



LIBRARIES

UNIVERSITY OF WISCONSIN-MADISON

Public documents of the state of Wisconsin ... for the fiscal term ending June 30, 1910. Volume 6 1908/1910

Madison, Wisconsin: Democrat Printing Company, 1908/1910

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

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

For information on re-use, see

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

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

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

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, 1910

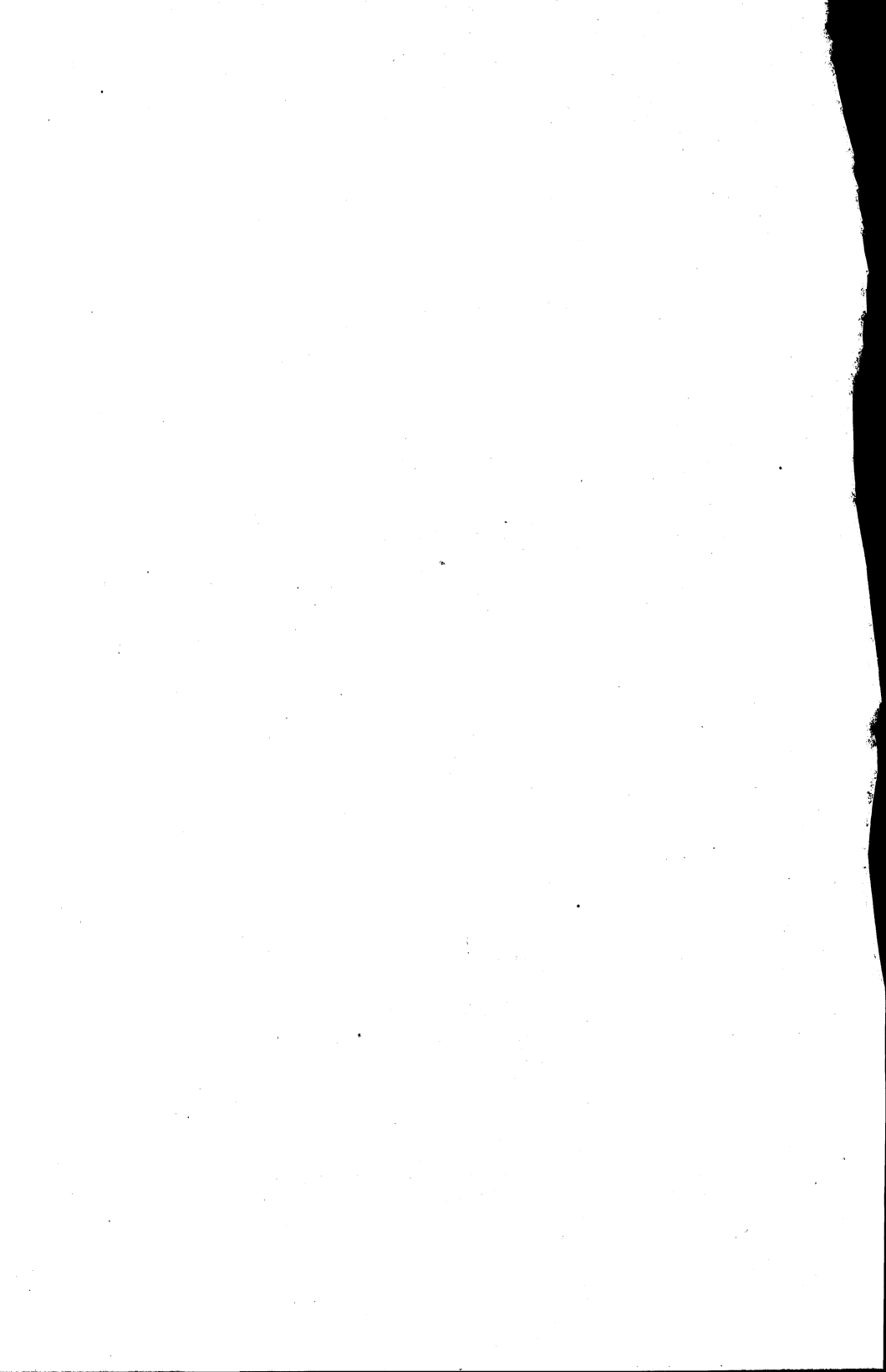
VOLUME 6



MADISON

DEMOCRAT PRINTING COMPANY, STATE PRINTER

1912



PUBLIC DOCUMENTS FOR 1909-1910

CONTENTS OF VOLUME I.

Message of the Governor.
Report of the Secretary of State.
Report of the State Treasurer.
Report of the Attorney General.

CONTENTS OF VOLUME II.

Report of the Department of Public Instruction.
Report of the Tax Commission.
Report of the State Board of Control.
Report of the Civil Service Commission.
Report of the Inspectors of Illuminating Oils.

CONTENTS OF VOLUME III.

Report of the Commissioner of Labor Statistics.
Report of the Dairy and Food Commissioner.
Report of the Adjutant General.

CONTENTS OF VOLUME IV.

Report of the Commissioner of Banking 1909.
Report of the Commissioner of Banking 1910.
Report of the Building and Loan Associations 1909.
Report of the Building and Loan Associations 1910.

CONTENTS OF VOLUME V.

Report of the State Board of Health.
Report of the Milwaukee Hospital for Insane.
Report of the State Board of Agriculture 1909-11.

CONTENTS OF VOLUME VI.

- Report of the Director Wisconsin Experiment Station 1909-10.
- Report of the Regents of the University.
- Report of the Commissioners of Public Lands 1909-1910.
- Proceedings of County Asylum Trustees 1909.
- Proceedings of County Asylum Trustees 1910.
- Report of the Commissioners of Fisheries.
- Report of the Agricultural Experiment Association 1909.
- Report of the Agricultural Experiment Association 1910.

CONTENTS OF VOLUME VII.

- Report of the Teachers' Association.
- Report of the Free Library Commission.
- Report of the Regents of Normal Schools.
- Report of the State Forester.
- Report of the State Horticultural Society.
- Report of the Dairymen's Association 1909.
- Report of the Dairymen's Association 1910.
- Report of the Natural History Survey.

REPORT OF THE DIRECTOR

1909



REPORT OF THE DIRECTOR

H. L. RUSSELL

This year marks the beginning of a new quarter century of endeavor for the Wisconsin Agricultural Experiment Station since it was founded in 1883 by the state of Wisconsin before the passage of the Hatch Act by Congress, under which law most of the states began the agricultural experiment station movement. It would have been fitting to have recapitulated the results accomplished in this period of time, were it not for the fact that it has been customary to make such a review at decennial periods, and it does not seem wise to change this policy.

ADMINISTRATION

In detailing the work of the Station, it is difficult to separate it from the work of the College as a whole, for in the University of Wisconsin all lines of agricultural work have been so closely correlated within the limits of each department, that no sharp line of distinction can be drawn. Some stations have segregated their funds and their experimenting staff more or less completely from the teaching departments of the institution, but in Wisconsin development has not been in this direction. It has been the policy here to have each department, so far as possible, engage in both research and teaching, on the ground that the teacher was stronger for his contact with research work, and that the results of scientific investigation could only reach their highest fruition when given to others through the medium of teaching channels, either to the students at the College, or directly to the farmers throughout the state.

It must be admitted, however, in times of stress, when the teaching work increases with unusual rapidity, that the research work is likely to be the first to suffer, because the demands of the

students on the ground must naturally be met. But the value of Station work in Wisconsin has been sufficiently appreciated by the Regents so that it has been possible, in most cases, to adjust the relation of the two lines without permanent loss to the research work.

The staff of the College at the close of this fiscal year embraces 38 members, excluding administrative staff. The distribution of their work between teaching and Station research is as follows:

	Total number.	Mainly research.	Mainly teaching.	Both research and teaching.
Professors.....	20	7	3	10
Instructors.....	11	1	4	6
Assistants.....	7	4	1	2
	38	12	8	18

IMPROVEMENTS AND ADDITIONS TO RESOURCES

The work of every agricultural experiment station that is meeting the needs of its constituency is rapidly expanding as the problems pressing for solution become more numerous and complex; consequently, the institutions that are rising to the level of their opportunities are growing rapidly in resources as well as in scope of their work. It is fitting that reference be made here to the increased facilities which have been afforded this College as a whole during this past year.

STOCK PAVILION.—The most important addition in the last year is the completion of the Stock Pavilion. The College has long needed a large amphitheater in which demonstration exercises could be held before miscellaneous gatherings which assemble from time to time. The auditorium in Agricultural Hall, which has a seating capacity of 700, is excellently adapted to lecture and lantern demonstration purposes, but, naturally, cannot be used for demonstration work involving the actual use of animals, machinery, and the like. The work of the 10-days Farmer's Course, held each winter, has been much handicapped because no judging or demonstration pavilions were available which would satisfactorily accommodate more than 350 persons. This course has now become so popular that at some of the meetings last winter nearly 2,000 persons were in attendance at one time. While the College has recognized the need of improved facilities of this

sort, it has not felt that it could ask for the construction of a building for this purpose exclusively, unless the same could be built so as to permit it to be utilized more or less continuously.

The very rapid growth of the Long Course during the past year has necessitated larger accommodations for stock judging; consequently a building was planned that will serve the several purposes. The frontispiece of this report gives a view of the exterior of the new Stock Pavilion, while Figures 1 to 4 show

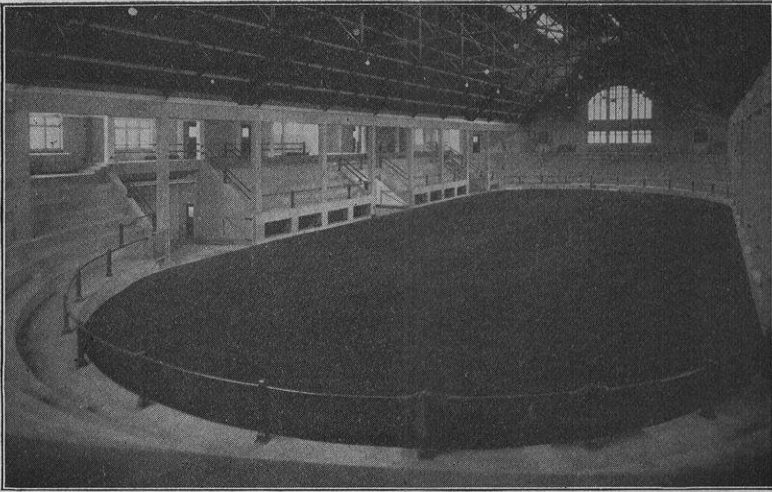


Figure 1. Arena of the live stock pavilion, which has seating capacity of 2,000 and curtain arrangement by which it may be divided into three rooms for classes in stock judging.

other views and a ground plan. The building is 115 feet by 212 feet, two stories and an attic in height, and covered with green enameled tile which gives a pleasing effect for such extensive roof surface.

The main arena is in the form of an ellipse 66 feet by 164 feet, which is large enough for all kinds of demonstration work, including the showing of horses, even for carriage work. Around the sides of the arena rise amphitheater seats of concrete, sufficient to accommodate 2,000 people. This large central space is so arranged that it can be divided into compartments with the aid of movable curtains, so that several classes may use these various compartments simultaneously. Beneath the amphitheater seats are 15 box stalls and 22 standing stalls for the use of horses belonging to the College and general University; also ample quar-

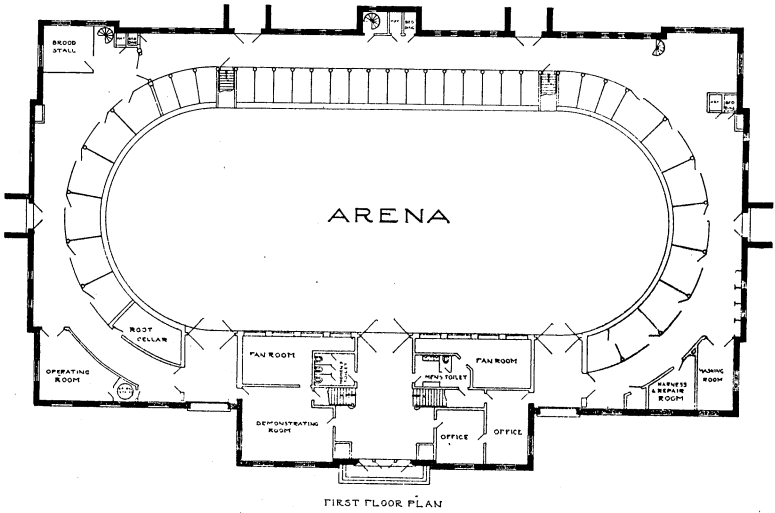


Figure 2. First floor plan of the live stock pavilion, showing stabling arrangements and offices.

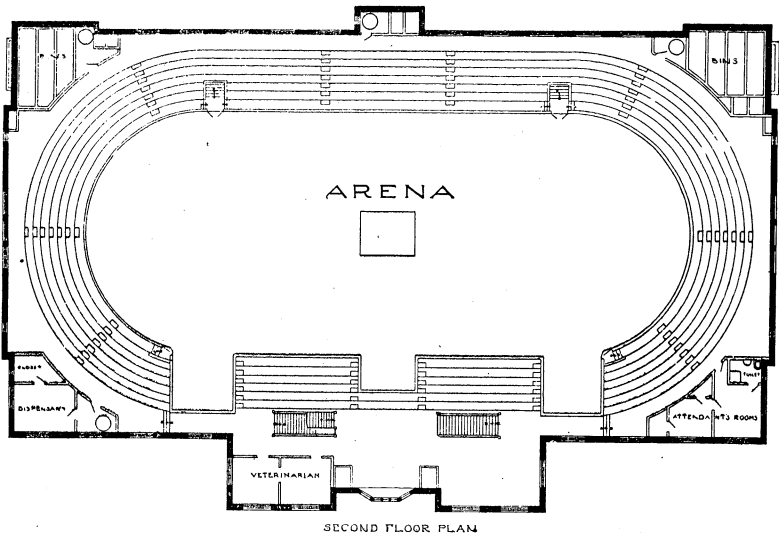


Figure 3. Second floor plan of live stock pavilion, showing arena with concrete ledges for seats and additional offices.

ters for hospital purposes and care of sick animals. The building is to be furnished with modern veterinary conveniences for treatment and surgical operations, and a well equipped dispensary. Suites of offices for the farm superintendent and the Veterinary Division are provided, as well as a class room for lecture and demonstration work.

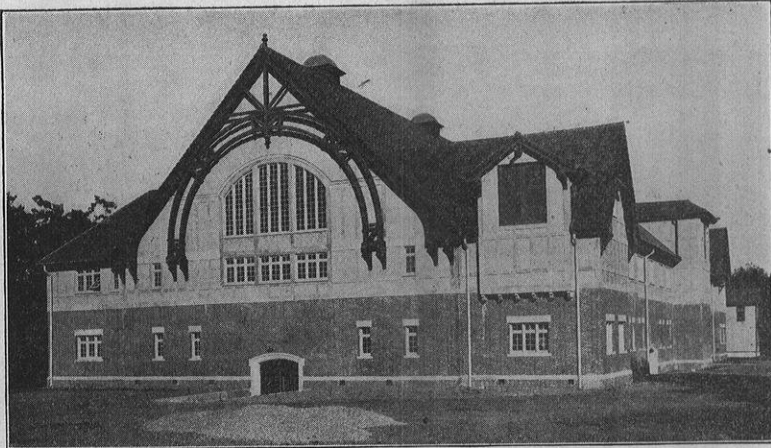


Figure 4. View of the rear and west end of the pavilion, showing entrance to stables and opening to hay loft which provides storage space for 600 tons of roughage.

The large arena gives a favorable opportunity for indoor student work in the winter, and will be used for athletic and gymnastic exercises for agricultural students, ample shower baths and other necessary conveniences being installed for these purposes on the upper floor. The arena will also serve admirably for poultry shows, horse exhibitions, cattle sales, and such agricultural gatherings as occasion may require. The loft has ample storage room for grain, hay and other forage, also considerable space for storage of machinery and other bulky equipment.

From an architectural point of view the building is regarded as one of the most imposing on the grounds, and connected with the central heating station, will cost approximately \$80,000. The variety of purposes for which this building will be used makes this new structure one of the most important additions in late years to the resources of the Agricultural College.

STOCK BARN AT HILL FARM.—The condition of the farm buildings at the outlying farm two miles west of the city, known as the

“Hill Farm,” has long been a disgrace to a state institution, no repairs having been made on them since they were acquired some twelve years ago. The condition of the stock barn has been such that much loss of forage has occurred annually, while the quarters for live stock have afforded the poorest possible shelter. During this last year a commodious new stock and forage barn, 36x106 feet, has been erected (Figure 5), at an outlay for lumber and materials, as all of the labor of building has been performed

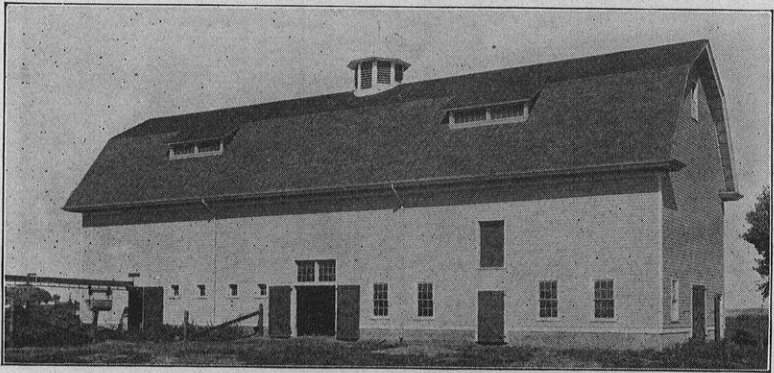


Figure 5. A practical farm barn which might well be adopted as a model for many farms in the state has been erected upon the Hill Farm.

by the regular farm force. This barn accommodates 30 head of horses and cattle, and has provision for 110 tons of forage. This fall for the first time the hay crop and the live stock of the farm are under adequate protection. Blue-print plans of this barn have been prepared for distribution to those farmers who may desire the same. There is a growing interest in the matter of constructing better sanitary buildings on the farm, and those who are intending to build may in this way profit by the suggestions offered.

Plans have been prepared for the rearrangement of all of the outbuildings at the “Hill Farm” so as to have them represent model farm buildings as nearly as possible. A portion of this work has already been accomplished. This equipment will materially improve our experimental resources, as a portion of the live stock and seed supplies are kept on this farm during the summer season.

LAND PURCHASES.—The rapid growth of the University has necessitated the formulation of plans looking forward several de-

cedes, and during the past year, plans have been made to cover the location of buildings which will be needed by the University in the future. These contemplate the use of most of the gardens, orchards, and field plots immediately adjacent to the agricultural buildings and now in use by our several departments, as sites for projected buildings for general University uses. To take their place, it is necessary that additions be made to the land holdings of the University. The only available direction for this, contig-

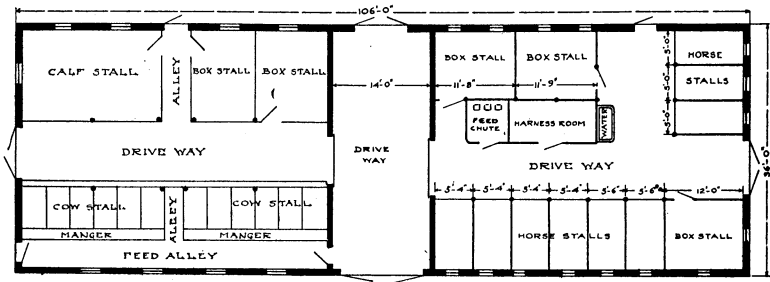


Figure 6. This floor plan shows the convenient arrangement of the Hill Farm barn.

uous to areas now utilized, is to the westward, as the city and the lake effectually check all growth in other directions.

During the past year several purchases have been made in accordance with the plans. Two small tracts, aggregating 8 acres, situated on the crest and sides of a knoll, immediately west of our present holdings, will afford a suitable location for horticultural purposes. Adjacent to this tract on the north, 80 acres have also been purchased, about 25 of which is high land, and the remainder marsh. Subsequently, to control an extensive marsh, most of which is now owned by the University, further purchases of about 58 acres were made. The acquisition of these marsh lands will enable satisfactory drainage improvements to be undertaken, which will result in the reclamation of this area. These lands, when improved, will add greatly to the land resources of the University, and the improvement work will be of the utmost value as a demonstration, for this marsh tract is typical of comparatively large areas in the southeastern and eastern portions of the state.

INCREASE IN FUNDS.—The appropriations derived from the State are not made directly to the College, but are included in the general University appropriations, and are then divided by

the Regents. The rapid increase in our student attendance has necessitated a material increase for teaching needs. The funds derived from the United States government for experiment station work are augmented this year by \$2,000, making in the aggregate, on account of the Hatch and Adams funds, \$28,000.

AGRICULTURAL EXTENSION WORK.—The most important accession this year has been in the legislative appropriation of \$30,000 annually for the next biennium for extension work in agriculture. It has been the endeavor of this College for years to popularize its work by carrying on demonstration work throughout the state. Experience has shown that actual trials and demonstrations of this character are the most effective means of disseminating information, and the recognition of this work by the Legislature in granting the full appropriation asked for indicates the attitude of the state-at-large toward this work.

The agricultural extension work will be organized in two main divisions: (1) Demonstration experiments carried out during the summer months in all parts of the state, and (2) Extension Courses of instruction, consisting of lectures, exercises, and demonstrations by a selected staff, to be given as regular courses of about a week each, during the winter in co-operation with the county schools of agriculture and elsewhere throughout the state.

These courses will be patterned in general after the 10-days Farmers' Course which is held annually in February at the University, and which has grown so rapidly in popularity. By holding similar courses in the different parts of the state a much larger number of people can be reached.

AGRICULTURAL PRESS SERVICE.—A new line of extension work was inaugurated this year in the form of a regular press service for the agricultural journals and newspapers of Wisconsin, prepared by the Station Editor. Recognizing that almost every farmer of the state may be reached through the medium of the agricultural and local press, the preparation and distribution of articles describing the work of this Station, results of experiments and demonstrations, with the advice of the Station staff on special topics, was considered necessary in order to extend the influence of the Station to a greater number of farmers in the state. The publication of suitable matter in such form is often of greater service than the more technical and voluminous Station publication.

Through the medium of the weekly University Press Bulletin,

established in January, 1909, notes on the work of the College and Station were sent regularly to over 100 leading agricultural journals, most of which circulate in Wisconsin to some extent, and to some 350 weekly newspapers in the state. Special articles have also been furnished to newspapers in many localities when any phase of the activities of the Station was of interest to a particular community. Announcements and reports of co-operative experimental work, demonstrations, etc., were furnished to the daily and weekly newspapers.

Photographs and engravings used in Station publications have been loaned to a large number of periodicals to illustrate articles describing the work done at this Station. Special illustrated articles have been prepared by the Editor in many cases. This office has been established with a view of securing the co-operation of the agricultural journals and newspapers in the dissemination of results that should be of value to the farmers of the state. In this way it is possible to reach quickly at least 75 per cent of Wisconsin's farmers.

ORGANIZATION OF NEW DEPARTMENTS AND CHANGES IN STATION STAFF

During the past year two new lines of work have been actively organized—the agricultural Editorial Office and the Department of Home Economics. Mr. J. C. Marquis, formerly associate editor of the Orange Judd publications, was appointed Agricultural Editor July 1, 1908. As editor he has editorial charge of all Station publications, and there will be developed in addition under his direction, work in Agricultural Journalism. There is a rapidly growing demand for men trained in the principles of journalism—indeed this department offers opportunity for experimental work as to elaboration of the best and most effective methods of presenting results. An agricultural press club, known as the Hoard Press Club, named in honor of ex-Governor W. D. Hoard, has been maintained during the past year.

The Department of Home Economics, formerly connected with the College of Letters and Science, was transferred in July, 1908, to the College of Agriculture, and the resignations of the former staff accepted. During this fiscal year the work has been entirely reorganized, Miss Abby L. Marlatt, formerly associated with the Providence (R. I.) Technical High School, having been chosen in April of this year as Professor of Home Economics. The active

work of this department begins with the opening of the fall semester. While primarily the work of this department will be along teaching lines, it is expected that with the unusual facilities in Chemistry, Physics, Physiology, and Bacteriology at the University, that important research on food supplies and cognate problems will be undertaken.

Mr. C. P. Norgord, formerly Professor of Agronomy in the University of Arkansas, was appointed in July, 1908, to the position of Instructor in Agronomy. Mr. Norgord's special duties are largely along extension lines.

Mr. C. S. Hean was appointed Librarian in place of Miss Iva Welsh, resigned October, 1908.

Mr. B. W. Hammer was appointed Assistant in the Bacteriology Department in July, 1908; Mr. Harry Steenbock, Assistant in the Agricultural Chemistry Department, and Mr. H. L. Walster, Assistant in the Soils Department. Mr. Mathias Michels of the Dairy Department, who has been in charge of the extension work in butter and cheese scoring exhibitions, resigned his position in November, 1908, to take up University studies.

The only resignation that has occurred in 1909 has been that of Prof. E. P. Sandsten, in charge of the Horticultural Department, who resigned his chair here at the close of this fiscal year to accept a commercial position with a western fruit raising company.

This fiscal year witnesses the preparation for an unusual increase in the scope of the work of this College, as well as the Station proper. Several new departments have been authorized by the Board of Regents, and will be equipped to undertake research work as rapidly as they can be organized. The following announcements can be made at the present time with reference to departments in which the details of organization have already been perfected.

POULTRY HUSBANDRY.—For many years there has been a considerable demand throughout the state for the organization of a Department of Poultry Husbandry. Few have realized the magnitude and importance of this industry. The aggregate value of poultry and eggs is exceeded in the Union by only three crops—hay, corn, and cotton. Even the beef cattle industry, important as it is, falls much below it. The organization of the work has been placed in the hands of Prof. James G. Halpin of the Michigan Agricultural College, who begins his labors with the opening

of the fiscal year. An entirely new equipment as to buildings and stock will be secured to begin the work at the opening of the fall semester.

AGRICULTURAL ECONOMICS.—A comparatively new but promising line of inquiry that is to be organized for the coming year is the Department of Agricultural Economics. Most experiment stations have concerned themselves mainly with the development of the material side of agriculture, but problems of a social and economic nature are fully as important and worthy of careful scientific endeavor as those concerned with crop or flock production. For several years Prof. H. C. Taylor of the University has been engaged in economic researches along agricultural lines. This year the work has been transferred to the College of Agriculture and the new Department of Agricultural Economics organized, to which is also assigned Prof. D. H. Otis, formerly Associate Professor of Animal Nutrition, who will devote his attention to the subject of farm management.

AGRICULTURAL EDUCATION.—The Department of Agricultural Education is concerned mainly with the problem of introducing agriculture into the secondary schools, and in offering such aid as it is possible for the University to give in the matter of training teachers for this work. State law requires the teaching of elementary agriculture in the graded schools, but as yet the opportunities for the training of teachers are very inadequate. Prof. K. L. Hatch, formerly principal of the Winnebago County Agricultural School, is to have charge of this work, in addition to his work as secretary of the Agricultural Extension Service. This new line of endeavor is largely educational, rather than Station work, but will offer exceptional opportunities for interesting educational experiments.

PLANT PATHOLOGY.—The losses which the agricultural interests suffer through the ravages of plant diseases are an exceedingly heavy tax on this industry, and great advance has been made in the control of these maladies through the discoveries which have been made in the realm of plant pathology. To put this work on the most effective basis, the Regents have authorized the establishment of such a department, and Prof. L. R. Jones, Botanist in the University of Vermont, has been appointed Professor in charge of this new department. Professor Jones will not be able to assume the duties of this office until the middle of the next academic year.

ECONOMIC ENTOMOLOGY.—Heretofore any entomological work carried on by the Station and College has been done by the Horticultural Department. The last Legislature increased materially the scope of the nursery and orchard inspection law, and the time has come for the development of this work on a separate basis. During this year there has been authorized the establishment of a Department of Economic Entomology, and Mr. J. G. Sanders, now associated with the Bureau of Entomology of the United States Department of Agriculture, has been placed in charge of this work. It will not be possible for this department to begin active its work before the middle of the forthcoming year.

CO-OPERATIVE WORK WITH OTHER ORGANIZATIONS.

Our co-operative enterprises with the United States Department of Agriculture have been extended this past year. The work on the investigation of cheese problems with the Dairy Division of the Bureau of Animal Industry has been expanded until there are now detailed at this Station three government experts (a chemist, a bacteriologist, and a cheese maker), who are giving their entire time to this work in conjunction with several members of our own staff.

The investigation of insects affecting the cranberry plant has been made possible by co-operative work with the Bureau of Entomology. This Station has furnished the working plant, superintendence and labor on the practical side, while the government has had one entomological expert in charge and an assistant for a portion of the year. This work will be continued along these lines for another year on the same co-operative basis.

Co-operative arrangements with the Bureau of Plant Industry on the investigation of fiber plants have been continued this year, as last, the work being confined mainly to a study of the adaptability of hemp culture to Wisconsin conditions. Already important practical benefits have been shown to accrue from the conclusions reached.

A line of co-operative investigation has been begun between the Bureau of Plant Industry, the Minnesota Experiment Station and this Station to undertake a study of the question of the best methods of removing stumps from cut-over lands in the northern part of these states. This is a problem of greatest importance to the timber states, and has interfered much with the settlement of

these regions. A careful comparative study of the various methods now in use will doubtless result in reducing expenditures for this purpose.

The Legislature last winter made an appropriation of \$10,000 annually for two years to the State Geological and Natural History Survey for the specific purpose of beginning a state soil survey in collaboration with this College. Arrangements have also been perfected whereby co-operation has been undertaken on an equal financial basis with the Bureau of Soils of the United States Department of Agriculture, thus making it possible to cover the work of the survey much more rapidly than was originally expected.

RESEARCH WORK OF THE EXPERIMENT STATION

The last year has witnessed a material improvement in the facilities of the Experiment Station for research work, as it has been possible, in several departments, to secure the additional help necessary to take care of the marked increase in teaching needs.

GENERAL PROGRESS OF STATION WORK

The following brief summary of the more important lines of work under investigation is presented. This summary is merely a statement of the problems with a report on the progress of the work, so as to indicate the nature of the researches under consideration, and does not attempt to present conclusions in final form.

IMPROVEMENT OF NATIVE PLUMS.—Some fifteen years ago, the late E. S. Goff, then horticulturist at this Station, took up the study of our native plums to see if possible improvements could be made. Beginning with the best named varieties, several thousand seedling trees were developed, which were then subjected to a rigid process of selection. Year by year this weeding-out process has gone on, until five years ago this plantation was reduced to about 500 specimens. More and more rigid selection was then exercised to save only specimens that were superior in some special quality. Not only was the size and quality of fruit considered, but special effort was made to develop a type that would be as resistant as possible to the brown rot, and hardy as well as productive. Hopes were entertained that a freestone form might be secured.

The selection process has now been in operation nearly 15 years and of the 25 specimens now in the orchard, about 10 are found to possess superior qualities to most of the named varieties now grown. In the case of one seedling, a type of superlative merit has been obtained. It has a freestone pit that separates quite completely from the pulp, a meaty flesh that is as solid as the European type, and is of excellent quality. For Wisconsin conditions, where the less resistant varieties cannot be successfully grown, this type offers exceptional advantages. This seedling will now be propagated and tested under various climatic conditions to see what influence a different environment may exert on it.

GREENHOUSE INVESTIGATIONS.—Prof. J. G. Moore has continued his studies on the crossing of American and English forcing cucumbers. The English hot-house variety is large in size and has but few seeds, but is often irregular in shape and lacking in prolificacy. Professor Moore has succeeded in crossing this on the more robust and prolific American types, producing a strain that has the good qualities of each. Many of the fruits are wholly seedless, and are of most excellent character. By selection this property has been accentuated until now about two-thirds of the fruits are seedless. The type has not been wholly fixed, but requires further testing before it can be commercially utilized.

CRANBERRY INVESTIGATIONS.—The success of the Station method of handling cranberry bogs was shown most conclusively this year. In fact a more forceful demonstration experiment could not possibly have been arranged. The indications this year were for an unusual crop, but on August 31 and September 1, the temperature on the bogs fell to a point considerably below freezing. On the Station bog where clean culture is followed, the air temperature just over the bogs was 26–27 degrees F, while on neighboring bogs where clean culture is not practiced, the temperature was reduced to 21 degrees F for a considerably longer number of hours. No loss on our clean, sanded bogs was experienced, while from 25 to 75 per cent of the fruit on adjoining areas was destroyed. Wisconsin should have harvested this year not less than 70,000–75,000 barrels, but as a result of this single freeze, the crop returns will be reduced to 30,000–35,000 barrels. This experiment carried out by Nature herself has had more

effect in convincing the growers of the success of the new method introduced by the Station than all of our previous publications.

The work with fertilizers, both phosphate and potash, alone or in combination, showed a marked improvement in vine growth and crop yield. Work on selection of improved strains of wild or cultivated types has been continued. Nearly 200 such strains are now under observation, and data are being collected on prolificacy, keeping-quality of fruit, etc.

The entomological investigations on cranberry insects have been continued this year in cooperation with the Bureau of Entomology of the United States Department of Agriculture, the scientific side being done by Mr. C. B. Hardenberg of the Department, while Mr. O. G. Malde of our Station staff has had charge of the practical culture work on the bog. The work this year has been directed toward a study of certain phases of the life history of the more important insects, especially the vine and fruit worms. Also special studies have been made on the parasites of these insects. It is plainly evident, however, that the growers will not be able to rely upon parasites for the purpose of holding the most undesirable pests in check.

CHEMICALLY BALANCED FEEDING RATIONS MADE FROM SINGLE VS. MIXED PLANT SOURCES.—Reference was made in last year's Report to the inauguration of a cooperative experiment in animal nutrition by the departments of Agricultural Chemistry and Animal Husbandry, in which the attempt was made to determine if a chemically balanced ration compounded from a single plant source was equal to those made from mixed grains. Sixteen young calves in four lots were taken and fed on a ration composed of corn, wheat, and oats, respectively, also a combination of all three nutrients. The animals have now been carried to maturity and undergone the strain of reproduction once, and are being bred again.

Marked differences early manifested themselves. In the early history of the animals, the corn fed lot did much better than any of the other three lots. That difference this year, however, has not been so marked as before. All lots have salt before them when feeding, and it is noteworthy that wide differences exist as to amount consumed, the mixture lot having used nearly six times as much as the oat lot. Striking variations have been observed in the size and vitality of the young produced. The average size of calves from the wheat-fed lot when dropped was 46 pounds,

while those from the corn lot was 73 pounds. The milk production of the wheat lot has been abnormally low, while the physical characteristics of the milk from different lots show material variation in the nature of the butter fats produced.

The experiment has opened a wide field of inquiry that is sure to lead to most important results in the matter of animal nutrition. It is apparent that the usually accepted dictum that a chemical analysis is all that is necessary to balance properly a suitable ration, is far from correct.

RÔLE OF THE INORGANIC ASH ELEMENTS IN ANIMAL NUTRITION.—In the cooperative work last year between the Animal Husbandry and Chemical departments, on the question as to the possibility of replacing in a nutritive ration, organic phosphates with inorganic phosphorus compounds, it appeared that the calcium salts also played an important rôle. Experiments have been conducted with growing swine, in which a corn ration has been fortified with different lime salts. While a well developed skeleton could be produced in this way, the soft tissues were not normal. Where lime salts have been used with mixed grain rations, not much difference was noted as to rate of growth, but again, the skeletal development with those receiving phosphates of lime was much more pronounced, and stronger bones were produced. It would seem that all grain rations usually fed swine are too low in lime for best development, and that either added calcium salts, such as phosphates, or plants like clover or alfalfa, which are very rich in lime should be added. The growing animal and the brood sow during the development of her young require an increased supply of this element.

In these studies the question has arisen as to whether the animal can actually utilize phosphorus wholly in inorganic form. Professor McCollum's experiments on rats have shown that such a supply can be used if great care is taken to make the food taste different from day to day. This demonstration that animal life can utilize purely inorganic salts for the manufacture of the organic body compounds brings the subject of animal nutrition into closer relation than ever with plant processes.

NUTRITION STUDIES ON DAIRY HERD.—This year completes the 3-year period in which Professors Humphrey and Woll have continued their studies on the influence of a medium protein ration for the economic production of butter-fat in the University herd. Nine years' observations have now been completed in which the

herd has been fed for periods of three years each on medium, then a high, and for the third period, again a medium, protein ration. Comparative studies of the influence of these rations for this long feeding period are now in progress.

RECORD OF THE DAIRY HERD.—The general improvement of the University dairy herd still continues to be maintained. During the year 25 cows in the herd gave an average of over 8,400 pounds of milk producing 363.6 pounds of butter fat, or 31.3 pounds of fat more than any other year's record of the herd. The value of products produced averaged \$111.76 per animal, while the feed consumed was worth \$50.34.

The phenomenal record of the Jersey cow Double Time, the 7-day official test of which was reported last year, has been maintained this year, as her yearly test, ending May 12, 1909, showed a production of 14,521 pounds of milk, having 691.3 pounds of butter fat, or equivalent to 806.5 pounds of butter.

SOIL STUDIES.—Professor Stoddart has continued the work on soil phosphates this year. His previous work had shown the deficiency of acid soils in available phosphates. The explanation now offered for this condition is that the ratio of iron and aluminum phosphates to phosphate of lime is greater in acid than in non-acid soils. He finds that a determination of the calcium phosphate as distinguished from the iron and aluminum salts of this element is a satisfactory means of measuring the phosphorous which may become available to crops.

Professor Whitson's studies on humus accumulation in the soil have shown that the heavy annual manuring of such lands as tobacco soils does not increase the total organic matter nor the nitrogen present in the same. The surprising condition is determined that in a large number of such cases continuous tobacco culture even with heavy manuring has resulted in a loss of a third of total organic matter and nearly as much nitrogen.

TREATMENT OF DIFFERENT SOIL TYPES.—The work on the improvement of sandy soils has been continued, the results this year being better with soy beans than with the lupines. The use of peat as a source of nitrogen has proven profitable for this type of soil, where it was readily available. Most of the sandy soils are found to be acid, and the addition of ground limestone has proven to be highly beneficial in aiding in the development of clover.

The marsh soil work this year has been a continuation of previous experiments, the results of which verify the conclusions

formerly deduced that phosphate and potash are frequently required on the virgin peat soils. At the Soils Station at Phillips, good crops of barley and potatoes were secured under this treatment.

CHEDDAR CHEESE INVESTIGATIONS.—The cooperative experimental work with the Dairy Division of the United States Department of Agriculture has been continued this past year. The experimental work on making cheddar cheese from pasteurized milk has been continued, and some very encouraging results have been obtained. The studies are yielding results on the complex nature of the changes involved. An analytical study of some of the factors which aid in the separation of whey from the curd in the vat has been made, the results of which will be published this fall.

Interesting data have been secured on the effect which **different** sizes of curd knives exert on the changes in curd masses of **varying** size. It has been shown that the separation of moisture progresses more rapidly at a moderate degree of acidity than when the acidity is extremely low or high. The use of high temperatures and rapid heating with over-ripe milk showed no more complete moisture separation than by more moderate treatment, while the loss of cheese solids was greater.

STUDIES ON RIPENING CHEESE.—A portion of the co-operative work with the Dairy Division of the United States Department of Agriculture has been directed this past year to the problem of separating and tracing the origin of the volatile compounds in ripening cheddar cheese to see if it was possible to throw any light on the complex problems of the development of cheese flavor. This exceedingly complicated organic study has been carried out by Mr. S. Y. Suzuki, the federal expert, in cooperation with Professor Hart. Much progress has been made in this study, but the results so far are of such a character as to make their announcement preferable in bulletins of the technical series.

PURIFICATION OF CREAMERY SEWAGE.—Investigations have been made by the department of Dairy Husbandry to apply the septic tank method of sewage disposal to creamery sewage. A small experimental plant, designed by Dean Turneure of the College of Engineering, was constructed three years ago to serve as a basis for this experimental work. It has been shown that creamery wastes are, however, much more resistant than domestic sewage, and that retention for ordinary periods of time will not produce a non-putrescible effluent. Chemical analyses on several plants

throughout the state have also been made. If the reduction tanks are made large enough to hold the sewage for five or six days, a reasonably satisfactory effluent may be produced. The use of sand or cinder filters to purify further the septic tank effluent has been studied to some extent, but no conclusive data as yet determined.

PEDIGREED BARLEYS.—This year witnesses the completion of eleven years of work on the part of Prof. R. A. Moore to improve the strains of barley best adapted to Wisconsin conditions. Thirteen pedigreed varieties have been developed in this time from which four or five will be chosen to be pushed. While the yield of these strains has been somewhat higher than that of the select Oderbrucker or Manshury types, their superior malting properties and absolute uniformity makes them especially valuable.¹ The Station has now accumulated about 1,500 bushels of these pedigreed strains which will be distributed mainly through the medium of the Experiment Association.

IMPROVED TYPES OF TOBACCO.—Work on improvement of tobacco by hybridization and selection has been continued this year by the Horticultural department. Crosses were secured in numerous cases and several strains of promise have been developed. These must, however, be tried out for several years before their real value can be determined.

NEW AND VALUABLE CROPS.—Experiments have been conducted by the Agronomy department on the growth of hemp this past year at Waupun and Mendota, the yields ranging from 1,400 to 1,550 pounds of straight fiber and tow per acre. At current prices this made the crop yield about \$75 to \$90 per ton. On good clay or muck soils this crop seems to do well. While hemp is probably too expensive for binder twine, it is extensively used in manufacture of fine twine and cordage.

PUBLICATIONS

CHANGES IN STATION PUBLICATIONS

The plan proposed last year of changing the manner of publishing the results of Station effort has been put into effect this year. As then outlined, the following plan is now pursued:

¹ At the National Corn Exposition at Omaha this fall these pedigreed strains took the highest prizes offered in the world's classes.

1. The results of experimental work that are directly available for the use of farmers will be presented in the regular bulletin series of the Station. It is designed to make these bulletins brief, covering a single definite problem, and where possible, well illustrated, so that they may be easily understood by all classes.

2. The more strictly scientific and technical results will be presented in a new series of bulletins entitled "Research Bulletins," which will be published in small editions and not given general distribution. These are distributed upon issuance to scientific workers and the agricultural press. During the last fiscal year six such bulletins have been issued. These Research Bulletins together with the Annual Report of the Director, which is also distributed as a bulletin of the regular series, will be bound together at the close of each fiscal year and will constitute the Annual Report of the Station, which will be sent to libraries, public institutions, and to such persons as may be especially desirous of maintaining a file of the scientific results of the Station. Such a plan as this is designed to economize in the matter of public printing, as separate mailing lists will be maintained for scientific workers and the general public.

To put this plan into operation this year, it has been necessary to revise our general mailing list. Heretofore our general state list, to which has been sent practically all publications of the Station, has aggregated about 15,000. This has been supplemented by special lists, such as operators of creameries and cheese factories, tobacco growers, cranberry growers, feed dealers, stallion owners, and the like, making the maximum distribution of our larger editions about 29,000. During the past year this general list has been revised so as to eliminate all "dead timber," such as changes of address, deaths, and those who might not care for these publications. It is gratifying to note that the reduction in the general mailing list has been only a few thousand, with return cards for continuance still being received daily.

Special attention is here called to the fact that the publications of the Station are free to all residents of the state and it is the privilege of any individual to ask that the same be mailed to him. On the other hand, in order that they may reach those who are interested in this work, the Station asks that application be made, if the same is desired. A postal card stating this fact, addressed to the Experiment Station, Madison, is all that is needed to have a name placed on the list.

PUBLICATIONS IN SCIENTIFIC JOURNALS.—The inauguration of the Research series of Bulletins of the Experiment Station is especially designed to present the results of the more technical work accomplished. This type of work of the American experiment stations has suffered neglect to a considerable extent at the hands of the scientific man engaged entirely in University work, because the Station reports and bulletins were not always directly available. It has therefore been deemed advisable to encourage members of the Station staff in the presentation of experimental results, under certain conditions, in the regular scientific journals, so that results would be made immediately available to all scientific students.

The following list presents such publications as have appeared during this fiscal year.

TECHNICAL PUBLICATIONS, 1908-1909

- The Rôle of Inorganic Phosphorus in the Nutrition of Animals.—E. B. Hart, E. V. McCollum, and J. G. Fuller, *Amer. Journ. Physiol.*, Vol. 23, p. 246.
- The Rôle of the Ash Constituents of Wheat Bran in the Metabolism of Herbivora.—E. B. Hart, E. V. McCollum, and G. C. Humphrey, *Amer. Journ. Physiol.*, Vol. 24, p. 86.
- The Relation of Different Acids to the Precipitation of Casein and to the Solubility of Cheese Curds in Salt Solution.—J. L. Sammis and E. B. Hart, *Journ. Biol. Chem.*, Vol. 6, p. 181.
- Volumetric Method for the Estimation of Casein in Cows' Milk.—E. B. Hart, *Journ. Biol. Chem.*, Vol. 6, p. 445.
- Nature of the Acid Soluble Phosphorus Compounds of some Important Feeding Materials.—E. B. Hart and W. H. Tottingham, *Journ. Biol. Chem.*, Vol. 6, p. 431.
- Quantitative Estimation of Lactic Acid in Cheddar Cheese.—S. Y. Suzuki and E. B. Hart. (Waiting for the approval of the Secretary of Agriculture. Journal not yet selected.)
- Soil Acidity in its Relation to Lack of Available Phosphates.—C. W. Stoddart, *Journ. Indust. Eng. Chem.*, Vol. I, No. 2, p. 69.
- New Separations in the Yttrium Group by Means of Stearates and Selenates.—C. W. Stoddart, published by the author in Madison.

The Milking Machine as a Factor in Milk Hygiene.—E. G. Hastings and C. Hoffmann, *Centb. für Bakt., etc., II, Abt., Vol. 22*, p. 222.

Note on a Group of Lactic Acid Bacteria not previously described in America.—E. G. Hastings, *Science N. S., Vol. 28*, p. 656.

A number of texts on various phases of agricultural work have also been published by different members of the staff during the past year.

PUBLICATIONS ISSUED.

In this fiscal year, thirteen bulletins of the regular series, aggregating 415 pages, and 6 technical bulletins of the Research series, embracing 200 pages, have been issued, and distributed. In addition to these, two special bulletins, giving lists of feeding stuffs and fertilizers have also been prepared for the special use of the trade concerned.

The following list and brief synopsis of these publications is herewith presented.

No.	Title.	Author.	Size of edition.	Number of pages.
REGULAR BULLETINS				
164	The King System of Ventilation.....	Ocock.....	50,000	24
165	Vaccination Against Tuberculosis in Cattle with Bovo-vaccine (Von Behring).....	Russell and Hoffman	27,000	13
166	Disinfection and Commercial Disinfectants.....	Ravenel and Smith..	35,000	19
167	The University Dairy Herd: Management and Records 1907-1908.....	Humphrey and Woll	25,000	27
168	Spraying Potatoes Against Blight and the Potato Beetle.....	Sandsten & Milward	30,000	27
169	Progress in Wisconsin Horse Breeding	Alexander.....	7,000	56
170	Licensed Commercial Feeding Stuff, 1908.....	Woll.....	20,000	96
171	Report of the Director, 1908.....	Russell.....	27,500	35
172	Tests of Dairy Cows, 1907-1908.....	Woll and Harris.....	15,000	33
173	Milking Machine Experiments.....	Woll and Humphrey	25,000	30
174	The Conservation of Phosphates on Wisconsin Farms.....	Whitson & Stoddart	40,000	20
175	A Three Year Campaign Against Bovine Tuberculosis in Wisconsin..	Russell and Hoffman	27,000	18
176	The Improvement of Wisconsin Tobacco Through Seed Selection.....	Sandsten.....	6,000	17

No.	Title.	Author.	Size of edition.	Number of pages.
RESEARCH BULLETINS				
1	The Rôle of Inorganic Phosphorus in the Nutrition of Animals.....	Hart, McCollum and Fuller.....	3,000	38
2	Factors Influencing the Phosphate Content of Soils.....	Whitson & Stoddart	3,000	20
3	The Efficiency, Economy and Physiological Effect of Machine Milking...	Woll and Humphrey	4,500	75
4	The Germination of Pollen.....	Sandsten.....	4,500	20
5	The Rôle of the Mineral Elements in the Metabolism of Herbivora.	Hart, McCollum and Humphrey.	4,500	16
6	Studies on the Bacterial and Leucocyte Content of Milk.	Hastings, Hoffman and Hammer.....	4,500	30
SPECIAL BULLETINS				
	Mch. 1909. List of Feeding Stuffs and Fertilizers Licensed for Sale in Wisconsin, 1909.....	Woll.....	2,500	12
	Apr. 1909. List of Feeding Stuffs and Fertilizers Licensed in Wisconsin, 1909 (Revised).....	Woll.	1,500	12

REGULAR BULLETINS

BULLETIN 164. THE KING SYSTEM OF VENTILATION. This bulletin presents a brief illustrated description of the essentials of the King system of stable and barn ventilation, which was devised at this station some years ago by Prof F. H. King, showing proper methods of installation in barns constructed of various materials. The drawings are devised to give the farmer and builder sufficient knowledge of the system to enable him to construct effective ventilators at moderate cost. Estimates of cost of construction are also presented.

BULLETIN 165. VACCINATION AGAINST TUBERCULOSIS IN CATTLE WITH BOVOVACCINE (VON BEHRING). Experiments to determine the value of bovovaccine as an aid in eradicating bovine tuberculosis from a herd are described in this bulletin. The significance of the results is discussed with relation to the practical value of the method. The method is considered of doubtful value for use by Wisconsin farmers in view of the expense of the process, time involved in immunizing the animals and the fact that only young stock can be treated and must be kept separate from sources of infection during the immunizing process.

BULLETIN 166. DISINFECTATION AND COMMERCIAL DISINFECTANTS. This bulletin presents a popular discussion of disinfection, the essential constituents of the principal disinfectants, methods of applying same in various places, such as stables, barns, etc. The results of tests of nine well known commercial disinfectants are presented.

BULLETIN 167. THE UNIVERSITY DAIRY HERD; MANAGEMENT AND RECORDS, 1907-1908. The management and performance of the University dairy herd for the year is described briefly in this bulletin,

which contains illustrations of the best animals of the herd. The description of the methods followed in keeping these animals during both summer and winter periods is presented for its practical value to stockmen in general.

BULLETIN 168. SPRAYING POTATOES AGAINST BLIGHT AND THE POTATO BEETLE. This bulletin reviews the experimental work in potato spraying done by the Station in eight counties of the state. The beneficial results of such spraying for blight are emphasized. A popular discussion of the nature of potato blight and the best methods of spraying to hold this trouble in check are outlined and suggestions in the selection of spraying machinery are given. Methods to be followed for the control of the potato beetle are also described.

BULLETIN 169. PROGRESS IN WISCONSIN HORSE BREEDING, with lists of stallion licenses and transfers for 1908. This bulletin reviews the improvement of the horse breeding industry of the state as a result of the operation of the Wisconsin stallion law which went into effect January 1, 1906. The elimination of unsound stallions with the introduction of pure-breds in their places is shown by the statistics. A review of the progress in the enactment of stallion legislation in other states is also presented. List of stallions and jacks licensed in 1908, as well as transfers of licensed animals made during the year are included in this bulletin.

BULLETIN 170. LICENSED COMMERCIAL FEEDING STUFFS, 1908. In accordance with the provision of the Wisconsin feeding stuffs law, a list of licensed manufacturers and dealers, together with analyses of feeding stuffs collected during 1908, are presented in this bulletin. The beneficial effects of feed inspection are shown by the absence of adulterated samples among those analyzed during the last three years and the marked reduction in samples pronounced suspicious. A discussion of the character of the licensed feed as related to the analyses is also included. The text of the feeding stuffs law appears in the bulletin.

BULLETIN 171. REPORT OF THE DIRECTOR, 1908. This bulletin presents a summary of the work of the Station for the fiscal year ending June 30, 1908. The activities of the Station along the lines of administration, research work, publication and extension service are briefly described to show the progress made during the year. The rapid development and importance of the extension service is emphasized in the descriptions of the many lines of demonstration, general extension and inspection work.

BULLETIN 172. TESTS OF DAIRY COWS, 1907-1908. This bulletin presents a summary of official tests of dairy cows conducted by the Station during the year ending October 1, 1908. A review of the tests made by the Station since 1893 is included. The bulletin includes illustrations of some of the best animals tested during the year representing the three principal breeds tested.

BULLETIN 173. MILKING MACHINE EXPERIMENTS. A popular discussion of trials made with a milking machine on the Station herd with a discussion of the efficiency, economy and bacteriological effects of the machine are presented in this bulletin. Opinions obtained from a large number of dairy farmers who have used this machine under practical conditions are also summarized.

BULLETIN 174. THE CONSERVATION OF PHOSPHATES ON WISCONSIN FARMS. The importance of phosphates to the agriculture of the state, description of how phosphates are removed from farms, together with an outline of the best methods of maintaining soil phosphates, as shown by experiments conducted by this Station, are presented in this

bulletin in popular terms. The beneficial effect of phosphate fertilizers when applied to lands in several parts of the state are duly emphasized in the discussion of experiments made with phosphate fertilizers.

BULLETIN 175. A THREE YEAR CAMPAIGN AGAINST BOVINE TUBERCULOSIS IN WISCONSIN. This summary of the educational campaign, which has been conducted in Wisconsin for three years, includes a discussion of the tuberculin tests together with data on the distribution of the disease throughout the state. The need for immediate action to hold the disease in check in the northern part of the state where it is just getting a foothold, as well as the great importance of dairymen exercising continual vigilance in their herds, is duly emphasized.

BULLETIN 176. THE IMPROVEMENT OF WISCONSIN TOBACCO THROUGH SEED SELECTION. This bulletin presents a review of methods followed by the Station in its tobacco improvement experiments during the past five years. Suggestions to growers as to how they may select seed plants, harvest, and test the seed in order to secure best results are also outlined. Suggestions to be followed by practical growers in their efforts to improve their own seed are presented.

RESEARCH BULLETINS

RESEARCH BULLETIN No. 1. THE RÔLE OF INORGANIC PHOSPHORUS IN THE NUTRITION OF ANIMALS. This bulletin presents the results of two sets of experiments to secure new data on the comparative value of certain forms of phosphorus-bearing materials for the young, growing animal; the nutritive value of inorganic phosphates when added to rations low in phosphate; the fundamental processes of organic phosphorus building in the body; the influence of the efficiency of phosphorus in the food on the body of the animal; and the minimum phosphorus requirements of young, growing pigs. The results present valuable information on a comparatively new phase of animal nutrition problems.

RESEARCH BULLETIN No. 2. FACTORS INFLUENCING THE PHOSPHATE CONTENT OF SOILS. This bulletin presents two discussions on soil phosphates. The phosphate content of soils as affected by methods of farming shown by comparative analyses of virgin and tilled soils is presented and the phosphate availability in its relation to soil acidity as shown by the history and analyses of soils from many fields is also discussed.

RESEARCH BULLETIN No. 3. THE EFFICIENCY, ECONOMY AND PHYSIOLOGICAL EFFECT OF MACHINE MILKING. This bulletin includes the details of an extensive investigation with a milking machine, which has been popularly described in Bulletin 173 of the regular series. Available and extensive data representing the results of investigation at the Station and experience of practical farmers are included. The effect of machine milking upon the udders of the cows is given by the Station Veterinarian. The bacterial content of machine-drawn and hand-drawn milk is also shown by the investigations made by the Bacteriological Department.

RESEARCH BULLETIN No. 4. THE GERMINATION OF POLLEN. This bulletin describes an investigation of some conditions which influence the germination and fertility of pollen. Laboratory and field experiments were conducted with pollen from different varieties of fruit trees, and the results of various conditions and temperatures of the atmosphere and their relation to the formation of pollen and the subsequent yield of fruit are shown.

RESEARCH BULLETIN No. 5. THE RÔLE OF THE MINERAL ELEMENTS IN THE METABOLISM OF HERBIVORA. This investigation presents new data on the effect of phytin in various forms upon the digestive processes of a cow in order to show the effect which this material and these constituents have upon the product and body of the animal.

RESEARCH BULLETIN No. 6. STUDIES ON THE BACTERIAL AND LEUCOCYTE CONTENT OF MILK. This bulletin includes three papers on the following subjects: The bacterial content of milk of individual animals; Experimental leucocytosis in the cow's udder, and The occurrence and distribution of organisms similar to the *Bacillus bulgaricus* of Yogurt. These articles present the results of investigations conducted by the Bacteriological department on various phases of dairy bacteriology.

AGRICULTURAL EXTENSION SERVICE

Important as is the work of teaching in the betterment of agricultural conditions, the work of extension is of more immediate value. The best results of teaching here at the College will only directly influence the coming generation; the results of extension effort are, however, immediate in their application, for they reach the man who is tilling the soil today.

For the purpose of organizing this new line of effort more effectively, the last legislature made a specific appropriation of \$30,000, but this did not become available until the close of the present fiscal year; yet the importance of this extension work, as indicated by the demand for the same, has been such that the College has pushed it as vigorously as possible. The result has been that much more has been accomplished along these lines than in previous years. In organizing this work on the basis of the new appropriation it is highly important that the same be planned in a most careful manner, so as to secure the greatest returns with the funds available for this purpose.

The plan of organization which has been adopted is to develop this extension service as far as possible in connection with each department of the College, realizing the necessity of having each line of College work, if possible, brought directly in contact with the people of the state. It is to be hoped that such a plan will keep the work on a practical basis and at the same time render the activities of the department more homogeneous than would be the case if the extension service was segregated in a special department, under a separate staff.

ORGANIZATION OF THE EXTENSION WORK

This extension work naturally divides itself into two main groups of effort:

- (1) The extension by demonstration of the results of experimental or research work,
- (2) The extension by teaching courses and otherwise, of general agricultural information, to persons unable to attend the University.

The two lines inevitably overlap. Therefore, the distinction sometimes made that extension work should be placed under the two heads, Station and College extension, is one which is too refined to be of much practical service. It seems preferable to combine this work for the state-at-large under the general head of extension. The rapidity with which this extension idea has developed within the last few years is indicative of the great interest now being attached to the education of the masses by new educational methods.

The plan of organization that is being developed at Wisconsin is as follows:

1. Field Demonstration Work.
2. General Extension Activities.
3. Control or Inspection Work.
4. General Information Work.
5. Extension Courses of Instruction held in conjunction with the County Agricultural Schools and elsewhere.

In organizing this work for the coming year, it is essential to state explicitly just what lines of effort will be put into operation and how the benefits of such service may be obtained. For this purpose a special publication has been issued (Circular of Information No. 7) giving in detail the various lines of work. This may be secured by anyone upon application.

In order that the agricultural public may have proper information as to this Service and how it can be obtained, a summary statement is here presented, giving the respective lines of work that have already been organized. Correspondence can be addressed to the individual department interested or to Agricultural Extension Service, College of Agriculture, Madison, Wis.

OUTLINE OF AGRICULTURAL EXTENSION SERVICE

AGRONOMY

PURE-BRED SEED DISSEMINATION. Improved grains and forage plants are disseminated, principally, through members of the Wisconsin Experiment Association, an organization of graduates and former students of this College. Centers are established for propagation purposes from which such grains are distributed. This Station does not undertake to sell these seeds commercially, but will place inquirers in touch with parties known to have select stock.

CROP DEMONSTRATION FARMS.—Demonstration centers have been established on a number of the county and state farms connected with asylums and other state institutions, so that the propagating work in pure-bred seeds may be more readily brought before farmers of the various vicinities. A few new farms will be added to the number yearly.

YOUNG PEOPLE'S SEED CONTESTS.—In cooperation with county fair organizations and the county superintendents of schools pure-bred seed is furnished for distribution to boys and girls to be planted, under directions furnished, and the crop exhibited at the respective county fairs. These contests are designed to awaken the interest of the young people in agriculture and to further disseminate pure-bred seeds.

WEED IDENTIFICATION.—Specimens of noxious weeds and other plants will be identified where satisfactory specimens are sent for examination. Information relative to the use of chemical solutions for weed control and eradication is supplied upon application.

SEED INSPECTION.—All seeds of grains and grasses, according to the State Seed Inspection law, must be examined for purity and germination, and be properly branded before being sold. The execution of this law is under the control of the Station and necessary details will be furnished upon application. Samples shipped in accordance with directions to the State Seed Inspector, will be examined free of charge to farmers who have purchased the seed. Samples sent by dealers, seedsmen or growers to comply with the law, should be accompanied by the authorized fee of 25 cents per sample.

ANIMAL HUSBANDRY

COMMUNITY BREEDING ASSOCIATIONS.—This department will assist in the organization of breeding associations, furnishing outlines of constitution and bylaws, and, to a limited extent, speakers will also be sent to address already existing associations.

LIVE STOCK JUDGING.—Lists of persons available for judging live stock at county fairs and other exhibitions, will be furnished upon application.

BACTERIOLOGY

TUBERCULOSIS POST-MORTEM DEMONSTRATIONS.—In cooperation with the State Live Stock Sanitary Board, a limited number of tuberculosis post-mortem demonstrations will be given at agricultural fairs and assemblies during the fall and winter seasons, when previously arranged for.

CONTROL OF ANIMAL DISEASES.—In cooperation with the State Live Stock Sanitary Board, aid will be given in the investigation of animal disease outbreaks. Samples of tissues to be examined should be sent

in accordance with proper directions, which will be furnished upon application. Examination of animal tissues suspected of containing poison, or samples of suspected water cannot be made by the Station. Analysis of waters should be referred to the State Hygienic Laboratory, Madison, Wisconsin. No attention will be paid to samples for analysis unless all charges are prepaid.

CHEMISTRY

MANURE PRESERVATION TESTS.—Cooperative experiments will be arranged with farmers to test the value of different methods of manure preservation.

CASEIN TEST DEMONSTRATIONS.—Upon request, arrangements will be made to demonstrate the applicability of the Hart Casein Test to factory use.

DAIRY COW TESTS.—Certification of the production of pure-bred dairy cattle is made by an authorized representative of the Station. Such official tests are continued as desired from one to 30 days, or more, the actual cost of the same being borne by the breeder.

WISCONSIN DAIRY COW COMPETITION.—This competition is designed to stimulate testing of dairy cattle as to performance, and encourage business methods in management. A prize fund, amounting to \$2,600, has been raised, and awards will be made for maximum records of butter fat produced by individual animals and herds. Entries in this competition will close Nov. 1, 1910, and awards made on basis of records completed prior to Nov. 1, 1911.

FEED INSPECTION.—Concentrated feeds, (except whole seeds and un-mixed meals made from the same) must be licensed for sale in this state, and should be labeled as to minimum fat and protein, and maximum fiber content. Samples of commercial feeding stuffs (taken in accordance with prescribed directions) will be analyzed for farmers free of charge.

FERTILIZER INSPECTION.—The sale of all commercial fertilizers in the state is under Station control, the law requiring the analysis of all such fertilizers and their license, each sack to show manufacturer's guarantee for minimum nitrogen, total and available phosphoric acid, and soluble potash.

DAIRYING

BUTTER AND CHEESE SCORING EXHIBITIONS.—Factory operators in cheese factories and creameries may join these monthly scoring exhibitions upon application, and have their factory product scored and criticised, in order to secure assistance in maintaining a uniformly high quality of product. Entry blanks for such exhibitions will be furnished upon application.

STARTER DISTRIBUTION.—To aid factory operators in the control of cream ripening, pure culture starters, prepared in the Bacteriological department, will be furnished, upon application to those who participate in the butter and cheese scoring exhibitions.

MILK AND CREAM TESTING.—Samples of milk and cream will be tested free for farmers and factory owners under prescribed conditions. Samples must be prepaid and sent in accordance with regulations.

ECONOMIC ENTOMOLOGY

NURSERY INSPECTION.—All nursery stock grown and offered for sale in the state must first be examined by the state nursery and orchard inspector, the legal fee for which is \$10 per nursery, and \$1 for each agent.

EDUCATION

RURAL AND HIGH SCHOOL AGRICULTURE.—The compulsory teaching of agriculture in the rural schools, and the increasing interest in this work in the other public schools of the state have led to a rapidly increasing demand for definite information relative to the best methods of instruction. A special series of circulars to cover needs of teachers is now in process of preparation, and all bulletins and such circulars as are adapted to this demand will be mailed free to all the rural school teachers applying directly, or upon application to the county superintendents. Lantern slides for lecture purposes will be loaned to schools upon application. The department can furnish a limited number of lecturers on this line of educational work.

ENGINEERING

BUILDING PLANS.—Blue prints of farm buildings (barns, hog houses, cow stalls, silos, cement work), ventilation plans of school houses, stables, etc., diagrams showing methods of belt lacing, rope splicing, knot tying, and rope halters, will be furnished upon application.

HORSE BREEDING

STALLION LICENSING.—All sires used for public service in the state must first be licensed by this department, and the certificate recorded with the county register of deeds. License certificate must be printed and posted wherever an animal is used for service. Unsound horses cannot be licensed. Speakers for meetings designed to aid in horse improvement work may be arranged for upon application.

HORTICULTURE

POTATO SPRAYING DEMONSTRATIONS.—Field demonstrations, to illustrate methods of controlling potato blight and other fungus diseases, will be made in a number of the counties particularly interested in potato culture. The Station furnishes, free of charge, machinery, chemicals, and a representative to supervise the work, the farmer doing all the necessary work connected with the demonstration. Field meetings for instruction to a community will be held when the spraying work is in progress and at harvest.

ORCHARD SPRAYING DEMONSTRATIONS.—Field demonstrations to illustrate methods of control of fungus and insect diseases infesting orchards, will be held under the same conditions as in potato work.

TOBACCO SEED DISTRIBUTION.—The distribution of select tobacco seed that has been developed at the Station will be made again this coming spring. After this season, general distribution will be discontinued, as now a large part of the tobacco grown in the state is of this variety.

DECORATION OF SCHOOL GROUNDS.—Plans for decoration of school grounds will be furnished free of cost to two schools in each county upon application. Where a special visit is required to perfect plans, traveling expenses must be borne by the school. The Station cannot furnish nursery stock, but will aid individuals in selecting plants, trees, and shrubs for ornamental or useful purposes.

SOILS

COOPERATIVE FERTILIZER TESTS.—Arrangements may be made for cooperative fertilizer tests to demonstrate the effect of phosphates on clay soils, the effect of special fertilizers, drainage, and crop adapta-

tion, to marsh soils and the treatment of sandy soils. The Station furnishes the necessary fertilizers and other material for the experiment, while the owner cares for, and keeps a record of the crop.

This Station does not analyze miscellaneous samples of soil, except where examination is made of the immediate condition.

SOIL DEMONSTRATION PLOTS.—Demonstration plots on typical soils have been established in various portions of the state to study and show methods of treatment applicable to special soil conditions. Such soil plots have already been located on the red clays at Superior and Ashland, on sand at Sparta, Iron River and Spooner, and on marsh soils at Marinette, Mather, and Phillips.

DRAINAGE SERVICE.—Plans are made for drainage systems and, when required, aid is given in the organization of drainage districts with plans and specifications for either tile or open ditch drainage.

SUB-STATIONS

NORTHERN SUB-STATIONS.—In order to study the best methods of treatment on other soil types than those which occur at the central Station at Madison, three branch or sub-stations have been located in the northern part of the state,—two on the Lake Superior red clays, at Superior, and Ashland, and one on light sandy soil at Iron River. In addition to these stations, which have been in operation for several years past, a new sub-station is now being located at Spooner on the jack-pine sandy soils.

CRANBERRY SUB-STATION.—Investigations of cranberry culture and methods of control of insect and fungus diseases are carried on at the Cranberry Sub-Station, located at Cranmoor (postoffice Grand Rapids, Wis.). Persons interested in cranberry culture may obtain the services of the Sub-Station Superintendent in making preliminary surveys of marsh areas, also advice, and assistance in laying out and managing cranberry bogs at the cost of his expenses for travel.

MISCELLANEOUS

STUMP REMOVAL INVESTIGATIONS.—In cooperation with the United States Department of Agriculture, and the Minnesota Experiment Station, this Station has the investigation of the most efficient and economical methods of removal of stumps from cut-over lands under way. Such aid as it is possible for the expert in charge to render will be furnished free of cost.

DEMONSTRATION WORK

As our experience with the demonstrative lines of extension work increases, it becomes more and more apparent that better results are obtained where the instruction is given by demonstration so far as the nature of the work will permit. Habits of thought have a strong tendency to become fixed. We are apt to do the things we need to do in the same old way, and it is difficult to change methods that have long been in vogue. An actual demonstration, however, affords the most convincing proof and will carry conviction where frequently all other methods fail. During the past year these demonstration lines of work have been materially increased over those of the preceding year.

COOPERATIVE FERTILIZER TESTS.—Although the soil fertility of this state has not been impaired, on the average, to the extent that it has in many other regions, by reason of the development of animal husbandry, yet, the examination of soils by the Soils department in different regions of the state indicates the necessity of attention being directed to this matter before further exhaustion follows. Cooperative tests have been undertaken in a number of cases with farmers where rock phosphate has been used to supplement barnyard manure. Even on dairy farms where supposedly the fertility was being maintained, the addition of phosphate has been found to be highly advantageous.

In tests made in Richland county the hay crop was increased over a ton per acre by adding raw phosphate rock to the manure over the yield obtained by the use of manure alone. In Door county, a barley crop was increased one-third or 15 bushels per acre. An application of phosphate fertilizer, costing \$2.50, increased the crop yield from \$9 to \$12 per acre.

Arrangements are being made to extend these tests materially the next season. The importance of this work is being readily recognized, and although phosphate has only been used in the state for a few years, interest in this matter is rapidly being awakened.

DRAINAGE SERVICE.—The interest in reclamation work by drainage continues to develop. During the last year this work has been pushed by the Soils department. Professor Jones has spent a considerable portion of his time in organizing 26 such projects, about one-half of which were on tile drainage, and the remainder open ditch work. The tiling projects have ranged from small tracts of a few acres to areas covering 200 acres; the open ditch work has been done on areas from 200 to 1,000 acres in extent. Preliminary surveys have been made where the necessity for drainage districts was evident, and plans submitted for same.

The Soils department aided in securing an amendment to the drainage law by the last legislature, making it possible to omit one hearing when the preliminary plans are sufficiently developed, thus lessening the expense and time necessary to organize drainage districts. In four cases, Lamartine, Fond du Lac county, Albion and Rutland, in Dane county, and the Larson Drainage District, in Winnebago county, meetings were held at

which plans and cost of proposed work were explained, as well as preparation of proper petitions for organization of such work.

Where tile drainage projects have been located on the farm of a single owner, neighborhood meetings were held to demonstrate the methods applied. Collection of data indicating the benefit to be derived from drainage has been undertaken. Reports indicate that the more thorough systems undertaken at a comparatively high cost are in the end the most satisfactory. The results obtained on a 30-acre marsh at Stoughton have had the effect of increasing the value of undeveloped but available marsh land in that vicinity in some cases as much as \$10 per acre.

ORCHARD SPRAYING.—During this year spraying demonstration tests have been continued by Mr. J. G. Milward on orchards located in Sauk, Winnebago and Kewaunee counties, approximately 22 acres being treated. Special effort was made by advertising the fact in the local press, to secure the attendance of persons interested in this line of work at these field meetings, which were held at the time of spraying, and again during the harvesting period. From observations made during this year, it appears that 60 to 90 per cent of all apples grown in the state are infested with the codling moth. Mr. Milward reports the fungus disease, apple scab, to be less prevalent this year than usual, but fully 30 per cent of the apples grown were nevertheless affected.

The results obtained in the orchard spraying work this year have been unusually striking. An average of all orchard work carried out showed about 6 per cent of unsound fruit on trees that had been sprayed with Bordeaux mixture and arsenate of lead, while in the control portion of the orchard that was left untreated about two-thirds of all of the fruit was unsound. A conservative estimate indicates that a net gain of not less than \$50 per acre was made on the crop where it was properly sprayed.

POTATO SPRAYING.—The Horticultural department has continued the demonstration work on potato spraying, Mr. Milward having direct charge of the same, as in former years. Spraying demonstrations have been carried on in Waushara, Barron, Washburn and Waupaca counties, 18 acres in all being treated with Bordeaux mixture. At the field meetings, held during the summer, not only was the subject of potato spraying discussed, but all phases of potato culture, seed selection, etc., were considered.

The frost that occurred in the potato districts on August 30

seriously injured the crop and detracted from the success of the work this year, but for a period of 10 days prior to this time, the vines began to show evidence of the blight and a difference in the condition of the sprayed and unsprayed fields was observable. The beneficial results of this spraying work are not to be wholly measured by the mere increase in crop yields as to quantity or quality. Where a man can be induced to take up spraying and carry it on efficiently, his interest in improved methods of culture and general care of his crop is aroused, so that he becomes a much more intelligent student of his business. This improvement in mental attitude is really the more important work of the two.

CRANBERRY SPRAYING.—In connection with the work of the cranberry station at Cranmoor, in Wood county, Mr. O. G. Malde, Superintendent of this Station, has, in conjunction with Mr. C. B. Hardenberg, the federal expert in Entomology, carried on spraying demonstrations in several regions. It is becoming more and more apparent that the insect pests affecting this crop must be controlled. Although the losses from the fruit-worm were unusually small this year, the spraying application reduced them, in some cases, from 12 per cent to about 0.9 per cent. Spraying is found to be especially effective where clean culture is carried on.

In addition to the spraying work, the Station grounds afford a demonstration to those interested in cranberry culture, as to proper methods of handling this intensive industry. The results of the clean culture method have been strikingly successful this year, and much interest has been manifested in the general work of the Station. Mr. Malde's services have been solicited by a number of people who are for the first time taking up cranberry culture. It is gratifying to find that the industry is attracting increased attention and that new projects in other portions of the state are being started in the right way.

CROP DEMONSTRATION FARMS.—In the dissemination of pure-bred seeds, an effective method has been developed in the establishment of demonstration farms on lands belonging to the various state institutions and the county "poor farms." Thirteen such farms have co-operated with the department of Agronomy during the past year, seven of which were state institutions, such as the state prison, state reformatory, home for the feeble minded, school for dependent children, and the asylums for the

insane. This work has been under the immediate charge of Prof. C. P. Norgord, and has had two definite objects in view,—first, to supply each farm with Station-bred seed, and make it the center of its respective community for the growth and dissemination of high-grade seed grains; second, to put into operation on these farms the most approved methods of crop management so as to demonstrate to neighboring farmers the advantage of such methods. The importance of proper storage of seed corn was effectively shown by testing samples secured from 150 farmers. These were tested as to germination at the Station, and field tests made on the county farms, to determine stand and yield. The results indicated that low germinating corn invariably produces a low stand and a reduced yield.

Meetings were held during the summer on all of these farms, the attendance ranging from 35 to 130, with an average of 60. The comparative demonstration of the superior merits of the best varieties of seeds appears to have been much appreciated. Where such a community center is established, it immediately becomes a center for the dissemination of improved varieties of seeds.

TUBERCULOSIS POST-MORTEM DEMONSTRATIONS.—The educational campaign for arousing interest in the subject of bovine tuberculosis, by making public post-mortems on cattle that have been condemned by the tuberculin test, has been continued by the Station in co-operation with the State Live Stock Sanitary Board. Such demonstrations were held at several of the Farmers' Courses as well as at the state and county fairs. Over 2,000 persons were in attendance at the demonstration held in the new Stock Pavilion at the time of the 10-days' Farmers' Course last February. At Menomonie, the meeting was held in the armory, which was filled. The influence of this graphic method of portraying the ravages of this insidious disease continues to reflect itself in the increased voluntary demand for tuberculin which is supplied by the Board (address, Secretary Live Stock Sanitary Board, Madison, Wis., not the Experiment Station). Last year over 43,000 animals were tested, as reported by that Board.

NORTHERN SUB-STATIONS.—Much of the work of the branch experiment stations which are located in the northern part of the state at Ashland, Iron River, and Superior, is demonstrative in

character. In addition to the purely experimental work which is carried on in these localities, fields are maintained which are designed to show those who visit these stations, the types of grains, fruits, etc., adapted to the region, as well as methods of soil treatment that are recommended.

Year by year, the work of these sub-stations becomes more and more important, and it is now generally acknowledged that they have been instrumental in aiding greatly in the development of this region. Practically all of the settlers who are coming in to develop this forest region confront entirely new conditions, and the experience of the Station is eagerly sought by such individuals as well as by those interested in the sale of lands. Superintendent E. J. Delwiche, who has had immediate charge of this work since it was inaugurated, also holds a number of meetings during the winter, throughout the northern counties, so that the results of the work are given as wide publicity as possible.

When these sub-stations were first established, lands were leased for the purpose rather than purchased outright, as the whole question was somewhat experimental in character. Their success, however, has been so marked that a policy of permanent location should be adopted. The last legislature enacted a law, making possible the establishment of two branch stations, under certain conditions. Arrangements have practically been perfected for the location of one of these at Spooner, Washburn county, immediately contiguous to the city, on sandy jack pine soil. This site is admirably adapted to serve the needs of the extensive region in Burnett, Douglas, Washburn, Sawyer, and Bayfield counties that is more or less covered with this forest growth. The Station is located on a soil that is typical of the entire belt, and is readily accessible by rail and highways. It is hoped that improvement work may be carried on this winter so that some crops may be planted next spring.

GENERAL EXTENTION WORK

DISSEMINATION OF PURE-BRED SEEDS.—The Wisconsin Experiment Association (composed of students who have attended the agricultural courses at the university) still continues to be the most potent factor in the matter of disseminating pure-bred seeds throughout the state. This association now has a paid-up active

membership of 1,255, most of whom are actively engaged in growing and selling pure-bred seed grains. The growth of this organization has been so great that it is difficult now for its officers to give adequate time to the supervision of its work. To overcome this, county orders have been developed in the counties where the membership is the largest (eight are now organized). The officers of the local organization supervise the work in each county. Not infrequently has it been possible for the Agronomy department to send orders amounting to a thousand bushels or more of selected corn or barley to be filled by these local organizations. Large sums of money are now being brought into the state annually because of the active demand for improved seeds of various types.

TOBACCO SEED DISSEMINATION.—Efforts have been made by the Horticultural department for several years to improve the character of the tobacco crop of the state by distributing a selected type of Connecticut-Havana seed leaf tobacco which has been developed with especial reference to the quality of plant produced. Selection of seed was made with reference to size of plant, number, and shape of leaves, as well as curing quality. By means of an air-blast separator, the lighter seed was blown out, leaving only the heavy seed for use. This season 400 pounds of high grade seed, valued at \$3,200, has been sent out to 2,150 growers, located in 50 counties of the state. From data collected from the growers, it appears that this type of tobacco is a somewhat better yielder, that the shape of the leaf is preferable to the old types grown, that more leaves are produced to the stalk, and that it cures out better in the shed. At the present time this type has been so widely distributed that it has been decided to discontinue the general dissemination of the same after this coming season.

YOUNG PEOPLE'S SEED GROWING CONTESTS.—The educational work in this direction has been extended this year by introducing barley, as well as corn contests among the young people in the schools. Eleven barley contests and 31 corn tests have been arranged at 35 different county fairs. Selected seed for this purpose has been furnished by the Station, and distributed by the county fair secretary or the county superintendent of schools to the young people of the county, with detailed instructions as to methods of planting, culture, and care of crop. It is surprising

to see how effective these contests are in interesting children in the matter of improved methods of culture. The reflex effect on the parent has also been shown in many instances. The backward condition of the season this year delayed the corn crop materially, so that some of the earlier fairs did not have so large a number of exhibits as would otherwise have been the case, but approximately 4,500 samples of product have so far been submitted.

COMMUNITY LIVE STOCK BREEDING ASSOCIATIONS.—Interest still continues to develop in the matter of organizing cooperative breeding associations, especially with dairy stock. At present 24 such breeders' associations and two agricultural associations have been organized by Prof. G. C. Humphrey in promoting this work with dairy cattle. An example of what has been accomplished in one or two instances is instructive.

The Barron County Holstein-Friesian Breeders' Association organized in January, 1907, with a membership of 30. It now has 96 members, each of whom is pledged to use none but registered Holstein sires. The Waukesha County Guernsey Breeders' Association began in 1906 with six members. It now has a membership of 40. Over 30 pure-bred sires are now in use. The Association has at the present time over 500 head of pure-bred stock and the demand for stock from the Association is much greater than their ability to supply. This phase of community effort is a type of co-operation that has aided much in the development of the dairy industry in this state.

DAIRY TESTS.—The official testing of pure-bred dairy stock for milk production, under the direction of Prof. F. W. Woll, has increased this last year over 14 per cent, aggregating for the fiscal year 1,474 separate tests on 539 animals. Forty-nine breeders have solicited the control of the production of their animals, 12 of whom began the work this year. The expenses of this work are borne by those who participate in the same, but it has a highly beneficial effect on the development of high-grade dairying throughout the state. Of 334 Holstein animals placed on these official tests, all but 13 were admitted to the Advanced Register of the Holstein-Friesian Association in America.

BUTTER AND CHEESE SCORING EXHIBITIONS.—This year marks the second year of this work, during which 115 creameries and 129 cheese factories were added to the list of those who have

sent in their factory products for scoring and criticism. Many of the makers whose product is below standard fail to take advantage of these monthly tests. It is expected that arrangements may be made this coming year with the Dairy Division of the Federal Department of Agriculture to place a field expert on this work, so that it will be possible to visit the factories and thus reach the makers whose product is inferior in quality.

Awards were granted to those whose product was of best quality where they had participated the required number of times. Twenty-five such awards were granted to butter makers for the first year's work, and 53 for the season just closed, while six cheese makers for the first year and 20 for the second also received such recognition.

Eight of the leading dairy states of the union have now followed the lead of Denmark in developing this line of work. Denmark now spends from \$10,000 to \$15,000 annually in this work to maintain her supremacy in dairying.

WEED ERADICATION.—In considering the resources of the farm, the matter of weeds is often looked upon as trivial, and yet, large areas of many counties in the state are so seriously infested with noxious weeds of various types as to depreciate land values materially. In a census taken last year by Mr. A. L. Stone, it was found that 250 farmers expended about one-half as much on weed eradication as they paid in taxes. Surely an unnecessary tax of this amount is a serious loss.

The iron sulphate treatment has proved successful and thorough application readily destroys wild mustard, but not Canada thistle and quack grass. The manufacturers of this chemical, however, have raised the price so much that it has led to an endeavor to find some substitute. Experiments with common salt seem to show that this comparatively inexpensive agent may be used as successfully and at about one-half the cost.

During the last season, as well as this, experiments were carried on with hemp as an eradicator of Canada thistle. The dense shade cast by this rapidly growing plant smothers all weed growth on the soil, and several trials on fields badly infested with Canada thistle have been successful. This coming season the method will be much more extensively applied before making general recommendations. Two hundred and fifty specimens of weeds were submitted to this division for identification.

SOIL SURVEY.—The soil is the fundamental asset in agriculture. Until recently the importance of this resource has not been generally appreciated by many farmers and the consequence is that in many portions of our country the fertility of cultivated lands is already on the wane. In our own state, this depletion has not been so pronounced; due, fortunately, to the prominence of animal husbandry, but nevertheless signs of such a condition are beginning to show in certain localities. The case is one which already calls for most careful consideration.

Preliminary to any consecutive work in this direction must come a comprehensive soil survey to determine the nature of the problems to be attacked and their location. The legislature responded at the last session to the appeal made for the organization of such a survey and has provided the funds for the purpose. The work is to be carried on under the auspices of the State Geological and Natural History Survey, in co-operation with the College of Agriculture.

INSPECTION AND CONTROL WORK

A number of lines of our Station work are of the nature of inspection and control work. Some of these are in part maintained on the fees prescribed by law as in the licensing of public service stallions and the feed and fertilizer inspection. The nursery and orchard inspection and the seed control are not yet on a self-sustaining basis.

THE LICENSING OF ALL STALLIONS used for public service continues to exert a most wholesome effect on the development of the horse breeding industry of the state. The relative percentage of pure-bred to grade sires is steadily advancing, as is shown by the following data:

	Percentage of sires licensed	
	Pure-bred	Grade
1906-1907	35	65
1907-1908	40	60
1908-1909	42	58

In 37 counties the number of pure-bred stallions has increased and in 40 counties grade sires have decreased in number. The efficacy of this campaign against the scrub stallion could doubtless be increased, if it were possible to provide veterinary supervision of all licensed animals.

The campaign for improvement in the horse industry which Professor Alexander first inaugurated by securing the passage of the original inspection law has been eagerly adopted elsewhere. Fifteen states have now taken up this matter and secured similar legislation, an increase of 10 over the record of the preceding year.

The educational work associated with this inspection has also borne good fruit in our own state. Two years ago 39 county fairs provided classes and premiums for grade stallions, but this year only nine followed the old method of encouraging the showing of grade stock.

The last legislature amended the stallion license law, materially strengthening its features, making a violation of its provisions punishable as a misdemeanor, and placing the duty of prosecution on the county district attorney.

The following financial statement gives the receipts and disbursements of the Department of Horse Breeding for the past fiscal year as required by law.

FINANCIAL STATEMENT, 1908-1909

Receipts

Balance from the year 1907-1908.....	\$402.58
Fees, new licenses.....	988.35
Renewals	465.00
Transfers	175.50
Duplicates	31.00

Disbursements

Salaries, including clerk hire.....	.....	\$1,408.43
Traveling expenses .....	.....	86.98
Postage and stationery.....	.....	226.65
Printing and supplies.....	.....	187.14
Balance on hand.....	.....	153.23

\$2,062.43	\$2,062.43
------------	------------

FEED AND FERTILIZER INSPECTION.—This inspection department, under the administration of Professor Woll, continues to grow in scope of work, 218 brands of feeding stuffs and 31 brands of fertilizers having been licensed for sale in 1909. Three inspectors have been regularly maintained in the field, visiting 853 different dealers in 258 different towns, and collecting 436 samples of feed, nearly all of which have been analyzed. The general attitude of the dealers and manufacturers with reference to the operation of the law is much improved over what it was several years ago.

The legislature of 1909 amended the law in several particulars, requiring that guarantees of maximum content of crude fiber must be given, as well as minimum protein and fat content. A change in the enforcement of the law was also made, placing it in the hands of the officers of the Experiment Station rather than with the State Dairy and Food Commission.

The case of infraction of the law which was tried in the municipal court at Antigo, in which the law was sustained which was appealed to the circuit court of the 10th judicial district and later to the supreme court, was dismissed by that tribunal on technical grounds. The beneficial effect of the law on the quality of feed sold is more and more apparent during late years, and has been of great value to the farming interests of the state.

NURSERY INSPECTION.—Seventy-nine nurseries have been officially inspected this last year by representatives of the Horticultural department. This number is somewhat less than for the previous year, due to the fact that a faulty wording of the old law did not make the inspection compulsory. This condition, however, has been remedied through the passage by the legislature of an entirely new inspection law, which provides that not only shall nursery stock be inspected, but cemeteries, parks, and orchards shall be examined as to their freedom from insect and fungus pests. The work of this year indicates the further establishment of the San Jose scale in several new places in the state. It is apparent that this pest can stand the severe winters in this state, even in the interior regions as well as along the Lake Michigan region. The European fruit scale has also been found in a number of cases where stock was imported from outside the state.

SEED INSPECTION.—The recommendation made in the Director's Report last year that the farmers of the state be given protection by the legislature from the indiscriminate sale of farm seeds, received consideration last winter, and led to the passage of a stringent law requiring the branding of all forage and grain seeds as to origin, purity, and germination tests. The law defines what noxious weeds shall be regarded as impurities or adulterations. The Experiment Station is charged with the control and enforcement of the law, which went into operation July 1, 1909.

The execution of this work has been placed in charge of the Agronomy department, and Mr. A. L. Stone has been designated Seed Inspector. From October, 1908, to the end of the fiscal year, 464 seed tests were made. Sixty per cent of these were for farmers, about 30 per cent for wholesale seedsmen, and the remainder for local dealers. Many samples were found to contain noxious weeds in abundance. Both farmers and seedsmen received material benefit by the determination that seed under consideration for purchase was of low vitality.

GENERAL INFORMATION WORK

LECTURES.—The demand on the Agricultural College for help in one capacity or another from all communities of the state is constantly increasing year by year. This is manifested in so many different ways that it is hard to classify the same. Many requests are received for lectures to attend all kinds of meetings, which we are unable to fill. To a limited extent some aid in this direction can be given, but for the most part such tasks fall on individuals who have certain definite teaching duties to perform in connection with the regular class work at the university. It will therefore be readily seen that services requiring absence from such work, even for a day or so, cannot be undertaken, unless arranged for well in advance.

It should be stated that the regular Farmers' courses given at the county agricultural schools and elsewhere in the winter consume considerable time of the regular staff, but the regular class work of the different members of the staff is previously arranged with this in view.

Over 100 lectures and addresses have been given by different members of the staff outside of the regular university work and the farmers' courses held in different portions of the state.

CORRESPONDENCE.—The amount of correspondence connected with the work of this college is rapidly increasing each year. More and more people of all classes are looking to the Station and college for help on all matters in any way relating to agriculture. Very frequently these requests entail considerable search for definite data to answer satisfactorily the matter in question. Even the mechanical work of replying to these inquiries consumes much time. Some 12 stenographers have been required for the work this last year. Nearly 45,000 letters were

written, 23,000 manuscripts, and 102,000 mimeograph sheets of matter were prepared and sent out in compliance with requests. In addition to this personal correspondence bulletins and reports have also been sent out. The constant revision of our general mailing list and the preparation of special lists for special lines of work entails a large amount of work that is not readily recognized.

EXTENSION COURSES

FARMERS' COURSE AT UNIVERSITY.—For six years it has been customary to hold in February at the College of Agriculture a short course of lectures, demonstrations, and exercises, known as the Farmers' Course. The first season this was given, 175 persons were in attendance. This brief course has grown rapidly in popularity until last year over 800 persons registered for this course and about 500 more were in attendance on special courses held simultaneously (The Women's Course for Homemakers and the Special Dairy Course for creamery and cheese factory operators and managers). These meetings are now recognized all over the state as some of the most important agricultural gatherings of the year.

The good results which have come from the work here at the University have led to the development of the same idea in other portions of the state. At Madison we are now reaching directly perhaps five out of a thousand of the farmers of the state. It is possible of course to increase this percentage somewhat, but it has been deemed worth while to make the attempt to carry this type of extension work to the people in other portions of the state who find it inconvenient or impossible to come to the University for this course.

FARMERS' COURSES AT COUNTY AGRICULTURAL SCHOOLS.—The most feasible place for the development of this work is naturally in conjunction with the county agricultural schools that are now being developed throughout the state. Suitable facilities for meetings and demonstrations are there readily provided, the local faculty are in position to push this work among the farmers of the section, and the holding of such a course, participated in by a well-equipped staff from the college and elsewhere, is of material aid to the development of a thorough interest in the work of the local school.

For the last two winter seasons, the regular College staff has attempted to hold such extension courses, in addition to the Farmers' Course at Madison. The success of the experiment showed the advisability of developing this line of work as a regular feature of the agricultural extension service.

During the last winter season, such courses were held at all of the county agricultural schools then in operation. The data as to registration, etc., are shown below.

	Date.	Time of course.	Number registered.	Number counties represented.
Madison, Dane County:		Days.		
Farmers' Course.....	Feb. 9-19	10	831	50
Special Dairy Course.....	Feb. 9-16	8	50	28
Women's Course.....	Feb. 9-13	5	413	39
Menomonie, Dunn County.....	Jan. 25-30	5	550	13
Marinette, Marinette County....	Mar. 9-11	3	500	10
Wausau, Marathon County.....	Mar. 2-4	3	325	8
Winneconne, Winnebago County	Feb. 22-26	5	1,078	18
Total registration.....			3,737	

The establishment of ten such county agricultural schools is now authorized by the legislature, and this coming season similar courses will again be held in the localities where such schools are in actual operation (La Crosse county having been added this past season). By this means three times as many people have been reached as would have been the case if the work had been confined to Madison. The legislative appropriation for agricultural extension specifies that such work may also be carried on at other points in the state not having county agricultural schools, so it becomes possible to organize the work on a much broader basis.

In doing so, special effort will be made not to interfere with the development of the regular Farmers' Institutes, which have been carried on so successfully for the last two decades. The work is differentiated from that given in the Institutes in that it is presented in the form of demonstrations, lantern slide exhibitions, etc., so far as possible, and is given in the larger centers.

FARMERS' INSTITUTES.—The work of the Farmers' Institutes under the direction of Superintendent George McKerrow has been carried along substantially the same lines as in previous

years. This work is maintained by means of an entirely separate fund (\$20,000 annually). The methods followed are the outcome of a large experience, and their applicability to Wisconsin conditions has been amply demonstrated. This work begins in December and runs through 20 weeks until March. Six corps of workers (each corps consisting of a conductor and one regular assistant, two corps of cooking demonstrators and 28 special lecturers, making a total of 44 persons, were engaged last season, holding during the winter season 125 institutes and 43 cooking schools in 62 counties. In addition to these, 16 meetings were held in June in the northern part of the state. The total attendance on these meetings aggregated 85,000 people, 60,000 copies of Farmers' Institute Bulletin, No. 23, and 10,000 copies of Farmers' Institute Cook Book, No. 1, were distributed.

Through the medium of these various agencies, supplemented by the aggressive state associations that are concerned in the improvement of general as well as special agricultural conditions, the farming life of the commonwealth is stimulated to an unusual degree. This manifests itself not only in a material way, but also in the intellectual and social progress which come to a people who spend their energies freely but wisely in uplifting themselves in an educational manner.

ACKNOWLEDGMENTS.

The following donations and loans have been received by the Agricultural Experiment Station during the past year.

DONATIONS.

Deming Co., Salem, O., spray fixture cabinet.
 Eagan Mfg. Co., La Crosse, Wis., spray material.
 F. E. Myers & Bro., Ashland, O., spray nozzles.
 Henry Dreer, Philadelphia, Pa., plants.
 Sherwin-Williams Co., Chicago, arsenate of lead.
 John Van Loon, La Crosse, Wis., six ears blue ribbon corn.
 Frank T. Stare, President, Waukesha Canning Co., three bushels peas.
 A. G. Weander, Sioux City, Ia., seed tester.
 John C. Watson, Rear Admiral U. S. Navy, sample of hemp grown at the Kentucky Experiment station.
 Parke-Davis & Co., Detroit, Mich., pure culture bacteria.
 Ekenberg Milk Products Co., Cortland, N. Y., 10 pounds powdered milk.
 Bucher & Gibbs Plow Co., Canton, O., one cutaway harrow.
 German Kali Works, New York, 4,000 pounds potassium sulphate.
 Biesanz Lime and Stone Co., Winona, Minn., 2,000 pounds ground limestone.
 Prof. A. S. Alexander, Madison, Wis., various anatomical specimens.
 Percheron Society of America, Vol. 11 of Studbook.
 American Clydesdale Assn., Vol. 31 of Studbook.
 American Shire Horse Assn., Vol. 6 of Studbook.
 American Breeders & Importers Percheron Registry Co., Vol. 1 of Studbook.
 French Coach Horse Registry Co., Vol. 2 of Studbook.
 The American Assn. of Importers & Breeders of Belgian Draft Horses, Vol. 2 of Studbook.
 The American Registry of Oldenburg Coach Horses, Vol. 1, of Studbook.
 National Register of French Draft Horses, Vols. 8, 9 and 10 of Studbook.
 American Shetland Society, Vols. 7 and 8 of Studbook.
 American Jack Stock Assn., Vols. 4, 5, 6 and 7 of Studbook.
 Creamery Pkg. Co., Newton computator.
 J. Severt Anderson, Minneapolis, Minn., Simple creamery computator.
 A. Jenson Co., Eureka, Cal., Jensen moisture test with scale.
 Standard Paper Bottle Co., New York, one doz. pint single service containers; two doz. one-half pint single service containers.
 Kenweld Can Co., Detroit Mich., six non-returnable one pint milk cans.
 Chr. Hansen Laboratory, Little Falls, N. Y., samples of culture for starter.
 Elov Ericsson, St. Paul, Minn., samples of culture for starter.
 Parke Davis, Detroit, Mich., samples of culture for starter.
 Marschall Dairy Laboratory, Madison, Wis., samples of culture for starter.
 S. G. Kleth, Boston, Mass., samples of culture for starter.
 J. I. Case Thresher Co., Racine, Wis., 150 copies Traction Engine Manual.
 Creamery Package Mfg. Co., Chicago, Twentieth Century No. 2 milk heater, Farrington Cream Ripener, Boyd Cream Ripener, Wizard Cream Ripener, 300 gal. capacity, three Wizard 24-bottle turbine testers, Twentieth Century 12-bottle hand tester, Victor 24-bottle Turbine tester, 24-bottle tester with electric motor attachment, 12-bottle hand tester, Victor skim milk pasteurizer, Ideal skim milk weigher, Trunnion starter can, Farrington butter moisture test, Farrington, Jr. butter moisture test, Hart 6-bottle casein test and two Wisconsin curd tests.

- D. H. Burrell Co., Little Falls, N. Y., No. 4 Simplex power cream separator with intermediate, 4-bottle Facile hand tester, 6-bottle hand tester, 24-bottle hand tester, 36-bottle Facile turbine tester, and 24-bottle hand tester.
- A. H. Barber Creamery Co., Chicago, No. 6 Simplex churn, No. 2 B. & W. milk heater, B. & W. skim milk pump and weigher, and No. 1 Simplex hand cream separator.
- Vermont Farm Machine Co., Bellows Falls, Vt., 20-bottle Turbine tester, No. 2½ U. S. cream separator, 12-bottle hand tester, No. 7 cream separator, 24 bottle Agos tester, No. 6 hand cream separator, and No. 8 hand cream separator.
- De Lavel Separator Co., Chicago, Acme cream separator, No. 17 hand cream separator, No. 12 hand cream separator, (No. 15 hand cream separator) and Cut Out hand cream separator.
- Sharples Separator Co., Chicago, No. 32 power cream separator with accelerator washer, No. 4 hand cream separator, and No. 6 hand cream separator.
- Melchior, Armstrong & Dessau, New York, Perfect Gloria power cream separator.
- National Separator Co., Goshen, Ind., hand cream separator.
- Burmeister & Wain, Copenhagen, Denmark, Perfect hand cream separator.
- Smith Manufacturing Co., Chicago, Ill., Great Western cream separator.
- Standard Separator Co., Milwaukee, Wis., Two Champion hand separators.
- Sears, Roebuck & Co., Chicago, Economy cream separator.
- Empire Separator Co., Bloomfield, N. Y., two hand cream separators.
- Currie Hardware Co., Mason City, Ia., two Eclipse moisture ovens.
- King & Walker Co., Madison, Wis., high pressure moisture oven.
- Perfection Churn Co., Owatonna, Minn., size 4 power churn.
- Marshfield Churn Co., Marshfield, Wis., hand churn.
- J. Cherry, Cedar Rapids, Ia., Edward's Mother Culture case with bottles.
- Exhaust Steam Purifier Co., Berlin, Wis., steam purifier, pump and tank.
- Marschall Dairy Laboratory, Madison, Wis., two Marschall acid tests.
- Fuller & Johnson Co., Madison, Wis., 3½ H. P. gasoline engine, and 2½ H. P. gasoline engine.
- Miller Tyson Co., Canton, O., milk heater.
- Brillion Iron Works, Brillion, Wis., Junker curd mill.
- Albrecht Mfg. Co., Kewaunee, Wis., skim milk and whey pump.
- National Wrapping Machine Co., Los Angeles, Cal., butter wrapping machine.
- Northern Electric Co., Madison, Wis., 5 H. P. motor.
- Gehl Mfg. Co., Milwaukee, Wis., butter printer.
- International Construction Co., Chicago, 6-bottle milk filler.
- Jensen Mfg. Co., Topeka, Kan., pasteurizer and cooler, and Haughdahl starter can.
- McKinnon & Co., Sheboygan Falls, Wis., combination cheese press.
- J. E. Egan Mfg. Co., La Crosse, Wis., field sprayer.
- Deming Co., Salem, O., century spray pump.
- F. E. Meyers & Bro., Ashland, O., O. K. spray pump.
- Gould Mfg. Co., Seneca Falls, N. Y., two Pomona spray pumps.
- Hurst Mfg. Co., Canton, O., wheelbarrow sprayer.
- International Harvester Co., Madison, Wis., one horse-power sprayer.
- Morrel & Morley, Benton Harbor, Mich., Eclipse spray pump.
- J. H. Robinson & Son, Evansville, Wis., Hereford bull.
- Curtis & Son, Poynette, Wis., Percheron stallion.
- Fred Stublely, Black Earth, Wis., Jersey bull.
- Ayers Bros., Honey Creek, Wis., Brown Swiss cow.
- J. Q. Emery & Son, Edgerton, Wis., Jersey bull.
- C. L. Hill, Rosendale, Wis., Guernsey bull.
- Avery Mfg. Co., Peoria, Ill., 18 H. P. double cylinder under-mounted steam engine, steam plow, thresher, and water tank.
- Bateman Mfg. Co., Glenlock, N. J., potato digger.
- International Harvester Co., Madison, Wis., 15 H. P. gasoline traction engine, and two small gasoline engines.

Loudon Machinery Co., Fairfield, Ia., litter carrier, cross draft hay carrier, sling carrier, and straight draft carrier.
 Racine Satley Co., Racine, Wis., New Way corn planter.
 Badger Harrow Co., Springfield, Ill., spike tooth harrow.
 Parlin & Orendorff Co., Canton, Ill., corn planter, gang plow, and 14-inch walking plow.
 Lauson Mfg. Co., New Holstein, Wis., a 2 H. P., a 4 H. P. and a 6 H. P. gasoline engines.

EXCHANGES.

The following papers come to the station in exchange for its reports and bulletins. While used by those connected with the Station to learn the expression of agricultural experience and sentiment, they are placed in the library where they can be read and referred to by our agricultural students, and others of the University, as well as visitors.

FOREIGN EXCHANGES.

A Lavoura, Rio de Janeiro, Brazil.
 L'Agricoltura Alessandrina, Alessandria, Italy.
 L'Agricoltura Moderna, Milan, Italy.
 Agricultural Bulletin, Straits Settlement, Singapore, East Indies.
 Agricultural Gazette of New South Wales, Sidney, Australia.
 Agricultural Journal of the Cape of Good Hope, Cape Town, South Africa.
 Agricultural Journal of India, Calcutta.
 Agricultural News, Bridgetown, Barbadoes, West Indies.
 Boletim de Agricultura, Sao Paulo, Brazil.
 Boletim do Instituto Agronomico, Sao Paulo, Brazil.
 Bulletin (de l'Administration) de l'Agriculture, Brussels, Belgium.
 Bulletin des Seances de la Société Nationale d'Agriculture de France, Paris.
 Canadian Dairyman and Farming World, Peterboro, Ont.
 Chronique Agricole du Canton du Vaud, Lausanne, Switzerland.
 Cold Storage and Ice Trades Review, London, Eng.
 Crónica Agrícola, Buenos Aires, Argentina.
 Deutsche Landwirtschaftliche Presse, Berlin Germany.
 Farmer's Advocate, London, Ontario.
 Farmer's Advocate, Winnipeg, Manitoba.
 The Field, London, England.
 Garden and Field, Adelaide, South Australia.
 Irish Farming World, Dublin, Ireland.
 Journal für Landwirtschaft, Berlin, Germany.
 Journal of the Bath and West of England Society, Bath, England.
 Journal of the Board of Agriculture, London, England.
 Journal of the British Dairy Farmers' Association, London, England.
 Journal of the College of Agriculture, Imperial University, Tokyo, Japan.
 Journal of the Department of Agriculture and Technical Instruction for Ireland, Dublin.
 Journal of the Department of Agriculture of South Australia, Adelaide, Australia.
 Journal of the Department of Agriculture of Victoria, Melbourne, Australia.
 Journal of the Department of Agriculture of West Australia, Perth, Australia.
 Journal of the Royal Agricultural Society, London, England.
 Journal of the Royal Horticultural Society, London, England.
 Journal of the Sapporo Agricultural College, Sapporo, Japan.
 Kgl. Landtbruks-Akademiens Handlingar och Tidskrift, Stockholm, Sweden.
 Landwirtschaftliches Wochenblatt f. Schleswig-Holstein, Kiel, Germany.
 Live Stock Journal, London, England.
 Mark Lane Express, London, England.

Milch Zeitung, Leipzig, Germany.
 Mitteilungen der Deutschen Landwirtschafts-Gesellschaft, Berlin, Germany.
 Natal Agricultural Journal, Maritzburg, Natal.
 New Zealand Dairyman, Wellington, N. Z.
 North British Agriculturist, Edinburgh, Scotland.
 Nyt Magazin for Naturvidenskaberne, Kristiana, Norway.
 O Criador Paulista, Sao Paulo, Brazil.
 O Fazendeiro, Sao Paulo, Brazil.
 Queensland Agricultural Journal, Brisbane, Australia.
 Rural World, London, England.
 Terre Vaudoise, Lausanne, Switzerland.
 Tidsskrift for det Norske Landbrug, Christiania, Norway.
 Tidsskrift for Landökonomi, Copenhagen, Denmark.
 Transactions of the Highland and Agricultural Society of Scotland, Edinburgh, Scotland.
 Transvaal Agricultural Journal, Pretoria.
 Ugeskrift for Landmand, Copenhagen, Denmark.
 Weekly Times, Melbourne, Australia.
 West Indian Bulletin, Bridgetown, Barbadoes, West Indies.

DOMESTIC EXCHANGES.

Agricultural Student, Columbus, Ohio.	Dairy Record, St. Paul, Minn.
American Agriculturist, New York, N. Y.	Dog Fancier, Battle Creek, Mich.
American Cultivator, Boston, Mass.	Elgin Dairy Report, Elgin, Ill.
American Fertilizer, Philadelphia, Pa.	Farm and Fireside, Chicago, Ill.
American Food Journal, Chicago, Ill.	Farm and Stock, St. Joseph, Mo.
American Fruits, Chicago, Ill.	Farm Journal, Philadelphia, Pa.
American Fruit and Nut Journal, Petersburg, Va.	Farm Life, Chicago, Ill.
American Hay, Flour and Feed Journal, New York, N. Y.	Farm Press, Chicago, Ill.
American Miller, Chicago, Ill.	Farm, Stock and Home, Minneapolis, Minn.
American Poultry Advocate, Syracuse, N. Y.	Farm World, Augusta, Me.
American Sheep Breeder, Chicago, Ill.	Farmers' Guide, Huntington, Ind.
American Sugar Industry and Beet Sugar Gazette, Chicago, Ill.	Farmer's Messenger, Atlantic, Iowa.
American Swineherd, Chicago, Ill.	Farmers' Review, Chicago, Ill.
American Thresherman, Madison, Wis.	Farmers' Tribune, Sioux City, Iowa.
Arboriculture, Connersville, Ind.	Farmers' Voice, Chicago, Ill.
Arkansas Homestead, Little Rock.	Field and Farm, Denver, Colo.
Baker's Helper, Chicago, Ill.	Flour and Feed, Milwaukee, Wis.
Berkshire World, Springfield, Ill.	Floral Life, New York, N. Y.
Better Fruit, Hood River, Ore.	Florists' Exchange, New York, N. Y.
Breeder's Gazette, Chicago, Ill.	Fruit Grower, St. Joseph, Mo.
Bulletin of the National Association of Wool Manufacturers, Boston, Mass.	Gardening, Chicago, Ill.
California Fruit Grower, San Francisco, Cal.	Gas Power, St. Joe, Mich.
Canadian Horticulturist, Ottawa, Can.	Gas Review, Madison, Wis.
Chicago Daily Drivers' Journal, Chicago, Ill.	Geflügel Züchter, Wausau, Wis.
Chicago Dairy Produce, Chicago, Ill.	Gleanings in Bee Culture, Medina, O.
Chicago Live Stock World, Chicago, Ill.	Green's Fruit Grower, Buffalo, N. Y.
Cold Storage and Ice Trade Journal, New York, N. Y.	Guernsey Herd Register and Breeders' Journal, Petersboro, N. H.
Colman's Rural World, St. Louis, Mo.	Hawaiian Forester and Agriculturist, Honolulu.
Commercial Poultry, Chicago, Ill.	Hoard's Dairyman, Fort Atkinson, Wis.
Cotton Seed, Atlanta, Ga.	Holstein-Friesian Register, Brattleboro, Vt.
Creamery Journal, Waterloo, Iowa.	Holstein-Friesian World, Ithaca, N. Y.
	Homestead, Des Moines, Iowa.
	Horse-Shoers' Journal, Detroit, Mich.
	Horticulture, Boston, Mass.
	Hospodar, Omaha, Neb.

- Hospordárske Listy, Chicago, Ill.
 Illuminated World Life, Minneapolis, Minn.
 Independent Farmer and Western Swine Breeder, Lincoln, Neb.
 Indian School Journal, Chilocco, Okla.
 Indiana Farmer, Indianapolis, Ind.
 Iowa State Register and Farmer, Des Moines, Iowa.
 Irrigation Age, Chicago, Ill.
 Jersey Bulletin, Indianapolis, Ind.
 Kansas Farmer, Topeka, Kan.
 Kimball's Dairy Farmer, Waterloo, Iowa.
 Lincoln Free Press, Lincoln, Neb.
 Live Stock Journal, Chicago, Ill.
 Louisiana Planter, New Orleans, La.
 Metropolitan and Rural Home, New York, N. Y.
 Michigan Farmer, Detroit, Mich.
 Minnesota and Dakota Farmer, Brookings, S. Dak.
 Minnesota Farm Review, St. Anthony Park, Minn.
 Minnesota Horticulturist, Minneapolis, Minn.
 Missouri Agricultural College Farmer, Columbia.
 Missouri Valley Veterinary Bulletin, Topeka, Kan.
 Modern Farming, Richmond, Va.
 National Farmer, Winona, Minn.
 National Farmer and Stock Grower, St. Louis, Mo.
 National Fruit Grower, St. Joseph, Mich.
 National Grange, Concord, N. H.
 National Monthly Farm Press, Chicago, Ill.
 National Swine Magazine, Freeport, Ill.
 Nebraska Farmer, Omaha, Neb.
 New York Produce Review and American Creamery, New York, N. Y.
 North Carolina Student Farmer, West Raleigh.
 Northwest Horticulturist, Tacoma, Wash.
- Northwestern Agriculturist, Minneapolis, Minn.
 Nut Grower, Poulan, Ga.
 Ohio Farmer, Cleveland, Ohio.
 Oklahoma Farm Journal, Oklahoma City.
 Orange Judd Farmer, Chicago, Ill.
 Oregon Agriculturist, Portland, Ore.
 Pacific Dairy Review, San Francisco, Cal.
 Pacific Fruit World, Los Angeles, Cal.
 Pacific Rural Press, San Francisco, Cal.
 Philippine Agricultural Review, Manila.
 Poultry Digest, New York, N. Y.
 Practical Dairyman, Rutherford, N. J.
 Practical Farmer, Philadelphia, Penn.
 Profitable Poultry, Milton, Wis.
 Pure Products, New York, N. Y.
 Reliable Poultry Journal, Quincy, Ill.
 Rock Products, Chicago, Ill.
 Rural Press, Chicago, Ill.
 Shepherd's Journal, Chicago, Ill.
 Southern Fruit Grower, Chattanooga, Tenn.
 Southern Planter, Richmond, Va.
 Southwestern Farmer and Breeder, North Fort Worth, Texas.
 Student Farmer, Madison, Wis.
 Successful Farming, Des Moines, Iowa.
 Successful Poultry Journal, Chicago, Ill.
 Sugar Beet, Philadelphia, Pa.
 Texas Farmer, Dallas, Tex.
 Town and County Journal, San Francisco, Cal.
 Trade, Baltimore, Md.
 Thresherman's Review, St. Joe, Mich.
 Twentieth Century Farmer, Omaha, Neb.
 Wallace's Farmer, Des Moines, Iowa.
 Western Empire, Los Angeles, Cal.
 Wilson Bulletin, Oberlin, Ohio.
 Wisconsin Agriculturist, Racine, Wis.
 Wisconsin E . . . ty News, Madison, Wis.
 Wisconsin Farmer, Madison, Wis.
 Wisconsin Sugar Beet, Menomonee Falls, Wis.

FINANCIAL STATEMENT.

The Wisconsin Agricultural Experiment Station, in account with the United States appropriation.

1908-1909.	Dr.	Cr.
To receipt from Treasurer of the United States as per appropriations for the year ending June 30, 1909, under the acts of congress approved March 2, 1887, and March 16, 1906	\$26,000 00	
By salaries		\$14,780 00
By labor		2,695 70
By publications		22 75
By postage and stationery.....		204 98
By freight and express.....		29 84
By heat, light and water.....		73 80
By chemical supplies		839 55
By seeds, plants and sundry supplies.....		1,441 21
By fertilizers		41 21
By feeding stuffs		2,457 89
By library		464 08
By tools, implements and machinery.....		678 24
By furniture and fixtures.....		161 00
By scientific apparatus		503 32
By live stock		564 00
By traveling expenses		737 19
By contingent expenses		15 00
By building and repairs.....		239 69
	\$26,000 00	\$26,000 00

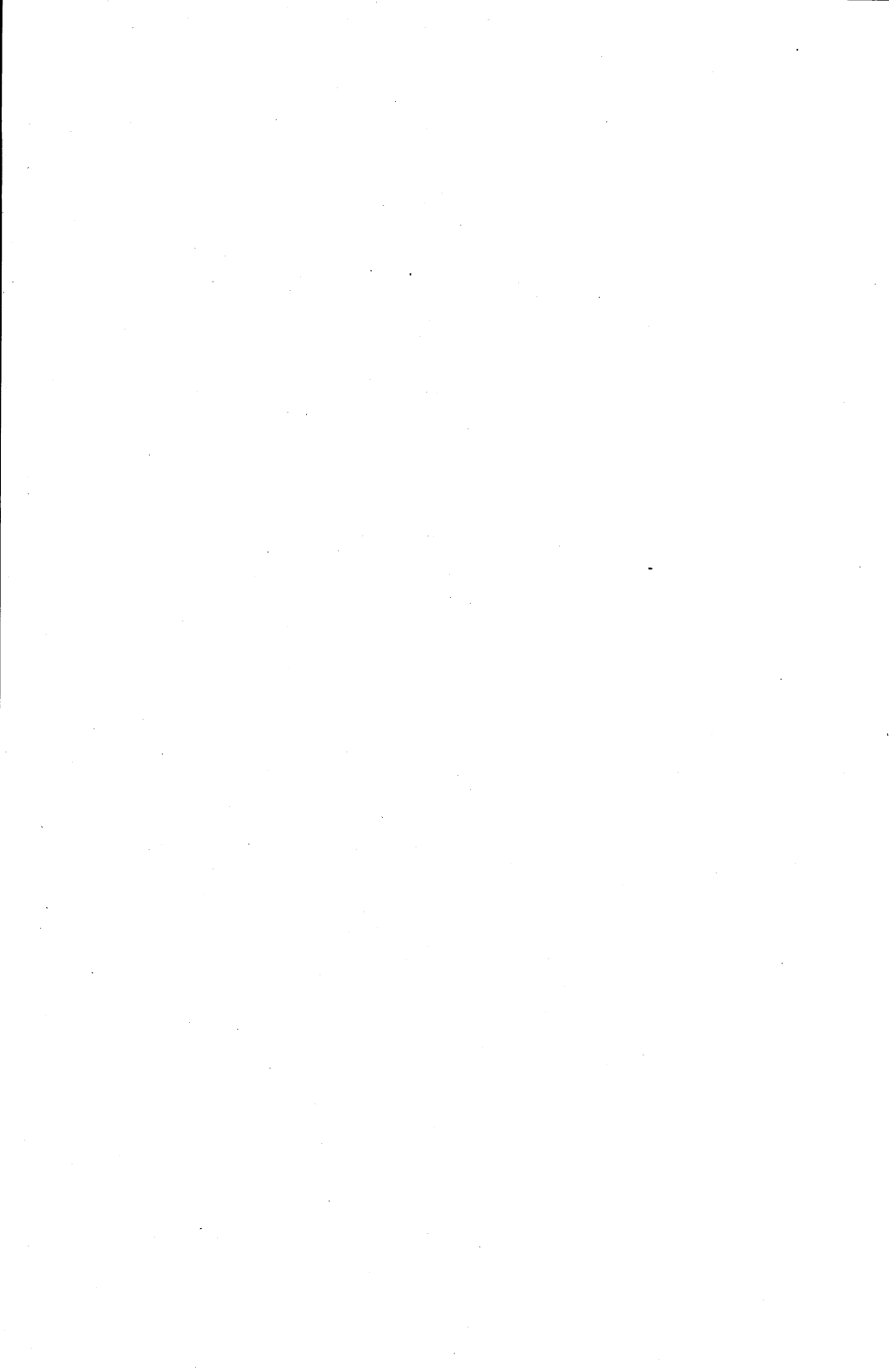
We, the undersigned, duly appointed auditors of the corporation, do hereby certify that we have examined the books and accounts of the Wisconsin Agricultural Experiment Station for the fiscal year ending June 30, 1909; that we have found the same well kept and classified as above, and that the receipts for the year from the treasurer of the United States are shown to have been \$26,000, and the corresponding disbursements \$26,000, for all of which proper vouchers are on file and have been by us examined and found correct.

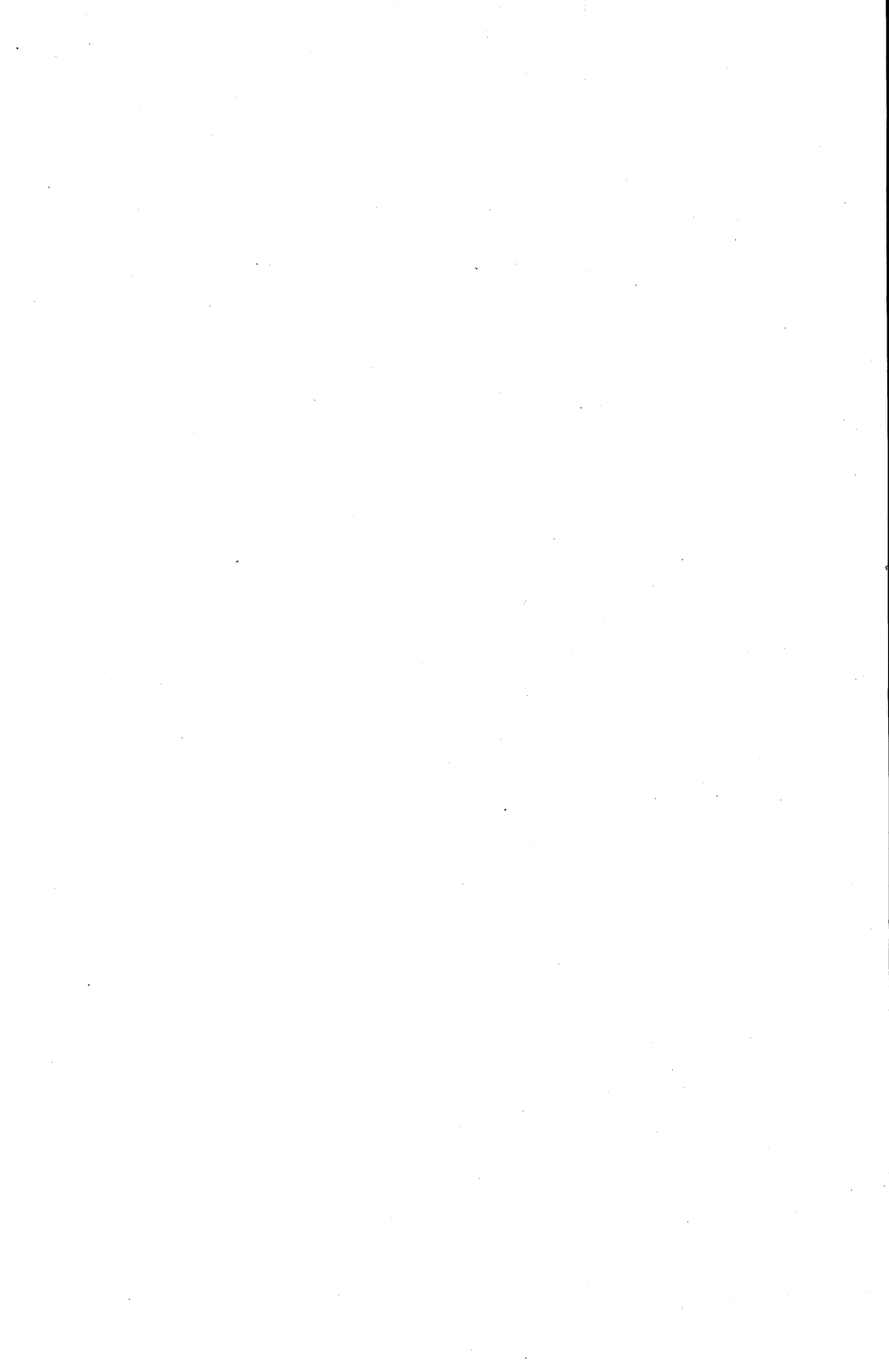
And we further certify that the expenditures have been solely for the purpose set forth in the acts of Congress approved March 2, 1887, and March 16, 1906.

M. SWENSON, Chairman,
L. S. HANKS,
PLINY NORCROSS,
Executive Committee.

ATTEST.

M. E. McCAFFERY,
Secretary.





REPORT OF THE DIRECTOR

1909-1910

H. L. RUSSELL

The most serious problem in agriculture today is to overcome the apathy and indifference, as well as the actual lack of knowledge, which exists among those most in need of the aid which science can render. The necessity for careful study of conditions affecting agricultural practice becomes more and more evident with the continued increase in land values and the cost of living. More and more agriculture is becoming a science, the principles of which must be known with accuracy in order to produce the world's supply of food and raiment.

Since the foundation of the system of American Agricultural Experiment Stations, a large part of the work and duty of these institutions has been to carry on a propaganda for the adoption of improved methods of practice. Where these methods did not exist, they had to be worked out, but after their discovery, the necessity of securing their adoption became an equally important duty and privilege of the station. The result has been that research and extension of research in terms of common practice to the occupant of the soil have been so closely coordinated in the work of the most successful stations, that it is with difficulty that the respective lines can be separated.

Much of the research work of the Experiment Station is more or less continuous, as any problem of magnitude gradually changes its scope as further research is applied to it. To present a proper idea of the activities of the Station, it becomes necessary to issue a progress report, in which not only is presented the results of actual accomplishment, but a summary of work which is more or less unfinished. This constitutes the Twenty-Seventh Annual Report of the Director for the year ending June 30, 1910.

A YEAR'S PROGRESS OF EXPERIMENT AND RESEARCH

The following brief reports present only the more practical aspects of the principal lines of work done by the Wisconsin Agricultural Experiment Station during the past year. Full discussions of all completed work are issued in the bulletins, either Regular or Research, as the results justify, but the following reports of progress present a general idea of the purposes and scope of these Station activities.

CHEDDAR CHEESE FROM PASTEURIZED MILK

The need of uniformity in cheese-making is one of the most important in the development of the industry. The varying quality of the milk makes it necessary that the cheese-maker use good judgment in handling his raw material. Any method which would tend to unify these conditions would be helpful. For several years, cooperative investigations have been in progress between this Station and the Dairy Division of the United States Department of Agriculture, in which the problem has been studied from the chemical and biological, as well as the practical point of view.

The attempt has often been made to manufacture cheddar cheese from pasteurized milk. The early experiments in this direction were quite unsuccessful, but more recently, the method of handling curds made from milk heated in a "continuous flow" pasteurizer to 155 degrees has been so improved by Professor Sammis, that excellent results have been secured. The cheese made has been very uniform in quality, of a clean, mild flavor, and an almost perfect texture. During the past summer such cheese has been sold under ordinary commercial conditions to test its keeping quality. The process of pasteurizing destroys the great majority of organisms in the milk, so that the addition of properly selected pure cultures gives a degree of uniformity with reference to the types of organisms present that renders conditions much more uniform than with the old process.

ORIGIN OF FLAVOR IN RIPENING OF CHEDDAR CHEESE

This exceedingly complex problem has attracted the attention of cheese investigators for many years, and numerous theories have been advanced to account for the peculiar changes produced. Heretofore attention has been directed mainly to the

decomposition changes which occur in the casein, as accounting for the ripening of cheese, but Professors Hart and Hastings have shown for the first time that the non-nitrogenous elements take part in these changes in a most important manner. The by-products formed in cheese, or in milk, by some of the lactic acid bacteria, are able to produce what are known as volatile esters and fatty acids, which give the characteristic cheese flavor. This is an important advance step in our knowledge of the complex changes which are necessary to convert green cheese into a well ripened and palatable product.

CREAMERY SEWAGE PURIFICATION

Investigations made by the dairy department on the purification of creamery and cheese factory sewage have been continued with good results this year, and the indications are now such as to lead to the conclusion that such sewage can be thoroughly reduced or decomposed in a closed septic tank if the reservoir is built large enough to hold the material for a sufficient period of time. The decomposition processes in the tank do not completely purify the sewage, but render it sufficiently soluble so that the resulting materials are easily purified by turning them on to sand or soil. Such discharges, however, must be intermittent, rather than continuous, so that conditions are favorable for the complete decay of the organic matter.

BALANCED RATIONS FROM VARIOUS GRAINS.

The experimental work on the value of chemically balanced rations for cattle derived from single plant sources, wheat, oats, corn, and a mixture of all three, has now been in progress for three years, and the results obtained by Professors Hart, McCollum and Humphrey are opening a most interesting field of study.

The animals in this experiment have been reared from calf-hood on a ration, balanced in accordance with the regularly accepted standards, but while the rate of growth has not been greatly dissimilar, the physical condition of the different groups has varied widely. The lot fed on the products of wheat alone have shown low vitality, low milk production and weak, undersized calves, while those fed corn and its products have continued thrifty and have given large, strong calves. The oat lot have given results more nearly like the corn lot, while the lot fed equal parts of corn, wheat and oats, resembled more nearly the

wheat-fed animals. The causes of these differences in the effects of these feeds have not yet been discovered. Differences in the nature of the mineral elements may be partly responsible; difference in the effect of the food nutrients based on their distinct chemical natures; or possibly the presence of poisonous substances may contribute to the conditions observed.

Animals matured on these somewhat restricted diets cannot be changed successfully to those rations producing low vitality. Contrariwise, transfers can be made to rations producing the more vigorous development. A mature corn-fed animal cannot change to a wheat ration without resulting shortly in death. A wheat-fed animal, however, can pass to a corn ration with improvement. The peculiar effect of the ration is much more rapid with the mature animal than with young growing stock. These experiments indicate that there is a value of one ration over another irrespective of the balance and supply of energy, as shown by the chemical analysis.

INFLUENCE OF SULPHUR ON WOOL PRODUCTION

The sheep is the only farm animal producing a product particularly rich in sulphur. For most classes of farm animals, the ordinary protein feeds furnish sufficient quantities of sulphur for ordinary needs. The practice of good shepherds is, however, to supply certain feeds very rich in sulphur, and this usage has suggested the possibility of a causal relation existing between the form and amount of sulphur supply and its relation to the growth of wool.

In the cooperative experiment now in progress between the departments of Agricultural Chemistry and Animal Husbandry, four lots of sheep are being fed different rations: Lot 1 receives as low a sulphur supply as is possible to make from the natural grains and clover hay; Lot 2 receives the same ration plus a low sulphur succulent, as sugar beets; Lot 3 receives the same ration, plus a high-sulphur succulent, as turnips, rutabagas, cabbages, etc., and Lot 4 the same ration, plus a mineral sulphate, as calcium sulphate. Different lots of sheep have been fed succulent root crops that are exceedingly high in sulphur, such as rutabagas, and likewise those peculiarly deficient, such as sugar beets, with dry grain rations supplemented by mineral sulphates. This work requires the complete analysis of the wool, to make a separation of the true fiber, suint and yolk.

The first analytical work, already performed, shows that our farm feeds contain greater quantities of sulphur than has hitherto been supposed, the low results which have been previously reported in standard texts being due to faulty analytical methods. This raises the important problem of the removal of sulphur from our soils, which, according to Professor Hart, is much greater than agronomists have heretofore believed. On the basis of existing analyses, it has been considered that a 100 bushel corn crop would remove only about one-fourth of a pound of sulphur per acre, whereas, the improved analytical methods, which have been devised in this work, show that the actual loss is about eight pounds.

MINERAL REQUIREMENTS OF GROWING ANIMALS

The cooperative work between the Agricultural Chemistry and Animal Husbandry departments on the question of the ash requirements necessary for the growth of farm animals has been continued during the current year, principally along the line of the influence of the lime supply on the development of the skeleton of the progeny. The indications at present are that the skeletal development of the young as to lime content, as well as size, is maintained in the pigs, regardless of the character of the lime supply present in the food. It has been shown that pigs can use mineral phosphorus in the form of floats or ground rock phosphate in place of phosphorus fed in grains. Normal rations used by farmers contain ample supplies of phosphorus. It has been shown that pigs fed grain alone do not get enough lime to meet the needs of the body for the growth of the skeleton.

In these experiments lime has been supplied in the form of ground lime stone (calcium carbonate), as floats (calcium phosphate), and in ground alfalfa, since the clovers contain a large proportion of phosphates. The floats has proved superior to the ground limestone. The latter does not serve so well in making bone or in retaining the phosphate fed in grains and clovers. A farther test of clover is in progress. Brood sows have been fed additional lime in the form of limestone floats and alfalfa to determine the effect on the skeleton of their pigs. The skeletons of pigs from litters born this year were analysed immediately after birth and no difference in bone weight or composition was observed. This experiment will be conducted through several generations to confirm these findings. In an experiment made three years ago a cow was fed a ration lacking in lime, and it

was found that she took lime from her skeleton to put into her milk to keep it up to the average composition. Her skeleton was seriously weakened as a result of this peculiar nutritional process.

LOSS OF PHOSPHORUS IN HEAVY MANURING

Professor Whitson and Mr. Truog have continued their studies on the loss of phosphorus from heavily manured soils, as is especially found in tobacco, asparagus, and cabbage culture. Marked losses in the leaching of soluble phosphates have been observed, indicating that the excess of phosphorus in such heavy manuring does not accumulate in such soils. Such leaching seems to be more pronounced on soils of open texture, as those of a sandy type. This work has an important bearing on the application of barnyard manures, inasmuch as a moderate application of manure will give relatively greater returns than where excessively large applications are made.

CONDITION OF PHOSPHORUS IN THE SOIL

Studies on the forms of phosphorus in the soil have been carried on by Mr. P. P. Peterson of the Soils department. These show that nearly one-half of the soil phosphorus is bound up with organic matter in such a way as to render it insoluble. Methods have been devised which permit of the differentiation of the soluble from this insoluble phosphorus, and so make possible the determination of the supply which is capable of being utilized by the plant.

SOIL MANAGEMENT INVESTIGATIONS

The work at Sparta on the use of peat as a source of nitrogen fertilizer on very light sandy soils indicates the availability in course of time of this cheap source of fertility. Soil plots which have received two applications of peat supplemented with phosphate and potash in five years gave this year a considerably larger yield of corn (grain) than plots receiving two applications of barnyard manure, although the yield of stover was not quite so great.

The changes in physical texture of the heavy red clays at the Superior and Ashland farms are becoming more and more marked each year. By careful attention to drainage and ploughing under of barnyard and green manure, these soils have been reduced from a stubborn heavy type that can be worked only with considerable difficulty, to most excellent tilth. Not only

is the physical texture of the soil greatly improved, but the color has been markedly changed through the incorporation of humus.

On the marsh soils, improved methods of management are being introduced. The treatment, as practiced by Mr. W. W. Hammond on the Buena Vista marsh in Portage county, is worthy of special notice. By the use of a heavy steam plow and roller, he has been able to secure a much firmer seedbed than normally obtains. This improvement in soil preparation has apparently enabled him to secure exceptionally good crops of all of the small grains, as well as corn and vegetables. This method will be tried in other sections to determine its general availability to lands of this class.

Results with tile drainage in northern Wisconsin, although not as evident as in past seasons, owing to the dry weather early in the season, were still well marked, and go to confirm the results obtained in previous seasons. The use of rock phosphate in combination with barn manure showed that this fertilizer is of value for increasing yields, particularly with grain crops.

THE NEEDS OF SANDY SOILS

This work has continued the work of previous years, which included crop rotation and fertilizer tests. Quite definite results have been obtained. These indicate that nitrogen and humus are the two fertilizer constituents most needed at the present time, for the improvement of the soils in question. Clover, hairy vetch and soy beans are the crops which seem best adapted to use for the purpose of storing nitrogen in the soil and increasing its content of humus.

ANTHRAX OUTBREAK ON UNIVERSITY FARM

During last year an outbreak of the deadly disease of anthrax occurred in our University herds which was exceedingly serious. The history of this case is so important as throwing light upon this comparatively unknown malady in Wisconsin, as to justify rather a full description of the outbreak, and the way it was handled.

On August 15, 1909, following a severe thunderstorm, the night before, one of the cows of the dairy herd was found dead in a pasture. The animal not having shown any previous symptoms of illness, was supposed to have been struck by lightning, and the hide was removed and the carcass buried in a sand

pit used for interment of dead animals. Two days later a young kid in a nearby paddock died, and a post-mortem was made at which evidence was revealed indicative of anthrax, which diagnosis was later confirmed by a microscopic examination of the spleen. About this same time several of the dairy cows developed a feverish condition, and were immediately removed from the dairy herd and placed in quarantine. A disinterment of the first animal was then made and a microscopic examination revealed that death had been due to anthrax, and not to lightning, as was supposed. Within a few days quite a general infection of the dairy herd resulted, in which 5 cows, 3 heifers, and 4 calves died from the disease. A considerable number of the cattle developed exceedingly high temperatures, but ultimately recovered from the original infection, a condition which is usually not noted in anthrax outbreaks.

As soon as the outbreak occurred the affected animals were quarantined and the remainder vaccinated with anthrax vaccine under the direction of the Station Veterinarian, Dr. Alexander, the sale and use of all milk from herd being entirely discontinued.

Two months later another cow in the experimental herd died from the same disease. During the fall and early winter several hogs also died, and the laboratory examination confirmed the diagnosis of anthrax.

In April, 1910, after a cessation of the disease through the winter four small pigs also succumbed to the same disease. From the very outset of the outbreak, strenuous attempts were made to disinfect as thoroughly as possible all places with which any of the affected stock had come in contact. This was done by thorough treatment of stalls, but the treatment of pastures was obviously less certain.

During this past summer a herd of four tuberculous cows, and the calves dropped from the same were allowed to graze over the originally infected area which had been disinfected as well as possible. To test the disinfection of the hog paddocks, vaccinated and unvaccinated pigs were kept in the originally infected paddock, and allowed to graze on growing rape, so as to give greatest possible opportunity for soil infection. In no case, did the disease develop in any of these animals. Considerable study has been made this summer by Professor Hastings on the susceptibility of swine to this disease, and the foregoing experience

indicates that the general opinion that hogs do not acquire anthrax unless fed on anthrax infected carcasses is erroneous, as the death of the hogs in this herd must have come from soil infection. It was noteworthy, however, that the lesions upon post-mortem examination were far from typical, and had they not been microscopically examined, would not from a clinical point of view have been regarded as anthrax. Experiments have been continued by the Agricultural Bacteriology department on the possibility of infecting young pigs. It has not been possible to produce the disease by infection through feeding, even where laceration of the mucous membrane of the mouth was produced, or by cutaneous inoculation, although with sub-cutaneous injections young pigs succumbed.

This outbreak is of much moment to us, as, so far as is known, no cases of anthrax have ever been previously observed upon the University farm and as such diseases can only develop from contact of susceptible animals, either directly or indirectly with material from a previously affected animal, it is of importance to trace, if possible the origin of this outbreak.

The following history is presented in this case, as it seems to afford the most reasonable ground for the explanation of this sudden outbreak. The refuse from the various laboratories of the University is disposed of by depositing it in the sand pit previously referred to, which is located in the middle of the marsh pasture, but separated from it by a fence. Accidental access to this pit was had through gates being left open when sand was hauled. The custom of thorough disinfection of all refuse from the bacteriological laboratories, it was found later, had been unknowingly discontinued by a laboratory subordinate. It appears that material was received at the Hygienic Laboratory in July, 1909, which was suspected of anthrax. Animal inoculations made at that time confirmed this diagnosis, and the refuse from these animal cages was not disinfected upon its removal. This material was probably deposited with the general garbage, and so made possible the origin of the disease in the single animal which was supposed to have died from lightning. The manner of the disposal of this carcass gave opportunity for the further spread of the disease. This history accounts for the chain of circumstances which developed, and shows how in an indirect way it may be possible for such a violently contagious disease as anthrax to establish itself in any new locality.

RELATION OF "METABOLIC" WATER PRODUCED IN TISSUES TO
GROWTH OF PLANTS AND ANIMALS

All living organisms contain water abundantly in their tissues, some of which is taken directly, some is absorbed in the solid food, and some is formed within the organism as the result of the respiration processes, due to the oxidation of the organic matter of the food in the tissues of plants or animals. The essential process of respiration, which is an active function of all living cells, results in the production of carbon dioxide gas and water. The water thus produced by respiration within the cell is termed "metabolic" water, to distinguish it from the water supplied from external sources.

Doctor Babcock has been carrying on studies on this subject for several years, and has discovered important relations existing between the presence of such water in plant and animal tissues and the respiratory processes of living cells. The formation of this internal water changes the cell contents, disturbing the equilibrium of the cell, and causing a movement of food materials toward the cells. This process continues so long as proper nutrients are available to supply the waste caused by respiration.

It has been shown that the action of this "metabolic" water plays an important part in the germination of seeds. It is also the chief source of succulence in ripened fruits. It seems quite probable also that the increase in water content and the development of sap pressure during the resting periods of deciduous trees, as well as the early growth of buds in the spring, is due in large measure to this cause.

Observations made upon various insects such as clothes moths and grain weevils, which subsist entirely upon air-dried material, containing less than 10 per cent of water, indicate the presence of over 50 per cent of water in the tissues of such insects, which difference can seemingly be accounted for only on the supposition that this "metabolic" water aids in their development. These researches open up an exceedingly interesting but comparatively new aspect of physiological processes, which is of great importance in both animal and plant life.

DEVELOPMENT OF PEDIGREED GRAINS

Improvement work on existing varieties of fall rye, spring and fall wheat, have been in progress for twelve years. This

work has been carried on by the Agronomy department by the process of selection and the results accomplished show a marked improvement in yield, as well as uniformity. Last year the pedigreed barleys were disseminated through the medium of the Experiment Association. This fall the improved seed of these other cereal grains has been distributed for fall planting. The new varieties of wheat and rye on the Station farm show not less than five bushels per acre increase over ordinary varieties. The yield of pedigreed oats (No. 4) on the Station farm this fall was 76 bushels per acre. This variety will be extensively grown next year for dissemination.

The development of varieties of grain for use in the northern part of the state has been carried on at the Northern Sub-stations under the direction of Professor E. J. Delwiche.

The work on corn was started in 1907 by tests carried on by the ear-to-the-row method, and several strains of three varieties—Smutcnse Flint, Early Yellow Dent (Wisconsin No. 8), and Silver King (Wisconsin No. 7)—have been obtained which are being disseminated throughout this region.

For several years efforts have been made to improve the strains of peas, both for canning and seed purposes. Several of the varieties that have been developed—Scotch, Marrowfat, and Green—show much promise, and have been grown upon the Ashland farm very successfully.

The improvement of wheat, including both spring and winter varieties, has been carried on by selection and crossing. Several pedigreed strains have been obtained, particularly from the winter wheats of the Kharkoff type, which give great promise, the product so far being found to be hardier and much more uniform than the commercial varieties heretofore grown.

Efforts have been made to secure a variety of oats that will be especially adapted to the damp climate and heavy soil conditions which are characteristic of the clay soils of the northern part of the state. Twenty-six varieties were grown last year on the heavy red clay soil at the Superior Sub-station farm. The White Jewel variety of Canadian type of oats gives much promise for a successful type for this region.

CROP ROTATIONS FOR NORTHERN WISCONSIN

Experiments to determine the efficiency of crop rotation on clay soils are in progress, at Ashland with a four year rotation

and at Superior with a three year rotation. The results obtained in the season of 1910 have demonstrated the value of systematic rotations for the handling of heavy soils, as the yields obtained under such conditions were superior to those obtained in the ordinary way.

SELECTION OF SEEDLING APPLES

About fifteen years ago Professor Goff started a plantation of seedling apples from the best standard varieties then in use in Wisconsin. This orchard has been maintained ever since, the inferior trees being culled out from time to time. Of the 54 trees still remaining, five types (whose female parentage is definitely known (2 Fameuse, 1 McMahan, 1 Walbridge and 1 Repka Malenka) show characters which make it seem worth while to study further. In order to be able to test these under varying conditions, Professor J. G. Moore has propagated a large number of root grafts, which will be developed in the nursery for a year or so, then placed for trial in different portions of the state.

INTRODUCTION OF NEW VARIETIES OF APPLES

Climatic conditions in Wisconsin are such that the list of desirable winter varieties of apples is quite restricted and efforts have been made to add to the varieties that may be found valuable for Wisconsin. The Station orchard contains two varieties, Garfield and Hyde King, that on this Station have been found to be very prolific, of high quality and good keeping fruit. The Garfield originated in Illinois and Professor Moore reports it as known to be growing only at one other place in the state, i. e., on the farm of Albert Reis, Richland county.

The Hyde King, when exhibited at the State Fair, has attracted much attention. Professor Beach, when at the New York Station, regarded it as one of the most valuable of the newer varieties. The Horticultural department is developing stock of these types for experimental purposes. The Station is unable to supply trees, but as soon as stock is available for further testing, it will be placed under conditions that will permit of dissemination.

RHUBARB FORCING

In forcing this crop, the chief difficulty is to secure suitable roots, as those once used are no longer of value. After several

years of experimental work, a method has been developed which has proven successful. The seed is sown broadcast in August, in small plats under the cold frame. They are mulched to carry them through the winter and transplanted in spring into rows so as to permit of horse cultivation. One-year-old roots have been found to be suitable for forcing, although the age at which to secure best results is yet a matter for further trial. This method is found to give better germination, to economize on use of land and to produce stronger plants in one year's time.

TOMATO BREEDING INVESTIGATIONS

In 1908 breeding work was begun by Mr. Rogers to secure a variety of tomatoes that would be resistant to the "mosaic" disease which is such a serious pest in forcing this crop. In this work he crossed the Earliana variety with the Peach and Cherry types. Pure strains of these crosses were established by continued development and it has been found possible to produce a disease resistant variety, but as yet the fruit is too small and of poor quality. Attempts are now in progress to produce attenuated hybrids that will result in an improvement of the type of fruit formed.

PROGRESS OF TOBACCO BREEDING

The Connecticut-Havana strain which was perfected at this Station several years ago was secured by selection and with this as a basis, experiments have been in progress for the last two years by Mr. Johnson of the Horticultural department to improve still further the type of seed by hybridization experiments. By rigid selection, type plants were developed and by self-pollination, seed secured which was free from foreign strains. These varieties appear very promising and have been carefully graded by growers and buyers, who regard this pure-bred type as superior to the select variety heretofore disseminated. It will be necessary to continue this work for a few years to fix the type. After thorough establishment, it is the expectation that the department will again resume the distribution of seed from these pedigreed varieties, the seed distribution from the select type being now discontinued, as this type is grown practically by all growers in the state.

METHODS OF TOBACCO CULTURE

Present methods of tobacco culture involve the use of the same piece of land year after year, while the soil is only used

for two or three months in the season for the maturing of the crop. Common practice leads to heavy fertilization, the entire manure output of the farm often being used on the tobacco field. These conditions lead to leaching and waste of soil and fertilizer so that by many tobacco is looked upon as an expensive crop from the standpoint of conservation.



Figure 1.—A tobacco breeding plot with selected flowering plants “bagged” to prevent cross pollination. This work is being continued to fix the type. Distribution of this improved seed will again be resumed when established pedigree varieties have been secured.

The Horticultural department has inaugurated a new line of cultural experiments this past season. Cover crops are planted just as soon as the tobacco harvest is gathered, the idea being to supply the organic matter to the soil when this is plowed under, thus lessening the amount of barnyard manure necessary to supply this important factor in plant growth. The effect of cover crops in the fall is also to prevent the washing of the soil and it is hoped also to diminish leaching. A crop of tobacco removes from the soil a much larger amount of potash, relatively, than either phosphoric acid or nitrogen. Consequently the application of barnyard manure does not supply plant food in proper proportion. Experiments are under way to determine whether or not commercial fertilizers may not be more economically used than ordinary manure. If some form of potash fertilizer can be used in connection with legumes for cover crops, the latter to supply

nitrogen and organic matter, it will not be necessary to continue to drain the fertilizing resources of the entire farm to maintain the fertility of the tobacco fields.

The third series of experiments is being conducted on the use of tobacco as a tilled crop in rotation. The present practice of continuous cropping has now gone on until in some cases as high as 30 crops have been removed from the same fields. It will be necessary to continue this line for a number of years before conclusive results will be forthcoming.

BAYFIELD FRUIT TRIALS

This region, by virtue of its geographical location, climatic conditions, and soil, is rapidly springing into prominence as a commercial fruit center. While it has only become prominent within the last few years, more inquiries are received relative to this district than any other. It is fortunate that the Experiment Station anticipated the possibilities of this region, and five years ago two orchards were planted among the first commercial propositions to be considered. The main orchard is on the farm of John Walters near the city of Bayfield. It contains 17 varieties of apples, three of cherries, three of European plums, one of Japan plums and eight of American type. This orchard is developing in a wholly satisfactory manner and it is to be hoped will give adequate data on varieties adapted to this region. A number of the trees bore this year, which is the fifth season, in spite of the adverse conditions which prevailed in nearly all other portions of the state. Next year, with favorable conditions, valuable data should be obtained. Another smaller orchard is located on the farm of E. P. Salmon on Madeline Island and contains a number of different species. Apples and cherries have done well so far, better than the plums.

NORTHERN POTATO TESTS

The work with potatoes at Iron River has been along the same lines as in the past season which included variety tests of several standard varieties of potatoes to discover at least one good early and one good late variety for this soil and climate. The results go to show that so far as yield is concerned, the Sir Walter Raleigh variety, Carman No. 3 and Rural New Yorker are the best potatoes for a general crop; for medium early, Early Rose, and for very early, Noroton and Stray Beauty, the two latter varieties being very much the same in returns per acre.

A test to determine the amount of cultivation necessary for good results with potatoes is also under way. The results of this year, the third season, confirm the fact that frequent cultivation gives the best returns per acre. It is still a question, however, whether cultivation after every heavy rain is better than less frequent cultivation.

The test to determine the depth of planting was also continued during the present season, being also the third year of the trial. These results confirm the findings of previous seasons, namely, that a depth of six inches is better than either shallow or deeper planting.

The trials with potatoes amply demonstrate the adaptability of Northern Wisconsin sandy soils to the growing of this crop. The yields obtained at Iron River have ranged on an average of from 33 to 100 per cent over the ten year average for the United States.

PLANT DISEASE SURVEY

In organizing the work of the new Plant Pathology department, Professor L. R. Jones began this last summer a reconnaissance survey of the state along pathological lines. The conditions this year have been unusual. The severe April freeze, the unusual drought of mid-summer and the delay in the autumn frosts have resulted in lessened destruction from parasitic causes. Potatoes ordinarily suffer materially from blight, but the main trouble this year has been "tip burn" of the leaves, the development of which was hastened by the dry weather. The unusual fall conditions have continued tuber growth and have resulted in development of blackening of stem end, which is suggestive of wilt disease.

The severe freezes in April, following the unusual warmth of March, destroyed not only the foliage, but also the fruit buds of all orchard crops, and it is also noteworthy that the two serious apple diseases, scab and fire blight, which normally develop on the young wood, were materially absent. Nature has thus checked to a considerable extent the progress of these troubles. The orchards along the shores of the Great Lakes did not suffer the frost injury and scab and blight started out in normal virulence, but were largely held in check by the mid-summer drought.

Observations throughout the state show considerable injury to apple trees from sun scald, due to early development of these

tissues in late winter and their subsequent freezing. Such injuries open the way for invasion of bacterial blight, or canker fungi. Where young trees are shielded from rabbit injury by tar paper or other complete covering, the displacement of this very generally results in a "scald" of the tissues which would not be occasioned with a wire or light porous screen.

The diversified farming with rotation of crops in this state has much to do with the decreased ravages of plant diseases, when compared with Eastern sections. With certain special crops, as cabbage, tobacco, peas, and ginseng that are grown continuously on same land, pathological conditions due to physiological, as well as parasitic causes, are making headway.

The Racine-Kenosha district is gradually being forced to abandon cabbage culture, their most profitable truck crop, on account of ravages of the bacterial black rot. Leaf blights and root diseases on the pea and ginseng, as well as leaf blights of celery and the cane rust of small fruits, have been found to be quite serious in a number of localities.

ECONOMIC ENTOMOLOGY SURVEY

The discovery that the San Jose Scale has established itself at a considerable number of places in southeastern Wisconsin, and especially in the cities of Milwaukee and Madison, is arousing considerable concern among the fruit growers of the state who justly fear invasion of their orchards by this dreadful pest. Steps are being taken to control the further spread of the scale wherever it has been located. It is hoped in this manner to retard the spread of the scale very materially. It is impossible to exterminate a pest of this character when it has once gained a foot-hold over a considerable area, but proper control measures are now available by which the fruit grower and horticulturist may protect his trees from serious injury.

CRANBERRY INVESTIGATIONS.

At the Cranberry Sub-Station at Grand Rapids tests of the value of various fertilizers upon the growth of vines and yield of cranberries have been continued under the direction of Mr. Malde. The selection of improved strains is being pursued with a view of securing varieties that will yield a large amount of high quality fruit, which will keep well when handled on the market. Tests of iron sulphate and other materials to control

weeds have been carried on with fair success. These sprays promise to become an efficient aid in controlling weeds on the bogs. A special study of the kinds of weeds infecting cranberry bogs is also being made with a view of developing methods of exterminating each species. The benefits of good methods of sanding have been farther demonstrated and clean culture together with proper handling of water for flooding has been shown to improve greatly yields from the station bogs.

INVESTIGATIONS IN AGRICULTURAL ECONOMICS.

The various lines of investigation in the Agricultural Economics Department under the direction of Professor Taylor, have for their combined purpose the gaining of knowledge of the economic forces which influence the farmer in determining what to produce, and in determining the kinds and qualities of

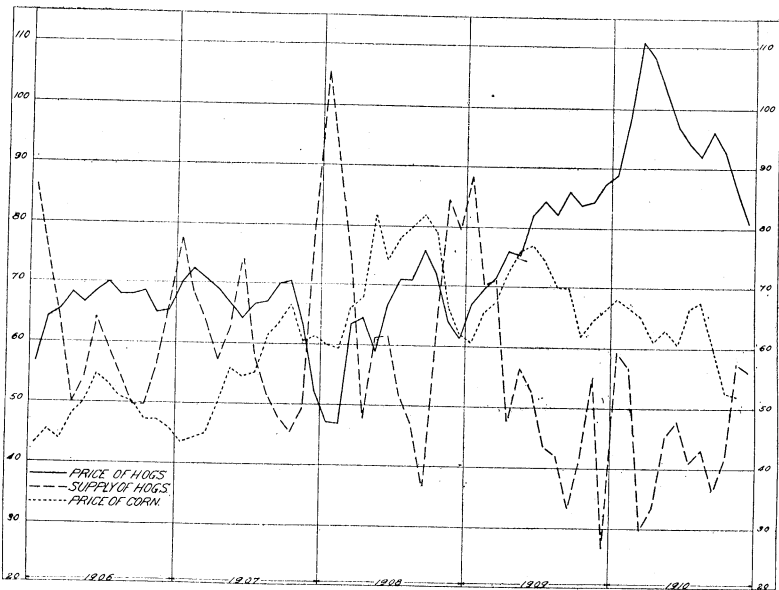


Figure 2.—Chart showing method of studying the relation between the prices of hogs and the supply of hogs at Chicago. The figures on the left represent the price of hogs per 100 pounds, the price of corn per bushel and the number of hogs delivered in tens of thousands. This chart shows that in 1906-7 the price of hogs was high and corn low, which caused the supply to exceed the record of 15 years in 1908. The price of hogs went down and the price of corn arose and it was more profitable to sell corn than to feed it to hogs as a result the supply of hogs decreased, which explains the high price of hogs in 1910.

land labor and equipments, the degree of intensity of culture, the size of the farm, the labor system, the system of tenure, the system of credit, the methods of marketing, etc., to make use

of in his farm operations. These subjects are studied with a view both to the formulation of general principles and to the pointing out of good practice for a given place at a given time; from the standpoint of the interests of the individual farmer and from the standpoint of the public interest or general welfare.

HISTORICAL AND GEOGRAPHICAL STUDIES.

The historical and geographical studies which have been in hand for the past three years have made some progress during the past year. As a basis for this work maps have been made which show the regions of production of each crop and of each kind of livestock at each census period from 1840 to 1900. Materials are being collected from contemporary agricultural papers and government reports with a view of describing the economic forces which were influential in bringing about the changes in the agricultural industries indicated on the maps.

The purpose of this work is to show and explain the changes which have taken place, and the differences which now exist in the types of farming in the various parts of the country, due to historical changes and geographical differences with respect to the character and abundance of land labor and equipments, and with respect to opportunities for marketing products. For example, in 1860 southeastern Wisconsin was the center of wheat production in the West, today dairying is the principal enterprise on most farms, and wheat is rarely grown. A study of the forces which brought about this change is full of interest, the best method of understanding the merits of the dairy business in this section, and is a good starting point for making a comparative study of the dairy region and the grain region of the northwestern part of the state.

STUDY OF FARM TENURES.

The study of the forms of land tenures in the United States has been continued during the past year with a special reference to negro tenure and plantation organization in the cotton belt. The purpose of this study is to bring together the results of experience on the best methods of renting farm lands for each of the racial elements of the agricultural population and for each of the types of farming practiced in the United States. There is a close resemblance, for example, between the method

of renting cotton land in Mississippi and the method of renting tobacco land in Wisconsin, between the method of renting dairy farms in the state of New York and in the state of Wisconsin, and between the method of renting grain farms in northwestern Wisconsin and Ohio.

ADVISORY RELATION WITH UNITED STATES CENSUS.

The study of farm tenures and of the organization of agricultural production in the different parts of the United States has been aided materially toward a successful completion by an advisory relation between Professor Taylor and the United States Bureau of the Census in the preparation of the schedules, and the planning of the tabulation of the results of the 1910 census of agriculture. Through this relation it is hoped that improvements have been made in the census of agriculture which will result in more useful data being available for the above purposes when the census figures are published.

FARM SURVEYS.

The purpose of these surveys is to bring together the results of experience in farm management, with a view of showing what is good and what is bad practice in farm organization and operation, in the various types of farming and under various conditions with respect to soil, climate, farm population, marketing facilities, etc. Professor Otis has personally visited a large number of farms to secure data and to determine the value of the particular farm in connection with the accredited farms system just inaugurated by the College.

WEED CONTROL.

Few farmers recognize the gravity of the weed problem. Weeds are looked upon as a more or less inevitable evil and no concerted action is taken to deal with this problem. Professor Stone has secured definite data from certain portions of the state as to prevalence of these noxious pests and the results indicate a serious condition. Five hundred reports of members of Wisconsin Experiment Association were received from 57 counties. The actual outlay incurred for weed control on these farms was over 40 per cent as much as was paid out for town taxes. Quack grass and Canada thistle were found on about one-half of the farms while other pests, such as wild mustard,

yellow dock, sow thistle, and snap dragon, were more or less abundant.

In addition to these data a farm to farm canvass was also made in five widely separated counties. A large number of farms, comprising over 60,000 acres, were visited in Eau Claire, Iowa, Langlade, St. Croix and Sheboygan counties, and over 3,000 acres of weeds were actually found, or 11.34 acres on the average farm. The following table gives the distribution of the more important types and shows an alarming condition of affairs to prevail.

TABLE I.—KINDS AND DISTRIBUTION OF WEEDS IN WISCONSIN.

County.	Canada Thistle, area, acres.	Quack Grass, area, acres.	Wild Mustard, area, acres.	Sow Thistle, area, acres.	Ox-eye Daisy, area, acres.	Snap Dragon, area, acres.
Eau Claire	5.0	432.00	.....	.....	.....	88
Iowa	55.2	388.92	685.42	.....	5	.....
St. Croix	20.4	552.01	.....	.24	.....	.....
Sheboygan	402.5	.....	.....	38.25	.....	.....
Totals	483.1	1,372.93	685.42	38.49	5	83

A presentation of these facts should suffice to convince the most skeptical of the need of immediate and concerted action. Our laws as they now exist are practically a dead letter and this whole matter should be given earnest consideration by the legislature.

COOPERATIVE WORK WITH GOVERNMENT AND STATE ORGANIZATIONS.

CHEESE WORK WITH DAIRY DIVISION.

The research work on the cheddar cheese problems with the Dairy Division of the United States Department of Agriculture, has now been expanded until there is detailed at this Experiment Station three experts (a chemist, a bacteriologist and a cheese maker), in addition to our own staff.

CRANBERRY INSECTS.

This year brings to a close the two years' cooperative work undertaken between this Station and the United States Bureau of Entomology on the subject of cranberry insects. This work, in which the federal department has furnished an entomological expert and assistant, has been carried on at our cranberry station at Cranmoor, near Grand Rapids, and it is expected that the results of these investigations will be published this winter.

STUMP REMOVAL.

Cooperative investigations as to the best methods of the removal of stumps from the cut-over lands in Northern Wisconsin and Minnesota, have been continued during this last year, with the Office of Farm Management, United States Bureau of Plant Industry, and the Northeastern Sub-Station of the Minnesota Experiment Station. The work this year has been confined more largely to the study of the most efficient methods of using explosives, in order that comparison may be made between explosives and mechanical methods of removal.

STATE SOIL SURVEY.

The most important cooperative work undertaken with a state organization has been in accordance with the grant made at the last session of the legislature of an appropriation of \$10,000 for two years to the State Geological and Natural History Survey, for the inauguration of the State Soil Survey, such work to be done in collaboration with the Agricultural College. Subsequent to the passage of this act, arrangements were perfected with the Bureau of Soils of the United States Department of Agriculture to cooperate on this undertaking. Professor Whitson of the Soils department has had immediate charge of this work and there has now been completed field work of a detailed character in Bayfield, Waukesha, Waushara and Iowa counties, while reconaissance surveys have been made in Marinette county and portions of Douglas, Bayfield and Ashland counties. Field work is finished and the preparation of reports is in progress.

HISTORY AND GEOGRAPHY OF AGRICULTURE.

The Department of Agricultural Economics is co-operating with the Carnegie Institution of Washington, D. C., in the prep-

aration of an historical and geographical study of farm tenures and the organization of agricultural production in the United States since 1840.

FARM ACCOUNTING INVESTIGATIONS.

During the year cost accounting has been successfully carried forward on fifteen Wisconsin farms, under the supervision of the Agricultural Economics Department in cooperation with the Division of Farm Management of the U. S. Bureau of Plant Industry. This accounting includes inventory, financial statement, and man and horse labor records. The purpose of this work is to give the farmer a complete record of his year's operations, such as will show him, not only the total profits of his business, but give him a complete statement of the labor and other costs, and the results of each line of production, which will show him in detail the sources of his profits and losses. This study, for example, will show the relative profitableness of the various competing crops such as corn, tobacco and sugar beets, or barley, oats and spring wheat.

WISCONSIN DAIRY MAP.

The Dairy and Agricultural Economics Departments have cooperated with the State Dairy and Food Commission in the preparation of a new dairy map showing the location of creameries and cheese factories, as of 1910. This map will be issued during the early portion of this calendar year, and will show the continued growth and expansion of the dairy industry of the state. It is worthy of note that the value of these dairy products for 1910 aggregated nearly \$80,000,000, in comparison with \$57,000,000 as obtained in 1905.

PUBLICATIONS.

During the fiscal year the publication of the Regular Bulletins has been continued and the second year of publication of the Research Bulletins has been completed. According to the plan previously announced, the Regular Bulletins contain results of experimental work that are directly available for the use of farmers while the more strictly scientific results are presented in Research Bulletins, which are distributed to scientific workers and the agricultural press,

CIRCULARS OF INFORMATION.—For some time there has been a demand for a series into which publications of a more or less temporary nature, often containing no new experimental results, might be issued. To include these miscellaneous publications a series of Circulars of Information was started in July, 1909, and 16 numbers were issued during the fiscal year. These publications are distributed according to the need, either to particular classes of farmers or to the general mailing list as the circumstances may justify.

PUBLICATIONS IN SCIENTIFIC JOURNALS.—The technical work of the Station, while provided for in a general way in the Research Bulletins, also finds an outlet through the various scientific journals of recognized standing. During the year a number of articles have been contributed by members of the staff of which the following list includes the most important.

TECHNICAL PUBLICATIONS, 1909-1910.

- Über Stereoisomeric Chlorundo Ketone.—Dr. Julius Streglitz and P. P. Peterson, *Berichte der Deutschen Chemischen Gesellschaft*, April, 1910, p. 782.
- Further Studies on *Phytophthora Infestans*.—L. R. Jones, *Science*, Vol. XXXI, p. 752.
- Nuclein Synthesis in the Animal Body.—E. V. McCollum, *American Journal of Physiology*, Vol. 25, November, 1909.
- Disappearance of Pentosans from the Digestive Tract of the Cow.—E. V. McCollum and W. A. Brannon, *Journal of the American Chemical Society*, September, 1909.
- The Production of Volatile Fatty Acids and Esters in Cheddar Cheese and their Relation to the Development of Flavor.—S. Suzuki, E. G. Hastings and E. B. Hart *Journal of Biological Chemistry*, June, 1909.
- Observations on California Vine Diseases.—O. Butler, *Torrey Botanical Club Memoirs*, Vol. 14, No. 2.
- The Identity and Synonymy of Some of our Soft Scale Insects.—J. G. Sanders, *Journal of Economic Entomology*, Vol. 2, pp. 428-448.
- A Review of the Coccidae Published by Dr. Asa Fitch.—J. G. Sanders, *Proc. of Entomological Society of Washington*, Vol. XII, pp. 56-61.
- The Preparation of Curd from Buttermilk.—J. L. Sammis, *Journal of Industrial and Engineering Chemistry*, Vol. 4, No. 4.
- The Occurrence and Distribution of Organisms Similar to the *B. Bulgaricus* of Yogurt.—E. G. Hastings and B. W. Hammer, *Centralblatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten, II Abteilung*, Vol. 25, p. 419.
- The Bacterial Flora of Milk held at Low Temperatures.—M. P. Ravenel and B. W. Hammer, *The Journal of Infectious Diseases*, Vol. VII, p. 38.

No.	Title	Author.	Size of Edition.	Number of pages.
REGULAR BULLETINS.				
177	Potato Culture in Northern Wisconsin.	Sandsten and Delwiche.....	15,000	17
178	The Field Pea in Wisconsin.....	Moore and Delwiche	10,000	12
179	The Eradication of Farm Weeds with Iron Sulphate.....	Moore and Stone....	25,000	17
180	Fertilizers for Wisconsin Farms.....	Woll.....	18,000	46

No.	Title.	Author.	Size of edition.	Number of pages.
181	The Propagation of Pure Starters for Butter and Cheese Making.....	Hastings.....	10,000	17
182	The Wisconsin Butter and Cheese Scoring Exhibitions.....	Farrington and Michels.....	10,000	42
183	Growing Clover for Seed and Forage in Northern Wisconsin.....	Moore and Delwiche.....	20,000	14
184	Practical Swine Management.....	Fuller and Alexander.....	20,000	22
185	Sanitary Cow Stalls.....	Ocock.....	30,000	18
186	Suggestions for the Improvement of Wisconsin Horses.....	Alexander.....	27,000	30
187	The University Dairy Herd 1908-1909....	Humphrey and Woll.....	15,000	22
188	Wisconsin Horse Breeding Statistics 1909	Alexander.....	7,000	54
189	Community Breeders' Associations for Dairy Cattle Improvement.....	Humphrey.....	20,000	21
190	Common Insect Pests of Fruits in Wisconsin.....	Moore.....	30,000	38
191	A Decade of Official Tests of Dairy Cows, 1899-1909.....	Woll and Harris.....	20,000	49
192	The Dairy Calf at Mealtime.....	Otis.....	30,000	14
193	Report of the Director.....	Russell.....	25,000	52
194	Licensed Commercial Feeding Stuffs, 1909.....	Woll.....	15,000	94
195	New and Improved Tests of Dairy Products. The Preparation of Buttermilk Curd.....	Babcock, Farrington and Sammis.....	8,000	21

RESEARCH BULLETINS

7	Factors Controlling the Moisture Content of Cheese Curds.....	Samms, Suzuki and Laabs.....	4,500	72
8	Nuclein Synthesis in the Animal Body	McCullum.....	4,500	21
9	The Nature of the Acid-Soluble Phosphorus Compounds of Some Important Feeding Materials.....	Hart and Tottingham.....	4,500	12
10	Some Improved Methods of Dairy Chemistry Analysis.....	Hart, Suzuki and Samms.....	4,500	18
11	The Production of Volatile Fatty Acids and Esters in Cheddar Cheese, and Their Relation to The Development of Flavor.....	Suzuki, Hastings and Hart.....	4,500	28
12	Some Factors Concerned in the Fixation of Nitrogen by Azotobacter.....	Hoffmann and Hammer.....	4,500	18
13	Studies of the Protein Requirements of Dairy Cows.....	Woll and Humphrey.....	4,500	40

CIRCULARS OF INFORMATION.

1	The Wisconsin Feeding Stuff Law....	Woll.....	5,000	9
2	The Propagation of Pure Culture Starters for Butter and Cheese Making....	Farrington and Hastings.....	2,500	4

No.	Title.	Author.	Size of edition.	Number of pages.
3	Directions for Spraying Potatoes.....	Milward.....	3,000	8
4	The Wisconsin Seed Inspection Law....	Stone.....	20,000	10
5	The Hollow Concrete Fence Post.....	Ocock.....	3,000	4
6	Synopsis of Wisconsin Drainage Laws with Forms and General Suggestions.	Jones.....	2,500	21
7	The Agricultural Extension Service....	.....	30,000	14
8	Corn Judging.....	Moore.....	50,000	16
9	The Wisconsin Dairy Cow Competition	Woll.....	7,000	9
10	Operating the Casein Test at Cheese Factories.....	Hart and Cooper....	2,500	4
11	Concentrated Feeding Stuffs and Fertilizers Licensed for Sale in Wisconsin, 1910.....	Woll.....	12,000	12
12	Spraying the Home Orchard.....	Milward.....	5,000	9
13	The Care of New Born Foa's.....	Alexander.....	25,000	7
14	The Determination of Salt in Butter at the Creamery.....	Samms.....	3,000	7
15	Analyses of Licensed Commercial Fertilizers, 1910.....	Woll.....	9,000	12
16	The Culture and Storage of Root Crops	Delwiche.....	15,000	14

DIGESTS OF REGULAR BULLETINS.

REGULAR BULLETIN 177. POTATO CULTURE IN NORTHERN WISCONSIN. Experiments in potato culture on the sandy and sandy loam soils of Northern Wisconsin have resulted in uniformly profitable yields in this territory. By turning under green crops, such as clover, rye and barley, and applying stable manure to this crop, the yields may be greatly improved. Dairy farming may be combined with potato raising to good advantage. Care should be used to select good seed of varieties known to be suited to the locality. Tests have shown that of the three kinds: Noroton Beauty, Early Rose and Stray Beauty, there is little preference; while for late sorts, Carman No. 3, Burbank, Sir Walter Raleigh and Rural New Yorker, are of about the same quality. This bulletin also contains suggestions on spraying for insects and fungus diseases.

REGULAR BULLETIN 178. THE FIELD PEA IN WISCONSIN. This crop may be grown with profitable returns in many sections of the state, the best yields being obtained on clay or clay loam soils of moderate fertility. The value of this crop lies in the worth of the peas as a feed and the beneficial effect on the soil. Pea growing for soil improvement is profitable on sandy lands that are lacking in humus. Experiments have demonstrated that excellent yields can be secured on the heavy clay soils in the northern clay belt, to which section peas are especially adapted.

REGULAR BULLETIN 179. THE ERADICATION OF FARM WEEDS WITH IRON SULPHATE. This subject has been investigated for several years, and wild mustard, quack grass, Canada and other thistles, as well as numerous other weeds, have made this investigation necessary. By spraying with iron sulphate solution, wild mustard has been eradicated, and cockle bur, bind weed and rag weed, partially controlled. Canada thistles were not killed, although some plants were seriously injured. The bulletin includes a detailed account of the method to be used in spraying with iron sulphate.

REGULAR BULLETIN 180. FERTILIZERS FOR WISCONSIN FARMS. The increasing need of the use of stable manures and commercial fertilizers on Wisconsin soils is emphasized in this bulletin. Fertilizers may be conserved in two ways, first, by feeding crops and purchased concentrated feeds to live stock and applying the stable

manure; second, by the application of commercial fertilizers and the culture of legumes to maintain the soil. Suggestions on the purchase and use of commercial fertilizers, with directions on how to select fertilizers for different crops and types of soils, are herein presented. Analyses of licensed commercial fertilizers are also included, which aid the farmer in making a choice of an effective fertilizer.

REGULAR BULLETIN 181. THE PROPAGATION OF PURE STARTERS FOR BUTTER AND CHEESE MAKING. Directions for the preparation and propagation of high grade pure culture starters are fully described in this bulletin. The methods are such as can be followed in an ordinary creamery and cheese factory with successful results. Pure culture starters have been distributed by the Station to a large number of members of the Butter and Cheese Scoring Exhibitions, and this bulletin forms a manual of directions on how to carry these starters for subsequent use.

REGULAR BULLETIN 182. THE WISCONSIN BUTTER AND CHEESE SCORING EXHIBITIONS. This includes a history and description of the Scoring Exhibitions which were begun in 1907, and have since grown steadily in importance and value to the dairy industry of the state. An account of the method of conducting exhibitions, together with statistical data on the results secured is included. In an Appendix an outline of butter and cheese defects, and how to correct them, based upon results secured by the Scoring Exhibitions, forms a very valuable manual of detecting difficulties with butter and cheese.

REGULAR BULLETIN 183. GROWING CLOVER FOR SEED AND FORAGE IN NORTHERN WISCONSIN. The methods of seeding, harvesting and curing clover for hay and to save the seed under Northern Wisconsin conditions are described in this bulletin. Clover is a crop of prime importance in the improvement of soils and in establishing live stock industry. The best methods of cultivating this crop should therefore be practiced throughout the Northern section. The growing of clover for seed is profitable where well managed.

REGULAR BULLETIN 184. PRACTICAL SWINE MANAGEMENT. Swine production in Wisconsin is rapidly expanding and may be made a profitable source of income as a side line with dairying. The great needs at present are better breeding stock, careful selection of sows and intelligent feeding. This bulletin outlines a system followed at the Station farm giving suggestions on selection of breeding stock and feeding both old and young animals. The care of young pigs is especially emphasized and suggestions on the control of common diseases and parasites are included.

REGULAR BULLETIN 185. SANITARY COW STALLS. A description of four economical and practical sanitary cow stalls with illustrations are presented in this bulletin in a manner as may be followed by any farmer in constructing such stalls. Directions on laying of concrete floors and mangers are included. The improvement of old and unsanitary stables involving the installation of sanitary stall arrangements which is being done on a large number of farms at present makes such a bulletin as this of great practical value to every dairy farmer.

REGULAR BULLETIN 186. SUGGESTIONS FOR THE IMPROVEMENT OF WISCONSIN HORSES. The campaign for the improvement of the horse industry of Wisconsin, which has been in progress for several years is described in detail in this bulletin and important lessons are taken from these years of experience. The importance of grading up by using pure-bred sires, breeding from only sound animals is duly emphasized. An outline for a campaign of better horse breeding is presented showing the various steps which should be taken to place the Wisconsin horse breeding industry upon a high plane.

REGULAR BULLETIN 187. THE UNIVERSITY DAIRY HERD, 1908-1909. This bulletin presents the records and system of management of the University dairy herd for one year and is one of the series of bulletins, describing the development of the herd, which have been issued regularly for several seasons. The plan of feeding used and the production and net profits of the herd are presented with special discussions upon winter rations and other details in feeding of the animals. The data presented is worthy of careful study by every dairy farmer.

REGULAR BULLETIN 188. WISCONSIN HORSE BREEDING STATISTICS, 1909. This bulletin presents the annual lists of stallion licenses and transfers with a general discussion of the progress and changes in the campaign for better horse breeding, which has resulted from the Wisconsin stallion license law. A decrease of inferior stallions is shown from 65 per cent of grade licenses in 1906-1907 to 53 per cent in 1908-1909.

REGULAR BULLETIN 189. COMMUNITY BREEDERS' ASSOCIATIONS FOR DAIRY CATTLE IMPROVEMENT. Since 1906 some 31 community breeders' associations have been

organized in Wisconsin, including over 1,000 members who are breeders of dairy cattle. This bulletin presents a history of the organization idea and the development of such associations. Specimens of a constitution and by-laws and advertising matter as well as a directory of present organizations are included, making this a helpful manual for any breeder, who is contemplating such an organization.

REGULAR BULLETIN 190. COMMON INSECT PESTS OF FRUITS IN WISCONSIN. This is a brief manual upon the control of injurious insects common to Wisconsin. Following a general discussion of insect pests about 30 of the more important pests are described and illustrated separately in a manner which will aid any orchardist in identifying them at sight. In an appendix, directions for prepared insecticides and fungicides are given together with a brief description of good spraying apparatus. This manual will be useful to every fruit grower of the state.

REGULAR BULLETIN 191. A DECADE OF OFFICIAL TESTS OF DAIRY COWS, 1899-1909. This account of ten-years progress in official tests of dairy cows, presents facts and figures of much interest to dairy breeders and others interested in the records of production of dairy animals. The history of cow testing, in which movement Wisconsin has been a pioneer, is here presented in condensed and interesting form. The growth in the number of tests is shown to have been steady as has also been the improvement in production by cows of various classes. This bulletin contains results of testing cows during 1908-1909 in detail.

REGULAR BULLETIN 192. THE DAIRY CALF AT MEAL TIME. The successful rearing of calves over 2,000,000 of which are annually born in Wisconsin is a specific topic of this bulletin. The proper management of whole milk, skim milk, grains and roughage for calves is included. The bulletin is a brief manual on the rearing of calves according to the most approved practice of the experiment station and leading dairymen.

REGULAR BULLETIN 193. REPORT OF THE DIRECTOR, 1909. This includes the annual report of the director on demonstration and research work, publications, extension service and finances which was issued as a regular bulletin for the first time in 1909, to receive wide distribution throughout the state. The account of the work of the Station is presented in popular form designed to interest and help any farmer who may come under the influence of the institution.

REGULAR BULLETIN 194. LICENSED COMMERCIAL FEEDING STUFFS, 1903. This bulletin presents the annual report of inspections done under the Wisconsin State Feeding Stuffs Law. It includes lists of dealers and analyses of various classes of feeding stuffs which included 766 samples of 869 brands during the past year. These were sold to 222 manufacturers or dealers. An interesting portion of the bulletin contains suggestions to purchasers of feeds.

REGULAR BULLETIN 195. NEW AND IMPROVED TESTS OF DAIRY PRODUCTS AND THE PREPARATION OF BUTTER MILK CURD. This bulletin contains four brief articles. The first three describe new tests of dairy products, devised at this Station during the past year in which are: the Wisconsin hydrostatic cream balance; the fat-saturated alcohol method of reading cream tests; and the milk sediment test for determining the amount of dirt in milk. The fourth article describes the method of making butter milk curd, also known as butter milk cheese, which has been successfully made at the station for several months. This bulletin is of practical interest to those interested in dairy manufactures.

RESEARCH BULLETINS.

RESEARCH BULLETIN NO. 7. FACTORS CONTROLLING THE MOISTURE CONTENT OF CHEESE CURDS. This contains the detailed data on an extensive investigation conducted in cooperation with the Bureau of Animal Industry of the United States Department of Agriculture on the causes of variation in the moisture content of cheese curds. These data are of particular interest to cheese makers and other students of cheese making. A popular presentation of the results of this investigation has been compiled in a Circular of Information No. 20, just issued.

RESEARCH BULLETIN NO. 8. NUCLEIN SYNTHESIS IN THE ANIMAL BODY. Some extensive studies of the various nutritional processes particularly as regards the use of certain factors are described in this bulletin. The objects of these particular experiments were to give phosphorus only in inorganic forms and to observe if the animal body is able to make use of this inorganic phosphorus for growth and maintenance. Experiments were performed upon rats in order to secure complete control of conditions surrounding the experiment. The results show that palatability of the

ration is a most important factor and also that other conditions being satisfied, all of the phosphorus needed for these animals can be drawn from inorganic materials. This factor is of great importance in animal nutrition and farther studies with larger animals are being pursued.

RESEARCH BULLETIN NO. 9. THE NATURE OF THE ACID-SOLUBLE PHOSPHORUS COMPOUNDS OF SOME IMPORTANT FEEDING MATERIALS. This presents an account of an investigation in the character of certain compounds of feeding materials, namely, phytic acid from corn, oats, and barley and the soluble phosphorus of rutabagas and cured alfalfa hay. This investigation shows that phytin is present in corn, oats and barley and has previously been isolated from wheat, but it could not be isolated from rutabagas or alfalfa hay.

RESEARCH BULLETIN NO. 10. SOME IMPROVED METHODS OF DAIRY CHEMISTRY ANALYSIS. This bulletin contains three papers of interest to dairy chemists: 1. A volumetric method for the estimation of casein in cow's milk; 2. The quantitative estimation of lactic acid in cheddar cheese; and 3. The relation of different acids to the precipitation of casein and to the solubility of cheese curds in salt solutions.

RESEARCH BULLETIN NO. 11. THE PRODUCTION OF VOLATILE FATTY ACIDS AND ESTERS IN CHEDDAR CHEESE AND THEIR RELATION TO THE DEVELOPMENT OF FLAVOR. This is an account of the careful investigation of processes which occur in the ripening of Cheddar cheese and their relation to flavor. It is one step in the chemical studies of cheese, which have been pursued at this Station for several years and sheds much light upon the actual processes taking place in cheese curing.

RESEARCH BULLETIN NO. 12. SOME FACTORS CONCERNED IN THE FIXATION OF NITROGEN BY AZOTOBACTER. Studies of the nitrogen forming bacteria have been pursued for some time and this research work has been confined chiefly to the factors which influence the nitrogen fixing character of these various bacterial forms.

RESEARCH BULLETIN NO. 13. STUDIES OF THE PROTEIN REQUIREMENTS OF DAIRY COWS. For a period of ten years careful data have been kept upon the feeding of the University dairy herd with a view to determine accurately the protein requirements of animals of various productions. The data have developed some very definite facts, some of which bear upon the needs of animals as formerly recognized by students of animal nutrition. This bulletin contains the full data and discussion of the experiments in a form of particular value to investigators and students of nutritional problems.

CIRCULARS OF INFORMATION,

CIRCULAR OF INFORMATION 1. THE WISCONSIN FEEDING STUFF LAW. This circular includes important extracts of recent legislation regarding the labeling, sale, shipment, analysis and adulterations of feeding stuffs. A complete list of feeding stuffs analyzed under the law is given, and emphasis is placed upon the values of the certified statements of chemical contents attached to samples.

CIRCULAR OF INFORMATION 2. THE PROPAGATION OF PURE CULTURE STARTERS FOR BUTTER AND CHEESE MAKING. Popular and condensed directions on the propagation, care and examination of pure culture starters designed to be sent out with the free starters supplied to members of the Butter and Cheese Scoring Exhibitions.

CIRCULAR OF INFORMATION 3. DIRECTIONS FOR SPRAYING POTATOES. A condensed discussion of the various sprays with explicit directions for their preparation. Spraying machines are briefly discussed and the defects and merits of various chemical sprays are mentioned.

CIRCULAR OF INFORMATION 4. THE WISCONSIN SEED INSPECTION LAW. The complete text of the law is presented, supplemented by popular explanations regarding labels, impurities and adulterations, seed testing and standards of purity and germination, for seed growers and dealers.

CIRCULAR OF INFORMATION 5. THE HOLLOW CONCRETE FENCE POST. This circular includes condensed directions for making the concrete mixture, the reinforcement and curing of concrete fence posts. Both hollow posts and those of the solid core variety are discussed.

CIRCULAR OF INFORMATION 6. SYNOPSIS OF WISCONSIN DRAINAGE LAWS, WITH FORMS AND GENERAL SUGGESTIONS. A detailed resumé of the state drainage laws, the organization of drainage districts, with an appendix containing form documents of the essential petitions, reports, specifications and contracts.

CIRCULAR OF INFORMATION 7. THE AGRICULTURAL EXTENSION SERVICE. This circular outlines the demonstrations, co-operative experiments, publications, and

general activities of the College in extension lines. Thirty-seven kinds of service in ten departments of the College and Station are described.

CIRCULAR OF INFORMATION 8. CORN JUDGING. A practical treatise on the ideals and important score card features to be borne in mind in corn judging. Special emphasis is laid on trueness to type, shape of ear, length of ear, percentage of corn, and market conditions.

CIRCULAR OF INFORMATION 9. THE WISCONSIN DAIRY COW COMPETITION. This circular deals with the value of cow-testing both as an insight as to the profitable individuals and from the standpoint of the increased value of cows admitted to advanced registry. The rules governing the Competition and the list of special prizes are also given.

CIRCULAR OF INFORMATION 10. OPERATING THE CASEIN TEST AT CHEESE FACTORIES. The successful operation of the Hart casein test when used in conjunction with the Babcock test in cheese factories is briefly discussed in this circular. Special suggestions on the operation of test for best results are included in view of particular difficulties which cheese factory men have experienced.

CIRCULAR OF INFORMATION 11. CONCENTRATED FEEDING STUFFS AND FERTILIZERS LICENSED FOR SALE IN WISCONSIN, 1910. In accordance with the state requirements a list of the licensed manufacturers of concentrated, commercial feeding stuffs and commercial fertilizers is presented in this circular.

CIRCULAR OF INFORMATION 12. SPRAYING THE HOME ORCHARD. The necessity of efficient spraying machinery and the accurate preparation of the chemical spraying solutions are emphasized. Formulæ for common insecticides and fungicides are given. Estimates of the field cost of spraying are also included.

CIRCULAR OF INFORMATION 13. THE CARE OF NEW BORN FOALS. The principal disease to which the newly born foal is exposed are discussed, also their prevention and treatment. Careful attention and sanitary surroundings are essential for the development of healthy vigorous foals.

CIRCULAR OF INFORMATION 14. THE DETERMINATION OF SALT IN BUTTER AT THE CREAMERY. This describes a modern method of testing the salt content of butter by the use of silver nitrate. Directions are included which will permit any factory operator to make his own tests after a little practice.

CIRCULAR OF INFORMATION 15. ANALYSIS OF LICENSED COMMERCIAL FERTILIZERS, 1910. In compliance with the state law analysis of the various fertilizers licensed for sale in Wisconsin are presented in this circular. The valuations of the various fertilizing elements are especially emphasized.

CIRCULAR OF INFORMATION 16. THE CULTURE AND STORAGE OF ROOT CROPS. This circular includes a popular discussion of the high feeding value, ready growth, and relative inexpensiveness of raising root crops. Methods of culture, harvesting and storage are described.

THE AGRICULTURAL EXTENSION SERVICE.

COMMUNITY BREEDERS' ASSOCIATIONS.

The co-operative spirit among the farmers of the state is rapidly crystallizing through the development of the community breeders' associations for dairy cattle. The high degree of success attained by those which Professor Humphrey organized a few years ago, has led to further increase, and during the last year ten new organizations have been started, making in all 37 of these co-operative enterprises in 27 counties that are specifically concerned in dairy cattle improvement.

TESTS OF DAIRY COWS.

The official authentication of dairy cow records under Professor Woll's direction, has greatly increased this last year, 872 animals, or 61 per cent more than last year, having been tested as to production by the University supervisors. The inauguration of the Wisconsin Dairy Cow Competition has greatly stimulated interest in the matter of actual performance of dairy animals, over 400 cows having been entered in the competition for prizes aggregating \$2,600, which have been offered by persons interested in the development of dairy cattle breeding.

TUBERCULOSIS POST MORTEM DEMONSTRATIONS.

The passage of a law by the last legislature requiring the testing of all dairy and breeding cattle intended for sale has greatly stimulated the educational campaign against the scourge of bovine tuberculosis. The post-mortem demonstration in which the farmer is able to see for himself the exact relation between the physical appearance of an animal affected with the disease and its actual condition after death invariably impresses him with his inability to detect the presence of this scourge without the application of the tuberculin test. Such demonstrations have been held in co-operation with the Live Stock Sanitary Board at the farmers' courses at the different county agricultural schools, the State Fair, and various county fairs. The Sanitary Board has the matter of distributing tuberculin in its charge and the campaign in the state is steadily progressing, each year showing a constant increase in the number of tests made.

BUTTER AND CHEESE SCORING EXHIBITIONS.

This educational work has grown at about the same rate as in previous years, from 100-150 different factories sending in their every-day product month by month for scoring, which work has been done by Professor Lee of the Dairy Department, with the co-operation of inspectors from the State Dairy and Food Commission and the U. S. Department of Agriculture.

During the four years that this work has been under way, monthly entries have been received from 618 creameries and 458 cheese factories in the state. The effect of this work on the quality of the butter and cheese made in the state is clearly shown at the annual conventions, fairs, and dairy shows where competitive exhibits are made in which the products of members of the scoring exhibitions have scored above those of non-members.

DISTRIBUTION OF PURE STARTERS.

The Department of Agricultural Bacteriology has co-operated with the Dairy Department in sending out pure culture starters to the creameries and cheese factories who participate in the Butter and Cheese Scoring exhibitions. About 150 factories have received such cultures on application during the year.

DISSEMINATION OF PURE-BRED SEED GRAINS.

The work of revolutionizing the type of seed grain throughout the state is being pushed by the Department of Agronomy with much vigor. A unique organization to accomplish this purpose is had in the membership of the Wisconsin Experiment Association, which now numbers over 1,500 paid-up members. Membership in this organization entitles the holder to receive a small assignment of the selected and pedigreed grains that have been developed at the College. These are grown in increase plots for the first year, and by the second season, the grower is in position to market this selected seed at good prices.

The introduction of this seed improvement work has markedly affected the types of seed used. Mixed and scrub varieties are now being displaced by these selected and pedigreed stocks, not only in Wisconsin, but a large sale is made all over the country. One member of the Experiment Association in Dodge County reported, for a portion of a season only, seed sales aggregating \$15,000. Orders have been frequently received at the College

this last season from China, Japan, and Mexico, the same being turned over directly to the seed growers, as the College does not sell any product. On one day orders for over \$5,000 of seeds passed through the College office. Professor Moore estimates the members of the Experiment Association sold last year not less than \$300,000 worth of selected seeds.

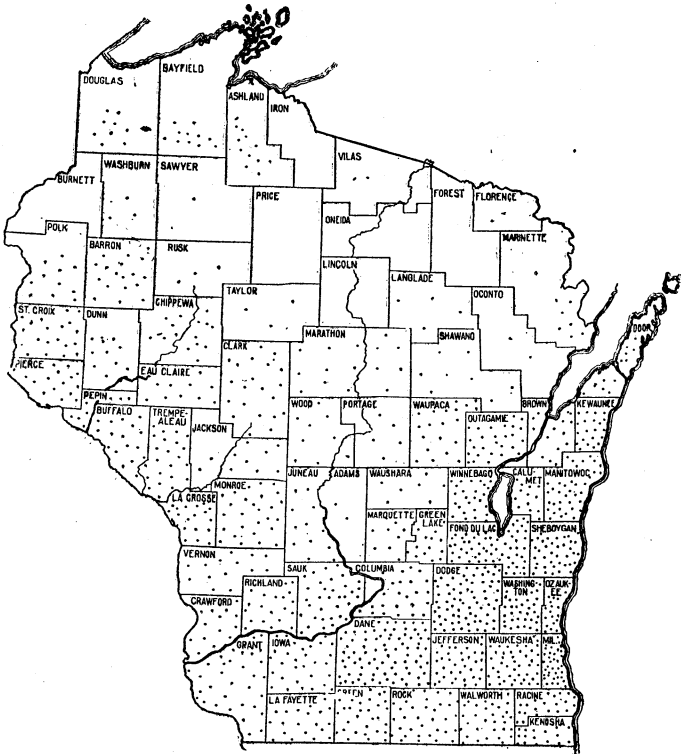


Figure 3.—Location of barley centers to which small amounts of well bred barley seed have been sent for growth and distribution to the farmers of that community. There are now over 1,200 of these centers covering every important barley growing section of the state.

The organization of the County orders of the Experiment Association (uniting all members in a single county) has been necessary to control more closely the work of inspection. These county orders now make collective county exhibits at the State Fair and other seed meetings.

Additional efforts at seed dissemination have been inaugurated this past year by organizing three Bankers' Associations at New Richmond, Bloomington, and Mineral Point. The station has furnished the seed which has been distributed through the med-

ium of the local banks. Several thousand exhibits were secured this fall in three contests held by Prof. R. A. Moore.

YOUNG PEOPLE'S GRAIN GROWING CONTESTS.

This educational work is rapidly increasing in importance. Two years ago 20 of these seed contests were held while last fall 50 were scheduled in 36 counties. Through the co-operation of the County Superintendent of Schools and County Fair Secretaries, select seeds furnished by the Agronomy Department have been distributed to the school children with specific instructions as to care and culture of same. Enough seed was sent out to furnish about 20,000 tests, and over 6,000 exhibits were made at the county fairs this fall. Last year over \$2,200 in prizes were distributed by the various fair authorities.

In connection with this work, last year there was developed a series of educational prizes, consisting of a cash prize given in each county to cover the expenses of the winner to take the Young People's Course of one week held at Madison at the time of the Farmers' Course. Twenty-one such prizes were given last year and this fall over 60 were awarded. This corn and seed improvement work is doing much to spread the use of pure bred seeds through the state, and at the same time it is developing an interest in farm operations on the part of many young people.

STATE AND COUNTY FARM DEMONSTRATIONS.

The State and County Farm demonstration work has been continued along the lines begun last year and extended to twenty farms. Thirteen all-day meetings were held this fall by Professor Norgord with a total attendance of 4,150 farmers. Lectures were given on the demonstration fields, pointing out the important features shown by the crops and presenting the methods employed to obtain best results. These fields were mostly located near main traveled roads and with the possibilities for visiting afforded on public farms, and the co-operation of local editors in printing timely notes on the crops, the work was kept before the farmers during the whole season.

Ten lines of work were presented on the farms this year, in most cases from four to six on each farm. With alfalfa, the good effect of soil inoculation was shown at all places on the west side of the state. At Viroqua, on a field of 20 acres, half

of which was inoculated, the inoculated part yielded at the third cutting $1\frac{1}{2}$ tons per acre against $\frac{3}{4}$ tons when uninoculated.

To emphasize the importance of curing corn properly and to show the losses sustained by farmers by present practices, samples of seed corn, as planted by the farmers, were secured from



Figure 4.—A field meeting at a county farm in an alfalfa field. The farmers gather in these summer picnics and learn the story of the various crops from the station representative as they go about the experimental fields. Over 4,000 farmers have attended the 13 meetings held this year.

25 farmers surrounding each of the Demonstration Farms. This corn was planted on the various county farms and tested in comparison with corn cured at this Station. The germination, stand and yield of the majority of the samples proved very low and many farmers, on learning the exact condition of their corn, went home determined to adopt the new methods.

The Farmers' Corn tests, also tests of cereals gave opportunity to show the advantage of using station bred seed of corn, barley and oats. The station seeds invariably showed to advantage in comparison with common varieties and the seeds and samples shown led to purchases by the visiting farmers.

The county farm work also included corn breeding plots, variety tests, tests for distance and depth, treatment of grain for smut, cleaning with fan mill, crop rotation, forage crops for hogs and cows, etc.

The culture of hemp and its value as a crop for the eradication of weeds, though still in an experimental state, formed an interesting addition to the demonstrations at Waupun and Viroqua. At Waupun a tough sod of quack grass and Canada thistles was cleaned up by this year's hemp crop preceded by

frequent cultivation of the field from August to November of the previous year. At this place also, hemp last year gave net returns of over \$40 and gross returns of \$70 per acre.

POTATO SPRAYING DEMONSTRATIONS.

Demonstrations this year were carried on by Mr. J. G. Milward at Porterfield, Marinette Co.; Almond, Portage Co.; Wey-

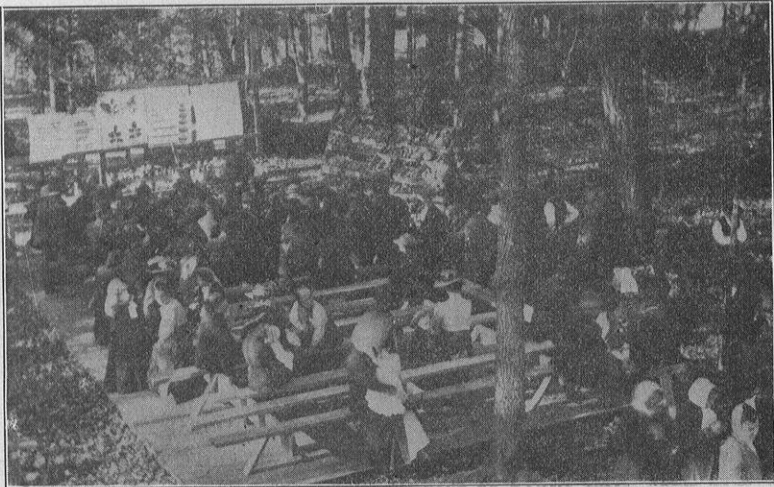


Figure 5.—A potato growers' meeting under the auspices of the station in a grove in a northern Wisconsin potato district. The growers gather at this picnic and hear illustrated lectures by the station experts and enter samples of their potatoes in an exhibition for small prizes.

auwega, Waupaca Co.; Spooner, Washburn Co.; and Conrath, Rusk Co. This work has been expanded beyond that of a mere demonstration of efficacy of Bordeaux mixture for potato blight by making the meetings a general potato institute. The discussions cover the matter of varieties and factors affecting potato culture in general. In connection with several of these meetings, exhibits by the growers have been made in competition for prizes of some of the improved varieties of seed grown by the Station. This feature has aroused considerable interest.

Propagating fields have been carried on at Conrath and Spooner for the propagation of the best varieties of tubers suitable for Wisconsin conditions. Attempts are being made to secure strains that are resistant to the attacks of the potato blight.

ORCHARD SPRAYING WORK.

The work this year on spraying of orchards was severely handicapped by the unfavorable weather conditions, as the freeze in April destroyed nearly all orchard fruits in most portions of the state. The demonstration work on application of Bordeaux mixture for codling moth and apple scab was made by Mr. Milward at Manitowoc, Oshkosh, Bayfield, Madeline Island and Sturgeon Bay.

PLANTING OF PUBLIC GROUNDS.

For several years the Horticultural Department has offered to make planting plans for two schools or other public grounds in each county. School grounds are so often left bare and unsightly, while at a very moderate expense, effective landscape gardening may be practiced. During the past year, plans and advice have been furnished the Berlin high school. Planting plans were furnished to the Royalton school of Waupaca, and, also a district school in Waukesha county. Requests have been filed from Sun Prairie, where the grounds surrounding the court house were available for this purpose.

TOBACCO SEED DISTRIBUTION.

The improved selections of Connecticut-Havana tobacco which were previously developed at this Station by the Horticultural Department have been disseminated for six or seven years by distributing small quantities of seed to tobacco growers. The results obtained in this seed distribution have so far been very gratifying. The quantity which has been sent out has increased year by year until it has now reached proportions which make it impossible for the Station to continue to furnish such supplies gratuitously. During the past season 1,322 growers living in 58 counties were furnished with 175 pounds of high grade seed, valued at \$1,400. The reports received from the growers, the tobacco buyers, and the awards made at the tobacco exhibits indicate very generally the superior merit, as to earliness, yield and quality, of leaf grown from this type over that of seed from other sources. Over 300 growers reported that it matured earlier than any other variety they had used. Two hundred and fifty-nine found it a better yielder and 442 out of 563 replies indicated that the quality of leaf was better.

This type has now been sent out for several years and is so thoroughly disseminated throughout all portions of the state

that the necessity for continuing the free distribution no longer obtains. As the funds which it is possible to devote to tobacco work are not large, and a number of other lines require attention, it will be necessary to discontinue the distribution of this seed, as was announced last year. It is expected, however, the new pedigreed varieties now being developed will be ready for distribution in two or three years.

NORTHERN SUBSTATIONS.

The special stations for experimental work, located at Ashland, Iron River, and Superior in the northern part of the state, have been continued this year, as in the past, in both experimental and demonstration work. The work this year has been extended so as to reach many portions of those regions that are not im-



Figure 6.—Demonstration meetings have proved very effective in northern Wisconsin in awakening the farmers interest in Station results. This shows an inspecting party of farmers at the Ashland Sub-Station viewing a crop of alfalfa.

mediately tributary to the stations proper. While the attitude of many of the farmers of this region at the outset was indifferent and in some cases antagonistic as to the value of these stations the trend of public sentiment has now been entirely changed, and the work of these substations is generally regarded as one of the most important factors in the development of these regions.

Much credit is due to the efforts of Professor E. J. Delwiche, superintendent, who has heretofore spent his entire time in carrying on the work in this section. The experience gained in conducting the trial work of the station proper has enabled the departments concerned in this work to give much more direct and definite advice to applicants for information. Professor Del-

wiche reports that co-operative tests with over 400 farmers have been in progress this last year in nearly every county north of the southern line of Marathon County, which approximately includes the northern half of the entire state. In these tests, particular attention has been given to the development of types of seed which are acclimated to these northern conditions. Efforts

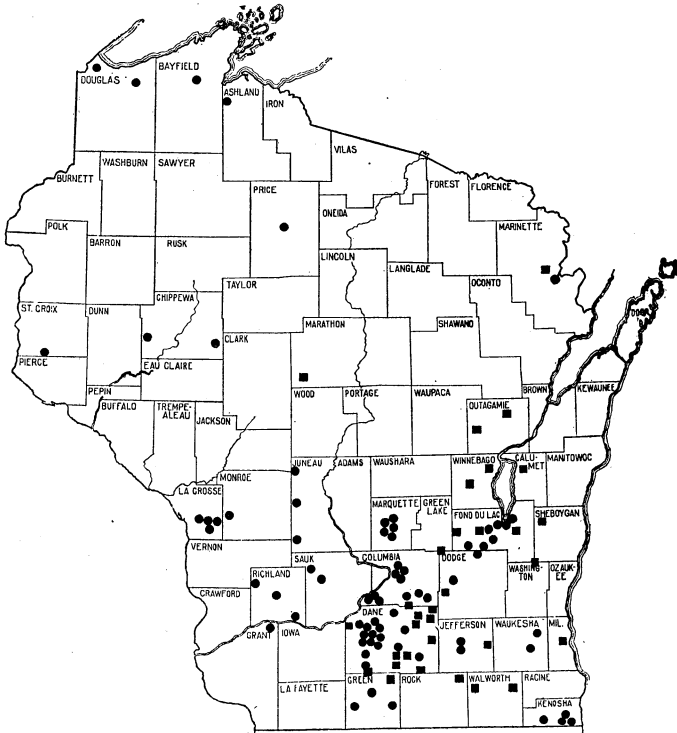


Figure 7.—Location of drainage projects organized or aided by the soils department. The squares represent drainage districts and the circles individual projects. The reclamation of 110,000 acres has been aided through this drainage service.

which have been in progress for several years on the development of a type of corn adapted to northern Wisconsin conditions have now resulted in the improvement of three types which are being grown with much success.

THE DRAINAGE SERVICE.

This last season the work in drainage has been continued along the same lines which have been previously developed, and there have been organized under the direction of Prof. E. R. Jones of the department of Soils, seven district organizations, representing 20,200 acres, in which preliminary surveys have

been made by this department, and plans prepared with estimates of cost of improvement. Of these seven proposed districts, four are progressing rapidly toward final organization.

Drainage plans, consisting mainly of tile systems, have also been prepared for 39 individual projects representing 3,380 acres.

The experts in this department have also had direct supervision of the work which the University is carrying on in reclaiming a large marsh area which is substantially at lake level on the University farm.

During the last five years in which the drainage service has been in operation, aid has been given by the department to the reclamation of 116,000 acres for which plans have been prepared and perfected. The improvement of 33,000 acres has already been performed, or is now in actual progress.

CO-OPERATIVE FERTILIZER TESTS.

In spite of the fact that Wisconsin through its wide development of the live stock industry has perhaps depleted the fertility of her soils less than almost any other state, yet the co-operative fertilizer tests carried on by the department of Soils have already indicated the necessity of careful attention being given to the matter of soil fertility. Nearly 200 co-operative tests were conducted last year on the special fertilizer requirements of the clay, marsh, and sand soils. Those on the clays have been chiefly on the use of untreated rock phosphate, supplementing manure, while those on marsh and sand soils have been with various forms of phosphate, and potash on marsh soils. In a number of instances, ground limestone has been used with these fertilizers on sandy soils.

It was not expected that the rock phosphate tests would show marked results the first year of their use, as it requires time for the gradual conversion of the insoluble phosphate into available plant food. The beneficial action of phosphates will doubtless become more manifest within the next year or two, and especially when the land is seeded to grain and clover following the tilled crops to which the phosphate has been applied. The serious drought of the early part of the summer retarded the growth of crops upon the lighter soils, so that results were not as satisfactory as had been hoped. Nevertheless, the work of this season shows clearly that there are extensive soil areas which

need special treatment in order to permit of the development of maximum crops. As illustrative of this may be mentioned the case of H. H. Hoard on whose farm west of Waupun, a treatment of rock phosphate and ground limestone, applied to a field sown to alfalfa, was followed by an excellent crop, while the untreated portion of the field was an entire failure. This type of soil condition has been found to exist to a greater or less extent throughout an area of nearly one hundred square miles in that section.

In the experiments on sandy soils the yield in several cases was increased from 25 to 50 per cent by the use of phosphate and potash fertilizers. Similar results were obtained in a number of cases on marsh soils where potash was added. In the case of one experiment carried on at Brookfield, approximately 60 bushels of shelled corn per acre were produced on the treated area, while no crop whatever matured on the untreated portion.

From the study of the acidity of soils, it is apparent that such conditions are frequently so marked as to interfere greatly with the growth of clover, making it therefore impossible for the soil to be enriched in nitrogen and humus. This condition has been found to be so common that this coming season special efforts will be made to secure the co-operation of farmers on the use of ground limestone to neutralize the acidity of the soil, and so make possible the production of larger crops of clover and other legumes, particularly upon sandy soils and clay loam soils that have been exhausted by continued cropping.

MANURE CONSERVATION.

The large losses of plant food which result from the exposure of barnyard manure to leaching by rains and improper control of fermentative changes are one of the greatest wastes of our present agricultural practices, and to demonstrate the necessity of greater care, the department of Agricultural Chemistry has this season instituted field tests in 15 different counties. Direct comparisons by means of crop yields of total produce, have been made from plots treated with; (a) fresh unleached manure; (b) leached manure; (c) untreated, or control, plots.

These tests have been made in the southern and eastern counties of the state where dairying and animal husbandry are most prominent. The season, in general, has been exceedingly unfavorable this year for all fertilizer experiments, but in

spite of this drawback, about half of the experiments showed marked positive gains in plant growth on plots treated with unleached manure, as compared with those receiving equivalent amounts of manure which had been previously exposed to the elements, and invariably a substantial gain was secured in manured plots, in comparison with control plots receiving no manure.

The increase in produce over the unleached plots when compared with the leached, amounted in many cases, to 500-600 pounds of hay per acre. In a number of instances, due largely to drought conditions, but little difference in yield was observed.

CLOVER HULLING DEMONSTRATIONS

In three counties in northern Wisconsin, Ashland, Bayfield and Douglas, the clover seed crop was hulled with a machine, purchased and owned by the Northern Sub-Station for the purpose of demonstrating the profitable yields of seed, which can be secured from clover in that region. Areas from one to nine acres in extent were hulled with yields per acre from one-fourth bushel to over four and one-half bushels. At the prevailing price of clover seed, this crop becomes one of considerable importance to Northern Wisconsin farmers.

EXHIBIT AT THE STATE FAIR.

During past years it has been the custom for several departments of the College and Station to make exhibits at the Wisconsin State Fair, these exhibits being placed in the respective departments of the fair. This fall arrangements were made with the State Fair authorities to secure the entire building known as the old Dairy Building for a collective exhibit representing all departments of the College. In this building, which provided 7,500 square feet of floor space and about 7,000 square feet of wall space, 16 departments were represented. Graphic material was used showing instructional, research and experimental work. The displays attracted much attention and it was carefully estimated that about 40,000 people visited the building and over 8,000 bulletins were distributed in compliance with requests. Hundreds of names were added to the mailing lists and the attention of many persons not heretofore reached was drawn to the kind of work being done by the College and Station.

THE WISCONSIN SYSTEM OF EXTENSION INSTRUCTION.

In addition to the demonstrative work of various types carried on during the growing period in the summer, by the different departments, an important phase is the collective lecture work, which is in progress during the winter season.

The most elementary type of this work is that of the *Farmers' Institutes*, which have now been in progress in this state for over 25 years. These institutes are held for two days and are maintained from a separate state fund under the direction of Superintendent McKerrow. They are conducted by practical farmers who are able to give the results of their practical experience to their fellow farmers.

The next step in the Wisconsin system of extension instruction is the *Farmers' Courses* which are under the direction of the Extension Secretary of the Agricultural College, Prof. K. L. Hatch. These consist in definite courses of lectures, demonstrations and practical work for a period of several days (3 to 10), which are participated in by a considerable number of members of the College staff (6 to 10 as a rule). Such courses are given at the University, at the county agricultural schools, and such other points as are deemed advisable. Holding these courses in connection with the county agricultural schools has been helpful in establishing a close relationship with these schools. The fact that their staff is on the ground to continue the work inaugurated by the course makes it possible to accomplish the largest results with the minimum expenditure of energy.

This last year another step toward definite concrete instruction to the masses was taken in the development of the *Farmers' School*, in which specific definite outlines of work are carried out by the farmers working in the improvised laboratory for six hours daily. Through these schools it is possible to secure a type of instruction in one or two lines that is sufficiently intensive to secure positive results in action.

This entire system of extension instruction is devised to meet the varying needs of all classes, and with the experience already at hand seems to be adapted to the needs of this state.

RESULTS FOR SEASON OF 1909-1910.

UNIVERSITY FARMERS' COURSE.—The ten-day Farmers' Course, held in February at the University, continues to grow in numbers and importance. The aggregate registered attendance at these meetings last winter was over 1,500, while at some of the special exercises over 2,500 people were present. Nearly 1,100 farmers from 59 different counties in the state left their regular work to come to the University for these meetings, while over 400 women from 32 counties were in attendance upon the Woman's Course.

The Special Dairy Course for Creamery and Cheese Factory Operators and Managers was attended by 35 persons. Last year for the first time a Young People's Course of one week was also given. This latter innovation included young boys from 14 to 17 years of age, who had won the educational prizes given by the county fair associations in their respective counties for the best exhibit of corn or other grain. This prize consists of



Figure 8.—The Young People's course, held for the first time February, 1910, was attended by 21 boys from 13 counties, most of whom had won scholarships in young people's grain contests. Through this course educational and inspirational benefit was received by each boy of far greater value than any cash premium. In 1911 this course attracted 40 boys from 20 counties.

the entire expenses of the student during a week's stay at Madison with transportation both ways. Last winter this Course drew 21 young boys from 13 counties in the state, and special instruction was given them in corn and grain judging by the Agronomy department. The interest of these young students in this work was noteworthy, and we feel that more extended efforts in this

direction will produce fruitful results in the way of enlisting the continued attention of these young people in agricultural pursuits.

FARMERS' COURSES THROUGHOUT THE STATE.—Continuing the policy which has been developed in recent years, courses simi-

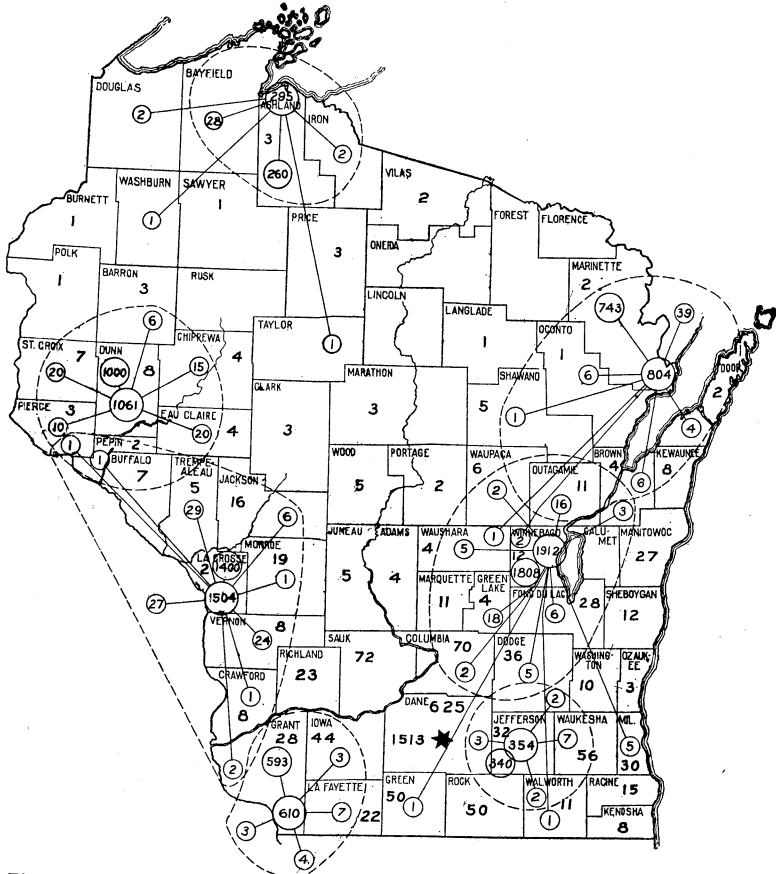


Figure 9.—Location and scope of attendance at the eight Farmers' Courses held in the state in winter 1909-10. The extension courses, enclosed within the dotted circles, had only local attendance, while the two weeks' course at Madison, drew from almost every county in the state.

lar to those given at the University have been presented in various portions of the state, mainly in conjunction with the county agricultural schools. In the appended table is given the aggregate attendance in connection with these general extension courses.

TABLE II.—ATTENDANCE AT FARMERS' COURSES.

Place.	Number registered.	Number of counties represented.
Jefferson, Jefferson county.....	354	5
Marinette, Marinette county.....	804	8
Menomonie, Dunn county.....	1,071	6
Onalaska, La Crosse county.....	1,504	9
Winneconne, Winnebago county.....	1,912	12
Platteville, Grant county.....	610	3
Ashland, Ashland county.....	295	6
Madison, Dane county.....		
Farmers' course (10 days).....	1,104	60
Woman's course (7 days).....	409	.....
Special dairy course.....	36	.....
Young people's course.....	21	.....
Total	8,120	

The growth in attendance on these courses has been very gratifying indeed. In every case where the course has been repeated, increased attendance has resulted. In all, over 8,000 people registered for this work.

FARMERS' SCHOOLS.—Last winter an educational experiment was attempted by holding at Onalaska in connection with the La Crosse County School of Agriculture a special one-week school of actual class room and laboratory instruction for mature farmers. The attendance upon this course was had only by previous registration, and the farmers who gathered here worked in the laboratory from 9 a. m. until 4 p. m., with a noon intermission. The work consisted of two definite branches—(1) field crops, particularly corn, and (2), animal husbandry.

The farmer student here learned how to make the Babcock test, and received instructions on how to test animals for bovine tuberculosis, as well as specific definite instruction in stock judging. Regular class room work was also carried on in corn and grain judging, testing seed, and such practical operations as the farmer could immediately and readily put into practice in his own operations. While this school was held at a somewhat unfavorable period of the year (early in March) the attendance of 43 farmers was satisfactory, and the results of this definite class room instruction were exceedingly gratifying.

It is worthy of note that at the Inter-State Fair at La Crosse this fall, Principal Johnson of the County School reports that nearly all of the prize winners on grain exhibits were among

those who had taken this course the preceding winter. These special schools of instruction are designed to clinch and emphasize in a more concrete manner the results of institute and extension lectures, and thus advance the work of agricultural extension along definite lines.

FARMERS' INSTITUTES.—The results of the work of Farmers' Institutes of the last year are incorporated in Farmers' Institute Bulletin No. 24, of which 50,000 copies are printed and distributed under the direction of Superintendent George McKerrow. Last winter six corps of workers of the regular staff, two corps of cooking demonstrators, and 23 special lecturers, making a total of 39 persons, held during the winter season 133 institutes, and 41 cooking schools in 62 counties.

INSPECTION AND CONTROL WORK.

NURSERY INSPECTION

This control work has been in charge of A. J. Rogers of the department of Horticulture for 1909-10. The passage of the new law (Chapter 468, Laws of 1909) has materially increased the amount of work of this character. Some 139 nurseries have been inspected and 44 nurseries outside of the state have been granted licenses. Mr. Rogers reports the status of affairs relative to injurious insects and asserts that the San Jose scale is now to be considered as one of the dangerous pests of the state.

The hitherto prevalent view has been that this scale could not live over the severe winters which obtain in Wisconsin away from the lake shore, but the pest has now been found in nurseries and parks in a number of places throughout the state. The oyster shell bark louse and the European fruit scale are gradually becoming established in a number of regions. It is apparent that orchardists and nurserymen are not sufficiently informed in general as to these pests to keep them from gaining a foothold in the nursery stock which is imported into the state. With the organization of a department of Economic Entomology, the work of the nursery and orchard inspection was transferred July 1, 1910, to that department and will hereafter be under the direction of Prof. J. G. Sanders.

FEEDING STUFFS AND FERTILIZER CONTROL.

The enforcement of the law controlling feeding stuffs and fertilizers was placed by the last legislature in the hands of the Station, this legal supervision materially increasing the work of this division which has been under the direction of Professor Woll. Two hundred and twenty-nine feed licenses and 34 fertilizer licenses have been issued during the year. The analytical laboratory has, however, been able to collect and analyze a larger number of samples than ever before, the number being approximately 700.

The benefit of this control work is now so generally recognized that the farmers are coming to rely more and more on the Station for protection in the matter of feeding stuffs. The use of commercial fertilizers is slowly increasing but the aggregate sales at present are only a very small per cent of what they are in the eastern and southern states where questions of soil depletion are much more imminent.

SEED INSPECTION.

Weeds, noxious and otherwise, are a rapidly growing menace to profitable farming operations in Wisconsin. Many sections of the State are so badly infested as to diminish greatly the possible profit on the farms. From data secured directly from owners, conditions not at all reassuring have been found. In eight counties in the northeastern part of the state 27 per cent of the land was found to be infected seriously with noxious weeds. Quack grass, Canada thistles and wild mustard are most abundant and have been introduced largely from importations of agricultural seeds.

The legislature of 1909 passed a seed inspection law placing the control of this question under the Experiment Station. During the year 1909-1910, 1813 official seed tests were made, 1386 of which were for dealers and the remainder for farmers. Thirty-six samples or 2.2 per cent were condemned as containing noxious weeds. Much interest has been shown by the farmers as well as the dealers in this matter of seed improvement.

STALLION LICENSING.

A noticeable improvement is gradually being made in the character of the horses of the state, made possible by the plan of stallion licensing, instituted by the law of 1906. Under this

law each animal is given a certificate stating its exact breeding and showing that its soundness has been guaranteed by affidavit of owner or a legally qualified veterinarian. With the inauguration of this work there has been a material decrease in the number of grade and scrub stallions that are licensed. Since this law became effective, 1226 grade stallions have been retired from service and 88 animals refused licenses or their licenses revoked on account of unsoundness. During this same time 647 purebred stallions have also been retired, 231 have been shipped out of the state, 126 died, and the balance retired for sundry reasons, including 27 cancellations for unsoundness.

In 1907, after the operation of the law for one year, 35 per cent of stallions were classed as purebred to 65 per cent grades. At the close of this year, the ration is 44.5 per cent purebred and 55.5 grade and scrub. Some 346 stallions, originally licensed as grades, have now been given the new "Mongrel or scrub" certificate, which was prescribed in the amended law of last year, for stallions neither of whose parents were purebred. It is expected that with a wider knowledge of the breeding of these animals, many of these will soon be retired from service. In 40 counties of the state there has been a material decrease in the ranks of grade and scrub sires, while in 34 counties purebred animals have increased. At the present time practically all of the county fairs receiving bounties from the State Treasury have ceased to encourage the exhibition of grade and scrub stallions by excluding these from their classes and premiums, a material change in public sentiment from that of three years ago, when such classes were provided at 39 county fairs.

Professor Alexander, who has charge of this service, reports that numerous prosecutions for violations of the law have been instituted by the district attorneys of a number of counties and that everywhere much greater interest has been taken in the matter of horse breeding. A number of extension lectures have been held by Professor Alexander in various portions of the state. It is gratifying to note that this educational work is spreading to many other states and in all, 14 other states have laws that are concerned with the enforcement of legislation on this question. A National Association of Stallion Registration Boards has been organized for the unification of this work and inter-state co-operation.

The following financial statement gives the receipts and disbursements of this work for this fiscal year as required by law.

RECEIPTS—

Balance from year 1908-1909.....	\$153.28
Fees for new licenses	1,463.99
Fees for renewals	1,174.00
Fees for duplicates	38.60
Fees for transfers	196.00

DISBURSEMENTS—

Professor's salary	\$700.00
Clerk's salary	838.45
Additional clerk hire.....	48.70
Printing and advertising.....	95.64
Stationery	18.41
Sundry supplies	7.75
Messages	1.45
Freight and express.....	1.00
Traveling expenses	117.69
Scientific assistance	13.00
Postage	284.02
Balance	898.71

\$3,024.82 \$3,024.82

ADMINISTRATION.

The close correlation of the research and teaching work at this College makes it impossible to differentiate completely the services of those engaged in Station activities from the instructional work, but at the close of this fiscal year the entire staff of the College consists of 69 persons, 13 of whom are of professorial rank, 18 associate and assistant professors, 14 instructors and 24 assistants. A considerable number of this staff are fully engaged in Station work, while others, primarily concerned with research work, are assigned to certain classes.

IMPROVEMENTS AND ADDITIONS TO RESOURCES.

This last year has seen continued activity in the matter of increasing the resources of the College, in order more fully to take care of the growing need of all phases of College work. The following buildings have been erected and practically completed during this fiscal period.

DAIRY LABORATORY.—The work of the department of Dairy-ing has outgrown the facilities afforded in Hiram Smith Hall, and during this last year additional facilities have been added to this department through the construction of a two-story and basement building, 46x84 feet, which has been placed immediately in the rear of the main dairy building. This structure will be used for additional laboratory space.

POULTRY PLANT.—The newly organized department of Poultry Husbandry began the year without any equipment whatever, and during this period a modest but efficiently equipped plant has been constructed. This consists of a two-story and

basement general utility house 36x56 feet, which will be used for the offices of the department, lecture rooms, storage rooms for feed and supplies, while the basement is equipped with 20 incubators for general purposes. Twelve movable colony houses and three permanent laying houses, 12x24 feet, were constructed last summer while this summer there is now under construction one large laying house, 12x100 feet, which will give sufficient space for the accommodation of this line of work.

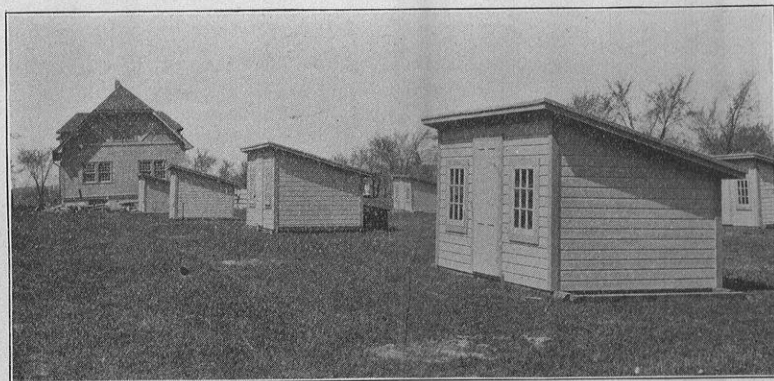


Figure 10.—The new Poultry Department equipment includes a general utility building, breeding pens, portable colony houses and a laying house of modern design and construction.

CONNECTION OF AGRICULTURAL BUILDINGS TO CENTRAL HEATING STATION.—During this last year the main connecting tunnel has been finished, which has permitted the transfer of the heating system for the Agricultural College buildings from the old heating plant to the new central heating station. The discontinuance of the College heating plant will permit of the conversion of these quarters into increased facilities for the Dairy department. It is proposed to enlarge the machine laboratory and also install in the underground cellars, facilities for the curing of cheese, which enlargements will still further add materially to the resources of the department of Dairying.

THE NEW STOCK PAVILION, which was erected during the preceding year, has been more completely equipped during this fiscal year. Quarters for the newly organized departments of Experimental Breeding and Veterinary Science have been assigned in this building, and laboratory facilities for these departments are in process of construction. Gymnasium facilities have been provided in the attic of this building for the Short Course and Dairy students.

REMODELING THE INTERIOR OF THE SOILS BUILDING.—The rapid development of the work in Soils and Horticulture has necessitated the formulation of a new policy with reference to these departments; and it has been decided to construct entirely new quarters for the Horticultural department and turn over the present Soils-Horticulture building entirely to the uses of

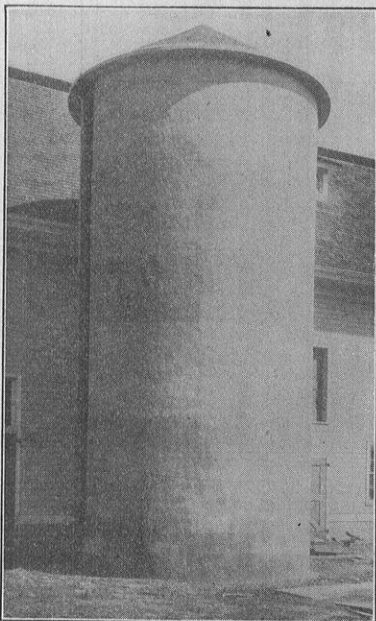


Figure 11.—This concrete silo, erected this year on the University Hill Farm, was made with a new type of mold devised by the Agricultural Engineering Department. It is 14 feet in diameter, 35 feet high, with six inch solid reinforced walls. The roof is of concrete four inches thick. It required 50 barrels of cement, 28 yards of crushed stone and 16 yards of sand. Reinforcement cost \$25, doors \$4.60. The material cost \$129, rent of staging \$5, labor \$159, total \$293. It holds 100 tons of silage.

the Soils department. In accordance with this plan, an extensive remodelling of the interior of this building has been carried on during this last year to fit this building for the permanent needs of the Soils department. In addition to the large laboratory for students' needs, a laboratory for the research work of the department, as well as quarters for the State Soil Survey, have been constructed. During the interim in which the construction of new quarters for the department of Horticulture is in progress, the research work of this department will be seriously handicapped but it is hoped that the new buildings for Horticulture will be completed by the fall of 1911.

GREEN HOUSES AND POTTING HOUSE.—In order not to delay unduly the experi-

mental and teaching work during the construction of the Horticultural building, there has been built during this year four greenhouses 20x90 feet, which are connected with a one story and basement brick structure, 30x60 feet, to be used for potting and general utility work. In addition to this, there has been erected for the purposes of the department of Plant Pathology, a small pathological laboratory, 20x30, immediately adjacent to

the section of the greenhouses which will be assigned to this department, for growing pathological material under glass. This entire equipment, aggregating over \$16,000, has been furnished from the surplus funds which have been accumulated from maintenance during the last biennium.

MISCELLANEOUS FARM BUILDINGS.—The general appearance of the farm buildings at the University farm, and also the Hill Farm, has been materially improved in this period. There has been constructed at the University Farm a two-story litter shed, 40x60 feet, sufficiently large to protect 300 tons of manure, the upper story of which will be utilized for the storage of coarse fodder, that can be fed directly to stock below.

A wagon shed, 30x90 feet, for the housing of wagons and heavy wheeled implements, has been constructed in close proximity to the Stock Pavilion, in which all horses of the University are stabled. Additional out buildings for the housing of machinery have also been built at both the University and the Hill farms.

ESTABLISHMENT OF PERMANENT BRANCH EXPERIMENT STATION.

—The legislature of 1909 passed an act permitting the establishment of two permanent branch experiment stations to aid in the further development of agriculture throughout the state. In accordance with the terms of this act, one of these stations has been established upon the extremely light sandy soils characteristic of the jack pine lands in northern Wisconsin, of which there are over two million acres. Eighty acres of land immediately adjacent to the city of Spooner, Washburn county, have been deeded to the Regents of the University, and the preliminary work connected with the establishment of this permanent station undertaken.

An attempt will be made on this type of soil to see if lands of this character cannot be handled in such a way as to render



Figure 12.—Main building at the Branch Station at Spooner. The first building at this new station.

them more productive than now obtains where present methods of farming largely result in a quick depletion of the low initial fertility of these soils. In order that the experience as to modes of handling these very light soils might be further utilized, a demonstration sub-station has also been started at Ellis Junction in Marinette county.

RECLAMATION OF MARSH LANDS ON UNIVERSITY FARM.—For many years the University has owned a tract of marsh land embraced in the University farm, which could not well be improved alone. Last year additional lands were purchased which gave the University entire control of the large marsh lying immediately west of its former holdings. Steps have been taken this year to reclaim these two areas which, if successful, will add greatly to the land resources of the College. Fortunately the well constructed drive of the Madison Park and Pleasure Drive Association passes through these marsh lands, skirting the lake shore, thus giving a permanent dike for the basis of this reclamation work.

Comprehensive drainage plans have been prepared by the Soils department and the immediate supervision of this work placed under the direction of Prof. E. R. Jones. Road ways, suitable for dikes, as well as road purposes, have been constructed, also diversion ditches as well, to keep as much as possible of the surface flow from the surrounding hills from entering the marsh. During this season 27,000 feet of tile have been laid, and 926 of open ditch constructed. It is expected to use windmill power for the lifting of the dry weather flow from the drains over the dikes, this to be supplemented by gasoline power for heavy rains and spring floods. The reclamation of this marsh tract will be highly advantageous, as a demonstration of what it is possible to do with the hundreds of thousands of acres of swamp lands found in the southern portion of the state. It will also add very materially to the land resources of the University farm, which have recently been greatly reduced through the necessity of using tracts for building and other University purposes.

ORGANIZATION OF NEW DEPARTMENTS AND CHANGES IN STATION STAFF.

PLANT PATHOLOGY.—While the appointment of Prof. L. R. Jones as Professor of Plant Pathology was made during the previous year, Professor Jones was unable to assume the duties of organizing the new department of Plant Pathology until the second semester of the last academic year. Pending the erection of the Pathological laboratory and the completion of the greenhouses, it will be impossible for Professor Jones to undertake more than the organization of the research work beyond the preliminary stages. At the present time the work of this department is temporarily housed in Agricultural Hall, but it is expected that suitable laboratory facilities will be completed by spring.

ECONOMIC ENTOMOLOGY.—The new department of Economic Entomology under the direction of Prof. J. G. Sanders, has temporarily been housed in the Agricultural Hall, but upon the completion of the new building for the department of Dairying, this department was assigned more permanent quarters in this building, pending the removal of the Horticultural department to its new structure.

HORTICULTURE.—The position made vacant as head of the Horticultural department, through the resignation of Prof. E. P. Sandsten, has been filled this last year by the promotion of Associate Prof. J. G. Moore, who has been placed in charge of the organization of this work.

EXPERIMENTAL BREEDING.—The rapid development in recent years along the lines of experimental breeding has led to the organization of a department of this character, which has been placed in charge of Associate Professor Leon J. Cole, previously connected with the Zoological department of Yale University. The study of the more fundamental problems associated with inheritance, as applied more particularly to domestic animals, will be especially emphasized.

DAIRYING.—The staff of the Dairy department was increased in July 1909 by the appointment of Assistant Professor Carl E. Lee formerly connected with the University of Illinois.

ACKNOWLEDGMENTS.

The following donations and loans have been received by the Agricultural Experiment Station during the year.

LOANS.

- Creamery Package Mfg. Co., Chicago, Ill.—No. 1 Farrington pasteurizer, Wisconsin curd test, Farrington moisture oven, No. 1 20th century milk heater, No. 2 20th century milk heater, 24 bottle tester, Victor skimmilk pasteurizer and oil trap, Farrington Moisture test, casein tester, No. 22, Wisconsin curd test, 6 bottles, Ideal skimmilk weigher, Twentieth Century hand tester, 8 bottle noiseless Wizard hand tester, 12 bottle hand tester, trunnion starter can, 200 gal. Farrington cream ripener, 1 Disbrow churn, size A 2, 16 gal. Boyd cream ripener, Farrington pasteurizer with retarder, Ames moisture test, 50 gal. starter can, trunnion style, 300 gal. Wizard agitator, 24 bottle turbine tester, 1994, Wizard turbine 24 bottle tester, No. 1436, Wizard tester turbine, 24 bottle, Wizard tester, No. 3743, 24 bottle turbine tester, No. 192.
- A. H. Barber Supply Co., Chicago Ill.—10 bottle Facile hand tester, 24 bottle turbine Facile, 300 gal. cream ripener, 36 bottle turbine tester, No. 2. B. & W. heater, Simplex churn, No. 6, B. & W. milk pump and weigher, 200 gal. Simplex ripener, Simplex hand separator.
- D. H. Burrell & Co., Little Falls, N. Y.—No. 4 power separator, 400L, 24 bottle hand Facile tester, 24 bottle turbine Facile tester, No. 402.
- De Laval Separator Co., Chicago, Ill.—Bowl for investigation purposes, Alpha Acme turbine separator, sectional De Laval machine, No. 17 hand separator, No. 987779, hand separator, No. 934551, No. 15 hand separator, No. 967278.
- Smith Mfg. Co., Chicago, Ill.—Great Western, No. 7, cream separator.
- The A. H. Reid Supply Co., Philadelphia, Pa.—1000 pound Reid pasteurizer.
- The International Harvester Co., Madison, Wis.—4 H. P. gas engine No. 5924, hand separator, Dairy Maid, hand separator, Blue Bell, 3 bb. 6079.
- Sharples Separator Co., Chicago, Ill.—No. 32 power separator, No. 964304, No. 3 hand separator, No. 9875 18 A, No. 4 hand separator No. 995100 A.
- Jensen Mfg. Co., Eureka, Calif.—Jensen moistener apparatus.
- J. Cherry Co., Cedar Rapids, Iowa.—One Edwards Mother Culture can, AmasParafine moisture test.
- National Wrapping Machine Co., Los Angeles, Calif.—Butter wrapping machine.
- Albrecht Mfg. Co., Kewaunee, Wis.—Skimmilk and whey check pump.
- King & Walker, Madison, Wis.—High pressure oven.
- Exhaust Steam Purifier Co., Berlin, Wis.—One steam purifier with tank.
- Perfection Churn Co., Owatonna, Minn.—Perfection churn, size 3.
- McKennon & Co., Sheboygan Falls, Wis.—Combination cheese press.
- E. Mandel, Colby, Wis.—Curd agitator.
- Marshfield Churn Co., Marshfield, Wis.—Hand churn.
- Montgomery Ward & Co., Chicago, Ill.—Hand separator, Golden Cream harvester
- National Separator Co., Goshen, Ind.—National separator, No. 12.
- Industrial Construction Co., Chicago, Ill.—Bottle filler.
- Empire Separator Co., Bloomfield, N. J.—Hand separator, No. 113020, No. 2 B, No. 34 hand separator, No. 326524, disc type, No. 2 hand separator, No. 113533.
- Marschall Dairy Laboratory, Madison, Wis.—Marschall acid test, moisture test, thermometer and 2 Al. cups, donated.
- Vermont Farm Machine Co., Bellows Falls, Vt.—12 bottle hand tester, "Agos," Agos tester, 24 bottle, turbine, No. 2½ U. S. separator with intermediate bowl and frame, 24 bottle turbine Agos tester, 24 bottle Agos tester, 9 bottle size, No. 15 hand separator, U. S. hand separator No. 16, No. 326273, U. S. hand separator No. 14, No. 325675.
- Currie Hardware Co., Mason City, Iowa.—Eclipse moisture test.
- Fuller & Johnson Co., Madison, Wis.—Pump engine, No. 23251, Ca. C12 coolen gasoline engine, No. 4086.
- Jensen Mfg. Co., Topeka, Kan.—Jensen pasteurizer, No. 912, size 4.

- Gehl Mfg. Co., Milwaukee, Wis.—Butter printer.
- The Brillion Iron Works, Brillion, Wis.—Junker curd mill.
- McCullough Mfg. Co., Minneapolis, Minn.—One force feed lubricator.
- Sears, Roebuck & Co., Chicago, Ill.—Hand separator, No. 674416.
- Alamo Mfg. Co., Hillsdale Mich.—18 H. P. gasoline engine.
- Aspinwall Mfg. Co., Jackson, Mich.—Potato planter and cutter.
- American Plow Co., Madison, Wis.—Sulky plow, gang plow, walking plow, pulverizing attachment, disc harrow.
- Bateman Mfg. Co., Grenlock, N. J.—Potato planter, potato digger.
- Badger Mfg. Co., Deerfield, Wis.—Harrow.
- Baker Mfg. Co., Evansville, Wis.—4 H. P. gasoline engine.
- Blizzard Mfg. Co., Canton, Ohio.—Ensilage cutter.
- J. I. Case Plow Co., Racine, Wis.—Corn planter, 16 inch walking plow, sulky plow, cultivator, tandem disc harrow, 45 H. P. traction engine.
- Champion Potato Machinery Co., Hammond, Ind.—Potato planter, potato cultivator.
- Deere & Co., Moline, Ill.—Stag gang plow, new Deere sulky, new Deere gang, single row cultivator, two row cultivator.
- Deere & Mansur, Moline, Ill.—Corn planter with exhibition stand.
- Emerson-Brantingham Co., Rockford, Ill.—Gang plow, corn planter, mower.
- Fuller & Johnson Mfg. Co., Madison, Wis.—7 H. P. gasoline engine, 1 H. P. pumping engine, corn planter, gang plow, walking plow, 14-tooth cultivator and harrow, disc harrow, Bemis transplanter.
- Fairbanks, Morse & Co., Chicago, Ill.—1 H. P. gasoline engine, 3 H. P. gasoline engine.
- Fort Wayne Mfg. Co., Madison, Wis.—10 K. W. generator, 5 H. P. motor, 10 K. W. convertible controller, mounted on truck.
- Gilson Mfg. Co., Fort Washington, Wis.—1 H. P. gasoline engine.
- Harvey Mfg. Co., Racine, Wis.—Set wagon springs.
- Hunt, Helen, Ferris & Co., Harvard, Ill.—Star cow stanchion.
- Independent Harvester Co., Plano, Ill.—Manure spreader.
- International Harvester Co., Chicago, Ill.—20 H. P. gasoline traction engine, 3 H. P. gasoline engine, wagon, manure spreader, Deering binder, McCormick binder, Champion binder, corn binder, Deering mower, McCormick mower, four binder attachments with exhibition stands.
- Janesville Machinery Co., Janesville, Wis.—Corn planter.
- Johnson & Field Co., Racine, Wis.—Farm grain cleaning mill.
- Johnson Harvester Co., Batavia, N. Y.—Grain binder.
- Cramer Mfg. Co., Paxton, Ill.—Pulverizing attachment.
- Louden Machinery Co., Fairfield, Iowa.—Cow stanchion, litter carrier, 3 hay carriers.
- Lauson Mfg. Co., New Holstein, Wis.—2 H. P. gasoline engine, 4 H. P. gasoline engine, 6 H. P. gasoline engine.
- Moline Pump Co., Moline, Ill.—Two 3 H. P. Eli engines.
- Manson-Campbell Co., Detroit, Mich.—Grain cleaning mill.
- Milwaukee Steel Post Co., Milwaukee, Wis.—Six fence posts.
- Meyers Pump Co., Ashland, Ohio.—Four pumps, 2 pump cylinders, hay sling, 2 hay carriers, spray pump.
- McDonald & Morrison, Dubuque, Iowa.—Six pumps, pneumatic pressure system, stock pump.
- Newton Mfg. Co., Batavia, Ill.—Cow tie.
- Parlin & Orendorff Co., Canton, Ill.—Gang plow, corn planter.
- Prescott Mfg. Co., Rochester, N. Y.—Cow tie.
- Rowell Mfg. Co., Beaver Dam, Wis.—Grain drill.
- Robertson Co., Forestville, Conn.—Four cow stanchions.
- Racine Sattley Co., Racine, Wis.—Corn planter.
- Reliance Iron and Engine Co., Racine, Wis.—Portable 4 H. P. gasoline engine.
- Sechler Carriage Co., Moline, Ill.—Corn planter.
- Smith Mfg. Co., Chicago, Ill.—Manure spreader, 3 H. P. gasoline engine.
- Sherman & Williams Mfg. Co., Independence, Iowa.—Two H. P. engine.
- Spalding Tilling Machine Co., Cleveland, Ohio.—Disc gang plow.
- Van Brunt Mfg. Co., Horicon, Wis.—Grain drill, cultivator.
- Wiard Plow Co., Batavia, N. Y.—Bean harvester.

Vacuum Insulating Co., Chicago, Ill.—Vac Jac No. 1 cooker.

Fox & Gahleger, Oregon, Wis.—Three Shorthorn heifers for demonstration purposes.
Herr Bros. & Reynolds, Lodi, Wis.—One Shorthorn bull and one cow for demonstration purposes.

Fred Stubley, Black Earth, Wis.—A Jersey bull for breeding purposes.

The Pabst Stock Farm, Oconomowoc, Wis.—Five Percheron stallions, one Percheron mare and one Hackney stallion for demonstration purposes.

W. L. Houser, Mondovi, Wis.—One Clydesdale stallion and two Clydesdale fillies for demonstration purposes.

John Whalen, Madison, Wis.—One Percheron stallion for demonstration purposes.

Arthur Broughton, Albany, Wis.—One Clydesdale stallion and four Clydesdale foals for demonstration purposes.

DONATIONS.

Hansen, Erlson and many others.—Samples of starters.

Marschall Dairy Laboratory, Madison, Wis.—Moisture test.

French Coach Horse Society of America, Volume II, French Coach Horse Stud Book.

Suffolk Horse Society, Volume XVII, Suffolk Stud Book.

American Clydesdale Association, Volume XIV, American Clydesdale Stud Book.

American Saddle Horse Register, Volumes I, II and III, American Saddle-Horse Breeders' Association.

American Coal Products Co., New York.—400 pounds of ammonium sulphate.

Nitrate of Soda Propaganda, New York.—400 pounds of nitrate of soda.

German Kali Co.—Two tons high-grade muriate of potash.

Earp-Thomas Farmo-Germ Co., Bloomfield, N. J.—Two packages of Farmo-Germ.

Prof. Frank Smith, University of Illinois.—Yellow field mouse.

G. C. Gebhardt, Millston, Wis.—Fifty pounds mammoth cranberry vines.

Albrecht & Bill, Madison, Wis.—Adjustable farm gate.

Pressure Cooker Co.—Pressure cooker.

James LeFevre.—Oliver sanitary cleaner.

Wm. Crane & Co.—Vulcan iron heater, Vulcan toaster.

Enterprise Enamel Co.—Corone pudding pan and roaster.

Victor Brab & Co.—Yale fruit press.

Washburn-Crosby Co.—Educational exhibits.

Walter Baker & Co.—Educational exhibits.

Samples of foods from various firms.

F. E. Loope, Eureka, Wis.—Fruit for class work.

A. C. Greaves, Sturgeon Bay, Wis.—Fruit for class work.

A. Dvorak, Kewaunee, Wis.—Fruit for class work.

Massachusetts Agricultural College, Amherst, Mass.—Fruit for class work.

Henry Melcher, Oconomowoc, Wis.—Fruit for class work.

D. W. Larkin, Sturgeon Bay, Wis.—Fruit for class work.

Stark Bros. Nursery Co., Louisiana, Mo.—Fruit trees.

W. J. Harrison, Baraboo, Wis.—Strawberry plants.

W. J. Moyle, Union Grove, Wis.—Strawberry plants.

William Fox, Baraboo, Wis.—Plants.

Manhattan Oil Co., New York.—Insecticides.

Chester Co. Chemical Co., West Chester, Pa.—Insecticides.

A. B. Ansbacher & Co., New York.—Insecticides.

Aphine Mfg. Co., Madison, N. J.—Insecticides.

Grasselli Chemical Co., Cleveland, O.—Insecticides.

B. G. Pratt Co., New York.—Insecticides.

Sherwin-Williams Co., Chicago.—Insecticides.

Kentucky Tobacco Product Co., Louisville, Ky.—Insecticides.

Empire Rubber Co., Chicago.—Spray hose.

Deming Co., Salem, O.—Spray nozzles.

F. E. Myers & Bro., Ashland, O.—Spray nozzles.

Brandt Mfg. Co., Chicago City, Minn.—Knapsack pump.

Rhodes Mfg. Co., Grand Rapids, Mich.—Pruning shears.

W. H. Gray, Eddyville, Iowa.—Pruning shears.

J. T. Henry Co., Hamden, Conn.—Pruning shears.

- Wells-Higman Co., St. Joseph, Mich.—Fruit packages.
 Bacon & Co., Appleton, N. Y.—Fruit packages.
 Hood River Box Co., Hood River, Ore.—Fruit packages.
 Ideal Orchard Heater Co., Grand Junction, Colo.—Orchard heater.
 National Orchard Heater Co., Grand Junction, Colo.—Orchard heater.
 Haswell Perfect Heater Co., Canyon City, Colo.—Orchard heater.
 Hamilton Reservoir Co., Grand Junction, Colo.—Orchard heater.
 German Kali Works, Chicago.—Fertilizers.
 R. W. — R. D. Hendry.—Potatoes.
 L. H. Jones, Los Angeles, Cal.—Raspberry plants.
 Renk Bros., Sun Prairie, Wis.—One Shropshire lamb.
 Mrs. Lottie Boyce Shell, Jim Falls, Wis.—One Cheviot lamb.
 The Knollin Sheep Commission Co., Chicago.—Two Oxford-Rambouillet wethers.
 The Armstrong Cork Co., Pittsburg Pa.—1,200 cork brick and 375 pounds of asphalt
 T. B. Hord Alfalfa Meal Co., Central City, Neb.—One-half ton of alfalfa meal.
 E. G. Boynton, La Crosse, Wis.—One iceless cooler.
 Northwestern Mfg. & Plating Co., Oshkosh, Wis.—A device for holding tail of cow
 while milking.
 American Aberdeen-Angus Breeders' Association, Charles Gray, Secretary, Chicago, Ill.
 Herd Book Vol. 18.
 American Berkshire Breeders' Association, Frank S. Springer, Secretary, Springfield,
 Ill.—Record. Vol. 81.
 American Cyldesdale Association, R. B. Ogilvie, Secretary, Chicago, Ill.—Stud Book.
 Vol. 13 and 14.
 American Hereford Breeders' Association, C. R. Thomas, Secretary, Columbia, Mo.—
 Record. Vol. 33.
 American Poland China Record Association, W. M. McFadden, Secretary, Chicago, Ill.
 —Record. Vol. 54.
 American Shorthorn Breeders' Association, John W. Groves, Secretary, Chicago, Ill.—
 Herd Book. Vols. 72 and 73.
 Atlas Portland Cement Company, New York City.—Two pamphlets.
 A. L. Barber Asphalt Company, New York City.—One pamphlet.
 Herbert N. Casson, Chicago, Ill.—Copy of Casson—Cyrus Hall McCormick, His Life
 and Work.
 John Clay, Chicago, Ill.—Copy of John Clay, a Scottish Farmer, written by his eldest
 son.
 Kgl. danske Landhusholdningsselskab, Copenhagen, Denmark.—Copy of Christensen-
 Laerebog i Planteavl.
 Devon Cattle Breeders' Society, John Ridson, Jr., Secretary, Somerset, England.—
 Davy's Devon Herd Book. Vol. 32.
 Devon Longwooled Sheep Breeders' Society, John Ridson, Secretary, Somerset, Eng-
 land.—Flock Book. Vol. 5.
 Hampshire Down Breeders' Association of America, C. A. Tyler, Secretary, Cold-
 water, Mich.—Flock Record. Vol. 10.
 Prof. E. G. Hastings, Madison, Wis.—Copy of Russell & Hastings' Experimental
 Dairy Bacteriology, copy of Russell & Hastings' Agricultural Bacteriology.
 Holstein-Friesian Association of America, F. L. Houghton, Secretary, Brattleboro, Vt.
 —Herd Book. Vol. 27.
 Holstein-Friesian Association of America, M. H. Gardner, Superintendent, Delavan,
 Wis.—Advanced Register. Vols. 18, 19 and 20.
 A. C. McClurg & Co., Chicago, Ill.—One pamphlet.
 Josiah Main, Champaign, Ill.—One pamphlet.
 National Delaine Merino Sheep Breeders' Association, J. B. Johnson, Secretary, Can-
 nonsburg, Pa.—Register. Vol. 8.
 Oxford Down Sheep Breeders' Association, Howard Sammons, Secretary, Oxford,
 England.—Flock Book. Vol. 21.
 Suffolk Horse Society, Fred Smith, Secretary, Woodbridge, Suffolk, England.—Stud
 Book. Vol. 17.
 Wensleydale Long-wool Sheep Breeders' Association, R. B. Hodgson, Secretary, Ley-
 burn, England.—Flock Book. Vols. 20 and 21.
 Wisconsin State Historical Society, Madison, Wis.—One book, ten pamphlets
 F. W. Woll, Madison, Wis.—Twenty pamphlets.

EXCHANGES.

The following papers come to the station in exchange for its reports and bulletins. While used by those connected with the Station to learn the expression of agricultural experience and sentiment, they are placed in the library where they can be read and referred to by our agricultural students, and others of the University, as well as visitors.

FOREIGN EXCHANGES.

- A Lavoura, Rio de Janeiro, Brazil.
 L'Agricoltura Alessandrina, Alessandria, Italy.
 L' Agricoltura Moderna, Milan, Italy.
 Agricultural Bulletin, Straits Settlement, Singapore, East Indies.
 Agricultural Gazette of New South Wales, Sidney, Australia.
 Agricultural Journal of the Cape of Good Hope, Cape Town, South Africa.
 Agricultural Journal of India, Calcutta.
 Agricultural News, Bridgetown, Barbadoes, West Indies.
 Boletim de Agricultura, Sao Paulo, Brazil.
 Bulletin (de l'Administration) de l'Agriculture, Brussels, Belgium.
 Bulletin des Seances de la Société Nationale d'Agriculture de France, Paris.
 Bulletin of the Department of Agriculture, Kingston, Jamaica.
 Canadian Farmer, Toronto, Ontario.
 Cold Storage and Ice Trades Review, London, Eng.
 Farmer's Advocate, London, Ontario.
 Farmer's Advocate, Winnipeg, Manitoba.
 The Field, London, England.
 Irish Farming World, Dublin, Ireland.
 Journal für Landwirtschaft, Berlin, Germany.
 Journal of the Bath and West and Southern Counties Society, Bath, England.
 Journal of the Board of Agriculture, London, England.
 Journal of the British Dairy Farmers' Association, London, England.
 Journal of the College of Agriculture, Imperial University, Tokyo, Japan.
 Journal of the College of Agriculture, Toboku Imperial University, Saipow, Japan.
 Journal of the Department of Agriculture and Technical Instruction for Ireland, Dublin.
 Journal of the Department of Agriculture of South Australia, Adelaide, Australia.
 Journal of the Department of Agriculture of Victoria, Melbourne, Australia.
 Journal of the Department of Agriculture of West Australia, Perth, Australia.
 Journal of the New Zealand Department of Agriculture, Wellington.
 Journal of the Royal Agricultural Society, London, England.
 Journal of the Royal Horticultural Society, London, England.
 Kgl. Lantbrhs-Akademiens Handlingar eh Tidskrift, Stockholm, Sweden.
 Landwirtschaftliches Wochenblatt f. Schleswig-Holstein, Kiel, Germany.
 Live Stock Journal, London, England.
 Mark Lane Express, London, England.
 Milch Zeitung, Leipsig, Germany.
 Milchwirtschaftliches Zentralblatt, Leipsig, Germany.
 Mitteilungen der Deutschen Landwirtschafts-Gesellschaft, Berlin, Germany.
 Natal Agricultural Journal, Pietermaritzburg, Natal.
 New Zealand Dairyman, Wellington, N. Z.
 North British Agriculturist, Edinburgh, Scotland.
 Nor'West Farmer, Winnipeg, Man., Canada.
 Nyt Magazin for Naturvidenskaberne, Kristiana, Norway.
 O Criador Paulista, Sao Paulo, Brazil.
 O Fabendeiro, Sao Paulo, Brazil.
 Queensland Agricultural Journal, Brisbane, Australia.
 Rhodesia Agricultural Journal, Salisbury, Rhodesia.
 Rural World, London, England.
 Tidsskrift for det Norske Landbrug, Christiania, Norway.

Tidsskrift for Landökonomi, Copenhagen, Denmark.
 Transactions of the Highland and Agricultural Society of Scotland, Ednburg,
 Scotland .
 Transvaal Agricultural Journal, Pretoria.
 Ugeskrift for Landmand, Copenhagen, Denmark.
 Weekly Times, Melbourne, Australia.
 West Indian Bulletin, Bridgetown, Barbadoes, West Indies.

DOMESTIC EXCHANGES.

Agricultural Student, Columbus, Ohio.	Farm and Fireside, Springfield, O.
American Agriculturist, New York, N. Y.	Farm and Home, Springfield, Mass.
American Cheesemaker, Grand Rapids, Mich.	Farm and Press.
American Cultivator, Boston, Mass.	Farm and Stock, St. Joseph, Mo.
American Fertilizer, Philadelphia, Pa.	Farm Implement News, Chicago, Ill.
American Food Journal, Chicago, Ill.	Farm Journal, Philadelphia, Pa.
American Hay, Flour and Feed Journal, New York, N. Y.	Farm Life, Chicago, Ill.
American Miller, Chicago, Ill.	Farm Machinery, St. Louis, Mo.
American Poultry Advocate, Syracuse, N. Y.	Farm Magazine, Omaha, Neb.
American Poultry World, Buffalo, N. Y.	Farm News, Springfield, O.
American Sheep Breeder, Chicago, Ill.	Farm Poultry, Boston, Mass.
American Sugar Industry and Beet Sugar Gazette, Chicago, Ill.	Farm Sense, Des Moines, Ia.
American Swineherd, Chicago, Ill.	Farm, Stock and Home, Minneapolis, Minn.
American Thresherman, Madison, Wis.	Farm World, Augusta, Me.
Arboreulture, Connersville, Ind.	Farmer, St. Paul, Minn.
Arkansas Homestead, Little Rock	Farmer's Digest, Columbia, Pa.
Baker's Helper, Chicago, Ill.	Farmers' Guide, Huntington, Ind.
Berkshire World, Springfield, Ill.	Farmers' Review, Chicago, Ill.
Better Fruit, Hood River, Ore.	Farmers' Tribune, Sioux City, Iowa.
Breeder's Gazette, Chicago Ill.	Farmers' Voice, Chicago, Ill.
Bulletin of the National Association of Wool Manufacturers, Boston, Mass.	Field and Farm, Denver, Colo.
California Cultivator, Los Angeles, Calif.	Flour and Feed, Milwaukee, Wis.
Canadian Horticulturist.	Florists' Exchange, New York, N. Y.
Chicago Daily Drivers' Journal, Chi- cago, Ill.	Florists' Review.
Chicago Dairy Produce, Chicago, Ill.	Fruit Grower, St. Joseph, Mo.
Chicago Live Stock World, Chicago, Ill.	Fruitman and Gardener.
Cigar Manufacturer and Jobber, Milwau- kee, Wis.	Gardening.
Clay, Robinson & Co.'s Live Stock Report, Chicago, Ill.	Gas Power, St. Joe, Mich.
Cold, Watertown, N. Y.	Gas Review, Madison, Wis.
Cold Storage and Ice Trade Journal, New York, N. Y.	Geflügel Zuehter, Hamburg, Wis.
Colman's Rural World, St. Louis, Mo.	Gleanings in Bee Culture, Medina, O.
Commercial Poultry, Marselles, Ill.	Green's Fruit Grower, Rochester, N. Y.
Cotton Seed, Atlanta, Ga.	Guernsey Breeders' Journal, Petersboro, N. H.
Country Gentleman.	Hawaiian Forester and Agriculturist, Honolulu.
Creamery Journal, Waterloo, Iowa.	Hoard's Dairyman, Fort Atkinson, Wis.
Dairy Record, St. Paul, Minn.	Holstein-Friesian Register, Brattleboro, Vt.
Dakota Farmer, Aberdeen, S. D.	Holstein-Friesian World, Ithaca, N. Y.
Dog Fancier, Battle Creek, Mich.	Homestead, Des Moines, Iowa.
Duroc Bulletin, Peoria, Ill.	Horse-Shoers' Journal, Detroit, Mich.
Egg Journal, Waterloo, Iowa.	Horticulture, Boston, Mass.
Elgin Dairy Report, Elgin, Ill.	Hospodar, Omaha, Neb.
Farm and Country Journal.	Hospodárske Listy, Chicago, Ill.
	House and Garden.
	Household Journal.
	Independent Farmer and Western Swine Breeder, Lincoln, Neb.
	Indian School Journal, Chilocco, Okla.

- Indiana Farmer, Indianapolis, Ind.
 Iowa State Register and Farmer, Des Moines, Iowa.
 Irrigation Age, Chicago, Ill.
 Jersey Bulletin, Indianapolis, Ind.
 Jewish Farmer, New York City.
 Kansas Farmer, Topeka, Kan.
 Kimball's Dairy Farmer, Waterloo, Iowa.
 Landmann, Milwaukee, Wis.
 Lincoln Free Press, Lincoln, Neb.
 Live Stock Journal, Chicago, Ill.
 Louisiana Planter, New Orleans, La.
 Market Growers' Journal, Louisville, Ky.
 Metropolitan and Rural, Home, New York, N. Y.
 Michigan Farmer, Detroit, Mich.
 Milk Man, Kansas City, Mo.
 Miller's Review, Philadelphia, Pa.
 Minnesota and Dakota Farmer, Brookings, S. Dak.
 Minnesota Farm Review, St. Anthony Park, Minn.
 Minnesota Horticulturist, Minneapolis, Minn.
 Missouri Agricultural College Farmer, Columbia.
 Missouri Farmer and Breeder, Columbia, Mo.
 Modern Miller, St. Louis, Mo.
 National Farmer and Stock Grower, St. Louis, Mo.
 National Fruit Grower, Chicago, Ill.
 National Grange, Concord, N. H.
 National Horticulturist, Council Bluffs, Ia.
 National Monthly Farm Press, Chicago, Ill.
 National Nurseryman.
 National Stockman and Farmer, Pittsburgh, Pa.
 National Swine Magazine, Freeport, Ill.
 Nebraska Farmer, Omaha, Neb.
 New York Produce Review and American Creamery, New York, N. Y.
 North Carolina Student Farmer, West Raleigh.
 Northwest Horticulturist, Tacoma, Wash.
 Northwestern Agriculturist, Minneapolis, Minn.
 Northwestern Dairyman, St. Paul, Minn.
 Nut Grower, Poulan, Ga.
 Ohio Farmer, Cleveland, Ohio.
 Oklahoma Farm Journal, Oklahoma City.
 Operative Miller, Chicago, Ill.
 Orange Judd Farmer, Chicago, Ill.
 Orchard and Farm, combined with Irrigation, San Francisco, Calif.
 Oregon Agriculturist, Portland, Ore.
 Pacific Dairy Review, San Francisco, Cal.
 Pacific Fruit World, Los Angeles, Calif.
 Pacific Rural Press, San Francisco, Calif.
 Pennsylvania Farmer, Meadville, Pa.
 Philippine Agricultural Review, Manila.
 Poultry, Peotone, Ill.
 Poultry Digest, New York, N. Y.
 Poultry Item, Sellersville, Pa.
 Practical Dairyman, Rutherford, N. J.
 Practical Farmer, Philadelphia, Pa.
 Profitable Poultry, Milton, Wis.
 Progressive Farmer and Southern Farm Gazette, Raleigh, N. C.
 Pure Products, New York, N. Y.
 Ranch, The.
 Reliable Poultry Journal, —uincy, Ill.
 Rock Products, Chicago, Ill.
 Rural New Yorker
 Shepherd's Journal, Chicago, Ill.
 Southern Cultivator, Atlanta, Ga.
 Southern Farm Advocate, Memphis, Tenn.
 Southern Fruit Grower, Chattanooga, Tenn.
 Southern Planter, Richmond, Va.
 Southern Ruralist, Atlanta, Ga.
 Southwestern Farmer and Breeder, North Fort Worth, Texas.
 Stallion and Jack News, Kansas City, Mo.
 Student Farmer, Madison, Wis.
 Successful Farming, Des Moines, Iowa.
 Successful Poultry Journal, Chicago, Ill.
 Sugar Beet, Philadelphia, Pa.
 Texas Farmer, Dallas, Tex.
 Town and County Journal, San Francisco, Calif.
 Trade, Baltimore, Md.
 Thresherman's Review, St. Joe, Mich.
 Twentieth Century Farmer, Omaha, Neb.
 United States Tobacco Journal, New York City.
 Wallace's Farmer, Des Moines, Iowa.
 Washington Fruit Grower, North Yakima, Wash.
 Western Empire, Los Angeles, Calif.
 Western Tobacco Journal, Cincinnati, O.
 Wilson Bulletin, Oberlin, Ohio.
 Wisconsin Agriculturist, Racine, Wis.
 Wisconsin Equity News, Madison, Wis.
 Wisconsin Farmer, Madison, Wis.
 Wisconsin Sugar Beet, Menomonie Falls, Wis.
 World-Wide Farming, Denver, Colo.

FINANCIAL STATEMENT

The Wisconsin Agricultural Experiment Station, in account with the United States appropriation.

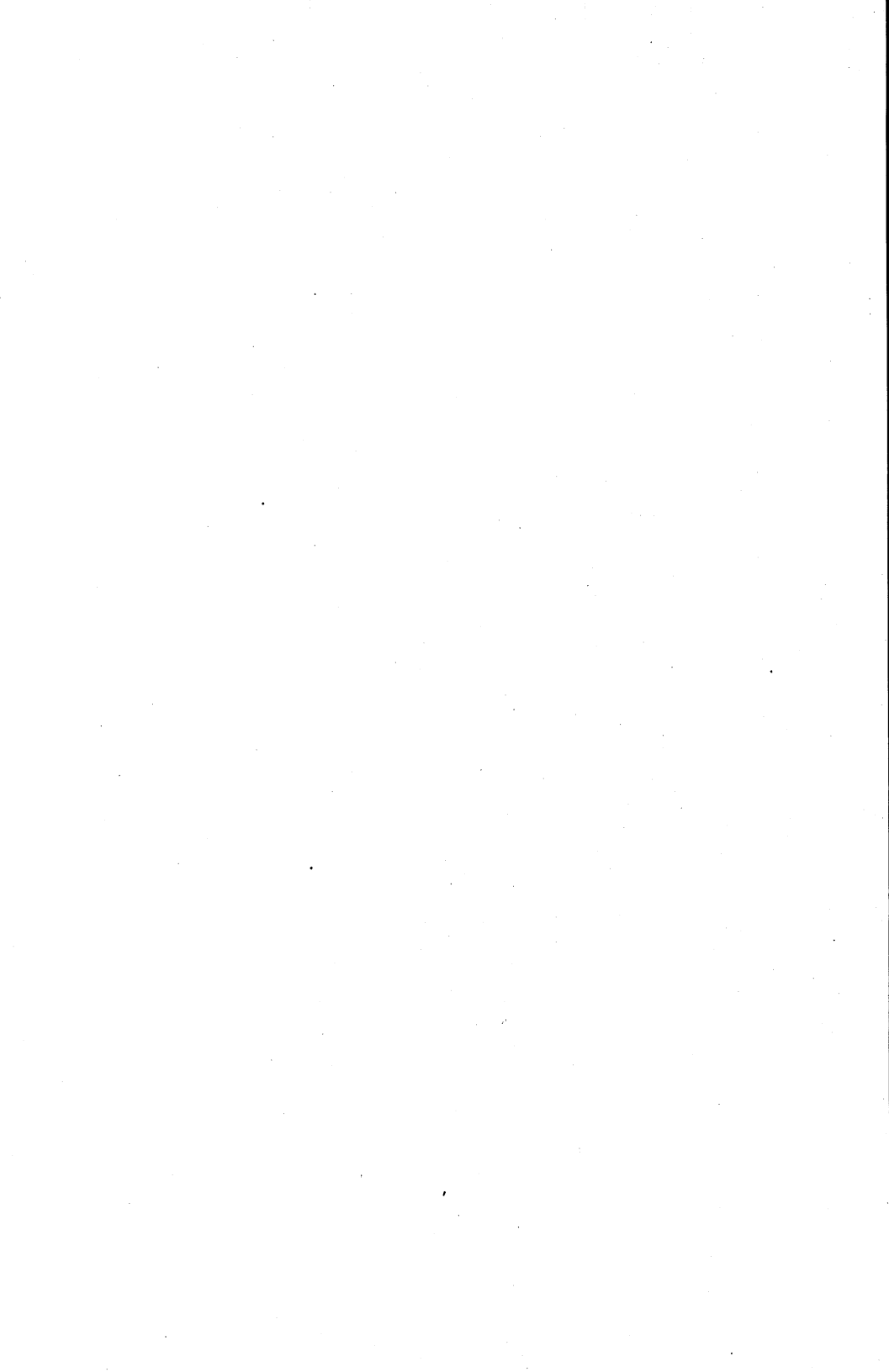
1909-1910.	Dr.	Cr.
To receipt from Treasurer of the United States as per appropriations for the year ending June 30, 1910, under the acts of Congress approved March 2, 1887, and March 16, 1906.	\$28,000 00	.....
By salaries.....		\$14,170 00
By labor.....		3,064 00
By postage and stationery.....		32 52
By freight and express.....		2 50
By chemical supplies.....		1,740 12
By seeds, plants and sundry supplies.....		1,768 70
By feeding stuffs.....		4,517 72
By library.....		209 17
By tools, implements and machinery.....		364 59
By furniture and fixtures.....		55 25
By scientific apparatus.....		906 08
By live stock.....		146 13
By traveling expenses.....		309 48
By contingent expenses.....		15 00
By building and repairs.....		698 74
	\$28,000 00	\$28,000 00

We, the undersigned, duly appointed auditors of the corporation, do hereby certify that we have examined the books and accounts of the Wisconsin Agricultural Experiment Station for the fiscal year ending June 30, 1910, that we have found the same well kept and classified as above, and that the receipts for the year from the treasurer of the United States are shown to have been \$28,000, and the corresponding disbursements \$28,000, for all of which proper vouchers are on file and have been by us examined and found correct.

And we further certify that the expenditures have been solely for the purpose set forth in the acts of Congress approved March 2, 1887, and March 16, 1906.

M. SWENSON, Chairman,
 L. S. HANKS,
 FRED. C. THWAITS,
Executive Committee.

ATTEST.
 M. E. McCAFFERY,
Secretary.



THE UNIVERSITY OF WISCONSIN

BIENNIAL REPORT

OF THE

BOARD OF REGENTS

FOR THE

Years 1908-9 and 1909-10



MADISON, WIS.

DEMOCRAT PRINTING COMPANY, STATE PRINTER

1910

THE REGENTS OF THE UNIVERSITY

THE REGENTS

THE PRESIDENT OF THE UNIVERSITY, *Ex-officio*.
C. P. CARY, State Superintendent, *Ex-officio*.
State-at-Large, MAGNUS SWENSON, Madison.
State-at-Large, W. D. HOARD, Ft. Atkinson.
First District, A. J. HORLICK, Racine.
Second District, LUCIEN S. HANKS, Madison.
Third District, J. W. MARTIN, Gotham.
Fourth District, FRED C. THWAITTS, Milwaukee.
Fifth District, JAMES F. TROTTMAN, Milwaukee.
Sixth District, D. P. LAMOREUX, Beaver Dam.
Seventh District, EDWARD EVANS, La Crosse.
Eighth District, MRS. FLORENCE G. BUCKSTAFF, Osnkosh.
Ninth District, GUSTAVE KELLER, Appleton.
Tenth District, GRANVILLE D. JONES, Wausau.
Eleventh District, A. P. NELSON, Grantsburg.

OFFICERS OF THE REGENTS

W. D. HOARD, *President*.
L. S. HANKS, *Vice-President*.
A. H. DAHL, State Treasurer, *ex-officio Treasurer*.
M. E. McCAFFREY, *Secretary*.
L. J. PICKARTS, *Bursar*.
E. FEWSON, *Purchasing Agent*.

STANDING COMMITTEES

(The president of the university is ex-officio a member of all standing committees.)

Executive—SWENSON, HANKS, THWAITTS.
College of Letters and Science—THWAITTS, CARY, EVANS, BUCKSTAFF, LAMOREUX, JONES.
College of Agriculture—HOARD, MARTIN, KELLER, NELSON, JONES.
Law School—LAMOREUX, TROTTMAN, JONES.
Trust Funds and Donations—HANKS, LAMOREUX, NELSON.
Finances—HANKS, SWENSON, THWAITTS, NELSON.
College of Engineering—TROTTMAN, KELLER, THWAITTS, LAMOREUX, NELSON.
Medical School—EVANS, TROTTMAN, KELLER, HORLICK.
University Extension—CARY, BUCKSTAFF, LAMOREUX, TROTTMAN.
Athletics—NELSON, THWAITTS, SWENSON, VAN HISE.
Women's Affairs—BUCKSTAFF, JONES, VAN HISE, CARY.
VAN HISE, CARY.
Publications (Aid)—KELLER, MARTIN, VAN HISE.
School of Music—THWAITTS, BUCKSTAFF, KELLER.

CONTENTS

	PAGE
Report of the Regents	1
Report of the President	3
Report of the Dean of the College of Letters and Science....	54
Report of the Director of the Course in Commerce.....	70
Report of the Director of the Course in Chemistry.....	75
Report of the Director of the Course in Pharmacy.....	81
Report of the Chairman of the Course in Journalism.....	84
Report of the Director of the School of Music.....	87
Report of the Director of the Course for the Training of Teacners	96
Report of the Director of the Wisconsin Library School....	121
Report of the Dean of the Medical School.....	125
Report of the Dean of the College of Engineering.....	143
Report of the Dean of the College of Agriculture.....	152
Report of the Dean of the Law School.....	182
Report of the Director of the Summer Session.....	187
Report of the Director of the Graduate School.....	193
Report of the Director of Physical Training.....	199
Report on Physical Training for Women.....	213
Report of the Commandant	216
Report of the Adviser of Women.....	224
Report of the Dean of the Extension Division.....	231
Report of the Chairman of the Committee on Accredited Schools.	253
Report of the Librarian	256
Report of the Director of Washburn Observatory.....	263
Report of the Director of the Hygienic Laboratory.....	267
Report of the University Editor.....	269
Report of the Editor of the Press Bulletin.....	273
Attendance	275
Changes in the Faculty.....	276
Report of the Treasurer.....	282
Financial Condition.....	284



The University of Wisconsin

REPORT OF THE REGENTS

FORT ATRINSON, Wisconsin, December 1, 1910.

TO HIS EXCELLENCY, JAMES O. DAVIDSON,
Governor.

SIR: In behalf of the Regents of the University, I have the honor to present to you herewith their biennial report for the years 1908-09, 1909-10.

This contains the reports of the president of the University, the deans of the colleges, the directors of the various courses and schools and other educational officers, as well as the reports of the treasurer, and of the secretary.

I shall not attempt in this letter of transmittal to summarize these various reports. Altogether they show very clearly the progress of the University during the biennial period, and in detail all financial transactions.

At the end of the previous biennial period, June 30, 1908, the balance in the treasury was \$99,974.86. At the end of the biennial period, June 30, 1910, the balance is \$196,535.10. Thus there is a gain in the balance during the two years amounting to \$96,560.24. The handling of the finances so as to increase the balance has been in response to the frequently expressed desire that as rapidly as possible a sufficient balance be accumulated so that it will not be necessary to continue the privilege of transferring money from the general fund to the University in anticipation of the payment of two sevenths of a mill tax.

The growth of the University during the biennial period has been more rapid than ever before, both from the point of view of numbers and as to percentages. For the year 1908-9 there

were at the University, in all branches and courses, including the summer session, 4,521 students, and in 1909-1910, 4,947. Since in the year preceding the biennium the attendance was 4,013, this represents an increase of 934, or 23 per cent. The increase for the previous biennium was 442, or 12.6 per cent. Thus the numerical increase is more than twice as great as in the previous biennium and the percentage of increase almost double. The faculty has been increased about in proportion to the increase in students.

During the biennium, in response to public demand, the University has expanded its work, by introducing in the college of engineering courses in mining, and by introducing in the college of agriculture, departments of agricultural economics, experimental breeding, economic entomology, plant pathology, poultry and agricultural education. Also the extension work, both general and agricultural, has been greatly enlarged.

The University has continued its threefold mission, of instructing the students who come to Madison, investigations for the advancements of knowledge, especially with reference to the improvement of the conditions within the state, and in carrying out knowledge to the people. While it is believed a very largely increased service has been performed as compared with the previous biennium, it still remains true that the increasing demands by the state upon the University forever outrun our resources.

To provide adequate instruction for the increasing number of students, an increased income is necessary; a number of educational buildings are needed to care for the students in the lecture and laboratory rooms; and student buildings to house them are imperative.

The educational officers in their reports have placed before you the large and pressing needs of the University. If their requests for additional resources are granted by the legislature, it is my belief that in the future as in the past the investment of funds in the University will be one which will be returned to the state manifold.

Bespeaking for the University a treatment by the legislature commensurate with the opportunities for wise investment by the state, I am,

Very respectfully yours,

W. D. HOARD,
President.

REPORT OF THE PRESIDENT

For the Years 1908-9 and 1909-10

TO THE HONORABLE W. D. HOARD,
President of the Regents,
Of the University of Wisconsin.

SIR:—Herewith I submit my report for the biennial period ending June 30, 1910.

The report consists of the following parts:

- I. The Progress of the University.
- II. The Needs of the University.

My report is supplemented by the reports of the deans of the colleges, the directors of the various courses and of the graduate school, and the reports of other officers.

THE PROGRESS OF THE UNIVERSITY

THE FACULTY

During the past two years there have been many changes in the faculty and considerable additions to its force. The details are given in the reports of the deans and directors and summarized in Appendix B of this report. Notwithstanding the large number in the faculty, fortunately there have been no deaths during the biennium.

Retiring Allowances

During the second year of the biennium the university was placed among the accepted institutions of the Carnegie Foundation for the Advancement of Teaching. Six men have been placed on the retired list, five at the end of the first year of the biennial period and one at the end of the second. The names and length of service of these men are as follows:

John Barber Parkinson was a member of the instructional force of the university for forty-one years; was professor of political science thirty-five years; and vice president twenty-three years.

William Arnon Henry served in the university for thirty years, fifteen years as professor of agriculture and botany and fifteen years as dean of the college of agriculture. It was under his administration that this college was organized and became recognized as among the first in the country.

Alexander Kerr was the first professor of Greek; he was connected with the university for forty years, since 1870.

William Willard Daniells was the first professor of chemistry in the university; he has faithfully served the institution since 1867, forty-three years.

The school of music was organized with Fletcher Andrew Parker as its head in 1880; Professor Parker therefore served in that capacity thirty years.

John Charles Freeman has been professor of English literature since 1879, thirty-one years.

All of these men have given the best years of their lives to the work of the university,—have indeed worn out their lives in its service. No words that I might formulate could adequately express the value of their work in education in this state, and their influence upon its advancement.

Increase in the Faculty

The strengthening of the faculty through its numbers is shown by the following table, which gives the number of the instructional force for three years.

	1907-8	1908-9	1909-10
Professors.....	85	91	98
Associate professors.....	13	17	22
Assistant professors.....	59	70	76
Instructors.....	157	178	196
	119	129	137
Total.....	276	307	333

The first column gives the number in each of the grades of the faculty except assistants for the year preceding the biennium, and the other two columns for each of the years of that period. Assistants are not included since there is no way to compare accurately the number of assistants of one year with

those of another because of the variable amount of work required of this class of the force.

The table shows that during the biennium the increase in number of professors, associate professors, and assistant professors was 39 or 24.8 per cent and that the increase in the number of instructors was 18 or 15.1 per cent.

Improvement in organization

Not only has there been enlargement of the instructional force of the university, but there has been improvement in the efficiency of its organization. The grouping into a general university faculty and the college faculties of letters and science, engineering, law, and agriculture, was made in 1900, that is, ten years ago. Since that time the medical faculty has been added. Thus, while the trunk and branches of the university have remained substantially as they were some years ago, there has been great growth in the size of the departments. This situation has led the university authorities to consider what could be done to improve the organization of the departments. A departmental organization has been adopted, the essential features of which are that all members of professional rank shall constitute a departmental committee, and that, subject to higher authorities, they shall have charge of the affairs of the department. Each committee shall have a chairman appointed by the dean after consultation with the president and with the departmental committee. The duties of the chairman are comprehensively and accurately defined in such a manner as to render it certain that the work of the department in all fields shall be conducted in a business-like and thoroughgoing manner. Among the duties of the chairman are those of keeping all necessary records, both in reference to teaching and research and that of making an annual report to the dean concerning all the activities of the department to be transmitted to the president. These activities to be reported upon include research and scholarly work of all kinds. During the biennial period the dean of the college of agriculture has called for regular reports from the various departments in reference to researches conducted by them. The college of engineering has had regular faculty conferences in reference to research, and the principle is now adopted that all departments are to make annual reports upon the investigation in the various departments.

THE STUDENTS

Increase in Number

The number of students in the university for the year preceding the biennium was 4013; in 1908-9, 4521, an increase of 508; in 1909-10, 4947, an increase of 426. Thus the total growth for the two years was 934, or 23 per cent. The increase for the previous biennium was 442 or 12.6 per cent; thus the numerical increase is more than twice as great as in the previous biennium, and the percentage of increase almost double.

It has been seen that the increase in the faculty was 24.8 per cent, and thus there has been a close correlation between the increase in the number of the faculty and the number of students.

Student Life

During the biennium much attention has been given to the improvement of the condition of student life. It has been the aim to develop self government among the students. The student conference committee has been the instrument through which this is being accomplished for the men. This committee, first organized by the president merely for conference and as a channel of communication between the students and the faculty, has steadily increased in influence and authority until it has become the most influential organization among the men.

Among the important steps of advance made by the student conference committee last year was the agreement to recommend the abolishment of hazing. This recommendation was accepted by the freshman class and practically all other organizations within the university. Although anticipating the biennial period, it should be reported that this agreement has been carried out by the students in good faith, there having been not a single case of hazing of any kind in the autumn of 1910.

Another important advance in self government has been the organization of a student court. The student conference committee petitioned the faculty to authorize a court which should have jurisdiction over all branches of discipline within the university except those concerning scholastic affairs. This petition was granted and a student court composed of six seniors and three juniors was organized, which has been in operation for a half year. This court makes recommendations to the faculty

discipline committee as to the penalties to be imposed in cases of discipline; and it is the duty of the faculty committee to transmit such recommendations to the faculty for approval, or to remand the case for a retrial. It is clear that the students have very great advantages over the faculty in administering discipline among the students, since they are much nearer to the sources of information. Several cases have already been acted upon by the student court, in all of which the faculty has imposed the sentence recommended by the court. The cases which have come before the student court have been handled with such firmness and wisdom that already this court has gained the respect and confidence of the student body.

Among the women there is a self-government association, to membership in which all are eligible. The association elects an executive board of thirty. General rules and regulations are made by the association but their execution rests with the executive board. This board in a large measure occupies among the women the same place that the president's conference committee does among the men. During the biennium, through this association, a number of advance steps have been made. For each of the women lodging houses, rules have been adopted similar to those which obtain in the fraternity houses, and in each a committee is appointed for the enforcement of these rules. The association has petitioned the faculty for permission to organize a student court for women which shall have the same rights with reference to that group as the court, organized under the student conference committee, has for the men. This request has been granted.

The report of the adviser of women describes in detail the various advances and activities in women's affairs during the biennium.

Another important improvement in student affairs has been the inauguration of the calling system for the first-year students. Many of the men and women when they first come to Madison are without friends; they do not know the traditions of the institution. During the first year of the biennial period the student conference committee proposed that upper classmen call upon each freshman, in order to give him such advice and assistance as could be furnished by one experienced in the affairs of the institution. This plan was presented to the regents, and funds were granted for the necessary clerical work. A chair-

man of freshman advisers was appointed, F. W. Roe, and also a social committee of the student conference committee, with C. O. Bickelhaupt as chairman. The second year of the biennium the calling plan was carried out by these two men acting together.

This plan provides that each first-year student is to be called upon by one senior and one junior. The freshman is expected to return the calls promptly. Both the student who calls and the student called upon are to make reports to the chairman of freshmen advisers. The first year certain difficulties appeared, due to the fact that the requests for calls were not gotten out promptly after the opening of the semester; but even with this handicap the returns showed that about fifty per cent of the students complied with the requests. In many cases friendships have sprung up as a result of these calls. Undoubtedly the system has been of great advantage to the entering students; and it is scarcely of less advantage to the upperclassmen, since it imposes upon them an important responsibility, and there is no more sobering influence than this. It is planned in the autumn of 1910 to have the calling notices sent out the opening days of the semester. It is believed that this will result in higher efficiency and greater advantage to the student body.

Student Health

Another step of progress has been in the care of student health. The first move in this direction was the establishment of a committee on university hygiene, in 1906. One of the functions of this committee is to look after the sanitary condition of the buildings. From time to time the committee has made reports upon ventilation, the humidity of the atmosphere, drinking fountains, etc. In consequence of the committee's reports the ventilation in a number of rooms and buildings has been improved by the regents; arrangements have been made to control the humidity of the air in the winter, which had heretofore been too dry; permanent vacuum cleaners have been installed in Chadbourne hall and Lathrop hall and movable cleaners in other buildings; bubble fountains have been placed in all of the buildings.

While much has been accomplished by these general sanitary measures, a study of the question of student health led to the conclusion that it was necessary to have the individual students looked after by the university authorities. To this end the re-

gents last year established the position of medical adviser, and Dr. Joseph Evans, of Philadelphia, was secured for the place. He began his duties the second semester of the second year of the biennium. At once the work of his department has proven to be a conspicuous success. The house purchased from Dr. Cornelius, adjacent to the administration building, was fitted up for offices, reception rooms, examination rooms, and a clinical laboratory. During the second semester of the year 1909-10, 997 students consulted the medical adviser, and of these 196 re-consulted him for new conditions. In most cases several visits were necessary. Also the medical adviser assisted many of the students by informal consultation.

By the end of the first semester the demands upon the medical adviser had become greater than could be met by a single officer. Therefore it is planned to transfer to the office of the medical adviser, Dr. J. Helen Dobson, medical examiner for women, and to have an additional instructor in clinical medicine for work among the men. For this place Mr. Robert Van Valzah has been appointed. An additional nurse has been provided, making two. Not only will the officers of the department of medical adviser do such work as they can for the students who are suffering in any way, but they will make the physical examinations of all students entering the university, with re-examinations from time to time. These examinations will give a basis for systematic work to improve the general health of the student body; also they will be available to the department of physical training, so that the officers of that department may assign work most advantageous to each individual; and also prevent men from going into strenuous exercise, such as that of the athletic teams unless they are physically fit.

Perhaps of equal importance with the advice of students needing medical assistance is the work of the department in keeping out of the classroom those students who are found to have infectious diseases, such as tonsilitis, pink eye, mumps, etc., which may endanger the health of the student body. The confidence of the student body in the medical adviser gained in one semester is somewhat extraordinary. This was necessary for the success of the department. Now that the confidence of the student body has been secured its beneficial influence will steadily increase.

Another very important step with reference to the general

health of the students has been the inauguration of inspection of the student boarding houses. This plan was started during the second year of the biennium. The work was done under the direction of the hygiene committee by assistants, the funds for the payment of whom was furnished by the regents. The report of Dr. Ravenel, the chairman of the committee, for the year 1909-10, shows that 170 fraternity and boarding houses were inspected. As a result of such inspection the houses were divided into three classes. As the term indicates, the first class houses are those in which the conditions are wholly satisfactory. Houses in the second class are not in an objectionable condition from a sanitary standpoint, but they do not have all the conveniences of the first class houses. The third class houses are those in which the conditions should be improved. Already as a result of this inspection and the recommendations of the committee the sanitary conditions of a number of houses, including both fraternity and others, have been greatly bettered.

Of the 170 houses inspected, 19 were placed in the first class, 116 in the second, and 9 in the third. These figures show that the great majority of houses are in the second class. There were four houses in which inspection was refused. Naturally the university authorities will not recommend to the students the houses of the third class nor those that refuse inspection. Doubtless, because of lack of satisfactory accommodations it will be necessary for some students to live in such houses, but it is hoped that within a few years we shall have sufficient dormitory accommodations so that it will be unnecessary for any student to live in an unsanitary house. (See pp. 8 and 9.)

Lathrop Hall

Lathrop hall, the new women's building, was ready for occupancy early in 1910. This building for the first time in the history of the University of Wisconsin furnishes the proper gymnasium facilities for the women. These include, in addition to the general rooms for physical training, complete examination rooms, showers, lockers, rooms for special work, swimming pool, bowling alleys, etc. In short, in the building is a thoroughly modern gymnasium equipped in the best fashion. The far-reaching influence of this gymnasium upon general health and physical development of the women cannot be estimated.

Lathrop hall, besides containing a gymnasium, also has an

auditorium with a stage, rooms for social purposes, for literary societies, and for other women's organizations. It is expected that as many as practicable of the social affairs under the auspices of the young women will be held in this building. Lathrop hall also contains a dining room and cafeteria. Thus this building furnishes to the women students all the advantages of a club, and in addition to that makes it possible to have the general social affairs under much more satisfactory conditions than heretofore.

Convocations

Finally, with reference to the instruction of students along higher ideals, the regents authorized the president to arrange regular convocations. Six such convocations were held during the year 1909-10, during which all other exercises were suspended. The speakers for these convocations included several of the more representative intellectual and moral leaders of the nation. They have proven very popular among the students, and their benefits are unquestioned.

PERMANENT IMPROVEMENTS

The legislature of 1909 extended the permanent improvement fund of \$200,000 per annum from five to seven years, and also provided \$50,000 a year for two years for books, apparatus, furniture, and equipment.

Books and Apparatus

Until the second year of the biennium funds for the enlargement of the library and the increase in apparatus have been taken from the \$200,000 building fund or from current expenses; but beginning with that year a \$50,000 fund became available for books, apparatus, furniture, and equipment; in consequence of which it was possible to increase largely the library appropriation for 1909-10 over that of the previous year. No other appropriation has given greater satisfaction to the faculty than this; for they feel strongly that an adequate book fund is absolutely essential to the highest efficiency of their work.

Buildings

As has already been indicated in connection with student affairs, Lathrop hall has been completed. This building with its

equipment cost \$223,295.16. It undoubtedly is among the best women's buildings in the United States.

The live stock building has been completed. It, with the equipment, cost about \$83,000. This building includes an arena surrounded by an amphitheater capable of accommodating over two thousand people. Also it comprises offices and class rooms for veterinary purposes, experimental breeding, and animal husbandry work.

A wing for the dairy building has been begun but is not completed at the end of the fiscal year. The same is true of new greenhouses, which are so placed as to be connected with the proposed horticultural building.

Another large building which has been completed during the biennium is the forest products laboratory, which has cost \$44,962.95. Under a cooperative arrangement with the United States government, the university has constructed the building and will furnish heat, light, and power. The building has been equipped by the forest service of the United States department of agriculture, and is also manned by that department. The staff includes a scientific force of thirty-two, a clerical force of twelve, and eight skilled laborers. The purpose of the laboratory is to investigate forest products, with reference to their best utilization. The scientific staff of the laboratory will give instruction to the students of the university without cost. For the coming fiscal year four courses have been arranged.

The central heating plant has been completed and connected with all the university buildings with the exception of the observatory, astronomer's house, and some of the minor agricultural buildings. The cost of this plant with tunnels and improvements associated with it to the end of the fiscal year amounted to \$267,523.76. As a result of the completion of this plant it has been possible to devote the old central heating building and that of the agricultural college to other purposes; the first to the new department of mines and mining, the second to dairy machinery.

The report of the superintendent of the heating plant shows that the economies, which have been expected from the construction of the new central heating plant and the abandonment of the old one, have been realized. He says a comparison of the situation in 1909-10 with that of 1906-07 shows that the cubical contents of the buildings to be heated have increased 20 per cent;

the enrollment of four-year students has increased 38 per cent; while the total operating expenses for the department of heat and water for the year 1909-10 was only 2.5 per cent above that of 1906-07, and the fuel cost only 1.4 per cent above that of 1906-07.

GIFTS

By far the largest bequest which has yet been made to the university will be received from the estate of Colonel William Freeman Vilas. Colonel Vilas graduated from the university in 1858, received the degree of master of arts in 1861, and doctor of laws in 1885. He was professor in the law school from its foundation in 1868 to 1885, and was lecturer in that school from 1897 to 1899, and therefore was a member of the faculty of that school for nineteen years. He served on the board of regents from 1881 to 1885, and from 1898 to 1905, eleven years. It thus appears that Colonel Vilas was connected with the university after graduation for twenty-five years, during five years of which he had the double capacity of regent and a member of the faculty of law. The deep affection which Colonel Vilas had for the university as shown by the many years of service, after his death, August 27, 1908, was made known to the world. Under his will, the income of his estate, in whole or in part, goes to his wife and daughter during their lives; it then passes to the university for specified purposes. This estate was appraised at \$1,899,434.71. When in the future the Vilas estate passes to the university there is provision, first for a theater as a memorial to his son, Henry Vilas. After this, half of the income of the estate goes first for scholarships and fellowships, some of which may be traveling fellowships; second, for the support of art and music; and third, for the maintenance of ten research professorships with adequate salaries and assistants.

In reference to the research professorships Colonel Vilas, in his will, wrote: "These professorships are designed to promote advancement of knowledge rather than to give instruction, and it shall forever be a limitation on the power to require service of any incumbent thereof, that not more than three hours in one week, nor more than one hour in one day, shall be exacted from him for teaching, lecturing, or other instruction to students, or otherwise." However, the professor is left free to render teaching service beyond this amount if he so desires.

While a limited amount of instruction only is required of a professor, and according to the will he is "free to pursue his fixed lines of research in his own way, still it may be expected that, in fact, each professor will gather about him as fellow-workers and assistants, so far as may be, students who will both gain learning and inspiration to promote it, from their participation in his pursuits and the opportunities of such association, which he will both desire and best know how to inculcate in them." "Any branch of human learning may be selected as the subject of special study." These research professorships, while not placed first in order, are placed "first in importance among the purposes of the trust."

When in the future the ten research professorships shall have been established, additional scholarships, fellowships, and professorships are to be established, and buildings constructed as may seem the greatest need to the university authorities.

Finally, a part of the income is to be used to increase the principal of the estate until it reaches twenty and finally thirty millions of dollars.

At the memorial service in honor of Colonel Vilas at the armory on October 20, 1909, I said: "The will of Colonel Vilas is not merely a deed of gift of his property to the university; it is a gift of his highest thought, matured through years of consideration of the educational problems of the state."

Another of the famous regents of the university was Carl Schurz, who occupied that post from 1859 to 1863. One of the last public addresses of Carl Schurz was at the commencement of 1905, at which time he was given the honorary degree of doctor of laws. After the death of General Schurz in 1906, it suggested itself to the German Americans of Wisconsin that a proper memorial for this eminent German American would be an exchange professorship between the university and some German university. To this end a Carl Schurz memorial association was organized, largely through the work of Professors Voss and Hohlfeld. The officers of this association are F. C. Winkler, Milwaukee, president; Emil Baensch, Manitowoc, vice president; Fred Vogel, Jr., Milwaukee, treasurer; and E. R. Stern, Milwaukee, secretary. It is the plan of the association to raise a fund of \$60,000 to endow the exchange professorship. To July 1st, 1910, \$36,570 has been subscribed. For the year 1911-12, Professor Reinsch will serve in the University of Ber-

lin as the Roosevelt exchange professor of Columbia. It is hoped by the year 1912-13 the Schurz fund will be completed and that the system of exchange professors between the state universities of this country and the state universities of Germany will be established.

Dr. Byron Robinson, of Chicago, a graduate of the University of Wisconsin in 1878, died in 1909. Before his death he gave to the medical school a valuable collection of medical books, mainly concerning anatomy. By his will the Robinson-Waite Anatomical Library was left to the university. This library has been received; it contains 450 volumes and many old and valuable atlases, and is one of the best collections in anatomy that has come to any institution. Also Dr. Robinson's will provides for \$10,000 endowment for a fellowship devoted to the study of the anatomy and physiology of the sympathetic nervous system. It is expected that this fund will be available as soon as certain real estate is disposed of.

At Hodgenville, Kentucky, on the centenary of his birth, there was placed a bronze statue of Abraham Lincoln, by Mr. Adolph A. Weinman, a pupil of St. Gaudens. The commissioners permitted but one replica of this statue to be made. While there was very strong competition for the replica the commissioners decided to have it go to the University of Wisconsin. This was made possible through the liberality of Mr. Thomas E. Brittingham, who gave \$6,500 for this purpose. It is believed that the great character written in bronze in the rugged face of Abraham Lincoln will be an inspiring force to the many thousands of students who attend the university.

From the Biblical Alliance and other sources funds to the extent of \$3,500 were received to pay the salary of an assistant professor of Hebrew and Hellenistic Greek for the year 1909-10, and for a fellowship in that department.

Additional fellowships and scholarships have been established through gifts as follows:

The Nathan M. Pereles fellowship in law, \$250, given by his son, Mr. James M. Pereles, of Milwaukee;

A fellowship in sociology, \$400, given by Mr. Guido C. Vogel, of Milwaukee;

A fellowship in journalism, \$400, given by the alumni;

In pharmacy, three scholarships in the summer session, of \$35 each, given by Yahr & Lange, Milwaukee Drug Co., and F. Dohmen, respectively.

During the biennium the student loan fund has been increased as follows:

The Alexander H. Rogers loan fund of \$1,000 has been established by his five sons, W. A. Rogers, A. R. Rogers, George H. Rogers, John J. Rogers, and H. E. Rogers.

The proceeds of the senior play of 1909, \$245.36 were donated by the graduating class to the loan fund.

The Arthur End music loan fund was established by his mother, Mrs. Mary B. End, of Sheboygan, with an initial payment of \$100.

The Self Government Association added to its loan fund \$200.

In addition to the above various departments have received donations of machinery, apparatus, books, etc., the largest contribution to such material being to engineering and commerce. (For details see report of dean and director.)

THE PROGRESS OF THE COLLEGES

This report is followed by those of the deans and directors of the various divisions of the university. Here only a partial summary will be given of them with supplementary statements. Those wishing fuller information are referred to the reports of the officers mentioned.

College of Letters and Science

The report of Dean Birge shows that the increase in the number of students in letters and science has been greater during the biennium than ever before, 488; whereas, the increase of the biennium preceding was 174. The increased instructional work for which it has been necessary to provide has been even greater than would be indicated by these figures, since a large part of the first year work of students registered in engineering and agriculture is done in the departments of letters and science, and also a smaller proportion of that of later years.

Within the college the more important advances are, (1) the development of general informational courses adapted to those students who do not wish to undertake prolonged work in a department but wish to gain some idea of its field, (2) the modification of the thesis requirement so as to make it more elastic, and (3) the development of courses looking toward a vocation. Here I shall speak only of the latter.

Vocational Courses

The traditional college of liberal arts was supposed to be broadly educational without reference to the subsequent career of the students. Since, however, the studies were of a kind adapted to prepare men for professional studies in law, medicine, or the ministry, and into these three fields a large proportion of the graduates went, this course after all did have a distinctly vocational trend. With the great increase in the number of learned professions there have developed definite courses in the college of liberal arts looking toward their practice. These new courses differ from the previous work of the college where the professional work has been done later, in that the vocational work is done during the four years heretofore held for general study. At the present time there are in the college of letters and science, courses in pharmacy, music, commerce, chemistry, training of teachers, journalism, and library science.

Many have regarded the introduction of such courses as likely to weaken the college of liberal arts; indeed this view is definitely held by some men. For my own part I do not share in this view. In universities where the colleges of liberal arts have been retained strictly along the old lines, the numbers of students in them have not rapidly increased and in some institutions is comparatively small. The very rapid increase in the number of students in the college of letters and science is largely the result of the introduction of these specialized courses; students have entered this college who otherwise would not have done so. In providing four-year courses in this college with a definite vocational aim a strong educational demand has been met. Admitting this to be true, it may be held that the students pursuing the traditional studies are less efficiently trained than heretofore; in short, that the intellectual standards of the college on account of the introduction of professional or semi-professional courses has deteriorated. From this point of view I wholly dissent, and I believe no adequate evidence can be furnished in support of it. Indeed, I believe that the work in purely liberal studies, which is done with the thought that it may be of service later in connection with one's profession, is likely to be vivified, better done, of higher intellectual quality, than it would be with the idea of simply acquiring knowledge and mental capacity. To illustrate, I go so far as to believe that the student who is studying the humanities, such as Latin,

history, or German, with the expectation that he may teach these subjects after graduation, is likely to do better work in them from the purely intellectual point of view than he would do if they were taken merely from the point of view of general culture with no thought of any special use. Indeed, our experience in the university while developing the course for the training of teachers proves this to be the fact.

Therefore the only point at which the departments in liberal arts can with plausibility be said to be injured by the introduction of vocational courses is that time and interest are taken from them. It is believed by many that vocational studies may be taught in the spirit of liberal studies so that to some extent they may serve the same purpose in general education as traditional studies. It is my conviction that such should be the aim in the treatment of vocational subjects; materials should be used to illustrate their principles rather than with the expectation of producing expert practitioners. Facility in practice should be gained outside the college walls.

The development of the special vocational courses are fully detailed in the reports of the directors and need not here be summarized. Only those will be mentioned in which there has been some marked change during the biennium.

Course for the Training of Teachers

For the course for the training of teachers a director has been appointed. Provision has been made for instruction in agriculture, manual arts, and also for the establishment of teaching fellows in cooperating high schools, all to take effect during the next biennium. But perhaps the most important development is cooperation with the seven state normal schools by which the first two years of a course for the training of teachers is given in the normal schools and the last two years in the university, the same leading to the degree of bachelor of arts.

School of Music

The school of music has been reorganized, the change taking effect the second year of the biennial period. The admission requirements have been made the same as those for other students of the college of letters and science; the course has been extended to four years and language and physics introduced into it; and the staff has been placed upon a salary basis. Thus the work

of the school of music has become an integral part of the university.

Library School

The legislature of 1909 made the library school, conducted under the direction of the Wisconsin free library commission, the school of library science of the university. Also this act authorized the regents to cooperate with the library commission in the maintenance of the school, by the appropriation of funds and otherwise. But the appropriations asked by the regents in 1909 were much reduced in amount, and it did not prove practicable for the university to make any allotment to the library school. Therefore, as heretofore this school has been supported exclusively from the funds of the free library commission.

Even before the library school became a part of the university, the two had cooperated in the preparation of librarians through the acceptance by the university toward the A. B. degree of a certain amount of work in the library school. In order to make this cooperative arrangement effective, the library school rearranged its schedule of work so as to meet the needs of the joint course students.

MEDICAL SCHOOL

During the biennial period the first two years of work of the standard four-year medical curriculum has been given. Previous to this time only one year's medical work was offered in the university. The requirements for registration in the medical school have been placed in accordance with the recommendations of the association of American universities,—two years in a college of liberal arts or their equivalent. So far as the work of the first two years is in the fundamental sciences of chemistry, physics, botany, zoology, philosophy, bacteriology, and hygiene, the medical students work in the college of letters and science. The departments that devote the entire energy to strictly medical work are anatomy, physiology, pathology, pharmacology, toxicology, and also one or two courses are given in clinical medicine. These departments, as indicated by the report of Dean Bardeen are strongly manned, well equipped, and have a good library. The university therefore offers thoroughgoing, high grade instruction in the first half of a four-year medical course. This opportunity is being taken advantage of

ly an increasing number of students. Not only is the school giving instructional work, but all of the men in the faculty are carrying on investigations with reference to the advancement of the science of medicine. The work of the medical advisers among the students has been spoken of in another connection. (See pp. 8 and 9.)

COLLEGE OF ENGINEERING

Mining Engineering

In the college of engineering, the chief enlargement has been the addition of a department of mining. For a number of years there has been in the institution a large number of courses necessary for the training in the mining profession. Some of these courses are in the college of letters and science; others are in the college of engineering. An increasing number of students have been coming to the university asking for training in mining. These men have been given such instruction as was available; after which they have been advised to go elsewhere. Finally, however, the demands became so strong for this work that at the beginning of the biennial period a course in mining engineering was definitely established, Professor E. C. Holden being secured to give instruction in this subject. The second year of the period Professor F. T. Havard was appointed to cover assaying and metallurgy; we are now in a position to give all the instruction of a full mining course.

With the completion of the central heating plant and the abandonment of the old plant it was decided to house the laboratory work of the department of mining in the old central heating plant. During the second year of the biennium this building has been remodelled and will serve satisfactorily for a number of years for laboratory work in mining, metallurgy, and assaying.

Other Courses

During the biennium, there have been improvement and development of other courses, such as electrical engineering, mechanical engineering, etc., which are fully detailed by the dean.

Building and Equipment

Because of the extreme congestion of the main engineering building, a wing was begun the second year of the biennium and will be available during the coming fiscal year. It is ex-

pected that this building will give greatly improved facilities for drawing and for the library, the plan being to transfer the entire engineering library from the general library building to rooms in the new wing adapted for this purpose. Also the new wing gives very greatly increased facilities for lecture rooms, offices, and laboratories.

Research

Encouraged by the fund established by the regents for research, the amount of graduate and research work in the college has been very greatly increased. The researches published by the college are detailed in the report of the dean.

COLLEGE OF AGRICULTURE

During the biennium the expansion of the college of agriculture has gone on more rapidly than ever before. This expansion has been correlative with the great increase in the number of students in the college course of four years. During the two years the following new departments have been organized: agricultural economics, agricultural education, economic entomology, experimental breeding, plant pathology, home economics, and extension. In addition to these departments, on the administrative side an editorial office has been established.

Agricultural Economics

The importance of economics as applied to agriculture has led to the establishment of a department of agricultural economics. As yet but few farmers keep accounts that give them the cost and income of each of the farm products. In some cases the profit or loss of the farm at the end of the year may be known, but in reference to what portion of the profit or loss is due to the various products turned off very little exact information can usually be furnished. Much less is it the case that the farmer is able to determine the profit of the crop, taking into account its effect upon the land. Ignoring its effect upon the land, a piece of tobacco may show a profit, but if the deterioration of the farm, due to this crop, were taken into account, it might show a loss. When upon the farm a method of accounting is in general use which takes account of the effect upon the land, the owner will be able to judge of the real profits of his crops. It is plain that the business side of farming and

farm management are becoming increasingly important. In order that the best results shall be obtained, the management of a farm must be regarded as a business as well as a science. In order to get such results it is a necessity to produce each product economically and to handle all the products advantageously with reference to one another in order that the labor may be distributed throughout the year, the fertility of the land continued, and the value of the farm built up instead of being allowed to deteriorate.

The above are some of the reasons which have led to the establishment of the department of agricultural economics.

Experimental Breeding

In previous reports the large increase in the wealth of the state due to plant breeding in the departments of agronomy and horticulture have been considered. Just as there have been rapid improvements in the breeds of plants adapted to the use of the farmers, so there have been great improvements in the breeds of animals. While for a long time we have had a department of animal husbandry, the systematic study of the principles of breeding with reference to their application to the improvement of the herds and stock of Wisconsin has not been undertaken. This field will now be covered by the department of experimental breeding.

Economic Entomology

The losses to farm crops through parasites is enormous. Also the damage done by insects attacking the forests is very great. By Marlatt these were placed in 1907 at more than \$650,000,000 for the United States as a whole. While some work has been done by the department of horticulture, in the controlling of parasites and insect pests, this work had been merely supplementary to their regular lines. A consideration of the condition of this state showed that the time had come when it was necessary to take up the question of eliminating the damage due to insects, and to this end the department of economic entomology has been established.

Plant Pathology

Another great loss to the farmers in addition to those caused by insects are due to various plant diseases, illustrated by rust of grain. To a certain extent such diseases have been consid-

ered by the department of agronomy, as, for instance, in the case of smut of oats and barley. However, there has been no department in the college which has taken up the study of diseases of agricultural plants and their elimination as a special problem. Such diseases are numerous. They affect tubers, vegetables, grains and fruits alike. It is believed that the study of the conditions of the plant diseases in Wisconsin with reference to their elimination cannot fail to result in further reductions of the losses due to these causes.

Agricultural Education

During the past few years conservation has become a national policy, and of all the problems of conservation it is agreed that the conservation of the soil is the most fundamental, because from the soil come food and clothing. And if the soil is to be conserved this can only be accomplished by the practice of scientific agriculture by the 170,000 farms of the state. Already agriculture is taught in the rural school, in the county agricultural school, in the county training school, in some of the high schools, and in the normal schools. But thus far, agricultural education is admittedly far from satisfactory and certainly far behind such education in the highly developed agricultural countries, such as Denmark. If agricultural science and practice are to be taught in all the common schools in such a way as to be effective, teachers must be trained for the teaching of agriculture in the normal schools, high schools and county agricultural schools. These schools will in time train teachers for the rural schools. These are in brief the reasons which have led to the establishment of the department of agricultural education in the university. While as yet it has only begun its work, it is believed that in the future it will have a far-reaching influence.

Home Economics

At the beginning of the biennium the department of home economics, formerly in the college of letters and science, was transferred to the college of agriculture, with the expectation that the department would be reorganized. This reorganization required a year, so that during the first year of the biennium there was very little work given in this subject. The second year the reorganized department began its work with a well organized four-year course. The department is temporarily located in the

west end of the upper floor of Lathrop Hall. It had last year an unexpectedly large enrollment, some fifty in the four-year course, in addition to the elections in letters and science, some seventy in number. While looking somewhat ahead the number of registrations in the home economics course for the year 1910-11 is more than double that of the previous autumn. It thus appears that there is to be a very large demand for the work of this department.

Agricultural Extension

In 1909 the legislature appropriated \$30,000 a year for two years for agricultural extension. This sum has therefore been available for one year of the biennium. The extension work has been fully organized and is performing service along many lines to the farmers of the state, including the furnishing of plans for construction of farms, cooperating with farmers on systems of cost accounting, aiding secondary schools in the introduction of agriculture into their curriculum, the dissemination of pure bred seeds through the state, the organization of community breeding associations, field demonstrations of many kinds such as potato and orchard spraying, fertilizer tests of the soil in various parts of the state, demonstration sub-stations such as those in the northern part of the state and the cranberry district, stump removal demonstrations, etc. Also regular extension courses have been carried on at various places in the state, the most conspicuous of which is the farmers' course at the university. Next to these are the farmers' courses at the county agricultural schools. In addition to these are the farmers' schools of one week. It is certain that the agricultural extension service has reached many thousands of people. It is but a part of the general plan of the university to carry out to the people knowledge which they may apply to their advantage along all lines.

Instructional and Research Work

No attempt will be made to summarize the instructional and research work of the college, since these are so fully treated in the report of Dean Russell. During the biennium, a two years' course in agriculture has been established, which comprises the more practical studies of the four-year course. The purpose of this two-year course is to give instruction somewhat more extended than that of the short course to those who do

not desire or are unable to complete the four-year course. It is probable that the two-year course will have an increasing usefulness.

Also a thorough revision of the short course has been made, the chief effect of which is the development of laboratory practice. This course as it began was largely given by the lecture room method, but gradually the laboratory was introduced. Under the new plan each of the lecture courses is accompanied by laboratory work. Under the improved plan the short course student does not simply hear about the things; he actually works with them. A further important improvement in connection with this course is the equipment of the stock pavilion for physical exercise. It has been found that the short course students are especially likely to suffer from the change from an active to a sedentary life, and hence the necessity of providing for them regular physical work during their residence at the university.

The research work of the college has continued along many lines. There has been further development of the purely scientific work under the special grants given by the government. In this connection the college has begun the issuance of a series of research bulletins which contain the more technical results. The edition of these bulletins need not be so large as those which require general distribution.

LAW SCHOOL

During the biennium no important changes have been made in the law school. The removal of the regents' office to the administration building has given additional space. The library has been enlarged and rearranged. During the previous biennium the law school adopted the standard requirement for admission recommended by the Association of State Universities,—two years of work in the college of letters and science or their equivalent. In advancing to the new standard it has been necessary for a time to admit a certain number of special students not candidates for degree, who, while prepared for the study of law, could not meet the requirement. The number of students of this class has been decreasing and it is expected that in the near future, with the exception of a few students, we shall be squarely upon the new basis.

While there has been some increase in the number of students in the law school, this has not been large; nor can this be expected in the future. The increase in the admission requirements of the better law schools of the country so as to produce a higher standard of professional training for lawyers has had an unexpected effect. It has encouraged the commercial law schools in cities, many of which are essentially night schools, to continue, and some new schools of this class have been founded. These schools, like the commercial medical schools, give wholly inadequate training for the practice of law, especially along the lines of high ideals which should obtain in this profession. It is only by legislation giving the state examiners and state boards authority to require adequate training for the practice of the law that inferior schools will be compelled to discontinue or else to raise their standards so as to protect the public from poorly trained men.

GRADUATE SCHOOL

The graduate school, the students of which are located in the various colleges of the university, but chiefly in letters and science, has continued to grow rapidly. The average number of students in the previous biennium of the regular session was 206, and for the biennium to which this report pertains, 264, a growth of 28 per cent. Also in the summer session the average number of students in the previous biennium was 158, and for the present biennium 307, a growth of 93 per cent. For the entire period, including the summer session, the average number was 346, and for the present biennium, 545, a growth of 58 per cent.

Not only have the graduate students increased, but also the numbers of advance degrees granted have increased. This is especially true of the masters' degrees. The number receiving this degree for the past biennium was 119 and for the present biennium 194, an increase of 63 per cent. This means that an increasing number of men and women are not satisfied with the breadth of their training in the four-year college course and wish to supplement it by an additional year of work. In my previous reports I have dwelt upon the close connection between the investigations for the advancement of knowledge and the graduate school. Where one exists the other will be found.

During the closing year of the biennium an important change was made in the organization of the graduate school, which is to take effect the current year. Heretofore the policies of the school have been in charge of an administrative committee, the executive work being done by the director. This committee is to be decreased to five and is to confine itself substantially to executive and administrative work, and there are to be regular meetings from time to time of all of the members of the faculty engaged in graduate instruction. This is probably the first step toward the establishment of a faculty of the graduate school.

UNIVERSITY EXTENSION

In my biennial report for the preceding period the organization of the university extension division into the departments of correspondence study, instruction by lectures, debating and public discussion, and general information and welfare was described. During the second year of the biennium an increased appropriation was available, \$50,000 instead of \$20,000 as in the year before. This made possible the beginning of the organization of division districts, each with a staff of its own subordinate to the central staff. Two districts have been organized, one centering in Milwaukee and comprising the counties of Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha; and the second centering at Oshkosh and comprising the counties of Brown, Calumet, Fond du Lac, Kewau-nee, Manitowoc, Outagamie, Shawano, Sheboygan, Waupaca, and Winnebago. As heretofore the preparation of courses, the reading of papers, etc., are done at the headquarters at Madison. The men centering at a district headquarters do the field work of various kinds, also the classroom work and the general welfare work. Under this plan the time of the men and traveling expenses are saved and the work of a given man made more efficient. It is clear that wherever there is enough work in a district along one line to occupy the full time of one man it is better for him to be located in that district rather than at Madison.

The report of the director of extension shows enlargement along all lines. The number of students in the correspondence division has greatly increased, the number in this department at the end of the biennium being 4,246, as compared with 1,040,

two years before. In the Milwaukee and Oshkosh districts, at the end of the biennium, there were 43 regularly organized classes. One manufacturing firm has agreed to extend the time allowed to their apprentices for class work in extension from an hour bi-weekly to one full half day each week.

In the department of general information and welfare a municipal reference bureau has been established, the purpose of which is to collect data and information in reference to municipal activities and municipal government, so that the same may be furnished to city officials whenever they may be requested. The director informs me that during the first nine months of the service there have been some nine hundred inquiries from municipal officers for information upon various subjects.

Cooperation has been undertaken between the correspondence study department and the public school officers under which school buildings have been used by the extension division. It has been found that the use of the school buildings does not interfere with the purposes for which they are constructed, but rather makes them available to the communities for a larger service. It is obvious that if a school building which is used not more than six hours a day can be adapted to the general purposes of the community in the evening it will gain larger fruits from its investment.

SUMMER SESSION

The summer session has continued to expand rapidly. Throughout the biennium work was offered in letters and science, engineering, law, and the dairy school. Agriculture was first given in the summer of 1910. During the previous biennium the average attendance was 615; for the current biennium 1,077, an increase of 75 per cent.

During the second year of the biennium the summer school for artisans in the college of engineering was changed to a regular summer session. This was a natural development due to the fact that the character of the work demanded had become of an increasingly higher grade. This change was analogous to that by which in 1899 the summer school of letters and science was changed to the summer session of the university. The work of the former was mainly of preparatory grade; the work of the latter is of college and graduate grade.

In his report, Director Sellery calls attention to the fact that in the summer session the great majority of the students take work for credit with the idea either that the same shall become a part of their regular college course or that it count toward an advance degree. He says of the students: "They are a zealous, hard-working group of men and women and their enthusiasm and appreciation of the opportunity they enjoy in attending the university in the summer are an inspiration to the instructional force."

PHYSICAL TRAINING

In the department of physical training, the work of the men during the biennium has continued much as heretofore. The great change has been in reference to physical training for women. In January, 1909, Lathrop Hall became available. For the first time this furnished adequate physical training facilities for the women; these have already been referred to. (See page 10.) During the second semester of the second year of the biennium nearly eight hundred women registered for physical training, and 116 classes a week were held. The university has now both instructional force and facilities to give all of the women of the university adequate and appropriate physical training.

MILITARY DEPARTMENT

The report of the commandant, Captain Ralph McCoy, shows that the work of the military department is in a more satisfactory condition than it has heretofore been. The beginning classes have increased so rapidly that already the number who work in this department has reached nearly one thousand. The students have been organized into a regiment of three battalions of three companies each, a hospital corps detachment, and a target detachment. The regiment is officered by men from the higher classes. The average number of commissioned officers during the biennium was 21. For 1910 the commandant reports 35 such officers. These men, having had service as company and regimental officers, would be able to take commands as company and higher officers in case of emergency.

As Captain McCoy fully explains the main purpose of the military department so far as the nation is concerned is to train

men, so that in case of war those who have served the allotted time as cadets would be able to act as company officers in voluntary infantry. This purpose is indeed an important one; but wholly aside from this it is clear to me that the department serves a useful purpose in general education. To be taught to stand erect, to walk correctly, to work as one of a group and to be amenable to discipline, are well worthy the efforts put forth by the university to make the military department effective, aside from possible service to the nation in time of war.

WASHBURN OBSERVATORY

The work of the staff of the Washburn Observatory has been a continuation of that of previous years. It is primarily a research institution, although its facilities are used for instruction. The director of the observatory has been carrying on important researches with reference to extending knowledge of the structure of the stellar system. Provisional results already published are important advances in reference to our conception of the heavenly system.

HYGIENIC LABORATORY

The work of the hygienic laboratory the first year of the biennium continued much as heretofore. The second year of the period, due to the increased funds granted by the legislature, the appropriation for this laboratory was increased from \$2,250 to \$7,500. As a result the laboratory has been able largely to extend its work. During that year there were 3,338 examinations made for various diseases,—diphtheria, rabies, typhoid fever, etc., and of such materials as sputum and water. This work was done for physicians from all parts of the state. Also during the year there was established a pasteur institute for the treatment of rabies. While the first patient was not received until in the middle of November, 1909, to the end of the year, 89 patients had been treated.

THE NEEDS OF THE UNIVERSITY

INCREASES IN SALARIES

In my biennial report of two years ago, in connection with the increasing number of students and the increased cost of living, the question of increases in the salary roll for instructional purposes in the university was discussed. Since the increase in students during this biennium has been greater than ever before and since the cost of living has continued to increase, it is necessary again to consider the salary account. In the report mentioned were given the average salaries for 1904-5, antecedent to the two-sevenths of a mill tax, the salaries for 1907-8, three years later, and the increased percentages of these three years. These facts are repeated in the table below:

	1904-5		1907-8		Percent- age of salary increase.
	No. in force.	Average salary.	No. in force.	Average salary.	
Professors	56	\$2,443 75	68	\$2,772 05	13.4
Associate professors	8	1,912 50	13	2,083 15	8.8
Assistant professors	36	1,563 88	53	1,635 84	4.6
Instructors	83	927 71	106	1,064 90	13.6
Average of all.....		1,560 38		1,730 33	10.9

The salary increases during the past biennium are shown by the following table:

Average Salaries for 1909-10

77 professors	\$2,954 55
23 associate professors	2,147 83
74 assistant professors	1,735 14
132 instructors	1,126 80
Average of all.....	\$1,826 59

Total Increases in Average Salaries for the Past Biennium

Professors	\$182 50
Associate professors	64 68
Assistant professors	99 30
Instructors	61 90
Average of all.....	\$96 26

Total Increases in Percentages for the Past Biennium

Professors	6.5%
Associate professors	3.1%
Assistant professors	6.1%
Instructors	5.8%
Average of all.....	5.6%

The rapid increase in the cost of living, discussed in the previous biennial report, has continued to the present time, except that on account of the financial depression in the latter part of 1907 and the first half of 1908 prices fell sharply. Beginning with the middle of 1908 the prices began again rapidly to rise and have continued to do so to the present time. According to figures taken from Bradstreet's, the prices of 96 representative commodities, including such articles as wheat, timber, pig iron, hogs, sheep, coal, milk, bread, copper, hay, petroleum, in 1909 were 6 per cent higher than in 1908. For the first six months of 1910 the average price of these commodities was 13 per cent higher than in 1908, and as compared with the low prices in 1896, 53 per cent higher.

In my report for 1906-8, I also showed that correlative with the increased prices had been a vast increase in the output of gold. This increase of gold has gone on with accelerating ratio during the past three years, and this is likely to continue for some time in the future. It is therefore clear that the fall in the price of gold which was made clear in this report has continued to the present time and is likely to go on in the future, at least for a number of years. It is therefore clear that notwithstanding the increase in the average salary in dollars paid to members of the instructional force, at the end of the biennium, they were no better off so far as purchasing powers of their salaries were concerned in 1907-8 than they were when the increase in the salary scale at the university was inaugurated.

These facts led the regents in 1909-10 to consider the adoption of a standard salary scale. After full consideration the president was directed to present a budget to the regents upon the following normal salary basis:

Instructors, first year appointment, \$1,000; increase \$100 a year to \$1,500.

Assistant professors, first appointment for three years, \$1,750; second appointment for three years, \$2,000.

Associate professors, first two years, \$2,250; second two years, \$2,500; and third two years and thereafter, \$2,750.

Professors, \$3,000; after three years, \$3,250; after five years, \$3,500. (Provided that those professors whose salaries are \$2,500 be increased to \$2,700; those at \$2,700 to \$2,850; those at \$2,850 to \$3,000; and increases in these cases are to be made each year until the standard of \$3,000 is reached; after which the regular rule is to apply.)

Also at the present time there are five men, other than the deans, receiving salaries varying from \$3,800 to \$4,000, but three of these men in addition to their professorial work are directors.

How moderate are the salaries now paid is illustrated by some of the events of the year just closing. One professor who was receiving \$3,250 here has gone to another institution at a salary of \$5,500; another receiving a salary of \$3,500 here went elsewhere at a salary of \$5,000; and still another receiving a salary of \$4,000 went to a \$5,000 professorship.

In proposing the provisional salary scale above given, it was recognized by the regents that it would not be practicable to place the entire force squarely upon it for the year 1910-11, since this would involve a larger increase in the budget for salaries than would be warranted, considering the finances of the university. This budget, as adopted by the regents, carries the following average salaries:

79 Professors	\$3,067 72
34 Associate professors	2,188 24
75 Assistant professors	1,746 89
143 Instructors	1,181 19
Average of all.....	\$1,871 79

It may be of interest to compare the above salary scale with those which, in recognition of the rapid increase in the cost of living, have been recently put into force at some other institutions.

In Harvard University, professors in Harvard College are ordinarily first appointed at a salary of \$4,000 and increased by \$500 every five years to \$5,500. In the law school professors are usually appointed at \$5,000, and increased by \$500 each five years until they reach a maximum of \$6,500. In Harvard College associate professors are appointed with salary of \$3,500 and a maximum salary of \$4,500; assistant professors are ap-

pointed for a five years' term at a salary of \$2,500, and on reappointment for two years usually at \$3,000.

At Yale the standard of salaries in 1906 was raised for professors from \$3,750 to \$4,000, and it is now announced that a new salary scale has been put into force in which instructors are to have salaries from \$1,000 to \$1,600; assistant professors on first appointment for three years from \$1,800 to \$2,000; second appointment \$2,500 for three years, after which they are to receive a salary of \$3,000. The normal salary for professors is to be \$4,000, \$4,500, and \$5,000, depending upon the length of service. Already twelve professors have been placed upon the maximum salary of \$5,000 and a slightly larger number on the \$4,500 basis.

At the University of Minnesota the salary problem is being considered at the present time. A report of a committee of the regents, appointed to consider this subject, recommends that the salaries of instructors for first appointment be \$1,200, with increases of \$100 a year until \$1,500 is reached; first appointment of assistant professors for three years, minimum salary \$1,750, with an increase of \$250 at each three-year reappointment until a maximum of \$2,500 is reached; the minimum salary for professors to be \$2,750, with an increase of \$250 every three years to \$3,750 per annum.

If the very modest salary scale proposed for Wisconsin is kept in force, involving increase of pay with length of service, this will of necessity very considerably increase the amount which must go to salaries each year. This, however, is only one factor in the increase in the total salary account of the university.

Another factor is the necessity for enlarging the instructional force on account of the increase in the number of students. It has been seen that the increase was 23 per cent for the biennium, and for the beginning of the year 1910-11, as shown by comparing the directories of last year and the current year, the increase is 407 or 11.6 per cent. The figures show that the enlargement of the instructional force must continue; for only by doing this as the students increase in number can the efficiency of instruction be kept at a high level. The enlargement of the force should be in proportion to the increase in students. While it may be necessary to establish some new departments, and while existing departments will need to be extended, the

cost of the same so far as salaries are concerned should be absorbed in the increase in cost above considered. Therefore these factors will not be considered in detail here; they are covered in the reports of the deans.

COLLEGE OF LETTERS AND SCIENCE

In the college of letters and science, as in other colleges, the staff of the departments will need to be enlarged as the students increase; but this does not require consideration beyond the statement already made.

Department of Art

In letters and science it will be necessary during the next biennium to establish only a single additional department, that of art. In most of the large universities of the country such a department already exists. Of the twenty-two institutions of the Association of American Universities, eighteen offer work in art, and of the eleven state universities here included, nine offer work in art. A number of state universities, as for instance, Michigan and Missouri, have large and beautiful collections of casts and photographs, and ample space in which to exhibit the same. These are not only a great inspiration to the students but to the many visitors from all parts of these states.

As compared with the European, the American is deficient in his opportunities to see and is still more deficient in his capacity to appreciate art. In the university this side of the nature of the student is starved. Even where a longing exists to learn about art the university cannot satisfy it. The American who has traveled in Europe understands how great is this gap in the educational opportunities of the institutions. As one goes through life the love for the beautiful becomes a growing pleasure of the purest kind. It is perfectly clear that if the university is to do its best to develop the people of the state along the highest lines, it must give opportunity for the study of the history and appreciation of art in the university. We have developed rapidly along material lines; department after department has been added during recent years in the applied sciences. This should have been done; but the material wealth which results from the development of applied science is for the man, and the man himself should not be neglected.

Model School

The second line of expansion which is imperatively demanded is the establishment of a university secondary school to serve for observation and practice and for training of teachers. At the present time the institutions which really offer fully satisfactory courses for the training of teachers have such schools. These include: Colorado, Illinois, Minnesota, Missouri, Nebraska, North Dakota. Recently such a university school has been completed at the University of Toronto at a cost of \$200,000. The cost of the maintenance of this school is \$25,000 per annum. Professor Elliott estimates that the cost of a building equipment probably would be \$150,000. The maintenance of the school when it is established will probably cost about \$20,000 per annum.

I shall not attempt to go into details as to the necessity for such school; it is understood by all educators. The necessity for demonstration and practice schools for the professional training of teachers is recognized in the state in reference to each of the normal schools. Certainly another legislature should not go by without adequate provision for the construction and maintenance of a proper university secondary school.

Wing to Chemistry Building

The chemistry building, first occupied in January, 1906, even two years ago was so overcrowded that in my previous report it was strongly urged that an additional wing be constructed. The situation has become much worse than then described. While looking somewhat ahead it may be said that at the opening of the semester of 1910-11 there are 750 beginners in chemistry and 450 others, making a total of 1,200 students in the chemical laboratory. It has been possible to provide for the students only by placing old desks to hold the apparatus along the walls and in the aisles. Even using every available corner for such purposes 70 students have no lockers at all. The space at the desks has been subdivided so that each student has a minimum amount. One division after another uses the same laboratory, so that it is occupied throughout the day. I cannot see how it will be possible to provide for the students in chemistry who are likely to apply in 1911-12. Certainly the legislature should not adjourn without making provision for a wing to this building, which at the best cannot be ready before the

college year 1912-13. It is estimated that such wings will cost \$30,000 per unit, and at least three, and Professor Kahlenberg thinks five, units should be constructed, making the needed additional cost from \$90,000 to \$150,000.

Wing to Biology Building

The need of additional space for other departments of letters and science is fully covered by the report of the dean and also is considered by the directors.

Probably this need can best be met by building one of the wings to the new biology building. If this were done it would be given to the allied departments of political economy, political science, history, and sociology, and thus accomplish a thing which has been desired for years,—bring these departments together and enable them to gain the *esprit de corps* and efficiency which would come from this close association. By moving these departments to a new building, other departments, such as language, literature, commerce, etc., would have increased space in university and north and south halls.

As pointed out by the dean, there is pressing necessity for enlarging the opportunities for conference of the students with the instructional force of each of the departments, either individually or in small groups. Already this has been done to a certain extent in a number of departments, as explained in my biennial report of two years ago; but to carry out this plan in all departments to the extent to which it should be done would require a very large increase in the number of offices; yet there is nothing which would more enhance the efficiency of the instructional work than to do this. The cost of a wing to the biology building is estimated by Architect Peabody as \$55,000.

School of Music

As soon as the repair shops now in the basement of Assembly Hall are moved to the new building adjacent to the central heating plant, the basement may be used for music practice rooms. For these it will be necessary to purchase additional pianos. The old organ in the assembly room, wholly useless for high grade work, should be placed in one of these rooms so as to be available for practice. This done, there should be purchased a modern four manual organ to cost from \$6,000 to \$6,500 for the assembly room.

Library School

The success of the Wisconsin Library School, now a school of the university by an act of the legislature, but still under the control of the Free Library Commission rather than the Regents, has been such as to make the demands upon it far exceed the number that can be accommodated. The library commission therefore urges that the salary staff of the library school be paid from the funds of the university. This would involve an expenditure of about \$7,500 for the first year and a somewhat increasing amount thereafter. If this were done the library commission would still continue to pay the other expenses of the school.

It is proposed by the director of the school that it shall extend its instruction to include the following courses: (1) A one year course for experienced librarians and other with special qualifications; (2) A two years course similar to that now given by cooperation of the library school and the university, this to be the leading course of the school, and two years of college work or its equivalent to be a prerequisite for admission in addition to other qualifications; (3) A short course substantially as now given. In addition to these there would be lectures to students fitting themselves for teaching library methods and lectures upon library administration especially available to students in commerce who are thinking of library administration as a career.

MEDICAL SCHOOL

The medical departments are now housed in three different buildings and in each their quarters are very much crowded. At the earliest moment a medical building should be constructed which would bring the departments of medicine together. In this way not only would medicine be adequately provided for, but the removal of these subjects from the chemical engineering building, science hall, and south hall, would make the space there occupied available for other departments. No accurate estimate has been made as to the cost of such a building, but probably one adequate for the purpose would require approximately \$200,000.

An immediate need of the medical school is a satisfactory animal building, which the dean thinks may be erected at a cost of \$2,500.

As with all departments, there is need for additions to equipment and to the library of the college. Also there is asked additional janitor service and clerical help.

The one important expansion in the instructional work of the medical school which should be undertaken during the next two years is a course in public hygiene for the training of health officers. It has been difficult to provide for such a course because of lack of space. As soon as the biology building, now under construction, is completed so that the departments of botany and zoology may be removed from science hall, it will be possible to find space for this work. The expense of the establishment of a course for the training of health officers will be inconsiderable, since in the faculties of medicine, engineering, and letters and science are men who could give the necessary instruction. For material equipment the facilities of the medical school will be available. The establishment of a course in which health officers from all parts of the state may obtain special training is recommended by the board of visitors for 1909-10 as being a step which will be very important in preventive medicine.

COLLEGE OF ENGINEERING

The completion of the new wing to the engineering building much improves the condition of the college of engineering. The laboratories, however, are very much over-crowded, especially those in chemical engineering and applied mechanics. The dean believes that a mechanical laboratory should be constructed in the near future. If by the construction of a medical building, it were possible to remove the departments of physiology and pharmacology from the chemical engineering building, chemical engineering would be adequately provided for for some time to come.

As heretofore, considerable appropriations will be needed each year for equipment, additions being especially needed in the department of electrical engineering, mechanical engineering, and mining engineering.

At the present time the research fund of the college has been only \$4,500 per annum. This amount is too small. Two years ago it was asked that this fund be increased to \$10,000 and Dean Turneure again urges that it be doubled.

COLLEGE OF AGRICULTURE

The very rapid increase in the number of students in the college of agriculture is summarized by the dean. He gives an estimate of the probable increase for the coming three years during which the constructional needs are to be considered; he thinks that the enrollment for 1912-13 will be in the long and graduate courses in agriculture, about 740, and in the autumn of the following year, 1913, 930.

Agricultural Chemistry

A consideration of the laboratory space in the central agricultural hall leads Dean Russell to conclude that agricultural chemistry and bacteriology cannot possibly be accommodated for three years longer. Therefore, he proposes that a building be constructed for agricultural chemistry, which shall be so planned as to provide for the distant future; but that for the present a central unit be constructed with an auditorium to accommodate from 350 to 400 students and one laboratory wing sufficient to accommodate 150 students. His estimate of the cost of this building is from \$60,000 to \$75,000. That additional space for work in agricultural chemistry will be needed in the near future is certain. But the question should perhaps be raised as to whether it would not be better for the present to accommodate agricultural chemistry, so far as it is necessary to take it out of agricultural hall, in wings constructed upon the present chemical building, which is so planned as to admit of great enlargement.

Home Economics

As has been noted in another place, the department of home economics is temporarily located in the attic of Lathrop hall. The increase in the number of students in this department the second year of its reorganization already makes it impracticable to provide adequately for the work. Dean Russell estimates that probably in the year 1912-13 there will be 175 students in the long course in this subject, and in addition 200 elections from the students in letters and science. He thinks that the number in each of these departments is likely to be 50 greater by the following year. I fully concur in his recommendation that provision be made for a building for home economics, as do also the board of visitors of 1909-10.

The home economics building of the Agricultural College of Cornell University cost about \$150,000. At the University of Toronto a building for this department has just been completed which with equipment will cost \$400,000. It is believed that the more modest sum, \$150,000, will provide for a building for home economics for some time in the future. Plans should be made so as to permit the construction of a part of the building at present with provision for future expansions as the need appears.

Soils

The soils building is very much overcrowded. Additional space will be required as soon as same can be provided. Dean Russell estimates that to construct an adequate wing to the soils building, with its equipment, and the necessary remodelling of the old building to suit the new wing, will cost approximately \$60,000.

Library

The library of the college of agriculture is located in the central hall, which is not fireproof. Already this library has become very valuable, containing now more than ten thousand volumes and nearly ten thousand pamphlets. As soon as practicable it should be housed in a fireproof building.

In this connection, the question may be raised, when this library is transferred, whether the project should not be considered of constructing a library for the applied sciences, including agriculture, medicine, and engineering.

Purchase of Koch Farm

The Koch farm, containing seventy acres, adjacent to the Hill farm of the university, has been leased for a period of five years, with the privilege of purchase at \$15,000. In order to have ground to raise the pure-bred seed grains for distribution through the state, it is necessary to have this land. The price at which it can be obtained is very reasonable, and I strongly urge that funds be made available for this purpose.

FORESTRY

In our biennial report of two years ago, both the dean of the college of letters and science and the dean of the college of agriculture explained the desirability of the extension of forestry

instruction in the university. During the biennium, as I have already pointed out, in connection with the forest products laboratory, courses in the handling of forest products have been introduced. Also a considerable number of courses are offered which belong to a curriculum in forestry. These cover forest botany, dendrology, histology of timbers, elementary plant physiology, elementary pathology, plant pathology, entomology, etc. The departments of chemistry, physics, physiography, surveying, mechanical drawing, etc., furnish the work needed in these subjects. Professor R. A. Harper says our immediate need is to supplement the more general courses already given by elementary work in special lines, such as silviculture, forest mensuration, forest seeding, planting, etc. These are courses which are offered for undergraduates in the best forestry schools, and they would be of special interest to students of agriculture from the standpoint of their relation to the management of farmers' woodlots, street planting, etc., as well as to those who are looking forward to professional work in forestry. For the first year this work could be given by one man, an assistant professor of forestry, who would be able to advise and direct the work of students who are preparing for more advanced and graduate work elsewhere.

But it is the opinion of Professor Harper that in the near future the state will require a regularly organized school of forestry which will provide at first graduate work for one year and ultimately graduate work for two years. In his opinion such a school should offer facilities for thorough scientific training of professional foresters. It is his belief that such a school would be an active influence in conserving and developing the forest resources of the state.

The development of a school of forestry should be a matter of growth. For this reason it seems advisable to introduce further forestry work during the next biennium and move forward gradually along the lines where development is most immediately demanded. At the outset the courses for which there is most need are those for forest rangers, so that men may be trained in the practical problems of forest management. The rapid destruction of our forests by cutting and by fire, combined with the fact that a considerable portion of the state of Wisconsin is better adapted for forests than for other products, and the presence here of the forest products laboratory of the

United States government, will undoubtedly lead to an increasing demand for instruction in forestry in the university.

EXTENSION

During the second year of the biennium there was available \$50,000 for university extension, and for the first year of the coming biennium there will be available \$75,000. In addition to this there was an appropriation of \$30,000 a year for two years for agricultural extension, one of which applies to the last year and one to the coming year.

It has been explained that the university extension division has organized two districts with sub-centers for administration. To cover the entire state will require the organization of nine additional districts. To accomplish this Dean Reber estimates will cost \$50,000 per annum. Also there is need for enlarging the amount for agricultural extension. In any case the appropriations for the coming year of \$75,000 for university extension and of \$30,000 for agricultural extension, should be continued for two years.

The extent to which these funds are enlarged should be left to the legislature, since they all go directly to the upbuilding of the state, not to the students at Madison. The benefits which have come to the state through the extension funds have already been summarized and are fully set forth in the reports of Deans Reber and Russell.

A pressing need for the extension division in addition to income is provision for housing. At the present time the space which can be offered for the extension division in University hall is entirely inadequate. Moreover, this space is very badly needed for regular instructional work of the departments in liberal arts. It is clear that it will be absolutely necessary within a year or two either to have a building for extension, or to rent quarters for this division until such building can be provided. Dean Reber estimates that the cost of an adequate building will be \$75,000.

PHYSICAL TRAINING

In the department of physical training, so far as buildings and equipment are concerned, the needs of the women are fully

met, and while a new gymnasium for men should be constructed as soon as practicable, this cannot be expected during the next biennium.

The immediate needs of the department are those of enlargement of the force, especially for the men, so that the work may be conducted along modern lines. This is fully explained by the director and here will be only briefly commented upon.

With the new appreciation that a sound body is essential to mental efficiency, there is a rapidly increasing demand for instructors in physical training in the universities, the normal schools, and the high schools, the fundamental idea of which is that each boy or girl shall become interested, in some game or sport so that daily exercise will become a life habit. In the university there should be formulated a four years' course which shall give this professional training. Now that we have the first two years of medicine and the preparatory fundamental sciences, a physical training course may be offered without the addition of any other departments.

As soon as a course is established and there are in it a considerable group of students, this will make it possible better and more cheaply to accomplish the work of physical training of the students at the university.

In order to have a successful course for physical training the students in it should have an opportunity for practice work. This work they will get as squad leaders in the gymnasium and in the field. Probably the efficient physical training of the student body can be more cheaply accomplished in connection with a teachers' course than without, when all squad leaders must be employes of the university.

To carry out the above plans the amount of ground available for sport outside of the gymnasium must be greatly enlarged. The lower campus should be newly surfaced and a wire fence placed about it. At Camp Randall all the grounds available south of the grand stand should have the stones and rocks removed and the grounds adapted to out of door work. This will give additional tennis courts and fields for football, baseball, hockey, etc.

DRILL HALL

In my report of two years ago I called attention to the need for a drill hall on Camp Randall for the military department

and to provide lockers and showers for the use of men who are engaged in outdoor sports. As time has gone on the demand for this building has become more insistent. The report of the commandant shows that it is impossible under the present circumstances to make that department as efficient as it should be because of lack of room in which to carry on drill work. The report of the director of physical training further shows that the use of the building for an armory interferes very seriously with that of the physical training department. Further, whenever a general auditorium is needed, both the physical training and gymnastic departments are dispossessed. Finally, the reports of the hygiene committee have again and again emphasized the fact that a building which is used for a gymnasium should not be used for a drill hall or an auditorium, since these uses prevent it being kept in a sanitary condition which should characterize a building for physical training. In my report of two years ago it was estimated that an appropriate drill hall would cost not less than \$75,000.

HEATING STATION

In order to provide heat for additional buildings which are under construction, it will be necessary to add during the year 1910-11 two additional 350 h. p. boilers in the new central heating station. Hot water meters should be installed in each of the buildings; other changes should be made. The total cost of these additions and changes is estimated by the superintendent of the heating plant at about \$25,000. As additional buildings become available additional boilers will need to be added. This will probably necessitate further expenditures during the year 1911-12, and certainly during the year 1912-13.

LIGHT AND POWER STATION

A careful investigation has been made by Professor H. J. Thorkelson as to the cost of installing a light and power station for the university. His investigation shows that the building and equipment of an adequate station would cost \$90,000. This estimate provides for electric power to drive pumps at the pumping station, and also provides for carrying an over-load of 25 per cent beyond the maximum. Dean Turneure, who has

considered this report, estimates that the installation of this plant would save the university for power and light about \$9,000 a year, in addition to 10 per cent for interest on investment and depreciation. If a plant were installed to furnish only the current which is now supplied by the Madison Gas & Electric Company, it would cost \$45,000 and would result in a saving of \$7,000 a year.

PUMPING STATION

In two previous reports, those for 1904-6 and 1906-8, I have emphasized the necessity for the construction at the earliest moment of a new permanent pumping station. The amount of water which is being used steadily goes up as the number of buildings increase. It is important with reference to fire protection to have a large reserve of water and pumping power. Year after year Professor Mead has reported that the pumping system of the university is wholly inadequate to meet an emergency. To provide an adequate pumping house station and its equipment would cost from \$20,000 to \$25,000.

STUDENT BUILDINGS

Of all the general constructional needs of the university that for student accommodations is the most imperative. In three previous biennial reports, those for the years 1902-4, 1904-6, and 1906-8, this need has been emphasized. During the past biennium Lathrop hall, a general building for the women, has been completed. It is expected that, unless other provision is made (see p. 52), about \$100,000 of the appropriation of the last legislature will be available for the construction of an additional dormitory for women. Thus the situation depicted in my previous reports has been much improved, so far as the women are concerned, and is likely to be still further improved when the dormitory in question is constructed. Nothing, however, has been done in the way of dormitories, commons, and union for the men.

I shall not attempt to repeat the arguments of my previous reports and my inaugural address as to the necessity for such buildings; but must add that as each year goes by this becomes more pressing. There should be a union constructed for the men at once which will give them the full opportunities of so-

cial life in a building of their own similar to those which the young women enjoy in Lathrop hall. The men have certain privileges in the Young Men's Christian Association building, but these are wholly inadequate. The union building should contain extensive dining halls so that the men may be furnished with good board at reasonable rates. As the students increase in number a man is more and more likely to be lost in the crowd, and the demand for a union building becomes more urgent.

The commons and union are put first among the student buildings because they will be available to all the men. However, there is equal necessity for the construction at once of a system of dormitories for the men such as already exist to a limited extent for the women. With the increasing number of students the cost of rooms has steadily increased. Only a few years ago the fraternity houses were regarded as expensive places to live; but the increasing prices charged by rooming house keepers, perhaps necessarily with the high real estate values which obtain at Madison, have made the expense for equal accommodations about the same as in the fraternity houses. At the present time it is difficult to get satisfactory board and lodging with two in a room for less than \$6 per week. Many students are obliged to pay considerably more than this amount. When dormitories are built upon university grounds and there is no necessity of paying interest on the investment, it should be possible to give good accommodations to students at a less figure than this.

It is very important that the cost of education at the university be kept as low as possible in order that the young men and women of the state having intellectual endowment fitting them for such work should have the opportunities of the institution. The plan for dormitories is fully approved in the report of the board of visitors for 1909-10. For the purposes of commons and union for the men and for dormitories for men and women there should be available not less than \$250,000 a year for a period of years.

Another building for student purposes for which there is immediate necessity is an infirmary. Dean Bardeen states that while the Madison General Hospital admits some of the students, its resources are inadequate to meet the requirements. Further, there is no provision for contagious diseases in that

hospital and the city contagious hospital takes only cases of diphtheria, scarlet fever and small pox. There should be accommodations available for isolating and properly caring for students with diseases such as mumps, measles, etc., which, while not so dangerous as those above mentioned, are contagious, and therefore should require the prompt removal and isolation from the rooming house or dormitory of each student. The cost of an infirmary adequate to meet the needs of the students is estimated by Dean Bardeen roughly at from \$35,000 to \$50,000.

WING TO LIBRARY

While not belonging to the university, our library is located in the state historical library building, and I must again call attention to the necessity for the completion of an additional wing to that building. In my report of two years ago I stated that this building is full from garret to basement; the bookstacks are crowded, the seminary room inadequate, the museum full. Some temporary relief will be obtained on the university side by removing the engineering library to the new wing of the engineering building. While this will make it possible to handle the library for the coming year it would seem almost impossible to provide adequately for the new books during the following years, unless an appropriation is made for the additional wing by the coming legislature. Even if this were done the wing would not be available until the college year 1912-13. It should be noted that the board of visitors for 1909-10 recommend that "steps be taken at once to provide the additional wing to the library building."

GENERAL AUDITORIUM AND MUSEUM

In previous reports I have mentioned the desirability of a general auditorium for the student body and for a university museum. While such buildings should be provided as soon as practicable, there seems little hope that we can expect funds will be appropriated for them by the coming legislature. Certainly they should not take precedence over the pressing needs which have been mentioned. Probably the best way to provide for an auditorium until the Vilas bequest is available for the Vilas theater will be to build a new modern gymnasium on university

grounds, as provided in the plans for the future constructional development of the university, and adapt the present gymnasium for an auditorium and the school of music.

A state museum building valuable for the instruction at the university and available to the people of the state will probably have to be deferred until more insistent needs are met.

BOOKS, APPARATUS, FURNITURE, AND EQUIPMENT

In order to provide for books, apparatus, furniture, and equipment, the appropriation of \$50,000 a year for two years, made in 1909, should be continued for not less than two years. The necessity for continuing this appropriation is made clear in the report of the librarian and the reports of the deans. In many respects the library requires supplementing, but building it up can best be accomplished through the continuance of a fair appropriation through a series of years, rather than by a single large sum.

AUTHORIZATION FOR TRANSFER FROM GENERAL FUND

Authorization for transfer of monies from the general fund in anticipation of the payment of the mill tax should be continued for two years. By the suggestion of the university authorities in 1907 this law was extended for two years, limiting the amount to \$250,000 and in 1909 two years more with a limit of \$200,000. It is now suggested that this law be extended for two additional years, limiting the amount to \$150,000 per annum. This is in accordance with the informal understanding that funds should be accumulated at the rate of \$25,000 a year so that the amount which may be borrowed from the general fund in anticipation of the payment of the taxes should be reduced each biennium by \$50,000.

LOAN FUND

A further very pressing need of the university is an increase of its loan fund. At the present time the loan fund wholly derived from various benefactions amounts to \$11,000. Each year there are many students of ability who are obliged to withdraw from the university because of lack of money. It is always a source of regret and sorrow to the university officials to

have this prevent a capable student from continuing his academic career. In case such students live they may be relied upon to pay the loans made to them. The university should have at once a loan fund of not less than \$100,000 in order that students who show themselves to possess character and ability should not be obliged to leave the university on account of lack of funds, if by loaning money to them they would be able to continue. I am informed by the authorities of the University of North Carolina that that institution has a fund of \$40,000 and further, that the fund is so managed that the interest more than compensates for the losses; therefore the fund is an increasing instead of a decreasing one. There is no direction in which a liberal-minded citizen of the state of Wisconsin, who has gained his wealth from its resources, could invest funds for its development to a better advantage than by contributing an adequate sum for a loan fund for students.

SUMMARY

Summarizing the needs of the university, I shall repeat the recommendations which were made two years ago. Had these recommendations been approved by the last legislature we would not now be so far behind in our constructional work. Their adoption at the coming session is therefore even more imperative than at that time.

1. For increase of income. A considerable increase in income is necessary to carry out the moderate salary scale given on a previous page, to enlarge the force in proportion to the number of students, to add the necessary departments, and provide for other increased expenditures, including a department of art, maintenance of model school as soon as established, provision for the salary of the library force, and other increases due to growth, such as additional heat, light, water, and janitor services necessary in connection with an enlarged plant. Also from our current income the lands purchased have been provided for. During the next biennium the Koch farm should be purchased; also there are obligations upon the Olin property purchased in order to procure an appropriate site for women's dormitories, and upon the proposed purchase of land for the location of a dormitory, commons, and union for men. The necessary increase of income to provide for the above will require about \$150,000 per annum above our present resources.

At the last session of the legislature it was proposed that the increased cost of the university be met by changing the two sevenths of a mill tax to three eighths. It was explained that this would increase the tax of the university upon a valuation of \$5,000 by 44 cents. This suggestion was not adopted but an increased appropriation for current expenses was made of \$100,000 a year for two years. This appropriation therefore expires July 1, 1911. It is now proposed that in lieu of this appropriation and for the additional increase considered that the two-sevenths of a mill tax be changed to three eighths.

2. The permanent educational improvement appropriation of \$200,000 per annum which has been made for seven years should be extended to nine years, and should be enlarged to \$300,000 per annum. Of this, \$250,000 each year should go to buildings and \$50,000 for books, apparatus, furniture, and equipment, the latter in lieu of the \$50,000 appropriation for these purposes which is available for two years.

This fund should be released from the requirement of constructing a women's dormitory to cost about \$100,000, and such dormitory should be constructed from the fund considered under No. 3 below. The requirement for the construction of a women's dormitory from the \$200,000 educational construction fund was inserted by the last legislature, but because of the great pressure for educational buildings it has been put off until the third year, that beginning July 1st, 1911. At the time this requirement was inserted the appropriation for permanent improvements was reduced by \$50,000. For the two years from July 1, 1907, to June 30, 1909, there were available for constructional purposes and for books, apparatus, furniture, and equipment, \$300,000 per annum. At the last legislature this fund was decreased to \$250,000, being divided into two parts, \$200,000 for buildings and \$50,000 for books, apparatus, furniture, and equipment. It is now proposed to restore the permanent improvement fund to the amount it was before and not to attempt from this to provide for student buildings. If this suggestion be accepted, we shall have for educational construction during the next three years \$200,000 already appropriated for the fiscal year beginning July 1, 1911, and \$250,000 per annum for the following two years, altogether \$700,000. With these sums the buildings mentioned below should be constructed in the order of the greatest need. The estimates for each build-

ing are, only roughly approximate, since they are not based upon detailed plans and specifications. In making them the attempt has been to err upon the side of making them conservative, and probably they are on the average somewhat too low.

We have seen that the following large constructions are immediately necessary:

Model school	\$150,000	
Wing, chemistry building, three to five units....	90,000	\$150,000
Wing, biology building.....	55,000	
Agricultural chemistry building.....	60,000	75,000
Home economics building.....	150,000	
Wing, soils building.....	60,000	
Extension building.....	75,000	
Drill hall.....	75,000	
Addition to central heating station, as a minimum	25,000	
Power and lighting plant.....	45,000	90,000
Pumping station.....	20,000	25,000
		<hr/>
Total	\$805,000	\$930,000

No significance is to be attached to the order in which the buildings are mentioned.

It appears from the table that the total estimated cost of the buildings needed at once is from \$805,000 to \$930,000, or from \$105,000 to \$230,000 more than will be available if the amount asked is granted. Apparently the aggregate amount asked for chemistry, general and agricultural, must be reduced in some way, and also some other buildings omitted. Even if this were done, at best we shall be obliged to wait for three years for some of the buildings for which funds are provided unless we are authorized to borrow in anticipation of receiving this fund. Since all the buildings are needed at once it seems extremely desirable that such authorization be given so that the buildings may be constructed rapidly. In the above estimates no provision is made for a medical building, for a museum, nor for a library for agriculture. Consideration of these needs are deferred to a succeeding legislature.

3. Student buildings, including men's commons and union, dormitories for men, and additional dormitories for women, and for an infirmary, will require an appropriation of \$250,000 per annum for a period of not less than four years. It would be very advantageous to have the proposed appropriation of \$1,000,000 for student buildings in a larger amount per annum and for a shorter time; in fact the total expenditure of \$1,000,000 for student buildings could be made wisely at once. But it

should be our aim to reduce the amount we ask per annum to the minimum; therefore the plan proposed.

4. The appropriations for university extension expire June 30, 1911. These are for the year ending that day, for university extension, \$75,000, and for agricultural extension, \$30,000. These amounts should be extended for not less than two years and increased to such amount as the legislature deems wise.

5. The act authorizing the temporary transfer from the general fund to the university fund income should be continued for two years, limiting the amount under such authorization to \$150,000 per annum instead of \$200,000 as during the previous biennium.

6. An appropriation is imperative for the final wing to the historical library building. It is estimated that this will cost \$150,000.

In conclusion we fully recognize that the state has been liberal to the university, but has not the liberality been fully justified by the results? I conclude by repeating the closing paragraphs of my report of two years ago. It is for the legislature to determine whether the liberality shall continue to the university commensurate with its needs and its opportunities to serve the state. It is clearly the duty of the regents of the university to place before the legislature the needs of the university in order to carry on the work for the students here, in order to do the investigational work, agriculture, engineering, and otherwise, demanded by a rapidly growing state, and in order to carry out to the people of the state the knowledge which has been gained here and elsewhere.

In making statements as to the actual amount of money needed by the university, it has been the aim to be conservative rather than otherwise. If the amounts asked for are granted, it is our confident belief that every dollar will be returned many fold to the state even if the material point of view alone be considered.

Respectfully submitted,

CHARLES R. VAN HISE,

President.

REPORT OF THE DEAN OF THE COLLEGE OF LETTERS AND SCIENCE

PRESIDENT CHARLES R. VAN HISE,
The University of Wisconsin.

DEAR SIR: I submit herewith my biennial report as dean of the college of letters and science.

CHANGES IN THE FACULTY

The ordinary changes in the faculty, caused by the resignation of its members, especially instructors and assistants, have been numerous, as usual, and many promotions have been made, all of which are stated on another page of this report. Some of the important changes in the permanent staff may be briefly indicated here.

Undoubtedly the most important change in the faculty that has occurred during the biennial period is the resignation in 1910 of Professor F. J. Turner, to accept a special professorship in Harvard University. Professor Turner has been in the service of the university ever since his graduation in 1884 and by his skill as teacher and the breadth of his views on American history has taken the lead in giving the department its reputation in the academic world. Upon his departure, Professor C. R. Fish assumed the leading position in American history, and Frederic L. Paxson of the University of Michigan came to us as professor in that department.

At the close of the year 1909-10 Professor J. C. Freeman was made professor emeritus in English literature. He has been professor in that department since 1878, and for a generation has brought to successive classes of the university the spirit and inspiration of letters.

In the department of political economy Professor T. S. Adams, who has been a most efficient member of that department since

1901, resigned to take the position of head professor of economics in the Washington University, St. Louis. Professor Adams devoted himself especially to the subject of statistics while a member of our faculty.

In the same year Professor Thomas K. Urdahl was appointed professor of political economy and will give his main attention at present to the work of the general course in the department. Professor Urdahl is a graduate of the University of Wisconsin in the class of 1891 and comes to us from the Washington and Lee University, Virginia.

Professor H. C. Taylor, whose work has tended more and more toward agricultural economics, has been transferred to the college of agriculture, though still continuing to teach one course in economic geography in the college of letters and science.

In the department of political science several changes have occurred in the year 1910. Professor R. B. Scott transferred his work to the law school and Assistant Professor E. C. Meyer resigned, to take special work in the U. S. census bureau. These vacancies were filled by the appointment, as associate professors, of Chester Lloyd Jones, a graduate of the University of Wisconsin, who came to us from the University of Pennsylvania; and Howard L. McBain, professor and dean in George Washington University, Washington, D. C.

Several changes have occurred in the school of music. Professor R. G. Cole, who succeeded Professor Parker, resigned in 1909. His place was filled temporarily during the year 1909-10 by the appointment, as acting director, of Eugene Luening of Milwaukee. In 1910 Dr. Louis A. Coerne, then professor of music in Olivet College, Michigan, was given the appointment as director. He enters on his duties with the college year 1910-11.

In the department of education Professor V. A. C. Henmon, dean of the University of Colorado, has been appointed as associate professor of education. A new department of instruction in manual training has been established, and Professor F. D. Crawshaw of the University of Illinois was appointed to the position of professor. This department will hold important relations to the secondary schools and to the university course for the training of teachers.

NUMBER OF STUDENTS

The number of students registered during the period covered by this report is as follows:

	1907-08	1908-09	1909-10
Graduates.....	203	200	224
Undergraduates.....	1,550	1,741	2,017
	1,753	1,941	2,241

The number of students registered in 1905-06 was 1579. During the preceding biennial period, therefore, the college increased by 174 students. During the biennial period just closed the increase amounts to 488, by far the largest addition that the college has ever had in a single biennial period. From the registration in the fall of 1910 it seems reasonably clear that the coming biennium will witness quite as large a growth as that now reported on. It must be remembered also that the college has lost in numbers by the transfer of the home economics department to the college of agriculture. It should also be noted that most of the instruction given to the students of the home economics course comes from the faculty of the college of letters and science, and that the rapid increase in the numbers of the college of agriculture demands a corresponding increase of teaching service from the faculty of this college.

As will be mentioned later in this report, the constant and large increase in the number of students is giving rise to very serious problems of administration. The buildings assigned to the use of the college are already so crowded that it is difficult to see how space can be found for the almost certain increase in numbers which the years immediately before us will bring.

PROGRESS OF THE COLLEGE

The biennial period on which I report has been marked rather by the development of an educational programme already determined upon than by the addition of new departments and courses in the curriculum of the college.

One appointment has been made which involves a new policy on the part of the university; that of Professor Crawshaw in

the department of manual training. The establishment of this department will undoubtedly mean the organization in the near future of a course to prepare teachers of manual training, and it will also mean the inspection by the university of the manual training courses of the high schools. The university thus enters upon the policy of aiding the high schools in studies other than those which have been technically called academic.

Two changes of general interest have been made in the college course. The first concerns the organization of what may be called—to use the term formally applied—a system of synoptic lectures. In 1891 the college adopted the group system of study and supplemented it by establishing a system of synoptic lectures. Each department was expected to give a course of weekly lectures, which should present some of the wider aspects of its subject, and each student was required to elect a certain number of these lectures during his undergraduate course. As a system, the plan was not found successful; in large part, perhaps, because the lectures were in many cases given by members of the faculty who were not well adapted to this particular form of instruction. The plan was, therefore, abandoned. At a later date the needs of the several departments caused the establishment of courses similar in character to the former synoptics, but not so named. In 1908 these courses had become so numerous and so varied as to require organization, and the faculty took up the subject and reorganized the system. No department is compelled to give such a course of lectures, nor are students required to elect them. The courses given vary with the character and the needs of the department and there is no wish on the part of the faculty to make them uniform. It was agreed that three types of these courses for general information might be offered; each earning for the student one credit per semester: 1. A course requiring regular attendance only and meeting three times a week. 2. A course meeting twice a week, with regular quiz and final examination. 3. A course meeting once a week, with assigned collateral reading, quizzes, and examinations.

It is understood that each type of course should occupy about three hours weekly of the student's time. He cannot receive credit for more than two courses per semester. Each student above the rank of freshman is advised to elect one such course each semester. Many students, of course, attend these lectures without expecting credit. Under these arrangements some twenti-

ty-five courses of lectures are now offered, some of which are new, while others have been given for years. Among them may be named courses in comparative literature, the Greek epic and drama, Roman life, German art, Roman countries, Norse literature and mythology, sociology, contemporary international politics, organic evolution, history of chemistry, conservation, forestry. Thus the student is offered a wide range of subjects on which he may gain general information and so supplement his more serious work in other departments. A similar method for reaching the same end is provided by the university in the establishment of a system of general lectures under the control of the university lecture committee, which is described on another page of this report.

The second change of general interest concerns the requirement of the senior thesis. Since 1892 a thesis has been required of all senior students at the completion of their work in the major subject. This requirement I have always regarded as one of the most valuable of our means of education. It demands of the student a piece of serious and consecutive work, expressing some results of the training that he has received, especially in the department to which he has given most attention. It prevents him from looking on his undergraduate course as a mere cramming of lessons, or an acquiring of information. As years have passed, however, some departments of the college have felt the requirement a burden. This has been especially true of those departments which try to cultivate in the student an appreciation of intellectual results already attained, rather than aim to develop in him the temper of research. In language and literature, for instance, it has been found by no means easy to assign to all students thesis subjects which should be at once within the student's ability and within the department's conception of a thesis as contrasted with an essay. Still further, these departments have felt that the student's time could be more profitably spent in literary work which did not lead directly to so formal a result as a thesis. These and similar considerations led the faculty in 1910 to allow certain modifications in the thesis requirement. Departments may now offer in place of the thesis, courses known as "thesis courses," restricted to seniors and graduates, and to which not more than ten persons may be admitted. Written reports of work done are to be required of the student. Similar courses may be offered for in-

dividuals, requiring a large amount of written work, but not demanding a single written production at the close of the year. The papers of the student in each kind of course are to be type-written, bound, and placed in the library, as is demanded in the case of theses. Thus the faculty hope to retain for seniors the advantage of a large amount of written work, expressing the result of study along a definite line, and of frequent personal conference with teachers on methods, both of study and expression. At the same time they hope that advantage will come by modifying the fixed requirement of a single type of thesis.

This is a very interesting experiment and its results will be carefully watched. It goes into effect in the fall of 1910 and nothing can be said at present regarding its effects. At present most of the students are expected to prepare a regular thesis.

During the biennial period a valuable study has been made of the marking system in the high schools and the university. This work was taken up by Director Elliott of the course for the training of teachers, but was transferred to Professor W. F. Dearborn, who was assistant professor of education here and is now professor in the University of Chicago. Professor Dearborn has published two university bulletins in the high school series as a result of this study: No. 6. Relative standing of pupils in the high school and the university; and No. 9. School and university grades. Many conclusions of great educational value may be drawn from these papers. I shall refer to only one of them here. It is plain that the high school marks, as reported on our certificates for entrance, give a very accurate forecast of the results of the student's university course. The exceptionally good students in the high school remain such in the university, and the same may be said of the medium and the poor students. Much has been said in past years by critics of admission on certificate, regarding the impossibility of judging the future performance of a student except by the results of entrance examinations, and they have commented on the consequent "looseness" of admission by certificate. Investigations which have been made in eastern universities show an almost complete absence of correlation between the marks received by students in their entrance examinations and those received from their study in college. It is, therefore, clear that our entrance certificates are beyond comparison better than the marks given in entrance examinations as a means of showing what may be expected of

students who are admitted to the university. The necessary conclusion from the study is to raise our judgment of the value of the certificate system of admission. I make this statement without intending to discuss the general value of examinations, which have important uses other than that of disclosing the amount of knowledge acquired by the student.

The possession of a student's high school record affords the university a valuable means of ascertaining the kind of care and treatment which he is likely to need as a freshman. The records of the eastern universities show that it would not be fair to conclude that the student who passes the entrance examinations with low grade is, therefore, in imminent danger of failing in his university studies. But the great majority of the students whose grades constitute the lowest quarter of those admitted on certificate remain in the same position in the university. Those students are most likely to fail in their work and to be dropped for deficiencies whose high school record was weak, and the knowledge of this fact and of the character of the grades received in high school is of great value to those who are charged with the care of the entering students.

Very important developments have been made in the special courses now included in the college of letters and science. There are now seven courses of this kind included in the college, and, as already indicated, one more is likely to be added in the form of a course for preparing teachers of manual training. The courses now established are those in pharmacy, music, commerce, chemistry, and the training of teachers, each of which is under the charge of a director. Two other courses have not yet been formally organized with a director but are in charge of a chairman from the faculty. These are the courses in journalism and library science. The course in medical science is partly within the college of letters and science and partly in charge of the faculty of medicine.

Two of these courses are in the full sense of the word professional or technical, those in music and pharmacy; and they are a part of the college of letters and science rather for administrative purposes than on the ground of close educational affinity. All of the other courses are intimately connected with the work of the college; all, or nearly all of their studies are given by its faculty and are open to election by all of its students, whether members of the special course, or not.

Four of the five courses which belong to this class have been recently organized. All of them are growing rapidly and are tending to develop and increase their technical characteristics. As the connections between college life and after life become more numerous and intimate, special courses of study for special ends are demanded and the amount of adjustment of studies to meet these demands continually increases. This educational phenomena is by no means a new one. A generation ago the engineering studies were semi-technical additions to a general course of study. Under the demands for special training these engineering courses have gradually made a complete change of character. The pre-medical course in this university has nearly completed a similar modification in response to a similar condition. The other courses are modifying more or less rapidly but quite as certainly in the same direction. This situation is one which will demand in the future the very careful consideration of the college. It is certain that a large number of students come to the university primarily to gain a liberal education, and that it would be an incalculable loss, both to education and to the state, if the college should come to consist of a mere congeries of courses for special training. The problem which the situation presents is not yet ready for settlement, perhaps not for discussion, but it is certainly ready for presentation. The catalogue of 1909-10 listed 351 students in the senior class of this college; 273 of these were listed in the course for the degree of bachelor of arts; the remaining students being in the courses which have been organized for special and technical training. In the general course are included students who are pursuing courses in music, law, medicine, and the course for training of teachers. Only 88 students remain who are not indicated as members of such a course. Thus there remain only about a quarter of the seniors who are not following a course of study at least partly technical or professional. There is no disposition to complain of this fact, which represents in great measure the necessary development of college training to meet the necessities of the public. The state needs in every profession not merely graduates provided with the knowledge necessary for the skillful performance of their duties, but also, and even more, graduates who have some portion of the *esprit de corps* of the profession into which they are going. But it is necessary to remember that liberal education also has a spirit and a temper of its own and that the cultivation of this spirit is the peculiar and highest function

of a college of liberal arts and is its especial contribution to education and to the community. It must also be remembered that this spirit cannot be fully attained by those who are seeking technical ends any more than the spirit of professional training can be fully realized by those who are seeking liberal culture.

The problem of the maintenance of the spirit of liberal culture is, therefore, becoming a serious one. The particular factor which makes it serious at present is the rapid growth of the demands for professional training in the course for teachers, and this phase of the question will be discussed more at length in connection with what is said on the report of the director of that course.

It is not my intention to give an abstract of the reports of the directors and chairmen of the several courses connected with the college of letters and science, which are submitted herewith. I shall only refer briefly to some of the chief matters of general college interest that appear in these reports.

The course in music has been completely changed during the biennial period. Its terms of admission have been made the same as those of the college; the course of study has been extended to four years, and now includes many studies outside of music. In the course of these changes the personnel of the faculty has also been altered, and with the opening of the college year 1910-11 the new course of study is fairly put into operation under the newly appointed director, Professor Louis A. Coerne.

The most important question raised in the report of Director Scott of the course in commerce concerns the necessity for special instruction for students who attend the university for only one or two years. This calls, not for a liberal or professional course of study, but for a limited amount of training in studies of college grade, which will be of immediate utility in the student's business career. This demand is one of a class of requests that come to the university from all directions and which it attempts to meet in many of its courses. We provide such instruction in summer courses for artisans; for farmers in the short and middle courses in agriculture; in music and pharmacy for those who seek instruction in those lines; and in all directions by our correspondence courses. There is, therefore, no apparent reason for refusing similar work to those who desire to go into business, and it is difficult to make students who want such a course see good grounds for refusing it. On the other hand,

it is plainly a physical impossibility for us to undertake such a work at present. We have no space in which to put the classes, and the time and energy of the faculty are fully taxed in meeting the needs of the students of the four-year course. These difficulties are part of the general situation of the college, which has arisen from its rapid growth, and they will be discussed on a later page.

The condition and needs of the course for the training of teachers are fully set forth in the report of Director Elliott. No educational problems that the college has to face are more difficult than those connected with this course. On the one hand, the schools are asking only what is their right in calling for the professional training of teachers. On the other hand, since the average service of a high school teacher, as shown by Director Elliott's report, is only three or four years, it is neither right, nor wise, to demand that students devote the four years of their college course to a professional preparation for an average teaching service shorter than the course which prepared them for it. The teaching profession needs to be professionalized in the same sense that engineering has been. It needs to be a permanent occupation instead of a temporary employment. But as matters stand, the educational problems are complicated by the social conditions and all present solutions are only temporary and unsatisfactory, both to the university and the schools. The situation must develop and adjust itself in various ways, both inside and outside of the university.

I cannot fail to remark the immense wastefulness of the present situation, both to the schools and the university. The average teacher hardly begins to be efficient before she leaves her work. She can give only apprentice services for the first year or two, as she is learning her duties. The pay of beginners in any profession is largely a compensation for future value, but in the case of teachers this future value is usually not received, as they leave the profession. Still worse is the condition of the high school student who receives only apprentice teaching in a large part of his course. The university is especially concerned with that part of the wastefulness which falls to the institutions that prepare teachers. If teaching were a profession instead of a temporary employment new teachers would be needed in small numbers and they could be easily and thoroughly trained. Now the normal schools, colleges, and universities, even though taxed

to the utmost, find their graduates inadequate in number to supply the flood of teachers needed to make good the annual loss.

This condition becomes increasingly worse educationally as the demands for the professional training of teachers are increased. The situation was by no means so bad when the high school teacher was a college graduate who had followed a liberal course of study and who used during a longer or shorter period, for the benefit of the schools, the intellectual training which he had acquired for the enrichment of his whole after life. As teaching becomes specialized and large amounts of professional training and practice teaching are expected before entering on the profession, the college course for teachers becomes no longer a course of liberal study but a technical and professional course. The student's work in college is becoming controlled and dominated by the brief period of teaching which may succeed it. It loses much of its value as a liberal course of study, and the short period which the student gives to the profession prevents him from realizing any considerable part of its proper value as a professional course.

The great number of persons necessary to supply the annual vacancies in the teaching profession makes this situation of especial concern to the college, since so large a share of its students are almost necessarily drafted into the teaching service for a time. It almost threatens the existence of the college as a home for liberal culture and for the training of the intellect for its own sake. The only justification of the existence of a college of liberal arts is faith in the intellectual life as an end in itself, and the primary mission of the college to the community is the fostering and strengthening of the intellectual life in its students, and so in the community. Nothing which seriously affects this service, however good it may be in itself, can be patiently accepted.

I see no escape from the situation which is developing except along the lines indicated by Professor Elliott, namely: the establishment of qualifications for teachers in the secondary schools so high that only those who intend to remain permanently in the profession will be likely to undertake the course of preparation. Such a standard cannot, of course, be reached at once, and provision must be made for a considerable period in which the adjustment can be affected. But unless the state can move

somewhat rapidly toward such a high standard its wider intellectual interests are sure to suffer great loss.

The report of Professor Kahlenberg, as director of the course in chemistry, is interesting, as it shows the enormous growth of the demand for teaching in chemistry during the years immediately past. The chemical laboratory has been occupied only since 1905, but in that time the number of students enrolled in the elementary course has nearly doubled. As a result, the laboratory is now so overcrowded that additions to the building are an imperative necessity. That such a condition should arise so soon in a new building shows, perhaps more clearly than any other one fact, how much the growth of the university has exceeded even the expectation of those who were most closely associated with its administration.

Professor Kremers, in the report of the course in pharmacy, calls attention to various new movements first proposed by that department and to experimental work now in progress, and makes proposals whose adoption would increase the efficiency of the course.

The reports relating to the courses introductory to journalism and library science present for the first time the condition of lines of work recently added to the college.

NEEDS OF THE COLLEGE

In the past biennial reports I have placed the biology building first among the material needs of the college. This building is now under construction and should be ready for occupation during the year 1911. It will afford long needed relief to the departments now housed in Science hall.

The present needs of the college are more numerous and pressing than they have been at any former period. They are closely associated with the rapid increase in the number of students, both in this college and in the colleges to whose students we furnish instruction. These needs may be grouped under three heads:

1. Those necessary to enable us to teach on the present basis the students now with us and the additional number which may be confidently expected in the near future.

2. Those necessary for the proper execution of educational plans already undertaken and in process of execution.

3. Those needed to properly supplement our present educational plans.

I shall speak of these in order:

1. The increasingly great number of students offers to us very serious problems, both as to providing recitation rooms and also in regard to furnishing proper instruction. At present the three buildings chiefly occupied by the college of letters and science are greatly overcrowded. In University hall the number of recitation rooms increased during the past ten years about 30 per cent, while the students receiving instruction there have increased more than 100 per cent. No comments are necessary in order to show the result of the condition. North hall, which is occupied chiefly by the course in commerce and by the department of German, is equally, or more, overcrowded; and South hall, with the department of bacteriology and part of the political economy, is in a similar condition. The chemistry laboratory is not only filled to overflowing but is crowded quite beyond a condition compatible with good teaching or study. The elementary course contains more than 700 students, while the building provides for only a maximum of 500.

This situation is educationally far worse than that of physical crowding and discomfort. When a few years ago the enlargement of University hall temporarily relieved the overcrowded condition of the college, certain improvements of methods were introduced, which had long been desired, but which were then for the first time made possible by the increased space for rooms and offices. Proseminary rooms were established for several departments, where the students specializing in each department could meet for reading, study, and conference. The increased number of offices enabled the instructors—especially those of freshmen—to give regular hours for personal conference with students. Both of these matters, wholly necessary to efficient teaching, are not only interfered with but their existence is threatened by the bare necessities of formal class instruction for rapidly growing classes. Losses in such directions mean a lowering of the spirit of instruction, and consequently of its real efficiency, quite disproportionate to the apparent amount of loss.

A conference between the instructor and student in an office where they have an opportunity for personal and confidential talk over difficulties and methods of study, is the most valuable kind of teaching. But in crowded offices, occupied by several

persons who are transacting business at the same time, such conferences become impossible.

I need not, however, spend time in urging the need of more room for carrying out such methods of personal teaching. The barest necessities of the college will call for all the money which can reasonably be expected for buildings. There must be, within the next two years, large accessions to our space or it will be impossible for us to handle our students. These include:

a. Considerable additions to the chemical laboratory, which ought to be ready by the fall of 1911. b. The removal of the offices of the university extension division from University hall to quarters elsewhere, and the restoration to the college of letters and science of the rooms now occupied by this division. In calling for this change I make no criticism on the extension division, whose quarters are far too small and cramped. This work has grown even more rapidly than that of the college of letters and science. But while our teaching cannot well be done outside of college buildings, the work of the extension division can much more readily be removed. c. The relief gained by these two measures is wholly inadequate, even for the present situation, and it seems clear that the college must expect at least 500 more students two years from now than are at present under its instruction. The rooms gained in University hall will be fully occupied at once and the increase offers no relief to North and South halls. I see no better or cheaper way of providing rooms than by proceeding as quickly as possible to build the proposed west wing of the new biology building. This wing can have its separate entrance and can be cut off from connection with the main building; thus dedicating it temporarily to uses other than those of the departments of biology. It can be divided into a considerable number of relatively small recitation rooms and offices. It will add to the departments now in the three buildings used by the college of letters and science, a space somewhat greater than North or South hall. I urge that this building be undertaken at once, since, even at best, it can hardly be ready before the opening of the college year 1912-13.

2. The second class of the needs of the college embraces those necessary to carry out enterprises to which we are already pledged. First among these is a model school for the course for the training of teachers. If the university is to develop this course to the efficiency justly demanded by the needs of the schools of the state, this building must be provided promptly.

The situation is set forth so clearly in Professor Elliott's statement that I need only refer to page 95 of this report and express my full concurrence with what is there said.

A second need of this type is that for additional space and instruction, so that the teaching of certain parts of the courses in history, literature, political economy, etc., can be organized on a basis comparable to that now obtaining in the science laboratories. Certain sides of these studies are tending more and more to the use of laboratory methods. In the science laboratory the student not only brings the results of his work to his teacher for criticism but performs much of it under the direct guidance of the teacher. No such regular and definite assistance is given in these "new humanities." The efficiency of their teaching is correspondingly lowered as compared with that of the more perfectly organized science teaching. The provision for this type of laboratory would not be so expensive as for the sciences, since this class of work does not offer the mechanical difficulties inherent in almost all laboratory science, and correspondingly less time and less space would be needed. But such an organization of even one department like history would demand much new room and much new instruction.

It is becoming increasingly plain that the efficiency of university teaching depends on the personal relation between teacher and student. Many of the larger problems of college administration are concerned with providing the means which are necessary to maintain that relation in the face of the constant growth of the college. Twenty-five years ago the college had fewer than 350 students and gave instruction to hardly more than 375. At present its students number more than 2,300 and it gives instruction to more than 700 additional students from other colleges. Its biennial increase is greater than the total number at the earlier date. This growth not merely makes the problems of administration larger but brings with it difficulties of a wholly new kind. In the small college the personal relation between teacher and student comes easily as an incident to class room instruction. In the large college, whose machinery is necessarily much more complicated, the maintenance of such relations demands proportionately much larger facilities in the way of small recitation rooms, office rooms, pro-seminary rooms, and similar agencies, affording the opportunity for their cultivation.

There is still another reason which makes the need for addi-

tional space for these departments more urgent and immediate. This is the increasing difficulty which students find in doing the collateral reading assigned to them as part of their courses of study. This work is now—as in the past—done in the university library. So long as the classes were of moderate size the library was by far the best place for the work, but at present the system is breaking down under its own weight. The overcrowding of space in the library, and especially the over-demand for books are such that the good effects of requiring the reading are rapidly disappearing. Methods which are easily applicable to a few score students and which are workable with a considerable increase in numbers, may become quite ineffective when classes contain hundreds of students, or even exceed a thousand. The methods of the ordinary library are no longer applicable and must be replaced by others. The organization of special reading rooms becomes a necessity and they must be conducted on the laboratory method.

It is possible that, if the provision for additional space already asked should be provided, the college could begin to offer instruction of the kind described, in some of the departments.

3. There seems to be little use in mentioning the third class of needs—those which are called for to meet the needs of the college for intellectual and spiritual advancement, rather than its physical necessities. The immediate wants are so great that they seem likely to absorb all and more than all that can be granted for them. Yet I should be wrong if I did not mention some of these needs; not for the first time. I place first, as for many years past, instruction in art. It is wholly unworthy of any university—much more of one of our rank—that it should be quite without regular means of presenting to its students this most important side of human achievements and human culture. This has been deeply felt by all persons concerned with the administration of the college, yet it has not seemed possible to make provision for it.

Secondly, I repeat from my last report, stands the need of a university museum, both of arts and sciences.

The third need is for increased facilities for research, especially in the way of research assistance. This also was discussed in my last report and I will not further enter upon it here.

Respectfully submitted,

E. A. BIRGE,

Dean College of Letters and Science.

REPORT OF THE DIRECTOR OF THE COURSE IN COMMERCE

DEAN E. A. BIRGE,

College of Letters and Science.

SIR:—I submit, herewith, my report as director of the course in commerce for the biennial period 1908–1910.

The number of students registered in the course in the year 1908–09 was 216, and in that of 1909–10, 237. The registration for the present year will probably greatly exceed these figures or those for any other year in the history of the course, the number of freshmen already registered exceeding those for any previous year by about 50 per cent, and the number of additions to advanced classes, due to transfers from other institutions, being much greater than ever before.

The following table indicates the total registration for each year since the course was established, together with the distribution of these totals among the various classes:

	Sen.	Jun.	Soph.	Fr.	Spec.	Grad.	Total.
1900-01.....		2	17	62	4		85
1901-02.....	3	9	35	50	5		102
1902-03.....	8	25	42	63	9		147
1903-04.....	22	25	47	71	8		173
1904-05.....	20	30	57	99	13		219
1905-06.....	22	38	73	83	9		225
1906-07.....	30	35	61	69	5		200
1907-08.....	28	44	59	86	5		222
1908-09.....	27	38	50	91	10		216
1909-10.....	33	36	69	95	4		237

The number of students from other states and foreign countries was 21 per cent of the total in 1908–09, and 22 per cent in 1909–10, the average percentage for the eight previous years being 20.6, and varying from a minimum of 16 in 1901–02 to a maximum of 24 in 1904–05.

In accordance with the recommendation made in my last report all the courses in accounting, except the elementary course

for sophomores, have been placed in the list accredited for the B. A. degree and made available for election by all suitably prepared students in the university. There has also been added to the curriculum a course in commercial correspondence given by Mr. Gardner of the English department. This succeeds the course in English 1 and affords our students drill in the composition of effective business letters. That it fills a real need is evidenced by the fact that the first class to which it was given unanimately petitioned to have it extended from a semester to a year's course. It is possible that it may be thought possible to grant this request during the present year. Other changes in our curriculum have been confined to modifications and improvements in existing courses in the interests of better correlation and more efficient pedagogical results.

Expansion along various lines has been checked during the last two years by losses from our instructional force which have not yet been made good. The place left by Professor Burchell in the department of business administration has not yet been fully filled. Professor Rastall of the extension division and Mr. Starch of the philosophy department are giving one course each, the former in business administration, and the latter in the psychology of advertising but the other courses given by Professor Burchell have of necessity been omitted from the program. Losses from the department of economics have forced us to cut off some courses formerly given in transportation, corporation economics, and economic history, and have rendered impossible expansion contemplated in the field of finance. The supply of these deficiencies and some expansion in the fields of accounting and finance ought not to be longer delayed. It ought to be possible for a student to prepare himself here fully for the certified public accountants' examinations now required in many states, and for the practice of the profession of accountancy in all its branches, and to this end additional and more highly specialized courses in accounting are needed. We should also have a course in investments and practical banking in the interests of young men who wish to enter the profession of finance in any of its branches.

I wish again to call attention to the special needs and demands of students who remain here for one or two years only, and who wish to secure in that time the best possible preparation for business life. Without exception such students rebel

against the freshman program of the course in commerce, even when modified by the substitution of elementary economics and the elements of accounting for the foreign language, or the history and mathematics, the only changes permitted to date. They wish to take the special subjects of the course such as commercial law, accounting, money and banking, corporation finance, commercial correspondence, etc. In my opinion something should be done towards meeting this demand. We ought, I think, to offer courses in commercial law and finance suitable for freshmen and sophomores who have not had work upon which the courses now given in these subjects are based, and such courses ought to be made available for students who are not candidates for degrees. Not only would such courses better meet the needs of short course and special students than the regular freshman and sophomore courses of the four years' curriculum, but it would remove from these latter courses an undesirable element which, on account of lack of interest, acts as a drag upon them. It would also reduce the number taking them and thus partially relieve the present congestion.

Several valuable additions have been made to our commercial museum during the last two years as the result of gifts from prominent business houses. The most important of these are exhibits illustrating the processes involved in the manufacture of shoes, flour, silk, oil, corn products, cocoa, chocolate, malted milk, and fountain pens, presented by the Douglas Shoe Company of Brocton, Mass., Pillsbury & Company, of St. Paul, Belding Brother & Company of Belding, Mich., the L. E. Waterman Company of New York, the Cheney Silk Company of Manchester, Conn., the Corticelli Silk Company of Chicago, Ill., the Standard Oil Company of New York, the Corn Products Refining Company of Chicago, Ill., Van Houtens Cocoa Company of Chicago, Walter Baker Company of Dorchester, Mass., the Lowney Chocolate Company of Boston, Mass., and Horlicks Malted Milk Company of Racine. The International Harvester Company of Chicago also presented the museum with a valuable mineral exhibit.

Next to such additions to our instructional force as would make possible the changes above recommended, the greatest need of the course is more room. The accounting room will no longer accommodate the students for which it was intended, and in our present quarters the only space available for enlarging

or supplementing it is greatly needed and is now used for other purposes. We are, therefore, obliged to divide laboratory classes which could easily be supervised without division, thus increasing in an uneconomical manner the work of instructors and assistants. Our museum is also overcrowded and its usefulness diminished by inadequate space for the display of collections and for their handling and study by the students. We also need a statistical laboratory with an equipment of adding machines, slide rules, drawing desks, and reference books; a study and reading room equipped with the financial and trade-papers which are now unused at the library for lack of access to them by the students; and a room for the Commercial Club, an organization of great value to the University, the usefulness of which would be greatly enhanced by the provision of suitable quarters for it.

The efficiency of the course has been greatly enhanced by the aid rendered it by many private individuals and business firms. We are especially indebted to Mr. S. H. Richards, credit manager of Marshall Field & Company of Chicago; Mr. Edward M. Skinner, credit manager of Wilson Brothers of Chicago and president of the Chicago Association of Commerce; Mr. Warren M. Horner, general agent of the Provident Life & Trust Company of Philadelphia, and Mr. C. N. Duffy, comptroller of the Milwaukee Electric Light and Street Railway Company, who have lectured before our students, to the firms mentioned above who have contributed valuable collections to our museum, and to Mr. E. M. Skinner of Wilson Brothers, Messrs. Poole, Bickford and Stixrud of Butler Brothers, Mr. M. H. Jackson of Marshall & Jackson Company, C. B. Whipple of the Hibbard, Spencer & Bartlet Company, Mr. Horan of Montgomery, Ward & Company, Mr. Thiede of Thiede & Company, Mr. Morgan of The Lord & Thomas Company, Messrs. Cody and Towsley of Marshall Field & Company, who by the contribution of sample letters and conferences with our representative, have aided greatly in the development of our course in commercial correspondence.

The demand for students trained in our course is constantly increasing. Each year representatives of leading firms in various parts of the country in increasing numbers visit us for the purpose of inspecting our methods and of conferring with students with a view to their employment. So far no student who

has made a good record here and by his ability, character, and conduct merited the recommendation of our staff, has failed to secure an opportunity to display the value of his training in actual business practice. The demand upon us for teachers of commercial subjects in colleges and secondary schools has also been much greater than we could supply. A few members of each graduating class have been willing to take teaching positions temporarily, but most of them desire to go at once into business.

Respectfully submitted,

WM. A. SCOTT.

October 5, 1910.

REPORT OF THE DIRECTOR OF THE COURSE IN
CHEMISTRY

DEAN E. A. BIRGE,

College of Letters and Science.

SIR:—I beg to submit herewith my report as director of the course in chemistry for the period of 1908–10.

The course in chemistry was established in the spring of 1908 and was formally opened to students in the fall of that year. At that time there were enrolled fifteen freshmen, eleven sophomores, seven juniors, and four seniors, making a total of thirty-seven. In the following year there were sixteen freshmen, eighteen sophomores, eleven juniors, and nine seniors, or a total of fifty-four. At this time it is not possible to state the exact number that will be in attendance upon the course this year, but the number will be greater than during the previous year. The number of students taking this course has then exceeded the most sanguine expectations by far. It should also be stated that in 1908–9 eight of the students enrolled were from other states, whereas in 1909–10 that number was twelve. The graduates of the chemistry course have readily secured desirable positions at once. Four of them are teachers of chemistry in colleges and universities, one is employed as a chemist by the federal government, and the others have engaged in various chemical industries.

The demand for trained chemists is much greater than the supply, and it has been quite impossible for the university to furnish the chemists which the various industrial firms and colleges have called for. This demand for chemists is not ephemeral in character, for the development of modern methods of farming, manufacture, hygiene and sanitation makes competent chemists indispensable. This fact is as yet not fully appreciated. When it becomes more thoroughly understood that the continuous services of an able chemist are invaluable in many

industrial fields, the call for properly qualified persons will become greater than ever.

In developing the course in chemistry at the University it has been the aim to study the needs of the various industries that require chemists at present, and to adapt the training so as to supply these needs. In so doing it has always been kept in mind that the work must rest upon a sound, broad foundation in the various important branches of chemistry and the closely related sciences of physics, biology, and mathematics. Students have been directed to elect studies in such subjects as economics, literature, philosophy, as well as further work in French and German in order to give them the requisite breadth of view. The fact that one hundred and forty-four hours of work are required for graduation in the chemistry course as compared with one hundred and twenty hours in the other courses offered in the College of Letters and Science, has made the chemistry course a rather difficult one for many students to attempt. It will probably be wise to modify these requirements somewhat in the near future in the light of the experience gained from the conduct of the course during the two years of its existence. So far, the work in mechanical drawing carried by freshmen of the chemistry course consisted of three periods per week for the entire year. Experience has shown that they can get the necessary training in this line in one semester, working at the rate of three periods per week, and it will consequently be wise to reduce this work accordingly, and thus lessen the requirements of the course by so much. It is possible too that in other directions some of the required work may be reduced somewhat to advantage, though such changes will require very careful consideration. The opportunity offered by the course to combine chemical and biological studies has been seized by quite a number of the students, and it has worked out greatly to their advantage, for at present the call for persons of such training has been particularly strong.

The greatest immediate need for the future development of the chemistry course and for the furthering of the work in chemistry at the University is a very material extension of the chemistry building. The need of additional room in that building was already mentioned by President Van Hise in 1908 in his report to the Regents of the University for 1906-8. At present there are not enough working places to accommodate the students that have presented themselves. It has been necessary to

construct apparatus boxes in the aisles, and those who have no lockers must use such boxes and carry them to a table top that is available at the time. This is not at all as it should be, and greatly handicaps the work. Table space and locker space allotted to each student have been reduced to the very minimum; and in the main laboratories students can work only during their assigned periods, being obliged to make way for other members of the class. Such conditions make it very difficult to keep up a high standard of work, and extensions of the activities of the chemical department are, of course, for the time being precluded. It is to be hoped that it will be possible to begin the construction of the necessary addition to the chemistry building in the spring of 1911, and thus increase the opportunity for the service which the chemistry department ought to render to the commonwealth.

Respectfully submitted,

LOUIS KAHLBERG,

Director.

October 4, 1910.

SUPPLEMENTARY REPORT CONCERNING THE NECESSITY FOR EXTENSION OF CHEMISTRY BUILDING

DEAN E. A. BIRGE,

College of Letters and Science.

SIR:—Concerning the necessity of enlarging the chemistry building at as early a date as possible, I beg to submit the following facts in addition to those already presented in my report for the biennial period 1908–10.

At this time there are enrolled 727 *beginners* in chemistry, of which number 511 are letters and science and agricultural students and 216 are students in the college of engineering. There are now 48 of these students working at old, improvised desks that stand in the aisles. These desks occupy space that ought not and never was intended to be used except as aisle space. Moreover, it is not feasible to equip these desks with water, sewer connections, and vent pipes. Seventy students have no lockers at all. These students are using boxes that have been

provided as a make-shift. They have to carry their apparatus in these boxes to a table the top of which happens to be available at the time. This arrangement is clearly an injustice to the students that have to be thus accommodated. The total number of beginners that do not have regular modern working places is then 118. The entire working places in the beginners' laboratory have been subdivided so that each student has the minimum amount of space with which he can possibly get along. The laboratory is running all day so as to accommodate these large numbers, and students can find room to work only during the regular periods when their class meets, being obliged to make room for others after those periods. The enrollment of *beginners* in chemistry for the last four years is shown numerically and graphically in the accompanying figure 1 which explains itself.

While this is the condition of affairs on the first floor of the chemistry building where the beginners are accommodated, the second and third floors, where the more advanced work is carried on, are also overcrowded. On the second floor 183 students are now working, and it has been necessary to subdivide laboratory desks here in order to give each one a place. One old laboratory table had to be installed to give additional room. Here too students are not able to work continuously, but must give way to others for the table top space is insufficient.

To accommodate the 110 students in organic chemistry on the third floor, each student had to be given but half a desk, which again makes it impossible to carry on the work as it ought to be done, and as it was intended to be done when the building was originally planned. The laboratories of physical chemistry and pharmaceutical chemistry, each intended for 48 students, are also on the third floor. These laboratories are crowded to overflowing. Here also it has been necessary to give students but half locker space and bring apparatus boxes into use to get along at all. It has furthermore been necessary to have the classes in water and gas analysis and proximate organic analysis work on this floor, in rooms that are not at all adapted for this work. This has increased the necessity for additional room on the third floor more than ever. The balance rooms on the second and third floors are also too small for the number of students that are to be served.

TABLE SHOWING NUMBER OF STUDENTS
IN FRESHMAN CHEMISTRY
1907-10

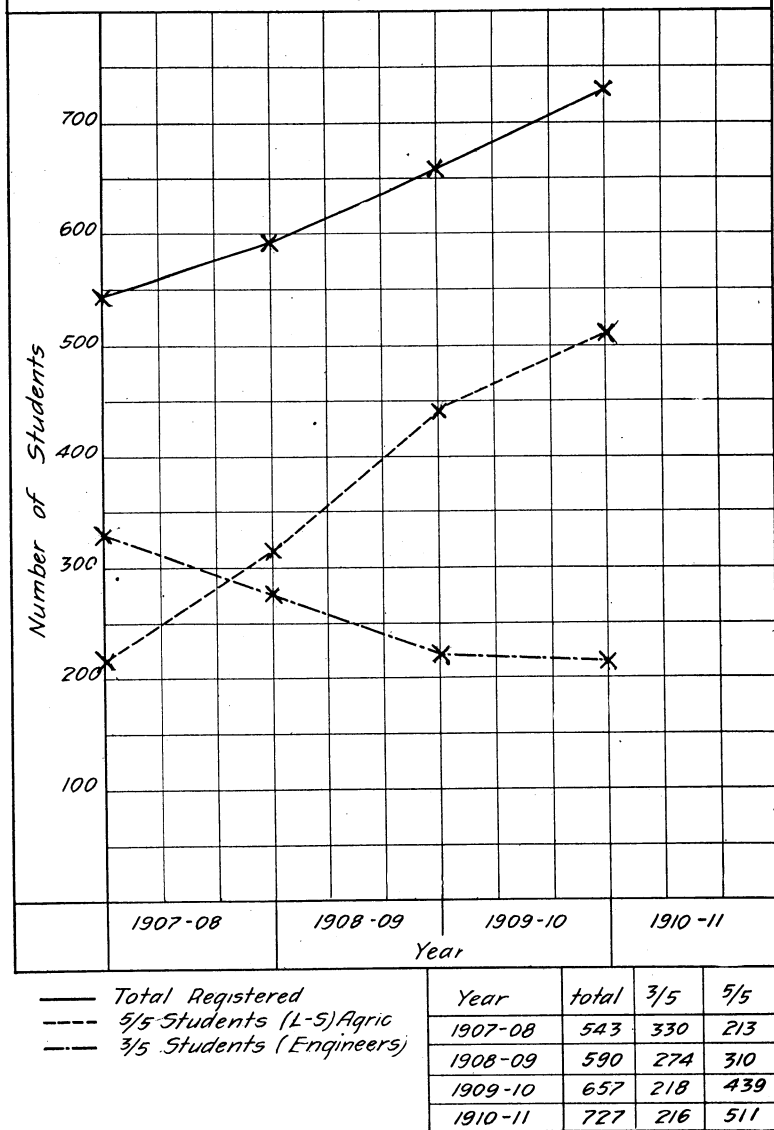


Fig. 1

With this crowded condition of affairs in the chemistry building it is needless to add that advanced work is greatly handicapped, and expansion into new lines in which the chemical department ought to serve the state is impossible.

The chemistry building as it now stands has basement room under only a small part of it. This room is now entirely inadequate to properly take care of all the chemicals, glass ware, and other supplies that the present large number of students require. The necessity of crowding the chemical supplies and the students into the space that is available has, of course, increased the liability of danger from fire and other accidents accordingly. While extra precautions are being taken to avoid accidents, it is to be hoped that the increased space will be provided as soon as possible.

Work on an extension of the chemistry building ought to be begun not later than the spring of 1911, so that at least a portion of such extension will be open to students in the fall of 1911. On consultation with the University Architect, Mr. Arthur Peabody, I find that the extension of the chemistry building which is needed to provide for the students that are already here, and for the more immediate future, would require an appropriation of about one hundred and fifty thousand dollars.

Respectfully submitted,

L. KAHLLENBERG,

Director.

October 6, 1910.

REPORT OF THE DIRECTOR OF THE COURSE IN PHARMACY

DEAN E. A. BIRGE,

College of Letters and Science.

DEAR SIR:—In compliance with your request, I herewith submit my report on the pharmacy course for the past two years.

When the new chemistry building was being planned, the laboratory space allotted to pharmacy students was restricted to the immediate needs of this class, whereas for all other classes of students, allowance was made for growth. The result has been that the laboratory devoted to pharmaceutical chemistry was fully utilized during the first two years of occupation, and has been overcrowded ever since. Indeed, the conditions both last year and this year have been such and are such as to render much of the work positively dangerous to the students. A further result has been that this is the third year in which the undersigned has had to beg space in other laboratories for his advanced students.

The new chemistry building was planned to accommodate pharmacy as well as pharmaceutical chemistry. Owing to some misunderstanding, the equipment intended for one of the pharmacy laboratories, viz., the dispensary, never realized. As a result, old library shelving and an old laboratory desk are being used today in place of proper dispensary furniture. By exercising the utmost economy, it has been possible this year to provide at least adequate containers for every item of the U. S. P. The next step to be taken ought to be to equip the dispensary and laboratories with the apparatus necessary for carrying out all of the processes and operations of the U. S. pharmacopoeia. The most crying need, however, is an adequate instructor in this department.

Of almost equal importance will be the conversion of the present dispensary from a mere instructional laboratory into a real university dispensary. This dispensary and the laboratories attached thereto ought to be the "clinics" of the pharmacy student.

Insurance against sickness has carried fifteen years after it was first advocated by the writer, but the university dispensary, in which the department of pharmacy was then and is still vitally interested, has not yet realized. The realization of this important aid to pharmaceutical instruction ought not to be put off longer than it is necessary to carry out the plan.

Ever since the writer has been in charge of the pharmacy course he has urged the importance of the cultivation of medicinal plants. The undersigned, in the spring of 1908, himself undertook the cultivation of medicinal plants in his own garden. About one-third of an acre was cultivated that season with seeds obtained from Washington. The students kindly assisted in the sowing of the seeds and the harvesting of the crops. A representative of the U. S. department of agriculture visited the garden and as a result the cooperative experiment between the bureau of Plant Industry and the university was started in 1909. In spite of a very bad season, the experiment proved sufficiently successful to prompt the officers in charge to make this the northern station. As a result, an agreement has been reached between the department at Washington and the university.

During the year 1909-10, the department contributed an equal sum with the university to support the work. At the beginning of the fiscal year 1910-11, viz., July 1, the government doubled the amount, paying for one-half of the time of the person in immediate charge of the field and work. Since then the sum has again been doubled, the entire time of the assistant being now claimed for this work.

This result is certainly highly gratifying to the university. Everything possible ought to be done on our part to further this important work. Already its effect is being felt, not only among our students, but outside of university circles.

Aside from the elements of research that enter into this cooperative experiment, it enables us to provide some of the basal materials for manufacturing in the pharmaceutical laboratories. If this activity, viz., the production of our own crude materials and their conversion into galenicals and chemicals, could be cou-

pled permanently with the plans for a university dispensary mentioned above, we should be able to boast of one of the strongest, if not the strongest, courses of pharmacy offered in the United States.

The true merits of the small university school, so often criticised when compared with the larger and independent colleges of pharmacy, are being brought to light more and more. Some of the older eastern colleges claimed only five years ago that it would be necessary for them to close their doors if the one thousand hour requirement, proposed by the American Conference of Pharmaceutical Faculties be enforced. Aided by state legislation in New York, the goal of one thousand hours was gradually reached by the eastern institutions and has now been increased to 1,200 hours of instruction. The University of Wisconsin, however, has demanded twice the eastern maximum since 1892. Until recently, the eastern colleges demanded no entrance requirements whatever. Now they demand one year of high school, a requirement in force at the university since 1892. It thus becomes apparent that the university has for a long time been a leader in pharmaceutical education. Whether it is to remain a leader will depend largely on the liberality with which the pharmacy course will be supported in the immediate future.

Respectfully submitted,

EDWARD KREMERS,

Director.

REPORT OF THE CHAIRMAN OF THE COURSE IN JOURNALISM

DEAN E. A. BIRGE,

College of Letters and Science.

SIR:—The four year course in the preparation for journalism was established in the college of letters and science (and the present chairman appointed) in 1907, under the name of "Courses Preparatory to Journalism." The courses in newspaper writing have been given since 1905–1906. In 1905–1906, 1906–07, 1907–08, one course in newspaper reporting was offered as a part of the regular composition work of the English department. In 1908–09, two courses were given under the same condition, one in reporting and one in editorial writing.

On the recommendation of the chairman of the English department, the faculty of the college of letters and science on February 15, 1909, approved the organization of the group of courses in journalism, constituting four years training in newspaper writing and editing. This group of five courses with the other studies in the "Courses Preparatory to Journalism" were organized into the "Course in Journalism" with the approval of the college of letters and science on April 26, 1909.

INCREASE IN ENROLLMENT

This year (1910–11) 111 students have enrolled in the number of students. From 29 students in 1908–09 when two courses were offered, the number increased to 102 in 1909–10 when four courses were offered. The total number enrolled in classes in journalism during 1909–10 was 102, of whom 34 were freshmen, 22 sophomores, 17 juniors, 26 seniors and 3 graduates.

This year (1910–11) 111 students have enrolled in the

classes in journalism, as compared with 72 at the same time last year. This is an increase of 39, or over 50 per cent. If this increase continues during the year, the total number will exceed 150.

Students in the course in journalism last year came from 22 states and 1 foreign country. The 34 freshmen last year represented 15 states. The year (1910-1911) 20 freshmen came from outside the state. Two foreign countries, India and Turkey, are represented by students in the course this year.

In connection with the course in journalism, a laboratory is maintained with six typewriters given to the university by the Wisconsin Cardinal Association. The laboratory also contains files of Wisconsin daily papers received in exchange for the university press bulletin, files of some of the Boston and New York papers, a small reference library furnished by the university, and copies of the leading journalistic periodicals deposited by the chairman. A collection of mounted newspaper articles taken from leading newspapers of the country, and several thousand classified newspaper and magazine articles have been supplied to the laboratory by the chairman for the use of the students in the course. Some 200 foreign newspapers from 30 countries have been presented to the laboratory by alumni and friends of the university.

NEEDS OF THE COURSE

Owing to the large amount of correction of written work in the classes in journalism and to the desirability of having adequate supervision of the laboratory, it seems necessary to the chairman to have additional assistance for instruction. In order to do really effective work it is necessary that such instruction be given by one who has had newspaper experience. It is urged, therefore, that provision be made for the appointment of an instructor in journalism with good training in English and with adequate journalistic experience. All other universities that are giving courses in journalism have more instructors in proportion to the number of students than we have at Wisconsin.

The rapid growth in numbers of the classes in journalism, the fact that courses in journalism have no organic relation to the department of English and are separated from that department

in the catalogue, and the fact that the work in journalism in other large universities has been organized as a separate department, seem to be good reasons for considering the advisability of separating journalism from the English department at Wisconsin, and giving it an independent existence.

The present laboratory is crowded and an additional room must be provided as soon as possible.

Respectfully submitted,

WILLARD G. BLEYER.

October 17, 1910.

REPORT OF THE DIRECTOR OF THE SCHOOL OF MUSIC

DEAN E. A. BIRGE,

College of Letters and Science.

SIR:—Pursuant to your instructions I beg to submit the following report, covering the progress of the school of music during the past two years. Since my appointment as director is of recent date, I have thought it best to request Emeritus Professor Parker to prepare that part of this report dealing with matters prior to July 1, 1910. As a result of his courtesy, I am enabled to quote Professor Parker as follows:

“Since the issuance of the last biennial report the most important change in the organization of the school of music has been the abolition of the academic course, thereby relieving the school of all work of a preparatory nature. The details of this change were worked out under the direction of a special committee of the regents of the university during the college year 1908–9, and the new scheme was put into operation at the opening of the succeeding college year, 1909–10.

“Under the regulations adopted at that time, with the approval of the board of regents, and which are in force at the present time, all students entering the school of music must meet the general entrance requirements for admission to the university. Exception is permitted in the case of special students who have unusual musical talent, on the recommendation of the faculty of the school of music. This privilege was granted last year in only four instances, although the applications were numerous.

“At the same time the course of study leading to the degree of graduate in music was lengthened from three to four years, and amplified in every respect, especially in the collateral branches of a liberal education. In general, two

years of English, two years of a modern language other than English, one year of modern literature, one year of elocution, and one semester of physics are required in addition to the special musical requirements for graduation in music. At the same time the course is made elastic by allowing a liberal choice of elective studies. The musical courses remain, as heretofore, open to election by students of other schools and colleges of the university. Two new musical courses are added this year: (1) Instrumentation, or the proper use of orchestral instruments in composition and arrangement, and (2) Ensemble Playing, for the benefit of advanced students of pianoforte.

“Beginning with the current year the course for supervisors in public school music is made a two-year course instead of one, as heretofore. It is believed that this extension will place this work abreast of that done in the most advanced institutions of the land.

“Professor Rossetter G. Cole resigned at the close of the college year 1908-9 after two years of faithful service as director of the school of music. His ripe scholarship and strong native ability were of material assistance in the solution of the problems under consideration, and much credit is due him for what has been accomplished. He is now actively engaged in professional work in the city of Chicago.

“In the fall of 1909 Mr. Eugene Luening, who had added to several years of study and musical activity abroad a long experience in the larger musical affairs of Milwaukee was called here to assume the duties of acting-director. Mr. Luening is probably best known as an instructor in singing, in which capacity he continues his connection with the school of music, with the title of Associate Professor of Music.

“In the spring of this year the position of director of the school of music was tendered Dr. Louis A. Coerne, who accepted, entering upon his duties here at the opening of the current college year. Dr. Coerne is a graduate of Harvard University, from which institution he also received the degree of Ph. D. He has filled several responsible positions in this country, and likewise has spent many years of his active life in Germany, where he achieved notable success as a composer. During the last college year he was connected with Olivet College, Michigan, as dean of the conservatory of

music. Olivet conferred upon him the honorary degree of Mus. D. at its last commencement.

“The radical changes in the whole plan of organization of the school of music necessarily occasioned a large number of changes in the personnel of the instructional force. Hence the following named instructors were discontinued at the close of the college year 1908-9: Miss Ada Bird, Miss Maud Fowler, Miss Grace Buehler, Miss Jeanne l’Homme-dieu, Miss Adelaide Foresman and Mr. Frank C. Bach. In justice to these instructors it should be said that the notification from the board of regents stated, in substance, that this action carried with it no criticism of the ability or faithfulness of the instructors named, but that it was the inevitable result of modified conditions.

“The demands upon the vocal department made it necessary to appoint an additional instructor in voice culture in the middle of the college year just closed. Miss Minnie Bergman of Chicago was chosen, and she accepted the position, beginning her period of service in January, 1910. She had previously won a favorable position in Chicago, and has added strength to the instructional force of the school of music.

“It was fairly to be expected that the entire abolition of the preparatory course and the rather radical change in the collegiate course would bring about a decrease in numbers, but such has not been the case. The college year 1909-10 shows an enrollment of 143, as against 114 collegiate students enrolled in the year 1908-9. Hence it is fair to assume that recent changes have not, in any wise, weakened the hold of the school upon the general public.

“One other point should be referred to, viz., that under the present regime, all instructors are salaried, whereas formerly all instructors in applied music were paid on a commission basis. There can be no doubt that this provision will go a long way toward contributing to efficiency and quality in service, rather than mere quantity.”

At the time of my appointment on July 1, 1910, as director of the school, the music staff consisted of seven teachers, not including Emeritus Professor Parker and Mr. Peter W. Dykema, special lecturer in the summer session. The instructional force now consists of one professor, one associate professor, one as-

sistant professor, six instructors and three assistants, making a total of twelve teachers. This increase is the result of the retention of last year's acting-director, Professor Luening, as teacher of voice culture and theory, of the establishment of a violin department with Mr. Waldemar von Geltech as instructor, of the appointment of bandmaster Charles A. Mann as assistant in violoncello, double-bass and brass instruments, and of the appointment of two assistants in music to teach woodwind instruments, trumpet and cornet. The entire music faculty of last year have been retained with the exception of Mr. Elias A. Bredin, who resigned to accept a position at Evanston, Ill. His place has been filled by Miss Irene B. Eastman, as instructor in organ and theory. Mr. Leland B. Hall has been advanced from instructor to assistant professor.

For the first time, therefore, the school of music is prepared to give instruction in a wide range of musical art, comparing not unfavorably with the most highly organized European conservatories of music. Theoretical branches are treated exhaustively, the following courses being offered: Elements of music, elementary harmony, advanced harmony, counterpoint, double counterpoint, canon and fugue, acoustics, musical composition, general history of music and musicians, public school music, course for supervisors of music in schools, sight-reading and ear-training, musical form, musical appreciation, masterpieces of music, choral music, instrumentation. These courses are open as electives to students in any department of the university, freshmen excepted, who show sufficient musical ability to pursue them with profit, and receive the same credit as similar courses in other departments of the university. The courses give prominence to analytical, critical and historical study, both in distinctive courses and in the methods generally pursued, and thus afford opportunity for study, not only to those specializing in composition, but also to those who, without technical skill, wish to acquire a more intelligent appreciation of music.

Exceptional musical activity was in evidence at the university during the summer sessions of 1909 and of 1910 under the able supervision of Mr. Peter W. Dykema of New York City.

Two courses, public school music and appreciation of music, are being offered by the correspondence-study department of the university extension division. These courses are in charge of Mr. Leroy C. Case, instructor at the school in public school music.

In applied music, by which is meant special instruction in voice culture or some instrument, the courses of instruction are now absolutely complete, and include every instrument of the modern orchestra. Instruction is offered in flute, oboe, clarinet, bassoon, saxophone, French horn, trumpet, cornet, trombone, tuba and all forms of brass instruments for bands, instruments of percussion, violin, viola, violoncello and double-bass. In my opinion, the university band has become an important feature in the musical activity of the university. Under the efficient leadership of Mr. Mann, the band has already reached an unusual degree of excellence. After having conferred with the commandant, Captain McCoy, it seemed advisable to me to bring the band in closer relations with the school of music, though retaining Mr. Mann as bandmaster and making no changes in its organization. This has now been brought about by the recent appointment of Mr. Mann as assistant at the school of music and by the further appointment of two assistants in woodwind instruments and cornet, as referred to above. By the appointment, also, of Mr. Mann as leader of the university orchestra, that organization also should soon occupy a position of importance in the university fully equal to that which the band already enjoys.

Apart from orchestral instruments, naturally the strongest departments in applied music at the school of music are those that have been established for many years; pianoforte, organ, and voice culture. There are five instructors prepared to teach pianoforte, two in organ, and three in voice culture. Correlated with the department of voice culture are three flourishing organizations: the Choral Union, the Glee Club, and the Women's Glee Club; and for the present, it would seem advisable for me to take personal charge of all three organizations.

In addition to the incidental concerts usually offered by the orchestra and the glee clubs, three concerts will be given this year by the Choral Union. At the first, Haendel's "Messiah" will be rendered; at the second, some soloist of international reputation—probably Mme. Sembrich—will appear; for the third, the performance with soloists, chorus and orchestra of Grieg's "Olaf Trygvason" and Goring Thomas' "The swan and the Skylark" is in contemplation. The school of music has further arranged for a series of eight artists' recitals. These recitals will consist entirely of chamber music, which seeks for the expression of the more refined and subtle effects of musical art.

The idea of *educational* value rather than sensationalism or mere virtuosity has been constantly kept in the foreground. The series will be comprised of the Steindel Trio of Chicago, a recital of compositions by L. A. Coerne, a pianoforte recital by Professor Leland B. Hall of the university school of music, a concert by Mr. and Mrs. Arnold Dolmetsch of Boston, an analytical lecture-recital by Mr. Glen Dillard Gunn of Chicago, a song recital by Miss Minnie Bergman of the university school, a violoncello recital by Mr. Boris Hambourg of London, England, and a recital for two pianofortes by Miss Alice Regan and Mrs. Inga Sandberg, both of the university school.

In preparing my first bulletin for the school of music (No. 376; General Series No. 225, published in August, 1910), I adhered closely to the general announcements, courses of instruction and schedules, as compiled by the faculty of the school of music before my appointment as director, and as approved by the general faculty of the university. The only exception to this is to be found on pages 9 and 10 of the bulletin in the outlining of the theoretical courses offered to candidates for the degree of Bachelor of Arts or Bachelor of Science. These courses are now arranged on a distinctly academic basis, with the design of raising the theoretical instruction at the school of music to equality with that offered by all other schools and colleges of the university.

NEEDS

The school of music is seriously handicapped through lack of adequate building facilities, an organ suitable for concert purposes, an auditorium that shall satisfy the demands of acoustical requirements, a number of new pianos, and a musical library. In this connection I beg to quote from the report of the chairman of the visiting committee on page 250 of the last biennial report of the board of regents:

“There is great need of an auditorium where students can meet as a student body for entertainments, recitals and concerts. The present auditorium will accommodate but one thousand students when crowded to its greatest capacity, whereas seats for at least two thousand should be provided. Such a hall would have great influence for good and would materially enhance the scope of the work outlined for the school. Besides being entirely inadequate for even the

present requirements as to seating capacity, the present building is a fire trap of the most dangerous sort owing to its narrow exits and stairways.

“At least four new pianos should be provided without delay, to replace an equal number of absolutely worn out instruments now in daily use in this building. It is inconceivable that these decrepit pianos should be permitted to remain where they are, as the culture of musical feeling becomes very difficult under such circumstances.

“The organ now in the building answers fairly well for practice work, but is entirely inadequate for the purpose of concert work such as becomes necessary in conjunction with the musical education which the students have a right to expect in this department of the University of Wisconsin. A new concert organ should therefore be supplied as soon as possible.”

At the present time, certain building improvements, recently authorized by the board of regents, are nearing completion. These improvements consist of making all teaching room practically sound proof, and of the addition of four practice rooms in the basement, thereby giving a total of eight available practice rooms. These improvements meet the more pressing needs of the school, but it will not be long before the normal growth of the school will require proportionate building facilities.

RECOMMENDATIONS

I therefore beg to recommend (A) certain immediate improvement, and (B) more extensive building facilities and apparatus in the near future:

A (1) The immediate purchase of four practice pianos for the four new practice rooms. Previous experience has proved that rental fees from pianos pay a fair interest on the investment.

(2) Three more practice rooms in the basement, as tentatively planned by the university architect, Mr. Peabody.

(3) Three further practice pianos upon the completion of the three practice rooms recommended under paragraph 2.

(4) The building of a suitable practice room in the basement for the small and obsolete organ at present located in Assembly Hall, and the removal of that organ from Assembly Hall to said

room in the basement. As already stated, that organ is utterly worthless from an artistic standpoint in its present location, but could be advantageously used for purely technical practice purposes.

(5) The immediate installation in Assembly Hall of a thoroughly up-to-date, electric, four manual organ, with radiating, concave pedals, and movable console, at a cost of not less than \$6,000 or more than \$6,500. Such an instrument, properly constructed and cared for, would be practically indestructible, and could be eventually removed to some other building without suffering injury. The limited size of Assembly Hall precludes the installment of an instrument of any great size, so that my recommendation calls for an organ possessing, primarily, purity of tone, delicacy, shading, flexibility, simultaneously offering abundant mechanical accessories to meet the constantly growing requirements of the modern organist. As a result of the rapidly increasing number of modern organs that are being built by the churches all over this country, it is imperative that students graduating from the organ department should be enabled to have familiarized themselves with the extremely complicated accessories of modern organs. At present, an organ graduate from the university school of music is thoroughly proficient in matters of technique, artistic rendition and general musicianship, but is seriously handicapped at the start in handling modern church organs when in competition with candidates from many other music schools and colleges of this state. I should add that the present organ in Assembly Hall is one of the poorest instruments I have ever come across among even the smallest colleges in the country.

(6) An initiatory appropriation of not less than \$300 to form the nucleus for an adequate musical library. In this again, I know of no college so utterly lacking in even the most inexpensive of standard music volumes. I refer chiefly to printed music rather than to musical literature. The university library possesses the nucleus of a fair musical library, though even there the range of up to date publications is very limited. Having conferred with the university librarian, Mr. Smith, I recommend that (a) the nucleus of an adequate library of printed music be supplied to the school of music and kept in the university library for handy reference for both students and teachers; (b) that the necessary additions of modern musical literature be sup-

plied to the university library and be cataloged and stacked in that library as being of easier access to the students of the university at large than if placed in the proposed special library of the school of music; (c) that a limited number of musical dictionaries, histories, biographies, together with certain musical literature pertaining to aesthetics, theory, and criticism, be supplied to the school of music for daily reference as duplicate copies to those already supplied or to be supplied to the university library.

I further recommend :

B (1) A most careful consideration of the advisability of ultimately erecting a large modern building for the use of the school of music, with adequate accommodations for teaching, practising, rehearsals of choral works, rehearsals of orchestra, band, glee clubs, chamber music, etc. Simultaneously the building should contain no less than three concert halls respectively adapted to large, medium, and small audiences, according to the nature of the performances.

(2) The installation in the largest of the concert halls suggested in the previous paragraph of a representative, large, modern organ at a cost of not less than \$20,000—preferably \$25,000. Until such an instrument be forthcoming, the musical activity of the university cannot hope to attain a standard compatible with the dignity of the state institution, nor can it hope to serve the state to an extent of usefulness and influence equal to that already exercised by other schools and colleges of the university which are more adequately equipped. The University of Wisconsin stands practically alone among the great universities of the country in its lack of a fine organ.

(3) A gradual development of a library of printed music for the school of music special library, and normal additions of musical literature to the shelves of the university library.

Respectfully submitted,

LOUIS A. COERNE,

Director.

October 6, 1910.

REPORT OF THE DIRECTOR OF THE COURSE FOR THE TRAINING OF TEACHERS

DEAN E. A. BIRGE,

College of Letters and Science.

DEAR SIR:—The following report contains a survey of the more important activities and developments of the course for the training of teachers for the university years 1908–1909 and 1909–1910. In reality, the report covers the first biennial period of the operation of this course, which was proposed by the faculty, and approved by the regents of the university, in February, 1908. The statement relative to the reorganized plan for the training of teachers within the university, presented to you two years ago, and incorporated in the biennial report of the board of regents for 1906–1908 (pp. 75–91), contained an account of the several steps leading to the establishment of the course together with a brief discussion of its status insofar as it had become operative during the year 1907–1908. The main emphasis of this first statement was placed upon the several lines of development which had been projected by the original plans.

The present report endeavors to set forth briefly the extent to which the contemplated development has been realized, and to present certain proposals for the further advancement of those interests which the course aims to conserve for the university and for the public school system of the state.

THE DOMINANT ISSUE: A UNIVERSITY DEMONSTRATION SCHOOL

The efforts of the past four years for the betterment of the training of teachers within the university have been centered chiefly upon the *academic* aspects of this training. New courses of instruction have been instituted by the departments and established courses have been modified and adapted so as better to meet the needs of the prospective teacher; a beginning has been

made toward a more economical and efficient use of the existing system of election of courses by students. This has been accomplished through the requirement that students must concentrate their academic preparation for teaching in approved and related directions. Departments, especially in the college of letters and science, have become more and more conscious of the direct responsibility which rests with them, through their own methods of teaching and organization of instruction, for the future professional efficiency of those students who anticipate teaching as a career, permanent or temporary. Nevertheless, these internal reorganizations and adaptations to which more detailed reference will be made later, and this increasing sense of obligation to students and to lower schools, are but the first necessary steps for the development and progress of the course. They represent but one of the phases of the transition of the college from the position of the great liberalizing factor in education to that of a great vocationalizing factor.

Nothing further of significant influence may be expected from the course until adequate provisions have been made to supply the chief need for the effective training of teachers, that is, *satisfactory laboratory facilities*. Indeed, without proper means for practice and demonstration teaching, *a limit practically has now been reached in utilizing the university as a professional training school for teachers*.

While, in one or two departments of the university, a very few of the prospective teachers are given opportunity for a limited amount of practice teaching in the elementary college classes, and while the existing cooperation with the Madison public schools has yielded certain benefits, the former device may be regarded as but a temporary and unsatisfactory expedient, and the latter affords merely a partial solution of the problem. A demonstration high school, completely under the control and subject to the needs of the university, is an immediate necessity. Until the facilities of such a school are provided, the people and the public school authorities of the state will continue to have just cause for complaint that the university does not fully meet the demands placed upon it for the effective training of teachers.

The arguments in support of this major need have been presented over and over again, and from many different points of view, during recent years. It is wholly unnecessary to repeat them here. Every person engaged in the work of training teach-

ers, and every person familiar with the general problem, recognizes its importance. A demonstration school is as necessary for the teacher in training, as are the shops and laboratories for the engineer in training, or as are the laboratories and experimental work for the agriculturist in training: educational means which the university in its wisdom has provided liberally for both classes. Without such a school we are, to a large extent, limited to performing certain academic motions for the professional training of teachers rather than to giving the training itself. Already a number of American universities, of equal or even lesser rank than the University of Wisconsin have definitely established demonstration and practice schools.

Now that the necessities of the situation are generally admitted, the question of practical means to the desired end becomes all important. A careful study of the legal constitution of the university seems to support the position assumed by some that the establishment of a school such as that contemplated is not possible without a direct legislative authorization. In other words, that funds from the general resources of the university may not be used for the construction and maintenance of a demonstration school without definite legislative sanction. If such be the case, then a full and proper presentation of the case by the regents to the coming legislative session is necessary and appropriate. The people of the state and their representatives are keenly interested at this moment in the development and efficiency of the lower schools, especially of the secondary schools. Any plan which promises to be a potent means for the removal of a conspicuous weakness of these schools—the inadequacy of the teacher—will be sure to meet with careful consideration. In justice to the responsibilities imposed upon the university, not only should the establishment of a demonstration school be authorized, but the requisite resources therefor appropriated by the legislature: at least \$150,000 for a building, and equipment sufficient to accommodate from one hundred and fifty to two hundred pupils in a school organized on a six-year basis. A careful preliminary study of the existing situation has convinced me of the practicability of operating successfully a school of the demonstration type within the city of Madison.

This section of my report has been given first place not only because it deals with a matter that is of great moment to the

future of the course for the training of teachers, but also because in this respect the University of Wisconsin is lagging considerably behind the other leading state and endowed universities in not providing something more than class-room instruction in the theory of education for those preparing to teach.

ADMINISTRATION

The appointment of a director of this course in April, 1909, completed the original administrative scheme of 1908 by which the course was to be placed in charge of a director and standing committee of the faculty. In addition to the chairman, the first committee consisted of nine members,—the dean of the college of letters and science, *ex officio*, and one representative from each of the principal departments immediately concerned with the training of teachers. Provision having been made for the addition of representatives of the departments of other colleges which might become related to the training of teachers, a member of the faculty of the college of agriculture was given a place on the committee at the commencement of the academic year 1908–1909.

As was pointed out in the immediately preceding biennial statement there are peculiar difficulties in administering such a course as that for the training of teachers. In the case of other so-called "courses," the instruction falls normally within a few departments, and the body of students pursuing such courses are more or less sharply differentiated and possess a certain distinctive unity. The training of teachers, on the other hand, involves a large number of departments, located in different colleges and may, as in the case of junior and senior classes in the college of letters and science, include a major percentage of the students. Any direction and supervision of the work, of either departments or students, pertaining to the course for the training of teachers becomes a delicate and complex matter. The director and the administrative committee have endeavored to secure, without unnecessary administrative formalities, a coherency of organization requisite for the efficiency of the scheme, and any successful issue of the several undertakings is due to the spirit of cooperation which to an increasing degree has become characteristic of departments of the university.

Two years ago a better coordination between the work of the committee on the training of teachers and the committee on:

accredited schools and appointments was urged. During the past year the membership of these two committees has been practically identical, thus permitting, as was anticipated, a readier adjustment of the manifold relations which the university bears to the public high schools of the state.

The extension of the work of the preparation of teachers into the field of graduate study will, in all probability, lead to problems, important alike to the administration of the graduate school and the administration of the advanced course for the training of teachers. The summer sessions have already developed a number of these problems. Whether one or more common representatives would not serve to develop a better understanding of the common problems of these two committees is a question of general policy worthy of consideration.

ENROLLMENT

Originally the faculty regulations governing this course provided for a special registration of students at the beginning of the senior year. This regulation involved principally the selection and approval of the subject or subjects, preparation for the teaching of which was contemplated. One of the very important ends sought by the establishment of the course was the concentration of the student's preparation upon definite related subjects; a major subject, a major subject and one minor subject, or a major subject and two minor subjects were the three arrangements made possible. One year of experience demonstrated, however, that this registration came too late, either to enable the majority of the students to fulfill with certainty the requirements as to definiteness and intensiveness of the professional study; or to permit instructors to be of any real service in directing the elections of students, especially of the great number to whom the profession of teaching was to be but a transitory stage in the affairs of life after the days of the university. To overcome this by no means inconsequential obstacle to the general efficiency of the professional education of teachers within the university, it was determined by the faculty in 1908, upon the recommendation of the administrative committee, to fix the time of registration at the beginning of the junior year.

This earlier registration, which became operative at the opening of the year 1909-1910, places an appropriate added emphasis in the minds of students upon the distinction that today

almost inevitably obtains between the more general study of the first two years of college and the more specialized study of the second two years. Whatever objection may be urged by the academic world to the professionalizing of the college work, it must be recognized that the outer educational world has a pressing condition and not a speculative argument to meet. This pressing condition arises from the demand for teachers who know their business, not in any general vague way, but in an accurate and expert way characteristic of any technical pursuit. Without doubt, four years is not a sufficiently long period in which to insure that breadth of culture and vision, and that depth of knowledge of men and things which constitute the major acquirements of the individual fitted by nature for the teaching profession. Nevertheless, four years is the limit that the American secondary education traffic will bear. The responsibility of the university has been so to organize and integrate the work of the four years of undergraduate study as to yield a product of passing efficiency. The day has passed when any college graduate, as such, is considered as competent by training for teaching in *any* department of a secondary school. A certain, though not too narrow, specialization is an absolute necessity. To initiate this specialized preparation and also to stimulate departments to organize their courses of instruction so as to enable students to pursue a harmonious and unified scheme of study constitute the real purpose behind the present system of registration.

During 1908-1909, 161 senior students were registered. Of this number 154 were granted university teachers certificates at the end of the year. During 1909-1910, 214 junior students, and 198 senior students were registered. 169 university teachers certificates were granted.

The tendency of students to specialize narrowly in their study is evident from the statistics of the class of last year. (See table, pp. 102-103.) Out of a total enrollment of 198, 42 qualified to teach in a single (major) subject, 105 qualified to teach a major and one minor subject, and 22 qualified to teach a major and two minor subjects.

COURSE FOR THE TRAINING OF TEACHERS.
REGISTRATION EXHIBIT 1909-1910.
SENIORS.

SUBJECTS.	MAJORS.				MINORS.									Home Econo- mics.	Latin.	Mathematics.	Music.	Philosophy.	Physical Training.	Physics.	Physiology.	Political Economy.	Political Science.	Public Speak- ing.	Romance Languages.	Zoology.
	Alone.	One Mi- nor.	Two Mi- nors.	Total.	Agricul- ture.	Botany.	Chemis- try.	Com- merce.	Educa- tion.	Eng- lish.	Geology.	German.	Greek.														History.
Agriculture.....	M W	1	1	1	1	1																				
Botany.....	M W	1 7	1 1	2 8						1 4																
Chemistry.....	M W	1 2	1 1	1 3			4	1		1																
Commerce.....	M W	1	1	1										1												
Education.....	M W	1 1	1 1	1 1		1										1										
English.....	M W	17	16	3	36	1	2			1	2		9		1	1	1						1	2		
Geology.....	M W	1	1	1			1																			
German.....	M W	1 5	2 21	3 29	3				11	1	5		4		3	1		1						1	7	
Greek.....	M W																									
History.....	M W	4 5	2 20	3 4	9 29				2 13	2 1								1		2 1		1		4		
Home Economics.....	M W		1		1			1																		

Latin.....	M	3	16	4	23					7		9	2	3	1		2																					
	W																																					
Mathematics.....	M	2	3	2	7			2		1		2																										
	W																																					
Music.....	M																																					
	W																																					
Philosophy.....	M																																					
	W								1																													
Physical Training.....	M																																					
	W																																					
Physics.....	M	1	3		4					1																												
	W		1		1				1																													
Physiology.....	M																																					
	W																																					
Political Economy.....	M		2		2					1																												
	W																																					
Political Science.....	M		1		1																																	
	W																																					
Public Speaking.....	M																																					
	W																																					
Romance Languages.....	M		1		1																																	
	W	1		1	2									1																								
Zoology.....	M																																					
	W	1	1		2			1																														
Totals.....		42	105	22	169	0	8	9	0	5	34	10	19	2	20	1	2	7	2	2	0	7	0	3	1	2	14	0										

Generally speaking, the teachers prepared at the university know too little of subjects of the secondary school curriculum which they are likely to be called upon to teach. This is very noticeable in the case of young and inexperienced graduates who must perforce begin their work in small schools. The situation in these small schools, employing but two or three teachers, makes it necessary that each teacher handle from two to three or more subjects. One of the tests of the efficiency of the future administration of the course will be the degree to which students have been guided and advised in the organization of a correlated course of preparation that is of real service in the class rooms of the public schools.

In June, 1910, out of a total of 98 university teachers certificates granted to students presenting majors in English, German, Latin, and mathematics, (four principal secondary school subjects), but three certificates were granted to men. The decline in the number of men entering the work of teaching, and their almost complete disappearance from some departments of instruction presents not only a university problem, but a large social problem. During the past two or three years I have talked with scores of young men in this university regarding teaching as a career. Many of them have already had experience as teachers. All of those whom I have in mind were headed toward law, commerce, engineering, agriculture, or other applied scientific work. All disdained to consider secondary school teaching as a career either of profit or promise. Almost without exception such work was regarded in a supercilious light or at the best as a means of attaining a further end only. This negative, and in many ways disastrous, attitude is not, I have discovered, due primarily to unpromising financial outlook of the work of teaching, but rather to the idea that public school teachers are an inferior and socially marked class. This is not the place to enter upon any discussion of this very important social issue. I make mention of it here in passing merely to draw attention to the fact that the preparation of teachers is not wholly a university problem. Until communities recompense the teacher and his work with respect, to say nothing of other compensation, the feminization of the profession of public school teaching will continue; and live and energetic men will not go into this work, which above all others demands personality and energy and which affords an avenue for efficient social service. And the

public schools will continue to be the sufferers, as well as the university.

DEPARTMENTAL PROFESSIONAL INSTRUCTION

A very considerable portion of the activity of departments with respect to the training of teachers has had to do with the institution and development of the so-called departmental teachers courses, that is, those special courses of instruction dealing with the technical and pedagogical aspects of teaching the subject in the secondary school. The general policy of the university in the matter of this special instruction has now become fairly well defined; that within each of those departments, whose subjects occupy an essential position in the secondary school curriculum, provision will be made for a trained man whose chief interests lie in the problems of secondary instruction, and whose training and abilities enable him effectively to present to students the technique appropriate to the successful teaching of the subject to pupils of secondary school growth. In addition to the responsibility for this professional instruction within the university, these men are, more and more, being charged with the work of high school inspection.

As I have pointed out in the report of the work of the committee on accredited schools, there are three important factors in the relation of the university to the high schools of the state: *first*, the preparation of efficient teachers and supervisors; *second*, the definition of standards of educational value; and *third*, the sustaining and elevating of these standards. The second of these factors is the principal element of the entrance requirements and the formal inspection and accrediting of schools. The third, and most essential factor of the relation, merits our most serious attention. We should be able continually to send men from the university to the high schools not for the single purpose of measuring efficiency of organization, equipment and instruction, but primarily to render a constructive personal service. The presence of a group of men within the university acting as skilled mediators between the university and the high schools will inevitably result in a better mutual understanding of the problems common to each institution and in the creation of a necessary unity of aim. This, to my mind, represents the great work to be done by these departmental specialists in secondary education. This plan of conserving and developing the

university interests in the high school, and the high school interests in the university, through and by men who have special training, knowledge and understanding of the educational situation is being gradually worked out in the principal university departments. Much remains yet to be accomplished, especially in the several departments of science.

Concerning the development and extension of the special professional instruction, two steps taken during the biennium may be especially mentioned: the institution of the department of agricultural education in the college of agriculture, and the authorization for the establishment of the department of manual arts in the college of letters and science at the beginning of the academic year, 1910-1911.

The prominent position which training and instruction in agriculture have assumed in contemporary education, especially in schools of elementary and secondary grade, has created a marked demand for trained teachers of agricultural subjects. To meet this demand a definite scheme of instruction, including the subject matter of the several essential branches of agricultural science and also their special and general pedagogical aspects, has been organized with the department of agricultural education as a center, and under the direction of Professor K. L. Hatch, who was brought to the university primarily for this new work. Through the cooperation of the faculties of the college of agriculture and the college of letters and science appropriate provision was also made last year whereby students of the latter college were permitted to pursue a "minor" in agriculture as a preparation for teaching.

The establishment of the department of manual arts is a significant advance in a new direction. For the first time the university has definitely recognized in a large way that trend in secondary education which has resulted in the introduction of the various manual arts subjects into the curriculum of the high school. That the success of this newer instruction is dependent upon a body of skilled teachers is now fully recognized. The full educational value of the instruction can be determined only through the medium of trained and competent teachers. Professor F. D. Crawshaw, formerly of the Bradley Polytechnic Institute, and recently assistant dean of the college of engineering of the University of Illinois, has been selected as professor of manual arts. Through him and the work of the new

department it is firmly hoped that the university will be able to render a most important constructive service to the public schools of the state. While for convenience of administration the department of manual arts has been placed within the college of letters and science, the courses and facilities for instruction have been organized with the cooperation of the faculty of the college of engineering, especially with the advice and assistance of Dean Turneure and Professors Phillips and Mack.

DEPARTMENT OF EDUCATION

Quite obviously, nearly all of the instruction given in the department of education is directly related to the professional preparation of teachers. The very small amount of work required of students in this department for the university teachers' certificate—(five semester hours)—considerably restricts the potential professional influence of the department. It is worthy of note that the requirement of such professional instruction in the University of Wisconsin is but approximately forty per cent. of that of institutions of similar rank in the country. Notwithstanding this limitation the department has exerted itself to the utmost to make its courses of instruction of service and professional inspiration to students. No department concerned in the work of training teachers is more handicapped by the absence of the demonstration school and other appropriate laboratory facilities. Beginning with the academic year 1910-1911 the department has made such a rearrangement and reconstruction of its elementary courses as better to meet the professional needs of students taking the minimum amount of work.

During the biennium just passed, the instructional force of the department was increased by the addition of an instructor in the history of education (Mr. J. B. Sears, Stanford University, for 1909-1910, and Mr. G. F. Wells, Teachers College, Columbia University, for 1910-1911). The vacancy in educational psychology, caused by the resignation of Professor Walter F. Dearborn, in 1909, has been filled by the election of Professor V. A. C. Henmen, recently professor of education and philosophy at the University of Colorado.

ADVANCED COURSE

Three years ago, when the matter of the definite organization of the course for the training of teachers was being considered by the faculty, it was recognized at the outset that the needs of two general classes of students must be met,—(a) those who were unable to spend more than the four years of regular college study in preparation for teaching and also those who intended to devote themselves to the work of teaching for a comparatively brief period; (b) those who were aiming to secure that quality of education and professional training best calculated to fit them for extended service in the better and more responsible educational positions:

For the first class of students it was necessary, during the four undergraduate years, to provide some effective arrangement of the ordinary academic study, supplemented by an amount of professional study, requisite to fulfill the minimum legal requirements for certification. This was attempted through the undergraduate course for the training of teachers.

For the second class of students, one year of graduate study, beyond that outlined in the undergraduate course, was regarded as very desirable. However, the existing circumstances—economic and social—surrounding and influencing the work of teaching in public schools rendered inexpedient, for the time being, any standards based upon graduate study. A tentative plan for special advanced study, equivalent to twelve credits of graduate work (which might be accomplished during two summer sessions, or, in one regular semester), was formulated and adopted under the caption of The Advanced Course for the Training of Teachers. The completion of the course entitled the student to a special certificate. It was contemplated that this advanced course would lead eventually to the placing of professional study in preparation for teaching and for the supervision of schools upon a definite graduate basis. The stipulated requirements for the certificate usually permitted the courses taken to be counted toward the second degree.

Experience has now been had through three summer sessions and two regular academic years. The following table exhibits the more significant statistical features of the enrollment during this time.

ADVANCED COURSE FOR THE TRAINING OF TEACHERS
STATISTICAL EXHIBITS

A. Enrollment

ITEMS	Summer session 1908.	Regular session 1908-09.	Summer session 1909.	Regular session 1909-10.	Summer session 1910.
REGISTRATIONS—New					
Men.....	5	1	10	1	18
Women.....	5	1	10	.....	5
REGISTRATIONS—Continued					
Men.....	.....	.....	2	.....	10
Women.....	.....	.....	.....	.....	.....
Totals.....	10	2	22	1	31
MAJOR SUBJECTS:					
Agriculture.....	.....	.....	.....	.....	1
Chemistry.....	1	.....	3	.....	.....
Economics.....	.....	.....	1	.....	1
Education.....	3	.....	5	1	9
English.....	2	2	3	.....	6
German.....	.....	.....	2	.....	1
History.....	3	.....	5	.....	5
Latin.....	1	.....	3	.....	4
Mathematics.....	.....	.....	.....	.....	2
Music.....	.....	.....	.....	.....	1
Sociology.....	.....	.....	.....	.....	1

B. Undergraduate Institutions

Institutions	Summer session 1908.	Regular session 1908-09.	Summer session 1909.	Regular session 1909-10.	Summer session 1910.
Alabama Polytechnic Institute.....	1
Albion College.....	1
Bethany College.....	1	.....	.....
Bowdoin College.....	1	.....	.....
Carleton College.....	1	.....	1
Colgate University.....	1	.....	.....
Colorado College.....	1	.....	.....
Des Moines College.....	1	.....	.....
Ewing College.....	1
Gustavus Adolphus College.....	1	.....	.....
Howard University.....	1	.....	.....
Iowa State College.....	1
Kansas Agricultural College.....
Lawrence University.....	1	.....	.....
Milwaukee Downer.....	1
Oberlin College.....	1
Ohio Wesleyan University.....	1
Ottawa University.....	1
Ripon College.....	2	.....	.....
Rochester College.....	1	.....	1
St. Clara College.....	1
University of Cincinnati.....	1	.....	.....	.....	1
University of Colorado.....	1	.....	.....	.....	.....
University of Illinois.....	1	.....	.....	.....	.....
University of Indiana.....	1	.....	1
University of Michigan.....	1	.....	.....
University of Wisconsin.....	6	2	10	1	5
Upper Iowa University.....	1	.....	.....
Valparaiso University.....	1	.....	1	.....	.....
Western Reserve University.....	1
Wheaton College.....	1
Wooster University (Ohio).....	1	.....	.....
Total.....	10	2	27	1	20

The growth and character of the development of the summer session of the university during recent years inclines one strongly to the opinion that this portion of the university year is to become increasingly important as regards graduate work of a professional nature. Nevertheless, as long as the work of the advanced course is accomplished almost exclusively during the summer session, it may not be expected that this course will operate to raise the general professional level of the teachers of the state. In its present form the course is lacking in a motive force. It contains nothing of the spirit, and but little of the coherent content of instruction organized for a definite professional end. As a first step it has served its purpose.

Nothing short of increased requirements for certification and admission to the permanent ranks of the teaching profession will serve to give vitality and worth to advanced preparation. The university might contribute something of lasting value to the educational welfare of the state by formulating and advocating the passage of a statute which would place a premium upon an intensive professional preparation beyond that which now qualifies one for full recognition. A state in which approximately one-half of the high school teachers and principals have had but two years of training beyond the high school curriculum has not yet put itself in the way of solving the immensely important problem of increasing the efficiency of the public schools. It is farcical to justify inadequacy in the preparation of teachers by the thread-bare argument that the compensation and conditions of the work of teaching will not permit the raising of the requirements for the teachers. Communities throughout Wisconsin are paying high school teachers \$500 to \$540 per year, not because they cannot pay more, but because they are unwilling to pay more for an uncertain product. One of the very bad habits of the educational system is that of low salaries; which are the result of poor preparation, rather than the cause. In the minds of those who have weighed the situation carefully, the one certain way to insure greater educational efficiency is to require at least four years of training beyond the high school as a condition for teaching therein under a limited certificate; and five years of training for an *unlimited* certificate. Such a requirement will make the advanced course more than an appearance of reality and would enable the university to exercise a powerful and lasting influence in raising the level of efficiency of the lower public schools.

TEACHING FELLOWSHIPS

In response to the general representations made regarding the need of increased and better facilities for practical work, and in accordance with the definite recommendations made two years ago (biennial report of the board of regents, 1906-1908, pp. 85-88), the regents established a number of special fellowships, designated as Teaching Fellowships.* Through these fellowships it is hoped to encourage graduate professional study for teaching and to inaugurate a scheme for the more thorough and extended preparation for teaching and supervisory positions in the public schools of the state. These teaching fellowships are to be awarded in a manner that will lead to the selection of certain of the graduates of the university for whom an additional year of special professional training and experience will result in the attainment of a high degree of efficiency in the public educational service of the state. The general features of the plan and the mode of its contemplated operation are as follows:

1. Appointments to available teaching fellowships are made upon the nomination of departments, and the recommendation of the Committee on the Training of Teachers. Appointments are for the period of one academic year and each fellowship entitles the holder to an honorarium of two hundred and fifty dollars.
2. Each teaching fellow devotes one-half of the period of the fellowship to graduate study within the university, such study to be pertinent to a better preparation for teaching or supervisory work, and one-half of the period to teaching under competent supervision.
3. Proper facilities for the one-half year of trial teaching are provided through the service of certain of the public secondary schools of the state designated as "cooperating secondary schools."*
4. In so far as conditions permit, each of the cooperating high schools agrees to receive one of the teaching fellows for

* Provision was made in the budget of 1909-1910 for the appointment of four Teaching Fellows. For a number of reasons it was found inadvisable to attempt to put the plan in operation until the academic year 1910-1911. The budget for 1910-1911 provides for six Teaching Fellowships, assigned and distributed as indicated later.

*For the year 1910-1911 the list of cooperating high schools includes the high schools at Ashland, Eau Claire, Menomonie, Racine, Superior, Wausau, Chippewa Falls, and Oshkosh.

assignment as a member of the teaching force of such school for a period of one-half of the school year. The teaching fellow thus received is assigned for teaching substantially one-half (twelve to fifteen) of the usual number of weekly teaching periods; such teaching to be done as far as possible under the direct supervision of the principal of the school, or of some properly qualified class teacher. In return for this teaching service the teaching fellow receives a monthly salary of not less than twenty-five dollars. The teaching fellow received for the first half of the school year is replaced by a second teaching fellow during the second half of the year; the former fellow devoting the remainder of the academic year to special professional study within the university just as the latter fellow devotes the first half of the year. In consequence of this arrangement appointments to fellowships are made in pairs as regards departments.

5. Previous to the designation of any school as a "cooperating high school," the general conditions for the appointment, service and supervision of the teaching fellows, together with the amount of compensation are formerly accepted by the board of education of the school, and agreed to by the regents of the university.
6. A teaching fellowship obligates the holder, (a) to devote one-half of the period of the duration of the fellowship to trial teaching, under supervision, in a cooperating high school, to be indicated by the Committee on the Training of Teachers, and to make such regular reports as are required by this committee; (b) to devote one-half of the period of the duration of the fellowship to a course of resident graduate study in the university, as approved by the Committee on the Training of Teachers and the major department of study; (c) to relinquish the fellowship with all of its privileges and benefits at any time if the results of either the trial teaching or the graduate study are unsatisfactory.

As will be readily seen from the above details, the central feature of the plan is the "cooperating high school." Much encouragement was received from the superintendents and high school principals to whom the original proposals were submitted for criticism. As an index of the temper of the public authori-

ties of the leading cities of the state toward this aspect of university work, it is worthy of record that in no instance was the plan of cooperation rejected after a personal explanation of the end had been made.

As a means of securing a complete understanding of the plan previous to its institution, I visited personally ten of the leading cities of the state and conferred with the board of education of each. In two instances, the local situation rendered impossible an immediate acceptance of the responsibilities involved in the cooperation. In every other case, principal, superintendent and members of the board of education regarded the plan not only as an effective means toward the professional end but also as a means of bringing the university and the public schools of the cities of the state into a mutually helpful relation. Moreover, the number of applications received for the assignment of teaching fellows to schools was three times as great as could be granted.

For the year 1910-1911 the following fellows have been elected and assigned from the class of 1910:

Fellow.	Subject.	School.
Davies, Avrina Bernice.....	German	Wausau.
Ruedeubuch, Gretchen.....	German	Wausau.
Reardon, Una Lee.....	History	Eau Claire.
Straight, Hazel Azubah.....	History	Eau Claire.
Lentzner, Florence Ida.....*	Latin	Superior.
Pomeroy, Mabel Frances.....	Latin	Superior.

The budget provisions for the teaching fellowships (six) being considerably less than had been hoped, the plan will have for the next year but a limited operation. However, it is believed that this experience will be such as to justify the enlargement of the scheme.

COOPERATION WITH THE MADISON PUBLIC SCHOOLS

The agreements entered into in 1907 by the regents of the university and the board of education of the city of Madison relative to the use of the classes in the Madison high and elementary schools for observational purposes by the students in the course for the training of teachers have continued in force.

High School: Professor H. K. Bassett, of the department of English, the only special instructor working under agreement A of June, 1907, has not only conducted his

classes within the high school but has also had charge in the university of the special professional course in the teaching of English. This arrangement, whereby a trained and specialized secondary school teacher, actually teaching under typical high school conditions, is charged also with the university instruction in the special technical aspects of the teaching of his subject, seemed from the beginning to be one likely to lead to efficient results. There are two related sorts of scholarship,—the scholarship requisite for the university and the scholarship requisite for the secondary school. This particular cooperation with the Madison high school does, it is firmly believed, place scholarship requisite for the secondary school first in the minds of those who are to be high school teachers.

Owing to inherent mechanical difficulties, it has not been readily possible to bring about those fine adjustments between the university and the high school whereby that part of the cooperative arrangement exemplified by the work of Professor Bassett could be extended to other departments. Only when an appropriate vacancy occurs in the corps of instruction of the high school is it possible to consider the further extension of the plan. Even when such vacancies take place, it is extremely difficult to find individuals who by scholarship, training, experience, and personal aptitudes, are capable of meeting the peculiar demands of the dual position of high school teacher and university teacher. However, by the continued active interest of the public school authorities of Madison, a special teacher in mathematics will be in service next year.

Professor W. W. Hart, recently vice-principal and head of the department of mathematics in the Shortridge (Indianapolis) High School, has been selected for this second position. Within the university he will have charge of the special departmental teachers' course in mathematics.

During each of the past two years, the classes of ten of the regular high school teachers have been open, under the provisions of agreement A with the board of education, for visitation and observation by students in the course for the training of teachers. Each of these

teachers has received a nominal compensation of ten dollars per month from the university for the additional service rendered. Including the classes of Professor Bassett, approximately 1801 recitation hours during 1908-1909 and 1414 during 1909-1910 were utilized for observational study by students in the departmental teachers courses and in courses in the department of education.

Elementary Schools: The agreement of December, 1907, (agreement B) with the board of education of Madison relative to the use of certain of the elementary schools for visitation and observational study has continued in operation during the biennium. Each year the twenty regular teachers in the George Washington and the Lyman C. Draper schools, and also the special teachers of manual training and domestic science have been designated for the service contemplated by the agreement. Each teacher has received an honorarium of thirty dollars per year for the performance of the additional duties incident to the cooperation. In the main, the observation in the elementary schools has been utilized in connection with the courses in the department of education. Substantially 1169 visits were made by students in 1908-1909 and 1096 in 1909-1910.

Results of Cooperation: Generally speaking, the cooperative arrangement with the public schools of Madison has resulted in the benefits anticipated, chief among which has been the increase in the interest of students in their professional preparation for teaching. The board of education, the superintendent of schools, the principals and teachers have at all times evinced a readiness to make the observational study of real value to students. Nevertheless, the plan has difficulties and limitations which may not be overlooked. The location of the schools, the profitable adjustment of the hours of visitation without interference with the regular university instruction of students, the practical impossibility of conference and discussion between the teachers of the classes observed and the university students, and the impracticability of any direct coordination between the university class room instruction and the work of the observed schools are items of more than passing importance. The university instructors and

students have endeavored to make the most of the limited opportunities afforded for laboratory experience. Experience at this university has demonstrated that, until there is established a school completely under the control of the university, we cannot hope to provide our students with a professional training other than one that is highly academic; and our students will continue to go out but meagerly equipped to meet the concrete situations of the real public school.

COOPERATION WITH STATE NORMAL SCHOOLS

As a result of conference between the representatives of the state normal schools and the faculty of the university in the spring of 1909 a closer relationship was effected between the work of normal schools and the university. For a number of years the graduates of the normal schools have been admitted to a special university course to which the degree of bachelor of philosophy was attached. Normal school graduates becoming candidates for the degree of bachelor of arts were given from thirty-eight to forty-five credits toward the one hundred-twenty credits required for that degree. Under the new arrangement, which is based upon the modified course of study for the normal schools, graduates of the Latin and German courses of the normal schools will, under certain conditions, hereafter receive sixty credits toward the bachelor of arts degree. Graduates of the English course will receive sixty credits toward the degree of bachelor of philosophy, with sixty credits instead of seventy-two required for graduation.

The establishment of better cooperation with the state normal schools will undoubtedly contribute much to the development of the course for the training of teachers, as well as to the more efficient and economical utilization of the facilities provided in state institutions for the preparation of teachers for public schools.

THE UNIVERSITY TRAINING OF TEACHERS AND THE STATE

From the standpoint of the state and its system of public high schools in particular, a pressing problem is exhibited by the following statistical table for the past triennium.*

* The difficult and laborious task of gathering this data for each year would have been impossible without the generous cooperation and assistance of Mr. Willard N. Parker, Editor of the Wisconsin Journal of Education.

For each of the indicated years, two principal classes of data are presented; first, the number of *new* teachers (including principals) beginning service in the free and independent high schools of the state; second, the institutions in which these new teachers received their preparation.

NEW TEACHERS IN FREE AND ACCREDITED HIGH SCHOOLS OF
WISCONSIN

GENERAL

	1907-08	1908-09	1909-10
Total No. of teachers.....	1,398	1,523	1,586
Teachers leaving service:	<i>in 06-07,</i>	<i>in 07-08,</i>	<i>in 08-09,</i>
	<i>out 07-08.</i>	<i>out 08-09.</i>	<i>out 09-10.</i>
Number	389	424	487
Per cent.....	27.8	30.0	32.0
New teachers:			
Number	482	549	550
Per cent.....	34.5	36.0	34.0
Teachers added:			
Number	93	125	63
Per cent.....	6.7	8.2	3.3

WISCONSIN INSTITUTIONS

	127	173	147
UNIVERSITY OF WISCONSIN.....	— 127	— 173	— 147
NORMAL SCHOOLS:			
Milwaukee	26	22	22
Oshkosh	40	35	37
Platteville.....	23	26	30
River Falls.....	18	14	16
Stevens Point.....	18	22	23
Superior.....	7	8	5
Whitewater	14	16	21
	— 146	— 143	— 154
COLLEGES:			
Beloit.....	16	24	23
Carroll.....	1	4	5
Lawrence.....	25	19	35
Milton	3	4	5
Ripon	9	12	5
	— 54	— 63	— 73
MISCELLANEOUS:			
Stout Institute.....	8	9	12
Milwaukee Downer.....	6	1	2
	— 14	— 10	— 14
CERTIFICATES AND SPECIAL LICENSES:			
State certificates.....	3	3	5
Others	3	14	14
	— 6	— 17	— 19

OUTSIDE INSTITUTES

	1907-08	1908-09	1909-10
UNIVERSITIES AND COLLEGES:			
Chicago.....	16	8	9
Columbia.....	3	0	1
Illinois.....	1	3	5
Indiana.....	3	3	2
Iowa.....	3	1	1
Michigan.....	5	10	11
Minnesota.....	3	13	12
Nebraska.....	1	0	0
Northwestern.....	6	3	4
Oberlin.....	2	8	7
Syracuse.....	1	3	0
Wellesley.....	3	2	2
Others.....	26	27	9
	— 73	— 81	— 63
STATE NORMAL SCHOOLS:			
Iowa.....	0	3	0
Michigan.....	4	3	1
Minnesota.....	1	2	0
New York.....	1	3	0
Miscellaneous (including private).....	5	9	22
	— 11	— 20	— 23
OTHERS	15	16	29
	— 15	— 16	— 29
UNCLASSIFIED	36	26	28
	— 36	— 26	— 28
Total number of new teachers	482	549	550

The real significance of the above statistical exhibit may be emphasized by a brief explanation of the data for the year 1909-1910. During this year, 550 out of a total of 1586 (34 per cent) of the teaching positions in the free and independent high schools of the state were filled by *new* teachers; that is to say, teachers who were teaching for the first time in Wisconsin high schools.* No account has been taken of those teachers who moved from one high school to another within the state. If these latter had been included, the number of teachers *new in their positions* would approximate 50 per cent of the total. The number 550 represents the number necessary to fill the gaps caused by the withdrawal of 487 individuals who taught in 1908-1909 but who disappeared from the ranks in 1909-1910, and by the absolute increase of 63 teachers.

To meet the demands of the year, the university supplied 147 (26.7 per cent), the several normal schools of the state 154 (28 per cent), the several colleges and institutes within the state

* This number is probably somewhat too high on account of some individuals who, after a period of teaching, completed their preparation, and then resumed their work as teachers.

87 (16 per cent). Of the remainder, (excluding the 19—3.4 per cent, who held special forms of certificates and licenses), 63 (11.4 per cent) came from colleges and universities outside of the state, and 23 (4.2 per cent), from other state normal schools, and 57 (10.3 per cent), came from minor institutions or from sources that could not be readily classified. Approximately 74 per cent of these new teachers came from Wisconsin institutions; 50 per cent had the equivalent of four years of education beyond the high school.

Weighing the situation thus presented in terms of the state's educational policy, an immense loss in efficiency of the public school system and a constant hindrance to development and progress are evident. With the continued growth of the public high school, and the increasing demand for better trained supervisors for public schools the responsibility of the university becomes greater. Not only must the state educate and train through four years or more a large number of teachers, but measures must be inaugurated that will secure to the state, some commensurate return from those receiving their professional education in its institutions. Above and beyond these there is needed a scientific and comprehensive study of those economic and other potential forces that serve to decimate the ranks of the teaching profession and to create an attitude of silent hostility toward it on the part of the newly educated generation. Here is one item worthy of conspicuous attention from the experts in social science.

CONCLUSION

In addition to the general matters of development of the Course for the Training of Teachers to which reference has been made in this report, I would, at this point, renew the emphasis which has been placed upon four items: (a) the need of the demonstration school; (b) the elevation of the standards requisite for permanent teaching certificates; (c) the placing of a secondary school specialist in each department related to the training of teachers. I have not entered upon the question of many of the details that stand in vital relation to the final efficiency of the university preparation of teachers, mainly because most of these, for example, the educational museum, facilities for the development of manual arts, etc., are

dependent upon the establishment of a demonstration school. Upon this school and its by-products of usefulness our future development must wait.

Very respectfully,

EDWARD C. ELLIOTT,

Director.

REPORT OF THE DIRECTOR OF THE WISCONSIN LIBRARY SCHOOL

PRESIDENT CHARLES R. VAN HISE,
The University of Wisconsin.

SIR:—Pursuant to your request to the Wisconsin Free Library Commission, I have the honor to submit the following report:

Chapter 416 of the laws of 1909 provided that the school of library science theretofore conducted by the Wisconsin Free Library Commission, should thereafter be known as the school of library science of the university. The same chapter also contained the following language: "The regents of the university are hereby authorized to cooperate with the free library commission in the maintenance of the library school and to aid the school by appropriating out of the funds of the university such sums as will aid in securing specialized teaching and equipment for said school, and otherwise to aid such school in such manner as will conduce to the development of said school and of library science in the state."

Owing, as we are informed, to the fact that all of the university funds had been appropriated to other purposes, it was impossible for the university "to cooperate with" the commission or to give such aid as the language of the act authorizes. It follows therefore that while the school is legally known as "the school of library science of the university," it is still in fact the school of library science of the free library commission. The commission, however, very gladly responds to your request for a report, and inasmuch as this is the first report ever made to you and to the regents, we include a brief account of the school from the time when it was opened in the fall of 1906.

The school was primarily established and maintained for the training of librarians for Wisconsin libraries, not as a general educational institution; rather, as an auxiliary to the commission in its work of library extension, visitation, and supervision. The members of the library school instructional staff are em-

ployed for the full twelve months. They have been acting as an advisory board to the free libraries of the state, and all of them have spent considerable portions of their time in library visitation and in attending to a large correspondence relating to the welfare of the libraries of the state.

Growing out of the fact that the school was conducted by the commission for the purpose of furthering the general library interests of the state, the course has been framed to impart a practical as well as a theoretical knowledge of library work. In addition to apprentice work in the Madison city library, every graduate is required to spend the months of February and March in some of the libraries of the state, engaged in actual full-time library work. This practical field work has been found of such great value that some of the older library schools have been forced to adopt similar methods.

The purpose back of the organization of the school has also led those in charge thereof to accept as students only those whose personality peculiarly fitted them for library work. The careful selection of students, the emphasis laid upon practical work during the course, as well as the general excellence of the instruction given, have resulted in so successful a training that it has created a demand for our graduates from libraries outside of the state, and has also brought to the school as applicants for admission many residing in other parts of the United States.

Conditions in Wisconsin are such that only a limited number of libraries can afford to pay the salaries which our graduates can secure elsewhere. In other words, the training of the school has been of such excellence that it has been impossible to keep many of the graduates within the state. We make this explanation in view of the fact that we have been able to keep in Wisconsin only twenty-eight of our eighty-five graduates, while fifty are employed outside of the state. The character of the instruction furnished, also explains the fact that of these graduates forty-five have come from without the state, although applicants from within the state are given preference over non-residents with similar qualifications.

Although the university has not yet cooperated with the commission in the maintenance of the school, a successful joint course has been arranged, whereby a student of ability and energy can in four years, with the opportunities afforded by the summer session of the university, take the degree of bachelor of arts, and at the same time complete the technical training

required by the library school and receive its certificate. In the first two years students take the regular freshman and sophomore work of the college of letters and science, choosing courses as will enable them to pass the entrance examination of the library school. In the junior and senior years they substitute equivalent courses in the library school for ten unit-hours of university work each year.

This arrangement was effected late in the spring of 1908, with little opportunity to give notice of the new course thus opened to university students. Two, however, presented themselves for examination; one a junior with advanced standing, and a sophomore. Both were admitted to the school. In 1909, six came up for examination, five of whom were admitted; in 1910, seven were examined and six admitted. The school has given its certificate to three joint course students; five will receive certificates in June, and five juniors will remain as seniors to graduate in 1912. A number of underclassmen have already planned their work for the freshman and sophomore years with a view to taking the joint library and university course in the appointed time.

Since the joint arrangement, the library school has rearranged its entire schedule of lectures, quizzes, student conferences, and practice work to meet the needs of the joint course students. Juniors spend Tuesday and Thursday at the library school; seniors Monday, Wednesday and Friday. The graduates of the joint course are filling responsible positions, and the seniors give evidence of meeting the requirements for a good library appointment.

That there is a demand for library training, is shown by the fact that hundreds have applied to us for admission to the regular one year course. Those who are plainly unfitted either by previous education or by unfortunate personality, are rejected without scholastic examination. The class is then selected from the more promising applicants by a rigid written examination, supplemented by investigation of personal characteristics and general fitness for library work. While only twenty-six can be admitted to the regular course, the number who have taken the examination each year is as follows:

1907	.....	50
1908	.....	60
1909	.....	68
1910	.....	70

The following is a statement of the value of the library school equipment now in the Carnegie library building in the city of Madison. The estimates are made after careful and complete inventory.

Estimated value of books and pamphlets.....	\$4,000 00
Estimated value of laboratory equipment, including sample catalog cards, bibliographies, etc.....	1,500 00
Estimated value of furniture and fixtures.....	4,500 00
Total	\$10,000 00

The following is a statement of the disbursements made in the maintenance of the school for the year ending June 30, 1910:

Quarters—including fuel, janitor service, insurance, minor repairs	\$499 56
Salaries	7,703 90
Traveling expenses	1,052 28
Lectures—including expenses	205 90
Light, telephone, incidental.....	186 08
Books, periodicals, repairs, etc.....	330 44
Total	\$9,978 16

It is to be noted, however, that while the item *salaries* includes the entire salaries of those whose work is mainly instructional, a portion of the time of the persons receiving the salary is spent in visitation and supervision of the libraries of the state. It is also true that a portion of the item *traveling expenses* is incurred likewise in the field work which is of value to the commission.

In addition to the money disbursed exclusively for library school purposes, the commission is expending other sums for the benefit of the school. The secretary of the commission gives a portion of his time to administrative and instructional work in the school. The financial matters of the school and clerical work connected therewith are in the hands of the chief clerk of the commission. In addition to this, the commission furnishes to Miss Bascom, the editor of the A. L. A. Booklist, quarters on the same floor with the school, and also furnishes to her a stenographer. In exchange for these quarters and the stenographer, the books coming to Miss Bascom for review become the property of the commission, and such of them as are needed are at the disposal of the school and are of great value to it.

Respectfully submitted,

M. S. DUDGEON,

Director Wisconsin Library School.

October 19, 1910.

REPORT OF THE DEAN OF THE MEDICAL SCHOOL

PRESIDENT CHARLES R. VAN HISE,
The University of Wisconsin.

SIR:—I submit my report as dean of the medical school:

ORGANIZATION

In the biennial report for 1906–08 there were outlined the general plans for the organization of the medical school. Scientific departments already established in the college of letters and science gave adequate facilities for the work of the first year and a part of the second year of the medical curriculum, substantially as given in the better medical schools of the country. The work of the first year of the medical curriculum was therefore offered during the year 1907–08. The establishment of departments of pathology and of pharmacology and toxicology has enabled us to offer the first two years' work of the standard medical curriculum during the biennial period of 1908–10. The establishment in 1910 of a department of clinical medicine, designed primarily to supervise more thoroughly the care of the health of the students at the university, has at the same time enabled us to offer the medical students in the latter half of the second year of the medical curriculum facilities for work in clinical and physical diagnosis which forms an important part of the second year of the medical curriculum in many of the better medical schools. We feel that the work of the first two years of the medical curriculum as now organized at the university compares favorably with that of the better of the university medical schools of the country. This has been recognized by the committee on Medical Education of the American Medical Association, by the Carnegie Foundation for the Advancement of

Teaching and by other bodies which have been investigating medical education in this country.

Mr. Abraham Flexner in the report of the Carnegie Foundation writes as follows concerning medical education at Wisconsin:

“Though temporarily housed, the laboratories, complete in number, are admirably equipped with respect to both teaching and research. A successful effort has been made to provide facilities worthy of students on a two-year college basis and of teachers deserving opportunities for progressive work. The department lacks only a building which shall bring its parts together. * * *

“A western state so admirably organized on the educational side, furnishing excellent college opportunities without cost to the student, is surely in position to meet Minnesota and Indiana in the matter of practice standards. The requirement of a year or two of college work as preliminary to practice would quickly leave the medical department of the state university in sole control.

“This department has wisely resisted efforts to make of it a divided instead of a half school; nothing worse could ever happen to it than that it should be rounded off with a clinical end at Milwaukee,—made up, perhaps, in part out of the two schools now there. When the time comes for the completion of the department, it must be completed at Madison. The difficulties due to the size and residential character of the town are not insuperable. There is not the least doubt that wise administration can develop on the site of the university a medical school large enough to train the doctors of the state. But its scope will run far beyond this primary duty; for it will inevitably be a producing department. Assuredly, Wisconsin, fortunate beyond almost all other states in the concentration of its higher institutions of learning, will not be guilty of the folly of detaching in whole or in part the medical department from the university whose ideals it can share and help to create.”

We feel that for the present we should be content to develop as thoroughly as possible the work of the first half of the medical curriculum as already undertaken. If in the future the establishment of the clinical half of the medical curriculum shall appear to be the duty of the state, future conditions will doubtless determine how this may best be done.

CHANGES IN THE FACULTY

Professors: In the fall of 1909 Dr. Joseph S. Evans, at that time instructor in clinical medicine at the University of Pennsylvania, was appointed professor of clinical medicine and medical adviser to the students. He began his duties here in February, 1910. In the spring of 1910 Dr. Joseph Erlanger, professor of physiology, resigned to accept a similar chair at the recently organized and highly endowed medical school of Washington University, St. Louis. Dr. John Augustus English Eyster, professor of pharmacology and toxicology at the University of Virginia has been appointed professor of physiology here, and begins work in the fall semester of 1910. In 1909 Dr. W. H. Brown was promoted from instructor to assistant professor of pathology. For the coming year Dr. W. F. Meek has been promoted from instructor to assistant professor of physiology.

Instructors: In 1909 Dr. W. E. Grove resigned as instructor in pharmacology. For the year 1909-10 Mr. A. Arkin was appointed assistant in pharmacology. For the coming year Mr. Arkin has been promoted to an instructorship. For the year 1910-11 Dr. Robert Van Valzah has been appointed instructor in clinical medicine. Dr. Josie Helen Dobson, appointed medical examiner in the department of physical training for women for the year 1909-10 has been transferred, with the same title, to the department of clinical medicine.

NUMBER OF STUDENTS

The following are the numbers of students registered in the medical school since its establishment in the fall of 1907:

	1907-8	1908-9	1909-10
First year class	26	18	32
Second year class		14	17
Men	23	30	47
Women	3	2	2
Residents	22	27	40
Non-residents	4	5	39
Graduates	8	5	11
L. & S. Seniors	7	10	15
L. & S. Juniors	11	17	23
Total	26	32	49

From this table it may be seen that there has been a steady increase each year in the number of students regularly enrolled in the medical school. The number of students enrolled in the medical school by no means indicates the number of students at the university preparing for medicine. For matriculation in the medical school at least two years of specialized college work in science and language are required. This specialized pre-medical work is really as much a part of the medical course as is the work of the medical curriculum. A considerable number of the students who enter the university to prepare for medicine find that for one reason or another they have to drop the work. Thus there are in attendance at the university a greater number of pre-medical than of matriculated medical students. The number of students preparing for medicine, pre-medical and medical, is considerably over twice the number of matriculated medical students given in the table above. In addition to students preparing for medicine a number of other scientific students take work in the departments devoted to the medical sciences. There is every indication that the number of medical students will rapidly increase in the near future.

BYRON ROBINSON DONATION AND LEGACY

In 1909 Dr. Byron Robinson gave a valuable collection of medical books to the medical school. He was at that time in poor health, and in March, 1910, he passed away. In his will he bequeathed to the medical school an important collection of books relating chiefly to anatomy. He also made provision for a \$10,000 endowment, the income of which is to be used for a fellowship devoted to the study of the anatomy and physiology of the sympathetic nervous system. Dr. Robinson received the B. S. degree from the university in 1878 and was always a most loyal alumnus. He was widely known for his numerous contributions to anatomy and surgery. In his generous gifts to the university he has had the cordial cooperation of his wife, Dr. Lucy Waite Robinson, who survives him. The legacy will stand in the names of both husband and wife.

PROGRESS

1. *Quarters:* No essential changes have been made during the past two years in the quarters occupied by the departments of

pathology, bacteriology and hygiene, anatomy, physiology, and toxicology and pharmacology. All are overcrowded, but the worst congestion has been felt in the last two departments. Provision has been made for converting the remainder of the attic in the chemical engineering building into laboratories so that the congestion in these departments will have some temporary relief. For the new department of clinical medicine, offices and a clinical laboratory were fitted up in the Cornelius house next to the administration building. This has proved fairly satisfactory for the work of the medical adviser. For instruction is clinical diagnosis and research, provision will be made next year in the chemical engineering building in conjunction with the laboratory of pharmacology.

2. *Equipment*: Liberal provision has been made for equipment of the various laboratories. Few medical laboratories have as complete an equipment for instructional work, and the equipment necessary for advanced investigation is being rapidly accumulated. To numerous physicians within and without the state we are indebted for anatomical and pathological specimens of value in teaching and research. Of these contributions those of Dr. A. J. Ochsner of Chicago to the pathological museum are especially noteworthy.

3. *Library*: The library already contains the greater part of the more valuable sets of periodicals devoted to the basal sciences of medicine and includes several important sets of periodicals devoted to medicine and surgery, as well as a large number of textbooks and monographs. It has been greatly enriched not only by the valuable donation and legacy of Dr. Byron Robinson, but also by generous gifts from Dr. Hugo Philler, who on retiring from practice in Waukesha gave his library to the university, from Dr. Charles Armstrong of Boscobel, who gave several valuable sets of American medical journals, from Dr. L. Weber of New York, who donated a set of the Virchow-Hirsch Jahresberichte, and from several other physicians who have made valued though less extensive donations.

4. *Instruction*: No marked changes in entrance requirements or in courses of study have been made from those outlined in my report of two years ago. The instruction consists chiefly in laboratory work under the immediate charge of the heads of the various departments. It is planned next year to alter the sched-

ule of the second year of the medical course so as to permit of greater freedom of electives in the second semester.

5. *Investigation:* Scientific investigation has been active in all of the departments of the medical school. The special lines of investigation followed are outlined in the reports of the various departments given below. While there is no formal cooperation between any two departments in conducting investigations, a hearty informal cooperation between all of the departments has proved of great value.

For aid in his investigation of the pharmacological action of certain iodine compounds of benzoic acid the Rockefeller Institute for medical research has granted Prof. Loevenhart substantial appropriations.

6. *Care of Student Health:* Since medicine is the science of the prevention, cure or alleviation of disease, it is but fitting that with the establishment of a medical school greater attention should be given to the care of the health of the students. The establishment of a committee on hygiene to look after the general hygienic conditions of the university was the first step in this direction. It soon, however, became obvious that the safety of the students as a whole, as well as the most effective work on the part of the students as individuals demanded careful medical attention. To get a first class man to act as medical adviser for students it was necessary to make the position in itself attractive, since a good man in private practice can easily earn much more than the salaries paid at universities. The position was therefore made a professorship of clinical medicine, and it was aimed to make it one in which there should be time for study, teaching and research, as well as for looking after the medical care of the health of the students. The need of a medical adviser proved to be so much greater than was anticipated that he had his hands more than full in looking after the health of the students. With an increased staff next year he should, however, have more time for teaching, reading and research. A detailed summary of the work of the medical adviser for the year is given in the summary of the work of the department of clinical medicine.

DEPARTMENTS

The medical school comprises those scientific departments of the university which offer special courses to pre-medical or medical students. This includes the departments of chemistry, physics, botany, zoology, philosophy, (psycology), bacteriology and hygiene, anatomy, physiology, pathology, pharmacology and toxicology, and clinical medicine. Of these departments the work of the first six is in major part in other fields than those of medicine, while the major part of the work in the last five is chiefly medical. We shall therefore leave to the dean of the college of letters and science a summary of the work and needs of the former and treat here merely of the departments of anatomy, physiology, pathology, pharmacology and toxicology, and clinical medicine, together with a brief statement of the work in medical bacteriology.

Anatomy: The increase in number of students taking courses in anatomy has necessitated the appointment of a student assistant in addition to the regular staff during the past two years. For the coming year two student assistants have been appointed. An additional course in medical zoology under the charge of Dr. B. M. Allen has been added to the courses offered. The department of anatomy is the only one of the departments here included which so far has offered courses during the summer session. These courses have attracted students, not only from Wisconsin but also from several of the leading medical schools of Chicago and of the east. The scientific work of the department has been chiefly devoted to embryology. All the members of the staff have made contributions to various aspects of this subject. The scientific papers published during the last biennial period are as follows: Die Entwicklung des Skeletts und des Bindegewebes, in the Keibel-Mall Handbuch der Entwicklungsgeschichte des Menschen, two papers on the development of the human vertebral column; and a paper on the action of the X-rays on development, by C. R. Bardeen; a paper on the origin of the sex-cells of *Amia* and *Iepidostens* by B. M. Allen. Several other papers by the various members of the staff are about ready for publication. In addition to the scientific contributions several other publications have been made by members of the staff including a report of the sub-committee on

anatomy, of which C. R. Bardeen was chairman, to the council on medical education of the American Medical Association.

The chief need of the department is for more laboratory space. Work in all lines has been hampered by overcrowding.

Bacteriology and Hygiene: The medical work in this department has proceeded along the lines outlined in the last biennial report. The large increase in number of students in all courses has made the problem of caring for them difficult. It is proposed next year to concentrate the bacteriology for medical students in the first semester and pathology in the second semester so that the pathological laboratory can be used by students taking medical bacteriology. The department has played an active part in extension work especially along the lines of educating the public to an appreciation of the prevention of tuberculosis.

Pathology: A pathological laboratory to provide for twenty-five students was fitted up two years ago on the fourth floor of south hall. Last year this laboratory was taxed to its full capacity and next year it is sure to be overcrowded. The course in experimental pathology has had to be limited to six students and, even at this, it has been difficult to give the course owing to lack of suitable operating room and animal quarters. In connection with the department a museum containing over three hundred gross specimens has already been established and there is a histo-pathological collection of about one thousand specimens. The following scientific contributions have been published by members of the staff: an article on blood platelets and one on cancer by C. H. Bunting; a paper on the toxic action of the bile by C. H. Bunting and W. H. Brown; articles on "fuchsin bodies," on autolysis of the liver, and on iodine as a skin antiseptic by W. H. Brown. Several more papers are now ready for publication. The most important of the needs of the department is greater space for general laboratory work, for advanced classes and scientific research. Additional equipment will be needed to keep up with the growth in size of the classes. The laboratory has done a considerable amount of work in making diagnosis of pathological tissues for various physicians throughout the state.

Pharmacology and Toxicology: In the fall of 1909 a new laboratory to provide for sixteen students was built in the attic of the chemical engineering building. This greatly facilitates teaching in this department. The increase in the number of students, however, necessitates increased space for the coming

year and this will be provided by the appropriation already made for fixing up additional laboratory quarters near those now occupied. In addition to the students taking medical work, one student during the last year took a master's degree in the department. During the past two years scientific contributions from the laboratory have been published as follows: on the toxicity of camphor, by W. E. Grove; on the action of certain oxidizing substances upon the respiratory center, by A. S. Loevenhart and W. E. Grove; on the pharmacological action of certain iodine-benzoic acid compounds by A. S. Loevenhart, A. Arkin and W. E. Grove. Other papers are now in course of preparation and publication. Among the needs of the department, the most important are new animal quarters. These should be outside of the building in a well lighted, well heated and well ventilated place and should be in charge of a special man.

Physiology: The progress made in the department of physiology during the biennial period just ending may be briefly summarized as follows: (1) the instructional force has been increased by the addition of a student assistant; (2) the number of students taking the medical courses, both didactic and laboratory, has doubled; (3) the course in elementary anatomy and physiology, formerly given partly in the department of anatomy and partly in the department of physiology, is now given wholly in the latter department. The number of students electing it has trebled. An optional laboratory course in this work was offered for the first time last year and under very adverse circumstances insofar as concerns laboratory facilities. It was taken by twelve students. With improved facilities both of these courses should prove both popular and valuable, and every effort should be made to foster them. (4) The Journal Club no longer confines its discussions to subjects of physiological and physiological chemical interests but has extended its field to include practically the whole realm of experimental medicine, and members of the instructional force of the departments of pathology and pharmacology participate in its proceedings. Weekly meetings have been held throughout the college year. All members of the department, as well as a few advanced students that we could accommodate in our crowded quarters, have been engaged in scientific investigation. Among the papers published are several on heart block by J. S. Erlanger; a paper on human pancreatic juice by H. C. Bradley; papers on heart muscle tissue and regeneration of the intestinal nerve plexus by

W. J. Meek. Other papers of a more popular nature have been published including several on animal experimentation. A number of researches have been completed but are not yet in press. Undoubtedly the greatest needs of the department are better quarters for instructors, for students and for animals. It is true that the present quarters are now being altered but these alterations, at best, are temporary and only serve to relieve the present cramped conditions of the department. The department should be granted what it has never had; namely, the opportunity of planning quarters exactly suited to the character and needs of the work done. The instructional force should be increased by one man, the present assistant to direct all of his time to physiology, an assistant to be apprenticed to Dr. Bradley to give all of his time to physiological chemistry. The janitor service should be increased. The work of the present janitor consisting, as it does, in caring for the quarters of the department, in keeping its apparatus clean and in order, in caring for the animals and obtaining their food, in assisting the instructional force in mammalian experiments, in passing apparatus to the students in the laboratory, etc., is too heavy. A helper receiving about five or six dollars a week would relieve him materially.

Department of Clinical Medicine: The Cornelius house on State street, next the administration building, has been fitted up so as to provide an office, reception rooms, an examining room and a clinical laboratory. Two rooms on the second floor were fitted up as emergency infirmary rooms. One student was cared for here, but the difficulty of giving hospital care in the house is so great that the rooms next year will be used as a reception room for women students and an office for the medical examiner for women. The other rooms are occupied by the resident attendant. The primary object of this department is the supervision of the medical care of student health. During the second semester of the year 1909-10, 997 students formally consulted the medical adviser and of these 196 reconsulted him for new conditions. In most cases several visits were necessary. In addition many other students informally consulted the medical adviser concerning their health. The percentage of students receiving medical attention was as follows in the various classes and colleges:

Letters and Science: freshmen, 35 per cent; sophomores, 32 per cent; juniors, 25 per cent; seniors, 24.5 per cent; special, 5

per cent; music, 39 per cent; graduates, 22 per cent; pharmacy, 13 per cent.

Engineering: freshmen, 24.4 per cent; sophomores, 25.5 per cent; juniors, 26 per cent; seniors, 26.3 per cent; special, 4 per cent.

Law: 1st year, 51 per cent; 2nd year, 40 per cent; 3rd year, 33 per cent; special, 4 per cent.

Agriculture: freshmen, 33.4 per cent; sophomores, 38.4 per cent; juniors, 27 per cent.

* The conditions for which medical advice or attention were sought were as follows:

Contagious diseases: (mumps, tonsilitis, chicken pox, typhoid fever, tuberculosis and measles) 227 students, 19 per cent of those consulting.

Infectious diseases: (bronchitis, inflammation of the eyes and ears, pleurisy, venereal disease, abscesses and infected wounds) 337 students, 28 per cent of those consulting.

Accidents: (contusions, burns, sprains, wounds, fractures and dislocations) 120 students, 10 per cent of those consulting.

Constitutional Troubles and Physical Examinations: 509 students, 42 per cent of those consulting.

During the summer session of 1910, 133 students consulted the medical adviser.

Classes for work in physical diagnosis were held three times a week and in addition the students electing this work were given practical exercise in the clinical laboratory. Fifteen students took the work. Next year the class will probably be twice as large, so that it will be necessary to hold it elsewhere. Facilities can probably be provided in the chemical engineering building in conjunction with the department of pharmacology.

The work at the office of the medical adviser proved so heavy during the first semester of its establishment that it became evident at once that another year the staff would have to be increased. To aid in looking after the young women, Dr. J. Helen Dobson, medical examiner for women, was transferred from the department of physical education for women, and for aid in looking after the young men, Dr. Robert Van Valzah has been added to the staff as instructor in clinical medicine. In addition to these there will be next year a reception room attendant, a laboratory technician and a nurse who will act as an office assistant and as a visiting nurse for men. The visiting

nurse for women, located at Chadbourne hall, has also been transferred to the department of clinical medicine. This department will cooperate with the department of physical training in making medical and physical examinations for freshmen and of candidates for athletic teams. To facilitate the examinations of the freshmen two local physicians have been secured for the opening weeks of each semester next year. The chief needs of the department are for more apparatus. It is also highly essential that a student infirmary be built at the university. While the Madison General Hospital can care for some of the students needing hospital care, the resources there are not adequate to meet the demands of any serious general outbreak of disease among the students. Furthermore, no contagious diseases can be admitted to that hospital while the city contagious hospital admits only cases of smallpox, diphtheria and scarlet fever. There is, therefore, at present, no means of isolating and properly caring for students suffering with mumps, measles, chicken pox and similar contagious diseases. A student infirmary should therefore have both general wards and isolation wards.

EXPENDITURES

Below is given a summary of the approximate expenditures of the various departments for the last biennial period:

	1908-9	1909-10
ANATOMY: (Including summer session.)		
Salaries.....	\$8,400 00	\$8,570 00
Apparatus.....	425 00	675 00
Furniture.....		150 00
Janitor.....	300 00	325 00
Supplies (student fees).....	1,150 00	1,630 00
Total.....	\$10,275 00	\$11,350 00
MEDICAL BACTERIOLOGY:		
Salaries.....	\$1,500 00	\$1,500 00
Apparatus.....	200 00	200 00
Supplies (fees).....	129 00	220 00
Total.....	\$1,820 00	\$1,920 00
PATHOLOGY:		
Salaries.....	\$4,500 00	\$4,500 00
Apparatus.....	2,675 00	770 00
Furniture and alterations.....	680 00	50 00
Janitor.....		600 00
Supplies (fees).....	40 00	136 00
Total.....	\$7,895 00	\$6,056 00
HARMACOLOGY AND TOXICOLOGY:		
Salaries.....	\$3,800 00	\$4,000 00
Apparatus.....	1,260 00	1,825 00
Building alterations and furniture.....	600 00	1,190 00
Janitor.....	600 00	600 00
Total.....	\$6,260 00	\$7,615 00
PHYSIOLOGY:		
Salaries.....	\$5,500 00	\$6,100 00
Apparatus.....	686 00	1,290 00
Furniture.....		50 00
Janitor.....	600 00	600 00
Supplies (fees).....	300 00	330 00
Total.....	\$7,086 00	\$8,370 00
CLINICAL MEDICINE:		(One semester.)
Salaries.....		\$2,100 00
Apparatus and improvements.....		700 00
Drugs and supplies.....		350 00
Emergencies.....		150 00
Janitor service, etc.....		300 00
Total.....		\$3,600 00
BOOKS.....	\$2,280 00	2,480 00
ADMINISTRATION (Medical School):		
Stenographer, etc.....	500 00	600 00
Grand total.....	\$36,116 00	\$41,991 00

In considering this summary of expenditures for the departments mentioned several factors should be taken into consideration.

(1) The work of the departments included in the table is not confined to teaching medical students. An attempt has been made in the case of bacteriology alone to estimate the cost of medical as opposed to other aspects of the work. Even here the estimate is only roughly approximate, since no reliable data exist on which to base an accurate estimate. In the department of anatomy nearly a third of the work is devoted to students not registered in the medical school, although many of these are in the medical science course. In the department of physiology the largest class is the course in general physiology not taken by medical students. In pathology and pharmacology several non-medical students have been enrolled each year. The work of the department of clinical medicine is devoted chiefly to looking after the health of the students of the university. A fair estimate of the cost of the medical school proper would be rather less than two-thirds of the estimates given above, about \$24,000 for 1908-09 and \$28,000 for 1909-10.

(2) Of these amounts about \$1,600 was derived from laboratory fees in 1908-09 and \$2,300 in 1910-11.

(3) The medical students pay five dollars per semester more than the students in the college of letters and science for incidental fees.

(4) During the period under consideration two new departments were established and the equipment in all departments had to be materially increased.

NEEDS OF THE MEDICAL SCHOOL

(1) *Medical Building:* The most important of the needs of the medical school is more adequate space. The report of the Carnegie Foundation states that "the department lacks only a building which shall bring its parts together." The quarters at present occupied by the various departments provide facilities for not over twenty-five in a class without serious overcrowding. They provide facilities neither for advanced work nor for expansion and already they are overcrowded by the elementary students.

An appropriation of \$4,500 has been made to convert the remainder of the attic of the chemical engineering building into

laboratories so that for a few years the elementary students in physiology and pharmacology can be taken care of but it seems certain that the quarters will soon be outgrown. No adequate provision for advanced classes can be made in that building, since the department of chemical engineering, for which the building was primarily designed, already needs all the remaining space in the building and more. When the departments of zoology and botany leave science hall for the new biology building now in course of erection, the department of anatomy can be provided with adequate quarters for some years to come. The overcrowding of the departments of bacteriology and pathology in south hall makes it imperative to provide new quarters for pathology. Since the new biology building will provide merely for botany and zoology, it seems necessary to transfer pathology to science hall. If this is done and anatomy is moderately provided for there will be little opportunity for expansion for the departments of physics and geology, both of which desire more space in science hall. It is certain that there will be serious overcrowding for all the departments occupying the chemical engineering building and science hall, until a new building is erected to take care either of the medical or of the physical sciences. Probably the best thing would be the erection in the very near future of a building for the medical sciences. Such a building would cost at least \$200,000 and should be designed to form a part of a group of buildings which may be erected from time to time as the medical sciences develop at the university. For transferring the department of pathology to science hall and for expansion of the department of anatomy in science hall, the expenditure will be probably from \$2,500 to \$5,000.

(2) *Animal Building*: A new building for animals used by the various departments of the medical school is urgently needed. An adequate building could probably be erected for about \$2,500. A special janitor should be provided for taking care of the animals for all of the departments. This would cost about \$650 a year. It is the aim here to use every effort to treat humanely the animals used for animal experimentation. The provision here outlined would be a great aid in carrying out this aim.

(3) *Equipment*: The various departments are well equipped for teaching classes of twenty-five and are fairly well equipped for research. The present rapid growth in size of the elementary classes and the need of apparatus for advanced work will

require liberal appropriations for apparatus but the amount needed for the next biennial will probably be not much greater than for the last, about \$5,500 per year.

(4) *Library*: The medical library now has a good start although there is urgent need of many books which it lacks. A continuation of appropriations for the next two years about equal to those of the last two years, about \$2,500 per year, is probably as much as we can be granted, although more could be used to great advantage.

(5) *Instructional Force*: With an increase in the number of students we shall probably need more instructors and assistants. The more deserving of the younger men upon the staff will have to be promoted. We are, however, unlikely in the immediate future to need to add to the professional force. There is, however, need of provision for more adequate salaries for the leading men on the faculty of the medical school. Most of them are serving here at salaries materially less than they have been offered elsewhere. The spirit of the university, the sympathetic support given by the regents and the administrative officers, the friendly cooperation existing between the different departments, both in teaching and research, are factors which have thus far enabled us to get and keep men who might get elsewhere larger salaries and more money for their departments. We cannot, however, hope permanently to compete successfully with the better medical schools in this time of rapid progress in medical education if differences in salary and departmental budgets are too great. The exceptional advantages in a reorganized medical school endowed with millions have already induced one of the most valued members of our faculty to leave us, though with hesitation and regret. It will be well worth while for the state to pay whatever may be necessary to keep the very best men on the medical faculty as well as elsewhere in the university. The amount paid for salaries in the departments under consideration, amounting in 1909-10, including the summer session of 1909, to \$26,770, should be materially increased during the next biennial period, not so much to get new men as to reward adequately those we have. An educational institution can become mediocre in no way quicker than by letting its best men be taken away by superior salaries and facilities offered elsewhere. Sentiment will always make it difficult and often impossible to get rid of the mediocre members of the staff, so that they alone will remain.

(6) *Janitor Service*: Probably the chief element in false economy in American universities is lack of adequate janitor service. Highly paid men are too frequently called upon to do work which can be more efficiently done at much less cost by janitors. Compared with the rest of the university the medical school is now fairly well supplied with janitor service, but at least one and probably more janitors should be added to our force in the near future. This would increase the cost of this service from \$2,400 to \$3,000 or \$3,500. In addition, within the near future, if not within the next biennial period, the medical school should be supplied with a mechanician at a salary of about \$1,200. After the number of students using instruments of precision reaches a certain amount, the cost of the mechanician can be saved out of the attention he can give to these instruments.

(7) *Clerical Help*: For the past biennial period we have had but part time of a stenographer. Provision has been made for 1910-11 for a full-time stenographer. This will probably suffice for the needs of the medical school in the immediate future.

(8) *Department of Clinical Medicine*: The budget for this department has been materially increased for next year and now calls for \$10,100 in addition to the expense of heat, light and janitor service, which amounts to about \$300 more. It is not probable that the expense of this department will materially increase within the next two years, although we should doubtless increase the salaries of several of those on the staff.

(9) *Infirmary for Students*: I have spoken above of the urgent need of an infirmary for students. This should be erected, if possible within the next biennial period. The first wing erected should cost about \$50,000. This would provide for from thirty to thirty-five students. The cost of operation would depend largely upon the number of students using it and could in large part be defrayed by such students. It would probably, however, cost the university about \$10,000 per year to maintain it. If erected in conjunction with the Madison General Hospital much expense could be saved. The chief objections to such a plan are: first, that it would be less accessible than if erected at the university; and, second, that it might involve a new policy for the university to enter into a kind of partnership with outside institutions.

(10) *Training of Health Officers:* It is essential that as soon as possible courses for training health officers be established at the university. The difficulty thus far has been lack of adequate space. It seems probable that space may be found after the department of pathology is transferred to science hall. The expense of establishing such courses should be slight since we could utilize the faculty and resources of the medical school for the purpose in conjunction with the state board of health, the department of economics and the college of engineering.

SUMMARY

Needs for next biennial period over present provisions:

CURRENT EXPENSES—

1. Increased amount for salaries.....	\$1,000 00 per year.
2. Increased amount for janitor service.....	650 00 per year.
	\$4,650 00

SPECIAL EXPENSES—

Laboratory remodeling.....	3,500 00
Animal house.....	2,500 00
Infirmery for students.....	50,000 00
	\$56,000 00

NEED FOR VERY NEAR FUTURE—

Medical Building.....	\$200,000 00
-----------------------	--------------

Respectfully submitted,

C. R. BARDEEN,

REPORT OF THE DEAN OF THE COLLEGE OF ENGINEERING

PRESIDENT CHARLES R. VAN HISE,
The University of Wisconsin.

DEAR SIR:—I submit herewith my biennial report as dean of the college of engineering.

CHANGES IN THE FACULTY

The following are the more important changes which have occurred in the faculty in the past two years:

Professor A. W. Richter, professor of experimental engineering, resigned in July, 1909. Professor C. H. Burnside, assistant professor of mechanics, was granted leave of absence for the year 1909–10, and during this period served on the faculty of Columbia University. In April, 1910, he resigned his position to accept a permanent appointment at Columbia.

Professor J. D. Phillips, professor of mechanical drawing, was appointed in July, 1910, as assistant dean of the college of engineering. This appointment was made with special reference to the freshman adviser work, although Professor Phillips will still retain general supervision of the drawing department.

Mr. A. G. Christie, a graduate of the engineering department of Toronto University, and for a time instructor at Cornell University, was appointed in July, 1909, as assistant professor of steam engineering, to take charge of the mechanical laboratory.

Mr. F. T. Havard, a graduate of Freiberg University and a man of several years' practical experience in metallurgical work, was appointed in July, 1909, as assistant professor of mining engineering, to take charge of the courses in assaying and metallurgy.

Mr. Edward Bennett, graduate of the Western University of Pennsylvania, and a man of large practical experience, was ap-

pointed in October, 1908, as associate professor of electrical engineering with special reference to the work in high tension currents and electrical transmission.

Mr. F. W. Doolittle, graduate of Princeton University and the University of Colorado, was appointed in July, 1910, as assistant professor of mechanics.

In April, 1909, Mr. M. O. Withey was promoted from instructor to assistant professor of mechanics, and Mr. W. S. Kinne from instructor to assistant professor of structural engineering. In 1910 Mr. J. R. Price was promoted from instructor to assistant professor of electrical engineering.

STUDENTS

The attendance in the college of engineering for the past four years has been as follows:

	1906-07	1907-08	1908-09	1909-10
Undergraduates	787	906	870	748
Graduates	12	15	26	33
Total	799	921	896	781

During the past biennial period the total number in attendance has shown a decrease, the first that has occurred in many years. Several causes have doubtless contributed to this change in registration. The introduction of the advanced courses has tended to encourage students to register for one or more years in the college of letters and science, or to attend some of the smaller colleges in the state for the first part of their college course. There was also, for a time, some decrease in certain directions in the demand for technical men. At the same time the interest in other professional fields, such as commerce and agriculture, has rapidly increased, tending to equalize more nearly the registration in the different departments. This condition is, to a considerable degree, general throughout the country, as the engineering registration in other technical schools, during the past two years, has generally remained stationary or has slightly decreased.

While the total attendance shown by the above figures has been reduced, the number of graduate students has shown a large relative increase. The registration at the opening of the current year shows a very large increase in the number entering to ad-

vanced standing and of those transferring from the college of letters and science to the advanced courses. This extension of graduate work and the growth of the advanced professional courses indicate a healthy development, and one which the faculty is desirous of promoting as far as practicable.

CHANGES AND IMPROVEMENTS IN INSTRUCTIONAL WORK

Two years ago the department of mining was established, and Professor E. C. Holden was placed in charge. In June, 1909. Professor F. T. Havard was appointed in that department to take charge of assaying and metallurgy, and the course was amplified to include these studies. During the past year an advanced professional course in mining has been arranged, corresponding to the advanced courses in the other departments. The department is now well established and the attendance is showing a very satisfactory growth. The courses in assaying, formerly given by the department of chemistry, have been transferred to the mining department.

In the electrical engineering profession there are two fairly distinct lines of employment. One of these may be considered as the technical or purely engineering branch of the profession, while the other relates more to the manufacturing and business side. This differentiation has been recognized to some extent in the past in the arrangement of the curriculum, but the extensive development of instruction at this university, both in the direction of scientific and technical work and in the direction of economics and business administration, has made it desirable to differentiate more fully in the prescribed programs of study. In view of these conditions, the electrical engineering course has been modified so that two optional groups are now offered, one emphasizing the advanced technical work while the other omits some of the technical studies and substitutes therefor work in economics and business administration. This optional arrangement has been made after consultation with many of the alumni of the institution, and it is believed will offer improved opportunities to students to prepare themselves for the work for which they are best fitted.

In the mechanical engineering course the instruction in steam and gas engines, and in commercial mechanical engineering, has been very considerably improved through cooperation of the departments concerned. In the latter course the department of business administration is rendering very great help.

Noteworthy among the improvements in the instructional facilities is the arrangement by which advanced work in railway economics and administration is offered through cooperation of the railway engineering department and the state railway commission. In this field of study the opportunities here offered are, I believe, unequalled.

The question of entrance preparation in mathematics has been given further consideration and some modifications have been made in the administration of the requirements. The algebra test is retained, but is deferred until the student has been in attendance for a short time. Students who fail to show a satisfactory knowledge of preparatory algebra, and those who do not present the requisite preparation in solid geometry, will be given instruction in the university in special sections. High school students who present the requisite number of units, but who have an insufficient preparation in mathematics for the engineering course, are thus admitted to the college of engineering and given an opportunity to make up their deficiencies in university classes.

Further attention has been given to the administration of the work of the students of the first two years. Professor Phillips was appointed assistant dean, with special reference to this work, and it is expected that he will devote a large part of his time to it.

The supervision of thesis work has been given much attention during the past year. The large increase in attendance during recent years, without a corresponding increase in the number of experienced instructors and in laboratory space, has made the thesis work difficult to carry on as effectively as was formerly the case. These conditions have gradually developed without being clearly recognized, and have become so difficult to meet that in some large institutions the thesis has been practically abandoned. The entire subject has received much consideration by the faculty, and it is their conclusion that the proper method of dealing with the thesis is not to abandon it, but, if possible, to give this work more attention. As a result of the discussion, thesis subjects have been more carefully selected and assigned, and the members of the faculty are devoting more regular hours to the supervision of the students' work. While much remains to be done, the work of the past year shows great improvement, and is more satisfactory to both faculty and students.

BUILDINGS AND EQUIPMENT

In the budget of 1909-10 provision was made for the construction of a large wing to the main building, which is now nearly completed. In the matter of recitation and drafting rooms, and office space, this addition will provide adequate facilities for some years to come for most of the departments. One of the most important changes which this added space will permit is the transfer of the engineering library from the main library building to the engineering building. With the increased reading-room space provided for, this arrangement will very greatly facilitate library work on the part of both students and faculty. Advantage is taken of the new arrangement of rooms to group the departments in a much more satisfactory manner than was heretofore possible.

During the present year the mechanical laboratory is also being very considerably improved by the construction of a small building for the gas producers and gas engines. The chemical and electrical engineering laboratories are being rearranged so as to group all the chemical engineering work in the chemical engineering building, and all the electrical laboratories in the shop building. This arrangement necessitates replacing a considerable amount of shafting by motors in order to make the second floor of the dynamo laboratory available for electrical measurements. While the changes in these laboratories add nothing to the total space occupied, the work will be much more effectively arranged.

The old heating plant has been fitted up into a mining laboratory, partly for assaying and partly for ore dressing purposes. The assay laboratory is completed and is very satisfactory, and the funds available this year will equip the ore dressing laboratory to a fair degree.

The hydraulic laboratory has recently been given some additional space by the vacation of a part of the second floor by the pipe fitting department of the university.

In regard to equipment, very considerable improvements have been made in all departments, especially in the mining department as above noted. The other laboratories have been considerably improved in various respects, mainly in the direction of additional instruments and equipment to take care of the regular classes in a more efficient manner. An especially valu-

able and unique piece of equipment is a refrigerator, which has been installed in the testing laboratory, for use in determining the effect of freezing temperatures on concrete and other building material.

GRADUATE AND RESEARCH WORK

The increase in graduate instruction has already been indicated by a statement of the number of graduate students in attendance. Recognizing the importance of this work the regents made provision in the budget of the current year for two fellowships in engineering, thus giving to this college two fellowships and three scholarships.

For special expenditures on research work the same amount of money has been available as for the previous two years. This has been expended mainly in the payment of small stipends to special research assistants, and in the preparation of material for publication. The contributions from graduate students and seniors through the regular thesis work have been very considerable, and, on the whole, the results of the past two years have been considerably greater than during the previous biennial period. The following university bulletins have been published during this period:

“Tests on plain and reinforced concrete columns,” by Morton O. Withey. “Investigation of centrifugal pumps, part II,” by C. B. Stewart. “Sewage purification with special reference to Wisconsin conditions,” by George J. Davis, and James T. Bowles. “Tests on bond between concrete and steel reinforced concrete beams,” by Morton O. Withey. “Relation of experiments to the theory of the tangential water wheel,” by D. W. Mead. “Tests on the permeability of concrete,” by F. M. McCullough. “Strength of alloys of nickel and copper with electrolytic iron,” by C. F. Burgess and James Aston. “Long distance transmission of steam and its effect on power plant economics,” by H. J. Thorkelson.

In the hydraulic engineering department other bulletins nearly ready for publication relate to the subject of rainfall and runoff, experiments on the air-lift pump, further experiments on centrifugal pumps, and friction losses in pipes.

From the chemical engineering department a large number of important papers have been published in engineering periodicals and society transactions. In the investigation of the properties

of alloys of iron with various other metals, this department has taken the lead and results of great importance have been produced. From the Carnegie Institution Professor Burgess has received, during the past four years, grants amounting to about \$10,000, which have enabled this work to be carried on to a point where results of great practical value are being secured. Important studies have been made in several other directions, notably on the electro-magnetic properties of metals and on the corrosion of iron.

In the department of electrical engineering important investigations are being conducted by Professor Bennett and Professor Beebe, particularly on high tension electric transmission and certain problems pertaining to electric lamps.

In the testing laboratory further valuable work has been done in reinforced concrete investigations. An extensive series of tests have been begun relative to the properties of the various local materials of the state with reference to their use in concrete construction. Variations in the qualities of sand and gravel are of much greater importance than is now the case with the standard commercial cements, and to assist in collecting and disseminating information on this subject it is planned to make a thorough study of the available materials in several of the more important localities of the state. Other important studies which are being conducted relate to the waterproofing of concrete and the temperature variations in concrete chimneys. The senior thesis work has been of special importance in this department in the prosecution of research work.

In steam engineering, studies have been conducted on the specific heat of steam and on several problems relating to the economy of the gas engine. The Allis-Chalmers Company of Milwaukee is cooperating in a valuable way in the study of the losses in steam turbines.

In the structural engineering department the extensive series of tests on bridges which has been conducted during the summer vacations of the past four years under the auspices of the American railway engineering and maintenance of way association, has been completed and a report published, which will have an important bearing on the design of railroad bridge structures.

Evaporation experiments have been conducted by the topographical engineering department in cooperation with the United States geological survey. Professor Smith of this department

prepared and published in 1908 a very valuable report on the "Water power resources of the state of Wisconsin" as a bulletin of the Wisconsin geological survey.

The services rendered by Professor Pence and several other members of the engineering faculty for the state railroad and tax commissions have been continued and have been, in many ways, of direct value to the students of the college. This work is, to a large extent, investigative in character and the opportunity for thus bringing fresh information to the laboratory and lecture room is of very great value to the college. In many respects the investigative work accomplished along these lines is unequalled, and could have been accomplished only by reason of the peculiarly favorable facilities offered by the work of the commission.

The work of research of the various departments of the college has been considerably aided by monthly conferences which were established last year, and which all the members of the engineering faculty are invited to attend. Cooperation among departments is much facilitated by such informal conferences.

NEEDS OF THE COLLEGE

Buildings: The needs of the college in the matter of space have been very well met in several directions by the wing now nearing completion. In other respects, however, this addition has not given any relief. The laboratories of chemical engineering and of applied mechanics are much crowded, but no additional space will be available for this work until a laboratory building is constructed for these or for some of the other laboratories so as to permit a transfer. Such a building, probably for the mechanical laboratory, should be constructed in the very near future. It is hoped that the chemical engineering department may soon be permitted to occupy the entire chemical engineering building by some provision being made for the medical department elsewhere. The graduate and research work in chemical engineering is very large and important, but it is not possible to provide suitable facilities for this work with the space now available.

Equipment: Considerable sums of money must continue to be expended annually for maintaining and improving the laboratory equipment, especially in the departments of electrical, chemical and mining engineering. Adequate development of our

laboratories, such as to make them better available for thesis and research work, is of vital importance if satisfactory progress is to be made in the direction of advanced scientific and professional instruction. The development of the electric furnace has brought about a new era in the study and utilization of materials of construction, and one of the most promising and important fields of research in applied science is along this line.

Research Fund: I wish again to urge that the fund available for research be very considerably increased. The fund of \$4,500 per year now available, when distributed among several departments, is insufficient to permit of such continuous work on important problems as will lead to the best results. The amount of money which could profitably be spent in studies of a practical nature is very large, but if the appropriation for this purpose could be doubled it would place the work on a fairly permanent and satisfactory basis, and be of the utmost advantage to the advanced work of the college.

Respectfully submitted,

F. E. TURNEAURE,

Dean, College of Engineering.

September 30, 1910.

REPORT OF THE DEAN OF THE COLLEGE OF AGRICULTURE

PRESIDENT CHARLES R. VAN HISE,
The University of Wisconsin.

SIR:—The following report on the condition of the college of agriculture for the biennial period closing June 30, 1910, is herewith submitted.

The following synopsis indicates the scope of this report:

- I. Changes in faculty.
- II. Permanent improvements and additions to resources.
- III. Business operations and utilization of balances.
- IV. General development and instructional work of the college.
- V. Research work of the experiment station.
- VI. Agricultural extension service.
- VII. Needs of the college.

I. CHANGES IN FACULTY

At the close of this biennial period, the instructional and research staff of this college included 69 persons, of which 13 were of full professorial rank, 18 associate and assistant professors, while there were 14 instructors and 24 assistants, including, in part, a number who give only half time service to the university.

The following changes have occurred during this biennium:

Resignations: The only professorial resignation during this term is that of Prof. E. P. Sandsten of the horticultural department, who severed his connection in June, 1909.

Appointments: New lines of work have been inaugurated in a number of directions during this biennial period. J. C. Marquis was appointed editor of agricultural publications in the fall of 1908, courses also being offered in agricultural journalism this last academic year. Prof. J. G. Halpin of the Michigan agricultural college was chosen to develop the work in poultry

husbandry. Work in this important new line is now thoroughly organized with adequate facilities. The work in agricultural extension was organized in July, 1909, and K. L. Hatch was placed in charge of the executive side of this work as secretary, and also in charge of the work in agricultural education which is designed to aid in the training of teachers preparing for agricultural teaching in the secondary schools.

Two years ago the department of home economics was transferred from the college of letters and science to this college, but the resignation of the staff required a reorganization of the work. Prof. Abby L. Marlatt, previously connected with the technical high school of Providence, R. I., was placed in charge of home economics at the beginning of the last year. The courses of study have been completely reorganized, the work of those preparing for teaching being differentiated from the general culture courses.

The teaching work in plant pathology and economic entomology, as well as nursery inspection, has heretofore been carried on by the horticultural department. The growing importance of the horticultural work, as well as the necessity for further development in these additional lines, has led to the formation of the two departments mentioned on a separate basis. Prof. L. R. Jones, formerly botanist at the university of Vermont, has been placed in charge of the plant pathological work, while Prof. J. G. Sanders, of the bureau of entomology of the U. S. Department of Agriculture, has been chosen to develop the economic entomological work and also designated as the state nursery and orchard inspector. Prof. J. G. Moore was made associate professor of horticulture in July, 1909, and placed in charge of that department.

For several years, Prof. H. C. Taylor, of the department of economics of the college of letters and science has given courses to the agricultural students in agricultural economics. To permit of further development of research work in economic lines, as applied to agriculture, he was transferred to the college of agriculture and made chairman of the department of agricultural economics. The subject of farm management has also been introduced into the curriculum, and assigned to this department under the immediate direction of Prof. D. H. Otis as professor of farm management.

Work in breeding problems has been undertaken by the organization of the department of experimental breeding, which

has been placed in charge of Associate Professor Leon J. Cole, who came to us from the zoological department of Yale university. The study of the more fundamental problems associated with inheritance, as applied more particularly to domestic animals, will be especially emphasized.

The staff of the dairy department was increased by the appointment of Assistant Professor C. E. Lee in July, 1909, who came to us from the University of Illinois. The considerable number of minor appointments (instructors and assistants) are mentioned in the reports of the director of the experiment station.

II. PERMANENT IMPROVEMENTS AND ADDITIONS TO RESOURCES

Lands at University: During this biennium there have been added to the university holdings that are under the administration of this college, several tracts of land immediately adjoining the university farm. These include 8 acres of high land purchased from E. P. Sandsten and A. R. Whitson, 80 acres of the Isom farm, about 25 acres of which is high land, the balance marsh, and tracts of wet lands, aggregating 51.85 acres, from Messrs. Olin, Breitenbach, and Stevens and Fuller. This gives the university control of the large marsh immediately west of the home farm, which it is expected will now be improved by drainage, so that it will serve as a demonstration as to what can be done with our swamp lands and at the same time give additional areas for our expanding work.

Branch Station: Eighty acres of land, immediately adjacent to the city of Spooner, Washburn county, has been deeded to the regents, in accordance with the statute passed by the last legislature, requiring such action as preliminary to the establishment of a branch agricultural experiment station. This station has been located on the extremely light sandy soil of the "jack pine" region of which there are 2,000,000 acres in northern Wisconsin. The attempt will be made on this type of soil to see if the same cannot be increased in fertility so as to render these lands more productive. With present methods of farming they are quickly depleted of their low initial fertility.

Buildings: The most important addition to the buildings that has been made this biennium is the stock pavilion. This building, 115 x 212 feet, is a fire-proof structure which has cost, including its equipment, about \$83,000. It includes a large

elliptical arena, suitable for all kinds of demonstration work, which is surrounded by amphitheater seats of concrete, sufficient to accommodate over 2,000 people. This large central space is so arranged that it can be divided into compartments by the aid of movable curtains, thus permitting its use simultaneously by several classes. Below the seats quarters for horses are provided, including those belonging to the university roads and grounds department; also ample space for hospital purposes. Offices and class rooms are provided for veterinary, experimental breeding, and animal husbandry work. Architecturally, the building is imposing, and the wide variety of purposes for which it is used make it a most important addition to our resources.

Last year the agricultural college was connected with the central heating station at an expense of \$18,300, for the tunnel system, which was laid along Linden Drive, so that it will be available for other buildings when needed. This connection makes possible the discontinuance of the college heating plant and the utilization of this building for machinery work connected with the dairy.

The facilities of the dairy department have also been increased by the erection of a two-story and basement building, 46 x 84 feet, immediately in the rear of the old dairy building. The basement will be used for additional working space for creamery machinery and the foreign cheese work, the first floor for a dairy laboratory for long course students, and for milk supply work, while the upper floor includes lecture and locker space.

The buildings for the newly organized poultry department, consisting of a two-story and basement general utility house, costing about \$4,000, three permanent laying houses, and twelve movable colony houses, have been built this last year. The quarters at present assigned for this work are being fenced and put into shape as rapidly as possible.

The above structures have been provided from allotments made by the regents from the regular building funds of the university. In addition to these a number of smaller buildings have been constructed from the balances which have been saved in the operation of the budget during the last two years.

Of these, the most important additions are a well equipped stock barn, 36 x 106 feet, built at the Hill farm at an expense of \$4,800; at the university farm, a litter shed, sufficiently large

to protect 300 tons of manure; a wagon shed, 30 x 90 feet, costing \$1,200 (one-half of the cost borne from general university fund), and extensive remodeling of the interior of the soils building, which has not yet been wholly completed. The four new greenhouses for the horticultural and plant pathology departments were partially completed during the last year. These, with the potting houses now under construction, are to be finished this fall and have been constructed from available balances, as have also the gymnasium facilities (shower baths, etc.,) which have been installed in the attic of the stock pavilion.

III. BUSINESS OPERATIONS

The commercial end of our college activities is constantly expanding, in spite of the effort to keep this subordinated to our other work. The main line of effort of this sort is in the creamery, the necessity of providing a steady supply of milk for winter requirements making it obligatory that we handle the product of our patrons throughout the year. We now have over 200 patrons on our rolls, furnishing milk from 1,500 cows. The university paid them \$68,300 for milk in 1908-09 and \$92,500 in 1909-10. This supply affords exceptional facilities for the investigation of any dairy problems under practical factory conditions. Our strict compliance with the terms of the Madison milk ordinance, as to the sale of pasteurized cream, has lessened our receipts and incurred an expense of about \$1,500 this last year, due to the fact that we are wholly unable to secure sufficient supply from tuberculin tested animals to meet the city demand. During this last year nearly 100,000 bottles of cream, 15,000 gallons of cream in bulk, 210,000 pounds of butter, and nearly 10,000 pounds of cheese have been handled. The receipts on this business aggregate something over \$10,000 more than the cost of the raw material. It is not feasible to strike a balance sheet of the purely commercial part of the business, as the instructional work, with its considerable inevitable waste and loss, cannot be readily separated from the daily operations of the creamery.

The sales in other departments have also been materially augmented over previous years. The demand for a high grade milk at the dairy barn is such that scores of patrons willingly pay a price nearly 30 per cent higher than the market price in

the city, and at great inconvenience come to the barn daily to secure this product.

All types of our livestock have been much improved within the last few years and an eager demand exists for any surplus that is turned off. Special effort has been made during the last biennium to secure accurate data as to cost of maintenance of different classes of stock and this has led to the introduction of a number of economies that have helped our balance sheet. With operations now involving an expenditure for maintenance, aggregating nearly a quarter of a million of dollars a year, besides over \$100,000 for salaries, it becomes an increasingly difficult problem to operate closely on a budget basis.

The receipts for the two years have been larger than was anticipated, not only in the sale of milk, live stock, and farm products, but from the inspection work (feeding stuffs, fertilizer, stallion licenses, and nursery inspection). All these balances have made possible the accumulation of a surplus which has been utilized in strengthening the different departments. Over \$20,000 has been required for the constructional needs heretofore mentioned, and almost every department has been aided during the period, in the purchase of needed equipment which the regular budget did not provide. The effect of this system in comparison with the old method of lapse of any unexpended balances leads to more economic departmental management, for the actual needs of a department (if regular budget proves insufficient) are now always met from this reserve fund, whereas under the other method, no fund was available for unforeseen contingencies.

IV. GENERAL DEVELOPMENT AND INSTRUCTIONAL WORK OF THE AGRICULTURAL COLLEGE

A. Number of Students: The rapid growth of the instructional work of this college is indicated by reference to following table showing the attendance upon the different courses of study for the past six years.

MATRICULATED UNIVERSITY STUDENTS						WINTER COURSE STUDENTS		Grand Total.
<i>Agriculture</i>				<i>Home Economics</i>	Totals.	Short Course.	Dairy.	
Year.	Grad.	Long.	Middle.					
1904-5.....	7	80	.....	.....	87	312	135	534
1905-6.....	7	136	.....	.....	143	322	163	628
1906-7.....	8	142	.....	.....	150	327	145	622
1907-8.....	14	146	.....	.....	190	393	144	627
1908-9.....	20	195	35	.....	250	461	150	861
1909-10.....	24	267	67	52	410	461	100	871
Nov., 1910 ..	32	364	83	99	578	475 (est.)	130	1,183

SUMMER SESSION STUDENTS							
July, 1910 ...	.....	59	.....	21	.....	.....	80

When it is considered that the exceedingly rapid increase in the attendance on the regular university courses is also observed in practically all other agricultural colleges of the country, it is apparent that this development is not sporadic, but represents a more or less general trend in educational circles, and must, therefore, be studied in the light of such a general movement. No other agricultural college has a higher standard for admission or adheres more rigidly to its requirements, so far as the regularly matriculated students are concerned. The middle course has now been in operation for two years, and while it was designed primarily for the boy from the farm who expects to go back to practical work, it is noteworthy that a considerable number of city youth are embracing the opportunity to secure this type of instruction.

The development of the more advanced agricultural teaching work is reflected in the growing attendance of graduate students. The exceptional facilities afforded by the Adams fund, received from the federal government, are rapidly widening the opportunity for high grade agricultural work. The reorganized department of home economics completed its first year the last half of this biennium. Over 50 students have entered the four-year course of training, while between 70 and 80 letters and science students who elected work in this department, do not appear in this registration. The number in attendance upon the winter courses has not increased so greatly during this biennium. The development of the county agricultural schools

will doubtless affect to some extent the further growth of the short course. The attendance this last year was 461. We can possibly accommodate 500, but a larger number than this would seriously interfere with the character of the work given unless facilities were greatly increased. Last year the dairy course dropped to about 100 students. This is the smallest class for a number of years. Whether it represents a permanent or temporary condition it is difficult to say, although the consolidation of creameries is reducing the number of factories in the state. Twenty-three hundred students have now completed this course, the great majority of whom have been engaged in Wisconsin factories.

Junior Inspection Trip: This year a student inspection trip was organized accompanied by a corps of instructors, in which the upper classmen were brought in direct contact with the best examples of general farms, also breeding farms, for different classes of livestock and poultry; market gardening, and fruit farms, nurseries, city milk supply stations, ice cream plants, and cold storage plants, manufacturers of dairy machinery and supplies, of general agricultural machinery, the printing establishments of agricultural publications, engraving plants, and the public market and commission row in Milwaukee.

This trip was of especial advantage in the study of various systems of farm management, the varying types of crop rotation, crop production, problems relating to soil fertility, drainage systems, systems of water supply, and the production of certified milk.

Summer Session Work: For several years there has been a growing demand for the training of teachers in agricultural work, due to the rapid development of this subject in the secondary and special agricultural schools. Heretofore the only instructional work regularly given in the summer in this college has been in the dairy department, where a practical creamery is operated throughout the year. Last winter the board of regents extended the work of the summer session to cover the agricultural college, and this season six departments offered 12 courses, primarily for the training of teachers. The attendance exceeded expectations, 80 being registered from sixteen states, of which 75 per cent were either present or prospective teachers.

Remodeling Short Course: During this last year, the curriculum of the short course has been remodeled and improved. The very rapid growth in the number of students for the last

few years exceeded the development in facilities so that more and more of the work had to be given by means of the lecture instead of the laboratory practice system. This defect began to be evident in the character of the work performed, and to remedy this, the course was wholly rearranged so that lecture periods now alternate in all cases with practical work. With the installation of gymnasium equipment in the stock pavilion this year, physical exercise will be required, and it is to be hoped that this work will materially improve the general health of the students, who suffer considerably from their radical change from outdoor to indoor work.

Recognition of Persons Contributing to Agricultural Advancement: Provision was made in December, 1908, by the regents for recognition by the university of persons who have by their service aided materially in the development of agricultural thought and practice. This recognition was made at the session of the farmers' course in February each year, at which time the recipient of this honor was presented with an illuminated parchment testimonial reciting the character of service rendered. Such testimonials have been conferred within two years on four prominent farmers of the state, and two persons outside of Wisconsin who have given a lifetime of service to the improvement of agricultural conditions. This recognition of merit and service by an educational institution will do much to inspire those engaged in the basic industry of agriculture with higher ideals.

Conventions Held at Agricultural College: In September, 1908, the Farmers' National Congress held its annual session at Madison, the university tendering its buildings for its use. The registered attendance was over 2,000 and exceeded all previous sessions, nearly all states of the union being represented. For the first time in the history of the congress, a distinctly educational program was presented which was participated in by several members of our staff.

Upon the invitation of the agricultural college, a large number of meetings and conventions are now held annually at the university. The poultry show of the Southern Wisconsin Poultry Association was held last December in the new stock pavilion. The annual convention of the state agricultural society, the various breeding associations, the state experiment association, and the like, bring to the university thousands of visitors annually. While these meetings entail no inconsiderable amount of work on the part of many members of the staff, they

serve to keep the progressive people of the state interested in agricultural development in close touch with our work.

Change in Accounting: Material improvements have been made in the accounting system in several lines of work. The most extensive change has been in the animal husbandry department, where each division of livestock is now debited with cost of maintenance and credited with products turned off, or work performed, so that the relative net expenditure for each group can be accurately ascertained.

A revision of the service scale in the dairy tests has been made so that this line of work is now practically self-supporting. The moneys received from the sale of butter and cheese sent in on account of the butter and cheese scoring exhibitions are now turned over to the state treasurer, and checks to exhibitors forwarded by the university, thus bringing this line of work in entire accord with the university accounting system.

COOPERATION WITH OTHER ORGANIZATIONS

During this biennium, cooperative arrangements have been inaugurated or continued with reference to a number of lines of work with other organizations within and outside of the state.

State Soil Survey: At the last session of the legislature, an appropriation of \$10,000 for two years was made to the state geological and natural history survey, in collaboration with this college for beginning a state soil survey. Arrangements were later perfected with the bureau of soils of the United States department of agriculture to cooperate on an equal financial basis. Professor Whitson of the soils department has been placed in immediate charge of this work, and during this interim, the work has been organized, an analytical laboratory provided, the field work of a detailed character completed in Bayfield, Waukesha, Waushara and Iowa counties, and reconnaissance surveys made in Marinette county, also in a group of nine counties in the western part of the state where soil work has been done to supplement the survey made by Doctor Weidmann of the geological survey. Reports of Marinette, Bayfield and Waushara counties have been prepared for publication and are now in press.

Cheese Problems: The research work on cheddar cheese problems with the dairy division of the United States Department of Agriculture has been expanded until there is now detailed at our experiment station three government experts (a

chemist, a bacteriologist, and a cheese maker) in addition to our own force in the same lines.

Cranberry Insects: The United States bureau of entomology has for the past two years furnished an entomological expert and assistant to take up the study of insects affecting the cranberry. This work has been carried on at our cranberry station at Cranmoor in conjunction with our regular work.

Stump Removal: Cooperative investigations as to the best methods of removing stumps from the cut-over lands in northern Wisconsin and Minnesota have been in operation for the last two seasons with the office of farm management of the United States bureau of plant industry, and the northeastern sub-station of the Minnesota experiment station. This problem is now the most serious drawback to the rapid settlement of this region and the study has been extended to a comparison of cost of mechanical methods of removal and explosives.

Cost of Farm Crops: Cooperative investigations by the department of Agricultural economics and the United States department of agriculture are being conducted relative to the cost of various phases of farm operations. Through the installation of accurate methods of farm accounting, data are secured as to actual cost of crop production.

Animal Diseases: The department of agricultural bacteriology has continued cooperative work with the state live stock sanitary board in the matter of holding post mortem demonstrations on tuberculous cattle and participating in the educational campaign against bovine tuberculosis, as well as the diagnosis of contagious diseases of animals.

V. RESEARCH WORK OF THE EXPERIMENT STATION

In the rapid growth of the teaching and extension work, the needs of the Experiment Station in carrying on research have not been overlooked. Several new departments have been added, in which a considerable portion of the work is designed to be along research lines, and in a number of other departments additional men have been assigned particularly to research work, but I consider the change which has been made in the method of publishing the results of research work the most distinctive advance that has been accomplished in the line of organization.

Issuance of Series of Research Bulletins: Beginning with the fiscal year 1909, a new series of research bulletins has been published, embracing the strictly technical work of the Experiment

Station. These are issued separately, bound in special cover, and are at once distributed to the scientific mailing list. At the close of the fiscal year, a portion of the edition is bound with the director's report, which gives a summary of all of the activities of the station, and this volume is sent to libraries, public repositories, and a special list, so as to be permanently available for reference use. This differentiation of the more highly technical work from that which is capable of more immediate practical application has resulted in an economy in expense of printing and a better distribution of the material.

The scientific work of American experiment stations has not been fully appreciated by scientific men engaged wholly in general university work, because such research work is not generally published in the regular scientific periodicals. Members of station staff are now encouraged to publish the results of their experimental work in the regular scientific channels (giving due credit to the experiment station), so that such work may be immediately available to all science workers.

The general series of bulletins will be continued as formerly, the same to include the results of investigations made which are more immediately applicable to practice, while the demand for general agricultural information that is not the result of special research work is met by the publication of a new series, entitled Circulars of Information.

This readjustment of our publications has enabled the more expensively bound annual report to be reduced from an edition of 15,000 to 2,000 copies.

Publications: The following publications were issued during the past biennium, 1908-1910:

BULLETINS

No.	Title.	Author.	Date.
164	The King System of Ventilation	C. A. Ocock	December, 1908
165	Vaccination Against Tuberculosis in Cattle (Von Behring).	H. L. Russell.....	November, 1908
166	Disinfection and Commercial Disinfectants.	M. P. Ravenel M. D., and K. W. Smith ..	February, 1909
167	The University Dairy Herd, Management and Records, 1907-1908.	G. C. Humphrey and F. W. Woll.	September, 1908
168	Spraying Potatoes Against Blight and Potato Beetle.	E. P. Sandsten and J. G. Milward.	November, 1908
169	Progress in Wisconsin Horse Breeding	A. S. Alexander.....	December, 1908
170	Licensed Commercial Feeding Stuffs, 1908	F. W. Woll	February, 1906
171	Report of the Director, 1908	H. L. Russell.....	February, 1909
172	Tests of Dairy Cows, 1907-1908	F. W. Woll and R. T. Harris.	February, 1909
173	Milking Machine Experiments.....	F. W. Woll and G. C. Humphrey.	February, 1909

BULLETINS—Continued

No	Title.	Author.	Date.
174	The Conservation of Phosphates on Wisconsin Farms.	A. R. Whitson and C. W. Stoddard.	April, 1909
175	A Three Year Campaign Against Bovine Tuberculosis in Wisconsin.	H. L. Russell.....	May, 1909
176	The Improvement of Wisconsin Tobacco Through Seed Selection.	E. P. Sandsten.....	May, 1909
177	Potato Culture in Northern Wisconsin....	E. P. Sandsten and E. J. Delwiche.	July, 1909
178	The Field Pea in Wisconsin	R. A. Moore and E. J. Delwiche.	July, 1909
179	The Eradication of Farm Weeds with Iron Sulphate.	R. A. Moore and A. L. Stone.	July, 1909
180	Fertilizers for Wisconsin Farms.....	F. W. Woll.....	August, 1909
181	The Propagation of Pure Starters for Butter and Cheese Making.	E. G. Hastings	September, 1909
182	The Wisconsin Butter and Cheese scoring Exhibitions.	E. H. Farrington	October, 1909
183	Growing Clover for Seed and Forage in Northern Wisconsin.	R. A. Moore and E. J. Delwiche.	November, 1909
184	Practical Swine Management	J. G. Fuller and A. S. Alexander.	November, 1909
185	Sanitary Cow Stalls.....	C. A. Ocock.....	November, 1909
186	Improvement of Wisconsin Horses.....	A. S. Alexander.....	December, 1909
187	The University Dairy Herd, 1908-1909.....	G. C. Humphrey and F. W. Woll.	December, 1909
188	Wisconsin Horse Breeding Statistics.....	A. S. Alexander.....	December, 1909
189	Community Breeders' Associations for Dairy Cattle Improvement.	G. C. Humphrey.....	February, 1910
190	Common Insect Pests of Fruits in Wisconsin.	J. G. Moore.....	February, 1910
191	A Decade of Official Tests of Dairy Cows, 1899-1909.	F. W. Woll and R. T. Harris.	February, 1910
192	The Dairy Calf at Meal Time.....	D. H. Otis.....	February, 1910
193	Report of the Director, 1909.....	H. L. Russell.....	February, 1910
194	Licensed Commercial Feeding Stuffs, 1909.	F. W. Woll.	February, 1910
195	New and Improved Tests of Dairy Products.	S. M. Babcock and E. H. Farrington.	February, 1910

RESEARCH BULLETINS

No.	Title.	Author.	Date.
1	The Role of Inorganic Phosphorus in the Nutrition of Animals.	E. B. Hart, E. V. McCollum and J. G. Fuller.	June, 1909.
2	Factors Influencing the Phosphate Content of Soils.	A. B. Whitson and C. W. Stoddard.	June, 1909.
3	The Efficiency, Economy and Physiological Effect of Machine Milking.	F. W. Woll and G. C. Humphrey.	June, 1909
4	Some Conditions Which Influence the Germination and Fertility of Pollen.	E. P. Sandsten.	June, 1909
5	The Role of the Ash Constituents of Wheat Bran in the Metabolism of Herbivora.	E. B. Hart, E. V. McCollum and G. C. Humphrey.	June, 1909
6	Studies on the Bacterial and Leucocyte Content of Milk.	E. G. Hastings, C. Hoffmann and B. W. Hammer	June, 1909
7	Factors Controlling the Moisture Content of Cheese Curds.	J. L. Sammis, Suzuki and F. W. Laabs.	February, 1910
8	Nuclein Synthesis in the Animal Body....	E. V. McCollum.	May, 1910
9	The Nature of the Acid-Soluble Phosphorus Compounds of Some Important Feeding Materials.	E. B. Hart and W. E. Tottingham.	May, 1910
10	Some Improved Methods of Dairy Chemistry Analysis.....	E. B. Hart, S. K. Suzuki and J. L. Sammis.	May, 1910
11	The Production of Volatile Fatty Acids and Esters in Cheddar Cheese and Their Relation to the Development of Flavor.	S. K. Suzuki, E. G. Hastings and E. B. Hart.	June, 1910
12	Some Factors Concerned in the Fixation of Nitrogen by Azotobacter.	C. Hoffmann and B. W. Hammer.	June, 1910
13	Studies of the Protein Requirements of Dairy Cows.	F. W. Woll and G. C. Humphrey.	June, 1910

CIRCULARS OF INFORMATION.

No.	Title.	Author.	Date.
1	The Wisconsin Feeding Stuff Law.....	F. W. Woll.....	July, 1909
2	The Propagation of Pure Culture Starters for Butter & Cheese Making.	E. H. Farrington and E. G. Hastings	August, 1909
3	Directions for Spraying Potatoes.....	J. G. Milward.....	August, 1909
4	The Wisconsin Seed Inspection Law.....	A. L. Stone.....	August, 1909
5	The Hollow Concrete Fence Post.....	C. A. Ocock.....	September, 1909
6	Synopsis of Wisconsin Drainage Laws with Forms and General Suggestions.	E. R. Jones.....	September, 1909
7	The Agricultural Extension Service.....		November, 1909
8	Corn Judging.....	R. A. Moore.....	November, 1909
9	The Wisconsin Dairy Cow Competition....	F. W. Woll.....	December, 1909
10	Operating the Casein Test at Cheese Factories.	E. B. Hart and W. H. Cooper	
11	Concentrated Feeding Stuffs and Fertilizers Licensed for sale in Wisconsin, 1910	F. W. Woll	February, 1910
12	Spraying the Home Orchard.....	J. G. Milward.....	April, 1910
13	The Care of New Born Foals.....	A. S. Alexander.....	April, 1910
14	The Determination of Salt in Butter at the Creamery.	J. L. Sammis	May, 1910
15	Analyses of Licensed Commercial Fertilizers, 1910.	F. W. Woll	May, 1910
16	The Culture and Storage of Root Crops...	E. J. Delwiche.....	June, 1910

Numerous researches are in progress from which interesting and valuable results have already been obtained, but presentation of further data regarding same may be found in director's reports for the period in question.*

VI. AGRICULTURAL EXTENSION SERVICE.

The appeal made to the legislature of 1909 for the organization of the extension work of the college on an adequate scale, was granted by the appropriation of \$30,000 per annum for this present biennium. The urgent need for the development of this work is recognized when one considers how utterly inadequate are the average agricultural returns compared with what might be easily and profitably secured from the farms of the state.

In these days, when the problem of high cost of living strikes each consumer as a personal matter, and not merely as an academic theory, it is important to realize that if we farmed our lands as thoroughly as do the Hollanders of Europe, we would raise in Wisconsin, on the basis of our present acreage, wheat, rye, barley, oats and potatoes to the value of over \$100,000,000, instead of \$53,000,000, which represents our average actual production for the last three years. As population becomes

* Results for 1908-09 may be found in Director's Report as published in Bulletin No. 171; those for 1909-10 will appear in Director's Report to be published in February, 1911.

more dense, consumption inevitably increases and unless production keeps pace with it, prices rise.

The state and federal departments that are concerned in the development of improved types of animal and plant life, of better methods of maintaining soil fertility, of ways of diminishing the ravages of plant and animal pests that exact such a stupendous toll of our crops and flocks, have already accumulated much information that is as yet used only by a portion of the most progressive farmers of each community. To introduce these or better methods into the actual practice of the whole community is the function of agricultural extension. The experimenting staff of the experiment station cannot successfully conduct the research and propaganda work at the same time. The printed page embodying the results reached, seems inadequate to carry conviction to many. Experience has proven that the most effective way is to show the farmer *how* the thing is actually done. With nearly 200,000 farmers in the state, with scores of lines of improvement that may be successfully demonstrated, it is evident that the field is almost illimitable, so that the question is not what can be done, but which of the numerous problems is most pressing.

Recognizing the necessity of developing the agricultural extension service in as close connection as possible with each department of the college, so as to be of the greatest service to the people of the state, the work has been organized along two general lines:

1. Demonstration work, which is under the immediate direction of the respective departments.
2. Extension courses (farmers' courses, farmers' one-week schools, etc.), given in cooperation with the county agricultural schools and elsewhere.

Circular of Information No. 7 explains how Wisconsin farmers may secure aid from the extension service. The following outline shows the scope of work now in progress:

The agricultural engineering department furnishes blue print plans for barns, sanitary cow stalls, silos, and King system of ventilation.

The agricultural economics department cooperates with farmers on systems of cost accounting as applied to production. The farm management section maintains employment bureau for mutual benefit of students and farmers.

- The department of agricultural education is aiding the secondary schools to introduce agriculture into their curriculum. Special circulars covering the needs of teachers are now in preparation, and a large number of lectures have been given before county training institutes for teachers, and elsewhere.
- The agronomy department is widely disseminating its pure-bred seeds through the state experiment association. Demonstration farms have been established on about 25 state and county asylum farms to illustrate the best methods of handling farm crops. Young people's corn and grain growing contests have been organized in over 40 counties, exhibitions of product being made at the county fairs. Over 20,000 samples were thus distributed this year. Over 60 scholarships, consisting of expenses of winners to the boys' corn and grain course at university in February have been provided for this year. Demonstrations are made on improved methods of eradicating noxious weeds and weed samples are identified. Also, all seed grains and grass seed sold in the state are tested in accordance with the new seed inspection law.
- The animal husbandry department has organized 36 community breeding associations for the development of pure-bred dairy stock. These have been very successful in building up a community spirit in some one special breed of dairy cattle. The department selects from our students competent live stock judges for the county fairs.
- The agricultural chemistry department is carrying on the Wisconsin dairy cow competition, for which a prize fund of \$2,600 has been subscribed. Official tests of dairy cows as to performance are aiding the breeder to establish authenticated records of much value. All concentrated feeding stuffs and fertilizers offered for sale in the state are analyzed, and the enforcement of the statute placed under control of the experiment station. Cooperative experiments with farmers on manure preservation and demonstration as to value of Hart casein test in cheese factories are carried on.
- The bacteriology department has distributed pure culture starters to exhibitors participating in butter and cheese scoring exhibitions. It also aids the state live stock sanitary board in the diagnosis of contagious animal diseases

and in making post-mortem demonstrations on tubercular cattle.

The dairy department tests milk and cream samples for farmers and factory owners, and conducts a monthly scoring exhibition of butter and cheese.

The economic entomology department has charge of the nursery license inspection, and the enforcement of the law regulating sale of nursery stock.

The horse breeding department maintains control of stallion breeding and licensing all sires used for public service. Much interest in the improvement of the horse industry has been awakened by frequent lectures on this subject throughout the state.

The horticultural department carries on field demonstrations on potato and orchard spraying, distributes improved types of tobacco seed, and aids schools in landscape decoration of their grounds.

The soils department has conducted a large number of fertilizer tests on the use of potash, phosphates, and ground limestone to correct acidity of soils. Soil demonstration plots on type soils are maintained at the sub-stations and in several other localities in the state. Aid is given in the matter of drainage by examining and reporting on the type of system most desirable to install for reclamation of marsh and clay lands.

Sub-stations have been maintained on the heavy red clays of the Superior district at Ashland and Superior, and on the light sands at Iron River; this year additional work has been undertaken on the "jack pine" soils at Spooner and Crivitz. These have been exceedingly helpful in developing interest in agriculture in northern Wisconsin.

The cranberry industry has also been greatly stimulated through the work of the cranberry sub-station located on the cranberry bogs near Grand Rapids.

Stump Removal Work. Cooperating with the Minnesota experiment station and the U. S. department of agriculture, demonstrations have been conducted in northern Wisconsin, on the use of explosives in stump removal. The problem of clearing land of pine stumpage is one of the greatest drawbacks to the settlement of this region.

The results of the demonstration work accomplished by the departments during this biennial period cannot be presented completely until this season's work is over this fall, and at this writing (Sept. 10), it is too early to secure them. The results accomplished in 1909 were presented in the director's report for that year (Bulletin No. 193); the data for 1910 will appear in the forthcoming director's report to be issued in February of this next year.

Extension Courses: The success of the extension courses has exceeded our expectations. The ten days' farmers' course at the university continues to increase steadily in importance, the registration for 1909 being 831 and for last winter 1125 from 59 counties of the state. Over 400 women from 32 counties attended the woman's course held at the same time. An innovation last year was a boys' course which comprised the boys who won educational prizes (consisting of their expenses to this course at Madison) given by the different county fairs in connection with the young people's corn growing contests.

Farmers' Courses Throughout the State: The success of the farmers' course at the university led us two years ago to extend this idea to other portions of the state, and as a nucleus for such movement, arrangements were perfected with the various county agricultural schools to hold a one-week course during the winter. In 1908-1909 four such courses were held at the four county agricultural schools then in operation. Last winter eight courses in all were given, there being a strong demand from localities in which no county school existed. The aggregate attendance reached nearly 8,000, and in all cases where a course had been given before, the number in attendance the second year was greatly increased. At the Winnebago county school at Winneconne over 1,900 persons registered. This line of work has met with an enthusiastic reception in all cases as is shown by immediate application for the continuance of the work. Tangible results as to improvement in the agricultural practice of the community have been especially gratifying.

The fact that the local school is on the ground to prosecute the work still further has been a factor of great value.

Farmers' School: An experiment was tried last winter in Ia Crosse county of presenting a special type of work somewhat similar to the "Iowa plan." A one-week school was held in which regular class room instruction was given six hours daily for a week, the farmers first pledging their regular attendance

and paying a fee of \$1.00 to cover a portion of the expense. Specific instruction in corn, grain, and cattle judging was given, also they were taught how to make fat tests of milk and tuberculin tests. Although the course was held at an unfavorable time, 43 farmers attended, five of whom were over 70 years of age. These "schools" in which specific, definite instruction is given serve to emphasize and fix the work more firmly than is possible in the general farmers' courses and farmers' institutes. The success of this experiment leads to the conviction that this type of extension work could be more generally introduced.

Agricultural Press Service: For the past two years a weekly press service has been maintained by the station editor in cooperation with the university press bureau. Through the medium of the 350 weekly newspapers in the state and over 100 leading agricultural journals, timely information on matters of agricultural interest has been quickly and effectively circulated, reaching in this way fully 75 per cent of the farmers of the state.

VII. NEEDS OF THE COLLEGE

It is gratifying to note that all of the new departments or lines of work in the college, with the exception of forestry and animal pathology, specially referred to in our last biennial report, have been organized during this biennium and are now in successful operation. Necessary additional facilities in the way of buildings and equipment, presented in our last report, have either been met, or are in process of accomplishment, with the exception of the proposed wing of the soils building. Provision for horticulture and plant pathology has already been made and bids for the new building are now being received. Plans for quarantine quarters are also in process of development.

The rapid growth in student attendance at Wisconsin in the past few years only reflects the general condition in all agricultural colleges, and it is fair to assume, in the light of the marked tendency now apparent in favor of development of country life, that it will be necessary to provide for continued expansion of the agricultural work. Inasmuch as any constructional work, provided by the legislature of 1910-1911 cannot be completed and ready for occupancy, at the very earliest, before the fall of 1912, and some doubtless must be postponed until the summer

of 1913, it is necessary that estimates, as to the needs for educational buildings be based upon the probable attendance at the opening of the fall semester of 1912, and for some buildings in 1913. This means looking ahead for at least three years, if not four years, and making plans *now* for that time.

I present in this connection what I consider a very conservative estimate as to probable attendance of matriculates for the interim in question. In estimating this, it must be borne in mind, that for recent years the number of students in our classes have actually increased rather than diminished, as they have passed from under to upper classmen, the influx due to transfers from other courses and from outside institutions more than making up the usual loss caused by dropping out.

Enrollment.	Graduate and Long.	4-year Home Economics.	2-year Middle.	Total.
Per catalog 1909-10.....	277	52	74	403
Enrollment Oct. 15, 1910.....	400	100	85	585
Estimated enrollment for 1911-1912.....	565	150	130	845
Estimated enrollment for 1912-1913.....	740	210	160	1,110
Estimated, Fall 1913.....	930	275	190	1,395

I include the actual enrollment of this fall, which past experience shows will be increased considerably for the second semester. Our freshmen class of this fall already numbers 207, in comparison with 122 for the final registration of last year.

In addition to this enrollment within the college, provision will have to be made for 112 students this year electing work in home economics from Letters and Science, and from 140-150 for 1911-1912, besides the winter courses (short course and dairy).

Constructional Needs: The following statement of conditions as they now exist is presented with reference to the four departments in which congestion is greatest.

Agricultural Chemistry and Bacteriology: These departments in the west end of the central agricultural building now have the following facilities: (1) Chemical student laboratory, desk room for 30 students; lockers for 83; (2) Advanced laboratory, 12 places with 24 lockers. It has already been necessary to take possession of space designed for other purposes, and this

fall the last possible available room will be converted into an additional laboratory, providing 16 places and 36 lockers. By running three sections it is hoped that we can accommodate for this year the present sophomore class, who are required to take this work. The general laboratory is utilized by the home economic students in household chemistry for the first semester, so that the actual use of the laboratory throughout the year is about 60 per cent, which is above the average in a required curriculum of study.

(3) The experiment station laboratory has two working tables adequate for four chemists. The feed and fertilizer inspection work has nearly trebled within the last three years and now six chemists are using this one room.

(4) The general student bacteriological laboratory accommodates 20 students at a time. This last year 72 men took this work, requiring four sections.

(5) Advanced bacteriological laboratory accommodates only four or five men. Last year it was necessary to use the kitchen to accommodate the students electing advanced work. Either chemistry or bacteriology should be removed from the building before the next year. In fact, both should eventually be removed, as they are a menace in a non-fire proof building. If chemistry is removed, bacteriology could for the time being occupy a portion of quarters vacated.

The following plan seems to give the greatest relief for all lines concerned, and should be made available not later than the fall of 1912:

1. Construction of a central unit for agricultural chemistry to contain offices, small class rooms, store rooms, and a large auditorium for general chemical demonstrations, that should seat not less than 350-400 students. There is now no suitable lecture room for chemical work in the agricultural college, and such an auditorium would serve the permanent needs of the long courses, and could also be utilized for the short course, thus relieving our big auditorium, which is not adapted to this type of class room work.

2. A laboratory wing large enough to accommodate 150 students at one time, with locker space for three times as many which could be installed as needed; advanced and special laboratories; research facilities on second floor for the different types of experiment station work (animal and plant nutrition,

dairy chemistry, feed and fertilizer inspection, etc.); and necessary ventilation apparatus.

3. Building should be planned so that additional wing might be added later. The central unit and laboratory wing should be a basement and two-story structure, costing not less than \$60,000-\$75,000, not including equipment which would probably be \$15,000 more.

4. By transferring the chemical laboratory to another building, the space released could be remodeled to meet the needs of bacteriology, at a probable cost, with necessary equipment, approximating \$2,500.

Home Economics: With the transfer of this department to the agricultural college, and its reorganization, temporary quarters were assigned in the attic of Lathrop hall in time to permit them to be finished with reference to the needs of the home economics work. This space, 42 x 72 ft., affords proper facilities for about 50-75 students. This last year about 120 students (including those from Letters and Science electing work in this department) utilized this space. This coming year some additional space is to be secured by appropriating the society rooms at the east end of the attic. The intervening attic space cannot well be utilized permanently for this work on account of steel trusses. This necessitates the consideration of permanent housing of this rapidly developing line of work.

The following estimates as to student attendance are, I believe, conservative:

	Four Year Course.	Elections from Letters and Science.	Total.
Enrollment 1909-1910.....	52	70	122
Enrollment 1910-1911.....	100	112	212
Estimates, 1911-1912.....	150	150	300
Estimates, 1912-1913.....	210	200	410
Fall, 1913.....	275	250	525

This does not include the inauguration of any new lines of work, such as a 2-year course in home economics for which there is a great demand.

A casual examination of present or possible facilities in Lathrop hall will reveal the utter impossibility of handling this work permanently in these quarters. A new building devoted entirely to this work should be planned at once. Laboratories in food work, textiles, home nursing, art and design, house

decoration, dietetics, and institutional management, as well as a large lecture room for at least 250-300 students, smaller class rooms, offices, etc., are required.

At the University of Illinois, one-half of the woman's building is devoted to home economics work, and is already inadequate. At Kansas Agricultural College and at the University of Nebraska, separate buildings are devoted to these needs. The New York legislature has just given Cornell Agricultural College \$154,000 for such a building, and there are only 400 women in Cornell, while at Wisconsin there are about 1,000. I am unprepared at the present time to estimate the cost of such a building, but it should be planned with the view of permanently housing the department in a satisfactory manner.

Soils: Last year, laboratory facilities in soils were so wholly inadequate that it became necessary to take over about one-half of the space used for horticulture and convert it into a student laboratory for the required work in soils. This addition gave 30 places and 88 lockers. The only lecture room now in the building seats about 110. The soils department estimates that by the fall of 1912 space for 150 in laboratory work will be required for the regular class. Working three sections, this will require laboratory space for 50 at a time.

No suitable laboratory is now available for soil physics.

The soils building, which is next to the oldest on the agricultural grounds, really contains less available room than any other on our campus. It needs to house both soil chemistry and soil physics, irrigation and drainage work, analytical laboratories and offices, and mapping rooms for the state soil survey.

The remodeling which has been carried on in both wings of this building, including the reconstruction of the greenhouses, two seasons ago, has now amounted to \$6,100 and has been entirely provided for out of our surplus. These improvements have all been planned with reference to their permanent utilization when the west wing was added. It seems imperative that this wing should now be constructed, as increased laboratory facilities as well as lecture room space will be needed by the beginning of next biennium. Even with the complete removal of the horticultural department from this building, sufficient and satisfactory laboratories cannot be secured. In addition to the construction of the west section to this building, further additional changes in the interior of the old building will be required, to make it suitable for its future use. It is difficult to

estimate accurately the cost of such construction, but the architect figures that the new wing would cost about \$50,000, while \$8,000 more would be required for adapting the interior of the old part and re-roofing whole building in harmony with other agricultural buildings.

Fire Proof Library: Libraries and museums above all other kinds of university equipment, should be housed in fire-proof structures. Offices, laboratories and class rooms can easily be replaced if fire loss occurs, but a well-equipped library represents a generation or more of effort. Our agricultural library now contains 10,500 volumes and 9,600 pamphlets, and is said to be the best equipped agricultural working library of any American college, and is surpassed only by that of the department of agriculture at Washington. The beginnings of this library date back to the earliest work in agricultural science; hence, our files are unusually complete. We have 42 complete and 13 uncompleted sets of very valuable scientific periodicals; also full files of the most important agricultural publications, including reports and bulletins of state, federal and foreign agricultural experiment stations. Under Professor Henry's fostering care, a large number of most valuable, rare, and out-of-print books have been picked up from time to time.

The library has now reached such proportions that a definite policy should be adopted with reference to its future development. Additional space will be required in the course of a year or two at most, which can only be secured by double decking the library stacks. Such expansion, however, continues the constant menace, that fire may at any time wipe our most valued asset. Agricultural Hall is not a fire-proof structure, and for a number of years to come, it will be impossible to remove all of the laboratories which are a greater menace to a building than offices or class rooms.

In view of these conditions, I deem it my duty to urge the provision of a fire-proof structure at as early a date as practicable. Provision should also be made in this building for an agricultural museum. Agriculture is rapidly developing and the historical aspect of this subject will be a matter of importance. A well equipped museum should not only furnish examples of best methods of present practice, but should present an epitome showing such historical development.

The relief here proposed relates only to three departments in agriculture and that of home economics. The difficulty is that

the pressure for space by other departments is not in any way relieved by help to those here mentioned. The agronomy department is already in close quarters, although they have occupied their building only three years. The mistake made in erecting too small a building for this department should be heeded with reference to other structures. The single lecture room in the building is arranged to seat only 140 students. This fall it is utterly impossible to get the class into the room and the lecture work is being repeated in the laboratory.

Formulating Comprehensive Building Plans: The exceedingly rapid growth in all lines of our work brings us face to face with the problem of planning for the future, especially with reference to the constructional needs of the college. No successfully managed commercial enterprise that is undergoing rapid expansion carries out its permanent development without following a well defined plan, and educational institutions are beginning to realize that it is equally necessary that they adopt a similar policy. While such a plan can never be regarded as final, as conditions are inevitably subject to change, yet the formulation of as definite plans for improvement as is possible must prove helpful in matters of moment. It is particularly needful that new construction entered into should be located so as to permit of future growth as the needs of the different departments may require.

The New York State College of Agriculture at Cornell University has recently presented such a plan to the New York legislature. It involves, for agriculture alone, buildings and equipment aggregating nearly \$2,000,000, in addition to their present plant. The legislature, after thorough study of the plan, sanctioned by enactment the principle involved and voted \$354,000 for three buildings for the next two years besides increasing their maintenance fund from the state to \$225,000 a year.

Purchase of Koch Farm: Three years ago the university was able to lease a tract of land immediately adjacent to the "Hill farm" for a period of five years, with the privilege of buying the same any time within five years at a price then fixed. This extension was very much needed in connection with the development of our pure-bred seed grains that are distributed through the medium of the agricultural experiment association, and which have proven to be of such value in increasing the yield of cereals in the state during the last few years. For this tract of 70 acres \$15,000 is required, in addition to which \$2,500-

\$3,000 should be provided for fencing, repairs, and other necessary building improvements. The option at this figure must be accepted before the expiration of this lease, as it cannot be renewed for anything like the price already agreed upon. As this amount of land is fully required for the production of seeds which are thus disseminated, the question might be considered as to whether its purchase would not be a proper item of expense in making permanent provision for the extension work.

VII. ORGANIZATION OF NEW LINES OF WORK

Rural Sociology: It is the general sentiment of thoughtful students of affairs that the permanent safety of the nation lies in a contented and prosperous rural people. As an illustration of this attitude, attention may be directed to the report of the Country Life commission appointed by President Roosevelt. The intellectual and social sterility of country life has been one of the main causes in the rapid movement of country youth from rural to urban pursuits. The problems of country life need sympathetic study, particularly in their social and economic aspects. The time is ripe for such study to be undertaken by universities, and in order to accomplish its purpose, it must be closely correlated with the practical farm problems which confront the dweller in the open country. It is, therefore, the duty as well as the opportunity for the agricultural college to take up this work. The field is comparatively new, but when a properly qualified person can be found, he should be given opportunity for such type of study.

Veterinary Science: So far as the veterinary work developed in our agricultural courses has been included in the department of animal husbandry, but the continued demand for more extensive instruction and research work in this important line requires the further differentiation of this work, and with the appointment of Professor Hadley, it is expected that next year this department will be placed on an independent basis.

Textiles in Home Economics: Provision should be made this coming year for an able teacher of professorial rank in textile work in home economics. The increased demand for work in art and design will require practically all of the time of one teacher, and the importance of the subject of textiles and house-decoration will involve a differentiation from the food and dietetic side of home economics.

Course for Forest Rangers: As far back as 1904 Dean Henry in his biennial report called attention to the need of developing instruction in forestry. The demand for work in this subject has steadily increased and for the past year has become more and more marked. The establishment of the forest products laboratories of the government forest service at the university, has misled many to believe that a course in forestry was now in operation.

A careful study of the problem with the forestry experts of our state, the federal forest service, and elsewhere, has led to the conviction that what is needed at Wisconsin at the present time more than a full-fledged professional school of forestry, is a practical school for the training of rangers. There is an opportunity at the present time for highly trained forest engineers and experts, but for the training of these, numerous well equipped schools are already in existence and are satisfying the demand for such type of instruction. The opportunity, however, to utilize this type of training is not an unlimited one and even now does not begin to compare with the need for properly trained men who are able to do the actual work of the forest ranger in forest management, fire patrol, logging, reforestation, and the like.

The state now has in its forest reserves about 300,000 acres. These lands are, in the main, cut over areas in which reproduction of both pine and hardwood is going on and would in a comparatively short time largely reforest themselves, if fires were kept out. The most pressing problem in the administration of these forests today is the control of fires. A trained ranger service is needed at once to inaugurate such work. It may be thought unnecessary to train educationally a fire fighter, but the forest ranger is called upon for a variety of activities, many of which do demand special training. Nowhere is there better material for such work than among the young men of our state who have been brought up more or less in contact with the forest, who possess in a degree at least that innate sense which accustoms them to a woodsman's life.

Such a ranger school might consist of a two-years' course, the winters of which would be spent at the university and the summers in practical work in the state forest reserves or in lumbering operations in the field. It is quite likely that remuneration for summer's work might be sufficient to cover the student's winter expenses at the university. The foundation for much of

the work that should be given already exists in departments now in active operation at the university. The combination of practical and theoretical work in the field could be accomplished without a large outlay. A department of practical forestry would need to be established, with such subordinate help in this and other departments as the needs of the work might require. This department should also be utilized in giving instruction to our agricultural students on wood-lot management, relative to which no work is at present given. So far as available the resources of the forest products laboratory could be utilized.

Such a school would be especially suitable for the education of North Wisconsin youth whose services could in considerable measure be utilized in Wisconsin work, state and private, and for the lumbering interests. The paper mills, and other wood-consuming industries are paying increased attention to these problems for which such training would be especially helpful. The state department of forestry will doubtless need all the trained men that such a course would turn out for a number of years. Such a school would possess a unique position, for outside of the Pennsylvania ranger school (the graduates of which are bonded to enter the service of the state for at least three years), and those established by the federal forest service in connection with some of the western institutions, no attempt has been made to meet this demand, which in the minds of forest experts is regarded at the present time as more pressing than the establishment of additional schools of a purely professional character. The success of the short course in agriculture has amply justified the departure from academic traditions relating to agricultural instruction, and it is my belief that such a course as above planned would in its way prove equally valuable in the development of forestry education.

General Development of Present Lines of Work: The rapid increase in amount of instructional work required is constantly making heavier drafts on the various departments. On the other hand, the federal government is becoming stricter each year in the administration of the research funds of the experiment station. More and more we shall be forced to a differentiation between our research and teaching work and it is apparent with the rapid expansion of the instructional and extension work that further provision will be required this coming biennium to maintain each line of effort on a proper basis. Each department

that is concerned with research should have at least one man who is able to give his time mainly to investigation and when such a relation is once established, it should not be easily broken off to supply teaching needs that may have arisen in the meantime. In the three fields of research, teaching, and extension, it is going to be necessary this coming year to add a number of strong men.

Development of Agricultural Extension Work: The expiration of the legislative appropriation for agricultural extension work makes necessary the consideration of the continuation of this work. Already mention has been made in this report of the numerous lines of work that have been developed with this fund. While the state lays upon the university the responsibility of acting as a trustee in the efficient and economic expenditure of these funds, it must be kept in mind that this appropriation is used for lines of work wholly apart from the instruction of students at the university. It goes directly toward the up-building of Wisconsin agriculture and the more complete development of the state. At the present time, our lands are only about one-half developed. We are losing thousands of our citizens, who are going to the west, to Canada, and the southwest, while there are yet tens of millions of acres of land in our own state that are awaiting development. The opening up of this northern region (much of it the finest agricultural land that could be sought) will enormously increase the aggregate wealth of the state, and thus distribute the burdens of governmental expenditures.

This development, as well as the increased production of the area already under tillage, will come most quickly through the application of the most scientific methods of agricultural practice.

Practically all of the lines of the extension service which have been undertaken so far have yielded results which make it seem advisable that they be continued. Some of them should be materially expanded, while requests made of the different departments as to the desirability of inaugurating additional lines of work have brought out the fact that a number of new lines could profitably be undertaken. At this date, it is impossible to give final estimates as to the amount needed in connection with this work, but there is no question as to the advisability of its continuance on even a broader scale than has been the case for the

past two years. For the benefit of the state at large, there is no line of our college activities that yields larger, more immediate, or more valuable returns than that which is embraced in the agricultural extension service. Nothing which has been done by this college has brought the people of the state and nation into closer sympathy with our work.

H. L. RUSSELL,
Dean.

October 1, 1910.

REPORT OF THE DEAN OF THE LAW SCHOOL

PRESIDENT CHARLES R. VAN HISE,
The University of Wisconsin.

SIR: I beg to submit the following report concerning the law school for the biennial period just closed:

FACULTY

The personnel of the faculty has remained substantially unchanged during the biennium. For the university year 1909-10 an exchange of professors was arranged with the law department of Stanford University, whereby Professor Howard L. Smith of this law school exchanged with Professor Charles H. Huberich of Stanford. A course in contracts was also offered in the law school by Professor Robert B. Scott, professor of political science in the university, during the same period. In April, 1910, Professor W. W. Cook resigned to accept a professorship in the University of Chicago law school. Professor Robert B. Scott of the political science department was elected to the position thus vacated. During the summer of 1908 the faculty was assisted in the work of instruction by Harold D. Haseltine, reader in English law, University of Cambridge, and lecturer in law in Emmanuel College, who offered a course in Property 1. In the summer session of 1909, Eugene Wambaugh, Langdell professor in the Harvard law school, assisted the regular faculty, offering a course in Insurance. During the same period a number of special lectures by members of the bench and bar of the state were given.

ATTENDANCE

The attendance for the biennial period was as follows:

1908-09	165
1909-10	159
Summer session 1908.....	51
Summer session 1909.....	67
	<hr/>
	442
Deduct students counted twice.....	44
	<hr/>
	398
Total biennial period 1906-08.....	355
	<hr/>
Increase over prior biennium.....	43

It thus appears that the attendance has increased somewhat over that of the preceding biennium, largely due to the growth of the summer session. The fact that the school has been able to maintain its numbers substantially unchanged notwithstanding the fact that the classes entering during this period were the first to enter under the increased entrance requirements is a matter of congratulation. The experience of other law schools where the requirements have been raised from that of the high school to one or two years of college work has not been as fortunate in this respect. At the Yale University law school where the two-year requirement was put in force last year, the enrollment of new students entering as candidates for a degree dropped from 153 the preceding year to 32, and unofficial reports for the present year indicate a still further falling off in attendance. As yet the school has not entirely adjusted itself to the new regulations. A large number* of special students have been enrolled, particularly during the past year. All of these students have had at least the preparation required for admission to the freshman class of the college of letters and science. The advance registration for the year 1910-11 indicates a marked falling off in this class of students, and a decided increase in the number of those who have entered as candidates for the degree. The problem of what provision is to be made for special students is still an unsolved one. At present the faculty holds itself at liberty to vote a degree to the special student who attains a scholarship of unusual excellence. Up to this year from two to three special students have been graduated annually on this basis. It does not seem expedient to exclude special students entirely from the school, as many of them are men who do not intend to practice law, but merely

wish to pursue certain branches of it for business purposes, or who wish to prepare for the bar examination. On the other hand, constant pressure is brought to bear from this group of men to be considered as candidates for a degree, and the refusal of the faculty to graduate them, results in more or less friction and dissatisfaction. Of the present enrollment, at least 30 per cent of the students who entered the law school as candidates for a degree hold the arts degree. A comparison with the number of men in residence during the preceding period as candidates for the degree shows that there has been an increase of about five per cent of this class. Of the entire enrollment in the school 25 per cent hold baccalaureate degrees. The percentage of men who have had more than two years of college work required is very much larger than in the preceding period. In this connection it is to be remembered that each year there are a number of men taking the combined course, who have completed the work in the college of letters and science through the junior year, and who are registered in the law school as regular first year students. The summer session of the school has been satisfactory, showing a solid growth each year.

The situation is as satisfactory as could be expected when we consider the general condition of legal education. While there has been a marked tendency in the last few years for law schools, particularly those of a better grade, to require some college work for admission, on the other hand there has been a large increase of low grade resident and correspondence law schools. These schools are for the most part located in the large cities. For the most part their work is carried on at night. An examination of their programs indicates that their principal purpose is to prepare men to pass the bar examinations which are now held under the direction of state boards in most of the states. The equipment of these schools is uniformly inadequate. The students are usually employed during the day and devote but a very small portion of their time to legal studies. Their standards of admission and instruction are of necessity inferior to the better resident schools. The attitude of the legal profession towards these institutions is one of easy tolerance.

The scholarship of the student body continues to show improvement. During the past year, through the generosity of the Honorable J. M. Pereles of Milwaukee, the Pereles scholarship in law was established, which yields an annual return of \$250. Under the rules of the faculty this scholarship is awarded

to the ranking third-year student holding a first degree. A chapter of the honorary legal fraternity of Theta Kappa Nu, which holds the place in law which Phi Beta Kappa holds to arts and letters, has been established, and the stimulus of the honor of election to this society and the possibility of securing a scholarship will undoubtedly promote still further interest in scholarly attainment.

NEEDS OF THE SCHOOL

Of the material equipment of the law school, the most important feature is necessarily the library, since it fulfills the same function in legal study that the laboratory does to the natural and physical sciences. The library now contains something over 18,000 bound volumes. The expense of maintaining the library has necessarily increased with its growth, since the cost of keeping up continuations of the various sets of reports and the cost of new accessions to make the library adequate to the needs of instruction involve much larger expenditures than heretofore. The amount available for the purchase of books has not been sufficiently large to enable any considerable expansion in the library. We have had funds enough to keep up continuations and to make repairs on books, but not to expand the library as desired.

With respect to the housing of the library, the space now available is bound to prove inadequate within the next two years, and some provision must be made for additional room. It will be possible to increase the storage capacity of the rooms now in use by placing the cases now in the library nearer together, and adding new cases, and this plan is recommended as a means of temporary relief.

Further material equipment is needed in the lecture rooms of the law building. The opera chairs now in the larger lecture rooms are not suited to the present system of conducting recitations, since the student is compelled to have his book and his note-book with him in order to take part in the recitations. It also appears from examination of the present seats that they are in a very dilapidated condition, and must very soon be replaced by other furniture. It is recommended that desks similar to those now in use in one of the lecture rooms be provided in place of opera chairs.

INSTRUCTION

In the report for the preceding biennium it was suggested that the instruction of the law school be extended to embrace a more comprehensive study of public law. Courses are now offered in some phases of administrative law, but it has not been possible to present some of the courses listed, because of lack of instructors. The demand for treatment of public law is not confined to students in this school. Many inquiries come from the advanced students in other departments concerning courses of that character. As pointed out in the previous report, there is an opportunity to develop very strong courses in public law from the legal side, a field that has not been developed in western schools. The question of how far practice should be taught in the law school has been a matter of study for a considerable period by the faculty, and some experiments have been made in that line during the past two years. A careful investigation of the practice courses offered in schools, that make a feature of such work has been made. The work done in the classroom and the moot court has been actually observed, and the views of the instructors, and students as to the benefits of the work ascertained. The conclusion to be drawn seems to be that such courses are potent in their power to draw students, but that the actual results in fitting for actual practice are not in proportion to the time devoted to them by the student, or the expense necessary to their maintenance.

It cannot be doubted, however, that these courses when properly conducted do enlarge the students' knowledge of substantive law, and his appreciation of its scope and meaning, and in this lie their real value. The moot trial at best is but the shadow of a real action, and can not present the difficulties that confront the lawyer in an actual trial.

Some phases of the practice work aside from the moot trial are unquestionably of great value, and entirely practicable. For example, the student can be taught to frame the more common forms of contracts, liens, wills, etc.; the examination of abstracts of title, the preparation of the formal pleadings in the various actions. It is therefore recommended that provision be made for additional instruction to enable the development of practice work along the lines indicated.

Respectfully submitted,

H. S. RICHARDS,

Dean.

October 6, 1910.

REPORT OF THE DIRECTOR OF THE SUMMER SESSION

PRESIDENT CHARLES R. VAN HISE,
The University of Wisconsin.

SIR: I have the honor to submit my report upon the summer session for the period 1908-1910.

ATTENDANCE

It is proper to give prominence to the growth in attendance, since, in a summer session, this is a real indication of the success of the work. During the biennial period the enrollment increased somewhat over fifty per cent. In 1907 it was 744 (including 96 registered in shop, surveying, and dairy courses, omitted in the past from the summer session totals), and in 1909 it was 1128.

The composition of the student body is indicated in the table which follows. For obvious reasons the classification in the second part of the table frequently involves the enumeration of the same students more than once. The figures for 1907 are given for the purpose of comparison.

ANALYSIS OF ATTENDANCE

	1907.	1908.	1909.
Letters and Science.....	535	737	863
Engineering.....	159	227	189
Law.....	37	51	67
Dairy School.....	13	11	9
Total.....	744	1,026	1,128
Teachers.....	275	384	506*
Graduates.....	170	261	328
Undergraduates.....	224	332	386
Normal graduates.....	135	.....	.....
With bachelor's degree.....	.....	27	48
Without bachelor's degree.....	.....	150	190
Preparatory students and auditors.....	87	87	100
Wisconsin residents.....	436	652	696
States and foreign countries represented.....	41	43	50

* Apparent great increase partly due to more definite data furnished by students.

The strong position of letters and science in the university is emphasized in the figures for attendance. The decline in engineering is due, of course, to the falling off in "artisans and apprentices." The school for artisans, as such, has done its work, and other agencies, stimulated by it, are now able to meet the demand. The recognition of this fact is shown by the merging of the work of this school, since the summer session of 1908, with that of the summer session in the college of engineering.

In 1908 it was thought wise to make a beginning in offering work of college grade in the college of engineering. In 1909 this work was increased somewhat, and while it is not safe to prophesy, it seems probable that summer work in engineering at Madison will gradually develop into a vital feature of the summer session. One difficulty, of course, is the fixed nature of the work required in the different courses prescribed for students in the college of engineering. The very restricted number of electives, and the necessity of taking engineering courses in a certain order, offer barriers to a rapid growth in summer work. These barriers, however, are being surmounted.

The growth in the law school has been gratifying, due in part, of course, to the addition of another instructor in the summer session of 1909. This enabled the law school to offer work to all students of the upper years.

CHARACTER OF THE WORK

In letters and science and law the courses given have been almost exclusively regular courses or suitable parts of regular courses. Due attention has been given to courses of a pedagogical character in most of the departments appealing to high-school teachers who desire to turn their increased efficiency into their teaching, and the response has been most pleasing. To be sure, in this matter of pedagogical courses, the summer session is again following in the train of the long session, or *vice versa*.

Whatever may be the conditions in the East, in Wisconsin an overwhelming majority of the summer students desire academic credit for their work. They attend the university because they desire to secure its courses and its degrees. They are a zealous, hard-working group of men and women, and their enthusiasm and appreciation of the opportunity they enjoy in attending the university in the summer are an inspiration to the instructional force.

THE STAFF

In 1908 the instructional force consisted of 53 professors, associate professors, and assistant professors, and 37 instructors and assistants, and for 1909 the corresponding figures were 58 and 46.

As pointed out in my preceding biennial report, the policy of the summer session is to secure instructors from other institutions when the regular staff cannot meet the demand. In accordance with this practice I desire to acknowledge the efficient services of the following instructors. In 1908: Professor Ames, of Pennsylvania, in history; Mrs. Anna Garlin Spencer, of the New York School of Philanthropy, in sociology; Professor Von Klenze, of Brown, in German; Professor Whitbeck, of the New Jersey State Normal School, now a member of our regular faculty, in geology; Miss Dement, late of Teachers' College, Columbia, in art and design; Mr. Dykema, of the Ethical Culture School, New York, in music. In 1909: Mrs. Anna Garlin Spencer, in sociology; Professor Nathaniel Schmidt, of Cornell, in oriental history; Professor Wambaugh, of Harvard, in law; Professor Wicker, of Dartmouth, in political economy; Professor Fossler, of Nebraska, in German; Mr. Dykema, in music; Miss Dement, in art and design; Dr. Neumann, of the College of the City of New York, in education; Professor Whipple, of Cornell, in education; Professor Wright, of Lawrence, in Latin.

SOCIAL LIFE

The opportunities which Madison affords for pleasurable out-of-door life in the summer-time are well utilized by the summer students. On the other hand, the students come together largely as strangers to each other, and if they are to be welded together into a student body in the six weeks' session, and are to derive the social education which flows from such a fusion, the university must of necessity lend active aid. We have been most fortunate indeed, during the biennial period, in having the trained assistance of Mr. Dykema, of New York, and Mr. Bassett, of our own university, both experts in developing student activities and student leadership. On Friday evenings the students have met together in one of the university halls, for varied sorts of formal and informal amusement. In the session of 1909 Mr. Dykema organized a student chorus, meeting for one hour every Monday evening. The attendance ran as high as six hun-

dred, and the success was most notable. Mr. Dykema has a genius for utilizing music in the development of a veritable student body, and the growing *esprit* of the summer session owes much to him.

CHADBOURNE HALL

During the biennial period this, our only dormitory for women, proved inadequate to the demand for accommodations. It is to be hoped that other dormitories, long promised, may become realities.

FINANCIAL FEATURES

The cash expenditures at the close of the sessions of 1908 and 1909 were \$14,882 and \$21,820 respectively. The material growth in the cash expenditures in 1909 was due, in some measure, to the increase of the staff, noted above, and, in large measure, to two other circumstances. First, the change in the method of remuneration, which went into effect in 1909, whereby instructors receive, as cash remuneration for the summer session, two-fifteenths of their annual salary, instead of the former flat rates of \$150 for instructors, \$225 for assistant professors, and \$300 for associate professors and professors. These amounts remain as a minimum for the respective grades. The new method, commonly known as the Two-fifteenths Rule, was adopted in order that the summer session might secure the required instructors of high rank from our own regular staff. It offers special inducements to the instructors receiving the higher annual salaries—generally those who are most needed to meet the demands of the summer students. These come to Wisconsin mainly to take work under our experienced professors. The second prominent cause of the growth of cash expenditures in 1909 was the increased cost of living, which compelled many instructors to take cash instead of leave of absence. Thus, while in 1908, 29 members of the letters and science faculty took leave-of-absence remuneration, only 17 did so in 1909.

The two-fifteenths rule has worked, on the whole, successfully, although it is proper to add that it gives the instructors only a trifle more than two-thirds of the cash salary they receive for six weeks of work in the long session.

The salaries of the instructors who took leave-of-absence remuneration would have amounted, on the cash basis, in 1908, to \$7,725 and in 1909 to \$6,919.

The receipts from fees were: in 1908, \$14,552, and in 1909, \$16,538.

DURATION OF THE SESSION

There has been some desire, mainly on the part of a group of older students, for the lengthening of the summer session. However, an inquiry sent out to Wisconsin residents who attended the summer session of 1908 showed their opinion to be 2 to 1 against more than a six weeks' session. At present this session is meeting with great success, as the growth in attendance indicates. It should be understood, of course, that we could not lengthen our session and maintain its present quality, with our existing regular staff. Our best professors, engaged in research as well as instruction—precisely those who make our summer session what it is—could not well give up more than six weeks of their summer to teaching, unless they received increased leave of absence. But, if these instructors were granted increased leave of absence, then our regular staff would need to be materially increased in order that the work of the long session might not suffer. It would seem, therefore, that the lengthening of our summer session, with its present quality unimpaired, can come only when our regular staff is largely increased.

RECOMMENDATIONS

The demand for summer instruction in agriculture has been most urgent. It is a pleasure to state that in the summer session of 1910, which falls in the ensuing biennial period, this work has been undertaken on a promising scale, with a registration of 59.

The courses in art and design should be increased and developed. There is real need, and I believe real demand, for this line of work in this part of the country.

The work in manual arts urgently requires organization, with an instructor devoting his attention to the correlation of the various parts of the subject. On the engineering side our facilities are admirable.

In music various applied courses should be given, students electing these courses being required to pay special fees.

Physical training courses for special teachers of this branch should be offered. At present our summer staff is able to do

only a little of this sort of work, because of the other demands made upon them.

Swimming facilities, especially in the matter of bathing in Lake Mendota, are in need of urgent attention. It is a matter of great surprise to visitors, who have heard so much of our lake advantages, that we have no bathing establishment on the lake. It would be to the advantage of both the university and the city if joint arrangements could be made by them to erect and maintain such an establishment near the university.

Respectfully submitted,

G. C. SELLERY,

Director of the Summer Session.

October 8, 1910.

REPORT OF THE DIRECTOR OF THE GRADUATE SCHOOL

PRESIDENT CHARLES R. VAN HISE,
The University of Wisconsin.

DEAR SIR: In submitting to you herewith my report as director of the graduate school for the academic years ending June, 1909, 1910, respectively, it is my pleasant duty to note the continued development of the graduate work of the university in respect of quality as well as quantity. The material provision upon which this growth is based being furnished through the college organization of the university falls outside the scope of this report.

The marked increase in the number of graduate students attending the university, noted in my last report, has continued in even larger measure, as is shown in the following summary, which is classified with respect to the major line of work pursued by such students. While the choice of work open to graduate students is in no way limited by college boundaries there exist fairly well marked lines of cleavage following these boundaries and corresponding to these lines there are enumerated the number of graduate students with major work in letters and science, in engineering and in agriculture during the semester sessions of each academic year since the organization of a department of graduate study in 1905. The corresponding data for the summer sessions are too incomplete for similar presentation. It appears plainly from the table that while the great majority of graduate students are engaged in work growing out of the college of letters and science, growth in the graduate professional work is strongly marked and students pursuing such work constitute an increasing percentage of the entire body. The increase in the number of graduate students attending the summer sessions of the university is even more pronounced than

that shown during the semesters, there having been a three-fold increase of such students during the past six years.

ATTENDANCE OF GRADUATE STUDENTS

Year ending June.	ACADEMIC YEAR.				Summer session.	Total attendance.*
	L. & S.	Engineering.	Agriculture.	Total.		
1895.....	76	9	5	90		
1896.....	88	15	2	105		
1897.....	91	13	6	110		
1898.....	104	19	5	128		
1899.....	89	6	4	99		
1900.....	83	4	0	97	101	184
1901.....	101	7	5	113	82	183
1902.....	116	7	3	126	92	203
1903.....	112	3	4	119	105	206
1904.....	105	7	3	115	94	196
1905.....	131	10	7	148	80	218
1906.....	144	7	7	158	137	272
1907.....	160	12	8	180	146	312
1908.....	203	15	14	232	170	379
1909.....	200	26	20	246	285	512
1910.....	224	33	24	281	328	577

* Excluding names twice counted.

It is perhaps worthy of passing note that the years prior to the organization of the graduate school, in 1904, show little growth in any of the several divisions of graduate work contained in the foregoing table, while in subsequent years every such division shows an increase that may be mathematically described as uniformly accelerated growth. Should this growth be similarly continued during the next half-dozen years it will result in an attendance of graduate students too great to be adequately served by the existing instructional staff of the university even though this be increased at its normal rate of growth, and even at the present time the demand for individual attention to advanced students is proving extremely burdensome to a considerable number of professors. Without venturing upon prediction as to the probable number of graduate students in future years, it is safe to say that the most urgent need of the graduate school in the near future will be for the addition to the university faculty of experienced men capable of inspiring and guiding the large body of mature students who resort to the university for advanced study.

Another viewpoint from which to estimate quantitatively the development of the graduate work is furnished by the number of higher degrees conferred annually in course, and a summary presentation of such data is given below. During the period

covered by the table the policy of the university with respect to second degrees has been greatly changed, the single degree, master of arts, in great measure replacing the multiplicity of such degrees formerly conferred, although some of the latter are still retained in restricted use. Conforming to this practice all second degrees are here grouped in one class whose common feature is the period of study, normally one academic year, required for attainment of the degree. Contrasted with these are the doctor's degrees for whose attainment the minimum period of candidacy is three academic years.

HIGHER DEGREES CONFERRED

Year ending June.	Masters.	Per cent.	Doctors.	Per cent.
1892.....	14	.....	1	.....
1893.....	14	.....	2	.....
1894.....	11	.....	1	.....
1895.....	13	.....	3	.....
1896.....	20	.....	5	.....
1897.....	12	.....	8	.....
1898.....	19	.....	5	.....
1899.....	18	.....	6	.....
1900.....	18	10	5	3
1901.....	12	7	6	4
1902.....	23	9	11	5
1903.....	25	12	4	2
1904.....	19	10	10	5
1905.....	34	16	9	4
1906.....	39	14	9	3
1907.....	48	15	19	6
1908.....	71	18	17	4
1909.....	84	16	16	3
1910.....	110	19	18	3

Despite some fortuitous variations from year to year, such as are to be expected in statistics of this kind, the number of degrees conferred shows a fairly continuous growth, at least during the past decade. The character of this growth is, however, best shown in the column that exhibits for each year of that decade the number of degrees expressed as a fraction of the total number of graduate students in attendance, including the summer session attendance. These figures may be summarized in the statement that in each year about four per cent of the graduate students obtain the doctor's degree, there being no progressive change in this ratio, while the corresponding percentage of masters' degrees rather steadily increased from nine or ten per cent at the beginning of the decade to twice that amount at the present time. The causes producing growth in this ratio are not completely assignable, but in part it may be attributed to an increasing esteem for the degree entertained by that large

fraction of the student body who look forward to academic careers. It is also probable that the revision of the requirements for the masters's degree, noted in my last report, has served to increase the proportion of candidates for the degree by permitting to the student greater freedom in the choice of his work without impairing its substantial character. Candidacy partly *in absentia* has also contributed to the growth during the latter part of the decade.

The form of candidacy last named, i. e., through attendance upon three summer sessions together with prescribed work to be done *in absentia* during the intervening years, has been regarded ever since its introduction in 1906, as a tentative scheme, to be carefully watched and to be judged by its results. While it must still be considered as on trial the consensus of opinion among those members of the faculty who have been most closely concerned with its operation is distinctly favorable with respect to the quality of the candidates and the general effect produced upon the university. That it meets a real demand in the community is shown by the large and increasing number of candidates, whose competence and seriousness of purpose are attested by their instructors. The most serious difficulty that has developed in this connection relates to the prescribed *absentia work*, which is designed to be approximately equal in amount to that done during the three summer sessions of resident study. This work having proved to be both burdensome to the candidate and embarrassing to the departments of instruction has necessitated a careful study of the conditions under which it may be most advantageously conducted. While definite conclusions in the matter have not yet been reached there has been established a system of intermediate examinations upon the *absentia work*, and current practice tends toward prolonging its period, without increasing the amount, and toward requiring a thesis in its later stages. A considerable demand exists among summer session candidates for the master's degree, for credit toward this degree to be extended to work done in other institutions. While in some way this demand appears legitimate and consonant with general university practice, it is deemed expedient to allow such credits to apply only as *absentia work*, which shall not be permitted to diminish the three summer sessions prescribed as a minimum period of residence at this university.

The conditions of candidacy for the doctor's degree have undergone one notable change during the period covered by this

report, through the introduction of a preliminary examination, or equivalent test, prescribed for all candidates and normally to be held about a year before final examination for the degree. It is the purpose of this test to insure the candidate's breadth of attainment and ripeness for the intensive work that should especially characterize the last year of candidacy for the doctorate. A further change of some consequence in the conditions of candidacy for this degree relates to the publication of theses and provides a substantial reduction in the number of copies to be filed in the university library when such theses are published through the ordinary channels of the book trade, under conditions approved by the director of the graduate school.

By far the most considerable change affecting the graduate school during the past two years is the action of the university faculty, in May, 1910, abolishing the graduate committee, which has for many years been the immediate source of authority in the administration of the school. This is to be replaced by a small committee advisory to the director and a large deliberative body composed of those members of the instructional staff who have immediate relations with graduate students. No power is vested in the body last named save that of recommendation to the university faculty. As this action becomes effective only at the opening of the next academic year its consequences do not fall within the scope of this report but it may be noted that the reorganization of the graduate school thus effected is regarded by its advocates as a preliminary step toward the establishment of a graduate faculty with jurisdiction comparable with that of the college faculties.

In the execution of its professed purpose to serve the needs of men and women of college training who seek a larger acquaintance with the scholarship and scholarly research of the world than can be obtained through the current undergraduate courses, the graduate school in increasing measure gives its training to those who look forward to professional and industrial careers. Its major service, however, is now rendered and doubtless will long continue to be rendered to students who are seeking to qualify themselves for the higher positions in the work of education. The graduate school is largely a professional college for the teacher that is to be and as such stands in immediate relation to the future of education in America, to its ideals, at least, and in some measure to its methods. While the opportunities thus opened to it and the responsibilities thus incurred with respect to the

morale of the future teaching body have not been ignored they have not found large recognition in any formal or systematic way and it is perhaps wise that they should not be to any considerable extent formalized. These obligations are nevertheless real and serious, worthy of equal consideration with the technique of scholarship or capacity for research, and with reference to these I repeat the recommendation made above, that the most urgent and abiding need of the graduate school is for additional men of character, attainment and reputation adequate to attract, influence and inspire the future leaders of academic training in America.

Very respectfully,

GEO. C. COMSTOCK,

Director.

August 10, 1910.

REPORT OF THE DEPARTMENT OF PHYSICAL TRAINING

PRESIDENT CHARLES R. VAN HISE,
The University of Wisconsin.

DEAR SIR: I have the honor to submit the following report for the department of physical training. Part I, concerning the work of the years 1908-1909 and 1909-1910, has been prepared by Dr. J. C. Elsom, and reviews the work of the biennium just closed. Part II considers the needs of the department from the standpoint of the new plan of work, the time and space requirements, the sanitary conditions, and the staff. Necessarily this is incomplete, due to the writer's short acquaintance with the situation and a supplemental report will be made at a later date, dealing with staff requirements as they may be indicated by the season's developments.

PART I

During the past two years the work in the department of physical training has grown proportionately with the increase in the number of students. The requirement of two hours a week in some sort of physical training has brought to the department all of the freshmen and sophomores, in addition to a large number of upper classmen. In order to make the work as effective as possible, and to relieve any possible irksomeness connected with the required exercise, a system of electives has been introduced, thirteen forms of physical training being given, from which each student may make his selection. Either indoor or outdoor work may be elected by the student, and credit given for any of the following forms of physical training: Crew work, basketball, swimming, track work, tumbling, advanced apparatus work, cross country running, football, baseball, indoor baseball, fencing, gymnastic dancing (spring 1910.)

REQUIRED WORK

There were registered at the opening of the second semester, 1910, for required work, 778 freshmen, and 681 sophomores, a total of 1,459 men. This is the largest number in the history of the department. Each of these men is required to report twice weekly for his physical training; so that there was a total in the weekly classes, in all branches of physical activity, of 2918.

ELECTIVE EXERCISES

The number of men working in the various forms of physical training varies from time to time, on account of the dropping of certain men from one sport, and their participation in another. In the spring of 1910 the registration was as follows:

Crews—Freshmen 117, Varsity 30, total.....	147
Basketball—Freshmen 90, Sophomores 18, total.....	108
Swimming—(All classes)	133
Track Work—Freshmen 50, Sophomores 74, Upper Classmen, 60, total	190
Tumbling	20
Advanced Apparatus Work—Freshmen and Sophomores.....	25
Cross Country (in Fall) and Running (all classes).....	303
Football in Fall)—all classes.....	101
Baseball—Upper Classmen 54, Freshmen 35.....	89
Indoor Baseball—Freshmen and Sophomores.....	107
Fencing—Freshmen and Sophomores.....	50
Special (asthenics and physically deficient).....	60
Gymnastic Dancing (Sophomores).....	65
<hr/>	
Total number of Freshmen and Sophomores in above classes	1,061
Regular gymnasium classes.....	398
<hr/>	
	1,459

No mention is made in the above figures as to the use of the gymnasium by upper classmen, large numbers of whom were in daily attendance, but exact figures cannot be given.

PHYSICAL EXAMINATIONS

The medical examiner made 1140 anthropometric and medical examinations, and discovered many cases of spinal curvature and other physical inequalities, defective vision, and various cases of abnormalities of heart and lungs, concerning which a previous report has been issued. A special class of 60 men, unable from various physical defects to take the work of the regular classes, were under his direction, and in most cases decided

improvement was noted. To each student examined, in all classes, a handbook with special prescription of exercise was given, and the student had constantly before him a result of his own physical condition and measurements, as compared with the measurements of 8000 college students. The medical examiner also gave 25 lectures to the freshmen on matters of personal and general hygiene, and the physiology of exercise.

GYMNASIUM OPEN EVENINGS

For the first time, the gymnasium was open each evening during the week, except Sundays, and was used by many men who were unable to take their exercise at other hours. An estimated average of 85 was in attendance. 150 short-course students made use of the gymnasium, with regularity, most of them coming in the evening.

The shower baths and swimming pool were in constant use, and the largest number of men took swimming in the history of the department.

INTER-CLASS ATHLETICS

Definite encouragement has been given during the past two years to inter-class games of various kinds, large numbers of men participating in indoor baseball in the fall and winter, and in baseball during the spring. Inter-class basketball has interested many, and during the winter of 1909-10 inter-class swimming meets were held. Class crews were organized in 1908-09 and 1909-10, 150 men receiving training in the use of the shell and rowing machines. Interclass indoor relay meets brought out 200 men for participation in running.

INTER-COLLEGIATE ATHLETICS

Inter-collegiate contests in football, baseball, basketball, track, gymnastics, and aquatics have been held with a fair degree of success. It may be noted that the class of athletes who have represented the university during the past two years has noticeably improved as regards scholarship and amateur standing. The athletic authorities have been careful to see that the men on athletic teams have been above reproach in these particulars.

PART II

NEEDS—IMMEDIATE AND PROSPECTIVE

It is a truism today that the individual requires a certain amount of vigorous muscular activity, proportioned to his physical makeup and the nature of his occupation, in order that he may be in the most efficient physical condition. It is also well known that physical exercise of a recreational type is of fundamental importance to the man or woman whose chief activities are mental. The efficiency of the mind is absolutely dependent upon a proper proportion of muscular activity in the nature of play. This is as true of the youth and the adult as of the child. Further, we know that aside from the ethical and moral values involved in the normal practice of games and sports per se, these activities are the only substitutes and antidotes for many forms of physically and mentally demoralizing practices that tend to attract the individual denied an opportunity of normal activity in his leisure time.

Play is the *sine qua non* of every one, no matter what his occupation, if efficiency of body and mind is to be conserved. This is especially true of the student, irrespective of his previous habits of life or his present course of university work. These things being so, it follows that if the university desires the highest efficiency in its students and that its products shall be a body of well-trained men and women, *fit* physically and morally as well as mentally, there must be adequate provision in the matter of material facilities and instructional and administrative staff, together with a comprehensive scheme of promotion, instructions, coaching, training and efficiency tests, organized with reference to the real needs and fundamental interests of all the students, and, taking into consideration:

- (a) The required exercise of freshmen and sophomores;
- (b) The voluntary exercise of students and faculty;
- (c) Inter and Intra collegiate sports;
- (d) Professional training of
 1. Directors and instructors of physical training.
 2. Playground leaders and instructors,
 3. School teachers,
 4. Social center leaders and directors,
 5. Coaches; and

- (e) Extension of physical training and play and facilities for the same, by means of
1. Lectures throughout the state,
 2. Training students with reference to their service in their home communities in the promotion and establishment of the university ideas and ideals as exemplified in this department.

At this time the material facilities and the instructional and administrative staff of this department are entirely inadequate to provide for even the first and primary service of this department—the required exercise of freshmen and sophomores, to say nothing of the equally important voluntary exercise of upper classmen and faculty. The only feature of our equipment at this time that is reasonably adequate for its purpose is the gymnasium for women, which serves admirably the needs of this class of students so far as that can be done *indoors*.

The men's gymnasium was built seventeen years ago for the joint use of the military and physical training departments. It has now become inadequate for either. The military exercises must be conducted at the time when large bodies of students are free from other duties regularly. The drill hall is now too small for the numbers enrolled, and their use of the same hall in which large classes in gymnastics must be conducted renders it impossible to equip the hall properly for military use. Further, the hour of military drill is one of the most desirable periods of the day for physical training, and such use operates, therefore, as a most serious inconvenience in arranging the physical training schedule. In addition to this, the use of the gymnasium hall by men wearing ordinary street-shoes and carrying in dust and dirt operates as a serious menace to the health of the students taking physical exercise, except under the most stringent precautionary measures as to cleaning, and the present building does not permit adequate measures being taken in this regard. Were the military drill removed from the present building the situation would be somewhat improved for the department of physical training.

Physical training is required of all freshmen and sophomores, approximately 1500 men in 1909-10. To these this year will be added 500 short-course agricultural students who will be accommodated temporarily in the stock pavilion. The present gymnasium building has 1150 lockers. The number who *must* be

accommodated because of required work necessitates the doubling up of 700 students. This is a most dangerous, unsanitary situation, as it paves the way for the easy communication of disease, because of the contact for so many hours, of clothing worn by different persons. Another feature is the location of 300 lockers in a third tier that must be reached by climbing ladders. The users of these lockers must sit or stand on suspended benches while changing their clothing. This is a great inconvenience, dangerous, and exceedingly wasteful of time. When it is considered that the maximum actual time the student can get in the gymnasium at his class period after a minimum allowance for changing clothes twice and bathing, is only thirty-five minutes, it will be realized that any inconvenience in facilities causes an unwarranted reduction of this time, already too short. Not less than 2000 lockers are needed at this date for the present needs of required physical training alone. With a system of exercise attractive to upper classmen and faculty, the number needed would be at least 3000. In five years that number will probably be inadequate for the students *required* to take physical training.

Seven hundred forty additional lockers will be installed in the present varsity team room as soon as the improvements now being made at Camp Randall are completed. This will afford temporary relief for this year, giving a total of 1890 lockers.

By the fall of 1911 we should have not less than 1500 more lockers to provide for faculty, upper classmen and the natural increase of freshmen and sophomores. Thereafter there should be provision for an annual increase of 300 or more.

So long as the military department occupies its present quarters no further material increase of locker facilities can be made within this building. An extension on the east of the gymnasium could easily be made to accommodate the necessary 1500 needed by September, 1911, and provide for the necessary annual increase, besides necessary office room.

If the military department is removed at an early date to Camp Randall, as is contemplated, no outside extension will be needed within one or two years. The present gun room and the adjoining corridor would provide space for about 1500 lockers, by the construction of a mezzanine story. Special ventilation facilities would be necessary in such case.

At the time the building was designed the dominant idea of physical training was gymnastic, and the handling of men in

large numbers was the custom. The building was fairly well adapted to that idea and the numbers then in the university. Since that day, the methods of physical training have radically changed. It is recognized that the hygienic aims of exercise can be successfully accomplished in most respects through forms of activity that are more natural, more interesting, and of greater value than gymnastics, and particularly in those forms that the individual finds it convenient and interesting and valuable to carry on after leaving the university. Nearly all recent structures erected by educational institutions have been designed in harmony with this idea. This is notably the case at Dartmouth College and Northwestern University, and will be most brilliantly illustrated in the new recreation building planned for Harvard University. It is exceedingly desirable that the individual acquire the "habit of exercise" against the day when business and the office will tend to divert him more and more from out of doors and an active motor life. The possibilities of this in the present building are exceedingly limited and for most desirable forms of exercise are entirely absent.

The present conception of the province of physical training arises very largely from the recognition of its social import. That is to say—the largest values of physical training are secured from those forms of exercise that are primarily social in nature, such as those that involve the idea of "the team," baseball, basketball, and the like, and those that involve antagonistic relationships between individuals, such as boxing, wrestling, and fencing. These activities require or induce the frequent assemblage of the participants in smaller or large groups and tend to the establishment of desirable relationships subsequent to their performance. Facilities for such relationships that will conserve their best features and permit their cultivation, are of most value when in immediate contiguity to the place of exercise. This is one of the notable features of the new Northwestern University gymnasium and has been incorporated to a large extent in our own Lathrop Hall—the women's gymnasium building. The men's building is absolutely without facilities of this nature.

A feature of a course of physical education that is receiving increasing recognition and emphasis is the matter of personal and public hygiene, treated with reference to the individual's own daily conduct. With this there should be thorough treatment of the elements and principles involved in the various

forms of exercise in which the student participates. These involve lectures, recitations, and demonstrations for which no facilities exist in the present building, except as short talks may be given to classes on the gymnastic floor. When the needs in this regard in connection with courses for professional training in physical education are considered, it will be seen that there are absolutely no possibilities in this direction, except in the women's building.

A work involving many students necessarily requires a considerable staff, and for these there should be adequate and commodious offices, dressing rooms, and toilet facilities, centrally located, easy of access but readily secure from intrusion, isolated or insulated from the noise incident to the activities conducted, but commanding the entrances and exits ordinarily used. In no respect are these requirements met by the present facilities.

Teaching, as does this department, the ideals of efficiency as related to right habits and the observance of the laws of hygiene, it should exemplify those ideals in every possible way in its own conduct. This is impossible in the present building, with its rough brick walls and its loose-jointed woodwork warped and racked and bent.

At this date the present building is absolutely inadequate in every respect to accommodate the department conducted on the lines as it was originally designed, and is in no way adapted to the numbers of students now in the university, or for the conduct of a curriculum organized with the idea of interesting a larger proportion of its present student body, to say nothing of taking care of the annual increase. Inasmuch as the work of this department must be conducted indoors for at least two-thirds of the university year, it will be appreciated that this is a very serious handicap.

Moreover, it must be remembered that any recommendations made herein for the improvement of this building have in view solely the accommodation of the students during the time that must expire before a new building can be supplied and are in no sense to be considered as indicating the possibility of any satisfactory permanent improvements. In fact, the sanitary condition of the building will be the worse for the larger numbers that are to use it, unless a larger expenditure, approximating thirty to fifty thousand dollars is made, and this would not provide adequately for longer than 1915.

If there is one thing more universally accepted than another

in regard to physical training it is that it should be taken out of doors when at all possible. In respect to possibilities for outdoor exercise and recreation, the university is almost ideally situated with its combination of lake and shore and field. Yet the facilities we have have not been developed with respect to their use by the student body as a whole. As far as it appears at present the development of the university's outdoor facilities has been with reference to inter-collegiate sports only.

As already indicated, it is the purpose of the department to make the largest possible use of the natural and interesting forms of exercise in the courses required of freshmen and sophomores. These include among outdoor sports and games the following: baseball, football (college, rugby and soccer), lacrosse, track and field including cross country running, tennis, handball, skating, ice hockey, and aquatics, including swimming, rowing (ordinary rowboat as well as shell), canoeing and water polo. It is intended that as rapidly as possible adequate courses shall be conducted in all these games, and that the student shall not only play them but shall receive such training that he shall know them—their principles, their values, their rules, and shall become a promoter of them wherever he goes.

We have at Camp Randall, ostensibly purchased as a play field, fifty acres. Less than ten of this is improved, of which about six is inclosed.

The development of this space provides an opportunity for accommodating

2 games of football.....	44 men,
or 2 games of baseball.....	36 men,
9 games of tennis.....	36 men.

a maximum of 80. When football or baseball is being played the track cannot be used. For practice purposes—not playing games—a much larger number can be accommodated, possibly two to four hundred.

For the women there is absolutely no provision out doors except seven tennis courts. These will accommodate 28 students at one time. Their need is fully as great as that of the men, if not greater.

Outdoor exercise requires the same equipment of lockers and baths that indoor exercise requires. Except for 150 lockers and 15 shower baths being installed at this date by the athletic council for the benefit of the inter-collegiate teams, there is ab-

solutely no provision of this nature. The athletic field being over ten blocks from the gymnasium, the use of these facilities at the gymnasium by those using the athletic field is out of the question except at great risk to health and much loss of time if done after class hours, and is entirely impossible during class hours.

With respect to aquatics, the only facilities for rowing are in an over-crowded and dilapidated condition, and there is no provision for other than shell rowing. The present plans of the department contemplate the instruction of every student in swimming (now required of all), methods of rescuing the drowning, methods of resuscitation, various aquatic games, rowing in ordinary row boats—the only kind the student is likely to have any experience with after leaving the university—shell rowing and canoeing. The annual loss of life in connection with swimming and rowing is doubtless greater than from all other sports combined, and no student should be permitted to graduate without acquiring a fair degree of proficiency in both swimming and rowing.

Inasmuch as the lower campus is at present the most available place and most largely used ground for student sports it is highly desirable that its present dangerous condition both for spectators and players should be abated.

In the first place, the ground itself is most dangerous to anyone playing upon it, the surface being very rough, having numerous small channels worn in it by the rain, and the soil containing a great amount of large-sized and rough pebbles that might easily be the cause of a fatal accident. Moreover, the present condition is most unsightly. It is earnestly recommended that this surface be removed, carefully graded, and a surface consisting of a layer of cinders covered with sand and torpedo gravel be laid and thoroughly rolled. Such a surface could be played upon even in the rain and would dry immediately if properly drained. It would afford also a desirable surface for the evolutions of the university regiment, which is not the case with the present surface. It would also do away with the unsightly paths and mud holes which now disfigure this portion of the campus.

In the second place, when ball games are played upon this ground the danger to the passerby is very great, even more so than to the spectator. It is reported that upon occasion base-

balls have been batted or thrown through the windows of passing street cars. A ball might easily be the cause of death to people passing on either State or Langdon, and I am quite sure would be a sufficient cause for legal action for damages. It is recommended, therefore, that so long as baseballs are permitted to be used upon this space that it be enclosed on the State street and Langdon street sides with a ten-foot steel wire netting, supported on an appropriate framework made of steel pipe. This could be made in such a manner as not to be objectionable. Openings at certain intervals would maintain the present freedom of motion across the campus. Vines planted along the fence would take from it any undesirable appearance and add to the beauty of its surroundings. The alternative to this, for the purpose of safety, is the prohibition of the use of baseballs but it does not seem to me that this would be wise. It is imperative, however, that the innocent passerby should be protected.

We find upon careful study that the facilities for physical training are inadequate to the last degree in respect to gymnastics, athletics, and aquatics.

The gymnasium is not susceptible of improvement. The athletic field, if entirely enclosed, graded, and developed, would provide facilities for about one-half the men. It could offer no adequate facilities for the women in such case. However, until it is settled as to what is to be the final location of the athletic field, nothing of a permanent nature should be done at Camp Randall; but until such decision is reached, and so long as the camp is the only available space, all the ground within the fences should be properly leveled, together with the space south of the enclosure, in order to make possible an increase in football and baseball fields. The number of tennis courts should be increased to twenty for the men and fifteen for the women. These latter should be located wherever sufficient space affords, close to the women's gymnasium or in the vicinity of the women's residences. There should also be erected a temporary locker and bath building in extension of the present facilities under the grandstand or immediately adjacent thereto, with lockers for at least two thousand students. Steel lockers of a permanent type installed here would later be available in a new gymnasium building without loss. In case the military build-

ing is placed upon Camp Randall, it would afford ample facilities for baths and lockers as long as Camp Randall is used for athletic purposes.

It is earnestly recommended that there be outlined a comprehensive study and survey for the purpose of determining the best location for an adequate physical training and recreational equipment that shall combine the various features herein discussed—gymnasium, athletic fields, and boat houses—in one modern plant; that an investigation and study of existing plants in other schools, colleges, and universities be made; that the architect of the university be directed to prepare plans looking to the erection of a plant adequate to the needs of the university and providing for future normal growth, and that whatever amount of the biennial appropriation may be secured for this purpose, be devoted to the erection of such section of the plant as will provide the greatest relief in the shortest possible time.

With respect to the additional staff necessary to conduct the work, there has been authorized the appointment as soon as the right man can be secured, of an athletic manager to have charge of the business matters of all inter-collegiate athletics and the various intra-college athletic tournaments and otherwise as instructed by the director of the department. There has also been authorized an additional assistant professor of physical training, to be filled at the beginning of the second semester, in February, 1911. This teacher is to have charge of the details of instruction in the required courses, to have charge of the gymnasium plant, and to cooperate in the professional courses mentioned hereafter, and otherwise as instructed by the director of the department.

It is recommended that there be authorized the appointment at the beginning of the next university year, September, 1911, of two additional instructors versed in outdoor sports and aquatics; and that it be the policy hereafter, as far as possible, to employ instructors for their full time only, except in the case of student assistants.

It is further recommended that there be authorized the establishment of professional courses in physical training and play, and that the introduction of these courses be at the time of the summer school of 1911; that special promotion and publicity, of such during the winter and spring be authorized; that a non-

resident professorship of physical education be established, the incumbent thereof to be appointed as soon as he can be secured, and to assist the director in the organization of the courses and to deliver such lecture courses as may be found desirable, and that other members of the staff of the department of physical training be used in connection with the giving of such professional courses as the director of the department may determine.

SUMMARY OF RECOMMENDATIONS

1. *Gymnasium*: Extension of locker and office space by temporary annex east of gymnasium in case military department not removed within a year.

2. *Lower Campus*: a. New surface to render safe for players.

b. Wire fence 10'—0" high so long as baseball is permitted.

3. *Camp Randall*: a. Level all ground within enclosure.

b. Level available ground south of grandstand and render surface safe by removal of stones and rock.

c. Construct additional tennis courts on space made available by (a) and (b), 10 for men and 7 for women.

d. Preparation of ground and construction of necessary goals, backstops, etc., for baseball and football outside the enclosure.

e. Dressing and locker room in annex to grandstand with 2,000 steel lockers and thirty shower baths and proportionate toilet facilities, or same facilities in military building if erected within a year. If military building is delayed, facilities indicated to be erected in temporary manner in spring of 1911 and removed to military building later.

4. *Staff*: a. At least two additional instructors versed in athletics and aquatics—to be appointed before the beginning of the next college year, 1911–12. This recommendation subject to later amendment.

b. That except in the case of student assistants it be the policy hereafter as far as possible to employ no one except for his full time, and that as soon as possible all positions be filled with men and women having had a college training or its equivalent.

c. Non-resident lecturer on physical education with rank of professor, to lecture in professional courses, beginning with summer session of 1911, to be appointed now to assist the director in organizing such courses.

5. *Professional Courses*: a. The establishment of professional courses in physical training and play for

- (1) Directors and instructors of physical training.
- (2) Playground leaders and instructors.
- (3) School teachers (reorganization of present course).
- (4) Social center leaders and directors.
- (5) Coaches and officials.

b. Inauguration of new courses in summer session of 1911.

c. Thorough promotion and publicity during current year (1910-11) by means of special circulars and advertising.

6. *New Plant*: a. Adoption of general policy with respect to future development of methods, plant, and staff.

b. Study and survey to determine permanent location of an adequate indoor and outdoor plant.

c. Study of existing school and college plans and methods.

d. The architect of the university to prepare plans embodying the ideas of the department and adequate to the growing needs of the university, as a basis for study and investigation.

Respectfully submitted,

GEO. W. EHLER,

Director Dept. Physical Training.

October 1, 1910.

REPORT ON PHYSICAL TRAINING FOR WOMEN

PRESIDENT CHARLES R. VAN HISE,
The University of Wisconsin.

DEAR SIR:—The years included in this report were necessarily years of waiting and transition and planning for the greater work in the new gymnasium.

Our aim was to keep up an active interest in the work, without attempting work along new lines. This purpose was accomplished, although the waiting time was prolonged far beyond our expectation.

1908–1909

In the fall of 1908, with an entering class of 200 and an unusually large sophomore class returning, it was thought best, on account of the crowded conditions in the small gymnasium, to allow the sophomores to postpone their work until their junior year. About 100 availed themselves of this privilege. This reduction enabled us to carry on the work with greater ease and far more comfort for the women.

No new lines of work were attempted with the exception of allowing the sophomores to elect athletics or fancy dancing for the year in the place of regular class work.

For the first time a fourth year's course was arranged, the class continuing throughout the year.

The corrective work, while necessarily limited, was carried on with more definite results than ever. The number given special work was 50.

FETE DAY

The women's fete day dances, which had been given the year before with success, were repeated and made an enthusiastic ending to our last year of work in the old gymnasium in which we had been for fourteen years.

1909-1910

The plans for the enlargement of the department made possible by our new gymnasium, included:

For the department faculty, a woman physician who would examine the women, oversee the measuring, and carry on the corrective work.

For the required work, four periods a week of class exercise, where only two had been required before, placing the requirements for women on the same basis as that for men.

In the fall of 1909 we were confronted with an unfinished gymnasium and the old one turned into a dormitory; even our office had become a students' room. And our problem was how to carry on physical work for 600 women which would rightfully give them credit. Finally our old offices being restored to us, we began the work of the semester, which consisted of sports, hockey, basket ball, tennis, track events, cross country walking, and for all not electing sports, four periods of walking a week. One lecture a week was required of all. The lectures were held in the chemistry lecture room.

When it was no longer possible to carry on outdoor sports, walking was required of all and the lectures were continued. At the end of the first semester we had demonstrated that we could carry on a physical work without a gymnasium and feel that the women had earned the credit given them.

Six hundred women had been examined, and three hundred measured. About two hundred women came to the physician in her consultation hours.

The habit of walking was formed, outdoor life was much increased for many who had never cared for it. Some increased the length of the walk until they walked around Lake Mendota easily.

The instructors were kept busy in their spare time with working out statistics. Some of the most interesting results of this statistical work can be obtained at any time.

Within two weeks of the opening of the second semester, the long-looked-for day arrived, when we moved into our beautiful new gymnasium and began regular work, although under difficulties.

Seven freshman, six sophomore, two junior and one senior, classes were formed, making a total of 46 class periods a week.

Eighty were registered for corrective work. As no more than six can profitably be in a class, twelve classes were formed, meeting on an average three times a week. Thus the total teaching periods were 36. As it was impossible for the physician to do all of this teaching besides her physician's work, which was increasing daily, an assistant was called to help in this department.

The demand for swimming was very great and as the classes must be limited to twelve to secure the best results, class privileges were limited to seniors and sophomores. There were eight classes a day, making a total of 32 classes a week.

The swimming pool was open for general swimming two evenings a week.

The bowling alleys were not opened this semester.

The course in theory of physical training was given this year as a two-fifths. It was repeated each semester. Three of the women have gone out to teach physical training and four were retained here to help in this department and go on with their training.

The Fete Day dances again ended our year's work.

Fully eight hundred were registered in the department in the second semester, and 116 classes a week were held.

While a great deal of work was carried on in this semester the time was very short and the most that was accomplished was the learning how to use the gymnasium. But that will enable us to begin the fall of 1910 free to enter into the fullest opportunities of growth, both in the quality of work and in the number reached. Our aim is to give the wisest training to those in our classes, to draw every woman into some form of regular exercise during her last two years, and to impress the strongest health ideals upon the lives of all the women.

Respectfully submitted,

ABBY SHAW MAYHEW.

REPORT OF THE COMMANDANT

PRESIDENT CHARLES R. VAN HISE,
The University of Wisconsin.

DEAR SIR: Pursuant to instructions, I have the honor to submit the following report on the military department of this university, covering the period from June 30, 1908, to June 30, 1910:

NUMBERS

The following table shows the number of students registered in the military department at the time of the annual inspections by the war department in May, 1909, and May, 1910:

Disposition.	1909.	1910.
Drilling	699	738
Excused, Working Way	108	133
Excused, Physical Disability	33	49
Excused, Athletics	50	73
Excused, Aliens	7	12
Excused, Previous Drill	28	23
Excused, Adult Special	32	41
Deferred	100	95
Total	1,057	1,164

The number reported as "drilling" by no means indicates the total number who have received military training during the year. The size of the cadet corps reaches a maximum just before the examinations at the end of the first semester. In January, 1910, there were 986 students actually drilling. Many were dropped at the examinations, and others were excused on account of the spring athletics, so that at the annual inspection in May the corps reached its minimum, as shown in the above table.

ORGANIZATION

The present organization of the university cadet corps is as follows:

- 1 infantry regiment of 3 battalions of 3 companies.
- 1 hospital corps detachment.
- 1 target detachment.

The regiment has been increased since the last report by the addition of one company, and a change has been made from a two to a three battalion organization. Small cadet companies, not more than sixty men each, can attain much better results than larger ones, as they give a larger proportion of officers and non-commissioned officers to the organization, and the company officers can give more thorough instruction to 50 or 60 men than is possible with 80 or 90. It has not been considered wise, however, to increase the number of companies faster than they could be properly officered. It is believed that sufficient well instructed cadets are now available to officer a full-sized regiment of 12 companies, and this is the organization which, with the approval of the president, will be adopted in the approaching semester. Our regiment will then have the same organization as that prescribed for the infantry of the United States army.

The hospital corps detachment consists of about 60 selected sophomores, organized as a company with officers and non-commissioned officers, who work under the direction of Dr. Elsom.

The target detachment consists of certain cadet officers and non-commissioned officers appointed for the year, and about 60 privates, sophomores, who are transferred from the companies from time to time for about six weeks of instruction in sighting, position and aiming, and gallery practice. It is intended that all sophomores will take this course. Those making the best records are assigned to the final target detachment in May, and allowed to shoot on the range.

WORK OF THE DEPARTMENT

The entire work of the military department is designed to turn out students who are capable of acting as company officers of volunteer infantry. It is not considered wise or desirable to attempt instruction in artillery drill or signalling; these branches have become highly technical in their nature, and in the time allotted, more harm than good would result in intro-

ducing them. The commandant is quite in accord with General Order 231, war department, 1909, which states: "The main object will be * * * to qualify students * * * to be company officers of infantry, volunteer or militia."

In undertaking to give our students sufficient instruction to prepare them as volunteer officers in time of need, it is realized that the very best we can do in the time and with the facilities at hand falls far short of what should be done by the nation in preparation for possible war. What we can do is to give these students a knowledge of organization, infantry drill in close and extended order, a few lectures on guard duty, outposts, patrols, etc., and a limited amount of instruction in rifle practice. What we leave undone includes all practical work in marches, camps, covering detachments, and combat, and the whole subjects of field engineering, military law, sanitation, strategy, logistics, etc. In view of the fact that our nation will depend so largely on hastily raised volunteer armies in case of war with a first class power (the regular army and national guard being only a fraction of the force required in such a war), even the small amount of training we are able to give is considered by the war department of great importance.

While from the point of view of the war department the training for the defense of the country is paramount, it is also the aim of the commandant to make the work of direct value to individuals. Of the benefits accruing to students who do this work with enthusiasm, three stand out prominently:

- (a) Erect, soldierly bearing.
- (b) Appreciation of the value of discipline and respect for authority.
- (c) Experience in the handling of men.

These results are attained in the regular routine drills. They would be more noticeable if at indoor drills we had fewer men on the floor at one time, and if we were not practically confined to the lower campus for outdoor work. These things can be accomplished only by the separation of the military from the athletic department, moving the military to Camp Randall.

Interest in the work is stimulated by frequent competitions between individuals, squads, and companies during the year, and the final individual and company competition at the end of the second semester. A board of three army officers is secured to judge the final competitions, and gold and bronze

medals are awarded the winners by the board of regents. These competitions, instituted by Colonel Curtis, serve their purpose well.

The hospital corps detachment, under Dr. Elsom, is given a course of eight lectures, followed by practical work in bandaging, resuscitation, carrying patients by hand and by litter, etc. This work always receives high commendation from the U. S. army inspector, and is of great value to the members of the detachment.

The work of the target detachment up to about May 1 consists of sighting, position and aiming drills, and gallery practice. From about May 1 until the end of the semester, it consists of shooting on the range.

During the present year the use of the rifle range, 200 to 1,000 yards, constructed by Company G, Wisconsin National Guard, near Verona, has been secured for our students. When permission to use this range was assured, the commandant took steps to organize a students' rifle club, to become affiliated with the National Rifle Association of America. Such a club was organized in April, and has now 152 members, including, besides regular members of the target detachment, many students no longer connected with the military department. Targets and ammunition are furnished by the war department without cost to the university or the Rifle Club. Shooting was held on Saturdays from April 15 to June 11, at 200, 300, and 500 yards, many members making excellent scores.

BAND

The university band, under the leadership of Captain Charles A. Mann, has shown decided improvement, and it is believed to be now one of the best bands in the state. The present system of payments of \$15 each semester to those band men who, having completed the required two years of drill, elect to continue their band work, produces excellent results. Great credit is due Captain Mann, not only for developing a student band which can make good music, but for the ability and tact shown in making this band one of the most popular organizations in the university.

UNIFORM

In 1908 a change was made in the cadet uniform, from the old style U. S. army to West Point cadet style, but dark blue instead of gray. After a two years' test, the new uniform has been found very satisfactory, and a great improvement over the old one. The uniforms are procured by students from the University Co-operative Association, for about \$14 complete. They are furnished to the Co-op by the M. C. Lilley and Company of Columbus, Ohio, and the fit is guaranteed.

ASSISTANT COMMANDANT

It is the desire of the war department that at institutions where an army officer is detailed, a retired non-commissioned officer of the army shall be employed as assistant to the commandant. Upon my representation to the board of regents of the necessity therefor, authority for the employment of such a non-commissioned officer was granted in 1908, and in October of that year Battalion Sergeant Major W. G. Atkins, U. S. army, retired, began work at the university. His services have been and are of inestimable value in the military department. He does a large part of the clerical work of the office, with the occasional help of students he keeps all arms and equipments in excellent condition, and he also acts as instructor at various drills and rifle practice. Should the commandant be called away by the war department on account of war or other cause, the work of the department could continue under his direction without interruption until a new commandant could be secured.

INDUCEMENTS TO UPPERCLASSMEN

The commandant firmly believes that the best results will be achieved in the cadet corps only when all cadet officers are upperclassmen, and a strong effort is constantly being made along this line. Prior to 1908, all lieutenants were sophomores, taking the military work because required. Upon representation by the commandant, the board of regents has since authorized the refundment of dues, \$10 per semester, to a limited number of upper classmen who, having completed the required two years of drill, elect to continue the work, and are appointed to commissioned grades. The faculty allows one unit hour credit as

elective for each semester of work beyond the required two years. With these inducements good progress has been made, and it is believed that in the approaching semester a large proportion of our cadet lieutenants will be upperclassmen.

ATTITUDE OF STUDENTS

One of the most discouraging features encountered by the present commandant when he entered upon his duties in 1907 was the apathy, or rather the positive dislike, shown by the greater part of the student body toward the military department. It is hoped and believed that there has been decided improvement along this line. As an indication of such improvement, the following table showing the number of students, candidates for lieutenantcies, is submitted:

Year.	Candidates.	
1907 (Fall).....	35	Practical test.
1908 (Spring).....	71	Practical and written examination.
1909 (Spring).....	95	Practical and written examination.
1910 (Spring).....	124	Practical and written examination.

An excellent spirit has been shown also in the cadet companies. Competition has been keen for the sergeancies and corporalcies, and captains have found no difficulty in filling these positions with their best men.

ARMORY

All reasonable requests of the commandant have been cheerfully granted by the president, the board of regents, and the faculty, except that for adequate drill hall facilities. The difficulties in the way of providing a new drill hall are well understood, but it is hoped that strenuous efforts will be made to secure this greatly needed building in the near future. The crowded conditions in the present building, due to its combined use as auditorium, gymnasium, and armory, have prevented the attainment of the best results in the military department for several years. A crisis has very nearly been reached where it will be necessary to cut down the requirements in the military or the athletic department, unless something is done. The arguments in favor of the separation of these two departments have been presented many times. The strongest one, perhaps,

comes from the medical and sanitary officers of the university, who state that the present use of the building as a drill hall makes it absolutely unsanitary as a gymnasium. This point has been so ably presented by others that it will not be enlarged upon here. The reasons why a new drill hall near Camp Randall is an absolute necessity from the point of view of the military department are here summarized:

1. Under the present arrangement the military department is allowed the use of the floor but one hour daily except on Thursdays, when it has two hours. In January, 1910, the registration in the cadet corps included 986 activities, divided into three battalions, band, hospital detachment, and target detachment. Each battalion included a few less than 300 men, and drilled twice a week. It was therefore necessary to have an entire battalion on the main floor at one time. For preliminary instruction the battalions were divided into about 25 squads, each under an officer or non-commissioned officer. The result was pandemonium, yet out of this confusion we are expected by the war department to evolve well drilled companies. While these battalions are drilling on the main floor, the hospital corps and target detachment are receiving instruction in other parts of the building, interfering with gymnastic training, and such training interfering with their work.

2. It is impracticable to better the above condition in the fall and early winter by drilling out doors. The only ground available is the lower campus, where the freshmen under instruction would be subjected to the gibes of fellow students, besides the bitter feeling which would result from using for drill the only ground available for various games at that season of the year. Darkness, also, would prevent out door drill in the fall.

3. With the unrestricted use of a drill hall, drills could be arranged at various hours of the afternoon, or even in the morning, so that only small numbers would be on the floor at any one time, and also so that many students now excused on account of outside work interfering with the drill hour could be accommodated.

4. Instead of using a separate gun room, gun racks would be arranged on the walls of the main hall. Under the present system, ten minutes are required to dismiss the companies after recall. Under the new system, one minute would be sufficient.

5. The gun room is now the only available room for lectures, special drills, etc. It is so full of gun racks that it is almost useless for these purposes. With a new hall, the main floor could be used.

6. Owing to the large and constantly increasing size of the student body, the lower campus is in great demand in the spring for various games. It is, moreover, too small for any but company drills. Camp Randall is 20 minutes' march from the armory, and 40 minutes are lost in going and coming. The new drill hall should be located on or near Camp Randall.

CONCLUSION

While an armory located near an ample drill ground is the one great physical necessity of the military department, there is one thing that is considered of even greater importance; that is, the attitude of the regents, faculty, and student body toward the work carried on by the department. If this attitude is favorable (and it is believed that such is the case), much good will be accomplished; if unfavorable, no efforts on the part of the commandant can produce the results desired by the war department.

Respectfully submitted,

RALPH MCCOY,
Captain 5th U. S. Infantry,
*Professor of Military Science and Tactics,
and Commandant of Cadets.*

September 1, 1910.

REPORT OF THE ADVISER OF WOMEN

PRESIDENT CHARLES R. VAN HISE,
The University of Wisconsin.

SIR:—I submit herewith my biennial report as adviser of women.

During the period covered by this report the number of women in the university was as follows:

1908-1909	954
1909-1910	1,103

For the latter year they were divided academically as follows:

Letters and Science.....	926
Agriculture	56
Music	124
Graduate	51
Medical	2
Engineering	1
Pharmacy	1
(twice counted 58).	

Perhaps it is more important for the purposes of this report, which concerns itself chiefly with the by-products of college life, to record their distribution as to residence for the same period:

Chadbourne Hall	115
Fraternity houses	184
At home	274
In lodgings	530

The year 1908-09 was very important in the history of Chadbourne Hall as at that time the university assumed full responsibility for its dining department which had been managed previously as a private enterprise. At the same time I assumed the position of mistress for the year, and a strong effort was made to develop a sense of responsibility for their common life among the residents. The cooperation of the matron, and the unity of purpose secured by the new domestic arrangement contributed much to the gratifying results obtained. At the beginning of the year 1909-10 Miss Katherine

Sprague Alvord, the present mistress, assumed her position, and she has still further promoted the feeling of social responsibility among the residents. The Hall is now a very desirable home, not only because of its comforts, which are of a high order, but because of the spirit of good fellowship and the opportunities for social expression which it affords. The number that share some of its privileges is not limited to the 115 residents as some 60 others come to the dining room for meals, a much appreciated privilege which should not be denied, in view of the demand for a good table at a modest price, and of the advantage of bringing young women living in lodging-houses into a common daily life. The fact should not be overlooked, however, that a dining room for nearly 200 girls is much too large, a group numbering half as many being more favorable to individual development.

Each of the eleven women's fraternities occupies a house. Seven of these are owned by corporations, the securities of which are held by alumnae, and four are rented from private owners. The capacity of these eleven houses is 190 girls and in most of them board is furnished as well for members of the chapter living outside the house. Each house is presided over by a chaperon chosen by the society. Naturally they vary greatly in efficiency, and the position is in no case as authoritative as it should be. I have attempted to assist the chaperones in their work by inviting them to occasional conferences. These advances and suggestions are welcomed and, it is hoped, are helpful to these ladies who generally feel the responsibilities and difficulties of their position. It has been suggested by alumnae of different chapters that it would be an advantage to the chapters if the university would take official recognition of the position of chaperon. I am convinced of the advantage to the university of such action, and I recommend the requirement of official approval of appointments to these positions, and of official notice of proposed absence or resignation. The latter requirement would make uniform a practice which is now quite general, and would be a protection to the careless. The life in the chapter houses is reasonably well ordered by a scheme of self government, is generally comfortable, and can be criticised only because of its tendency to limit the acquaintance and interest of those who enter upon it early in their college course and to offer too many distractions to the socially inclined. The proposed plan to prevent the initiation and residence of fresh-

men in fraternity houses, and to prescribe a minimum academic standing for initiates, should go a long way to correct such features as merit criticism.

The 530 women described as living in lodgings include all who live with friends or are scattered in private families. The number living in lodgings proper is not more than 400, and these are distributed among about 35 houses. The last two years have brought great changes to this group. Following the action of the Self Government Association in 1908, segregation of men and women students in lodging houses has become complete. Desirable as this arrangement is, it has developed its own problems, giving rise to many puzzling questions of equity between landlady and student. A colony of house holders has sprung up which depends upon women lodgers for its support. These houses are under my supervision, and are subject to certain special requirements. The inspection conducted in the second semester of 1909-10, by the committee on hygiene, reported them to be of much higher grade than those houses occupied by men. This is doubtless due, in a measure, to the standard of comfort set by Chadbourne Hall and to the greater home making instinct of women; but a study of the effect of supervision of lodging houses in other universities leads one to the conclusion that the superiority of women's houses is largely a response to supervision here. It is to be hoped that an extended dormitory system will soon make it possible to reject such houses as do not approximate the standard set by university residences, and that the university may cooperate more fully with those who house women students than it has yet done. These students when once established in an accredited house should be required to remain in their lodgings until the end of the semester, as is the rule in Chadbourne Hall, unless a change is approved by university authority.

One of the good results of grouping women students in cottages is the growth of a sense of responsibility toward each other in the members of the group. In 1908-09 the suggestion began to come from those directly concerned that a proposition for organization and the adoption of rules for conduct in the different lodging houses, similar to the system in vogue in Chadbourne Hall and the fraternity houses, would meet with ready response. The proposition was brought to the Self Government Association and, following the adoption of a resolu-

tion, each house made rules for its conduct, and appointed a committee to secure their enforcement and act as a channel of communication between it and the executive board of the association. Out of these rules, first submitted in the second semester of 1909-10, a model set has been prepared and all women living in lodgings are now asked to observe them. This is felt to be a most important action of the association as it brings the large group of women, most remote from official supervision, into cooperation with the best sentiment of women students and in touch with authority. The association has requested and received permission to form a student court for women, and when this is in operation the machinery for government of women's affairs will be complete.

With the opening of Lathrop Hall the social side of the association's activities received a new impetus. Several very successful parties for women have been held, and there are generous plans for developing the usefulness of Lathrop Hall as a club. It is expected that the realization of these plans will be an important feature of a later report.

In 1909-10 the association cooperated in the scheme for upper class calls upon freshmen, at that time inaugurated. The success of this scheme among the women, while not brilliant, was such as to warrant a second trial. If the scheme fails it is because it is artificial and something more natural must be found to take its place. There seems to be a genuine desire among upper class women to help freshmen, if a working plan can be found. A bulletin recounting its work is published each semester by the executive board of the association. The last edition, containing a brief description of the calling scheme and also of each of the women's university organizations, was put into the hands of freshmen at the beginning of the present year.

In 1907 the association established a loan fund for women to which it adds \$100 each year. This money has previously been raised by cooperation with a popular confectionery store, on one day in the year known as "College Day." This scheme having lost popularity will doubtless be succeeded by some other method of raising the money. The object of this effort is a good one, and the promotion of unity among those who work to accomplish it is altogether wholesome. In closing this account of the work and activities of the Self Government Association

it may not be superfluous to explain that every woman who registers in the university becomes by that act a member of the association and an object of its care. The business of the association is conducted by an executive board of 30 members, four of these being the officers of the association elected by the members and the others being chosen by residential sections which they represent. All legislation is by the association.

Next to the Self Government Association in point of numbers and general appeal is the Young Women's Christian Association. At the beginning of the year, it acts as a committee to meet incoming trains and renders helpful service to new students. Lathrop Hall has centralized the work of the Christian Association and should increase its efficiency. Social affairs and weekly addresses are there given under its auspices, Bible classes are held and office hours are kept by its president and general secretary. After having twice attempted, with indifferent success, to maintain the latter office, the Christian association in the year 1908-09 discovered a way to raise funds and at the same time to render a distinct service to the community, by bringing high class concerts to the university armory. Nordica, Schumann Heink and Melba have sung to large audiences under its auspices, and the treasury of the association has profited thereby. In 1908-09 the association maintained a residence, but it was not a financial success and was abandoned at the end of the year. The appointment in June, 1910, of a young woman of high intellectual attainments and unusual personal qualities as general secretary has stimulated and encouraged the association. It is hoped that its numbers, now about 130, will increase under her judicious leadership and that its activities will be directed toward helpful ends for all university women.

In 1909-10 an important addition was made to the women's literary societies by the formation of Round Table. The two older societies, Castalia and Pythia, limit their membership to 60 each and choose members by ballot. Round Table, therefore, meets a long felt want, as it welcomes to its circle any woman student whose interests impel her to join it. It provides for the establishment of additional circles by the withdrawal of a group of 20 for that purpose whenever its membership shall reach 50, the maximum number for the efficiency of its work.

I should fail in my duty if I failed to point out in this report

the limitations which the introduction of the department of home economics into Lathrop Hall has placed upon the literary societies whose rooms it usurps. The two older societies have for years looked toward the time when the erection of a woman's building should furnish them suitable rooms for their meetings. The presence of the home economics work in the rooms, which were designed for them, so disturbs their plans that one of the societies has returned to its old quarters in Assembly Hall, and the other uses its room with dissatisfaction, having no other place, its former quarters being no longer available. The department of home economics is not well provided for by the present arrangement, and the activities of the women's societies are greatly hampered.

The Girls' Glee Club, the Athletic Association, and the dramatic club, "Red Domino," have continued their customary activities with interest and success. The Red Domino gave a very creditable presentation of "Cousin Kate" at the Fuller Opera House during the first year covered by this report.

The Consumers' League has given university women an opportunity to listen to addresses by Agnes Nestor on Labor Unions among Women; by Mrs. B. C. Gudden on National and International Aspects of Consumers' League, and by Mrs. Florence Kelly and others on related subjects.

Under the auspices of the College Equal Suffrage League addresses have been made before university women by Mrs. Frederick Howe, Mrs. Lydia Commander and Miss Carolyn Lexow.

An honorary society called "Keystone" has been organized whose membership consists of presidents of the university women's organizations. It hopes to become an opinion forming body for the best interests of women students. A senior women's society called "Mortar-board" has for two years given a scholarship for a senior woman of the value of \$100.

The report of the director of physical training makes it unnecessary for me to dwell upon the new opportunities in that line, which Lathrop Hall affords. But this report would be incomplete without some mention of the value of this work as a unifying influence, through its sports and pastimes, its athletic association and the campus fete which it conducts.

It is regrettable that the bowling alleys are not yet available at Lathrop Hall, not only for the work of the department of physical training, but for the occasional use of the girls. The

matches of the "Inter-sorority Bowling League" are now played off in public alleys down town. This is not desirable and should be corrected by the Lathrop Hall alleys.

The dining rooms at Lathrop are another factor in unifying the women. Nearly 200 come to them daily from the lodging houses, and find as at Chadbourne, better food for the price charged than can be obtained elsewhere, and companionship as well.

Living is so costly in Madison that the university would render a useful service to women students of limited means if in its scheme for dormitories it would include at least one house for women to be managed with the cooperation of the residents, thereby reducing the cost of living by limiting the service required. Two such residences are successful and popular at Northwestern University, and a smaller one is in operation at Cornell. As no less than 75 women students are working to support themselves, wholly or in part, while in the university, and many more live with much regard for economy, a home in which, by rendering one hour's service a day living expenses might be reduced one-half, or at least one-third, and where, as in any university residence, a stimulating social life might be developed, would be sure of support and appreciation.

Respectfully submitted,

CORA STRANAHAN WOODWARD,

Adviser of Women.

REPORT OF THE DEAN OF THE EXTENSION DIVISION

PRESIDENT CHARLES R. VAN HISE,
The University of Wisconsin.

DEAR SIR:—I submit herewith my biennial report for the period extending from July 1, 1908, to July 1, 1910:

The work of the university extension division has developed with no departure from that described in the report of two years ago. The bureaus of Municipal Research and of Civic and Social Center Development, whose work was not specifically mentioned in that report, were introduced in 1909 and 1910, respectively. These bureaus fall naturally under the head of General Information and Welfare, their work being entirely in harmony with the functions of that department.

On July 1st, 1908, the university extension force, paid by salary, instructional and administrative, numbered 10. On July 1st, 1910, this force numbered 59. Of these, 7 gave only part of their time. This enumeration does not include the regular university instructors who conduct correspondence courses, in conjunction with intramural teaching, for which they are paid by fees, nor members of the faculty who lecture throughout the state under the auspices of the extension division.

The extension force proper at present includes the following members.

One Dean
One Secretary, Correspondence-Study Department
One Secretary, Department of Debating and Public Discussion
One Secretary, Department of Instruction by Lectures
One Social and Civic Center Adviser
Two District Representatives—One in Milwaukee District; one in Oshkosh District
Five Assistants and Field Organizers—Three in Milwaukee; two in Oshkosh
One Accountant
One Chief Clerk
Seventeen Clerks and Stenographers—One in Milwaukee; one in Oshkosh

ENGINEERING, MATHEMATICS, AND DRAWING

One Associate Professor of Electrical Engineering
 One Assistant Professor of Mechanical Engineering
 One Assistant Professor of Structural Engineering
 Three Instructors in Mechanical Engineering—One in Milwaukee; one
 in Oshkosh
 Three Instructors in Mathematics and Engineering
 One Instructor in Mathematics
 One Instructor in Mathematics and Drawing—In Milwaukee
 One Assistant in Drawing

BUSINESS ADMINISTRATION

One Associate Professor of Business Administration
 One Assistant Professor of Business Administration
 One Instructor in Business Administration—In Milwaukee
 One Assistant in Business Administration (Part time)

ENGLISH AND LATIN

One Assistant Professor of English (Part time)
 One Instructor in English (Part time)
 One Instructor in English and Latin
 One Instructor in Elementary English

MODERN LANGUAGES

One Instructor in German
 One Assistant in German (Part time)
 One Assistant in French and Spanish (Part time)
 One Associate Professor of History (Half time)
 One Instructor in Political Science, in charge of Municipal Reference
 Bureau
 One Instructor in Library Work
 One Instructor in Political Economy (Part time)
 One Assistant in Debating and Public Discussion

MILWAUKEE DISTRICT

*

As the funds appropriated to the extension division by the last legislature were not sufficient to provide for organization of all the districts into which it is proposed to divide the state for extension work, it was thought best to develop two districts as fully as possible during these two years..

Before July 1, 1908, headquarters had been established in Milwaukee for the development of the Milwaukee district, a section of the state embracing the following counties: Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, Waukesha.

A considerable demand for correspondence-study courses had

come from this region and the use of class work in conjunction with correspondence-study had ceased to be an experiment.

In November, 1909, Assistant Professor Kenneth G. Smith, was appointed district representative in this district, and the work was systematized and extended. In its earlier development it was chiefly industrial, but, as this report shows, it now covers a great variety of interests.

Six assistants are permanently located at the Milwaukee headquarters. Of these one is instructor in mechanical engineering, one in engineering and mathematics, one in business administration, and three are assistants in elementary subjects and in field organization.

OSHKOSH DISTRICT

Mr. Paul H. Neystrom was elected district representative in the second district June, 1909, with headquarters at Oshkosh. This district includes the following counties:

Brown	Manitowoc	Sheboygan
Calumet	Outagamie	Waupaca
Fond du Lac	Shawano	Winnebago
Kewaunee		

Mr. Neystrom has at present three assistants, one of whom is an instructor in mechanical engineering. The other two combine the duties of assistant in elementary branches and in field organization.

CORRESPONDENCE-STUDY DEPARTMENT

The table which follows gives, in detail, information regarding the registration in correspondence-study courses since the inauguration of this work to July 1st, 1910. The registrations since July 1st, 1910, number 548, making the total to date, 4,794. This registration represents over 3,500 individuals.

TABLE I
REGISTRATIONS IN CORRESPONDENCE-STUDY
October 1, 1906—July 1, 1910

	Total registration.	Registrations since July 1, 1909.	Courses completed.	Credit given.	Courses dropped.	Registrations holding over.
Ancient Languages.....	63	32	15	13	5	43
Astronomy.....	9	2	3			6
Bacteriology.....	31	8	4	2	1	26
Botany.....	10	8	2	2		8
Business.....	306	187	1		35	268
Chemistry.....	25	8			2	23
Commercial Law.....	117	2	44		5	68
Drawing.....	442	307	21	14	40	382
Education.....	67	30	15	15	5	47
Engineering—Electrical.....	174	127	7		3	164
Engineering—Mathematical.....	902	433	40		116	746
Engineering—Mechanical.....	414	278	15		12	387
Engineering—Structural.....	66	66			1	65
English.....	350	192	43	35	34	273
Geology.....	17	13	3	2	1	13
German.....	200	99	29	26	13	158
Highway Construction.....	148	4	7			141
History.....	55	28	11	10	5	39
Home Economics.....	17		13			4
Mathematics.....	438	222	43	22	43	352
Music.....	11	5	1		1	9
Pharmacy.....	34	18			8	31
Philosophy.....	24	13	10	9	1	12
Physics.....	5	5			1	4
Political Economy.....	96	36	22	21	2	72
Political Science.....	16	8	2	2		14
Romance Languages.....	73	31	24	20	2	48
Surveying.....	26	18				26
Teachers' Rev.—Algebra.....	6	6			2	4
Teachers' Rev.—Am. Lit.....	27	27			2	25
Teachers' Rev.—Arithmetic.....	9	9			3	6
Teachers' Rev.—Cataloguing and Use of Library.....	4	4			1	3
Teachers' Rev.—Civics.....	2	2			1	1
Teachers' Rev.—Com. Sch. Manual.....	1	1			1	
Teachers' Rev.—Eng. Comp.....	14	18			1	13
Teachers' Rev.—Eng. Hist.....	7	7			2	5
Teachers' Rev.—English Literature.....	5	5			1	4
Teachers' Rev.—Geography.....	1	1			1	
Teachers' Rev.—Grammar and Composition.....	9	9			2	7
Teachers' Rev.—Phys. Geog.....	7	7	1		1	6
Teachers' Rev.—Physics.....	9	9			2	7
Teachers' Rev.—Physiology and Hygiene.....	2	2			1	1
Teachers' Rev.—School Management.....	5	5			1	4
Teachers' Rev.—U. S. Hist.....	2	2			1	1
Zoology (special).....	1	1				1
Total.....	4,246	2,292	376	192	345	3,525

The tabulation which follows shows the total numbers each month since the correspondence-study work was begun. The number of registrations from July 1, 1908, to July 1, 1910, was 3,206. Experience shows that July, August, and September are active months for students taking work for credit. May, June, and July are the lightest registration months.

TABLE II

NUMBER OF STUDENTS REGISTERED FOR CORRESPONDENCE-STUDY AT THE END OF EVERY MONTH SINCE REORGANIZATION OF THE EXTENSION DIVISION.

1906		1908	
October	2	October.....	1,257
November.....	14	November.....	1,484
December.....	26	December.....	1,505
1907		1909	
January.....	52	January.....	1,592
February.....	79	February.....	1,675
March.....	89	March.....	1,734
April.....	96	April.....	1,816
May.....	101	May.....	1,912
June.....	106	June.....	1,954
July.....	116	July.....	2,153
August.....	143	August.....	2,403
September.....	172	September.....	2,664
October.....	215	October.....	2,931
November.....	291	November.....	3,190
December.....	383	December.....	3,446
1908		1910	
January.....	577	January.....	3,628
February.....	619	February.....	3,869
March.....	730	March.....	4,041
April.....	866	April.....	4,143
May.....	1,020	May.....	4,209
June.....	1,040	June.....	4,246
July.....	1,088	July.....	4,349
August.....	1,106	August.....	4,513
September.....	1,148	September.....	4,794

On July 1, 1910, there were 43 organized classes in the Milwaukee and Oshkosh districts. These classes were met regularly by instructors, either weekly or bi-weekly. The classes are located as follows:

22 in Milwaukee	5 in Oshkosh	2 in Green Bay
2 " Beloit	2 " Fond du Lac	3 " Manitowoc
3 " Racine	3 " Two Rivers	1 " Appleton

The subjects taken by these classes are:

Shop Mathematics	Gas Engines
Drawing	Structural Engineering
Mechanics	Business Organization
Strength of Materials	

Twenty-five manufacturing companies are cooperating in various ways in facilitating instructional work among their employees.

It would have been possible to organize more classes had the field instructional force been sufficiently large to take care of them. With the teachers it was possible to employ, the limit of the number of classes that could be handled was reached some time before the end of the last academic year.

The cooperation of the Free Traveling Library Commission has enabled us to carry on correspondence courses for credit in isolated districts. The Commission has sent from one to seven books needed for correspondence courses to individual students, in the following villages in which there are no libraries:

Brillion	Merrimack
Burlington	New Lisbon
Detroit Harbor	Nielsville
Etna	Oneida
Franklin	Shullsburg
Genesee Depot	Tigerton
Green Lake	Turtle Lake
Hartford	Two Rivers
Kilbourn	Winneconne
Maiden Rock	

The organization of correspondence students into classes has added greatly to the efficiency of the work. It is evident, however, that more frequent meetings should be had with the more elementary students.

Although the students are scattered throughout the entire state, as shown by the map herewith presented, much the larger percentage are in the Milwaukee and Oshkosh districts, where there is regular field organization. These two districts cover approximately one-fifth of the state. It would have been possible to cover a larger part of the state with the field organization employed, but it was believed that better results would be secured by concentrating the work and thus in some measure demonstrating its possibilities.

PUBLIC SCHOOL COOPERATION

With the demand for the introduction of industrial training in the public schools comes an opportunity for cooperation between the correspondence-study department and the public school officials. Evening classes have been established in the West Allis high school for this school year. It was found that in this school there were no teachers to take care of certain technical subjects which it was desired to introduce. Arrangements have been made for the instructors of the extension division located at Milwaukee to devote several hours a week to

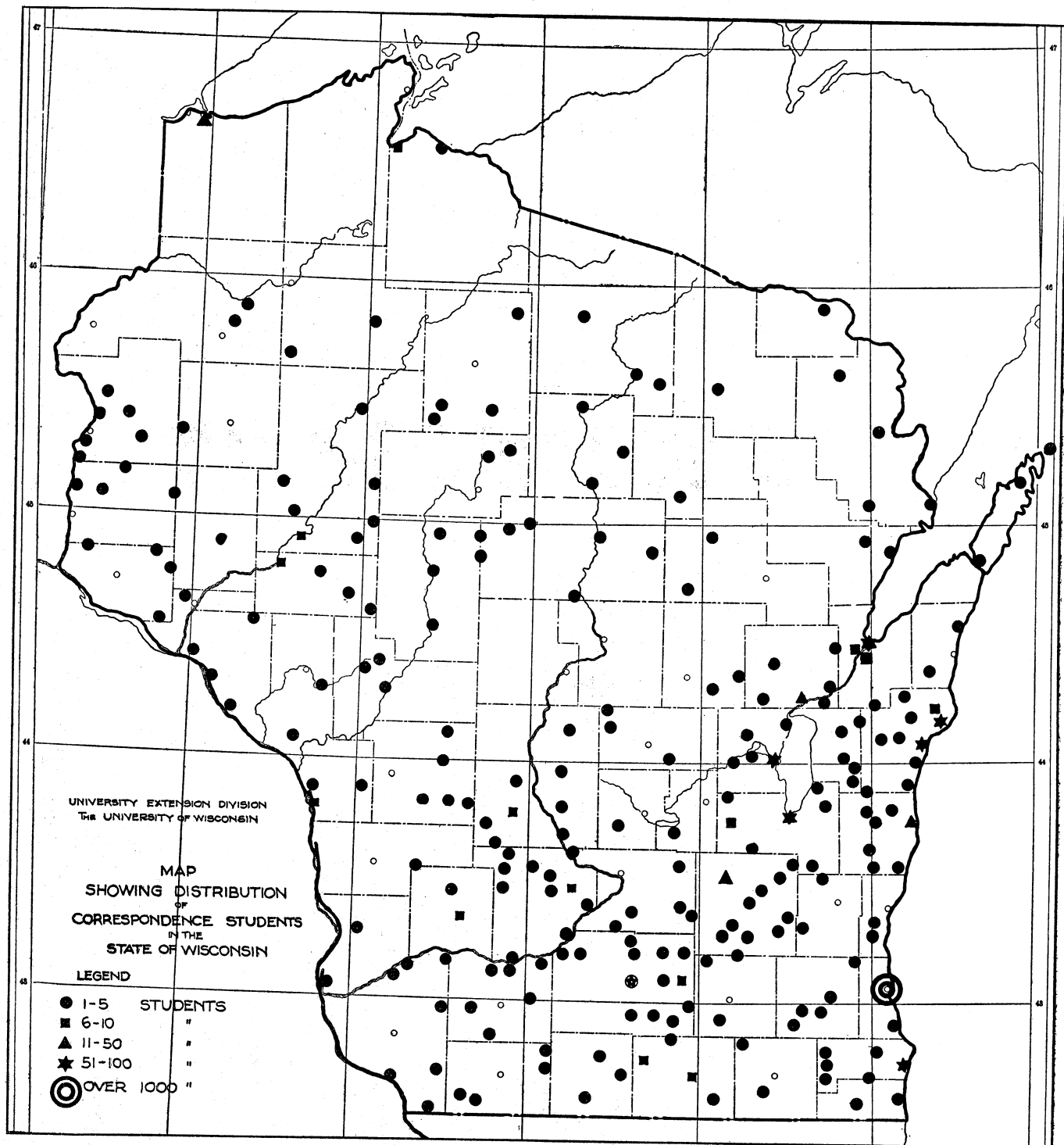


PLATE I.

these evening classes, the school board paying the university for the service.

The schools thus secure at a minimum cost the services of a trained and experienced teacher, capable of giving technical instruction impossible to obtain otherwise, except at a prohibitive cost.

APPRENTICES

One of the largest manufacturing firms in Milwaukee, realizing the fact that pupils engaged in elementary studies require a larger amount of direct contact with the instructor than is necessary with more advanced students, has arranged to give its apprentices one half day of company time each week for class work. These classes are devoting two hours weekly to drawing and to mathematics, the instructor giving his undivided services during the entire time.

A second company is arranging for similar instruction for its apprentices, and an effort is being made to secure the cooperation of all the leading manufacturers of Milwaukee in the provision of special training for apprentices. It is recognized that this degree of cooperation can be expected from the companies for apprentices only. Others who take the correspondence-study courses will continue the bi-weekly or in some cases weekly one-hour meetings.

If this concession can be brought about, courses will be arranged for each particular industry. The course will be so developed as to afford special preparation for the work in which the apprentice is engaged. It is believed that it would be profitable to the company not only to allow the time for this instruction, but to pay the larger part of the tuition fees.

PUBLIC SERVICE COURSES

Last year the correspondence-study department offered a correspondence course at a nominal cost to official road supervisors. This was made possible through the generosity of Mr. Hotchkiss of the geological survey. This work demonstrated that much may be accomplished by this method and suggests that a number of what might be called public service correspondence courses should be introduced. The highway construction course

should be expanded and made to apply not only to rural road officials, but also to town boards and municipal road officers. Much could be done to stimulate and encourage the good road movement by systematically developed instruction in these lines. A similar useful course should be offered for health officers. The health officer of the future will not be a country doctor who is willing to give, incidentally, a little thought to general sanitary problems, and in this way add a few dollars to his income, but rather a layman trained for this service, and much of value could be accomplished by offering systematic courses of instruction in sanitation and hygiene. Similar courses at a similarly low rate should be offered for bakers, barbers, and others whose methods of work may affect the health of the community. These courses which have to do with the health and comfort of the people, should be given by the university at a nominal cost, under definite and specific regulations.

VOCATIONAL TEACHING IN THE SCHOOLS

The work which has been inaugurated at Milwaukee in the West Allis schools suggests great possibilities for cooperation between extension and the schools throughout the state. The introduction of vocational training in all schools, whether in cities or villages, becomes possible, through the instrumentality of the university extension division, at a cost which any school board should be able to meet. Requests have come to the extension division for just such cooperation but, under the present conditions of district development, response has been found impossible on account of the isolation of those making application. Participation in class work in the public schools can be carried on only in towns and cities or where a number of schools in adjoining districts can cooperate to make a practicable itinerary for the teacher. The growing appreciation of the need for vocational training, and the possible prospect of definite legislation relating to it, presents to the extension division a large field of service.

CREDIT COURSES

Results from the correspondence-study courses given for credit, have been entirely satisfactory. It is believed that much

more might be done in this work by forming night classes with the correspondence feature. In the larger municipalities, especially in Milwaukee, opportunity might be offered for taking the greater part of the first and second years of the university engineering courses by correspondence, supplemented by night class work. Such an opportunity should stimulate many young men to continue their formal education, who had given up the idea of going to college, on account of financial or other difficulties. Students brought to the university under these circumstances would be of the very best class.

GRADUATE WORK

The requests for work in correspondence, which have come from candidates for advanced degrees, seem to indicate that some definite regulation should be prescribed accepting correspondence work in such courses as may be taken in absentia toward advanced degrees.

WOMEN'S CLUBS

By study outlines, supplemented by lectures, it has been possible to offer a special service to the women's clubs of the state—a service which it is believed is being appreciated and will be helpful to these organizations in many ways.

TRAVELING EQUIPMENT

Equipment for giving instruction by lectures in the use of fuels is now being prepared. This, we believe, may be made of economic value not only to large fuel consumers but to those who use comparatively small quantities of fuel. This equipment should be placed in a traveling car, so as to be moved from place to place readily in order to make it most effective.

TEXTS

The question of texts for correspondence work has been a serious one. In all industrial subjects it has been necessary to produce our own texts. These, up to this time, have been copied by mimeograph. This is unsatisfactory for many reasons, and

as promptly as possible the manuscripts should be put into printed form. During the past year the instructors of the correspondence-study department prepared over 5,000 typewritten pages of original text. Much of this is in the form of completed manuscripts ready for the publisher. The printing of this material would assist greatly in obviating errors, and would make it possible to carry on the work of the correspondence-study department with a smaller clerical force.

DEPARTMENT OF INSTRUCTION BY LECTURES

The department of instruction by lectures endeavors to keep in touch with the organizations and groups of people in the state that may be interested in lecture courses and to secure, from the various departments in the university, lectures that will be of interest and service to those organizations and groups.

Last year was the first, since the reorganization of the extension division, in which a systematic effort was made to develop the lecture work. The tabulation herewith presented shows what has been accomplished:

Total number of lectures arranged for.....	217
Total number of entertainment numbers arranged for.....	24
Average size of audience reached.....	150
Number of people reached through the extension lectures and entertainments	26,000
Number of different towns to which lecturers were sent—size of town varied from 300 to city of Milwaukee.....	71
Number of commencement speakers arranged for, May 30....	64
Average size of commencement audiences, about.....	350
Number of people that will be reached through these addresses	20,000
Total number of people reached through lectures and commencement speakers	46,000

The numbers called entertainment numbers were arranged for either in popular lecture courses or sent out as single numbers requested by special organizations. Fifty-seven of the lectures were what might be called popular, given in lecture courses, adapted to mixed audiences. Ninety-two were lectures for special organizations, such as civic clubs, engineers' clubs, business men's associations, boards of trade, women's clubs, and high schools.

The foregoing statistics do not include the speakers sent to the pure food exhibit in Milwaukee, and to the bakers' institute.

DEPARTMENT OF DEBATING AND PUBLIC DISCUSSION

The following tabulation shows clearly what has been done during the year 1909-1910 by the department of debating and public discussion:

I. Requests answered

(1) Libraries lent—each library containing on the average, forty classified articles.

	Libraries	Articles	Subjects	Localities
Debating.....	905	36,200	97	
General Discussion.....	602	24,080	211	
Total.....	1,507	60,280	308	213

(2) Requests answered by letters giving desired information—555.

Libraries.....	1,507
Letters.....	555
Total.....	2,062

II. Bulletins distributed—12,680.

The libraries referred to in this tabulation are made up of articles, pamphlets, and, in some cases, books. A large number of the leading magazines of the country place the extension division on their free mailing list for two copies. In fact, the importance of this work is so thoroughly recognized throughout the entire country that cooperation is secured readily.

The bulletins referred to, in II above, contain questions formulated for debate with references, and practically all of the 12,680 were sent in response to application.

A comparison of the work in this department in the years 1908-1909 with that of 1909-1910 is given below.

	LIBRARIES			SUBJECTS		
	1908-09	1909-10	Per Cent	1908-09	1909-10	Per Cent
Debating.....	386	905	234.4	41	97	236.5
General Discussion.....	138	602	436.2	75	211	281.3
Total.....	524	1507	287.5	106	308	290.5
Places.....	133	213	169.1			

Appreciation of the opportunities offered in this work is evidenced by the rapid growth shown in the tabulation. The number of calls for debating material has increased 287½ per cent. The number of places, from which these calls have come, has increased 160 per cent. Information has been requested on a much greater variety of subjects this year than the year before. In fact, for want of time it has not been possible for the department to respond to all requests. It is not too much to say that the possibilities of this department for good work throughout the state are limited only by lack of funds available for carrying it on.

Information was solicited upon 97 different subjects for debating, the following list including those which were most popular. This list shows that the subjects dealing with state and national issues are receiving most attention:

1908-1909		1909-1910	
Subjects	Number	Subjects	Number
Commission Government.....	41	Commission Government.....	102
Woman Suffrage.....	30	Woman Suffrage.....	84
Postal Savings Banks.....	30	Income Tax.....	57
Immigration.....	30	Election of Senators.....	53
Parcels Post.....	26	Immigration.....	52
Bank Guaranty.....	23	Parcels Post.....	51
Initiative and Referendum.....	19	Conservation.....	47
Election of Senators.....	17	Postal Savings Banks.....	44
Municipal Ownership.....	13	Bank Guaranty.....	41
Capital Punishment.....	13	Tariff.....	33

The accompanying map shows the distribution of the 213 places to which material for debating and public discussion has been sent. It will be noticed that these places are scattered

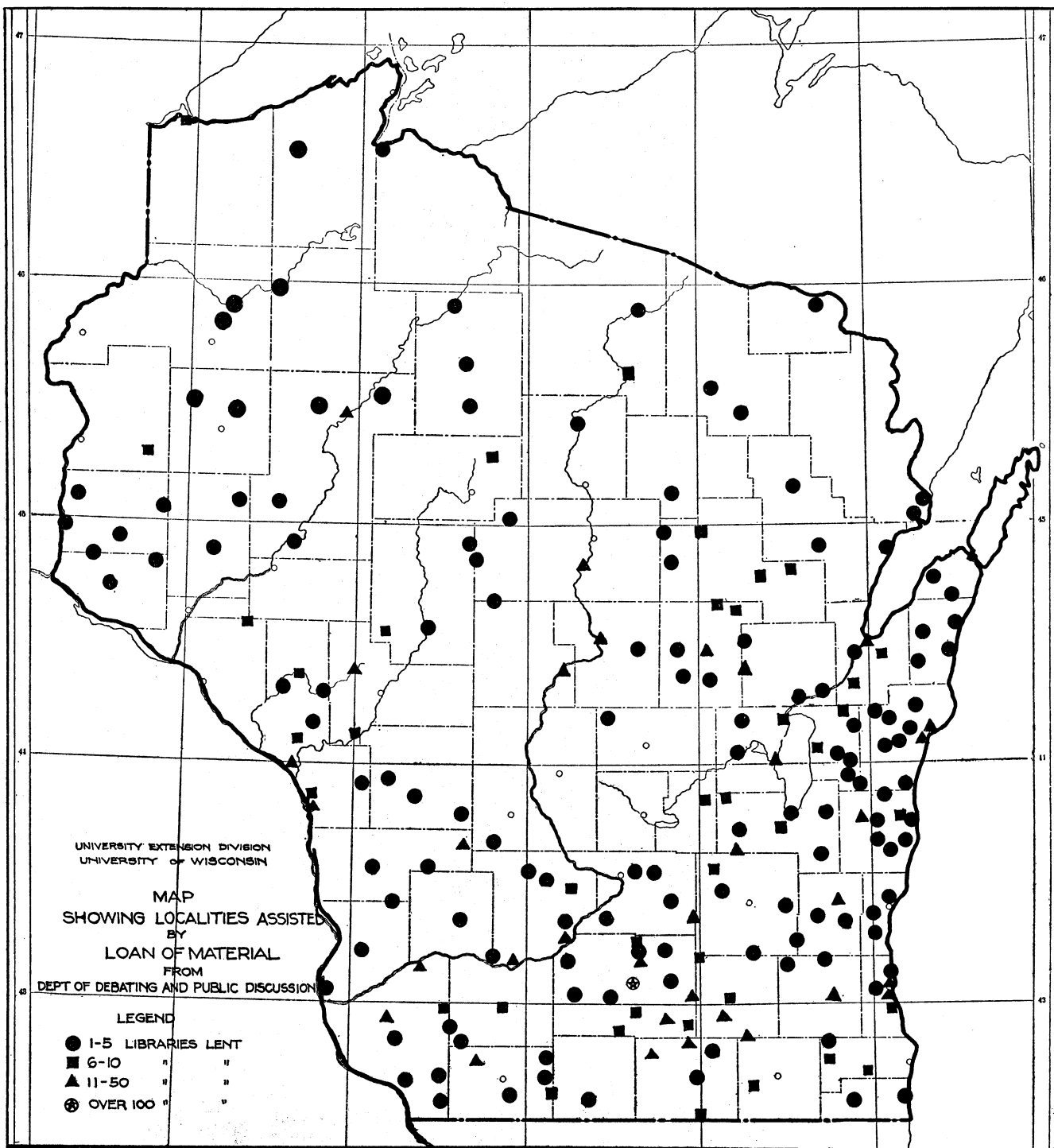


PLATE II.

over the entire state—the distribution going apparently with the population.

DEPARTMENT OF GENERAL INFORMATION AND WELFARE

MUNICIPAL REFERENCE BUREAU

On July 1st, 1909, a municipal reference bureau was established. The purpose of this bureau is to collect data and information on the various departments of municipal activity and government for the purpose of rendering that material available to the cities and citizens of the state.

“City government touches the citizen at more points and is of more vital importance to his interests, business and personal, than any other government with which he comes in contact. It collects more taxes from him and expends more money. Its problems are among the most complex with which public officials have to deal, and being largely of a business nature, every mistake which they make helps to raise the citizen’s taxes. If these problems are to be wisely solved, if each city is to be benefited by the success of other cities and profit by their failures, city officials must have access to all the available information and data to be had upon these various subjects. They must compare notes.

Recognizing these facts, and that such information is both difficult to obtain and hard to keep up to date, municipal reference departments have been established in many of our large cities—New York, Boston, Baltimore, Philadelphia, Cincinnati, Milwaukee, etc. Each department collects this information for that individual city.

But not every city can maintain such a department. The municipal reference bureau aims to perform this service for the state. In so far as time and resources permit, it aims to collect and furnish information on all subjects of municipal organization and administration, public works, public utilities and public service rates, municipal employment, paving, sewage disposal, water supplies and water purification, garbage disposal, parks, and play-grounds, housing, street cleaning, street sprinkling, dust prevention, smoke abatement, city planning, civic centers, art commissions, care of city trees, schools,

charities and corrections, health and sanitation, accounting methods, comparative statistics, commission government, home rule, civic organizations, and all the other subjects of municipal interest, and so far as possible, to collect and maintain a file of charters and ordinances of the principal cities of the United States, and the available municipal material of the principal cities of Europe and the continent. It has correspondents in most of the principal American cities, and in this way is able to furnish information as to what cities have, for instance, a milk ordinance, a wheel tax or other ordinance, how they work, and, if desired, lend a copy of the ordinance. It can tell how boards of public works are organized in various cities, how school boards are constituted, or how street sprinkling or street repairs are paid for. In short, it aims to be a clearing house for municipal experiments and experience." Bulletin, 186.

During the nine months following the establishment of the bureau, over 900 inquiries from municipal and other officials throughout the state were received and answered, and over 5,000 documents relating to municipal administration were collected.

The results of an investigation of the municipal legislation upon the prevention, care, and cure of tuberculosis in the United States is about ready for publication in bulletin form.

BUREAU OF CIVIC AND SOCIAL CENTER DEVELOPMENT

The signs of civic and social awakening are everywhere. This awakening has many expressions. Of these expressions, two are resulting in movements which are perhaps common to all neighborhoods.

First, the movement to wholesomely enrich the neighborhood life by increasing the common educational and recreational opportunities.

Second, the movement to develop intelligent public spirit—not to bring the people to any particular party standard, but to make more alert the general interest, broader and more sympathetic the understanding, more accurate the knowledge of facts, and stronger the sense of responsibility for the common welfare.

In many places the first of these movements has led to the erection of public libraries, museums, music halls, gymnasiums, field houses, and natatoriums, as well as the opening of parks and playgrounds.

The second has led to the organization of clubs and associations, or has turned the attention of existing organizations, churches, lodges, chambers of commerce, etc., to the nonpartisan consideration of community problems.

But in many neighborhoods, on the other hand, it has been found that the already existing public school building may be adapted to serve as a public gathering place for discussions, lectures, entertainments, and other forms of social intercourse; as a library, museum, music hall, gymnasium, and natatorium for the use of adults outside of regular school hours; and that the school grounds may have their value increased by equipment and use as playgrounds and recreation parks.

It has been found that this extension of the use of school plants does not interfere with their primary object as educational centers for the children, but rather leads to their improved equipment for this prime use, thus making their extended use economical both from the point of view of the regular school work from that of the wider neighborhood service.

Believing that the activities which are the expression of the civic and social awakening should be developed with full knowledge of what has been done and thus avoid the mistakes of others, the extension division has added a bureau of civic and social center development to its organization and furnishes an expert, who will personally cooperate in civic and social center development with the people of the various communities throughout the state and advise concerning equipment, organization, programs, supervision, etc. In this department the extension division also furnishes information, concerning methods which have been found successful in various places, and aids in availing to each community of the neighborhood resources offered by the extension division, which may be used in civic and social center development.

LANTERN SLIDES

Frequent requests come from school teachers throughout the state for lantern slides for use in connection with educational work. The university of the state of New York, through its extension department, has for a number of years been lending thousands of slides to the schools of the state for what is called visual instruction. By this means well selected sets of slides on various educational subjects are placed at the service of

schools for a limited period at no cost to them beyond that of transportation. This work has proved helpful and stimulating to both teachers and pupils.

During the past year, with the cooperation of the Wisconsin Latin teachers' association, a collection of slides to be used in the teaching of Latin was made. These are now being lent to schools upon application for a period of two weeks at a time—the schools paying transportation charges and guaranteeing the extension division against breakage. Although the work was begun only last April, on June 13th applications for the slides had come from 24 schools, as follows:

Arcadia	La Crosse	Richland Center
Berlin	Lancaster	St. Croix Falls
Boscobel	Manawa	Stanley
Chippewa Falls	Medford	Stevens Point
Edgerton	Menomonee Falls	Viroqua
Ellsworth	Milton	Waukesha
Janesville	Milton Junction	Wauwatosa
Jefferson	Monroe	West Salem

The demand for the slides is so great that the length of time during which any school may retain them will probably have to be limited to one week. Sets of slides in connection with other subjects such as history, geography, etc., are being prepared for similar use.

BAKERS' INSTITUTE

On March 1, 2, and 3, 1910, a bakers' institute was conducted in Milwaukee, similar to one held there about a year ago. At this institute twenty lectures, including practical demonstrations, were delivered. The average attendance was about one hundred and included master bakers not only from Milwaukee and throughout Wisconsin, but from several other states, and, through the cooperation of the state board of control, the bakers of the various state institutions.. Although the institute of last year was remarkably successful and was so recognized by the press of the entire country, I think there can be no doubt that from every point of view the work this year was more effective. The experience of last year made it possible this year to meet the baker's special problems with more specific application and directness.

MILK EXHIBIT

In response to requests from a number of citizens of Milwaukee, who guaranteed a fund of \$500 for the care and supervision of a traveling milk exhibit in Milwaukee, the extension division caused such an exhibit to be prepared by the bacteriological department of the university. This exhibit treats the milk problem only incidentally from the point of production, but has special reference to the quality of the milk, its food value, danger of disease transmission, and other matters relating to mortality through negligence in its care. Through the cooperation of the school board this exhibit has been shown in the schools of Milwaukee by a trained demonstrator. During its stay of several days in each school, the demonstrator lectured before the children of the schools during the day, and in the evenings gave special lectures to mothers and others interested. Although this exhibit is in charge of the extension division, the expense incidental to its display, including the salary of the demonstrator, is paid from the fund of \$500 previously referred to, as appropriated for this purpose in Milwaukee.

CONFERENCE ON CRIMINAL LAW

A conference participated in by the leading judges, lawyers, clergymen, and others, of Wisconsin, on criminal law and criminology, was held at the instance of the extension division and a committee of citizens, November 26 and 27, 1909.

The extension division has cooperated with the anti-tuberculosis association and has printed and distributed widely a comprehensive bulletin on this subject.

THE INSTITUTE OF MUNICIPAL AND SOCIAL SERVICE IN MILWAUKEE

Perhaps no previous period of history has witnessed such a profound and democratic interest in public, social, and economic problems as the one through which we are now passing. This lively and genuine interest manifested among all classes calls for up-to-date, reliable, co-ordinated information and knowledge.

It has, therefore been but a natural response for the University of Wisconsin, in its policy of commonwealth service, to announce an institute for municipal and social service, designed

to meet the requirements of this awakening social consciousness and the demands of the modern social conscience. Although this institute for social service was proposed three years ago, its realization was not feasible until the present generous offer of funds by one of Milwaukee's public-spirited citizens, who, however, desires to remain an anonymous donor.

The institute is so organized that it will enable not only those who are officially engaged in civic or social service to keep fully abreast of the times, but likewise to be of equal interest and value to all public-spirited citizens who desire to be kept progressively informed upon those problems of public policy and social expediency which so profoundly affect contemporary life and the development of organized society in the future.

NEEDS

Districts: The experience gained in the past years of university extension work has clearly demonstrated that permanent district organization is essential to the development of university extension work. Nine more districts which, with the two already established, will cover the entire state, should be developed as promptly as funds are available. It is not fair to the rest of the state that certain parts only should receive the service that is offered by the university at the expense of the entire state. Yet with the funds at present available, effective work is possible only by concentrating the effort in a limited territory.

Each new district, like those at present organized, should have a central office presided over by a university district representative, who would have such assistants—teachers and organizers—as his district would demand. It is believed firmly that district organization is absolutely essential in order to make university extension effort effective. Through its instrumentality the university is brought into touch with the community and waste effort is avoided and service is applied to advantage.

Results obtained in the Milwaukee and Oshkosh districts have shown that \$50,000 could be spent profitably in the field organization of the nine additional districts.

Instructors: A number of additional instructors should be added to the correspondence-study department. New courses should be developed relating to health and hygiene, home economics, nature study, bacteriology, botany, and education, with instructors giving their entire time to the work. Much good

work has been accomplished by the intramural university instructor doing this work on a fee basis in courses now offered in certain of these subjects, but it has been conclusively demonstrated that the best results can be secured only when the work is in charge of one who gives his whole thought to it. That is, the extension work must have first consideration. This can not be expected of the teachers engaged for residence work.

The marked increase in registration in many of the courses now offered will make it necessary to add a number of instructors during the year. The probable growth during the next two years, judging from the experience of the last year, will necessitate a large increase in the clerical force also.

The department of debating and public discussion should have added two additional trained assistants and two clerks should be assigned for its exclusive use.

Lectures: Although the work done during the past year by the department of instruction by lectures has been by no means unsatisfactory, yet the results confirm the statement made in the report of two years ago, that to develop the work properly, ten lecturers, possessing special qualifications, should be secured—each lecturer to give his first consideration to extension work, but to be identified with residence work by giving at least one course a year during one semester to residence students. Larger provisions must be made for the administrative side also of this department.

The work of the department of general information and welfare is capable of large usefulness. The municipal reference bureau, the civic and social center development, the bakers' institute, the institute of municipal and social service, the milk exhibit, the work in cooperation with the anti-tuberculosis society, etc., are important activities of the department, and suggest further similar service for the people of the state with funds available.

Laboratories: For want of funds no local laboratories have as yet been established in any of the districts, although the need has been felt. In Milwaukee, through the courtesy of the city administration, the city fuels laboratory has been put at the service of the extension division and has been of decided value to

the correspondence students in fuels by making it possible to supplement the class work with laboratory instruction.

QUARTERS

As the correspondence students who have been taking elementary branches (there is a large number of these) in preparation for more advanced technical subjects complete the elementary branches, the need for local laboratories will become more imperative.

The greatest need of the extension division at the present time is adequate quarters at the university. During last semester fourteen instructors were obliged to work in one room. When it is understood that a number of these instructors are working upon original texts, while others are dictating lessons and letters or holding conferences, the objection to having so many instructors housed in one room can be appreciated. If good work is to be expected of the instructors, conditions must be such as to make it possible.

The instructional force of the extension division working in the extension division offices now numbers twenty-three, exclusive of the university residence teachers who give correspondence courses on fee basis.

Satisfactory grouping for offices for the present instructional force might be the following:

- 1 room for Electrical and Civil Engineering—at present 3 desks
- 1 room for Mechanical Engineering and Mathematics—5 desks
- 1 room for Drawing—at present one man, another to be added—to include equipment for reproducing drawing
- 1 room for Business Administration—3 desks
- 1 room for English, Latin, and Greek—5 desks
- 1 room for German—2 desks
- 1 room for History, French, and Political Science—3 desks
- 1 room for Municipal Reference Bureau—1 desk with filing room
- 1 room for Civic and Social Center Development Bureau
- 1 room for Secretary of Instruction by Lectures Department
- 1 room for Secretary of Correspondence-Study Department
- 1 room for registration and for the Accountant
- 1 room for the Department of Debating and Public Discussion—4 desks
- 1 room for the Dean of the Extension Division
- 1 room, or rooms, for stenographers and clerks—1 at present, others to be added
- 1 filing room
- 1 stock room
- 1 mailing room

Each of these rooms should be so placed relatively as to keep those engaged in closely related work conveniently near each

other. For instance, the drawing should be so placed as to be readily accessible to all the engineering rooms.

In order to take care of the extension division this semester, its work is being distributed from the basement to the attic in main hall. Some of the rooms are ill adapted to the purpose and many are overcrowded. The room at present used for filing material is entirely inadequate. As the character of the work is such that all of the departments have continued relations with administrative activities, the scattering of the offices over the building necessitates much running back and forth. Furthermore, proper cooperation in the use of materials is impossible with present arrangements.

The foregoing enumeration of rooms provides only for the present force, and a conservative estimate of the number of square feet necessary to provide this space is 2000. Well planned quarters adequate for the probable growth of the next few years will require three times this floor space.

Properly housed, each department of instruction in the extension division should have a room assigned to it. If to these be added the room needed for administrative work, taking into account the probable immediate growth, it will be recognized that the space required would be that of a building of considerable size. The university editor and the press bureau might be provided for in the same building.

SPIRIT OF THE EXTENSION WORKER

The earnest, enthusiastic interest of the extension division workers is extremely gratifying. What has been accomplished was made possible only through the self-sacrificing devotion of the force. I cannot better describe this spirit than by quoting from the general instructions given by one of the extension district representatives to his force.

“University extension work is not a trade and not a business, but it is a high grade of professional, social service. No rules or directions can prescribe precisely what is expected and hoped of its workers. The professional attitude desired includes enthusiasm, sympathy for real men and women, willingness to work hard, often without encouragement, and willingness to study how to make that work more effective.

“Always remember that, while you are employed by the university extension division, you are really working for those peo-

ple of the state with whom your duties bring you in contact. Your success is to be measured by *what good you do for them*.

“Regular duties will be assigned by the district representatives to each member of the district corps, so far as possible, but each will at all times hold himself ready to undertake other duties under direction should occasion require.

“Each member of the corps is required to make such reports, at such times, and in such form as may be required by the district representative.

“Each one should consider himself constituted an official eye for the extension division, always on the look-out for places where the institution may be of more or better service.

“Recommendations are not only welcome but expected from every member of the corps. All such recommendations should be made in writing, if possible, and signature attached, so that credit may be properly assigned.

“Expenditures for the university should be made with the view of getting *full value* for the institution for *every cent expended*. Let it be shown and known through facts in black and white that a public institution can be run just as economically and efficiently as any private concern, when in the hands of public-spirited citizens, such as all members of the university extension division must be.”

Respectfully submitted,

LOUIS E. REBER,

Dean.

October 4, 1910.

REPORT OF CHAIRMAN OF THE COMMITTEE ON ACCREDITED SCHOOLS

PRESIDENT CHARLES R. VAN HISE,
The University of Wisconsin,

DEAR SIR: The following summary of the work of the Committee on Accredited Schools for the years 1908-09 and 1909-10 has been prepared by Professor A. W. Tressler, inspector of high schools, and secretary of the committee. The presentation of this summary, together with certain brief observations, concerning the work which has been attempted, may be considered appropriate at this time when the question of the relation of the state University to the public high school is receiving such wide attention.

SUMMARY OF THE WORK OF THE COMMITTEE ON ACCREDITED SCHOOLS
FOR THE YEARS 1908-09 AND 1909-10

	1908-09	1909-10
Number of schools inspected.....	145	159
Number of schools visited by inspector.....	72	57
Number of meetings held by the committee (full committee and executive committee, 1909-10).....	11	28
Number of schools dropped from the list (by mutual agreement or for cause)	5	6
Number of schools added to the list.....	12	21
Total number of accredited schools.....	300	315
Total number of free high schools in Wisconsin (4 year course).....	268	286
Number of these schools accredited.....	186	205
Number not accredited	82	81
Number of these schools not accredited in 1899-1900.....	32	
Number of these schools not accredited in 1903-1904.....	67	
Number of these schools not accredited in 1906-1907.....	101	

ACCREDITED SCHOOLS ARE DISTRIBUTED IN CLASSES AS FOLLOWS:	1908-09	1909-10
Wisconsin free high schools.....	186	205
Other Wisconsin high schools.....	14	13
High schools in other states.....	72	71
Academies and private schools in Wisconsin.....	20	18
Academies and private schools in other states.....	8	8
Total number of schools in Wisconsin.....	220	236
Total number of schools in other states.....	80	79

DISTRIBUTION BY STATES *		
Accredited schools in Wisconsin	220	236
Accredited schools in Illinois	45	45
Accredited schools in Iowa	9	10
Accredited schools in Michigan	8	8
Accredited schools in Indiana	5	5
Accredited schools in South Dakota	3	3
Accredited schools in Colorado	2	2
Accredited schools in Minnesota	2	2
Accredited schools in Montana	2	2
Accredited schools in Kansas	1	0
Accredited schools in North Dakota	1	0
Accredited schools in Utah	1	1
Accredited schools in Washington	1	1

* By action of the Faculty of the University, upon the recommendation of the Committee on Accredited Schools, the inspection of secondary schools outside of Wisconsin has been discontinued.

SCHOOLS ADDED TO THE LIST

1908-09		
Abbotsford		Black Earth
Beloit Academy		Bloomer
Blair		Cashton
Cambridge		Charles City, Iowa
Cassville		Cbetek
Crandon		Cuba City—for 1909-10 and 1910-11
Loyal		Hazel Green
Mellen		Independence
Middleton		Iron River
Peshigo		Linden—for 1909-10
Prairie du Chien (St. Mary's Academy)		Lone Rock—for 1909-10
Spooner		Mukwonago—for 1909-10
		New Holstein
		Park Falls—for 1909-10
		Pewaukee—for 1909-10
		Verona
Athens	1909-10	Wabeno—for 1909-10
Belmont—for 1905-10		Walworth
Benton—for 1909-10		

SCHOOLS INSPECTED, BUT NOT ACCREDITED

1908-09	1909-10
Athens	Altoona (St. Mary's High School)
Benton	Ashland (Northland Academy)
Cashton	Crown Point, Indiana
Hazel Green	Hixton
Independence	Johnson Creek
Iron River	Kendall
Markesan	Marengo, Ill.
Merrillan	Mercer (Keewatin Academy)
Park Falls	Muscoda
	Scandinavia Academy
	Waunakee
	Westboro

SCHOOLS DROPPED FROM THE LIST

1908-1909

Boone, Iowa—By mutual agreement
 Chicago, Illinois (University School)—By mutual agreement
 Louisville, Kentucky (Manual Training High School)—By mutual agreement
 Macon, Missouri (Bless Military Academy)—By mutual agreement
 Missoula, Montana—For cause

1909-1910

Delafield (St. John's Military Academy)—For cause
 Fargo, North Dakota—By mutual agreement
 Milwaukee Academy—School discontinued
 Topeka, Kansas—Mutual agreement
 Webster City, Iowa—No report
 Woneoc—No report

The committee has sought to improve the effectiveness of its work through careful attention to three matters of major importance; *first*, close coöperation with the work of the committee on the training of teachers; *second*, inspection of schools by men especially adapted for this work; and *third*, constructive service to schools outside of the narrower limits of the inspection. The first of these is but a part of the University policy of unifying those activities involving relationships to the secondary school system. In the preparation of teachers the University carries its most important responsibility to the high school. The second is a recognition of the fact that competent and effective inspection of schools may be accomplished only through men who by training and temperament are capable of passing sound and constructive judgments upon the work of schools. Not every University man is capable of doing this. Advice and encouragement to individual schools, and a general stimulation of all high schools constitutes the third form of activity. The publication of the several bulletins in the high school series is one concrete illustration of a sort of helpfulness which finds genuine appreciation from those in charge of and teaching in high schools. From more than one point of view this informal constructive service is the most important of the relationships that the University holds to the lower schools. The accrediting system cannot exist merely as a bit of educational machinery. It must be vitalized by men and works. And this is what your committee has endeavored to do to the fullest extent of its resources, energies and abilities.

Very respectfully,

EDWARD C. ELLIOTT,
Chairman.

October 27, 1910.

REPORT OF THE LIBRARIAN

PRESIDENT CHARLES R. VAN HISE,
The University of Wisconsin.

DEAR SIR: I submit herewith a brief report on the growth and condition of the university library for the biennial period ending June 30, 1910.

GROWTH

The total number of bound volumes in the general university library and the departmental libraries accessioned with it, on June 15, 1908, was 119,920. On June 15, 1909, this number had increased to 130,240, and on June 15, 1910, to 143,215. The accessions for the biennial period, therefore, numbered 23,295. This statement of increase does not include the library of the law school, now numbering 17,000 volumes, nor the Woodman astronomical library at the Washburn observatory of 2600 volumes. The total strength of the university library and all of its branches at the present time is estimated at 168,000 volumes and 40,000 pamphlets.

During the first year of the biennium the regents found it necessary to reduce greatly the book purchasing fund of the library. This retarded somewhat the development of the library, but fortunately the purchasing fund for 1909-10 was restored to its former figure. The policy has been continued of devoting a large part of the book fund to the purchase of sets of periodicals and other expensive sets of fundamental importance, which are constantly becoming rarer and consequently more expensive. It is now very difficult to obtain sets of some greatly needed works, and for many items we have been obliged to wait months and even years. While the accessions of the past two years have helped to fill the gaps in several fields, there is practically no diminution in the demand from all departments for an increased library allotment. This demand for an increased book-purchasing fund will be treated in a later section of this report.

All gifts as received are given individual acknowledgment. A few of the more important gifts of the period deserve, perhaps, special mention. Early in 1910, Dr. Byron Robinson, '78, of Chicago, presented to the university the larger portion of his general medical library, including sets of periodicals and treatises. After Dr. Robinson's death a few months later, the Robinson-Waite anatomical collection of important and expensive works on anatomy came to the library as a gift from Dr. Robinson and his wife, Dr. Lucy Waite. Other gifts to the medical section of the library have come from Dr. Hugo Philler, Dr. Charles A. Armstrong, Dr. L. Weber, and Dr. J. M. Kirk. Mr. Patrick Cudahy, of Milwaukee, has presented a collection of books on South American history, politics, and institutions. This collection has been divided between the university library and the state historical library in accordance with the adopted scheme for their respective fields of development.

While the larger gifts of the last few years have been most welcome, not less acceptable are the smaller gifts of books and pamphlets which reach the library continually from alumni, members of the faculty, students, and other friends of the university in Wisconsin and elsewhere. I regret that limitation of space forbids an enumeration here of all these gifts, as well as the more important purchases of the past two years.

CATALOGUING DEPARTMENT

The cataloguing staff during the past two years has kept well up with the current accessions, and has made excellent progress in the recataloguing of certain sections and in the cataloguing of the library of the Wisconsin Academy of Sciences, Arts and Letters. The head cataloguer reports that 13,014 volumes were catalogued in 1908-09 and 15,917 volumes in 1909-10. The amount of actual cataloguing is not adequately represented by the figures in volumes given above, as any given volume may be represented in the card catalogue by many main and subsidiary entries. The figures given show, however, an increase of more than 36 per cent in work accomplished over the corresponding statistics for the preceding biennial period.

Since the removal of the library to the new building in 1900, the library of the Wisconsin Academy of Sciences, Arts and Letters has been shelved in the stack separate from the university and the state historical libraries. While the collection has

been of service to members of the university and others, the lack of an adequate catalogue has been a hindrance in its use. On account of press of other work, only during the last two years has it been possible to make much headway in the cataloguing of this collection. The greater portion of this work has now been done and we hope to complete it during the present year. By permission of the Wisconsin Academy, this collection is now classified and catalogued with the university library. A special book plate in each volume of this collection shows, however, that it belongs to the Wisconsin Academy. An extra copy of the main card for each volume or set is made and these cards, kept together, form a finding list or inventory of the collection. It is felt by all concerned that this arrangement of the academy library will be of most service to members of the Wisconsin Academy, as well as to all other users of the collection. An effort is now being made, by exchange and purchase, to enlarge this collection of reports and transaction of learned societies.

LOAN AND REFERENCE DEPARTMENT

It is most difficult in a report of this character to give any adequate notion of the loan and reference work, which is perhaps after all the most important work which the library does, at least for the university of today. As stated in a previous report, statistics as to recorded loan and reference use have practically no significance, owing to the freedom given in the unrecorded use of books in the reading rooms, seminary rooms, and stacks. It has been possible of late years, with an enlarged and experienced loan and reference staff, to give much better service in this department, but there are still many possibilities of helpful service which the press of work at certain hours does not permit. It is believed that the new time-table of university classes, which went into effect this fall, will relieve the pressure on the library at rush hours and yet result in an increased use of the library over the entire working day. During term time the library is open from 7:45 a. m. to 10 p. m. daily, except on Saturdays and Sundays. On Saturdays the library closes at 9 p. m. to permit the weekly cleaning of the reading rooms.

Notwithstanding our growth, we constantly find it necessary to borrow material from other university and reference libraries for the use of instructors and advanced students. Unless the

books are needed for actual class use, all transportation charges are ordinarily paid by the person for whose benefit the books are borrowed. The university is under obligations to many institutions for such favors. To some of these same institutions and to others we have frequent occasion to loan from our collections. The library loans to other libraries, or educational institutions, for the use of individuals, and not ordinarily to individuals directly. Both libraries are especially glad to be of service to the college and public libraries of Wisconsin, and these libraries apply to us frequently for the loan of books and bibliographical assistance.

RELATIONS WITH THE STATE HISTORICAL LIBRARY

The relations of the university library with the state historical library, located in the same building, continue to be of the most cordial character. While the libraries are distinct in management, it is aimed to conduct the two libraries, so far as the public is concerned, as one great state public library, open to all who would make use of its resources. The fields of collection of the two libraries, both by purchase, exchange, and gift, are kept distinct by careful cooperation. The experience of each passing year makes more clear the wisdom of bringing the two libraries under one roof, as it has resulted in both economy and increased efficiency.

THE ENGINEERING LIBRARY

While for many years the special libraries of the colleges of law and agriculture have been housed separately with special librarians and catalogues, the collections in the fields of engineering and technology have been included in the general library. At the engineering reading room in the engineering building have been kept only the current files of engineering periodicals and a small collection of engineering reference books. With the rapid growth of the university and the library, and the crowded condition of the general library, I have for some time felt that the engineering students were not making satisfactory use of the engineering section of the library and that, under present conditions, it was not possible for the general library staff to give adequate service to this portion of our constituency. The matter was therefore canvassed last spring with

the dean and faculty of the college of engineering. As a result of conferences with yourself and the university architect, recommendation was made to the regents that provision be made in the enlargement of the engineering building for a separate engineering library. This recommendation received favorable consideration by the regents and quarters for the college or department engineering library are now being prepared. While we fear that both reading room and stack for this new branch library will very soon prove quite inadequate, they will occupy all the space that could be spared in the engineering building for the purpose at the present time. The engineering library will be in the immediate charge of a young man with engineering education and experience, who seems to be well qualified for the work. I hope and believe that the institution of this branch engineering library will prove of great and increasing benefit to the faculty and students of the college of engineering.

NEEDS

In regard to the needs of the university library for the immediate future, I can only reiterate what I said in my reports of two and four years ago. One of the two most pressing needs of the library is the continuance of a liberal book purchasing fund. While the growth of the past few years is reasonably gratifying, the rate of growth must be accelerated if the library is to prove adequate to the needs of this rapidly growing university. While progress has been made, the library is still greatly inferior as a working library to those of many American universities with which the university of Wisconsin is proud to compare herself in equipment and work. It should be remembered that the growth of our library is of very recent date and that we have not the advantage possessed by many other university libraries of an extensive collection of books formed through many decades. This means of course that we are obliged to pay much higher prices for many important sets of books than it was necessary for these older libraries to pay. It is to be remembered also that from time to time the university has added new departments, such as those of the new medical school, which have to be equipped from the ground up with expensive working collections in fields in which the university library previously had little or nothing. All these elements

combine to render the present book fund inadequate for the pressing needs of the various departments.

Two years ago, the faculty library committee, depressed by the great reduction in the book fund of 1908-09, appointed a sub-committee to ascertain from each department what additions were actually needed to make of the university library a good working library. Nearly every department submitted an actual list of needed books, accompanied by an estimate of cost. The total of the estimates was over \$150,000, as given in the report made to you at the time. This then was the amount which the faculty felt was necessary to bring the library up to a state of working efficiency in 1909. With the present book fund, most members of the faculty feel that we shall never catch up, and that a considerable increase in the annual book fund is therefore absolutely necessary. Next to an increase in the book fund, the permanency of amount is felt to be desirable. Such cuts in the book fund as the large one of 1908-09 and the smaller one of 1910-11, if repeated frequently, will retard greatly the orderly development of the library. Hence an increased and permanent book purchasing fund seems to be one of the great needs of the library for the next biennial period.

The library was removed to the new building ten years ago. In the decade, the university library has grown from 55,000 volumes to 168,000 volumes, an increase of over 200 per cent. In the same period, the historical library has grown from 108,000 to over 165,000 volumes. In other words, more than twice as many volumes are stored in the building than when it was first occupied. During the past year, it was necessary to construct additional shelving in the basement, in eight seminary rooms, and on three floors of the stack. At all points the storage capacity of the building is severely taxed and there is available little or no more vacant space where additional shelving can be erected. The removal of the engineering library this fall will help somewhat, but the shelving gained will be more than filled by the accessions of this year alone.

This congested condition makes quite evident the second great need of the immediate future, viz., the construction of the north-west stack wing. In the original plans of the building, this stack wing was provided for, but it was omitted through lack of necessary funds. At present all of the shelving in the building is crowded, and there is no free space for additional shelv-

ing. Only by constant readjustment are accessions accommodated, and the crowded condition interferes constantly with the free use of the library by readers, as it has been necessary to remove sets of books from their proper places to inconvenient places in the basement. Even if the construction of the wing is provided for by the next legislature, the question of caring for books will become a very serious one for both libraries before the wing can be completed. This enlargement of the library building is certainly one of the most urgent needs of the university today and it is one in which practically every department of the university has an interest. No one thing probably means more at this time in the development of the university, both for the present and the future, than the rapid growth of its libraries. To care for this growth properly and thus to make readily available to students and other workers the book resources, render the additional stack wing an urgent necessity of the immediate future.

Respectfully submitted,

WALTER M. SMITH,
Librarian.

October 5, 1910.

REPORT OF THE DIRECTOR OF WASHBURN OBSERVATORY

PRESIDENT C. R. VAN HISE,
The University of Wisconsin.

DEAR SIR:—I have to submit the following report upon the work of the Washburn Observatory during the period from June 30, 1908, to June 30, 1910.

The observatory is primarily a research institution and as such its activities have for many years been directed to problems dealing with the positions and motions of the fixed stars. In the execution of this programme, the meridian circle has been allotted to Astronomer Flint and the large equatorial telescope to the director; the smaller equatorial telescope and transit instrument are not systematically employed in research since the limited staff of the observatory does not suffice for this purpose without unduly curtailing the major lines of work above indicated.

My personal research work has been given largely to a determination of the proper motions of faint telescopic stars, a field that has hardly been touched by any other person, although it appears to be of fundamental importance to a knowledge of the structure of the stellar system. Provisional results of this investigation, which were briefly indicated in my last report, have since that time been published, together with the observations upon which they are based, in Vol. XII of the Publications of the Washburn Observatory. A second series of observations of similar character and purpose has been in progress during the period covered by this report and the observations are now nearly complete. Comparatively little progress has been made, however, in the necessary discussion of the data thus acquired since the practical impossibility of obtaining in Madison competent assistance for astronomical computation throws the whole burden of this routine work upon myself.

In order to utilize the observations above outlined, they must be combined with similar ones of much earlier date and the scanty amount of such early data constitutes a limit to this research which is now nearly attained, at least in so far as the present form of the research is concerned. It is hoped, however, that a large amount of data accumulated at the Harvard observatory more than half a century ago, and as yet unutilized may prove to be of sufficient precision to warrant a reobservation of the stars and discussion of the entire material for the determination of proper motions. By arrangement with the director of the Harvard observatory, this matter is now under investigation and, if it shall prove feasible, I shall personally undertake the work in the near future.

In addition to the foregoing, I continue the annual observation of a list of double stars selected many years ago for continuous measurement on account of their relatively rapid angular motion. These measures I expect to maintain so long as my connection with the observatory subsists.

Astronomer Flint has continued his second series of meridian observations for the determination of stellar parallax and the work is now well advanced toward completion. The printer's copy for all the tables of data and individual results has been prepared and considerable progress has been made in the discussion of the results. Mr. Flint has also employed the meridian circle in an extensive series of observations supplementary to my proper motion work, determining the positions of some hundreds of bright comparison stars not otherwise sufficiently well known. Something more than half of the observing required for this purpose has been accomplished, but the reduction of these observations is still in progress and considerable time will be required for its completion.

The time service furnished to the university by the observatory has been regularly maintained and largely extended on account of the growing demands of the university. Over 100 bells are distributed through sixteen buildings and simultaneously rung twice hourly throughout the day, and the number of these bells is rapidly being augmented. The supervision, maintenance, and extension of this service constitutes a large demand upon the time of the observatory janitor, who is, under my general direction, immediately charged with it.

Following a custom of many years' standing the observatory is open to the public on the first and third Wednesday evenings of each month and is largely visited at such times by university students and others. I estimate the amount of such attendance at from 2,000 to 3,000 visitors per annum, all of whom are given an opportunity to look through the large telescope at objects of interest that are explained by the astronomer in charge of the instrument. On account of the great public interest manifested during the past year in the return of Halley's comet to proximity with the earth, the observatory was specially opened to the public on six evenings when the comet was at its best, and the opportunities thus offered were eagerly utilized by several hundred visitors.

As chairman of the Committee on Comets of the Astronomical and Astrophysical Society of America, I have devoted a considerable measure of time and strength to securing cooperation among the astronomers of the world in observing Halley's comet by methods best adapted to advance our knowledge of these bodies. As a part of this work, I have assumed general charge of the organization and despatch to the Hawaiian Islands of an expedition to photograph the comet from a region and at times not otherwise available. This party has recently returned after a very successful mission.

The instruments and equipment of the observatory have been maintained in good condition and the buildings require only ordinary repairs for which provision is made in the current budget. The steam heating plant is, however, very old and the boilers must soon be condemned. I recommend that instead of replacing the plant, connection be established with the central heating station of the university at the earliest possible date. From the standpoint of the astronomical observer, any heating plant in the vicinity of an observatory is an injury to its work, although an unavoidable one. At the present time, the observatory suffers all the inconvenience resulting from proximity to the central station as well as from its own plant, and derives no advantage from the former.

The past two years has been a period of much anxiety with respect to the encroachment of new buildings upon the space surrounding the observatory, but this matter has already been so fully brought to your attention that I need not here repeat the

tale of injury that threatens its scientific work. The growth of the university will doubtless require at some future time the removal of the observatory to a more remote site, if its scientific activity is to be preserved. Such removal will, however, so impair its educational service to the community as to be undesirable so long as tolerable conditions can be maintained in the present site.

Very respectfully submitted,

GEO. C. COMSTOCK,

Director.

Madison, July 16, 1910.

REPORT OF THE DIRECTOR OF THE HYGIENIC LABORATORY

PRESIDENT CHARLES R. VAN HISE,
The University of Wisconsin.

DEAR SIR:—I beg herewith to submit to you a copy of the report of the work done in the state hygienic laboratory from July, 1909, to July, 1910. The statistics show that we have received seven hundred and fifty specimens more than last year. The work of the laboratory seems to be increasing steadily and I believe we are giving good service to the physicians in the state.

During the past year in conjunction with the state board of health, we have established a pasteur institute. This has met with a reception absolutely unexpected. Our first patient was received on November 16th, 1909, and up to the present time we have had eighty-nine patients. We are under the necessity of obtaining our material from the public health and marine hospital service in Washington, D. C. We are in great need of an appropriation sufficient to enable us to prepare our own material completely. We also need very much proper quarters in which to receive the patients and to make the injections. It is my conviction that this treatment should be given free to citizens of the state of Wisconsin. At the present time we charge \$25.00 to each patient, which is about one-fourth the charge made by many private institutions, or public institutions when serving citizens from other states, but we are giving the treatment to all comers, however, whether they are able to pay or not. In order to furnish this service free of charge, it will be necessary for us to have an appropriation sufficient to employ a physician to make the injections.

I trust that at the next legislature we will be able to obtain an appropriation of at least \$3,500.00 for this specific work.

With much respect, I am,

Very sincerely yours,

MAZÛCK P. RAVENEL,

Director.

July 8, 1910.

REPORT OF THE UNIVERSITY EDITOR

PRESIDENT CHARLES R. VAN HISE,
The University of Wisconsin.

DEAR SIR:—I have the honor to submit the following report upon the work of the division of publications during the biennial period closing June 30, 1910.

PURPOSES OF THE DEPARTMENT

The office of university editor was established by the regents in the spring of 1907 for the purpose of concentrating the work of publishing the university publications. Shortly after the establishment of the office all of the university printing was placed in the editor's hands and now all printing work is in his charge.

PROGRESS OF THE WORK

I took up the work of the office in October, 1909, shortly after the former university editor, Charles M. Gillett, was taken ill, to attempt to keep the work running until he could return to the office. On his death in February, I was continued in charge of the work. As a result of having been in the office but one year I am familiar with the work of the year 1908–1909 only in a general way.

Monographs: The various series in which monographs embodying the results of research and special investigation are published remain the same as at the time of the last biennial report: namely, the economics and political science series, the history series, the philology and literature series, the science series, the engineering series and the university extension series.

The number of monographs published during the past two years shows an increase over the number during any previous

biennial period. While the engineering series contains the greatest number of additions there has been at least one addition to each series.

When I took charge of the work in October, 1909, there were three manuscripts on hand and three more were soon after put into my hands. These have all been published, in addition to a number of others which were turned over to me at various times during the year. At present there is one monograph about to be printed, two in the hands of the printers, two which will be turned over to them immediately and one awaiting action of the Bulletin Committee. Below is a table which shows the number of monographs in the six regular series published in each biennial period since 1892:

From July 1, 1892 to June 30, 1894.....	3
From July 1, 1894 to June 30, 1896.....	13
From July 1, 1896 to June 30, 1898.....	7
From July 1, 1898 to June 30, 1900.....	11
From July 1, 1900 to June 30, 1902.....	7
From July 1, 1902 to June 30, 1904.....	8
From July 1, 1904 to June 30, 1906.....	8
From July 1, 1906 to June 30, 1908.....	22
From July 1, 1908 to June 30, 1910.....	25

General Series: This includes the annual catalogue, the departmental announcements, a large number of publications of the university extension division, and various miscellaneous publications which it is found advisable to class under the head of bulletins.

During the past two years an attempt has been made to improve the University Catalogue with an idea of securing greater uniformity and simplicity. Last fall a committee of the faculty was appointed to take up this matter. After several discussions a number of recommendations were made which have been quite generally adopted by the members of the faculty in preparing their announcements for the catalogue. Although there has been much improvement, it is hoped that another year will show a still greater advancement along these lines, particularly in the matter of simplifying descriptions of courses.

High School Series: This series, which includes manuals intended to assist secondary school teachers in the presentation of subjects in the course of study, has proved extremely popular. There have been a number of additions to the series during the past two years and it has been found necessary to print a second edition of one number and a third of another.

During the biennial period ending June 30, 1910, the number of issues in each series of the Bulletin was as follows:

Economics and Political Science Series.....	6
History Series.....	1
Philology and Literature Series.....	2
Science Series.....	3
Engineering Series.....	11
University Extension Series.....	2
General Series.....	99
High School Series.....	9
Syllabi.....	8
Total.....	141

Alumni Directory: The work of preparing a new directory of alumni of the University has been placed in the hands of the registrar and the card catalogue which was started in this office has been turned over to him.

Job Work: The job work, such as stationery, blanks, etc., all of which is now handled through this office is steadily increasing in bulk. At times so much of it comes at once and those ordering the work are in such a hurry that it hampers the work of the office and also causes congestion at the printer's, thereby causing delay. If as much of this work as possible were ordered in time so that it would not have to be rushed through it would be a great convenience both to the editor and those ordering the work.

Printing: During the past year all of the university work has been handled by the Democrat Printing Company, under the state printing contract, in compliance with a ruling made by the attorney general. This plan has some advantages as it often saves delays which might occur due to the necessity of securing bids from various firms. There is also considerable time saved because of the fact that it is not necessary to send copy and proof back and forth through the mails.

One disadvantage of the plan is the matter of congestion which at times causes delay. But on the whole the Democrat Printing Company has given fairly good satisfaction on this score. The chief complaint has been in regard to the quality of work furnished, which has been unsatisfactory. However, I took up these points in considerable detail in a special report which I furnished you last June and there is at this time nothing to add to that report.

Stock: Since the university work has been handled under the state printing contract a large part of the stock has been purchased by the state printing clerk. This has in almost every

instance resulted in a saving to the university and the plan has proved quite satisfactory.

NEEDS

The greatest need of this department at present is larger and better quarters. The department has, since its establishment, been located in a small office in the basement of university hall. This office is much too small and in addition is poorly ventilated and, especially during the winter, is very unhealthful. The work of the department would be greatly facilitated if better quarters could be provided.

Respectfully submitted,

O. C. GILLET, *University Editor.*

REPORT OF THE EDITOR OF THE PRESS BULLETIN

PRESIDENT CHARLES R. VAN HISE,
The University of Wisconsin.

DEAR SIR:—I have the honor to submit the following report of the work and development of the *University of Wisconsin Press Bulletin*, during the biennial period ending July 1, 1910:

THE PURPOSE OF THE PRESS BULLETIN

Ever since the establishment of the University Press Bulletin by the regents in April, 1909, its policy has been determined by the aims which led to its inception, which were: First, to give the citizens of the state through the daily and weekly papers the results of the investigation and research that is being carried on at the university; second, to inform the public in regard to the educational work of the university and the ever-increasing opportunities for training offered to the young men and young women of the state; third, to furnish to the press accurate reports of all official news of the university, including reports of regent and faculty meetings, and of the work of officers of the university in general.

ORGANIZATION AND DEVELOPMENT

The Press Bulletin is issued in three forms: First, a printed bulletin, consisting of forty-eight inches of news matter, distributed every week in an edition of 700 copies to weekly papers in Wisconsin and to agricultural and dairy papers throughout the country; second, mimeograph news sheets, issued whenever the news warrants it and sent to daily papers in Wisconsin and adjoining states; third, carbon copies of university news notes, sent weekly to metropolitan daily papers that have college news departments.

University news is thus supplied regularly to five classes of publications: (1) daily newspapers in Wisconsin; (2) weekly newspapers in Wisconsin; (3) agricultural and dairy journals throughout the country; (4) daily newspapers in eastern and

western cities, that have college news departments; (5) news syndicates and newspaper unions that furnish news service to daily and weekly papers in the form of "ready-prints," "patent insides," stereotyped plates, and news letters.

Illustrated special feature articles are frequently prepared for magazine sections of Wisconsin papers, for news syndicates, and for periodicals generally. Information regarding the university, together with descriptive matter and photographs for illustrations, are supplied magazine writers and publishers upon request.

All of the news matter and the special articles concerning the College of Agriculture that have been sent out through the Press Bulletin have been prepared by Mr. J. C. Marquis, editor of the agricultural publications.

RESULTS

All the various publications to which the Press Bulletin is sent, print news of the University thus supplied to them. In every county in the state at least one weekly newspaper is publishing university news taken from the printed press bulletin, and in a number of counties from five to ten weekly newspapers are using this news service. Daily newspapers in twenty-eight Wisconsin cities are printing news taken from the mimeograph bulletins. The agricultural, dairy, and poultry journals published in all parts of the United States that use the news sent to them in the printed bulletin now number one hundred and seventy-five. The important news syndicates, press associations and newspaper unions, all make frequent use of the University Press Bulletin in their news service.

State wide as well as national publicity is given through the medium of these publications to the work of the university and the results of investigation and research. By furnishing these publications with complete and accurate reports of all matters pertaining to the university, the public generally is kept informed regarding the various activities of the university, and the effect of occasional reports, often unsatisfactory, concerning the institution emanating from other sources is thereby counteracted, or at least minimized.

Respectfully submitted,

WILLARD G. BLEYER.

APPENDIX A

The Attendance at the University of Wisconsin

1. NUMBER OF STUDENTS DURING THE PAST TEN YEARS

College of	00-01	01-02	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10
Letters and Science ¹	1,137	1,176	1,	1,312	1,476	1,579	1,579	1,762	1,941	2,241
Mechanics and Engi- neering.....	411	513	585	744	804	788	799	921	896	781
Agriculture.....	⁵ 440	⁵ 448	⁵ 461	⁵ 525	⁵ 526	⁵ 628	⁵ 622	⁵ 694	⁵ 859	403
Short Course.....										561
Law.....	266	260	226	201	183	154	165	157	165	159
Course in Pharmacy.....	44	35	35	36	33	32	37	32	44	42
School of Music.....	191	169	126	172	153	209	191	150	114	143
Summer Session.....	323	367	410	400	403	528	568	661	1,026	1,128
Library School ²	40	37	44	30	59	51	71	42	22	30
Less Twice Enumerated..	³ 193	³ 191	³ 205	³ 239	³ 236	³ 327	³ 302	³ 364	³ 524	³ 511
Totals.....	2,619	2,777	2,870	3,151	3,342	3,571	3,659	4,013	4,521	4,947

2. NUMBER OF THE INSTRUCTIONAL FORCE

	00-01	01-02	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10
Professors.....	55	58	59	71	69	78	80	85	91	98
Associate Professors.....	1	1	2	1	8	9	9	13	17	22
Assistant Professors.....	37	33	35	40	38	45	48	59	70	76
Instructors.....	37	46	58	65	96	113	119	119	129	137
Assistants.....	32	29	30	43	44	47	71	84	97	121
University Fellows ²	⁴ 14	13	13	13	13	14	18	16	16	16
Totals.....	162	167	184	220	255	292	327	360	404	454

¹ This includes the courses in commerce, chemistry, journalism and the training of teachers. These courses are so interwoven with the other courses of the college of letters and science that they cannot well be separated.

² Not included in totals.

³ This large number is due to the fact that many persons who were present at the summer session were also present in the regular sessions of the university.

⁴ The university fellows, though primarily students, are classified here for the reason that according to the terms of their appointment, they are required to render a small amount of instruction. This requirement, however, applies only to the university fellows; consequently the above enumeration does not include the fellows provided for by private generosity.

⁵ This number includes the short course and dairy students.

APPENDIX B

Changes in the Faculty

During the fiscal year July 1, 1908-June 30, 1909

APPOINTMENTS

Professors

Name	Title
BUNTING, CHARLES HENRY, B. Sc., M. D.,	Professor of pathology.
HOLDEN, EDWIN CHAPIN, B. S., M. E.,	Professor of mining engineering.
JANSKY, CYRIL METHODIUS, B. A., B. S.,	Assistant professor of electrical engineering.
JOHNSTON, CHARLES,	Lecturer in political science.
JUDAY, CHANCEY, M. A.,	Lecturer in zoology.
LOEVENHART, ARTHUR SOLOMON, M. S., M. D.,	Professor of pharmacology and toxicology.
MASON, MAX, Ph. D.,	Associate professor of mathematics.
MEYER, ERNST CHRISTOPHER, Ph. D.,	Lecturer in political science.
MILLER, ERIC REXFORD,	Local forecaster, U. S. Weather Bureau.
MOORE, WILLIAM UNDERHILL, M. A., LL. B.,	Assistant professor of law.
NORRIS, EARLE B., B. S., M. E.,	Assistant professor of mechanical engineering.
SANBORN, JOHN BELL, Ph. D.,	Lecturer in law.
THOMAS, CARL CLAPP, M. E.,	Professor of steam engineering.
WESTERMANN, WILLIAM LINN, Ph. D.,	Assistant professor of history.
YOUNG, KARL, Ph. D.,	Assistant professor of English.

PROMOTIONS

Professors

ADAMS, THOMAS SEWALL, Ph. D.,	From associate professor to professor of political economy.
ALLEN, BENNET MILLS, Ph. D.,	From instructor to assistant professor of anatomy.
BEEBE, MURRAY CHARLES, B. S.,	From associate professor to professor of electrical engineering.
CHASE, WAYLAND JOHNSON, M. A.,	From assistant to assistant professor of history.
FISH, CARL RUSSELL, Ph. D.,	From associate professor to professor of American history.
FISKE, GEORGE CONVERSE, Ph. D.,	From assistant professor to associate professor of Latin.

FULLER, JAMES GARFIELD, B. S. A.,	From instructor to assistant professor of animal husbandry.
GILMAN, STEPHEN WARREN, LL. B.,	From assistant professor to professor of business administration.
HUTCHINS, CHARLES PELTON, M. D.,	From professor of physical training to director of physical training.
INGERSOLL, LEONARD ROSE, Ph. D.,	From instructor to assistant professor of physics.
KAHLENBERG, LOUIS, Ph. D.,	From professor of chemistry to director of the course in chemistry and professor of chemistry.
KEOWN, ROBERT McARDLE, B. S.,	From instructor to assistant professor of machine design.
KIND, JOHN LOUIS, Ph. D.,	From instructor to assistant professor of German.
KOELKER, WILLIAM F., Ph. D.,	From instructor to assistant professor of chemistry.
McCOLLUM, ELMER VERNER, Ph. D.,	From instructor to assistant professor of agricultural chemistry.
MARQUETTE, WILLIAM GEORGE, Ph. D.,	From instructor to assistant professor of botany.
MARTIN, LAWRENCE, M. A.,	From instructor to assistant professor of geology.
MILLAR, ADAM VAUSE, M. S.,	From instructor to assistant professor of mechanical drawing.
PROKOSCH, EDUARD, Ph. D.,	From instructor in German to assistant professor of German and comparative philology.
RAVENEL, MAZYCK PORCHER, M. D.,	From professor of bacteriology to director of the hygienic laboratory and professor of bacteriology.
SCOTT, ROBERT BRUCE, Ph. B.,	From assistant professor to associate professor of political science.
SHOWERMAN, GRANT, Ph. D.,	From assistant professor to associate professor of Latin.
WATSON, JAMES WEBSTER, B. S.,	From instructor to assistant professor of electrical engineering.
WATTS, OLIVER PATTERSON, Ph. D.,	From instructor to assistant professor of applied electro-chemistry.
WINCHELL, ALEXANDER NEWTON, D. Sc.,	From assistant professor to professor of mineralogy and petrology.

Changes in Title

BLEYER, WILLARD GROSVENOR, Ph. D.,	From assistant professor of English to assistant professor of Journalism.
ELSON, JAMES CLAUDE, M. D.,	From professor of physical training to medical examiner in the department of physical training.
HUTCHINS, FRANK AVERY,	From field organizer to secretary of debating and public discussions, university extension.

Changes in the Faculty

During the fiscal year July 1, 1909-June 30, 1910

APPOINTMENTS

Professors

Name	Title
BENNETT, EDWARD, B. S.,	Associate professor of electrical engineering.
COLE, LEON J.,	Associate professor of experimental breeding.
DOBSON, JOSIE HELEN, M. D.,	Medical examiner, department of physical training.
EVANS, JOSEPH S., B. A., M. D.,	Professor of clinical medicine. Medical adviser.
EVANS, SILAS, M. A.,	Assistant professor of Hebrew and Hellenistic Greek.
HALPIN, JAMES GARFIELD, B. S. A.,	Assistant professor of poultry husbandry.
HATCH, KIRK LESTER, B. S.,	Assistant professor of agricultural education and secretary of agricultural extension.
HAVARD, FRANCIS THOMPSON, E. M.,	Assistant professor of mining and metallurgy.
HOOL, GEORGE ALBERT, B. S.,	Assistant professor of structural engineering.
HOWE, FREDERIC CLEMSON, Ph. D.,	Lecturer in political science.
HUBERICH, CHARLES HENRY, J. U. D., D. C. L., LL. D.,	Professor of law.
JONES, LOUIS RALPH, Ph. D., Sc. D.,	Professor of plant pathology.
KELLY, FREDERICK THOMAS, Ph. D.,	Assistant professor of Hebrew and Hellenistic Greek.
LEE, CARL EMIL, M. S.,	Assistant professor of dairying.
LUENING, EUGENE,	Acting director of School of Music.
MARLATT, ABBY LILLIAN, M. S.,	Professor of home economics.
NEYSTROM, PAUL HENRY, Ph. B.,	District university extension representative, Oshkosh.
RASTALL, BENJAMIN McKIE, Ph. D.,	Associate professor of business administration.
SANDERS, JAMES GLOSSBRENNER, M. A.,	Assistant professor of economic entomology.
SMITH, KENNETH GARDNER, B. A. B. S.,	District university extension representative, Milwaukee.
SPENCER, JOHN, V. S.,	Lecturer in veterinary science.
WHITBECK, RAY HUGHES, B. A.,	Assistant professor of geography and physiography.

PROMOTIONS

Professors

ALLEN, CHARLES ELMER, Ph. D.,	From associate professor to professor of botany.
ALLEN, KATHERINE, Ph. D.,	From instructor to assistant professor of Latin.
BLACKWELDER, ELIOT, B. A.,	From assistant professor to associate professor of geology.

- CHRISTIE, ALEXANDER GRAHAM, From research assistant to assistant professor of steam engineering.
- DICKINSON, THOMAS HERBERT, Ph. D., From assistant professor to associate professor of English.
- ELLIOTT, EDWARD CHARLES, Ph. D., From professor of education to director of the course for the training of teachers and professor of education.
- EVANS, MARSHALL BALKEMORE, Ph. D., From assistant professor to associate professor of German.
- FISCHER, RICHARD, Ph. C., Ph. D., From assistant professor of pharmacy to professor of chemistry.
- HASTINGS, EDWIN GEORGE, M. S., From assistant professor to associate professor of agricultural bacteriology.
- JANSKY, CYRIL METHODIUS, B. A., B. S., From assistant professor to associate professor of electrical engineering.
- JONES, EDWARD RICHARD, M. S., From instructor to assistant professor of soils.
- KINNE, WILLIAM SPAULDING, B. S., From instructor to assistant professor of structural engineering.
- LEONARD, WILLIAM ELLERY, Ph. D., From instructor to assistant professor of English.
- LYMAN, ROLLO LUVERNE, B. A., From assistant professor to associate professor of rhetoric and oratory.
- NORGORD, CHRISTIAN PERCIVAL, B. S., From instructor to assistant professor of agronomy.
- OTIS, DANIEL HENRY, M. S., From assistant to dean of college of agriculture and associate professor of animal nutrition to assistant to dean of college of agriculture and professor of farm management.
- PYRE, JAMES FRANCIS AUGUSTINE, Ph. D., From assistant professor to associate professor of English.
- ROE, FREDERICK WILLIAM, M. A., Ph. D., From instructor in English to professor of English and chairman of freshmen advisers.
- SCHLATTER, EDWARD BUNKER, Ph. D., From instructor to assistant professor of romance languages.
- SCOTT, ROBERT BRUCE, Ph. B., From associate professor to professor of political science.
- SELLERY, GEORGE CLARKE, Ph. D., From director of the summer session and associate of European history to director of the summer session and professor of European history.
- SHOWERMAN, GRANT, Ph. D., From associate professor to professor of Latin.
- TAYLOR, HENRY CHARLES, Ph. D., From associate professor of political economy to professor of agricultural economics.
- WAGNER, GEORGE, M. A., From instructor to assistant professor of zoology.
- WESTERMANN, WILLIAM LINN, Ph. D., From assistant professor to associate professor of history.
- WITHEY, MORTON OWEN, C. E., From instructor to assistant professor of mechanics.
- WOOLLEY, EDWIN CAMPBELL, Ph. D., From instructor to assistant professor of English.

CHANGES IN TITLE

BURGESS, CHARLES FREDERICK, E. E.,	From professor of applied electro-chemistry to professor of chemical engineering.
MARTIN, LAWRENCE, M. A.,	From assistant professor of geology to assistant professor of physiography and geography.
MEYER, ERNST CHRISTOPHER, Ph. D.,	From lecturer to assistant professor of political science.
O'SHEA, M. VINCENT, B. L.,	From professor of the science and art of education to professor of education.
PARKINSON, JOHN BARBER, M. A.,	From vice-president and emeritus professor of constitutional international law to emeritus professor of constitutional and international law.

VACANCIES.

Taking effect June 30th, 1910, unless otherwise indicated.

Professors.

ADAMS, THOMAS SEWALL, Ph. D.....	Resigned Professor of political economy.
BURNSIDE, CHARLES HOWARD, M. A.....	Resigned Assistant professor of mechanics.
COOK, WALTER WHEELER, M. A., LL. M.....	Resigned Professor of law.
ERLANGER, JOSEPH, B. S., M. D.....	Resigned Professor of physiology.
EVANS, SILAS, M. A.....	Resigned Assistant professor of Hebrew and Hellenistic Greek.
HOWE, FREDERIC CLEMSON, Ph. D.....	Term expired Lecturer in political science.
HUBERICH, CHARLES HENRY, J. U. D., D. C. L., LL. D.....	Term expired Professor of law.
HUTCHINS, CHARLES PELTON, M. D.....	Resigned Director of physical training and director of the department.
MEYER, ERNST CHRISTOPHER, Ph. D.....	Resigned Assistant professor of political science.
OLIN, JOHN MYERS, M. A., LL. B.....	Resigned Professor of law.
SPENCER, JOHN, V. S.....	Term expired Lecturer in veterinary science.
STEEN, JAMES CLARENCE.....	Resigned Superintendent of machine shops.
STODDART, CHARLES WILLIAM, Ph. D.....	Resigned Assistant professor of soils.
TURNER, FREDERICK JACKSON, Ph. D., LL. D., D. Lit.....	Resigned Professor of American history.

VACANCIES.

Taking effect June 30, 1909, unless otherwise indicated.

Professors.

BARTLETT, JAMES L., B. S.....	Resigned Observer, U. S. Weather Bureau, assistant professor of meteorology.
BODE, BOYD HENRY, Ph. D.....	Resigned Assistant professor of philosophy.

COLE, ROSSETER GLEASON, Ph. B.....	Resigned
Director of the school of music. Professor of music.	
DEARBORN, WALTER FENNO, Ph. D.....	Resigned
Assistant professor of education.	
DICKERMAN, JUDSON CHARLES, B. S.....	Resigned
Assistant professor of chemical engineering.	
HAWES, CHARLES HENRY, M. A.....	Term expired
Lecturer in anthropology.	
JOHNSTON, CHARLES.....	Term expired
Lecturer in political science.	
LORENZ, MAX OTTO, Ph. D.....	Term expired
Assistant professor of political economy.	
RICHTER, ARTHUR WILLIAM, M. M. E.....	Resigned
Professor of experimental engineering.	
SANDSTEN, EMIL PETER, Ph. D.....	Resigned
Professor of horticulture.	
TAYLOR, ALBERT HOYT, B. S.....	Term expired
Assistant professor of physics.	

REPORT OF THE TREASURER

MADISON, WIS., Dec. 1, 1910.

HON. W. D. HOARD,

President of the Regents of the University of Wisconsin.

DEAR SIR:—I have the honor to submit herewith my report as treasurer of the board of regents of the University of Wisconsin for the fiscal years ending June 30th, 1909, and June 30th, 1910.

Very truly yours,

A. H. DAHL,
State Treasurer.

UNIVERSITY FUND INCOME

RECEIPTS	1909	1910
Received from interest on land contracts	\$72 26	\$74 99
Received from interest on loans	3,336 61	3,412 44
Received from interest on bonds	840 13	400 00
Received from interest on state deposits	4,634 63	4,519 58
Received from interest on certificates of indebtedness.....	7,770 00	7,770 00
Received from United States government	61,000 00	68,000 00
Received loan from general fund.....	202,000 00	128,000 00
Received building appropriation	262,225 24	168,876 18
Received Woman's building appropriation.....	135,402 79	62,496 30
Received books and apparatus appropriation.....	.....	43,646 79
Received University Extension appropriation.....	20,000 00	50,000 00
Received Washburn Observatory appropriation.....	3,000 00	3,000 00
Received taxes	708,160 00	743,585 00
Received Agricultural Institutes appropriation.....	19,200 70	20,000 00
Received Agricultural Extension appropriation.....	.....	32,000 00
Received Agricultural College transfer.....	13,243 32	11,777 56
Received state insurance .....	.....	51 00
Received L. J. Pickarts, bursar.....	314,282 14	420,542 93
Received current expense appropriation.....	.....	100,000 00
Received cancelled drafts	34 27	90 87
Total	\$1,755,202 09	\$1,868,243 64

UNIVERSITY FUND INCOME—Continued

DISBURSEMENTS	1909	1910
University warrants	\$1,522,043 59	\$1,664,479 33
Loans from general fund.....	202,000 00	128,000 00
Insurance	4,914 00	5,429 97
Refund of interest on land contracts.....	7 84	10 76
Total	<u>\$1,728,965 43</u>	<u>\$1,797,920 06</u>
RECAPITULATION		
Balance on hand June 30, 1908.....	\$99,974 86	.....
Receipts for two years.....	3,623,445 73	.....
Disbursements for two years.....	.....	\$3,526,885 49
Balance on hand June 30, 1910.....	.....	196,535 10
Total	<u>\$3,723,420 59</u>	<u>\$3,723,420 59</u>

FINANCIAL CONDITION

REPORT OF THE SECRETARY.

MADISON, WIS., June 30, 1910.

HON. W. D. HOARD,

President of the Regents of the University of Wisconsin.

SIR:—I submit herewith the financial report of the secretary of the university for the biennial period closing June 30, 1910.

The report consists of the following statements:

1. Receipts and disbursements for the fiscal years 1908-09, 1909-10.
2. Details of disbursements for each college, or main account, by classification or sub-account, and recapitulation of disbursements by sub-account for each year.
3. Statement of assets and liabilities taken from our books as of June, 1910.
4. University trust funds.
5. Appendix A. Details of disbursements to individuals or firms. Appendix B. Details of pay rolls.

Respectfully,

M. E. McCAFFREY,
Secretary.

UNIVERSITY FINANCES, 1908-9

RECEIPTS

From state appropriations—	
2-7 mill tax	\$708,160 00
Agricultural Institute, Chap. 318, Laws 1907.....	19,200 70
University extension, Chap. 413, Laws 1907.....	20,000 00
Washburn observatory, Chap 418, Laws 1887.....	3,000 00
Special appropriation, Sec. 3, Chap. 428, Laws 1907 (\$200,000 building fund)	262,225 24
Special appropriation, Sec. 4, Chap. 428, Laws 1907 (women's building)	135,402 79
From U. S. appropriations—	
Agricultural experiment station (Hatch fund).....	15,000 00
Agriculture and mechanic arts (Morrill fund).....	25,000 00
Agricultural experiment station (Adams fund).....	11,000 00
Agricultural experiment station (Nelson fund).....	10,000 00
From productive funds—	
University fund	16,653 63
Agricultural college fund	13,243 32
From refunds, state treasurer, cancelled drafts.....	34 27
From deposits by bursar, account student fees, etc.—	
Law	3,092 00
Letters and science	37,771 50
College of engineering	25,075 50
College of agriculture	7,222 50
Non-resident	23,262 50
Gymnasium and locker	8,146 00
Piano and organ rent (including \$625.00 from school of music).....	1,216 50
Chadbourne hall, rent	10,473 98
Chadbourne hall, board	23,428 56
Summer session	14,048 00
University extension	9,768 55
Library fines	63 75
Laboratory supplies	40,000 00
Agricultural college sales, proceeds of material after having been used for experimental purposes	98,823 55
Horse breeding permits	1,872 65
Farmers' institutes, advertising, and sale of bulletins.....	688 90
Nursery inspection	144 00
Soils department	103 55
Miscellaneous agricultural college	480 36
Return of cash advanced for traveling expenses.....	1,782 30
Refund Madison Gas & Electric Co.....	175 50
Salary refund, L. M. Price.....	22 50
Salary refund, E. A. Boyer.....	125 00
Hygienic laboratory, examination of water.....	340 00
Sale of cinders	334 30
Sale of old horse.....	130 00
Sale of old iron and paper.....	39 49
Sale of old potatoes, Chadbourne hall.....	108 88
Refund contingent account, Mrs. Taylor (Chadbourne hall).....	700 00
Sale of kindling	39 00
Sale of old houses.....	320 00
Use of gymnasium, \$124.64; junior prom., \$72.08.....	196 72
Labor	454 57
Sale of janitors' uniforms.....	223 20
Refunds, freight, etc.....	208 94
Rents of university houses.....	1,520 85
Charles R. Van Hise, gas and electric current.....	140 04
State historical society, gas and current.....	227 13
Sale of university publications (outside of state).....	413 19
Sale of hay	20 00
Sale of wood, \$52.00; shavings, \$7.29; shrubs, \$3.20.....	62 49
All other sources	99 99
Sale of cement sacks.....	515 70
Vogel fellowship (annual donation).....	400 00

 \$1,553,202 09

DISBURSEMENTS

College of letters and science.....	\$422,060 93
Agricultural college and experiment station.....	267,962 50
College of engineering	128,822 56
General account	58,086 43
General library	42,540 70
Administration	38,106 12
Chadbourne hall	36,992 37
University extension	35,863 70
Laboratory supplies	35,536 55
Law school	28,157 56
Physical culture—men	22,540 13
Washburn observatory	7,016 49
Architect's office	4,918 35
Physical culture—women	3,924 81
Military department	2,822 12
Woman's building	135,560 49
New central plant	112,661 74
Animal husbandry building	59,651 55
Tunnels	41,082 75
University grounds	30,115 00
Store room	13,349 74
Fees refunded	2,848 50
Piano account	2,169 00
J. J. Hill railway library fund.....	1,126 11
Medical school books	586 35
Biology building	329 21
North wing, main hall.....	300 00
Forestry building	285 40
Agricultural engineering equipment	107 07
School of economics library fund.....	76 36
Johnson endowment fund income.....	39 50
Bryan prize fund income.....	37 50
Men's dormitories	33 85
Interest refunded	7 34
Rent	7 00
Agronomy equipment	4 50
	<hr/>
	\$1,535,730 78
Less store room credit.....	8,765 35
	<hr/>
	\$1,526,965 43

SUMMARY, 1908-09

	Re- ceipts.	Disburse- ments.
Total receipts for the year 1908-09.....	\$1,553,202 09	.....
Total disbursements for the year 1908-09.....	.....	\$1,526,965 43
Balance June 30 1908.....	99,974 86	.....
Balance June 30, 1909.....	.....	126,211 52
	<hr/>	<hr/>
	\$1,653,176 95	\$1,653,176 95

UNIVERSITY FINANCES, 1909-10

RECEIPTS

From state appropriations—		
2-7 mill tax		\$743,585 00
Agricultural institutes (Chap. 318, Laws 1907).....		20,000 00
University extension (Sec. 7, Chap. 306, Laws 1909).....		50,000 00
Washburn observatory (Chap. 418, Laws 1887).....		3,000 00
Current expense appropriation (Sec. 2, Chap. 306, Laws 1909).....		100,000 00
Agricultural experiment station, branch (Chap. 507, Laws 1909).....		2,000 00
Agricultural extension (Sec. 8, Chap. 306, Laws 1909).....		30,000 00
Special appropriation—		
\$200,000 building fund (Sec. 5, Chap. 306, Laws 1909).....		168,876 18
Balance women's building fund (Sec. 6, Chap. 306, Laws 1909).....		62,496 30
\$50,000 books and apparatus (Sec. 3, Chap. 306, Laws 1909).....		43,646 79
From U. S. appropriations—		
Agricultural experiment station (Hatch fund).....		15,000 00
Agriculture and mechanic arts (Morrill fund).....		25,000 00
Agricultural experiment station (Adams fund).....		13,000 00
Agricultural experiment station (Nelson fund).....		15,000 00
From productive funds—		
University fund		16,177 01
Agricultural college fund		11,777 56
From state insurance fund, account fire at Chadbourne hall.....		51 00
From refunds, cancelled drafts.....		90 87
From deposits by bursar:		
Student fees—		
Incidental		82,505 50
Non-resident		41,500 00
Law		3,264 00
University extension		14,856 59
Gymnasium and locker		7,092 25
Music—		
Old account transferred		1,214 95
Piano rent		345 25
Organ rent		138 75
Recitals		218 75
Instruction		6,633 60
Chadbourne hall—		
Rent	\$9,177 50	
Board	28,356 84	
		37,534 34
Lathrop hall—		
Rent	\$185 00	
Board	2,535 28	
		2,720 28
Summer session		16,070 50
General library, fines		60 48
From students for laboratory supplies.....		46,000 00
Agricultural college—		
Sales		110,213 35
Horse breeding permits		2,766 34
Nursery inspection		2,190 14
Soils department		297 54
Dairy tests		5,965 71
Inspection of feeds		5,680 50
Inspection of fertilizers		850 00
Refunds of cash advanced for traveling expenses.....		3,128 28
Miscellaneous, agricultural college		446 08
Agricultural institutes—		
refunds, cash advanced for travel.....		2,500 00
refunds, salary (Mr. Brigham).....		200 50
W. H. Williams, deposit for salary of S. Evans.....		2,000 00
Sale of cinders		375 80
Sale of old iron, boilers, smoke stack, etc.....		2,959 91
Sale of models		347 85
Water examinations, hygienic laboratory.....		245 00
College of engineering, refund E. H. Burnside.....		200 00
Sale of kindling, \$69.75; old house, \$50.00; old barrels, \$13.60.....		133 35
Y. M. C. A. for sidewalk, \$31.68; junior prom. com., \$80.75; use of gymnasium and labor \$49.56.....		551 90
Sale of hay, \$23.00; wood and old lumber, \$24.50; shrubs, \$3.60; old horse, \$135.00		186 10

Refund of cash advanced for traveling expenses of high school inspectors	200 00
Photographic work, \$49.15; bulletins, \$116.42; university syllabus, \$401.32	566 89
Rent of university houses	1,775 00
Electric current, gas and telephone service: President Van Hise, Professors Russell and Comstock	264 59
Sale of tickets, Halley's comet, \$68.50; old typewriter, \$15.00; N. Quinn, forfeit on contract, \$116.03	199 58
Sacks sold, \$57.24; refund from Collier's on adv. contract, \$5.42	62 66
All other sources	198 60
Carnegie foundation fund	7,016 87
Nathan Perels fellowship in law	500 00
Yahr and Lange scholarship in pharmacy	35 00
The F. Dohmen scholarship in pharmacy	35 00
The Milwaukee Drug Co. scholarship in pharmacy	35 00
Alumni fellowship in journalism	400 00
Cambrian Biblical Alliance fellowship	1,000 00
Vogel fellowship in sociology	360 00
T. E. Brittingham, account Lincoln statue	6,500 00
	<hr/>
	\$1,740,243 64

DISBURSEMENTS

College of letters and science	\$469,806 66
Agricultural college and experiment station	339,851 24
College of engineering	146,710 55
University extension	64,285 75
General library	50,593 25
General account	47,958 81
Administration	41,673 16
Chadbourne hall	40,837 07
Laboratory supplies	37,928 21
College of law	29,315 35
Physical training—men	26,473 00
Agricultural institute fund	22,996 92
Observatory	7,070 85
Physical training—women	6,686 26
Lathrop hall	5,335 09
Superintendent of buildings	5,155 38
Architect's office	4,066 59
Military department	2,848 07
Forest products laboratory	998 71
Woman's building	68,235 73
Forestry building	44,677 06
Tunnels	36,772 09
New central plant	29,535 37
Store room	25,512 45
Animal husbandry building	23,735 56
Addition to engineering building	22,882 24
Bills payable	21,000 00
Equipment woman's building	17,386 55
Addition to dairy building	13,275 35
University grounds	12,510 25
Carnegie fund	7,016 87
Fees refunded	5,033 35
Remodeling Chadbourne hall	5,020 37
Equipping animal husbandry building	1,169 50
Cambrian Biblical Alliance fellowship	1,000 00
Biology building	999 22
College of medicine, books	421 10
Vogel fellowship	400 00
Alumni fellowship, journalism	400 00
Agricultural engineering building	325 00
Addition to administration building	280 00
Perels fellowship in law	250 00
J. J. Hill railway library fund	244 79
Agronomy building	200 00
Milwaukee Drug Co. scholarship in pharmacy	35 00
Rent	21 00
School of economics library fund	16 00
Historical society	10 20
	<hr/>
Less store room credit	\$1,688,955 96
	19,085 90
	<hr/>
	\$1,669,920 06

SUMMARY, 1909-10

	Re- ceipts.	Disburse- ments.
Total receipts for the year 1909-10.....	\$1,740,243 64	.....
Total disbursements for the year 1909-10.....	.....	\$1,669,920 06
Balance June 30, 1909.....	126,211 52	.....
Balance June 30, 1910.....	.....	196,535 10
	<u>\$1,866,455 16</u>	<u>\$1,866,455 16</u>

RECAPITULATION

	Re- ceipts.	Disburse- ments.
Total receipts for two years.....	\$3,293,445 73	.....
Total disbursements for two years.....	.....	\$3,196,885 49
Balance June 30, 1908.....	99,974 86	.....
Balance June 30, 1910.....	.....	196,535 10
	<u>\$3,393,420 59</u>	<u>\$3,393,420 59</u>

DETAIL OF DISBURSEMENTS FOR FISCAL YEAR
ENDING JUNE 30, 1909

COLLEGE OF LETTERS AND SCIENCE		
Salaries	\$323,920 55	
General apparatus.....	2,780 75	
Snow apparatus.....	959 44	
Botany apparatus.....	716 33	
Chemical apparatus	981 58	
Geology apparatus.....	869 92	
Zoology apparatus.....	556 73	
Psychology apparatus.....	490 31	
Bacteriology apparatus.....	1,079 23	
Anatomical apparatus.....	424 20	
Pharmacy apparatus.....	274 44	
Erlanger apparatus.....	685 03	
Home economics apparatus.....	43 22	
Anthropology apparatus.....	7 20	
Education apparatus	153 19	
Repairs and improvements.....	7,818 38	
Heat and water.....	26,692 02	
Light	5,671 85	
Insurance	1,965 00	
Postage and stationery.....	982 53	
Printing and publishing.....	148 85	
Furniture	1,308 78	
Lectures	2,118 60	
Clerks and stenographers.....	5,191 00	
Janitors	8,566 47	
Incidentals	129 90	
Hygienic	2,933 88	
Home economics incidentals.....	20 98	
Emeritus professors.....	6,045 00	
Summer session.....	10,433 14	
Dean's contingent.....	551 86	
Training of teachers.....	2,126 21	
Pharmacology apparatus.....	1,260 19	
Pharmacology repairs.....	600 70	
Pathology repairs.....	680 83	
Pathology apparatus.....	2,674 93	
Models	86 68	
Total		\$422,060 93
COLLEGE OF AGRICULTURE AND EXPERIMENT STATION		
Salaries	\$71,547 81	
Repairs and improvements.....	4,526 10	
Heat, light, water and electric power.....	12,678 45	
Insurance	982 80	
Postage, stationery, phones and telegrams.....	3,443 63	
Furniture and fixtures.....	1,863 85	
Traveling expenses.....	4,299 85	
Clerks and stenographers.....	9,773 89	
Books and binding.....	916 54	
Labor	22,515 15	
Seeds, plants and sundry supplies.....	10,741 36	
Tools, implements and machinery.....	2,733 83	
Feeding stuffs.....	6,492 70	
Scientific apparatus.....	2,073 94	
Live stock	1,917 80	
Chemical supplies.....	2,973 21	
Contingent expenses.....	645 65	
Freight and express.....	2,010 63	
Fertilizers	103 92	
Agricultural institutes.....	22,786 19	
Milk	64,112 49	
Printing and publishing.....	1,368 95	

Rent	1,043 25	
Permanent improvements	3,378 01	
Extension	41 81	
Bursar	2,074 32	
Home economies	1,031 67	
Research	9,833 30	
Total		\$267,932 50

COLLEGE OF ENGINEERING

Salaries	\$83,734 45	
Apparatus	8,794 44	
Furniture	707 07	
Postage and stationery	424 56	
Printing and publishing	407 83	
Insurance	737 10	
Clerks and stenographers	1,333 28	
Janitors	4,473 20	
Incidentals	270 97	
Traveling expenses	783 78	
Repairs and improvements	1,502 62	
Research fund	3,933 68	
Heat and water	12,502 83	
Light	1,561 77	
School for artisans	3,025 00	
School of surveying	400 00	
Summer session	000 00	
Lectures	200 00	
Total		\$128,822 56

GENERAL ACCOUNT

Salaries	\$2,589 22	
Clerks and stenographers	2,516 83	
Postage and stationery	703 40	
Printing and publishing	13,470 07	
Graduate department	783 37	
Janitors	947 00	
Team and labor	3,029 64	
Repairs and improvements	3,871 47	
Roads and grounds	9,036 10	
Dray	949 63	
Incidentals	3,285 15	
Commencement, etc	991 97	
Furniture	910 70	
Maintenance President's house	1,499 01	
High school inspection	3,397 53	
Telephones	2,604 12	
Interest	2,881 55	
Laird act, etc	3,949 04	
Maintenance, Russell	20 49	
Maintenance, Comstock	37 20	
University day	177 88	
Lectures	75 00	
Landscape architect	300 00	
Total		\$58,086 43

GENERAL LIBRARY

Salaries	\$14,411 47	
Postage and stationery	294 71	
Heat and water	5,931 77	
Light	1,239 30	
Books and binding	19,646 41	
One-half maintenance	13 02	
Student assistance	1,003 42	
Total		\$42,540 70

ADMINISTRATION		
President's office, salaries.....	\$7,524 97	
President's office, clerks and stenographer.....	125 00	
President's contingent.....	1,327 64	
Registrar's office, salaries.....	2,491 65	
Registrar's office, clerks and stenographer.....	2,701 73	
Registrar's assistance.....	312 56	
Registrar's office, postage and stationery.....	2,194 16	
Regents' office, salaries.....	5,505 46	
Regents' office, clerks and stenographer.....	8,819 55	
Regents' office, postage and stationery.....	1,576 40	
Expenses of regents.....	1,213 70	
Expenses of visitors.....	335 40	
Incidentals.....	494 73	
Heat and water.....	631 34	
Postage and stationery.....	5 05	
Light.....	167 10	
Janitors.....	600 00	
Auditing.....	1,827 05	
Student assistance.....	252 63	
Total.....		38,103 12
CHADBOURNE HALL		
Salaries.....	\$1,466 64	
Janitors.....	2,277 81	
Heat and water.....	4,220 41	
Light.....	2,398 27	
Repairs and improvements.....	1,911 99	
Insurance.....	393 12	
Furniture.....	3,510 07	
Incidentals.....	845 87	
Postage and stationery.....	47 42	
Contingent.....	773 58	
Subsistence.....	15,039 09	
Clerks and stenographers.....	4 00	
Kitchen service.....	4,104 10	
Total.....		36,992 37
UNIVERSITY EXTENSION		
Salaries.....	\$19,476 47	
Clerks and stenographers.....	5,140 20	
Postage and stationery.....	3,257 24	
Printing and publishing.....	1,609 54	
Incidentals.....	1,060 59	
Traveling expenses.....	2,322 94	
Furniture.....	785 99	
Fees refunded.....	210 00	
Deposit account, salaries.....	1,938 73	
Rent.....	62 00	
Total.....		35,893 70
LABORATORY SUPPLIES		
Chemistry laboratory supplies.....	\$17,110 78	
Snow laboratory supplies.....	2,900 17	
Botany laboratory supplies.....	1,111 42	
Bacteriology laboratory supplies.....	1,022 23	
Engineering laboratory supplies.....	9,756 46	
Psychology laboratory supplies.....	29 03	
Business laboratory supplies.....	55 07	
Mineralogy laboratory supplies.....	477 66	
Geology laboratory supplies.....	908 95	
Anatomy laboratory supplies.....	1,144 47	
Home laboratory supplies.....	84 49	
Erlianger laboratory supplies.....	297 64	
Zoology laboratory supplies.....	316 43	
Geography laboratory supplies.....	280 83	
Pathology laboratory supplies.....	40 92	
Total.....		35,536 55

LAW SCHOOL		
Salaries	\$19,216 60	.....
Repairs and improvements	645 42	.....
Heat and water	1,783 24	.....
Light	261 46	.....
Clerks and stenographers.....	970 57	.....
Janitors	600 00	.....
Books and binding	2,329 05	.....
Postage and stationery.....	145 42	.....
Insurance	245 70	.....
Summer session	1,575 00	.....
Printing and publishing	93 14	.....
Traveling expenses	30 58	.....
Furniture	206 58	.....
Incidentals	54 80	.....
Total		28,157 56
PHYSICAL CULTURE—MEN		
Salaries	\$9,500 00	.....
Janitors	1,119 25	.....
Heat and water.....	7,740 64	.....
Light	553 50	.....
Incidentals	509 65	.....
Postage and stationery.....	163 69	.....
Insurance	393 12	.....
Repairs and improvements.....	1,128 81	.....
Clerks and stenographers.....	795 73	.....
Apparatus	635 74	.....
Total		\$22,540 13
WASHBURN OBSERVATORY		
Salaries	\$5,000 00	.....
Clerks and stenographers.....	454 31	.....
Janitors	640 00	.....
Postage and stationery.....	50 33	.....
Repairs and improvements.....	150 58	.....
Light	26 49	.....
Apparatus	3 11	.....
Heat and water.....	246 45	.....
Insurance	196 50	.....
Incidentals	288 66	.....
Total		\$7,016 49
ARCHITECT'S OFFICE		
Salaries	\$3,075 50	.....
Clerks and stenographers.....	657 50	.....
Postage and stationery.....	214 50	.....
Incidentals	100 00	.....
Draughtsmen	870 85	.....
Total		\$4,918 35
PHYSICAL CULTURE—WOMEN		
Salaries	\$3,550 00	.....
Apparatus	78 03	.....
Incidentals	83 26	.....
Postage and stationery.....	47 97	.....
Janitors	165 55	.....
Total		\$3,924 81

MILITARY DEPARTMENT		
Salaries	\$400 00	
Incidentals	783 36	
Postage and stationery.....	78 48	
Band	658 28	
Commutation of quarters.....	432 00	
Clerks and stenographers.....	10 00	
Fees refunded.....	310 00	
Field officers' prizes.....	150 00	
Total		\$2,822 12
Store room.....	\$13,349 74	
University grounds.....	30,115 00	
Fees refunded.....	2,848 50	
Piano account.....	2,169 00	
J. J. Hill railway library fund.....	1,126 11	
Tunnels	41,082 75	
Biology building.....	329 21	
Men's dormitories.....	33 85	
New central plant.....	112,631 74	
Woman's building.....	135,560 49	
Animal husbandry building.....	59,651 55	
Equipment agricultural engineering building.....	107 07	
North wing main hall.....	300 00	
Interest refunded.....	7 34	
School economics library fund.....	76 36	
Equipment agronomy building.....	4 50	
College of Medicine, books.....	586 35	
Forestry building.....	285 90	
Rent	7 00	
Bryan prize fund income.....	37 50	
Johnson endowment fund income.....	39 50	
		\$1,535,730 78
Less store room credit.....		8,765 35
Total		\$1,526,965 43

RECAPITULATION OF EXPENDITURES BY SUB-ACCOUNTS FOR THE YEAR
ENDING JUNE 30, 1909

Salaries	\$560,918 71
Postage and stationery.....	9,858 93
Clerks and stenographers.....	26,847 82
Incidentals	7,906 94
Heat and water.....	72,427 15
Light	11,879 74
Janitors	19,349 28
Repairs and improvements.....	21,985 37
Insurance	4,914 00
Furniture	9,293 04
Printing and publishing.....	17,068 38
Apparatus	12,292 07
Traveling expenses.....	7,437 15
Summer session.....	12,608 14
Books and binding.....	22,892 00
Research fund.....	13,816 98
Contingent expenses.....	1,418 63
Student assistance.....	1,256 05
Fees refunded.....	520 00
Telephones	2,604 12
Snow apparatus.....	959 44
Botany apparatus.....	716 33
Chemical apparatus.....	981 58
Geology apparatus.....	869 92
Zoology apparatus.....	556 73
Psychology apparatus.....	400 31
Bacteriology apparatus.....	1,079 23
Anatomy apparatus.....	424 20
Pharmacy apparatus.....	274 44
Erlanger apparatus.....	686 06
Education apparatus.....	153 19

Anthropology apparatus.....	7 50
Pharmacology apparatus.....	1,260 19
Pathology apparatus.....	2,674 43
Emeritus professors.....	6,045 00
Deans' contingent.....	551 86
Training of teachers.....	2,126 21
Lectures	2,473 00
Hygienic	2,963 88
Labor	22,515 15
Seeds, plants and sundry supplies.....	10,741 36
Tools, implements and machinery.....	2,733 83
Feeding stuffs.....	6,492 70
Scientific apparatus.....	2,073 94
Live stock.....	1,517 80
Chemical supplies.....	2,973 21
Freight and express.....	2,010 63
Agricultural institutes.....	22,786 19
Milk	64,112 49
Fertilizers	105 92
Extension	41 81
Bursar	2,074 32
Home economics.....	1,031 67
Rent	1,105 25
Permanent improvements.....	3,378 01
School for artisans.....	3,025 00
School of surveying.....	400 00
Interest	2,881 55
Roads and grounds.....	9,096 10
High school inspection.....	3,397 56
Maintenance president's house.....	1,499 01
Commencement, etc.....	991 97
Graduate department.....	783 37
Team and labor.....	3,029 64
Dray	949 63
Laird act, etc.....	3,949 04
Maintenance, Russell.....	20 49
Maintenance, Comstock.....	37 20
University Day.....	177 88
Expenses of regents.....	1,213 70
Expense of visitors.....	335 40
President's contingent	1,327 64
President's office, salaries.....	7,524 97
President's office, clerks and stenographers.....	125 00
Registrar's office, salaries.....	2,491 65
Registrar's office, clerks and stenographers.....	2,701 73
Registrar's office, assistance.....	312 55
Registrar's office, postage and stationery.....	2,194 16
Regents' office, salaries.....	5,505 46
Regents' office, clerks and stenographers.....	8,819 55
Regents' office, postage and stationery.....	1,576 40
Auditing	1,827 05
One-half maintenance, library.....	13 62
Chemical laboratory supplies	17,110 78
Snow laboratory supplies	2,900 17
Botany laboratory supplies	1,111 42
Bacteriology laboratory supplies.....	1,022 23
Engineering laboratory supplies.....	9,756 46
Psychology laboratory supplies.....	29 03
Mineralogy laboratory supplies.....	477 66
Geology laboratory supplies.....	908 95
Anatomy laboratory supplies.....	1,144 47
Home laboratory supplies.....	84 49
Business laboratory supplies.....	55 00
Erlanger laboratory supplies.....	297 64
Zoology laboratory supplies.....	316 43
Geography laboratory supplies.....	250 83
Pathology laboratory supplies.....	40 42
Subsistence	15,039 09
Kitchen service.....	4,104 10
Deposit account, salaries	1,988 73
Draughtsmen	870 85
Band	658 28
Commutation of quarters	452 00
Home economics apparatus.....	43 22
Home economics incidentals.....	20 18
Pharmacology repairs.....	660 70
Pathology repairs.....	680 83
Models	85 68
Landscape architect.....	300 00
Field officers' prizes.....	150 00

Store Room.....	13,349 74
University grounds.....	30,115 00
Fees refunded.....	2,848 50
Piano account.....	2,169 00
J. J. Hill railway library fund.....	1,126 11
Tunnels.....	41,082 75
Biology building.....	329 21
Men's dormitories.....	33 85
New central plant.....	112,661 74
Woman's building.....	135,560 49
Animal husbandry building.....	59,651 55
Equipment, agricultural engineering building.....	107 07
North wing, main hall.....	300 00
Interest refunded.....	7 34
School economics library fund.....	76 36
Equipment, agronomy building.....	4 50
College of medicine, books.....	586 35
Forestry building.....	285 90
Rent.....	7 00
Bryan prize fund income.....	37 50
Johnson endowment fund income.....	39 50
	<hr/>
Less store room credit.....	\$1,535,730 78
	8,765 35
	<hr/>
Total for year.....	\$1,526,965 43

DETAIL OF DISBURSEMENTS FOR FISCAL YEAR
ENDING JUNE 30, 1910

COLLEGE OF LETTERS AND SCIENCE		
Salaries	\$365,871 20	
Postage and stationery.....	1,185 60	
Clerks and stenographers	5,844 81	
Incidentals	444 86	
Heat and water	29,201 39	
Light	6,734 52	
Janitors	9,742 64	
Repairing and improving.....	4,929 37	
Insurance	2,009 09	
Furniture	2,934 37	
Printing and publishing	394 05	
Apparatus	2,506 97	
Summer session	13,271 42	
Snow apparatus	1,068 53	
Botany apparatus	603 73	
Chemical apparatus	784 56	
Geology apparatus	700 16	
Zoology apparatus	598 62	
Psychology apparatus	316 13	
Bacteriology apparatus	2,707 77	
Anatomy apparatus	673 42	
Pharmacy apparatus	433 48	
Erlanger apparatus	1,292 04	
Education apparatus	169 05	
Pharmacology apparatus	1,825 36	
Pathology apparatus	769 07	
Dean's contingent	512 41	
Training of teachers	3,192 66	
Lectures	1,147 88	
Hygienic	4,682 03	
Models	693 75	
Rep. pharmacology	1,100 03	
Rep. pathology	72	
Concerts	420 46	
Musical instruments	965 00	
Music library	9 50	
Total		\$469,806 66
COLLEGE OF AGRICULTURE AND EXPERIMENT STATION		
Salaries	\$102,137 45	
Postage and stationery	4,405 11	
Clerks and stenographers	11,857 79	
Heat and water	11,838 95	
Repairing and improving	6,776 78	
Insurance	1,194 59	
Furniture	5,687 52	
Printing and publishing	1,886 33	
Traveling expenses	7,829 87	
Books and binding	1,182 62	
Research	8,196 00	
Contingent	506 11	
Labor	27,493 05	
Seeds, plants and sundry supplies.....	9,185 21	
Tools, implements and machinery.....	3,073 48	
Feeding stuffs	8,077 22	
Scientific apparatus	4,706 13	
Live stock	4,254 50	
Chemical supplies	4,392 85	
Freight and express	2,968 10	
Milk	82,008 78	
Fertilizers	497 35	
Bursar	3,359 60	
Rent	978 25	
Permanent improvements	22,462 77	
Photos and illustrations	328 60	
Farmers' courses	1,966 23	
Total		\$339,851 24

COLLEGE OF ENGINEERING		
Salaries	\$92,750 13	
Postage and stationery	431 11	
Clerks and stenographers	1,676 68	
Incidentals	308 96	
Heat and water	14,062 34	
Light	1,827 52	
Janitors	5,109 31	
Repairing and improving	5,637 47	
Insurance	760 20	
Furniture	489 74	
Printing and publishing	324 79	
Apparatus	15,303 72	
Traveling expenses	798 10	
Research	2,717 17	
School for artisans	4,093 31	
School of survey	400 00	
Total		\$146,710 55
UNIVERSITY EXTENSION		
Salaries	\$37,866 22	
Postage and stationery	4,126 84	
Clerks and stenographers	9,237 36	
Incidentals	1,372 75	
Repairing and improving	451 57	
Furniture	1,357 13	
Printing and publishing	1,728 42	
Apparatus	226 69	
Traveling expenses	4,853 08	
Fees refunded	377 35	
Rent	668 00	
Deposit, account salaries	2,020 34	
Total		\$64,285 75
GENERAL LIBRARY		
Salaries	\$15,135 76	
Postage and stationery	282 03	
Heat and water	6,613 05	
Light	1,288 75	
Books and binding	24,763 06	
Student assistants	993 38	
One-half maintenance	1,517 22	
Total		\$50,593 25
GENERAL ACCOUNT		
Salaries	\$1,560 01	
Postage and stationery	842 32	
Clerks and stenographers	3,258 41	
Incidentals	1,262 35	
Janitors	566 63	
Repairing and improving	4,371 79	
Furniture	373 97	
Printing and publishing	7,132 12	
Telephone	2,829 89	
Lectures	766 57	
Interest	3,301 59	
Roads and grounds	12,124 57	
High school inspection	3,645 89	
Maintenance of president's house	812 34	
Commencement, etc.	1,266 44	
Photographic appliances	140 07	
Graduate department	803 68	
Team and labor	475 45	
Dray	1,141 14	
Laid account, etc.	24 50	
Maintenance of residence of dean of college of agriculture	43 49	
Maintenance of residence of director of Washburn observatory	62 74	
Convocation	361 38	

Secretary's contingent	100 00	
University photographs	158 63	
Landscape architect	200 00	
Inspecting boarding houses	103 40	
Dedication of Lathrop hall	196 44	
Total		\$47,958 81
ADMINISTRATION		
Postage and stationery	\$3 13	
Incidentals	525 00	
Heat and water	697 56	
Light	168 39	
Janitors	645 00	
Summer session	1,853 37	
Student assistants	508 60	
Expenses of regents	877 87	
Expenses of visitors	401 15	
President's contingent	1,251 52	
President's office, salaries	7,683 33	
President's office, clerks and stenographers	166 49	
Registrar's office, salaries	2,500 03	
Registrar's office, clerks and stenographers	3,703 85	
Registrar's office, postage and stationery	1,866 89	
Regents' office, salaries	5,804 17	
Regents' office, clerks and stenographers	10,742 29	
Regents' office, postage and stationery	1,686 88	
Alumni directory	587 64	
Total		\$41,673 16
CHADBOURNE HALL		
Salaries	\$2,300 00	
Postage and stationery	42 57	
Incidentals	1,277 64	
Heat and water	4,503 37	
Light	2,652 71	
Janitors	2,031 78	
Repairing and improving	1,462 09	
Insurance	380 10	
Furniture	1,963 86	
Contingent	189 78	
Subsistence	17,013 95	
Kitchen and dining room service	6,718 62	
Total		\$40,837 07
LABORATORY SUPPLIES		
Chemical laboratory supplies	\$16,925 35	
Snow laboratory supplies	3,846 36	
Botanical laboratory supplies	1,234 25	
Bacteriological laboratory supplies	1,429 05	
Engineering laboratory supplies	11,142 35	
Psychological laboratory supplies	17 66	
Mineralogical laboratory supplies	269 38	
Anatomical laboratory supplies	1,640 30	
Home economics laboratory supplies	52 54	
Business laboratory supplies	69 10	
Erlanger laboratory supplies	330 32	
Zoological laboratory supplies	608 36	
Geographical laboratory supplies	337 01	
Pathological laboratory supplies	136 27	
Geological laboratory supplies	110 69	(credit)
Total		\$37,928 21
LAW SCHOOL		
Salaries	\$19,470 00	
Postage and stationery	169 19	
Clerks and stenographers	854 90	
Heat and water	1,987 93	
Light	320 70	
Janitors	607 60	

Repairing and improvements	405 53	
Insurance	162 90	
Furniture	45 36	
Printing and publishing	16 66	
Traveling expenses	11 00	
Summer session	1,672 21	
Books and binding	3,528 32	
Student assistants	63 05	
Total		\$29,315 35
PHYSICAL TRAINING—MEN		
Salaries	\$10,275 96	
Postage and stationery	89 71	
Clerks and stenographers	1,098 49	
Incidentals	676 11	
Heat and water	8,635 89	
Light	793 73	
Janitors	1,296 80	
Repairing and improving	2,128 38	
Insurance	380 09	
Apparatus	1,097 84	
Total		\$26,473 00
AGRICULTURAL INSTITUTE FUND		
Salaries	\$8,307 50	
Postage and stationery	251 44	
Clerks and stenographers	900 00	
Incidentals	13 40	
Janitors	60 00	
Printing and publishing	6,053 79	
Traveling expenses	4,717 95	
Freight and express	192 84	
Bursar	2,500 00	
Total		\$22,996 92
WASHBURN OBSERVATORY		
Salaries	\$5,200 00	
Postage and stationery	17 59	
Clerks and stenographers	446 65	
Incidentals	56 79	
Heat and water	378 87	
Light	17 04	
Janitors	690 00	
Repairs and improvements	101 01	
Insurance	162 90	
Total		\$7,070 85
PHYSICAL TRAINING—WOMEN		
Salaries	\$5,830 00	
Postage and stationery	115 86	
Clerks and stenographers	92 30	
Incidentals	267 64	
Janitors	228 55	
Apparatus	151 91	
Total		\$6,686 26
LATHROP HALL		
Salaries	\$1,350 00	
Postage and stationery	70 94	
Incidentals	113 10	
Light	144 94	
Janitors	793 46	
Furniture	1,280 28	
Rent	5 00	
Subsistence	991 63	
Kitchen and dining room service.....	575 74	
Total		\$5,335 09

SUPERINTENDENT OF BUILDINGS		
Salaries	\$1,358 35	
Postage and stationery	10 97	
Incidentals	1,335 43	
Team and labor	2,450 63	
Total		\$5,155 38
ARCHITECT'S OFFICE		
Salaries	\$3,000 00	
Postage and stationery	146 33	
Clerks and stenographer	600 00	
Furniture	30 36	
Draughtsmen	289 90	
Total		\$4,066 59
MILITARY DEPARTMENT		
Salaries	\$550 00	
Postage and stationery	19 82	
Incidentals	441 60	
Printing and publishing	2 10	
Fees refunded	500 00	
Band	727 55	
Com. of quarters	432 00	
Field officers' prizes	175 00	
Total		\$2,848 07
FOREST PRODUCTS LABORATORY		
Heat and water	\$975 80	
Light	22 91	
Total		\$998 71
Woman's building	\$68,235 73	
Forestry building	44,677 05	
Tunnels	36,772 09	
New central plant	29,535 37	
Store room	25,512 45	
Animal husbandry building	23,735 56	
Addition to engineering building	22,882 24	
Bills payable	21,000 00	
Equipment, woman's building	17,386 55	
Addition to dairy building	13,275 35	
University grounds	12,510 25	
Carnegie fund	7,016 87	
Fees refunded	5,033 35	
Remodeling Chadbourne hall	5,020 37	
Equipment, animal husbandry building	1,169 50	
Cambrian Biblical Alliance fellowship	1,000 00	
Biology building	999 22	
School of medicine, books	421 10	
Vogel fellowship	400 00	
Alumni fellowship, journalism	400 00	
Agricultural engineering building	325 00	
Addition to administration building	280 00	
Peres fellowship, law	250 00	
J. J. Hill railway library fund	244 79	
Agronomy building	200 00	
Milwaukee Drug Co., scholarship in pharmacy	35 00	
Rent	21 00	
School of economics library fund	16 00	
Historical society	10 20	
Less store room credit		\$1,688,955 96
		19,035 90
Total expenditures for year		\$1,669,920 06

RECAPITULATION OF EXPENDITURES BY SUB-ACCOUNTS FOR THE YEAR
ENDING JUNE 30, 1910

Salaries	\$672,992 58
Postage and stationery	12,160 56
Clerks and stenographers	35,867 39
Incidentals	8,095 63
Heat and water	79,195 15
Light	13,971 21
Janitors	21,771 77
Repairs and improvements	26,284 59
Insurance	5,049 87
Furniture	14,172 59
Printing and publishing	17,538 27
Apparatus	19,287 13
Travelling expenses	18,210 00
Summer session	16,797 00
Books and binding	29,474 00
Research	10,913 17
Contingent	695 89
Student assistance	1,565 03
Fees refunded	877 35
Telephones	2,829 89
Snow apparatus	1,098 53
Botany apparatus	603 73
Chemical apparatus	784 56
Geology apparatus	700 16
Zoology apparatus	598 62
Psychology apparatus	316 13
Bacteriology apparatus	2,707 77
Anatomy apparatus	673 42
Pharmacy apparatus	433 48
Erlanger apparatus	1,292 04
Educational apparatus	169 05
Pharmacology apparatus	1,825 36
Pathology apparatus	769 07
Dean's contingent	512 41
Training of teachers	3,192 66
Lectures	1,914 45
Hygienic	4,682 03
Labor	27,493 05
Seeds, plants and sundry supplies	9,185 21
Tools, implements and machinery	3,073 48
Feeding stuffs	8,077 22
Scientific apparatus	4,706 13
Live stock	4,254 50
Chemical supplies	4,392 85
Freight and express	3,160 94
Milk	82,608 78
Fertilizers	497 35
Bursar	5,859 60
Rent	1,651 25
Permanent improvements	23,462 77
School for artisans	4,093 31
School of surveying	400 00
Interest	3,301 59
Roads and grounds	12,124 57
High school inspection	3,645 89
Maintenance of president's house	812 34
Commencement, etc.	1,266 44
Photographic appliances	140 07
Graduate department	806 68
Team and labor	2,926 08
Dray	1,141 14
Laird account, etc.	24 50
Maintenance of residence of dean of the college of agriculture	43 49
Maintenance of residence of director of Washburn observatory	62 74
Expenses of regents	877 87
Expenses of visitors	401 15
President's contingent	1,251 52
President's office, salaries	7,683 33
President's office, clerks and stenographers	166 49
Registrar's office, salaries	2,500 03
Registrar's office, clerks and stenographers	3,703 85
Registrar's office, postage and stationery	1,866 89
Regents' office, salaries	5,804 17
Regents' office, clerks and stenographers	10,742 29
Regents' office, postage and stationery	1,686 88

REPORT OF THE REGENTS

303

One-half maintenance	1,517 22
Chemical laboratory supplies.....	16,925 35
Snow laboratory supplies	3,846 36
Botanical laboratory supplies	1,234 25
Bacteriological laboratory supplies	1,429 65
Engineering laboratory, supplies	11,142 35
Psychological laboratory supplies	17 66
Mineralogical laboratory supplies	269 38
Geological laboratory, supplies.....	110 69
Anatomical laboratory supplies	1,640 30
Home economics laboratory supplies.....	52 54
Business laboratory supplies	69 10
Erlanger laboratory supplies	330 32
Zoological laboratory supplies	608 36
Geographical laboratory supplies	337 01
Pathological laboratory supplies	136 27
Subsistence	18,005 58
Kitchen and dining room service.....	7,294 35
Deposit, account salaries	2,020 34
Draughtsmen	289 10
Band	727 55
Com. of quarters	432 00
Models	693 75
Repairs, pharmacology	1,190 03
Repairs, pathology	72
Concerts	420 46
Musical instruments	965 00
Music library	9 50
Photos and illustrations	328 60
Farmers' courses	1,966 23
Convocation	361 38
Secretary's contingent	100 00
University photographs	158 63
Landscape architect	200 00
Inspecting boarding houses	103 40
Dedication of Lathrop hall.....	196 44
Alumni directory	587 64
Field officers' prizes	175 00
Woman's building	68,235 73
Forestry building	44,677 05
Tunnels	36,772 00
New central plant	29,535 37
Store room	25,512 45
Animal husbandry building	23,735 56
Addition to engineering building.....	22,882 24
Bills payable	21,000 00
Equipment, woman's building	17,386 55
Addition to dairy building.....	13,275 35
University grounds	12,510 25
Carnegie fund	7,016 87
Fees refunded	5,033 35
Remodeling Chadbourne hall	5,020 37
Equipment, animal husbandry building.....	1,169 50
Cambrian Biblical Alliance fellowship.....	1,000 00
Biology building	999 22
School of medicine, books.....	421 10
Vogel fellowship	400 00
Alumni fellowship, journalism	400 00
Agricultural engineering building	325 00
Addition to administration building	280 00
Pereles fellowship, law	250 00
J. J. Hill railway library fund.....	244 79
Agronomy building	200 00
Milwaukee Drug Co., scholarship in pharmacy.....	35 00
Rent	21 00
School of economics library fund.....	16 00
Historical society	10 20
	<hr/>
	\$1,688,955 96
Less store room credit.....	19,035 90
	<hr/>
Total for year	\$1,669,920 06

STATEMENT OF ASSETS AND LIABILITIES AS OF JUNE 30, 1910

Assets			
University grounds		\$391,975 29	
Buildings and tunnels		2,423,670 36	
		\$2,815,645 65	
Library		352,988 40	
Apparatus		413,054 27	
Furniture		165,843 98	
Machinery and tools		24,571 55	
Live stock		28,414 58	
Store room		12,483 49	
Laboratory supplies		3,742 28	
Agricultural institutes		168 27	
Piano account		26 98	
Gund scholarship		25 00	
Guido C. Vogel fellowship.....		40 00	
M. E. McCaffrey, secretary, contingent account.....		100 00	
R. H. Taylor, matron, contingent account.....		300 00	
State treasurer		196,535 10	
Liabilities			
Bills payable			\$50,000 00
Sundry accounts:			
College of agriculture and exp. station.....	\$76,931 58		
Washburn observatory	6,722 54		
University extension	986 49		
Biological laboratory fund.....	116 18		
School of economics library fund.....	125 22		
Halle Steensland prize fund.....	60 00		
James J. Hill railway library fund.....	1,263 26		
Political science research fund.....	50 00		
Gustave A. Klettsch fellowship.....	252 08		
B. F. McMillan scholarship.....	50 00		
Yahr & Lange fellowship (pharmacy).....	35 00		
The F. Dohmen fellowship (pharmacy).....	35 00		
Nathan Pereles fellowship in law.....	250 00		
			86,877 35
State university capital account.....			3,877,062 20
		\$4,013,939 55	\$4,013,939 55

REPORT OF THE REGENTS

305

UNIVERSITY TRUST FUNDS

(Under Regents' Law, June 1, 1906, all bequests and funds, the amount of which was to be used for specific purposes were set apart from all other University moneys and placed with the state treasurer as custodian.)

The principal of the funds July 1, 1908.....	\$83,851 46	.....
The Jas. T. Lewis prize fund.....		\$400 00
The John A. Johnson student aid fund.....		7,714 96
The Mortimer M. Jackson law professorship fund.....		20,000 00
The Amelia E. H. Doyon student aid fund.....		5,000 00
The W. J. Bryan prize fund.....		250 00
The Christian R. Stein student aid fund.....		1,000 00
The Mary M. Adams graduate fellowship in English language and literature, No. 1, fund.....		10,000 00
The C. K. and Mary M. Adams fellowship fund income.....		24,133 25
The Milwaukee Gas Light fund.....		250 00
The Henry Gund scholarship in German literature.....		5,000 00
The Fannie P. Lewis scholarship fund.....		10,000 00
The secretary's loan fund.....		103 25
	\$83,851 46	\$83,851 46
The income of the funds for the year 1908-9 was.....	\$4,383 65	.....
The James T. Lewis prize fund income.....		\$20 91
The John A. Johnson student aid fund income.....		403 33
The Mortimer M. Jackson law professorship fund income.....		1,045 56
The Amelia E. H. Doyon student aid fund income.....		261 40
The Wm. J. Bryan prize fund income.....		13 08
The Christian R. Stein students aid fund income.....		52 28
The C. K. and Mary M. Adams fellowship fund income.....		1,561 65
The Mary M. Adams graduate fellowship in English language and literature fund.....		522 78
The Milwaukee Gas Light fund income.....		13 08
The Henry Gund scholarship in German literature fund.....		261 40
The Fannie P. Lewis scholarship fund income.....		522 78
The secretary's loan fund income.....		5 40
	\$4,383 65	\$4,383 65
The principal of the funds July 1, 1909, was.....	\$88,803 28	.....
The Jas. T. Lewis prize fund.....		\$400 00
The John A. Johnson students aid fund.....		8,319 32
The Mortimer M. Jackson law professorship fund.....		20,000 00
The Amelia E. H. Doyon student aid fund.....		5,000 00
The Wm. J. Bryan prize fund.....		250 00
The Christian R. Stein student aid fund.....		1,000 00
The Mary M. Adams fellowship in English language and literature No. 1 fund.....		10,000 00
The C. K. and Mary M. Adams fellowship fund.....		24,400 71
The Milwaukee Gas light fund.....		250 00
The Henry Gund scholarship in German literature.....		5,000 00
The Fannie P. Lewis scholarship fund.....		10,000 00
The secretary's loan fund.....		183 25
	\$88,803 28	\$88,803 28
The income of the funds for the year 1909-10 was.....	\$4,610 89	.....
The James T. Lewis prize fund income.....		\$21 75
The John A. Johnson students aid fund income.....		452 35
The Mortimer M. Jackson law professorship fund income.....		1,087 44
The Amelia H. Doyon students aid fund income.....		271 86
The Wm. J. Bryan prize fund income.....		13 59
The Christian R. Stein students aid fund income.....		54 38
The Mary M. Adams graduate fellowship in English language and literature No. 1 income.....		543 72
The C. K. and Mary M. Adams fellowship fund income.....		1,326 67
The Milwaukee gas light fund income.....		13 59
The Henry Gund scholarship in German literature fund income.....		271 86
The Fannie P. Lewis scholarship fund income.....		543 72
The secretary's loan fund income.....		9 96
	\$4,610 89	\$4,610 89

UNIVERSITY TRUST FUNDS—Continued.

The principal of the funds July 1, 1910, was.....	\$90,003 15	.....
The James T. Lewis prize fund.....		400 00
The John A. Johnson students aid fund.....		8,455 37
The Mortimer M. Jackson law professorship fund.....		20,000 00
The Amelia E. H. Doyon student aid fund.....		5,000 00
The Wm. J. Bryan prize fund.....		250 00
The Christian R. Stein students aid fund.....		1,000 00
The Mary M. Adams graduate fellowship in English lan- guage and literature, No. 1 fund.....		10,000 00
The C. K. and Mary Adams fellowship fund.....		29,143 91
The Milwaukee Gas Light fund.....		250 00
The Henry Gund scholarship in German literature fund.....		5,000 00
The Fannie P. Lewis scholarship fund.....		10,000 00
The secretary's loan fund.....		286 37
The Latin League fund.....		220 50
	\$90,003 15	\$90,003 15

APPENDIX A

*To the Report of the Regents of the University of Wisconsin,
Showing Detail of Disbursements of Funds for the
Two Years Ending June 30, 1910.*

For further details of pay roll items see Appendix B

DETAIL OF DISBURSEMENTS, 1908-1909

COLLEGE OF LETTERS AND SCIENCE	
Administration pay roll, clerks.....	\$7,498 69
Association of American Medical Colleges, fee.....	28 75
Andrews Co. A. H., castings, locks.....	51 20
Alberene Stone Co., slab.....	10 42
Alabastine Co., alabastine.....	5 40
Alford Bros., laundry.....	43 00
American Color Co., dyes.....	2 25
Aeslian Co., The, piano.....	200 00
Ames, H. V., salary.....	500 00
Automatic File & Index Co., guides.....	4 56
American Instrument Co., voltmeters.....	43 73
Aluminum Co. of America, wire.....	1 85
Armstrong, V., charts.....	37 25
Andrae & Sons Co., J., panel board, mdse.....	29 25
American Seating Co., castings.....	7 50
Allen, Katharine, instructor, salary.....	1,200 00
Aron, A. W., assistant, salary.....	600 00
Allen, B. M., assistant professor, salary.....	1,400 00
Austin, C. B., fellow, salary.....	400 00
Aldrich, L. B., assistant, salary.....	400 00
Allen, Florence E., instructor, salary.....	1,100 00
Ashmun, Margaret, instructor, salary.....	1,000 00
Augsburger, L. F., assistant, salary.....	400 00
Arzberger, E. G., assistant, salary, expenses.....	405 69
Atwell, W. E., student assistant, salary.....	500 00
American Express Co., express.....	93 35
Allen, C. E., associate professor, salary.....	2,300 00
Adams, T. S., professor, salary.....	1,875 00
Allen, Ruth F., assistant, salary.....	400 00
Bartlett, J. L., assistant professor, salary.....	165 00
Bishop & Co., J., crucibles.....	63 72
Biddle, J. G., apparatus.....	312 03
Beazley, C. R., salary.....	300 00
Baker Chemical Co., J. T., chemicals.....	107 26
Betz Co., F. S., tools.....	5 05
Boucnken, E., apparatus.....	65 02
Bailey, W. L., assistant, salary.....	450 00
Bouchard, J., plating.....	1 80
Barroll, Jos., salary.....	150 00
Blied & Schneider, hardware.....	39 63
Batthey, Edna H., technician, salary.....	400 00
Boehm, W. J., condenser.....	25 00
Biersach & Niedermeyer Co., pipe.....	1,250 00
Biological Society of Washington.....	49 85
Burchell, D. E., professor, salary.....	600 00
Blumer, J. C., fungi.....	5 00
Bardeen, C. W., advertising.....	15 00
Benedict, F. G., salary.....	100 00
Beedle, G. E., commissioner of insurance, insurance.....	1,965 60
Burdick & Murray Co., merchandise.....	26 91
Brainard, F. K., instructor, salary.....	680 00
Birge, E. A., Dean, bills paid, salary.....	4,516 25
Bode, B. H., assistant professor, salary.....	1,600 00
Bean, E. F., student assistant, salary.....	300 00
Birkhoff, G. D., instructor, salary.....	1,300 00
Bachman, Freda M., salary.....	400 00
Bowles, J. T. B., chemist, expenses, salary.....	619 66
Brannon, J. M., assistant, salary.....	400 00
Brewer, R. K., assistant, salary.....	500 00
Bradley, H. C., assistant professor, salary.....	1,600 00
Bunting, C. H., professor, salary.....	3,500 00

Bredin, E. A., instructor, salary.....	1,000 00
Burger, Peter, hardware.....	45 14
Blackwelder, E., assistant professor, salary.....	1,800 00
Banning, Bernice T., fellow, salary.....	400 00
Bardeen, C. R., Dean, expenses, salary.....	3,813 40
Berkeley, Frances C., instructor, salary.....	1,220 00
Bausch & Lomb Optical Co., boxes, apparatus, chemicals.....	983 43
Brown, W. H., instructor, salary.....	1,000 00
Bruns, F., instructor, salary.....	1,150 00
Beatty, A., assistant professor, salary.....	1,420 00
Bassett, H. K., lecturer, salary.....	1,484 00
Becher, M. A., assistant, salary.....	400 00
Barnes, V. G., assistant, salary.....	400 00
Bleyer, W. G., assistant professor, salary.....	1,600 00
Beyd, C. E., assistant, salary.....	400 00
Brandt, J. G., instructor, salary.....	900 00
Chicago Hardware Co., keys.....	2 08
Curtiss, F. W., negatives.....	8 50
Chancellor, W. E., salary.....	40 00
Columbia Phonograph Co., graphophone.....	67 50
Capital City Paper Co., paper.....	3 00
Conklin & Sons, coal.....	565 99
Clarke, E. H., salary.....	80 00
Colburn, G. B., salary.....	75 00
Crowe, Belle, refreshments.....	35 00
Catholic School Journal Co., advertising.....	28 00
Crocker-Wheeler Co., generators.....	136 00
Colorado School Journal, advertising.....	12 00
Capital City Fuel Co., plaster.....	2 70
Castle & Doyle, lime, cement.....	25 50
Conlin, W. H., models.....	36 00
Collins, F. S., fascicle.....	10 00
Cheyney, E. P., salary.....	100 00
Central Scientific Co., slides, apparatus.....	22 35
Cooley, A. S., slides.....	6 58
College Book Store, paper.....	3 00
Crane Co., pipe.....	58 58
City of Madison, water.....	25 54
Clark, C. U., slides.....	9 75
Chase, W. J., assistant professor, salary.....	1,600 00
Commons, J. R., professor, salary.....	3,500 00
Coffin, V., salary.....	1,000 00
Cattell, J. L., instructor, salary.....	1,000 00
Cook, E. A., instructor, salary.....	1,100 00
Cole, R. G., professor, expenses, salary.....	3,050 07
Case, L. C., instructor, salary.....	1,000 00
C., M. & St. P. Ry. Co., freight.....	248 98
C. & N. W. Ry. Co., freight.....	107 98
Cantwell Printing Co., printing.....	161 55
Chamberlin Metal W. S. Co., strips, planes.....	103 88
Chicago Calcium Light Co., oxygen, rent.....	12 50
Chaney, G. A., assistant, salary.....	600 00
Cerf, B., instructor, salary.....	1,100 00
Cairns, W. B., assistant professor, salary.....	1,800 00
Cunliffe, J. W., professor, salary.....	3,099 30
Cool, C. D., instructor, salary.....	1,100 00
Deyrolle, Les Fils D'Emile, books.....	51 51
Democrat Printing Co., printing.....	15 00
Dickinson, G. L., salary.....	200 00
Davis, L. L., lanterns.....	136 23
Daily Cardinal, subscription.....	2 50
Dean, Alleta F., salary.....	120 00
Dresen & Rhodes, paints, frame.....	17 50
Dykema, P. W., salary.....	200 00
Duval, E. P. R., salary.....	150 00
Dement, L. W., salary.....	125 00
Danner Mfg. Co., bookcases.....	13 50
Du Vivier, E. H., charts.....	4 73
Doyon & Rayne Lumber Co., lumber.....	4 80
Dodge, R. E. N., assistant professor, salary.....	1,600 00
Dexter, J. S., scholar, salary.....	225 00
Daniels, W. W., salary.....	1,750 00
Deming, H. G., salary.....	400 00
Dake, C. L., salary.....	240 00
Dunleey, R. B., assistant, salary.....	400 00
Dudgeon, M. S., instructor, salary.....	500 00
Denniston, R. H., assistant professor, salary.....	1,400 00
Du Mez, A. G., assistant, salary.....	500 00

Dowling, L. W., assistant professor, salary.....	2,000 00
Diemer, M. E., scholar, salary, slides.....	321 95
Dengler, C. M., lettering.....	17 00
Dickinson, T. H., assistant professor, salary.....	1,400 00
Deihl, J. D., salary, stencils.....	605 20
Duncalf, F., assistant, salary.....	400 00
Dennis, A. L. P., professor, salary.....	2,700 00
Denniston, G. W., assistant, salary.....	200 00
Dearborn, W. F., assistant professor, salary.....	2,125 00
Engelhardt, E., repairs.....	2 00
Electrical Supply Co., mdse.....	131 44
Evans, W. A. salary.....	25 00
Eastman, J. S., cord, mantles.....	17 00
Elsom, J. C., medical examiner, salary.....	300 00
Educator Journal Co., advertising.....	20 00
Educational Review, advertising.....	23 05
Educator School Supply Co., advertising.....	10 00
Elastic Tip Co., casters.....	5 14
Ely, R. T., professor, salary.....	4,000 00
Elliott, E. C., professor, salary.....	3,000 00
Erlanger, J., professor, salary, expenses.....	3,022 78
Eimer & Amend, balancer, chemicals.....	610 13
Elliott, G. R., salary.....	900 00
Evans, M. B., assistant professor, salary, expenses.....	1,805 19
Frederickson, A. D. & J. V., lumber.....	712 35
Foerst, J. P., mechanician.....	1,200 00
Findorff, J. H., frames, lumber, cases, windows.....	216 00
Flint, G. M., specimen.....	6 00
Ferrosteel Co., The, registers.....	192 03
Foltz, P. M., slides.....	10 50
Frantschi & Son, C., furniture.....	96 75
Field & Co., M., sheets, toweling.....	45 80
France, L. V., bee collection.....	3 90
French Battery & Carbon Co., cells.....	3 00
Felton, A. P., keys, repairs.....	3 20
F. F. Steam Laundry, laundry.....	12 35
Flick, E. C., salary.....	15 00
Fish, C. R., professor, salary.....	1,500 00
Fischer, R., assistant professor, salary.....	700 00
Freeman, J. C., professor, salary.....	3,000 00
Fuller, C. A., instructor, salary.....	1,000 00
Ft. Wayne Electric Works, generator, pulleys, motors.....	282 25
Fitch, J. A., fellow, salary.....	400 00
Frost, W. D., assistant professor, salary.....	2,000 00
Forsythe, W. E., assistant, salary.....	500 00
Feise, Ernst, instructor, salary.....	900 00
Fiske, G. C., assistant professor, salary.....	2,000 00
Gundlach-Manhattan Optical Co., repairs.....	3 25
Goodyear Rubber Co., belting.....	20 85
Greig, J., Est., furniture.....	265 00
General Electric Co., regulator, wire.....	182 62
Gloyer, W. O., salary.....	40 00
Gould Storage Battery Co., battery.....	172 50
Gaertner & Co., Wm., apparatus.....	13 50
Gutsch, M. R., salary.....	52 40
Gigons, H. S., models.....	47 00
Gilbertson & Anderson, watches.....	7 50
Gimbel Bros., towels.....	10 35
Gillan & Co., S. Y., advertising.....	17 00
Geographical Supply Bureau, slides.....	170 00
Graham Chemical Percolator Works, C., percolator.....	92 00
Gihnan, S. W., professor, salary, expenses.....	3,305 53
Galland, J. S., assistant, salary.....	500 00
Greubel, O. W., scholar, salary.....	235 00
Gesell, G. A., scholar, salary.....	225 00
Grove, W. E., instructor, salary.....	800 00
Garton, G., scholar, salary.....	225 00
Grimm's Bindery, binding.....	15 30
Gram, E., music.....	6 00
Gray Herbarium, cards.....	144 53
Gates, C. B., assistant, salary.....	500 00
Goodnight, S. H., assistant professor, salary.....	1,400 00
Gage, O. A., assistant professor, salary.....	1,400 00
Grimes, N. C., instructor, salary.....	1,160 00
Gay, Lucy M., salary.....	1,500 00
Giese, W. F., associate professor, salary.....	2,000 00
Gray, L. C., assistant, salary.....	400 00
Haerger, Ben, assistant, salary.....	180 00

Hoffman Mfg. Co., B., mdse.....	45 76
Harris & Co., S., fittings.....	4 24
Hickman, J., salary.....	15 00
Hauptmann, C., salary.....	75 00
Hynson, Wescott & Co., syringes.....	12 75
Hanson & Van Winkle Co., brushes.....	12 67
Hooper, J. T., expenses.....	29 76
Heddle, J. R., mounting.....	20 00
Hollister Drug Co., drugs.....	24 37
Heil Chemical Co., H., crucibles, chemicals.....	235 83
Heise, G. W., salary.....	15 00
Hunt, Caroline L., salary.....	300 00
Huels, F. W., instructor, tests.....	12 60
Heckler, H., case.....	18 00
Hausmann, J. F., salary.....	150 00
Hall, R. D., instructor, salary.....	600 00
Hardy & Co., F. A., tests, apparatus, tuning forks.....	25 29
Herrick, L. R., instructor, salary.....	800 00
Huntington, Ellen A., instructor, salary.....	700 00
Hayden, Estelle, salary.....	40 00
Howe Scale Co., scale.....	6 20
Hickman Mary A., assistant, salary.....	240 00
Harvard App. Co., instruments.....	81 95
Haswell Furniture Co., furniture.....	310 98
Hess, R. H., instructor, salary.....	1,200 00
Hawes, C. H., lecturer, salary.....	1,000 00
Hornbeck, S. K., instructor, salary.....	500 00
Harper, R. A., professor, salary.....	3,300 00
Hall, E. B., salary.....	440 00
Holt, H. H., salary.....	400 00
Heat and water, percentages.....	26,091 12
Hall, E. A., salary.....	150 00
Holmes, S. J., assistant professor, salary.....	1,800 00
Hill, C. W., assistant, salary.....	600 00
Hacker, E. F., salary.....	400 00
Hammond, L. D., salary.....	250 00
Heston, E. A., fellow, salary.....	400 00
Hell, H. G., salary.....	800 00
Hubbard, F. G., professor, salary, expenses.....	3,055 20
Haertel, M. H., instructor, salary.....	1,100 00
H'Doubler, F. T., fellow, salary.....	400 00
Hellman, E. A., assistant, salary.....	400 00
Herrick, L. R., instructor, salary.....	650 00
Hohlfeld, A. R., professor, salary.....	3,000 00
Haekett, H. C., instructor, salary.....	1,320 00
International Instrument Co., apparatus.....	108 00
Ill. Cent. Ry. Co., freight.....	25 28
Inglis, D. N., salary.....	500 00
Ingersoll, L. R., assistant professor, salary.....	1,400 00
Juergens, C. H., chart work.....	6 50
Johnson, A. R., salary.....	100 00
Johnston, C., lecturer, salary.....	600 00
Jenkins Bros., valves.....	208 20
Johnson Service Co., valves.....	20 40
Jaap, Otto, fungi.....	8 44
Jastrow, J., professor, salary.....	2,900 00
Johnstone, A. H., instructor, salary.....	1,000 00
Juday, C., lecturer, salary.....	500 00
Jackson, H. H. T., scholar, salary.....	225 00
Jordan, E., fellow, salary.....	400 00
Jolivet, Hally, assistant, salary, expenses.....	442 60
Johnson, Axel, fellow, salary.....	400 00
Knuppel, A. E., research.....	3 40
Klein Bros., paints.....	5 00
Krantz, Dr. F., specimens.....	16 83
Kny-Scherer Co., cylinders, skulls, apparatus.....	668 98
Kerschensteiner, M. J., salary.....	160 00
Kirchoefer, W. H., salary.....	15 00
Kecley, Neckerman & Kessenich Co., mdse.....	63
Ketelle, Mary A., assistant, salary.....	500 00
Kind, J. L., assistant professor.....	1,400 00
Kent, W. J., salary.....	400 00
Kahlenberg, L., professor, salary.....	3,300 00
Krenners, Edw., professor, bills paid, salary.....	2,505 00
Kornhauser & Co., A., oil cloth, mdse.....	13 48
Kroncke Bros., hdwe.....	37 02
Kirk, C. T., fellow.....	400 00
Klein, D., assistant, salary.....	600 00

Koch, A. R., assistant, salary.....	500 00	
Kerr, A., emeritus professor, salary.....	1,000 00	
Krauskopf, F. C., instructor, salary.....	900 00	
Koelker, W. F., assistant professor, salary.....	1,625 00	
Kustermann, W. W., salary.....	300 00	
Kirchman, J. E., assistant, salary.....	400 00	
Ludlow Valve Mfg. Co., hydrant.....	24 96	
Louisiana School Review, advertising.....	6 00	
Leybold's Nachfolger, E., pump.....	99 15	
Linderman & Haverson C., plates.....	10 35	
Levitan, Sol., muslin.....	12	
Lantz, G. H., charts.....	52 50	
Library Bureau, cabinet.....	61 90	
Linde Air Products Co., oxygen.....	70 94	
Lemcke & Buechner, charts.....	19 80	
Lane, A. C., salary.....	25 00	
Lentz, E. A., apparatus.....	360 13	
London Topographical Society, subscription.....	15 69	
Leitz, E., apparatus.....	122 69	
Lehmann, A. C., mice.....	3 00	
Lorenz, E. H. J., mechanician.....	548 24	
Littig & Co., W. T., privilege.....	5 00	
Logan, H. E., salary.....	160 00	
Loevenhart, A. S., professor, salary, bills paid, specimens.....	3,051 80	
Lathrop, B., associate professor, salary.....	2,300 00	
Leonard, W. E., instructor, salary.....	1,120 00	
Lyman, R. L., assistant professor, salary.....	2,000 00	
Lutman, B. F., assistant, salary, expenses.....	403 90	
Laird, A. G., salary.....	2,000 00	
Lewis, R. M., scholar, salary.....	225 00	
Lunt, W. E., instructor, salary.....	1,200 00	
Lowrie, S. G., assistant, salary.....	300 00	
Lehner, V., professor, salary.....	2,500 00	
Littleton, J. T., Jr., salary.....	400 00	
Leith, C. K., professor, salary, expenses.....	1,801 71	
Leiserson, W. M., assistant, salary.....	500 00	
Metal Specialties Mfg. Co., metal work.....	27 00	
McKenna Bros. Brass Co., grinder.....	60 00	
Meister, Edw., batteries, instruments.....	34 05	
Mayhew, Abby S., assistant professor, salary.....	225 00	
Merck & Co., chemicals.....	3 90	
Manual Arts Press, advertising.....	24 50	
Martin, Hermi, salary.....	7 50	
Madison Paint & Wall Paper Co., brushes, paints.....	14 13	
Milwaukee Leather Belt Co., belting.....	1 20	
Mayers Electric Press, printing.....	2 25	
Michigan Alumnus, advertising.....	20 00	
Madison Steam Laundry, laundry.....	42	
Marine Biological Laboratory, specimens.....	24 10	
Mayers, A. A., glass, groceries, paints.....	16 27	
Morgan, G. F., slides.....	6 30	
Madison Gas & Electric Co., gas, current.....	5,659 25	
Moseley, J. E., stationery.....	12 20	
Mandell Engraving Co., half-tones.....	6 86	
Mueller Bros., drawings.....	7 50	
Massachusetts General Hospital, slides.....	4 80	
Midland Schools, advertising.....	27 00	
McCarthy, T. C., repairs.....	1,267 00	
McKenny, C., expenses.....	6 43	
Madison Brass Works, castings.....	3 12	
Myers, P. H., clerical work.....	20 00	
McKittrick, R., assistant, salary.....	400 00	
Meek, W. J., instructor, salary.....	1,000 00	
Miller, W. S., associate professor, salary.....	2,000 00	
Miller, E. R., salary.....	210 00	
Martin, L., assistant professor, salary.....	1,400 00	
Meyer, E. C., lecturer, salary.....	800 00	
Merica, P. D., assistant, salary.....	400 00	
Mendenhall, C. E., professor, salary.....	2,800 00	
Mathews, G. C., assistant, salary.....	600 00	
Marshall, W. S., associate professor, salary.....	1,800 00	
Mautz Bros., paints.....	337 15	
Mason, Max, associate professor, salary.....	2,500 00	
Marquette, W. G., assistant professor, salary.....	1,400 00	
Mead, W. J., instructor, salary.....	806 00	
Menges pharmacy, drugs.....	11 92	
March, H. W., instructor, salary.....	1,200 00	
McClurg & Co., A. C., books.....	213 13	

Mathews, J. H., instructor, salary.....	1,000 00
Mott, W. R., instructor, salary.....	800 00
Munro, D. C., professor, salary, expenses.....	3,802 50
Miller, P. G., assistant, salary.....	500 00
McCauley, G. V., scholar, salary.....	225 00
McIntosh Stereopticon Co., apparatus.....	67 73
McDaniel, A. S., instructor, salary.....	900 00
McBride, R. S., assistant, salary.....	500 00
Maurer, H. H., assistant, salary.....	400 00
Muenzinger, K. F., assistant, salary.....	420 00
Morgan, B. A., instructor, salary.....	925 00
Michell, R. B., instructor, salary.....	1,200 00
McGilvary, E. B., professor, salary.....	3,500 00
Niebuhr, P. F., repairs.....	2 50
Northern Electric Mfg. Co., repairs.....	54 00
Nelson, W. A., salary.....	100 00
Niebuhr, Wm., repairs.....	5 00
National Blower Works, fans, pump.....	651 31
Nickles, R. J., mdse., lamps.....	15 60
Niedecken Co., H., pens.....	1 44
Nelson, O. O., salary.....	60 00
Neunfeldt, E. R., frogs.....	7 00
Nebraska Teacher, advertising.....	16 00
Nielson, E. C., slides.....	254 20
Newton & Co., condensers, apparatus.....	67 06
Neidig, W. J., instructor, salary.....	1,000 00
Owens, Wm., plumbing.....	2 80
Ohio Teacher, advertising.....	28 00
Olson, Thos., furniture.....	1 70
Outlook Co., advertising.....	33 60
Ohio Educational Monthly, advertising.....	13 00
Orr & Lockett Hdwe. Co., hdwe., keys.....	10 90
O'Shea, M. V., professor, salary, Keith lecture.....	2,712 50
Overton, J. B., assistant professor, salary.....	1,400 00
Olson, J. E., professor, salary.....	2,000 00
Owen, E. T., professor, salary.....	2,000 00
Otto, M. C., assistant, salary.....	600 00
Pringle, R. W., expenses.....	7 54
Plymouth, The, gloves.....	2 00
Pickarts, L. J., bursar, bills paid, postage.....	730 59
Pritzlaff Hdwe. Co., J., hooks.....	4 50
Phillips, Mrs. H. A., sewing.....	1 85
Petzold, W., apparatus.....	2 58
Public School Pub. Co., advertising.....	14 40
Patterson, D. L., salary.....	150 00
Post, L., music.....	38 00
Parker, O. M., advertising.....	21 20
Parker Educational Co., advertising.....	25 52
Pickarts, Mary E., salary, clerical work.....	55 00
Price, L. M., scholar, salary.....	22 50
Pokoring, A., labeling.....	5 25
Park hotel, expenses.....	43 00
Parey, Paul, charts.....	14 80
Packard Machinery Co., O. L., drills, tools.....	53 85
Pannock, E. F., labor, stone.....	32 67
Parkinson-Marling Lumber Co., lumber.....	22 07
Peters, Alfred, rabbits.....	10 50
Phillips, U. B., salary.....	225 00
Price, W. H., instructor, salary.....	1,300 00
Pyre, J. F. A., assistant professor, salary.....	2,000 00
Plagge, H. J., assistant, salary.....	400 00
Parkinson, J. B., emeritus, salary.....	1,900 00
Parsons P. & S. Co., stationery.....	264 18
Pitman, Jennie M., charts.....	42 15
Postal Telegraph Co., messages.....	4 52
Parker, F. A., emeritus, salary.....	1,395 00
Prokosh, E., assistant professor, salary.....	1,400 00
Queen & Co., thermometer.....	10 00
Roe, F. W., instructor, salary.....	1,300 00
Rundle-Spence Mfg. Co., hdwe.....	146 18
Reinhard, E., salary.....	800 00
Roedder, E. O., assistant professor, salary.....	1,600 00
Ravenel, M. P., professor, salary.....	1,250 00
Rigden, Effie J., salary.....	280 00
Ross, E. A., professor, salary.....	3,300 00
Roebuck, J. R., instructor.....	1,200 00
Richards, A., salary.....	400 00
Reed, F. O., assistant professor, salary.....	1,800 00

Reinsch, P. S., professor, salary.....	3,750 00
Root, W. T., instructor, salary.....	1,200 00
Rankin, C. Adda, salary.....	200 00
Rosner, R., apparatus.....	20 25
Root Co., A. I., bee-hives.....	9 70
Roessler & Hass Chemical Co., chemicals, acid.....	85 47
Rogers, A. J., Jr., specimens.....	4 00
Robinson, E. E., assistant, salary.....	80 00
Remington Typewriter Co., ribbons, paper.....	23 40
Rand, McNally & Co., maps.....	65 00
Stoedtner, Dr. F., slides.....	97 54
Sphung, A. A., turtles, frogs.....	6 52
Small & Stevens Co., repairs.....	1 50
Sasse, C. L., glass.....	2 23
Suzzallo, H., salary.....	50 00
Spencer Lens Co., objective, microscopes, parts.....	1,349 60
St. Peter, L. U., salary.....	51 20
Sargent & Co., E. H., chemicals.....	92 60
Sinaiko, Alex., oats.....	5 00
Starrett Co., L. S., rule.....	5 42
South Dakota State Journal of Education, advertising.....	6 40
State Journal Printing Co., printing.....	27 90
Salisbury & Co., W. H., hose.....	8 30
Southern Wisconsin Foundry Co., castings.....	1 83
Sharp & Dahme, tablets.....	3 15
School Science & Mathematics, advertising.....	14 40
Shade, M. T., clerical work.....	20 00
Snyder, Matilda L., stencils.....	14 20
Sparling, S. E., salary.....	225 00
Summer School of the South, advertising.....	10 00
School Education, advertising.....	15 00
Swain, G. R., slides.....	67 98
Sumner & Cranston, films.....	3 70
Stazione Zoologica, specimens.....	7 37
Shong, A. C., expenses.....	19 90
Sladky, Paul, salary.....	1 05
Sholes Co., C. E., magnesite.....	9 71
Schneider Bros., apparatus, bulbs.....	33 20
Semrad, C. A., instructor, salary.....	80 00
Stern, Leo, expenses.....	8 73
Southern School Journal, advertising.....	12 00
Science Press, advertising.....	8 00
Stoelting Co., C. H., tester.....	3 20
Standard Adding Machine Co., repairs.....	12 50
Schubert, J. C., slides.....	15 45
Sedgwick, W. T., salary.....	100 00
Streissguth-Petran Engraving Co., half-tones.....	21 45
Sharp, F. C., professor, salary.....	2,700 00
Seerist, H., assistant, salary.....	400 00
Scott, R. B., associate professor, salary.....	2,000 00
Smith, C. F., professor, salary.....	3,300 00
Stout, A. B., student assistant, salary, expenses.....	401 40
Smith, H. A., professor, salary.....	3,000 00
Sterling, Susan A., assistant professor, salary.....	1,500 00
Smith, E. R., instructor, salary.....	1,100 00
Smith, G. C. scholar, salary.....	225 00
Schannahan, W. D., assistant, salary.....	500 00
Steidtman, E., asst., salary.....	600 00
Snow, B. W., professor, salary.....	3,000 00
Slichter, C. S., professor, salary.....	3,000 00
Stanton, Margaret B., scholar, salary.....	225 00
Starch, D., instructor, salary.....	300 00
Stechert & Co., G. E., books.....	153 62
Schmitt, B. E., fellow, salary.....	400 00
Sumner & Morris, hdwe.....	38 80
Schloer, F. H., apparatus.....	85 03
Store room, indse.....	648 62
Schaffrath, Wm., salary.....	200 00
Smith, A. W., instructor, salary.....	1,000 00
Skinner, E. B., assistant professor, salary.....	2,425 00
Schmidt, Wm., sterilizer, tools.....	22 25
Steve, W. F., assistant, salary.....	400 00
Street, Ida M., salary.....	300 00
Smith & Bros. Typewriter Co., L. C., typewriter.....	60 00
Schulz, R. L., assistant, salary.....	450 00
Schlatter, E. B., instructor, salary.....	1,200 00
Simpson, T. M., instructor, salary.....	1,000 00
Smith, K. W., instructor, salary, expenses.....	1,018 51

Showerman, G., associate professor, salary.....	2,000 00
Slaughter, M. S., professor, salary.....	3,000 00
Scott, J. F., assistant, salary.....	450 00
Shepard, W. J., instructor, salary.....	1,200 00
Selery, G. C., associate professor, salary, bills paid, expenses.....	3,069 81
Scott, W. A., professor, salary, lecture.....	3,710 00
Tauchnitz, C. H., apparatus.....	4 80
Thompson & Co. A. T., lantern, limes.....	85 00
Training of Teachers, P. R., salaries.....	1,445 00
Texas School Magazine, advertising.....	13 50
Tilden, Josephine E., specimens.....	5 26
Tyrell, J., carpenter work, cases.....	149 00
Torrey Botanical Club, cards.....	20 67
Teachers' Journal Printing Co., advertising.....	10 00
Truax, Greene & Co., apparatus.....	2 54
Troy, J. P., slides.....	14 70
Thayer & Chandler, plastina.....	9 00
Taylor Instrument Co., instrument.....	147 75
Texas School Journal, advertising.....	9 00
Taylor, H. C., associate professor, salary.....	2,500 00
Taylor, A. H., assistant professor, salary.....	1,600 00
Taggart, D. R., scholar, salary.....	225 00
Terry, E. M., instructor, salary.....	1,250 00
Trimble, W. J., fellow, salary.....	400 00
Titsworth, W. A., assistant, salary.....	400 00
Tracy, Gibbs & Co., printing.....	210 10
Tabor, E. O., scholar, salary.....	225 00
Thomas Co., A. H., apparatus, chemicals.....	2,271 42
Titus, M. E., assistant, salary.....	400 00
Titsworth, P. E., salary, stencils.....	403 00
Turner, F. J., professor, salary.....	4,000 00
University pay roll, janitors.....	12,595 87
University Cooperative Co., stationery.....	51 13
Underwood Typewriter Co., ink, typewriter, cleaning.....	22 40
University of Chicago Press, advertising.....	28 50
United States Express Co., express.....	55 85
Underhill, A. L., instructor, salary.....	1,450 00
Von Schrenk, H., salary.....	300 00
Von Klenze, C., salary.....	500 00
Veerhusen, Elsbeth, instructor, salary.....	1,200 00
Ver Halen, E. T., awnings.....	8 25
Van Vleck, E. B., professor, salary.....	3,500 00
Voss, Ernst, professor, salary.....	2,700 00
White, Rhoda M., clerical work, salary.....	440 00
Wisconsin Medical Journal, advertising.....	50 00
Whitall-Tatum Co., apparatus, supplies, containers.....	67 77
Werner, Max, drawings.....	16 80
Whitbeck, R. H., salary, expenses.....	361 19
Weinar, H., monarda.....	2 50
Western School Journal, advertising.....	12 00
Wolfenson, L. B., instructor, salary.....	1,000 00
Williams, W. H., professor, salary.....	700 00
Watt, H. A., assistant, salary.....	400 00
Woodward, Cora S., dean, salary.....	1,500 00
Woolley, E. C., instructor, salary.....	1,150 00
Wrench, J. E., assistant, salary.....	400 00
Westermann, W. L., associate professor, salary.....	1,900 00
Wallace, B. B., fellow, salary.....	400 00
Wells-Fargo Express Co., express.....	6 98
Wisconsin Telephone Co., messages.....	2 87
Wahl, H. R., assistant, salary.....	400 00
Winchell, A. N., professor, salary.....	2,200 00
Wagner, G., instructor, salary, expenses.....	1,207 48
Williams, F. P., student assistant, salary, expenses.....	326 19
Wilcox, W. G., assistant, salary.....	600 00
Wolf, Kubly & Hirsig, hdwe.....	95 85
Warmbrunn, Quilitz & Co., bottles.....	105 75
Ward's Natural Science Etsab, map.....	16 00
Williams Pharmacy, turpentine.....	1 75
Willms Surgical Instrument Co., C., instruments, apparatus.....	58 87
Wolff Mfg. Co., L., hdwe, bows.....	40 38
Western Electric Co., mdse. supplies, battery.....	42 86
Wakeman, Nellie, salary.....	9 80
Wilcox Mfg. Co., slides.....	10 14
Western Electrical Instrument Co., voltmeter.....	146 10
Western Union Telegraph Co., messages.....	4 48
Williamson, H. P., lecture.....	16 00
Warner, W. W., tuning, rolls, cartage.....	89 17

Wiedenbeck, Doeblin & Co., hardware.....	20 00	
Weber, A. W., assistant, salary.....	600 00	
Walton, J. H., Jr., assistant professor, salary.....	1,700 00	
Wolf, H. C., instructor, salary.....	1,300 00	
Yawkey-Crowley Lumber Co., lumber.....	228 00	
Young, E. B., assistant, salary.....	400 00	
Young, Karl, assistant professor, salary.....	1,500 00	
Ziegler, F., model.....	10 50	
Zanesville Stoneware Co., jars.....	10 00	
Zehnter Co., J., merchandise.....	3 50	
Zeiss, Carl, micrometer.....	25 99	
Zidanowicz, C. D., instructor, salary.....	1,100 00	
	\$422,879 80	
Correction memorandum credit	818 87	\$422,060 93

COLLEGE OF AGRICULTURE

Alexander, A. S., professor, expenses, salary.....	\$2,653 10	
Alford Bros., laundry	84 67	
American Sprayer & Supply Co., sprayer.....	125 00	
Administration pay roll, clerks.....	2,946 28	
Andrews Co., A. H., blackboard.....	3 20	
American Linseed Co., oil.....	27 43	
Atlantic Refining Co., oil.....	34 65	
Agricultural College pay roll, clerks.....	43,179 80	
American Berkshire Association, entries, registry.....	31 00	
American Jersey Cattle Club, registry, testing.....	37 89	
Allen Mfg. Co., W. D., pipe.....	44 63	
American Aberdeen-Angus Association, application, registry.....	7 50	
Andrae & Sons Co., J., merchandise.....	6 59	
American Guernsey Cattle Club, registry, testing, transfers.....	77 05	
Ayrshire Breeders' Association, registry.....	5 25	
Angell & Co., G. R., directories.....	8 00	
Agricultural Institutes pay roll, instruction, conductors.....	6,260 00	
Addison, J., moving	5 00	
American Express Co., express.....	341 78	
Armour Fertilizer Works, phosphate.....	12 00	
Andrew, J. M., seed, rent.....	25 58	
Alexander & Co., Dr. H. M., guinea pigs.....	4 25	
American Dist. Steam Co., piping.....	330 76	
Armstrong, Vermillion, chart work.....	1 50	
American Duroc-Jersey Association, registry, book.....	8 00	
American Chester-White Record Association, registry.....	3 00	
Accola, J., expenses	17 20	
Acker, John, oats	529 38	
American Shropshire Registry Association, registry fee.....	19 25	
American Hampshire Sheep Association, registry fee.....	13 25	
Association of American Agricultural Colleges and Experiment Stations, fee	30 00	
American Poland-China Record Association, registry.....	5 00	
American Cheviot Sheep Society, registry.....	8 75	
American Southdown Breeders' Association, entries, registry, books	12 00	
American Farnsworth Swine Record Association, registry.....	3 50	
Baker Chemical Co., J. T., acids, chemicals.....	91 06	
Burpee & Co., W. A., seeds.....	4 97	
Besly & Co., C. H., tools.....	51	
Bishop & Co., J., dishes, crucibles.....	534 63	
Broughton, A., lambs	40 00	
Babbitt, B. T., lye.....	37 75	
Burger, Peter, hardware, locks.....	145 03	
Blued & Schneider, hardware.....	49 45	
Bull, C. P., peas.....	3 00	
Bausch & Lomb Optical Co., cells, apparatus, chemicals.....	715 15	
Barrett Mfg. Co., oil.....	7 50	
Babeock, S. M., professor, salary.....	3,000 00	
Bandow, L., potatoes.....	8 25	
Burroughs Adding Machine Co., paper.....	4 25	
Barber Cream Supply Co., A. H., rings, bottles, apparatus, plates, scales, cloth	426 76	
Booth & Co., A., storage.....	112 37	
Butter and cheese pay roll, butter and cheese.....	5,386 91	
Brannon, W. A., assistant, salary.....	600 00	
Benkendorf, G. H., instructor, salary, expenses.....	1,483 80	

Bowles, J. T., chemist, salary.....	300 00
Burdick & Murray Co., merchandise.....	26 43
Brockhaus, F. A., books.....	220 88
Boston Thermometer Co., thermometer.....	1 50
Baer, U. S., expenses.....	3 26
Bigelow, H. O., oats.....	490 70
Burnham, O. J., apples.....	15 00
Bollenbeck, J., mugs.....	4 00
Brown Co., E. C., spray.....	14 45
Beedle, G. E., commissioner of insurance, insurance.....	982 80
Burnham, E., lectures.....	41 81
Bateman Mfg. Co., apparatus.....	6 00
Bingham's Son Mfg. Co., S. roller.....	2 30
C. M. & St. P. Ry. Co., freight.....	7 74
C. & N. W., Ry. Co., freight.....	1 55
Currie Bros. Co., plants, beans.....	1 40
Cantwell Printing Co., printing.....	284 55
Cornish, Curtis & Greene Mfg. Co., printer, wheel, tubs.....	50 40
Coe, Converse & Edwards Co., trees, seeds.....	60 80
Carl, Fred, apparatus.....	54 80
Creamery Package Mfg. Co., tubes, repairs, supplies, knives, apparatus, cans, maps, color.....	745 11
Cline, James, horse.....	185 00
Cadwell, H. W., guinea pigs.....	22 50
Cooley, C. F., plaster, lime, coal, coke.....	53 15
Castle & Doyle, coal, plaster, lime.....	8,960 26
Creamery pay roll, milk and cream.....	64,112 49
C. & N. W. Ry. Co., freight, milk tickets.....	739 75
Capital City Paper Co., paper.....	61 87
City of Madison, water.....	12 00
Crane Co., pipe.....	56 44
Cherry Co., J. G., apparatus, paraffine.....	43 56
Chicago Flexible Shaft Co., knives.....	7 80
C. M. & St. P. Ry. Co., freight.....	799 74
Centralia Hardware Co., hardware.....	8 33
Cary, C. P., dictionary.....	7 50
Chapman Co., T. A., carpet.....	84 58
Chandler, S. S., potatoes, rent.....	209 10
Charles R., eggs.....	2 00
Clark Engraving Co., cut.....	3 60
Childs & Co., C. H., kilfly.....	3 00
Colonial Salt Co., salt.....	10 00
Corn Products Mfg. Co., feed.....	55 00
Cobden Machine Works, machine.....	16 00
Carpenter & Co., G. B., twines.....	15 75
Coleman, C. B., expenses.....	51 89
Channon Co., H., fittings.....	10 00
Corry, T. J., hauling.....	2 00
Cranmoor Telephone Co., service.....	18 25
Carman, C., shoeing.....	44 35
Conklin & Sons, ice, coal.....	86 80
Curtiss, F. W., photograph.....	2 00
Chester Farm Co., seed.....	50 00
Cranmoor Poultry Yards, vines.....	6 00
Dietzgen Co., E., paper, stationery.....	55 40
Dairy and Short Course instruction pay roll, instruction.....	6,289 07
Davis Regulator Co., G. M., regulator.....	13 00
Delwiche, O. J., expenses.....	4 85
Dauck, John, straw.....	8 12
Delwiche, E. J., superintendent, expenses.....	628 78
Dickinson Co., A., seeds.....	42 07
Diemer, M. E., slides.....	44 10
Durand Steel Locker Co., locker.....	276 00
Diepold, P. J., blacksmithing, repairs.....	89 95
Deming Co., fixtures.....	6 75
Dopp & Watson, planter, belt, oil, tools.....	58 45
Doyon & Rayne Lumber Co., lumber.....	5 97
Dengler, C. M., lettering.....	14 85
Democrat Printing Co., printing.....	493 90
Dennison Mfg. Co., tags.....	5 40
Deane Steam Pump Co., valves.....	24 77
Danner Mfg. Co., J., cases.....	12 00
Deutsch & Sickert Co., grain.....	240 00
Davis, G., oats.....	9 87
Drovers Journal Publishing Co., printing.....	14 00
De Laval Separator Co., arms, bushings.....	6 80
Dahl, A. H., state treasurer, refund Institute balance.....	2,406 36
Dane County Telephone Co., service, messages, rentals.....	16 90

Des Rivieres Co., G. R., drawings.....	189 93
Eimer & Amend, chemicals.....	952 64
Eastman, F. R., dry cells.....	2 10
Egan Mfg. Co., J. E., potato digger.....	45 00
Electrical Supply Co., merchandise, tube.....	38 98
Ewer, H. D., use of engine, twine, seeder.....	26 25
Eagle Lock Co., locks.....	25 88
Eastman, J. S., merchandise, chimneys, mantles.....	22 25
Fuller & Johnson Mfg. Co., parts, cultivator.....	42 95
Fairechild & Bro., M. H., wash powder.....	65 09
Fleckenstein, F., repairs.....	18 00
Fairbank, H. E., potatoes.....	2 40
Ford & Co., C. W., seeds.....	15 55
Ferguson, L., seed.....	1 50
Foley Mfg. Co., glass.....	69 45
Fairbanks, Morse & Co., scale, pipe.....	35 69
F. F. F. Steam Laundry, laundry.....	3 03
Fargo Creamery Supply House, salt, bowls.....	18 50
Friez, J. P., forms.....	2 60
Farrington, E. H., professor, salary, expenses.....	2,839 63
Fox, E. W., expenses.....	7 67
France, W. E., expenses.....	6 27
Fuller, J. G., assistant professor, expenses, salary.....	1,677 66
Felton, A. P., keys, repairs.....	16 15
Findorf, J. H., furniture, carpenter work.....	485 00
Frederickson, A. D. & J. V., lumber.....	415 18
French Battery Co., cells.....	12 00
Fox, C. W., expenses.....	8 26
Farmers' Phosphate Co., phosphate.....	370 50
Fuller, D. A., cattle.....	360 00
Ford Co., J. B., cleaner, soda.....	10 00
Gurley, W. & J. E., instruments, apparatus.....	239 08
Greig, G. T., desk.....	55 75
Globe-Wernicke Co., cards.....	2 70
Gamm, W. J., clock.....	18 50
Golding Sons Co., mineral.....	2 20
Gimbel Bros., carpet.....	239 00
General Electric Co., lamps.....	4 20
Grimm's Bindery, binding, cases.....	110 70
Grand Rapids Mill Co., seeds.....	11 50
Gugel, William, sawing.....	8 00
Gross Hardware Co., P., locks.....	29 90
Gould, Wells & Blackburn, sugar, merchandise, salt.....	41 27
Gilson Mfg. Co., coll.....	6 50
Gallagher Co., J., rent.....	18 50
Goulds Mfg. Co., tools, pumps.....	22 01
Gaynor Cranberry Co., barrels, rent.....	34 90
Gerber's Co., Dr. N., apparatus.....	20 90
Grasselli Chemical Co., chemicals, acids.....	80 06
Greig, J., Est., furniture.....	146 00
Halbach, J. P., repairs.....	5 85
Hoffmann, C., instructor, expenses, salary.....	1,239 08
Humphrey, G. C., professor, expenses, salary.....	2,384 71
Hutchison, Mrs. J. H., lecture, rental.....	13 04
Hausemann & Dunn Co., case.....	10 00
Hanchett, W. H., expenses.....	7 57
Hammer, B. W., expenses, salary.....	728 07
Halpin, J. G., expenses.....	30 00
Hanchett & Son, G., plants.....	14 39
Hayes, J. D., shoeing.....	58 20
Hastings, E. G., assistant professor, salary, expenses.....	1,710 40
Heil Chemical Co., H., chemicals, crucibles.....	46 26
Hoffman, W. H., oats.....	636 40
Haswell Furniture Co., furniture.....	270 42
Harris, R. E., testing.....	29 00
Holstein-Friesian Association, registry.....	9 25
Hammersmith Engraving Co., halftones.....	148 36
Hopkins, C. G., expenses.....	67 54
Hutton, George, expenses.....	1 66
Hart, E. B., professor, salary, expenses.....	2,744 46
Harris, R. T., assistant, expenses, salary.....	1,214 43
Hine, G. S., assistant, salary, expenses.....	1,154 17
Hollister Drug Co., chemicals, drugs, sponges.....	74 45
Henry, W. A., emeritus professor, salary.....	2,050 00
Hoffmann Co., Fred., corn, oats, middlings, straw.....	1,465 26
Henning, W. E., expenses.....	7 68
Hatfield, Mrs. H., board.....	5 25
Hathaway, W., plants.....	17 55

Hartmeyer, J., killing	2 00
Heat and water, percentages	592 85
Hall Estate, Inc., cow	150 00
Hibbard, Spencer, Bartlett & Co., hardware	1 29
Hinrichs Dry Goods Co., batting	4 75
Hoffman Mfg. Co., B., pipe	17 10
Heilman, Geo., Est., bread	9 00
Hatfield, William, oats	74 80
Haner, F. E., oats	60 55
Hills, J. L., treasurer, subscription	25 00
Huels, F. W., testing	2 40
Hoffman, William, oats	656 10
Hall, E. J., photos	4 50
Holliday & Son, fittings	7 75
Hunt, E. H., liquid	4 00
Haak, Wm., Jr., repairs, fittings, valve, belting, plugs	44 15
Illinois Central Ry. Co., freight	39 41
Ionia Pottery Co., pottery	23 54
Illinois Steel Co., steel	5 38
Illinois Experiment Station, testing	28 00
Illinois Electric Co., lamps	4 20
International Live Stock Exposition Association, freight	88 92
Iron River Hardware Co., lime, felt	4 65
Ilgenfritz Sons Co., J. E., plants	5 63
International Harvester Co., repairs, twine, machines, wagon, piston, cells, parts	886 98
Jones, F. R., instructor, expenses, salary	1,495 27
Johns-Manville Co., H. W., covering	41 03
Jorgenson & Son, G., plants	1 10
Jewell Nursery Co., shrubs	8 25
Jurriens, J. C., salary	50 00
Jones & Laughlin Steel Co., tools	17 58
Jahns, Louise M., assistant, salary	720 00
Johnson & Hill Co., gasoline	9 41
Klueter & Co., salt, middlings, meal, feed	591 30
Keyes, William, hauling	444 60
Kellogg & Son, W. E., plants	16 00
Koch, Fred, rent	600 00
Kimble Glass Co., bottles, vials	24 00
Kleinheinz, F., instructor, expenses, salary	1,731 82
Kiefer-Haessler Hardware Co., plates	7 00
Kny-Scherer Co., apparatus	58 40
Kassell, B. C., engrossing	46 70
King, F. H., book	1 75
Kellogg Co., R. M., plants	7 50
Klein Bros., frames, painting	96 55
King & Walker Co., castings, ovens	40 57
Kruse, C. J., signs	8 60
Kroncke Bros., hardware	2 55
Kateley, Fred, salary	2 00
Kauffman, W. H., seedlings	39 75
Kiel Wooden Ware Co., boxes	26 25
Lake, D. S., seedlings	16 50
Livingston Seed Co., seeds	1 70
Laabs, F. W., expenses	1 94
Lewis Mfg. Co., F. J., creosote	35 84
Lake Sons Co., H., trees	25 20
Lubeke, C. C., services of bull	3 00
Lima Eng. & Mfg. Co., machine	15 50
Lunenschloss, F., hog	20 00
Levitan, Sol., muslin	5 28
Lantz, G. H., lettering	2 10
Lantz, M. P. & S. E., lambs	20 00
Mayers, A. A., seeds, mdse., grain, glass, groceries, oil, paints, drugs	152 82
Marschall Dairy Laboratory, extract	9 21
Minnesota Experiment Station, wheat	1 20
Mortenson & Nelson, potatoes	2 00
Milwaukee Bag Co., bags	14 33
Morrill & Morley, rods	10 88
Marquis, J. C., editor, expenses	3 75
Miles, A. H., paint	2 15
Michels, M., expenses, scoring	70 88
Madison Gas & Electric Co., gas, current, mdse.	2,639 48
Malde, O. G., assistant, expenses	294 09
Merck & Co., alcohol, drugs	11 37
Madison Steam Laundry, laundry	5 24
Miller, Lewis, bees	12 00

Milward, J. G., instructor, expenses, salary.....	1,276 47
Machinists' Supply Co., tools, screws.....	5 30
Markey, W. E., assistant, expenses.....	13 86
Madison Brass Works, castings.....	1 76
McLay Bros., keeping mare.....	25 00
McCullum, E. V., assistant professor, salary.....	1,400 00
May & Co., L. L. trees, seeds.....	59 05
Myers & Bro., F. E., fittings.....	2 38
Madison Tent & Awning Co., covers, awning.....	51 60
Madison Engraving Co., etchings.....	7 25
Mautz Bros., paints.....	108 73
McClurg & Co., A. C., books.....	221 32
Meyer, F. M., shoeing.....	64 70
Moore, J. G., assistant professor, salary, expenses.....	1,630 64
Marlatt, Abby L., expenses.....	246 55
Moore, R. A., professor, expenses, salary.....	2,735 45
Madison Saddlery Co., harness.....	41 50
McKerrow, G., superintendent, bills paid, salary expenses.....	7,323 88
Mortenson, M., expenses.....	26 33
Marsh & Co., hdwe, glasses, pans.....	9 30
Menges Pharmacy, drugs, alcohol.....	92 83
Musback, E. L., expenses, salary.....	737 08
McCarthy, J. E., eggs.....	13 81
Mueller Co., The, enamel, supports.....	33 25
Moseley, J. E., stationery.....	68 31
McIntosh Stereoptican Co., screw.....	10 80
Madison Paint & Wall Paper Co., paints, glass.....	11 83
Marvin, G. A., potatoes, rent.....	53 91
McKerrow & Sons, G., corn.....	5 00
Marshall, R. R., assistant, expenses, salary.....	742 98
Moore, J. W., expenses.....	24 02
Mandel Engraving Co., half-tones, engravings.....	117 17
Macy-Wernecke Co., cases.....	2 77
Milwaukee Leather Belt Co., belting.....	16 00
Madison Investment Co., sand.....	2 10
Morgan Farm, sow.....	70 00
Madson Seed Co., M. G., peas.....	14 22
Marty, G., assistant, expenses.....	19 47
McEwen, R., ram.....	35 00
McPherson, Myron, banners.....	10 00
Madden, Geo., boar.....	35 00
Norgard, C. P., instructor, salary, expenses.....	1,665 51
Niagara Sprayer Co., sprayer.....	150 00
Nelson, Chas., services of stallion.....	10 00
Niebuhr, Ernestina, re-seating.....	4 50
Newbury & Peper, pulleys.....	15 65
Niemann, O., ice.....	61 85
New York Store, rugs, binding.....	3 44
National Chemical Co., borax flakes.....	21 00
Norsman, O. S., license.....	1 00
Nordman, F., expenses.....	9 57
Northrup, King & Co., seeds.....	5 25
Narragansett Machine Co., lockers.....	310 00
Nelson, N. M., seeds.....	3 20
Neal, O. H., service of horse.....	79 00
Nielson, E. C., slides, negatives.....	153 80
Nadeau, O. E., slides, photo work.....	18 20
Neostyle Co., repairs.....	5 00
Niehols Co., tumblers.....	4 20
Northern Electrical Mfg. Co., motor.....	7 20
Nickles, R. J., wire.....	2 00
Noble, Dr. G. W., veterinary services.....	5 00
Oeock, C. A., assistant professor, salary, expenses.....	1,523 37
Otis, D. H., associate professor, expenses, salary.....	2,678 07
Otis, Mrs. D. H., woman's course.....	75 00
Olds Seed Co., L. L., buckwheat, seeds.....	130 82
O'Neil Oil & Paint Co., soda ash, soluble soda.....	8 04
Owens, Wm., plumbing.....	1 96
Oppel's Fancy Grocery, groceries.....	20 10
Piper Bros., gasoline, groceries, jars, mdse.....	45 19
Pioneer Pub. Co., printing.....	12 00
Port Huron Eng. & T. Co., machines.....	15 83
Polonze Scale Co., scale.....	2 50
Potter, B. S., tests.....	8 00
Pannack, E. F., stone.....	30 00
Pickarts, L. J., bursar, bills paid, postage, cash.....	4,857 26
Peters, J., tank.....	12 00
Pettingill, J. A., rent.....	100 75

Pure Gluten Food Co., flour.....	100 00
Pecher, F. J., suits, overalls.....	14 90
Peper, J. W., strips.....	5 50
Pieh, J. F., land.....	3 75
Parsons P. & S. Co., stationery, printing.....	233 00
Postal Telegraph Co., messages.....	1 45
Peterson, A. P., supports.....	4 00
Post, E. H., plow.....	10 25
Pilling & Son Co., G. P., apparatus.....	3 00
Parnell, G. W., ram.....	15 00
Perrin, C. F., felt.....	4 85
Quaker Oats Co., oats.....	712 50
Ravenel, M. P., professor, reports, salary, expenses.....	1,528 67
Rundle-Spense Mfg. Co., hdwe, pipe.....	46 77
Reid C. & D. Supply Co., A. H., belt.....	2 25
Roesch & Son, L., plants.....	2 92
Reinberg, P., plants.....	8 00
Ransey, P. C., expenses.....	2 72
Ryerson & Son, J. T., iron.....	5 43
Riverside Printing Co., printing.....	283 80
Roloff, Ed., slaughtering.....	2 00
Reid, Chas., slides.....	24 75
Russell, H. L., Dean, expenses, salary.....	4,530 07
Rogers, A. J. Jr., assistant, dishes, salary.....	913 15
Roberts, D. E., charts.....	20 00
Ross Co., J. L., tools, grain.....	34 00
Riley & Son, Jas., seed.....	24 00
Remington Typewriter Co., ribbons.....	5 00
Riverside Mills, waste.....	10 64
Richards, M., expenses.....	17 65
Swift & Co., fertilizer.....	104 67
Stone, A. L., instructor, salary.....	1,500 00
Standard Oil Co., gasoline, oil.....	44 78
Storrs & Harrison Co., plants.....	5 93
Store room, mdse.....	1,672 72
Sherwin-Williams Co., arsenate.....	15 00
Sammis, J. L., assistant professor, expenses, salary.....	1,844 96
Sinaiko, Alex., oats, wheat.....	205 81
Smith, K. W., instructor, expenses.....	23 04
Spencer Lens Co., microscopes.....	401 40
Smith Premier Typewriter Co., repairs, coupons, ribbons.....	103 67
Small & Stevens Co., repairs.....	1 00
Sandsten, E. P., professor, salary, expenses.....	2,545 14
Strand, G. W., plants.....	19 95
Sewell-Clapp Mfg. Co., envelopes, paper.....	67 98
Sargent & Co., E. H., chemicals.....	616 75
Sladky, P., salary.....	1 40
Schaffer & Budenberg Co., thermometer.....	1 50
Stechert & Co., G. E., books.....	353 37
Searles, H. C., expenses.....	4 86
Superior Rubber Typewriter Co., daters.....	4 30
Schubert, J. C., slides.....	40 35
Simpson, R., plants.....	5 00
Smith & Gannett, plants.....	11 25
Stoddart, C. W., assistant professor, salary.....	1,700 00
Smith, M. D., horse.....	200 00
Schwarze, H. R., examination.....	5 00
Steenbock, H., salary.....	720 00
Schaum Engraving & Printing Co., half-tones.....	67 89
Sodders, I. S., horse.....	450 25
Seyk Co., W., screenings.....	70 37
Stone, R. J., lamb.....	8 75
Sasse, C. L., glass, frames.....	7 49
Smith & Co., B., envelopes.....	187 18
Sylvester, W. W., assistant, salary.....	480 00
Smith, H. M., crate.....	20 00
Sumner & Morris Hardware Co., hardware.....	117 16
Stephens, D., stone.....	56 75
Scheler, H., storage.....	6 00
State Journal Printing Co., printing.....	101 75
Spencer, C. A., paris green.....	10 00
Siggelkow & Son, H. C., pigs.....	42 00
Sumner & Son, E., sponges.....	3 60
Sandell, H., expenses.....	3 00
Spencer's Bakery, pies.....	8 00
Southern Wisconsin Foundry Co., castings.....	1 05
Salzer Seed Co., J. A., seed.....	2 00
Stannard, C. A., oil.....	5 00

Schmidt, Wm., nails.....	1 31	
Stern & Sons, B., bran.....	516 25	
Sauve, E., corn.....	38 20	
Schroeder Lumber Co., J., lumber.....	1 88	
Stehr, Wm., meats.....	10 98	
Salisbury & Co., W. H., hose.....	15 98	
Smith, W. H., rent.....	79 50	
Scott-Taylor Co., lumber.....	5 74	
Skeflo, P., expenses.....	9 00	
Tottingham, W. E., instructor, salary.....	1,100 00	
Tharburn & Co., J. M., plants, seeds.....	38 75	
Thompson & Co., A. T., boxes.....	44 00	
Thatcher Mfg. Co., bottles.....	45 75	
Thomas Co., A. H., apparatus, chemicals.....	631 22	
Taylor & Gleason, printing.....	4 00	
Tyrell, J., carpenter work.....	13 50	
Traev, Gibbs & Co., printing.....	534 69	
Trachte Bros. & Co., tank.....	12 20	
Toepfer, Mrs. A. F., chickens.....	1 00	
Underwood Typewriter Co., typewriter.....	70 00	
University Cooperative Co., stationery.....	13 40	
United States Express Co., express.....	166 38	
University pay roll, janitors.....	1,805 26	
University Butter & Cheese Scoring Expenditure, butter, cheese.....	6 48	
Union Transfer & Storage Co., plows.....	16 40	
Vreeland Chemical Co., electro.....	10 80	
Valvoline Oil Co., oil.....	10 25	
Van Schaak & Sons, P., calcium.....	5 18	
Van Nostrand Co., D., book.....	4 80	
Vermont Farm Machinery Co., tools.....	1 37	
Vaas-Maw Dry Goods Co., repairs.....	10 50	
Vaughan's Seed Store, seeds.....	62 98	
Wells Fargo Express Co., express.....	24 42	
Western States Envelope Co., envelopes.....	19 54	
Whitall-Tatum Co., apparatus.....	23 09	
Walster, H. L., assistant, expenses, salary.....	994 25	
Wiedenbeck-Dobelin Co., hardware.....	44 68	
Wisconsin Staats-Zeitung, printing.....	142 86	
Western Union Telegraph Co., Telegrams.....	37 21	
Wehrmann, C., bill book, repairs, harness.....	76 20	
Whitson, A. R., professor, expenses, salary.....	2,795 97	
Woll, F. W., professor, expenses, salary.....	2,528 43	
Wolff, Kubly & Hirsig, hardware.....	284 68	
Westerlin & Campbell Co., gaskets.....	5 00	
Wausau Box & Lumber Co., shavings.....	44 40	
Wausau Quartz Co., quartz.....	17 50	
Winterfield, Hans, potatoes.....	25 00	
Watson, N. A., infector.....	8 81	
Weber-Costello Co., blackboard.....	6 30	
Warner Bros., flms.....	2 10	
Whalen, J., expenses.....	15 00	
Wisconsin Central Ry. Co., freight.....	20 05	
Waldo Book & Stationery Co., book.....	2 00	
Wisconsin Telephone Co., messages, rentals.....	36 43	
Wittwer Bros., boxes.....	5 00	
Warner, E. E., wood.....	4 75	
Wisconsin Wagon Co., repairs, tires, shaft.....	76 00	
West, Dr. J. P., veterinarian.....	11 50	
Wisconsin Fruit Packing Co., boxes.....	44 25	
Whalen, J. L., services of mares.....	40 00	
Wells-Higman Co., basket stock, covers.....	21 75	
Western Electric Co., shades, relay.....	9 40	
Williamson, Wm., wheat.....	119 97	
Yewdale & Sons Co., J. H., bulletins.....	4,717 50	
Yahr & Lange Drug Co., sulphate.....	27 00	
Yawkey-Crowley Lumber Co., lumber.....	2,883 70	
Zenner Disinfectant Co., zenoleum.....	9 23	
Correction Memorandum (credit).....	714 74	
Total.....		\$237,962 50

COLLEGE OF ENGINEERING

American Express Co., express.....	\$39 92	
Aluminum Co. of America, aluminum.....	12 75	
Andrae & Sons Co., J., mdse.....	17 01	
Ayres, A. H., salary.....	172 15	
Abbott, E. P., salary.....	30 00	

Andrews Co., A. H., chair backs.....	7 20
Administration pay roll, clerks.....	1,682 28
Bishop & Co., J., desk.....	39 06
Bowles, J. T., salary.....	200 00
Biddle, J. G., instrument's, apparatus.....	357 70
Blued & Co., F. C., printing.....	16 50
Burnside, C. H., salary.....	1,800 00
Burrer, K. O., salary.....	850 00
Beebe, M. C., expenses.....	8 53
Bliss & Laughlin, rod.....	7 82
Beslv & Co., C. H., rod.....	74 06
Beeble, G. E., commissioner of insurance, insurance.....	737 10
Barbee Wire & Iron Works, wire cloth.....	22 09
Burritt, C. G., salary.....	58 20
Baker, R. L., salary.....	850 00
Boehm, W. J., apparatus.....	7 50
Beck Duplicator Co., duplicator.....	11 00
Brandel, C. O., salary.....	860 00
Burnett, E. S., salary.....	765 00
Baker, R. L., expenses.....	28 70
Breckenridge, J. M., salary.....	225 01
Bowles, J. T., expenses.....	5 98
Burnside, C. H., expenses.....	60 75
Beebe, M. C., salary.....	2,500 00
Behrend, F., apparatus.....	149 01
Burgess, C. F., salary.....	2,700 00
Bausch & Lomb Optical Co., chemicals, apparatus.....	60 85
Burger, P., hardware.....	111 89
C. M. & St. P. Ry. Co., freight.....	33 08
City of Madison, water.....	49 15
Crosby Steam Gage & Valve Co., spring, apparatus.....	230 13
Curtis, N. P., salary.....	1,200 00
Chicago Brass Co., tube.....	3 30
Crane Co., pipe.....	156 37
Cooper, M. D., salary.....	67 50
Christie, A. G., salary.....	400 00
Castle & Doyle, cement, lime.....	45 80
Corbin Cabinet Lock Co., locks.....	6 67
Christie, A. G., expenses.....	17 63
Cutler, J. A., salary.....	15 00
Corbin, P. & F., brackets.....	9 90
Cantwell Printing Co., printing.....	26 53
Conklin & Sons, ice, coal.....	15 30
Capital City Paper Co., paper.....	2 50
Correction Memorandum, picture.....	3 00
C. & N. W. Ry. Co., freight.....	86 44
Cortez-Wilson & Co., F., tanks.....	27 00
Dietzen Co., E., electric globes, transits, holders, stationery.....	405 84
Davis, G. J., Jr., expenses.....	1,913 20
Duluth News Tribune Co., photos enlarged.....	13 50
Dickerman, J. C., salary.....	1,725 00
Dengler, C. M., lettering.....	50
Davis, G. J., Jr., expenses.....	4 46
Disque, R. E., salary.....	800 00
Dorscher, J., wiring.....	7 50
Diemer, M. E., slides.....	129 50
Driver-Harris Wire Co., metals.....	32 16
Dickerman, J. C., expenses.....	57 65
Democrat Printing Co., printing.....	49 25
Dement, L. W., salary.....	125 00
Doyon & Rayne Lumber Co., lumber.....	31 90
Dabney, W. L., salary.....	1,150 00
Egelhoff, R. F., salary.....	800 00
Electric Storage Battery Co., batteries.....	36 92
Erie Forge Co., bar.....	40 04
Electric Supply Co., mdse.....	23 20
Engelhardt, C., apparatus.....	48 00
Eimer & Amend, chemicals.....	755 05
Engelhardt, E., repairs.....	1 75
Frederickson, A. D. & J. V., lumber.....	358 32
Fauerbach Brewing Co., acid.....	3 03
Fairbanks, Morse & Co., scale.....	20 00
Ft. Dearborn Watch & Clock Co., timer.....	14 80
Falk Co., machines.....	48 60
Faber, M. E., salary.....	3 45
Greve, F. W., Jr., salary.....	55 20
Gould Storage Battery Co., battery.....	11 21
General Electric Co., switches.....	274 42
Gattiker, W. A., salary.....	73 95

Glaittli, J., salary.....	25 63
General Storage Battery Co., cells.....	10 90
Gilman, E. D., salary.....	22 65
Greig, J., Est., furniture.....	97 00
Grasselli Chemical Co., cadmium.....	2 25
Heat and Water, percentages.....	12,452 21
Holden, E. C., salary.....	3,250 00
Holden, E. C., expenses.....	139 42
Huels, F. W., testing meter.....	3 90
Hirsch, J. G., salary.....	45 00
Howe Scale Co., scale.....	59 30
Holzworth, H., expenses.....	28 65
Hart & Cooley, hardware.....	38 80
Higson, C. R., salary.....	800 00
Hammer, M. R., salary.....	403 40
Hollister Drug Co., drugs.....	90
Hanson & Van Winkle Co., mdse.....	30 60
Hendey Machine Co., tools.....	49 00
Haswell Furniture Co., furniture.....	133 40
Herz & Co., watch.....	5 63
Huels, F. W., salary.....	1,300 00
Illinois Central Railroad Co., freight.....	46 26
International Acheson Graphite Co., carbons.....	47 43
Ives, F. W., salary.....	16 20
Illinois Steel Co., steel.....	3 15
Jones & Laughlin Steel Co., steel.....	10 59
Kislingbury, H. G., salary.....	225 00
Kroncke Bros., hardware.....	9 65
Kendrick & Davis, motors.....	12 80
Kommers, J. B., salary.....	950 00
Kroeschel Bros. Ice Machine Co., rent.....	50 00
King & Walker Co., bolts, castings.....	27 11
Kinne, W. S., salary.....	1,400 00
Keown, R. M., salary.....	1,500 00
Keuffel & Esser Co., slide rule, instruments.....	60 50
Knott Apparatus Co., L. E., gas coke.....	3 38
Kowalke, O. L., salary.....	1,100 00
Kinne, W. S., expenses.....	59 20
Kateley, F., salary.....	550 00
Lunforth-Milburn Co., model.....	125 00
Lumkenbreimer Co., valves.....	28 63
Linde Air Products Co., oxygen.....	60 00
Leeds & Northrup Co., apparatus.....	34 20
Lutze, H. F., salary.....	29 58
Loew, E. A., salary.....	950 00
Lottes, W. G., salary.....	1,200 00
Moseley, J. E., stationery.....	3 70
Mead, D. W., expenses.....	17 10
Machinists' Supply Co., hardware, tubing, tools.....	28 91
Madison Brass Works, castings.....	51 73
Madison Gas & Electric Co., gas, current.....	1,537 87
Mack, J. G. D., expenses.....	5 74
Madison Paint & Wall Paper Co., paints.....	7 00
Miller Lock Co., locks.....	1 90
McCullough, F. M., salary.....	1,596 00
Morgan, R. V., salary.....	242 00
Milwaukee Electric Ry. & Light Co., rails.....	72 46
Mead, D. W., salary.....	3,000 00
Mack, J. G. D., salary.....	3,000 00
Machado & Roller, meter.....	63 50
McCullough, F. M., expenses.....	45 43
Millar, A. V., salary.....	1,550 00
Miller, A. H., salary.....	1,207 25
McBride, B. R., salary.....	800 00
Menges Pharmacy, drugs.....	15
Mandel Engraving Co., engravings.....	31 78
Mayers, A. A., groceries.....	9 26
Milwaukee Steel Foundry Co., castings.....	8 80
Maurer, E. R., salary.....	2,700 00
Mautz Bros., paints.....	36 52
Nadeau, O., slides.....	17 20
National Aniline & Chemical Co., chemicals.....	7 77
National Association of State Mechanical Schools, dues.....	25 00
National Battery Co., battery.....	11 20
Northern Electrical Mfg. Co., motor.....	85 68
Nielsen, E. C., slides.....	90 40
Newbury & Peper, pulleys.....	4 08
Nelson & Polk, shades, curtains.....	22 55
Nickles, R. J., merchandise, lamps.....	23 88

Orth, H. D., salary.....	800 00
Orford Copper Co., nickel.....	26 00
Orr & Locket Hardware Co., hardware.....	3 60
Owen, R. S., salary.....	1,300 00
Parsons P. & S. Co., stationery.....	122 70
Pieh, J. F., sand.....	6 25
Phillips, J. D., expenses.....	16 23
Pritzlaff Hardware Co., J., hardware.....	5 35
Post Publishing Co., blue books, printing.....	26 50
Payton, M., salary.....	497 00
Pickarts, L. J., bursar, postage.....	501 33
Pence, W. D., expenses.....	6 69
Paltz, J., cleaning.....	1 50
Price, J. R., salary.....	1,350 00
Parkinson-Marling Lumber Co., lumber.....	231 70
Pence, W. D., salary.....	3,000 00
Post, L. M., mechanician, salary.....	1,200 00
Postal Telegraph Co., messages.....	25
Phillips, J. D., salary.....	2,800 00
Parker, H. A., salary.....	900 00
Paekard Machine Co., O. L., pulleys.....	33 79
Parker, E. E., salary.....	800 00
Richards, M., salary.....	80 00
Rome Brass & Copper Co., rod.....	49 13
Rife Engineering Co., valves.....	4 45
Roessler-Hass Chemical Co., chemicals.....	7 50
Remington Typewriter Co., platen.....	1 20
Roebblings Sons Co., J. A., wire, sockets.....	49 24
Ryerson & Son, J. T., rods, steel.....	26 60
Riehle Bros., Test Machine Co., machine.....	575 00
Richter, A. W., salary.....	2,500 00
Store Room, merchandise.....	365 38
Sumner & Morris, hardware.....	12 36
State Journal Printing Co., printing.....	125 70
Shuster, J. W., salary.....	1,925 00
Sturtevant Co., B. F., apparatus.....	183 99
Schubert, J. C., slides.....	177 45
Shealy, E. M., salary.....	1,200 00
Sanford, H. B., salary.....	850 00
Steward Mfg. Co., D. M., apparatus.....	7 95
Sasse, C. L., glass.....	3 38
Steen, J. C., salary.....	2,050 00
Schapirograph Co., The, paper.....	9 50
Sargent & Co., E. H., chemicals.....	19 27
Sauveur, A., slides.....	10 00
Siebert & Kuhn, Dr., thermometers.....	34 08
Smith, L. S., salary.....	2,500 00
Stephens, D., stone.....	20 93
State Journal Printing Co., printing.....	23 05
Sladky, P., salary.....	749 85
Sanford, H. B., expenses.....	23 39
Shaver, Granite & Marble Co., J., marble.....	8 00
Stewart, C. B., salary.....	263 60
Semrad, C. A., salary.....	650 10
Southern Wisconsin Foundry Co., castings.....	93 75
Taylor & Gleason, printing.....	12 75
Turneure, F. E., expenses.....	30 93
Turneure, F. E., salary.....	4,000 00
Tracy, Gibbs & Co., printing.....	88 50
Thomas, C. C., expenses.....	136 18
Thomas, C. C., salary.....	3,600 00
Thorkelson, C. C., salary.....	2,000 00
Thorkelson, H. J., expenses.....	60 36
United States Express Co., express.....	20 63
University Cooperative Co., stationery.....	41 53
University pay roll, janitors.....	7,723 28
Underwood Typewriter Co., typewriter.....	115 50
Von Schrenck, H., lecturer.....	200 00
Vosskuehler, J. H., salary.....	1,500 00
Van Zandt, J. G., salary.....	1,000 00
Wells Fargo Express Co., express.....	2 50
Wood Drill Works, drill.....	80 00
Wilmore J. J., salary.....	175 00
Wisconsin Brick Co., brick.....	6 10
Whitehead Co., J. H., valves.....	3 00
Ward Leonard Electric Co., rheostat.....	130 50
Wadsworth, W. J., salary.....	34 65
Western Society of Engineering, reprints.....	20 00
Wied, J. C., salary.....	850 00

Withey, M. O., salary.....	1,711 53	
Western Electric Co., batteries, supplies.....	12 39	
Wissler Instrument Works, A., levels.....	180 00	
Watts, O. P., salary.....	1,500 00	
Willard Storage Battery Co., cells.....	8 68	
Wood, B. S., salary.....	825 00	
Wolf, Kubly & Hirsig, hardware.....	60 79	
Wisconsin Telephone Co., rentals, messages.....	1 70	
Wickenden, W. E., expenses.....	56 00	
Westcott, G. R., salary.....	400 00	
Wolf Mfg. Co., L., plumbing.....	10 61	
Wisconsin Bridge & Iron Works, bearings.....	22 00	
Watson, J. W., salary.....	1,650 00	
Withey, M. O., expenses.....	17 14	
Weston Electrical Instrument Co., voltmeter.....	417 99	
Wiedenbeck, Doblin & Co., hardware.....	22 48	
Wickenden, W. E., salary.....	1,300 00	
Western Union Telegraph Co., messages.....	7 16	
Westinghouse Electric & Mfg. Co., transformer.....	20 78	
Wilson-Maulin Co., apparatus.....	94 00	
Wood, L. H., salary.....	50 00	
Yawkey Crowley Lumber Co., lumber.....	198 66	
Yager, R. M., salary.....	6 30	
Zucker, Levett & Loeb Co., brushes, tank.....	41 93	
Total.....		\$128,822 56

GENERAL ACCOUNT

American Express Co., express.....	\$102 00	
Armstrong Mfg. Co., F. A., braid.....	3 35	
Aitchison, Mrs. L., interest.....	5 0 0	
American Steel & Wire Co., netting.....	30 00	
American Press Association, plates.....	158 25	
Alford Brothers, laundry.....	20 36	
Allen, C. E., expenses.....	45 30	
Armour Glue Works, glue.....	18 00	
Alumni Association of the University, expenses.....	100 00	
Alberem Stone Co., stramers.....	12 25	
Association of American Universities, assessment.....	40 00	
Alberts, Wm., interest.....	550 00	
Andrae & Sons Co., J., merchandise.....	50	
Anson, O. H., map.....	15 00	
Administration pay roll, clerks.....	6,695 67	
Acker, J., oats.....	25 50	
Angell & Co., G. R., directories.....	8 00	
Berger Mfg. Co., drawer.....	5 00	
Burger, Peter, hardware.....	56 80	
Barckham, W. G., laying carpet.....	18 00	
Boner Co., E. A., paper.....	407 00	
Beebe, M. C., expenses.....	18 85	
Blied & Schneider, hardware.....	6 37	
Bach, Hugo, music.....	451 00	
Bolzt, Bertha, laundry.....	10 45	
Burdick & Murray Co., merchandise.....	2 50	
Besly & Co., C. H., brass rod.....	12 61	
Bassett, H. K., expenses.....	60 95	
Burton-Pierce Co., janitor uniforms.....	245 40	
Bigelow, H. O., oats.....	50 00	
Buckstaff Edwards Co., chair.....	6 50	
Bunde & Upmeyer Co., envelopes.....	45 00	
Bouchard, J., plating.....	6 00	
Boettge, C. M., merchandise.....	28 75	
Badger Board, badgers.....	450 00	
Bleyer, W. G., editor.....	216 08	
C. M. & St. P. Ry. Co., freight.....	37 24	
Castle & Doyle, cement.....	23 70	
City of Madison, care of lot.....	19 00	
Chase, W. J., expenses.....	100 39	
Cret, P. P., professional services.....	1,500 00	
Carpenter & Co., G. B., twine.....	7 88	
Chapman & Co., T. A., linoleum.....	55 30	
Cunliffe, J. W., expenses.....	17 07	
Capital City Green House, rent.....	6 00	
Conlin, D. F., moving piano.....	7 00	
Channon Co., H., bats.....	6 49	
Chicago Brass Co., rpd.....	6 76	
Cantwell Ptg. Co., printing.....	826 50	

Conklin & Sons, coal and ice.....	355 60
Clow & Sons, J. B., fittings.....	65 83
Crane Co., pipe.....	39 39
Comstock, G. C., salary.....	600 00
C. & N. W. Ry. Co., freight.....	97 44
Diedrich, M., groceries.....	10
Diemer, M. E., slides.....	50
Dane County Titles Co., recording.....	51 83
Dottl, J., goals.....	18 25
Dowling, L. W., expenses.....	40 76
Drovers Journal Publishing Co., blanks.....	11 00
Des Revieres & Co., G. R., shavings.....	61 58
Dane County Telephone Co., rentals.....	50 09
Dengler, C. M., lettering.....	2 75
Dahl, A. H., State Treasurer, interest.....	1,056 05
Diepold, P. J., repairs.....	50 40
Daily Cardinal, subscriptions.....	325 00
Doyon & Rayne Lumber Co., lumber.....	9 12
Democrat Printing Co., printing.....	2,524 81
Elliott, E. C., expenses.....	36 16
Eastman, J. S., merchandise.....	3 00
Evans, M. B., expenses.....	34 09
Electrical Supply Co., merchandise.....	38 05
Frederickson, A. D. & J. V., lumber.....	170 64
Findorff, J. H., cases.....	104 55
Felton, A. P., repairs.....	1 25
Fiske, G. C., expenses.....	2 95
Flanagan Co., A., cleaner.....	4 95
French Battery Co., wire.....	70 00
Fritz, C. B. & A. K., auto shed.....	545 26
Ft. Wayne Electric Works, wire.....	1 00
Gowin, E. B., distributing posters.....	15 25
Grimm's Bindery, binding.....	35
Gallagher Co., J., blankets, use of flags.....	15 25
Gilbertson & Anderson, watches.....	1 00
Gunheim, T. H., injury settlement.....	100 00
Gregg Mfg. Co., tools.....	8 00
Greig, J., Est., furniture.....	50 50
Goodnight, S. H., expenses.....	14 78
Gowin, E. B., bill posting.....	7 50
Haswell Furniture Co., furniture.....	433 85
Hogan Envelope Co., envelopes.....	28 84
Hayes, J. D., horse shoeing.....	55 70
Hammersmith Engraving Co., etching.....	1 15
Harloff, P. F., labor.....	8 40
Hoffman Feed Co., oats.....	147 71
Hauer, F. E., oats.....	45 62
Hibbard, Spencer, Bartlett Co., nails.....	9 05
Hoffman Feed Co., hay.....	34 61
Huels, F., key blanks.....	1 75
Herfurth & Son T., insurance.....	119 26
Hollister Drug Co., drugs, chamols.....	4 35
Hoeveler, Theo., upholstering.....	4 75
Harris & Co., S., hardware.....	1 20
Halbach, J. P., repairs.....	17 30
Isom, Thos., interest.....	375 00
Illinois Central Ry. Co., freight.....	9 66
International Harvester Co., repairs, tools.....	10 60
Jefferson Brick & Tile Co., tile.....	1 08
Jones & Laughlin Steel Co., steel.....	11 46
Jones, Jenkin Lloyd, speaker.....	100 00
Janney, Sempie, Hill & Co., mower.....	7 60
Kimberly Clark Co., paper, blue books.....	1,973 74
King, F. H., interest.....	400 00
Kahlenberg, L., expenses.....	8 83
Klueter & Co., salt.....	12 10
Keeley, Neckerman & Kessenich Co., merchandise.....	23 40
Kaltenborn, W. V., directory boarding houses.....	25 00
Kassell, B. C., lettering, express, engraving.....	210 50
King & Walker Co., steel.....	2 65
Kroncke Brothers, hardware.....	39 51
Laird & Cret, drawings.....	674 64
Laird, E. H., J., mechanician.....	57 20
Lorenz, E. H., J., agent, premium.....	5 00
Lamp, C. F., expenses.....	1,740 60
Laird, W. P., expenses.....	11 00
Mutchler, I., car fare.....	3 77
Machinists' Supply Co., tubing.....	30
McCarthy, J. E., eggs, etc.....	3 77
Milwaukee Leather Belting Co., belting.....	5 01

May & Co., L. L., seeds.....	151 50
Mayers Electric Press, blanks.....	1 75
Madison Steam Laundry, laundry.....	288 65
Madison Engraving Co., etchings.....	3 80
Madison Tent & Awning Co., awning.....	4 00
Murphy, Theresa, stenographer.....	19 00
Monroe Evening Times, directories.....	3 00
Madison Gas & Electric Co., gas and current.....	195 69
Madison Saddlery Co., collar.....	7 00
Mayers, A. A., glass.....	4 03
Mack, J. G. D., expenses.....	26 09
Milburn Wagon Co., dump wagon, gear.....	173 18
Munro, D. C., expenses.....	36 55
Madison Paint & Wall Paper Co., paints.....	1 87
McCaffrey, M. E., expenses.....	2 50
Madison Brass Works, castings.....	47 71
Moseley, J. E., stationery.....	30 59
McKay, Wm., hay.....	89 12
Meyer, F. M., shoeing.....	54 35
Madison General Hospital, care of Gunheim, acid.....	218 70
Mackenzie, F. W., salary.....	366 66
Menges Pharmacy, drugs.....	1 00
Mautz Brothers, paints.....	72 67
Madison Saddlery Co., harness, straps.....	56 25
National Printer, Journalist, book.....	1 00
Nicodemus, R. C., premiums, insurance.....	18 33
Nance, W. A., horses.....	500 00
Nickles, E. J., merchandise.....	853 73
National Association of State Universities, fee.....	10 00
Norton Co., wheel.....	1 12
Nolen, J., services.....	300 00
North Central Association of Colleges, fee.....	20 00
Olds Seed Co., L. L., seeds.....	74 25
Orr & Lockett Hardware Co., keys.....	27 17
Oscar Olson, repairs.....	6 10
Olson, J. E., Publishing Editor.....	200 00
Post Publishing Co., catalogs.....	2,482 64
Phillips Publishing Co., magazine.....	42 50
Paunaack, E. F., stone.....	280 50
Pureell, Dr. H. E., attending Gunheim.....	61 50
Pickarts, L. J., bursar, bills paid, postage.....	1,112 38
Postal Telegraph Co., messages.....	1 04
Peabody, A., expenses.....	4 48
Phillips, J. D., expenses, engrassing.....	54 77
Paper Mills Co., paper.....	18 50
Parsons P. & S. Co., stationery.....	400 20
Quan-Scherer Orchestra, music.....	45 00
Remington Typewriter Co., ribbons.....	5 75
Ralls, G. G., repairs.....	1 75
Rice Co., J. H., glass.....	76 84
Reiner, H., hay.....	11 29
Rentschler, Fred, plants.....	12 20
Rundle-Spence Mfg. Co., hardware.....	25 12
Smith & Co., Bradner, envelopes.....	83 30
Smith, H. A., expenses.....	22 84
Sumner & Son, E., sponges.....	1 25
Sasse, C. L., glass.....	1 34
Sumner & Morris Hardware Co., hardware.....	51 48
Skinner, E. B., expenses.....	37 35
Slichter, O. S., expenses.....	35 18
Slaughter, M. S., expenses.....	37 65
Sinaiko, Alex., oats.....	281 69
Southern Wisconsin Foundry Co., castings.....	42 30
Schaeffer & Budenberg Mfg. Co., dials.....	6 00
Student Farmer, publications.....	181 25
Sheppard Co., C. E., file.....	1 88
Steckelberg, F., hay.....	11 00
Secretary of State, merchandise.....	50
State Journal Printing Co., printing.....	301 90
Schaum Engraving Co., cuts.....	30 03
Sphinx, The, advertising.....	150 00
Scanlan-Morris Co., enameling.....	2 00
Sandsten, E. P., salary.....	300 00
Superior Rubber Type Co., type.....	1 62
Spectator, The, subscription.....	81 25
Store Room, merchandise.....	1,742 12
Tressler, A. W., salary.....	614 46
Tracy, Gibbs & Co., printing.....	237 00
Tension Envelope Co., envelopes.....	51 25

Thorburn & Co., J. M., plants.....	23 85	
Tokheim Mfg. Co., tank.....	28 00	
University Cooperative Co., merchandise.....	80	
University pay roll, janitors.....	10,885 72	
Underwood Typewriter Co., typewriter.....	91 50	
Union Transfer & Storage Co., advertising.....	20 00	
United States Express Co., express.....	62 04	
Valvoline Oil Co., oil.....	13 05	
Van Hise, C. R., maintenance of house.....	500 00	
Van Eden, F., lecture.....	75 00	
Vaughan Seed Store, seeds.....	23 45	
Western Bank Note & Engraving Co., engraving.....	650 00	
Wehrmann, C., repairs.....	10 95	
Wisconsin Wagon Co., pole, parts.....	6 00	
Weinman, A. A., statue.....	1,600 00	
Windsor Mfg. Co., lead.....	4 56	
Wisconsin Alumni Magazine, advertising, copies.....	312 50	
Woodward, W. L., expenses.....	30	
Wiedenbeck-Dobelin Co., hardware.....	3 85	
L. Wolf Mfg. Co., tools, bowls, boiler, hardware.....	75 22	
Western Electric Co., electric merchandise.....	43 86	
Western Union Telegraph Co., messages.....	1 10	
Webster Co., F. S., ribbons.....	2 25	
Warner, W. W., piano.....	200 00	
Woodward, Cora S., loss of rent.....	150 00	
Wells-Fargo Express Co., express.....	75	
Ward Brothers binders.....	28 20	
Wolf, Kubly & Hirsig, hardware.....	9 10	
Wheelock, J. H., refunds of freight.....	22 18	
Wisconsin Literary Magazine, copies, subscription, etchings.....	450 00	
Wisconsin Engineer, copies, etc.....	100 00	
Wisconsin Telephone Co., messages, rentals.....	2,518 27	
Yale & Torne Mfg. Co., iron shears.....	1 28	
Yawkey-Crowley Lumber Co., lumber.....	89 27	
Zoch, J. F., repairs.....	8 95	
Correction memorandum.....	1,928 26	
Correction memorandum (credit).....	349 14	
		\$58,086 43

GENERAL LIBRARY

American Express Co., express.....	\$29 26	
American Institute of Mining Engineering, books.....	5 00	
American Society for Physical Research, books.....	15 00	
Annals of the Entomological Society, books.....	6 00	
American Political Science Association, dues.....	3 00	
Accountancy Publishing Co., subscription.....	3 00	
American Exploration Society, books.....	26 00	
American Statistical Association, subscription.....	4 00	
American Ceramic Society, book.....	5 20	
A. L. A. Publishing Board, catalogs, prints, etc.....	5 54	
Brockhaus, F. A., books.....	261 71	
Blakiston's Son & G. P., book.....	1 35	
Burke, L. C., salary.....	1,191 74	
Bowen, Agnes, salary.....	348 75	
Bartlett & Co., N. J., books.....	22 50	
Business Man's Pub. Co., subscription.....	1 00	
Badger, R. G., subscription.....	7 00	
Boston Book Co., books.....	10 00	
C. & N. W. Ry. Co., freight.....	173 53	
Crane Co., pipe, etc.....	66	
College Book Store, book.....	1 50	
Class. Association of M. W. & S., dues.....	2 00	
Canadian Mining Institute, books.....	54 69	
Coddington, Hester, salary.....	1,491 74	
C. M. & St. P. Ry. Co., freight.....	52 02	
Dudley, W. H., salary.....	1,600 00	
Dodlinger, P. T., book.....	2 00	
Davis Press, The, periodicals.....	1 89	
Dodd, Mead & Co., books.....	9 60	
Dixie Book Shop, periodicals.....	11 00	
Drovers Journal Pub. Co., cards.....	43 00	
Dowling, L. W., book.....	3 85	
Democrat Printing Co., printing.....	24 75	
Davidson, Flora N., salary.....	655 00	
Engineering Magazine, books.....	4 00	
Engineering News Publishing Co., book.....	3 00	
Funk & Wagnalls Co., periodicals.....	5 00	

Foley, P. K., books.....	49 75	
Grover, Arlene, salary.....	900 00	
Geuthner, P., books.....	115 02	
Gyldendal Publishing House, book.....	1 80	
Grant, A. H., books.....	11 12	
Geological Society of America, subscription.....	5 00	
Gonden, H. J., subscription.....	4 00	
Grimm's Bindery, binding.....	1,638 20	
Heat and water, percentages.....	5,929 64	
Hotchkiss, G. W., book.....	20 00	
Huels, F. W., testing meters.....	2 70	
Hopkins Press, Johns, books.....	8 43	
Hill Publishing Co., books.....	10 63	
Illinois Central Ry. Co., freight.....	23 33	
International Textbook Co., books.....	46 67	
Industrial Press, books.....	13 75	
Journal of Infectious Diseases, periodical.....	1 05	
Johnston, C., book.....	1 05	
Journal of Geography, periodicals.....	5 80	
Johnson, G. E., subscription.....	2 50	
Knudson, Agnes C., salary.....	540 00	
Library of Congress, cards.....	104 24	
Loeser & Co., F., books.....	3 65	
Library Bureau, cabinet.....	8 55	
Lea & Febiger, books.....	18 00	
McClurg & Co., A. C., books.....	2,116 57	
McCulloch, Isabella J., salary.....	668 75	
Mushroom Publishing Co., book.....	2 85	
Madison News Agency, publishing.....	3 00	
Moody Manual Co., subscription.....	20 00	
Muller & Co., F., books.....	378 11	
Miner, Sarah H., salary.....	718 75	
Madison Gas & Electric Co., gas and current.....	1,236 60	
Miner, Ruth P., salary.....	600 00	
Mautz Bros., paint.....	1 00	
National German-American Teachers' Seminary, subscription.....	1 50	
Nijhoff, Martinus, books.....	3 58	
New York Botanical Garden, books.....	4 50	
National Educational Association, fee.....	2 00	
National Geographical Society, magazines.....	4 75	
Osborne, Julia S., salary.....	50 00	
Pickarts, L. J., bursar, postage, bills paid.....	76 10	
Publishers' Weekly, catalogs, books.....	15 00	
Pratt, W. S., books.....	1 60	
Poor's Railroad Manual, manual.....	10 00	
Psychological Review, subscription.....	8 00	
Psychological Clinic Press, reports.....	1 92	
Pyre, Amelia F., salary.....	585 00	
Penton Publishing Co., book.....	5 00	
Parsons Printing & Stationery Co., stationery.....	57 35	
Republican Publishing Co., books.....	8 00	
Religious Educational Association, dues.....	3 00	
Rosenthal's Antiquariat, books.....	100 50	
Renault, Raoul, book.....	1 00	
Store Room, merchandise.....	54 58	
Smith, W. M., salary, subscription paid.....	2,703 00	
Sotheran & Co., H., books.....	51 81	
Smith & Co., Bradner, paper.....	9 30	
Schwaab Stamp & Seal Co., seal.....	2 00	
Schaefer, Ellen, salary.....	435 00	
Sanford, Della C., salary.....	896 74	
Social Science Library Bureau, periodicals.....	2 50	
Stone, Armond, books.....	20 00	
Scribner's Sons, C., book.....	9 90	
Smithsonian Institution, publishing, books, periodicals.....	115 25	
Smith, Reb. J. N. B., books.....	52 80	
Skidmore, Stanley, salary.....	405 00	
Steinke, Laura A., salary.....	450 00	
Stechert & Co., G. E., books.....	13,749 72	
Tracy, Gibbs & Co., printing.....	24 50	
Treat & Co., E. B., books.....	3 15	
University of Pennsylvania, History, books.....	4 55	
University pay roll, janitors, etc.....	1,026 44	
University Press, The, subscription.....	3 00	
Usher, R. J., salary.....	185 00	
University Cooperative Co., stationery.....	1 25	
University of Chicago Press, index, books.....	18 45	
United States Express Co., express.....	20 08	

University of Virginia, books.....	6 00	
Van Hoesen & Co., H. M., books.....	2 50	
Viereck Publishing Co., books.....	3 60	
Wells, Fargo Express Co., express.....	55	
Walter, H., subscription.....	5 89	
Wilson, L. N., periodicals.....	3 50	
Williams Co., David, periodicals.....	5 00	
Wahr, George, book.....	2 00	
Wilson Co., H. W., subscriptions.....	25 00	
Wood & Co., William, subscription, books.....	17 00	
Youtmans, H. M., books.....	1 60	
		\$42,540 70

ADMINISTRATION

Angell & Co., G. R., directories.....	4 00	
Agnew, A. D., expenses.....	23 59	
Administration pay roll, clerks.....	21,464 03	
American Express Co., express.....	16 69	
Burroughs Adding Machine Co., repairs.....	44 78	
Brown, Mrs. W. E., expenses.....	22 11	
Burdick & Murray Co., merchandise.....	2 59	
Brown, H. M., expenses.....	31 69	
Baker Paper Co., stationery.....	2 17	
Burr Index Co., index.....	23 50	
Buckstaff, Florence G., expenses.....	55 22	
Cantwell Printing Co., printing.....	195 75	
Clausen, F. H., expenses.....	31 71	
Curtiss, F. W., photo work.....	3 00	
City of Madison, water.....	38 16	
Capital City Paper Co., paper.....	17 84	
C. & N. W. Ry. Co., freight.....	81	
Correction Memorandum, clerical work..... (credit)	21 36	
Democrat Printing Co., printing.....	88 50	
Dissette, E. J., dictionary.....	46 31	
Dane County Telephone Co., messages.....	1 05	
Drovers Journal Publishing Co., cards, printing.....	167 75	
Erickson, O. G., expenses.....	15 98	
Evans, Edw., expenses.....	48 20	
Elmore, J. H., expenses.....	52 52	
Forest Hill Cemetery, care of lot.....	10 00	
Fewson, Edna, expenses.....	11 45	
Grimm, Rose, making curtains.....	1 10	
Grimm's Bindery, binding.....	30 75	
Huels, F. W., testing meters.....	30	
Hagemann, J. A., expenses.....	25 15	
Howe Scale Co., scale.....	6 60	
Haswell Furniture Co., furniture.....	1 84	
Heat and water, percentages.....	592 97	
Illinois Central Ry. Co., freight.....	1 19	
Jones, E. L., expenses.....	46 23	
Kingston, P., carriage.....	2 00	
Kassell, B. C., lettering.....	45	
Keeley, Neckerman & Kessenich, merchandise.....	20 50	
Kentzler Bros., livery.....	8 00	
Keller, Gus, expenses.....	58 70	
Luse, L. K., expenses.....	23 40	
Lorenz, E. H., salary.....	1 10	
Library Bureau, cards.....	175 49	
McClurg & Co., A. C., books.....	7 06	
Mautz Bros., paints.....	1 75	
Milwaukee Leather Belt Co., packing.....	1 58	
Mayers' Electric Press, printing.....	20 25	
McConnell, J. E., expenses.....	19 95	
Madison Gas & Electric Co., gas, current.....	166 80	
Macey Co., cards.....	53	
McCaffrey, M. E., car fare.....	27 33	
Moseley, J. E., stationery.....	4 85	
Merrill, G. F., expenses.....	154 19	
Menges Pharmacy, drugs.....	1 00	
Nicodemus, R. C., premium.....	90 00	
Norcross, P., expenses.....	181 79	
Nelson, A. P., expenses.....	263 78	
Pickarts, L. J., bursar, postage, bills paid.....	1,445 29	
Parsons Printing & Stationery Co., stationery.....	242 22	
Postal Telegraph Co., messages.....	3 25	
Remington Typewriter Co., paper, repairs.....	14 07	

Rowlands, W. W., expenses.....	32 15	
Rand, McNally & Co., atlas.....	9 45	
Rentschler, F., rent.....	5 00	
Superior Rubber Type Co., daters.....	4 00	
Schwaab Stamp & Seal Co., seals, dater.....	13 50	
Schranch, H. C., expenses.....	20 37	
Smith & Co., B., envelopes.....	4 00	
Security Audit Co., auditing, services.....	1,827 05	
Sewell Clapp Mfg. Co., envelopes.....	13 59	
Smart, Rose C., expenses.....	23 18	
Smith Premier Typewriter Co., frame, parts.....	10 00	
State Journal Printing Co., printing.....	20 32	
Shaw-Walker Co., index.....	9 65	
Saltzstem, C., paper.....	11 25	
Store Room, merchandise.....	481 70	
Tracy, Gibbs & Co., printing.....	385 60	
Trottman, J. F., expenses.....	175 39	
Thwaites, F. C., expenses.....	227 20	
Taylor & Gleason, printing.....	31 50	
Thompson & Norris Co., tubes.....	2 26	
Taylor & Gleason, printing.....	7 00	
University pay roll, janitors.....	626 40	
Underwood Typewriter Co., typewriters.....	224 00	
United States Express Co., express.....	3 75	
Van Hise, C. R., bills paid, salary.....	7,802 36	
Western States Envelope Co., envelopes.....	29 97	
Woodward, W. L., fare.....	1 15	
Ward Bros., binders.....	4 50	
Western Union Telegraph Co., messages.....	7 33	
Wisconsin Telephone Co., rentals.....	53 00	
Total.....		\$88,106 12

CHADBOURNE HALL

Andrae & Sons Co., J., merchandise.....	\$10 29	
Alford Brothers, laundry.....	20 69	
Atwood, J. A., cleaning apparatus.....	525 00	
Averbeck, F. A., clocks.....	3 00	
American Soap & Chemical Co., kleansall.....	42 84	
American Express Co., express.....	5 80	
Administration pay roll, clerks.....	1,470 64	
Angell & Co., G. R., directories.....	4 00	
Bartek, Mrs. F. J., Jr., groceries, meals.....	142 74	
Badger Creamery, cream, etc.....	25 17	
Burdick & Murray Co., merchandise.....	72 34	
Buckstaff-Edwards Co., chairs.....	23 30	
Beedle, G. E., commissioner of insurance, insurance.....	393 12	
Bled & Schneider, hinges.....	8 95	
Peter Burger, hardware, merchandise.....	34 74	
C. & N. W. Ry. Co., freight.....	70 66	
C. M. & St. P. Ry. Co., freight.....	54 97	
Calumet Tea & Coffee Co., tea and coffee.....	9 00	
Cardinal Dye Works, dyeing.....	3 75	
Creamery Package Manufacturing Co., cans, etc.....	7 50	
Capital City Paper Co., paper.....	22 39	
Cudahy's Market, meats.....	48 17	
Carson, Pirie, Scott & Co., linen.....	162 11	
Cliffard, G., agent, machine.....	22 00	
Conlin & Sons, coal, ice.....	9 25	
Capital City Soap Works, soap.....	39 40	
Chapman & Co., T. A., linoleum.....	3 12	
City of Madison, water, hauling, garbage.....	103 85	
Crowe, Belle, kitchen furnishings, rent of silver, laundry.....	497 23	
Crane Co., pipe.....	3 69	
Chadbourne Hall pay roll, labor, kitchen service.....	4,104 10	
Cooley, C. F., charcoal, coke.....	8 75	
Dairy Department, College of Agriculture, butter.....	2,550 19	
Democrat Printing Co., printing.....	5 75	
Drives & Struck, wood.....	14 65	
Diederich, M., merchandise.....	6 55	
Engelhardt, E., upholstering.....	10 00	
Electrical Supply Co., merchandise.....	19 89	
Frederickson, A. D. & J. V., lumber.....	4 20	
Field & Co., Marshall, toweling, padding.....	502 54	
Frudland, O. W., flour.....	7 00	
Fink, Elsie C., refunded rent.....	20 50	

Frautschi & Sons Co., couches.....	14 00
Fewson, Edna, expenses.....	16 50
Findorff, J. H., furnishings.....	50 00
F. F. F. Laundry, laundry.....	38 44
Girabalde & Cuneo, fruit, groceries.....	885 80
Greig, J., Estate, furniture.....	39 65
Garrettson & Co., F. P., coffee.....	28 20
Gisholt Machine Co., iron.....	1 37
Gilbertson & Anderson, repairs.....	5 00
Goodell Co., crumber.....	15 25
Haswell Furniture Co., furniture.....	141 00
Hygienic Food Co., flake.....	1 45
Huels, F. W., testing meters.....	5 40
Harloff, P. F., lamps.....	9 00
Hull, R. D., renovating.....	47 30
Howe Scale Co., scale.....	18 15
Hibbard, Spencer, Bartlett & Co., hardware.....	59 65
Herfurth & Son, T., insurance.....	31 50
Hall, R. D., renovating.....	24 60
Haak, Wm., belting.....	3 12
Hollister Drug Co., drugs.....	1 35
Heat and water, percentages.....	4,151 07
Illinois Central Ry. Co.....	29 77
Jamieson Brothers, potatoes.....	374 70
Kallin & Sons, M., soap.....	39 25
Klein, Anton, potatoes.....	11 20
Kohnstamm & Co., nets.....	5 50
Kalscheuer, H., potatoes.....	28 35
Keystone Wire Matting Co., mats.....	4 29
Kortin Brothers Co., coffee.....	55 00
Keely, Neckerman & Kessenich, toweling.....	6 25
Kroneke Brothers, hardware.....	84 23
Livesy, J. M., calcimining.....	10 00
Lansing Wheel Barrow Co., cart.....	8 25
Lindeman & Hoverson Co., plates.....	5 06
Leschen & Sons Rope Co., A., rope.....	7 11
Libby, McNeill & Libby, bacon, sausage.....	817 83
Madison Gas & Electric Co., gas, current.....	2,457 34
Madison Candy Co., candy.....	3 25
Minneapolis Bedding Co., beds.....	138 02
Madison Steam Dye Works, dyeing.....	6 00
Mavers, A. A., merchandise.....	18 60
Middleton, H. C., vegetables, eggs.....	484 56
Menges Pharmacy, drugs.....	15
Mautz Brothers, paints, hardware.....	57 02
MacVeagh & Co., F., canned goods.....	240 40
Moseley, J. E., stationery.....	2 00
Marshalltown S. & S. Co., maple sugar.....	47 90
Meyer, Jessie M., cot, etc.....	4 50
Marsh & Co., hardware.....	11 90
Model Creamery Co., cheese.....	46 30
Madison Steam Laundry, laundry.....	255 67
Niemann, Otto, ice.....	50 05
New York Store, rugs.....	122 58
Nelson & Polk, shades.....	16 50
Northern Electric Mfg. Co., repairs, motor, parts.....	151 60
Oppel's Fancy Grocery, groceries.....	3,481 45
Orr & Lockett Hardware Co., hardware.....	233 20
Oneida Community, Ltd., silverware.....	292 06
Peoples' Cash Meat Market, meats.....	2,723 64
Pritzlaff Hardware Co., J., hardware.....	3 48
Parsons P. & S. Co., stationery.....	6 90
Postal Telegraph Co., messages.....	60
Pieper, O. R., vanilla.....	35 00
Piper Brothers, groceries.....	469 19
Pick & Co., A., dishes, glassware, pitchers.....	595 68
Pickarts, L. J., bursar, postage, bills paid.....	14 50
Roebblings Sons Co., J. A., wire.....	21 54
Radke W. J., wood.....	10 00
Reid, Murdock & Co., canned goods.....	705 16
Rundle Spence Mfg. Co., hardware.....	12 02
Store room, merchandise.....	168 52
Sladky, F., salary.....	1 40
Sherman Brothers & Co., coffee.....	56 42
Salisbury & Co., W. H., hose.....	7 50
Sherman Brothers & Co., teas.....	104 50
Snell J. H., fruit.....	29 45
Schneider, J., potatoes.....	14 00
Sumner & Morris, hardware.....	13 04

Sasse, C. L., glass.....	75	
Steinmeyer Co., Wm., merchandise, canned goods.....	270 94	
Two River Plating Works, napkin rings.....	14 50	
Troy Laundry Machine Co., washer.....	55 00	
Taylor, Mrs. R. H., expenses.....	1,021 20	
Tanbert, C., repairs.....	10 00	
Tracy, Gibbs & Co., printing.....	16 75	
Thompson & Co., J. M., canned goods.....	348 75	
University pay roll, janitors.....	3,134 65	
United States Express Co., express.....	1 15	
Vaag-Maw Co., oil cloth.....	1 43	
Wells Fargo Express Co., express.....	1 25	
Weinand, Peter, milk.....	650 62	
Wisconsin Telephone Co., messages.....	25	
Wisconsin Iron & Wire Works, railing.....	9 00	
Wilbur & Sons, H. O., extract.....	44 22	
Woodward, W. L., expenses.....	94	
Wiswall & Son, E. C., vases.....	2 75	
Western Electric Co., fans.....	24 00	
Wolf, Kubly & Hirsig, hardware.....	42 60	
Wolf Mfg. Co., L., fittings.....	3 89	
Yawkey-Crowley Lumber Co., lumber.....	31 75	
		\$36,992 37

UNIVERSITY EXTENSION

American Express Co., express.....	\$44 87	
Angell & Co., G. R., directories.....	4 00	
Averbeck, F. A., clocks.....	4 50	
Allen, Katharine, instruction.....	1 50	
American Press Association, printing.....	305 59	
Administration pay roll, clerks.....	7,997 32	
Andrews, B. R., fee.....	2 00	
Andel & Co., Theo., books.....	6 40	
American School of Correspondence, books.....	15 40	
Burke & James, supplies.....	8 65	
Bleyer, W. G., instruction.....	8 63	
Blied & Schneider, hardware.....	60	
Boardman, E., correspondence teaching.....	4 00	
Burger, P., hardware.....	84	
Bodden, Matilda, refund.....	8 00	
Boyer, E. A., salary expenses.....	276 00	
Bosshart, E. R., refund.....	5 00	
Beatty, A., assistant professor, instruction.....	37 76	
Burroughs & Sons, G., case.....	6 00	
Chase, W. J., assistant professor, salary, expenses, teaching.....	444 88	
Capital City Paper Co., paper.....	2 63	
Corss, A. L., negatives.....	6 00	
Craig, R. T., instructor, expenses, salary.....	1,603 63	
Correy, Margaret, cleaning.....	5 00	
Conway, Mayme A., refund.....	20 00	
Cook, C. R., refund.....	15 00	
Crane Co., pipe.....	39	
Crummett, Grace M., refund.....	10 00	
Cox, Guy, instruction.....	4 50	
Cobb, N. A., lecture.....	7 00	
C., M. & St. P. Ry. Co., freight.....	12 06	
Central Scientific Co., slides.....	24 30	
Cheney, L. S., expenses.....	\$10 12	
C. & N. W. Ry. Co., freight.....	7 25	
Cantwell Printing Co., printing.....	142 75	
Dietzgen Co., E., papers, stationery, instruments.....	23 77	
Democrat Printing Co., printing.....	129 74	
Dans Duplicating Co., F. F., paper.....	3 75	
Dictaphone Co., cylinders.....	9 60	
Domestic Engineering, book.....	8 40	
Denniston, assistant professor, R. H., instruction.....	4 25	
Day, Laura G., expenses.....	14 80	
Dreher, A. C., expenses.....	13 88	
Dickinson, assistant professor T. H., teaching.....	26 75	
Elliott, professor E. C., teaching, instruction, expenses.....	16 76	
Eastman, J. S., merchandise.....	5 00	
Erlanger, professor, J., expenses.....	4 78	
Eaton, E. L., instruction, expenses.....	10 11	
Frost, assistant professor, W. D., teaching, expenses, in- struction.....	184 69	
Fischer, assistant professor, R., expenses.....	12 83	
Frederickson, A. D. & J. V., lumber.....	36 00	

Galland, assistant, J. S., instruction, expenses.....	112 00
Grossman, W. J., refund.....	4 00
Griffin, J. S., instruction.....	34 88
Gilman, professor, S. W., instruction, expenses.....	387 16
Globe-Wernicke Co., cards.....	28 40
Greig, J., Est., desk, furniture.....	137 50
Hess, R. H., instructor, instruction.....	72 39
Hogan, Envelope Co., envelopes, printing.....	16 80
Hotchkiss, W. O., instruction.....	3 38
Hoyt, Mrs. Edith, research.....	12 00
Hawley, T., books.....	6 00
Hollister Drug Co., drugs.....	20
Hutchins, secretary, F. A., salary, expenses.....	1,437 51
Huntington, Ellen A., instructor, teaching.....	2 50
Hill Publishing Co., book, plates.....	22 52
Hammond Typewriter Co., parts.....	5 00
Henley Publishing Co., N. W., books.....	22 80
Hausmann, J. F., instruction.....	130 00
Hastings, assistant professor, E. G., expenses.....	6 08
Haswell Furniture Co., guides, furniture.....	271 70
Heller, J. D., refund.....	15 00
Hammer, M. R., instructor, correspondence teaching, salary, expenses.....	1,134 87
International Textbook Co., paper, books.....	33 65
International Press Clip Bureau, clip.....	7 00
Illinois Central Ry. Co., freight.....	1 30
Jansky, assistant professor, C. M., salary, expenses.....	1,858 55
Jaeger, F. E. H., refund.....	14 00
Keuffel & Esser Co., table.....	30 60
Kohlmeier, H., refund.....	11 09
Keeley, Neckermann & Kessenich, merchandise.....	35 00
Kirk, C. T., instruction.....	1 50
Keown, assistant professor, R. M., salary, instruction.....	304 50
Leiserson, W. M., assistant, instruction.....	19 25
Lyman, R. L., assistant professor, correspondence teaching.....	23 25
Leucke & Buechner, books.....	1 85
Logan, H. E., instruction.....	19 25
Lighty, W. H., secretary, salary, expenses.....	2,114 75
Library Bureau, supports.....	3 30
Moseley, J. E., stationery.....	11 98
McConchie, L. G., instruction.....	7 88
Martin, L., assistant professor, correspondence teaching.....	7 88
Mae Kenzie, F. W., expenses.....	79 76
Miller, Frank, refund.....	20 00
Menges Pharmacy, drugs.....	1 55
Midland Publishing Co., books.....	6 53
Macmillan Co., loose leaves.....	87 65
McGill, E. C., refund.....	4 00
Maurer, E. R., professor, instruction.....	9 00
Mandel Engraving Co., engraving.....	7 00
Mayers, A. A., groceries.....	2 44
Mayer's Electric Press, printing.....	3 75
Meyer News Service Co., printing, clippings.....	26 25
McClurg & Co., A. C., books.....	95 66
Mautz Brothers, paints.....	7 98
McCarthy, Chas., expenses.....	13 96
McDaniel, A. S., instructor, expenses, instruction.....	12 00
Millar, A. V., assistant professor, instruction.....	2 25
Madison Engraving Co., etchings.....	35 93
Norris, E. B., assistant professor, salary, expenses.....	1,972 46
Nickles, R. J., wiring, lamps.....	6 40
Norwood, J. N., correspondence teaching.....	3 35
Nielson, E. C., slides.....	17 60
Nadeau, O. E., photo work.....	8 00
Neighbors, R. E., expenses.....	602 58
Otto, M. C., assistant, correspondence teaching.....	21 25
Osborne, O. M., services.....	10 00
Orth, H. D., drafting.....	23 85
O'Shea, M. V., professor, instruction.....	49 51
Parsons P. & S. Co., stationery.....	104 05
Pitman, Annie M., correspondence teaching, salary.....	769 00
Philadelphia Book Co., books.....	5 40
Plankinton House, rent.....	30 00
Poppert Mfg. Co., G., tools.....	15 60
Prokosh, E., assistant professor, instruction.....	248 88
Pabst Brewing Co., rent.....	55 00
Pettibone, I. F., instruction.....	17 10
Pearson Brothers, books.....	3 56
Parry, J. W., salary, expenses.....	236 28

Pickarts, L. J., bursar, postage, bills paid.....	1,507 30	
Reinhard, E., instructor, salary.....	400 00	
Ross, E. A., professor, instruction.....	13 88	
Remington Typewriter Co., paper.....	33 60	
Richter, A. W., professor, instruction.....	250 00	
Ravenel, M. P., professor, expenses.....	11 28	
Reber, Dean L. E., expenses, salary.....	4,347 64	
Store Room, merchandise.....	1,512 40	
Schlatter, E. B., instruction.....	9 76	
Smith, K. G., salary, expenses.....	248 88	
Schwaab Stamp & Seal Co., seal.....	1 75	
Showerman, G., expenses.....	32 40	
Smith Premier Typewriter Co., parts, repairs.....	8 75	
Shaw-Walker Co., cards.....	27 64	
Scott, Almere L., salary.....	50 00	
Slade, M. F., instruction.....	2 01	
Shealy, E. M., instructor, salary.....	350 00	
State Journal Printing Co., printing.....	39 90	
Steidtmann, E., assistant instruction.....	9 00	
Scheibe, A. H., refund.....	15 00	
Stechert & Co., G. E., books.....	2 58	
Sumner & Morris, hardware.....	60	
Schmidt, F. J., refund.....	17 00	
Starch, D., instructor, instruction.....	2 68	
Smith, C. C., books.....	6 82	
Smith & Brothers Typewriter Co., L. S., ribbons, coupon book, rent.....	25 00	
Tracy, Gibbs & Co., printing.....	1,119 35	
Thompson & Norris Co., tubes.....	5 00	
Thiele, O. V., salary, expenses.....	232 63	
Thelemann, Wm., refund.....	16 00	
University Cooperative Co., stationery.....	48 22	
University pay roll, janitors.....	103 78	
Underwood Typewriter Co., machine, coupon book.....	154 50	
United States Express Co., express.....	12 21	
Van Dusen, Sara H., fare, expenses.....	10 40	
Van Hoesen Co., H. M., stationery.....	32 75	
Van Nostrand & Co., D., book.....	1 88	
Wisconsin Telephone Co., messages.....	46 20	
Western States Envelope Co., envelopes.....	13 10	
Wollum, H. M., refund.....	20 00	
Wurster, A. R., refund.....	6 00	
Wolff, Kubly & Hirsig, hardware.....	85	
Webber, R. L., salary.....	120 00	
Woolley, E. C., instruction.....	2 17	
Wisconsin Spectator, The, subscription.....	1 00	
Wells Power Co., light.....	2 00	
Western Union Telegraph Co., messages.....	34 84	
West Co., H. H., printing, blackboard.....	15 50	
Walker, H. G., expenses.....	4 20	
Willett, G. H., refund.....	5 00	
Winton, A. L., expenses.....	27 96	
Watson, J. W., assistant professor, salary.....	100 00	
Wales, H. A., salary, expenses.....	183 65	
Woodruff, Margaret, refund.....	5 00	
Wells Fargo Express Co., express.....	1 35	
Correction Memorandum.....	13 94	
		\$35,863 70
LABORATORY SUPPLIES		
Alford Bros., laundry.....	\$30 92	
American Book Co., books.....	7 71	
Anson, O. N., maps.....	6 00	
Anglers' Bait & Mfg. Co., turtles.....	10 95	
American Electrochemical Co., transactions.....	6 00	
American Society of Mechanical Engineers, books.....	11 75	
Atlantic Refining Co., oil.....	4 40	
Averbeck, F. A., repairs.....	19 75	
Administration pay roll, clerks.....	100 72	
American Institute of Mining Engineering, books.....	5 00	
Accountancy Publishing Co., periodicals.....	13 75	
Andrus & Church, paper.....	3 20	
American Express Co., express.....	509 47	
Andrae & Sons Co., J., merchandise.....	30 08	
Barbee Wire & Iron Works, wire.....	36 91	
Brown & Co., steel.....	8 40	
Bockel & Co., Wm., thermometers.....	12 00	

Betz Co., F. S., apparatus.....	1 10	.....
Broekhaus, F. A., books.....	6 70	.....
Blied & Schneider, hardware.....	42 85	.....
Boston Gear Works, gears.....	2 72	.....
Bunting, C. H., guinea pigs.....	2 50	.....
Burke & James, apparatus.....	161 80	.....
Boker & Co., H., nickel.....	15 74	.....
Bates Mfg. Co., machine.....	14 00	.....
Bartholomew, E., book.....	18 40	.....
Baker & Co., wire.....	5 81	.....
Bliss & Laughlin, steel.....	3 46	.....
Boehm, W. J., apparatus, reports.....	41 25	.....
Biddle, J. G., repairs.....	1 76	.....
Belden Mfg. Co., wire.....	5 10	.....
Burger, Peter, hardware.....	151 09	.....
Bishop & Co., J., platinum, wire.....	175 20	.....
Business Man's Publishing Co., books.....	2 80	.....
Bruce & Cook, lubricator.....	4 75	.....
Baugh, J. H. A., tape.....	3 10	.....
Bouchard, J., plating.....	2 70	.....
Blackwelder, E., expenses.....	3 30	.....
Bausch & Lomb Optical Co., wire, mirror.....	6,645 68	.....
Baker Paper Co., pens.....	2 13	.....
Birkett, M. W., thesis.....	3 60	.....
Blackwelder, E., expenses.....	1 45	.....
Bardeen, C. R., delivery body.....	3 80	.....
Brown & Sharpe Mfg. Co., merchandise.....	15 07	.....
Bentley, W. A., slides.....	6 30	.....
Buetow, W. C., copy of thesis.....	3 50	.....
Burdick & Murray Co., merchandise.....	18 24	.....
Besly Co., C. H., brass rods.....	220 27	.....
Correction Memorandum.....	285 19	.....
Central Electric Co., armature.....	1 10	.....
Conklin & Sons, coal, ice.....	61 50	.....
Crookston Tool Co., tools.....	7 50	.....
Cambridge Botanical Supply Co., seed boxes, specimens.....	35 71	.....
Cleveland Twist Drill Co., drills.....	36 98	.....
Carborundum Co., carborundum, powder.....	20 64	.....
Conlin & Sons, ice.....	6 85	.....
Currie Bros. Co., plants.....	3 05	.....
Carpenter & Co., G. B., gaskets.....	13 47	.....
Castle & Doyle, cement.....	20 15	.....
Chicago Calcium Light Co., oxygen.....	35 00	.....
Crucible Steel Co., copper.....	204 24	.....
Columbia Incandescent Lamp Co., lamps.....	1 43	.....
Columbia Tool Steel Co., steel.....	14 21	.....
College Book Store, paper.....	2 25	.....
Crosby Steam Gage Co., cord.....	87 91	.....
Central Scientific Co., slides, instruments.....	17 75	.....
Capital City Paper Co., paper.....	6 57	.....
Curtiss, F. W., photos.....	1 50	.....
Crane Co., pipe, fittings.....	58 64	.....
Comstock, A. S., pump.....	12 50	.....
Chicago Screw Co., screws.....	33 63	.....
Concilio Bibliographic, cards.....	19 56	.....
Cutler Hammer Mfg. Co., regulator.....	10 80	.....
Cornell Cooperative Society, paper.....	4 23	.....
C. M. & St. P. Ry. Co., freight.....	386 82	.....
C. & N. W. Ry. Co., freight.....	327 82	.....
Crandall Packing Co., rings.....	13 50	.....
Central Electric Co., wire, brushes.....	12 92	.....
Capital City Green House Co., bulbs, rent.....	7 90	.....
Corbin Cabinet Lock Co., key blanks.....	1 32	.....
Collyers Pharmacy, gloves.....	1 35	.....
Cranmer Dry Plate Co., plates.....	1 52	.....
Cantwell Printing Co., printing.....	42 25	.....
Chicago Brass Co., rod, tubing.....	60 73	.....
Curtis Co., D., zinc.....	15 25	.....
Crook, H. J., repairs.....	5 50	.....
Cooley, C. F., compound, plaster, coal.....	99 05	.....
Dietzgen & Co., E., electric globes, merchandise.....	147 59	.....
Diamond State Fiber Co., tubing, fibre.....	6 97	.....
Driver-Harris Wire Co., wire.....	61 46	.....
Diemer, M. E., slides.....	20 00	.....
Dickinson, T. H., instruction.....	5 00	.....
Dalgger & Co., A., glass tubing.....	21 85	.....
Detroit Copper & Brass Rolling Mills, tubes.....	9 20	.....
Democrat Printing Co., printing.....	48 92	.....
Devoe & Reynolds Co., architect's material, paper.....	32 63	.....

Dreer, H. A., plants.....	3 32
Dominion Astronomical Observatory, photos.....	7 95
Drovers Journal Publishing Co., printing.....	18 00
Diederich, M., groceries.....	7 75
Dennison Mfg. Co., labels.....	6 94
Dengler, C. M., lettering.....	34 95
Eimer & Amend, chemicals.....	877 12
Eastman, J. S., merchandise.....	15 10
Electrical World, subscription.....	6 00
Engelhardt, Chas., platinum.....	30 15
Electrical Review Publishing Co., subscription.....	3 00
Electric Storage Battery Co., electrolyte.....	3 32
Ester Oyster Co., frogs.....	6 25
Eastman, F. R., repairs.....	3 00
Electrical Appliance Co., merchandise.....	43 88
Erlanger, Jos., bills paid.....	24 44
Engineers' Society, periodicals.....	1 00
Excelsior Shoe Store, umbrellas.....	3 25
Excelsior Supply Co., tubing.....	16 06
Eberback & Son, models.....	10 00
Emmert Mfg. Co., vases.....	14 50
Emmert Mfg. Co., vise.....	4 25
Engineering Magazine, books.....	6 00
Electrical Supply Co., merchandise.....	57 34
Fritzsche Bros., oils.....	22 33
Foote Mineral Co., minerals.....	12 30
Frederickson, A. D. & J. V., lumber.....	209 15
Faultless Rubber Co., tubing.....	215 37
Ft. Wayne Electric Works, motor, pulleys, wire.....	27 45
Ft. Dearborn Watch & Clock Co., timer.....	14 80
Fulton Machine & Vise Co., vise.....	4 05
Fond du Lac Pressed Brick Co., brick.....	2 00
Fergusson Bros., sulphate.....	23 34
Fairbanks, Morse & Co., fittings.....	6 40
Foote Brothers Co., rod.....	2 75
F. F. F. Laundry.....	30 48
Fauerbach Brewing Co., gas.....	12 00
Felton, A. P., keys.....	22 55
Grasselli Chemical Co., chemicals.....	1,076 35
Greimer Co., Emil, dephlegmator.....	2 50
Goodyear Rubber Co., tubing.....	19 08
Gray Herbarium, cards.....	35 16
Graff, B. H., thesis.....	7 28
Gillespie, Jas., thesis.....	1 00
Grims, Miss, cover.....	1 00
Gisholt Machine Co., steel.....	97 88
Gilbertson & Anderson, watches.....	24 00
Greig, J., Est., furniture.....	5 90
Gallagher & Co., J., rent of flag.....	5 90
Grimm's Bindery, binding.....	90 74
Garlock Packing Co., packing.....	11 62
Geographical Supply Bureau, photos.....	9 55
Gas Machinery Co., bars.....	10 40
Gaertner & Co., Wm., clamps.....	25 20
Gurley, W. & L. E., wire cable.....	3 60
General Electric Co., switches.....	132 92
Goerz American Optical Co., C. P., apparatus.....	53 24
Heil Chemical Co., H., chemicals.....	3,940 28
Hayes File Co., files.....	4 00
Hanson & Van Winkle Co., rouge.....	1 75
Haegers, Wm., thesis.....	3 40
Hollister Drug Co., drugs.....	69 19
Huntington, Ellen, instruction.....	2 50
Huels, Fred, key blanks.....	90
Haak, Wm., Jr., fittings.....	65 30
Hogseth, M. J., box.....	15 00
Hirsch, J. G., thesis.....	7 85
Harris & Co., S., hardware, tools.....	86 42
Haswell Furniture Co., furniture.....	4 50
Hoffman Feed Co., corn.....	3 00
Hydrofluoric Mfg. Co., acid.....	2 50
Hibbard, Spencer, Bartlett Co., hardware.....	8 36
Hammer, M. R., instruction.....	40 00
Hain, E. L., thesis.....	3 60
Halbach, J. P., repairs.....	1 50
Huber & Tuhman Drug Mills, pepper.....	1 70
Henion & Hubbell, cement.....	1 50
Hill, Clarke & Co., emery wheel.....	13 00
Harlow, P. F., tape.....	11 50

Hammacher, Schlemmer, & Co., tools.....	8 75
Illinois Steel Co., steel.....	55 79
International Trading Co., tressing.....	29 73
International Brass & Electric Co., posts.....	21 82
Illinois Electric Co., electric merchandise, lamps.....	8 93
Ivins Tube Works, E., tubing.....	5 22
Illinois Central Ry. Co., freight.....	22 23
Illinois Paper Box Co., trays.....	24 83
International Textbook Co., pamphlets.....	14 49
International Acheson Graphite Co., electrodes.....	3 37
International Harvester Co., piston, batteries.....	30 25
Johns-Manville Co., H. W., covering, felt.....	6 40
Jackson, T. E., filaments.....	1 50
Jones & Laughlin Steel Co., steel.....	3 96
Klein Bros., paints.....	11 20
Kirk, Dr. Edw., chemical compound.....	1 25
Keuffel & Esser Co., instruments.....	55 60
King & Walker Co., bolts.....	14 82
Keeley, Neckerman & Kessenich Co., merchandise.....	4 98
Kohl, Max, apparatus.....	120 13
Knable, H. A., castings.....	5 11
Kimble Glass Co., vials.....	21 29
Kroncke Bros. Hardware Co., hardware.....	19 57
Kornhauser & Co., A., merchandise.....	2 75
Keyes, Wm., sand.....	1 00
Kruesi, F. E., thesis.....	1 50
Kateley, Fred, salary.....	5 50
Koniglichen Porzellan Mfg. Co., apparatus.....	135 48
Kny-Scherer Co.....	413 50
Lorenz, E. H. J., mechanician.....	491 92
Lyman, R. L., instruction.....	12 00
Leith, C. K., expenses.....	80 14
Lumiere North American Co., apparatus.....	1 36
Leeds & Northrup Co., repairs.....	111 00
Leonharde, O., plants.....	5 02
Lydow, H., book.....	7 94
Leitz, Ernst, chemicals.....	144 98
Lambert, F. D., laboratory material.....	18 00
Leeds & Northrup Co., parts.....	5 94
Lentz & Sons, Co., knives sharpened.....	4 00
Lunkenheimer Co., valves.....	17 75
Le Blond Machine Tool Co., E. K., handle.....	1 00
Lehn & Fink, chemicals.....	51 76
Madison Gas & Electric Co., gas, current, coke.....	1,053 20
Miller, J., photo work.....	4 00
Marshall Field & Co., toweling.....	191 20
Milwaukee Leather Belt Co., belting.....	180 56
Moseley, J. E., merchandise.....	16 81
Mayers Electric Press, printing.....	6 25
Mayers, A. A., merchandise.....	85 75
Madison Engraving Co., etchings.....	1 25
Machinists' Supply Co., tools.....	58 87
Marsh & Co., pans.....	4 82
Mathews, W. W., thesis.....	2 00
Martin, L., expenses.....	25 76
Meltzer, W. J., chimney.....	1 20
Mueller, Richard, apparatus.....	68 88
Milwaukee Electric Ry. & Light Co., core.....	3 75
Matsuki, Bunkio, architects' material.....	19 73
Museum of Fine Arts, insurance.....	4 00
Miller, Louis, bees.....	7 00
Madison Brass Works, castings.....	53 39
Mechanical Rubber Co., rubber.....	2 00
MacMillan Co., books.....	2 40
Meister, Edw., apparatus.....	5 25
Madison Steam Laundry, laundry.....	22 19
McChurg & Co., A. C., books.....	415 04
Mautz Bros., paints.....	45 24
Michigan Rubber Co., gum.....	4 00
Morrison, Plumer & Co., chemicals.....	19 80
Miller, Waldron & Studeman, sieve.....	3 60
McKinley Publishing Co., maps.....	12 80
McComb, B. K., thesis.....	6 00
Menges Pharmacy, drugs.....	199 80
Nernst Lamp Co., glowers.....	17 10
Norton Co., emery wheel.....	13 32
Neil & Co., Wm., pump.....	2 00
Norwood, J. N., instructor.....	3 35
Nielson, Alex., neeturns.....	8 00

Newbury & Peper, belting.....	16 27	.....
Niebuhr, E. M., boat rent.....	5 25	.....
New York & Pennsylvania Co., jugs.....	2 86	.....
National Lead Co., lead.....	3 50	.....
Northern Electric Mfg. Co., wire.....	24 05	.....
Nickles, R. J., dry cells.....	19 24	.....
Newton & Co., condensers.....	2 60	.....
National Distilling Co., alcohol.....	24 32	.....
Nachet, A., microscopes.....	265 85	.....
Nielson, F. C., slides.....	31 65	.....
Nystrom & Co., A. J., globe.....	5 00	.....
National Carbon Co., tubes, cells, carbons.....	48 22	.....
Obermayer Co., S., crucible.....	3 25	.....
Otto, Max, instruction.....	5 50	.....
Oxford Copper Co., chemical.....	8 00	.....
Orr & Lockett Hardware Co., blanks.....	1 54	.....
Owen, Wm., plumbing.....	30	.....
Parsons P. & S. Co., stationery, printing.....	108 30	.....
Peters, Alfred, rabbits.....	1 00	.....
Pulsometer Engineering Co., parts.....	1 51	.....
Post, L. M., car fare.....	8 20	.....
Pilling & Son Co., G. P., bowles.....	9 36	.....
Piper Bros., groceries.....	43 17	.....
Poorman, J. E., tools.....	1 50	.....
Paunaack, E. F., stone.....	5 76	.....
Petrolithic Pavement Co., express.....	2 80	.....
Philadelphia Gear Works, gearing, parts.....	3 60	.....
Postal Telegraph Co., messages.....	1 69	.....
Pittsburg Automatic V. & J. Co., vises.....	9 45	.....
Pitman, Annie, instruction.....	9 00	.....
Packard Machine Co., O. L., tools.....	32 87	.....
Pritzlaff Hardware Co., J., hardware.....	6 04	.....
Pieh, J. F., sand.....	22 50	.....
Piekens Co., E., cylinder.....	22 50	.....
Parkinson-Marling Lime Co., lime.....	10 83	.....
Piekarts, L. J., bursar, cash advanced, bills paid.....	109 03	.....
Queen & Co., bronze.....	2 50	.....
Quaker City Rubber Co., lace.....	3 20	.....
Ryerson & Son, J. F., rods.....	136 38	.....
Rosner, R., desks.....	3 00	.....
Rich, T. A., agent, tools, repairs, scale.....	30 42	.....
Rome Brass & Copper Co., rod.....	3 34	.....
Rock Island Tool Co., vise.....	6 08	.....
Riehle Bros., gear.....	15 00	.....
Rentschler, F., plants.....	6 30	.....
Reynolds, E. E., drayage.....	5 50	.....
Rundle-Spence Mfg. Co., hardware.....	8 20	.....
Rieh, F. A., agent, instruments, tools.....	33 32	.....
Roller-Smith Co., repairs.....	8 25	.....
Roat & Co., A. L., frames.....	2 25	.....
Reisinger, H., carbon.....	7 97	.....
Store Room, merchandise.....	1,116 14	.....
Schmidt & Haensch, F., apparatus.....	7 32	.....
Schaprograph Co., paper.....	6 75	.....
Standard Oil Co., oil.....	25 02	.....
Schadauer & Co., J. F., plates.....	4 50	.....
Sasse, C. L., frames.....	5 75	.....
Stephens, D., stone.....	12 61	.....
Standard Gauge Steel Co., tape.....	6 90	.....
Sears, Roebuck & Co., boilers.....	18 84	.....
Small & Stevens, shot.....	6 50	.....
Sphung, A. A., turtles.....	40 00	.....
Scientific Shop, calorimeter, weights.....	60 44	.....
Seovill Mfg. Co., tube.....	3 53	.....
Spencer, F. L., thesis.....	3 00	.....
Schneider & Co., E., acid.....	3 00	.....
Stahl, G. H., thermometers.....	2 25	.....
Smith, A. C., desks.....	3 00	.....
Smith, L. S., expenses.....	208 21	.....
Siniako Bros., iron.....	3 15	.....
Swenholt, H., copy of thesis.....	3 00	.....
Sumner & Cramton, drugs.....	35 50	.....
Schmidt, Wm., repairs.....	1 25	.....
Strelinger Co., C. A., tools.....	34 35	.....
Snyder, Matilda L., stencils.....	11 20	.....
Stoelting Co., C. H., apparatus.....	102 45	.....
Steward Mfg. Co., D. M., apparatus.....	1 00	.....
Southern Wisconsin Foundry Co., castings.....	137 57	.....
Siniako, A., oats.....	95	.....

Sumner & Morris Hardware Co., hardware.....	53 14	
Steege & Reuter, apparatus, instruments.....	93 82	
Stechert & Co., G. E., books.....	1,191 23	
Shaw & Co., J., soda.....	2 50	
Salisbury & Co., W. H., hose.....	3 95	
Starratt Co., L. S., indicators.....	3 19	
Standard Oil Co., oil.....	10 70	
Sargent & Co., E. H., chemicals.....	1,347 38	
Strelinger Co., C. A., brass rod.....	6 01	
Sumner & Son, E., jars.....	5 25	
Sauveur, A., books.....	10 00	
Safety Emery Wheel Co., emery wheels.....	10 00	
Sandusky Portland Cement Co., sand.....	28 10	
Schaeffer & Budenberg Mfg. Co., cord, parts.....	10 77	
Standard Calorimeter Co., funnel, peroxide.....	12 00	
Shriner Bros., coffin, shipping body.....	25 00	
Sladky P., salary.....	162 10	
Tracy, Gibbs & Co., printing.....	77 15	
Thorburn & Co., J. M., seeds.....	2 57	
Toch Bros., paint.....	6 25	
Tablet & Ticket Co., letters.....	3 60	
Taylor & Gleason, printing.....	28 25	
Tomlinson, W. H., rock.....	3 20	
Trache Bros. & Co., tank.....	6 50	
Thomas Co., A. H., chemicals, apparatus.....	69 21	
University pay roll, janitors.....	4,050 16	
United States Express Co., express.....	91 64	
University of Chicago Press, indexes, books.....	11 25	
University Cooperative Co., stationery.....	83 88	
Vaughns Seed Store, seeds.....	15 65	
Viscosity Oil Co., oils.....	121 34	
Van Schaack & Son, P., sponges, mercury.....	64 33	
Valvoline Oil Co., oil.....	147 74	
Vaas-Maw Dry Goods Co., oil cloth.....	7 02	
Wiedenbeck, Dobelin Co., hardware.....	89 59	
Wehausen, G. W., thesis.....	1 45	
Wolf, Otto, instruments.....	217 25	
Wells Fargo Express Co., express.....	17 09	
Wolf, Kubly & Hirsig, hardware.....	239 09	
Whitney Elect. Inst. Co., repairs, ammeter.....	48 45	
Warner, W. W., bows.....	9 00	
Wisconsin Engineer, tapes.....	8 00	
Ward & Co., M., cabinet.....	5 88	
Winchell, A. N., expenses.....	57 58	
Ward Leonard Electric Co., units.....	11 72	
Western Electrical Instrument Co., repairs.....	72 04	
Western Electric Co., electric merchandise, supplies.....	37 20	
Williams Co., D., book.....	5 00	
Williams, Brown & Earle, lenses.....	37 90	
Wratten & Wainwright, apparatus.....	5 93	
Western Union Telegraph Co., telegrams.....	9 25	
Wittstock, P. & R., eye-piece.....	5 64	
Whitall, Tatum Co., bottles.....	609 25	
Wolf Mfg. Co., L., fittings.....	48	
White Dental Mfg. Co., S. S., oxygen.....	28 15	
Wesler, P. J., plants.....	15 97	
Wilson Co., subscription.....	2 00	
Wissler Instrument Co., A., caps.....	1 09	
Williams & Peters, coal.....	138 83	
Wisconsin Malleable Iron Co., iron.....	6 64	
Westinghouse Electric & Mfg. Co., repairs.....	33 39	
Wisconsin Telephone Co., messages.....	3 50	
Ward's Natural Science Estate, specimens.....	6 37	
Yawkey-Crowley Lumber Co., lumber.....	26 38	
Yahr & Lange, sulphate.....	7 00	
Zanesville Stoneware Co., jars.....	53 50	
Zobel, W. P., bills paid.....	2 75	
		\$35,536 53

LAW SCHOOL

Administration pay roll, clerks, janitors.....	\$1,747 17	
American Law Book Co., books.....	15 09	
American Express Co., express.....	1 50	
American Seating Co., desks.....	72 80	
American Association of Law Libraries, subscription.....	10 00	
Association of American Law Schools, books.....	10 00	
Boston Book Co., books.....	239 50	

Bancroft-Whitney Co., reports, books.....	15 00	
Bender & Co., M., books.....	10 00	
Burlington Venetian Book Co., tape.....	6 00	
Banks Law Publishing Co., book.....	40 00	
Beedle, G. E., commissioner of insurance, insurance.....	245 70	
Carswell Co., reports.....	546 30	
Cantwell Printing Co., printing.....	22 00	
C., M. & St. P. Ry. Co., freight.....	28	
City of Madison, water.....	4 00	
Clementson, Geo., expenses.....	7 42	
Castle & Doyle, lime.....	4 80	
Citator Publishing Co., subscription.....	3 00	
C. & N. W. Ry. Co., freight.....	8 65	
Cook, W. W., salary.....	3,500 00	
Callaghan & Co., books.....	881 98	
Electrical Supply Co., merchandise.....	93 35	
Findorff, J. H., cases.....	40 00	
Felton, A. P., keys.....	25	
Fiske & Co., book.....	3 25	
Frederickson, A. D. & J. V., lumber.....	36 69	
Gilmore, E. A., salary.....	3,500 00	
Greig, J., Est., furniture.....	2 39	
Grimm's Bindery, binding.....	52 05	
General Electric Co., merchandise.....	40 94	
Heat and water, percentages.....	1,778 60	
Haswell Furniture Co., furniture.....	60 00	
Huels, F. W., testing meters.....	90	
Hazeltine, H. D., salary.....	400 00	
Jones, G. I., books.....	5 00	
Jones, B. W., salary.....	960 00	
Keefe-Davidson Co., books.....	19 50	
Kroneke Bros., hardware.....	1 55	
Lang Electric Co., J., panel brace.....	51 50	
Lawyers' Cooperative Publishing Co., reports.....	55 00	
Menges Pharmacy, drugs.....	15	
Madison Gas & Electric Co., gas, current.....	250 92	
Mack, E. S., expenses.....	3 83	
Moseley, J. E., stationery.....	3 00	
Mayers, A. A., groceries.....	2 40	
Mautz Bros., paints.....	10 90	
Moore, W. U., salary.....	2,200 00	
Nickles, R. J., merchandise.....	3 15	
Olin, J. M., salary.....	1,280 00	
Orvis, W. N., reports.....	6 00	
Post Publishing Co., bulletins.....	60 73	
Pickarts, L. J., bursar, postage.....	54 44	
Parsons P. & S. Co., printing, stationery.....	14 35	
Quarles, J. V., expenses.....	6 80	
Richards, H. S., expenses.....	12 10	
Richards, H. S., salary.....	4,000 00	
Rundle-Spence Mfg. Co., hardware.....	17	
Remington Typewriter Co., paper.....	7 50	
Store room, merchandise.....	82 29	
Sanborn, J. B., salary.....	550 00	
Statute Law Book Co., books.....	138 44	
Sumner & Morris, hardware.....	20	
Smith, H. L., salary.....	3,500 00	
Shepard Co., F., books.....	3 00	
Tracy, Gibbs & Co., printing.....	14 90	
Taylor & Gleason, printing.....	3 50	
Thompson Co., E., books.....	11 25	
University of Chicago Press, books.....	17 00	
University pay roll, janitors.....	1,019 11	
United States Express Co., express.....	1 00	
Western Electric Co., merchandise.....	30 74	
West Publishing Co., periodicals.....	238 75	
Western States Envelope Co., envelopes.....	2 60	
Western Union Telegraph Co., telegrams.....	2 24	
Correction memorandum, advertising.....	125 00	
		\$28,157 56

PHYSICAL CULTURE—MEN

Alford Bros., laundry.....	\$254 83	
Alabastine Co., alabastine.....	6 00	
American Express Co., express.....	6 88	
Burger, P., hardware.....	26 75	
Bristol-Myers Co., liniment.....	4 53	

Blued & Schneider, hardware.....	10 20
Beedle, G. E., commissioner of insurance, insurance.....	393 12
Barry, T. A., salary.....	1,500 00
City of Madison, water.....	29 60
Crane Co., pipe.....	4 19
Cooley, C. F., drain pipe.....	3 40
Castle & Doyle, cement.....	90
C. & N. W. Ry. Co., freight.....	1 69
Cantwell Printing Co., printing.....	8 00
C. M. & St. P. Ry. Co., freight.....	8 07
Dearborn, W. F., water rent.....	13 71
Davidson, T. R., salary.....	100 00
Doyon & Rayne Lumber Co., lumber.....	11 49
Democrat Printing Co., printing.....	3 00
Engelhardt, E., cushion.....	13 50
Elsom, J. C., salary.....	1,800 00
Frederickson, A. D. & J. V., lumber.....	29 62
Faber, M. E., repair locks.....	36 00
Gallagher Co., J., sheeting.....	1 80
Heat and water, percentages.....	7,708 27
Haswell Furniture Co., furniture.....	13 00
Huels, F. W., testing meters.....	1 80
Hollister Drug Co., drugs.....	26 28
Halbach, J. P., repairs.....	1 00
Hutchins, C. P., salary.....	3,000 00
Hyland, W. J., mantles.....	6 00
Ill. Cent. Ry. Co., freight.....	5 79
Jones, W. H., supplies.....	3 38
Kerns Co., E. J., oars.....	84 50
Kroncke Bros., hardware.....	4 35
Mautz Bros., paints.....	55 65
Main, G., salary.....	500 00
Miller Lock Co., locks.....	35 50
Madison Paint & Wall Paper Co., paints.....	14 45
Marsh & Co., trays, merchandise.....	1 80
Medart Mfg. Co., E., apparatus.....	45 60
Madison Tent & Awning Co., covers.....	16 00
Moseley, J. E., stationery.....	3 15
Mayers, A. A., glass.....	15 55
Malec & Brother, V., repairs.....	19 80
Madison Gas & Electric Co., gas, globes, current.....	556 45
Menges Pharmacy, bandages, drugs.....	19 50
Narragansett Machine Co., apparatus.....	201 63
Pickarts, L. J., bursar, postage, bills paid.....	37 43
Parkinson-Marling Lumber Co., pine.....	35 84
Pennsylvania Coal Supply Co., long curve.....	2 59
Parsons P. & S. Co., printing and stationery.....	5 75
Partridge Co., H., clubs.....	2 25
Parsons P. & S. Co., stationery.....	1 50
Sasse, C. L., glass.....	6 76
Small & Stevens Co., repairs.....	30
Sumner & Morris, hardware.....	31 40
Store room, merchandise.....	141 43
Sumner & Cramton, drugs.....	8 90
Salisbury & Co., W. H., hose.....	7 65
Spalding & Bros., A. G., apparatus.....	48 00
Ten Eyck, E. H., salary.....	1,600 00
Tracy, Gibbs & Co., printing.....	63 25
University pay roll, janitors.....	2,476 12
Underwood Typewriter Co., salary.....	3 50
United States Express Co., merchandise.....	85
University Cooperative Co., stationery.....	95 80
Valvoline Oil Co., oil.....	13 00
Wehrmann, C., repairs.....	75
Wolf Mfg. Co., L., lavatory.....	9 17
Warner, W. W., tuning.....	3 00
Wiedenbeck, Dobelin Co., hardware.....	6 79
Wolf, Kubly & Hirsig, hardware.....	46 34
Yawkey-Crowley Lumber Co., lumber.....	584 91
Zeidlhack, F. S., salary.....	300 00
Zarfos, L. N., salary.....	800 00

\$22,540 13

WASHBURN OBSERVATORY		
Administration pay roll.....	\$454 31	
Andrae & Sons Co., J., merchandise.....	1 50	
Averbeck, F. A., lamp.....	5 00	
American Express Co., express.....	34	
Beedle, G. E., commissioner of insurance, insurance.....	196 53	
Besly & Co., C. H., rod.....	2 31	
Conklin & Sons, coal.....	217 68	
C. & N. W. Ry. Co., freight.....	10 25	
C. M. & St. P. Ry. Co., freight.....	26	
Comstock, G. C., salary.....	3,000 00	
Dengler, C. M., sign work.....	2 00	
Drives & Struck, wood.....	19 00	
Eastman, J. S., lamp cord.....	5 00	
Electric Supply Co., electrical merchandise.....	6 10	
Flint, A. S., salary.....	2,000 00	
Frederickson, A. D. & J. V., lumber.....	36 50	
Grimm's Bindery, binding.....	12 00	
Hollister Drug Co., drugs.....	2 95	
Knabe, H. A., castings.....	2 16	
Keys, Wm., hauling.....	9 77	
Keeley, Neckerman & Kessenich Co., carpet.....	24 74	
Lorenz, E. H. J., salary.....	11 00	
Observatory, Lick, slides.....	4 50	
Madison Gas & Electric Co., gas, current.....	30 61	
Menges Pharmacy, drugs.....	1 50	
Mautz Bros., paints.....	1 52	
Nelson & Polk, papering.....	15 00	
Pickarts, L. J., bursar, postage, bills paid.....	44 77	
Parkinson-Marling Lumber Co., lumber.....	25 00	
Payne, W. W., slides.....	2 25	
Parsons P. & S. Co., stationery.....	17 75	
Sears, Roebuck & Co., tools, instruments, lamps.....	63 45	
Store room, merchandise.....	17 13	
University pay roll, janitors.....	724 35	
University of Chicago Press, slides.....	9 28	
United States Express Co., express.....	50	
Wolff, Mfg. Co., L., tools.....	10 47	
Wehrmann, C., repairs.....	2 50	
Wolff, Kubly & Hirsig, hardware.....	10 00	
Western States Envelope Co., envelopes.....	16 68	
		\$7,016 49
ARCHITECT'S OFFICE		
Administration pay roll, clerks.....	\$4,567 65	
American Express Co., express.....	3 20	
Dietzgen Co., E., paper, etc.....	1 03	
Grimm's Bindery, binding.....	3 50	
Huebsch, B. W., year books.....	1 00	
Haswell Furniture Co., furniture.....	10 00	
Jenkins, H. D., perspective.....	100 00	
Mautz Bros., paints, etc.....	4 80	
Moseley, J. E., stationery.....	1 25	
Owen, R. S., drafting.....	8 50	
Pickarts, L. J., bursar, postage.....	50 00	
Peabody, A., advertising.....	1 10	
Postal Telegraph Co., message.....	25	
Store room, merchandise.....	140 63	
Sumner & Cramton, drugs, etc.....	50	
Tracy, Gibbs & Co., printing.....	8 00	
University Cooperative Co., stationery.....	4 20	
United States Express Co., express.....	45	
Wolff, Kubly & Hirsig, hardware.....	3 00	
Wisconsin Telephone Co., messages.....	75	
Wisconsin Engineer, copies.....	6 25	
Western Union Telegraph Co., messages.....	2 76	
Parsons P. & S. Co., credit.....	50	
		\$4,918 35
PHYSICAL CULTURE—WOMEN		
Atkinson, Elizabeth E., salary.....	\$700 00	
American Express Co., express.....	1 35	
Alford Bros., laundry.....	1 69	
Bassetts Co., F. A., books.....	5 75	
Peter Burger, hardware.....	1 75	
Castle & Doyle, cement.....	3 00	

C., M. & St. P. Ry. Co., freight.....	1 18	
Electrical Supply Co., merchandise.....	3 40	
Engelhardt, M., curtain goods.....	1 32	
Frederickson, A. D. & J. V., lumber.....	1 40	
Haswell Furniture Co., furniture.....	24 00	
Kornhauser & Co., A., merchandise.....	4 38	
Merrick, Jessie B., salary.....	700 00	
Mayers Electric Press, printing.....	2 25	
Mayhew, Abby S., salary.....	1,600 00	
Moseley, J. E., stationery.....	4 63	
Narragansett Machine Co., apparatus.....	10 20	
Parsons P. & S. Co., stationery.....	11 90	
Pickarts, Mary E., salary.....	550 00	
Pickarts, L. J., bursar, postage.....	9 15	
Store room, merchandise.....	15 01	
Tracy, Gibbs & Co., printing.....	22 00	
University Cooperative Co., stationery.....	13 40	
University pay roll, janitors.....	233 96	
Wolf, Kubly & Hirsig, hardware.....	90	
Wisconsin Music Co., music.....	2 19	
		\$3,924 81

MILITARY DEPARTMENT

Administration pay roll, clerks, etc.....	\$16 10	
Andrews Co., A. H., blackboard.....	2 00	
Atkins, W. G., salary.....	400 00	
American Express Co., express.....	5 20	
Band pay roll, musicians.....	450 00	
Burdick & Murray Co., merchandise.....	75	
Blued & Schneider, hardware.....	7 95	
C. & N. W. Ry. Co., freight.....	3 09	
Cantwell Printing Co., printing.....	14 00	
C., M. & St. P. Ry. Co., freight.....	19 03	
Colladay, E. B., prize.....	25 00	
Dengler, C. M., lettering.....	4 50	
Esser Co., L., medals.....	27 00	
Eagle Lock Co., padlocks.....	11 98	
Felton, A. P., keys, etc.....	40	
Frederickson, A. D. & J. V., lumber.....	127 57	
Gold Medal Comp Furnishing Co., litters.....	20 00	
Griswold, E. C., prize.....	25 00	
Grimm's Bindery, binding.....	3 75	
King, Chas., expenses.....	16 76	
Kassell, B. C., engrossing.....	10 25	
Lilley & Co., M. C., medals, sabres, trumpets.....	102 95	
Meredith, O. R., expenses.....	10 14	
Mautz, Bros., paints, etc.....	2 90	
McCoy, Ralph, commutation of quarters.....	432 00	
Menges Pharmacy, drugs, etc.....	3 75	
Mayers, A. A., glass, etc.....	4 50	
Minick, A. D., expenses.....	10 14	
Mann, C. A., music, salary.....	118 08	
Nicodemus, R. C., premiums.....	81 20	
Northwestern Lith. Co., diplomas.....	30 35	
Ordway, A. B., prize.....	50 00	
Owen, H. E., instruments.....	75 80	
Parsons P. & S. Co., printing.....	17 05	
Post Publishing Co., printing.....	14 50	
Pritzlaff Hardware Co., J., hardware.....	3 20	
Pickarts, L. J., bursar, postage, bills paid.....	9 16	
Regimental officers' pay roll, refunds.....	310 00	
Robertson Soap Co., T. B., soap.....	3 00	
Store room, merchandise.....	17 73	
Saxton, R. G., prize.....	50 00	
Sladky, Paul, salary.....	1 40	
Sumner & Cramton, drugs.....	3 30	
Tracy, Gibbs & Co., printing.....	10 50	
United States Express Co., express.....	2 10	
University Cooperative Co., stationery.....	1 50	
University pay roll, janitors.....	231 48	
United States Flag Co., flags.....	19 25	
Wolf, Kubly & Hirsig, hardware.....	5 75	
Wiedenbeck, Doblin & Co., hardware.....	15 31	
Wells Fargo Express Co., express.....	75	
		\$2,822 12

J. J. HILL RAILWAY LIBRARY FUND			
Grimm's Bindery, binding.....		\$143 05	.....
McClurg & Co., A. C., books.....		29 38	.....
Parsons P. & S. Co., stationery.....		4 00	.....
Pickarts, L. J., bursar, postage.....		10 00	.....
Stechert & Co., G. E., books.....		931 08	.....
Taylor, F. J., book.....		2 60	.....
World Railway Publishing Co., book.....		6 00	.....
			\$1,126 11
WOMAN'S BUILDING			
American Express Co., express.....		\$ 90	.....
Administration pay roll, clerks.....		817 34	.....
Blued & Schneider, hardware.....		65	.....
C. M. & St. P. Ry. Co., freight.....		1,536 82	.....
Conklin & Sons, coal.....		61 65	.....
Clow & Sons, J. B., pipe.....		99 15	.....
C. & N. W. Ry. Co., freight, switch.....		444 49	.....
Doyon & Rayne Lumber Co., lumber.....		6 50	.....
Huebsch, B. W., yearbooks.....		1 00	.....
Janesville Cement Shingle Co., sand.....		399 12	.....
Keyes, Wm., team work.....		100 00	.....
Keuffel & Esser Co., tracing cloth.....		19 35	.....
Ludlow Valve Mfg. Co., valve.....		12 60	.....
Madison Concrete Mfg. Co., sand.....		151 05	.....
McCarthy, T. C., contract.....		125,574 00	.....
Newbury & Peper, pipe.....		1 40	.....
Store room, merchandise.....		31 15	.....
Stephens, David, stone.....		1,657 80	.....
University pay roll, janitor.....		1,504 76	.....
University Cooperative Co., merchandise.....		1 85	.....
Universal Portland Cement Co., cement.....		3,147 66	.....
United States Express Co., express.....		2 65	.....
Wisconsin Telephone Co., messages.....		95	.....
Wolf, Kubly & Hirsig, hardware.....		5 85	.....
Correction memorandum, stone (credit).....		18 20	.....
			\$135,560 49
FORESTRY BUILDING			
Administration pay roll, clerks.....		\$234 20	.....
American Contractor, advertising.....		16 20	.....
Improvement Bulletin, advertising.....		11 10	.....
Pickarts, L. J., bursar, postage.....		10 00	.....
Store room, merchandise.....		11 10	.....
Wells Fargo Express Co., express.....		90	.....
Western Builder Publishing Co., advertising.....		2 40	.....
			\$285 90
MEN'S DORMITORIES			
Grimm's Bindery, binding.....		\$3 00	.....
Owen, R. S., drafting.....		29 00	.....
University Cooperative Co., stationery.....		1 85	.....
			\$33 85
MEDICAL SCHOOL			
Richter Brothers, books.....		\$278 30	.....
Stechert & Co., G. E., books.....		308 05	.....
			\$586 35
UNIVERSITY GROUNDS			
Corseott, G. J., appraiser.....		\$15 00	.....
Gundlach, Theresa, land.....		3,500 00	.....
Gay, L. W., commission.....		70 00	.....
Hammersley, E. C., lot.....		19,500 00	.....
Isom, Thomas, land.....		5,000 00	.....
Petrie, W. E., appraiser.....		15 00	.....
Soelch, Geo., appraiser.....		15 00	.....
Sandsten, E. P., land.....		2,000 00	.....
			\$30,115 00

PIANO ACCOUNT		
Gram, E., pianos.....	\$750 00	
Smiley, B. E., tuning, repairs.....	169 00	
Wisconsin Music Co., pianos.....	575 00	
Warner, W. W., pianos.....	675 00	\$2,169 00
BIOLOGY BUILDING		
Administration pay roll, clerks.....	\$103 58	
Grimm's bindery, binding.....	6 50	
Owen, R. S., charts.....	48 43	
Peabody, A., expenses.....	143 67	
Postal Telegraph Co., messages.....	60	
Parsons P. & S. Co., stationery.....	2 00	
Store room, merchandise.....	21 38	
University Cooperative Co., stationery.....	1 85	
Western Union Telegraph Co., messages.....	1 20	\$329 21
ANIMAL HUSBANDRY BUILDING		
American Express Co., express.....	\$1 50	
American Contractor, advertising.....	12 00	
Administration pay roll, clerks.....	630 30	
Billed & Schneider, hardware.....	3 50	
C. M. & St. P. Ry. Co., freight.....	1,336 84	
Cooley, C. F., coal.....	30 00	
Chronicle Co., advertising.....	3 25	
C. & N. W. Ry. Co., freight.....	494 26	
Democrat Printing Co., printing.....	3 90	
Gross Hardware Co., P., locks, hardware.....	693 40	
Germania-Herold Co., advertising.....	4 13	
Gazette Printing Co., advertising.....	2 90	
Huebsch, B. W., year-books.....	1 00	
Improvement Bulletin, advertising.....	10 80	
Janesville Cement Shingle Co., sand.....	318 74	
King & Walker Co., castings.....	6 87	
Kroncke Brothers, hardware.....	65	
Laird & Cret, design.....	300 00	
McCarthy, T. C., contract.....	50,000 00	
Madison Concrete Mfg. Co., sand.....	102 68	
Mueller Co., The, setting radiators.....	50 00	
Postal Telegraph Co., messages.....	27	
Rundle-Spence Co., pipe.....	26 06	
Sentinel Co., The, advertising.....	10 80	
State Journal Printing Co., printing.....	7 15	
Stephens, David, stone.....	937 50	
Store room, merchandise.....	86 20	
University pay roll, janitor.....	915 21	
United States Express Co., express.....	40	
University Cooperative Co., merchandise.....	1 85	
Universal Portland Cement Co., cement.....	3,256 36	
Western Union Telegraph Co., messages.....	1 20	
Western Builder Publishing Co., advertising.....	1 60	
Waukesha Lime & Stone Co., stone.....	336 28	
Wolff, Kubly & Hirsig, hardware.....	6 15	
Correction memorandum.....	57 40	\$39,651 75
AGRICULTURAL ENGINEERING BUILDING EQUIPMENT		
Crane Co., pipe.....	\$4 88	
Fairbanks, Morse & Co., fittings.....	97 69	
Madison Gas and Electric Co., merchandise.....	4 50	\$107 07
AGRONOMY BUILDING EQUIPMENT		
Madison Gas & Electric Co., mdse.....	\$4 50	
RYAN PRIZE FUND INCOME		
McCaffrey, M. E., secretary, transfer of accounts.....	\$37 50	

NORTH WING		
McCarthy, T. C., balance contract.....	\$300 00	
SCHOOL ECONOMIC LIBRARY FUND		
C. M. & St. P. Ry. Co., freight.....	\$25	
Museum Book Store, periodicals, books.....	76 11	\$76 36
JOHNSON ENDOWMENT FUND INCOME		
McCaffrey, M. E., secretary, transfer of accounts.....	\$39 50	
RENT		
Pickarts, L. J., bursar, bills paid.....	\$7 00	
INTEREST REFUNDED		
Interest refunded.....	\$7 34	
NEW CENTRAL PLANT		
American Express Co., express.....	4 75	
American Radiator Co., enamel.....	1 10	
American Contractor, advertising.....	13 80	
Administration pay roll, clerks.....	192 47	
American Dist. Steam Co., piping.....	233 39	
Builders Iron Foundry, meter, meter tube, etc.....	322 50	
Babcock & Wilcox Co., boilers, fittings, contract, moving boiler	16,489 00	
Bishop, H. A., contract, boilers, brick work.....	4,546 00	
Burger, P., hardware.....	1 50	
C. & N. W. Ry. Co., freight, switching.....	149 30	
Crane Co., pipe, etc.....	1,318 81	
Central Electric Co., sockets.....	9 24	
Custodis Co.-Alphons, chimney.....	19,000 00	
Chapman Co., T. A., linoleum.....	36 75	
Castle & Doyle, lime.....	1 50	
Clow & Sons, J. B., fittings.....	2 82	
C. M. & St. P. Ry. Co., freight.....	255 69	
Conklin & Sons, ice, etc.....	18 63	
Democrat Printing Co., printing.....	2 85	
Deane Steam Pump Co., pump.....	503 50	
Deane Steam Pump Co., mdse.....	14 50	
Electrical Supply Co., mdse.....	19 05	
Frederickson, A. D. & J. V., lumber.....	875 00	
Fairban's, Morse & Co., track scale.....	343 00	
Gross Hardware Co., P., hardware.....	2 91	
Gisholt Machine Co., castings.....	37 50	
Haswell Furniture Co., furniture.....	2,609 00	
Hell Co., The, breeching.....	13 20	
Improvement Bulletin, advertising.....	6 00	
Icke, J. F., surveying.....	73 27	
Jones & Laughlin Co., steel, bolts, etc.....	131 69	
Janesville Cement Shingle Co., sand.....	4 00	
Kateley, Fred, salary.....	3 79	
King & Walker Co., hardware.....	1,621 95	
Keasbey & Mattison Co., covering.....	130 00	
Lau & Co., W. H., lamps.....	20,730 00	
Link-Belt Co., coal elevators.....	742 22	
Manthey-Sieker Co., feed water heaters.....	5 50	
Madison Gas & Electric Co., merchandise, etc.....	25 32	
Madison Concrete Mfg. Co., sand.....	30,750 00	
McCarthy, T. C., contract.....	200 00	
Mueller Co., The, gaskets.....	520 00	
Nelson, G. W., coal pit.....	358 00	
Nickles, R. J., merchandise, wiring.....	8 75	
Owen, R. S., charts.....		

Postal Telegraph Co., messages.....	1 53	
Pittsburg Valve & Foundry Co., pipe, etc.....	1,757 00	
Pieh, J. F., sand.....	27 00	
Reynolds, E. S., drayage.....	85 00	
Store Room, merchandise.....	295 35	
Sumner & Morris, hardware.....	2 15	
Smith, J. M., bills paid.....	6 75	
Sladky, Paul, salary.....	4 90	
Schaeffer & Budenberg Machine Co., gage.....	44 00	
Southern Wisconsin Foundry Co., castings, etc.....	202 00	
State Journal Ptg. Co., printing.....	3 80	
Stephens, David, stone.....	606 58	
University pay roll, janitors.....	2,271 68	
United States Express Co., express.....	2 45	
Universal Portland Cement Co., (credit).....	136 12	
Western Union Telegraph Co., messages.....	3 68	
Wisconsin Telephone Co., messages.....	2 70	
Wiedenbeck, Dobelin & Co., hardware.....	5 78	
Waukesha Lime & Stone Co., stone.....	32 84	
Western Builder Publishing Co., advertising.....	2 90	
Wolf, Kubly & Hirsig, hardware.....	11 60	
Westinghouse Machine Co., stokers, freight.....	5,049 02	
Correction memorandum.....	90	\$112,661 74

TUNNELS

American Dist. Steam Co., contract, piping.....	\$4,025 20	
Administration Pay Roll, clerks.....	44 95	
American Express Co., express.....	30	
American Contractor, advertising.....	21 47	
C. M. & St. P. Ry. Co., freight.....	524 23	
Chronicle Co., The, advertising.....	3 25	
C. & N. W. Ry. Co., freight, switch.....	134 36	
Democrat Printing Co., printing.....	5 20	
Germania-Herold Co., advertising.....	4 12	
Gazette Printing Co., advertising.....	2 90	
Huebsch, B. W., year book.....	1 00	
Improvement Bulletin, advertising.....	10 80	
Janesville Cement Shingle Co., sand.....	67 59	
Keys, Wm., team work.....	54 40	
Mueller Co., The, (Milwaukee) special fittings, contract, bal- ance of contract.....	24,672 00	
Madison Concrete Mfg. Co., sand.....	78 47	
Mitchell, Robert, contract, removing earth, hauling dirt, bal- ance of contract.....	9,150 00	
Stephens, D., stone.....	1,015 94	
Sentinel Co., The, advertising.....	6 90	
State Journal Ptg. Co., printing.....	7 15	
Universal Portland Cement Co., cement.....	1,033 72	
University pay roll, janitor, etc.....	217 20	
Western Builder Pub. Co., advertising.....	1 60	\$41,082 75

FEEES REFUNDED

Acly, C. R.....	\$50 00	
Acret, G. E.....	20 00	
Atkinson, Ruth, V.....	5 20	
Billings, E. S.....	11 00	
Burke, R. J.....	12 00	
Bartholomew, Grace.....	15 60	
Bundy, R. G.....	9 00	
Bechtel, Leslie.....	15 00	
Brooks, A. H.....	7 00	
Bushnell, C. T.....	26 00	
Browne, J. H.....	6 60	
Buchen, W. A.....	9 00	
Benoy, E.....	4 60	
Baleh, J. W.....	20 00	
Brown, Mamie, A.....	10 00	
Boundey, G. L.....	6 00	
Beck, C. A.....	15 00	
Bradbury, W. E.....	7 20	
Beye, H. L.....	20 00	
Bean, E. F.....	15 00	
Berkeley, E. A.....	3 00	

Bullis, C. B.	6 40
Bradley, O. F.	15 00
Buechel, F. A.	15 00
Brophy, N. D.	25 00
Bentson, B.	21 00
Callen, E. W.	6 40
Clancy, L. M.	35 00
Coleman, R. V.	8 80
Cole, R. G.	10 00
Clippinger, A. S.	10 80
Canada, C. K.	14 00
Carville, Hazel, L.	6 00
DeBoos, C. E.	15 00
Davidson, W. W.	15 00
Davis, Elizabeth, M.	8 80
Draves, H. C.	6 00
Dale, D. P.	20 00
De la Fuente, E.	6 00
Dach, C. B.	2 00
Dahl, E. O.	15 00
Davey, C. M.	16 00
Davis, S. H.	20 00
Davidson, T. R.	15 00
Doerschuk, J. J.	15 00
Ekern, Helga, M.	6 00
Fink, Elsie.	4 00
Faber, M. E.	20 00
Fukuta, T.	5 00
Franke, Meta, E.	10 00
Faulkes, W. F.	3 00
Farrar, V.	15 00
Fuller, R.	4 60
French, E. E.	4 80
Frost, R. E.	21 00
Fisher, F. W.	11 00
Finn, U. J.	8 80
Gorst, G. E.	4 00
Gilman, D.	20 00
Garling, Elsie.	6 00
Godfrey, R. W.	6 60
Gosling, A.	20 00
Glynn, E. J.	7 00
Gloyer, W. O.	8 80
Grove, Helen, L.	6 00
Greve, F. W., Jr.	15 00
Groves, A. B.	11 00
Geise, I. A.	16 00
Garling, Else.	10 00
Gray, W. A.	15 00
Gates, G. E.	26 00
Huff, J. S.	20 00
Hall, Lucy.	10 00
Howard, J. G.	20 00
Harvey, C. B.	2 20
Hixon, J. F.	36 00
Horstkotte, E. H.	20 00
Hendricks, F. H.	6 60
Hutchinson, W. D.	4 00
Harms, H. W.	16 00
Howard, J. G.	17 00
Hill, C. L.	10 00
Herrick, Josie.	10 00
Heald, R. P.	35 00
Hickman, Mary, A.	11 00
Hubbell, Affa.	20 00
Hibbard, C. A.	8 80
Irwin, O. L.	20 00
James, A. E.	10 00
Jacobson, C. J.	3 20
Jones, J. D.	7 20
Johnson, C. E.	36 00
Jones, F. R.	16 00
Johnson, Nina.	15 00
Knight, C. C.	3 00
Kauffman, J. L.	15 00
Kersten, L. C. M.	2 00
Kroening, R. H.	16 00
Kiemle, Amelia, K.	15 00
Kiley, E. G.	11 00

Longwell, H. C.	15 00
Lawrence, B. E.	25 00
Link, A. A.	6 60
Langwill, J. S.	20 00
Linley, F. H.	20 00
Lescoheir, D. D.	15 00
Lukken, P. A.	1 00
Leist, R. A.	16 00
Loomer, C. J.	3 00
Levenhagen, H.	16 00
Lunenschloss, E. J.	16 00
Lees, W. E.	16 00
Lawrence, B. E.	27 00
Lowell, J. W.	20 00
Mashek, Anna, M.	10 00
Mustain, L. G.	15 03
Matheson, K. J.	4 00
Mainland, J.	3 20
Meloche, Rhea, B.	15 00
Moy, J. B.	9 60
Meloche, C. C.	15 03
Mayer, S. L.	35 00
McCarthy, Vere, L.	25 00
McGuire, A. R.	12 80
Murphy, J. R.	6 60
Mills, T. E.	11 00
Mackmiller, W. F.	15 00
Mitchell, Dean	1 00
Morris, P. J.	15 00
McGraw, C. J.	20 00
McThee, P. M.	4 30
Minert, A.	4 00
Mengel, F.	6 40
Mitchell, A. R.	20 00
Mears, G. S.	3 20
Nelson, V. E.	4 00
Nichols, C. B.	15 00
Noer, O. J.	10 00
Naffz, Otto	6 60
Newhall, H. W.	16 00
Newcomer, H. S.	16 20
Olds, H. A.	16 00
Ordway, A. B.	20 00
Olson, E. H.	1 00
Pickarts, L. J., bursar	34 00
Patterson, O. C.	36 00
Paige, H. L.	6 00
Pineo, F. K.	20 00
Pohlman, E. J.	6 60
Petrie, W. W.	6 00
Pickford, L. S.	36 00
Pinney, J. C.	20 00
Pratt, H. K.	11 00
Pond, L. L.	6 00
Peltier, G. L.	4 40
Polzin, A. W.	15 00
Ranschenberger, E. J.	6 60
Roloff, W. E., refund	20 00
Robinson, E. E.	2 00
Ray, V.	4 60
Rodabang, J. L.	15 00
Reid, B. S.	20 00
Stiles, F. B.	27 00
Shear, J. J.	7 00
Schwager, L. A.	9 60
Shillander, A.	15 00
Sazama, Jos., E.	8 00
Scherer, A. C.	20 00
Schreiner, A.	15 00
Schaenble, Sophia, M.	15 00
Smith, G. M.	15 00
Stone, J. R.	1 00
Schroeder, Charlotte, A.	8 00
Sorenson, B.	12 80
Sun, Y. L.	36 00
Sikhart, J. G.	10 00
Sharpe, T. T.	33 00
Schmidt, A. C.	8 00
Stone, J. R.	2 30

Schwartz, F. W.	4 60
Stephens, J. C.	20 00
Sullivan, W. K.	16 20
Surrey, Mrs. N. M.	15 00
Tobenkin, Jos.	12 00
Totman, W. M.	6 60
Tearman, C. H.	10 00
Taylor, A. R.	15 00
Tanberg, C. O.	16 00
Tearman, R. A.	10 00
Thompson, W. L.	20 00
Tonsdell, E. B.	20 00
Thompson, D. R.	6 60
Thornton, Marcia	22 50
Thompson, S.	15 00
Tyson, W. J. C.	3 00
Upson, L. D.	15 00
Ubrich, E. C.	12 00
Vitz, F. E.	35 00
Van Auken, K.	7 00
Vasen, G. B.	22 20
Wade, J. C.	1 00
Weber, W. H.	12 00
Ward, O. G.	6 00
Wolfe, A. J.	6 00
Weinhagen, L. F.	9 00
Wohlenberg, Erma, L.	5 00
Warner, S. B.	12 80
Woodruff, Mary, L.	2 00
Williams, M.	20 00
Wright, E. F.	16 00
Wood, A. B.	21 60
Willson, J. A.	25 00
Wahl, H. R.	10 00
Weldner, G. J.	4 40
Young, Katherine.	2 00
Young, J. H.	2 00

\$2,848 50

HEAT AND WATER

American Express Co., express	\$11 05
Appleton Car Mover Co., movers	8 00
American S. G. & Mfg. Co., charts	12 00
Administration pay roll, clerks, etc.	1,437 50
Burger, Peter, hardware	17 74
Bled & Schneider, hardware	1 50
Besly & Co., C. H., rod, etc.	57 24
Crane Co., pipe	100 53
C. M. & St. P. Ry. Co., freight	16 68
Cooley, C. F., coal	106 29
Conklin & Sons, coal	759 43
Channon & Co., H., fittings	9 66
Carpenter & Co., G. B., fittings	88 22
City of Madison, water	21 50
C. & N. W. Ry. Co., freight	27 04
Deane Steam Pump Co., rings, pistons	46 98
Davis Regulator Co., C. M., parts	4 00
Dearborn Drug Co., vegetable compound	33 08
Diederich, M., gasoline	1 75
Dickerman, J. C., analysis	12 00
Danielson, Mueller & Simpson, gloves	1 00
Des Rivieres & Co., G. R., shavings	12 42
Fisher Governor Co., leathers	7 50
Frederickson, A. D. & J. V., lumber	6 54
General Electric Co., coils	2 24
Hafer & Sons Coal Co., H., coal	18,196 07
Hayes, J. D., shoeing	9 10
Haner, F. E., oats	16 47
Hollister Drug Co., drugs, etc.	1 15
Haak, Wm., belting	40
Henion & Hubbell, packing	25 38
Hoffman Mfg. Co., B., merchandise	2 00
Huels, F. W., texting coal	18 00
Hoffman Feed Co., oats	59 02
Illinois Central Ry. Co., freight	22,037 88
Ives, F. W., charts	6 90
Johns-Manville Co., H. W., gaskets, asbestos	12 12

Jones & Laughlin Co., bolts.....	2 37	
Johnson Service Co., diaphragms, thermometers, valves.....	24 80	
King & Walker Co., hardware, castings.....	69 15	
Kateley, Fred, salary.....	50	
Klueter & Co., oil meal.....	1 75	
Knowles Steam Pump Co., pump.....	19 55	
Keyes, Wm., hauling.....	1,163 67	
Ludlow Valve Mfg. Co., cover.....	3 25	
Lorenz, E. H. J., mechanician.....	11 00	
Lagonda Mfg. Co., hose.....	15 00	
Link-Belt Co., castings.....	8 85	
Madison Gas & Electric Co., current.....	732 03	
Milwaukee Leather Belt Co., belting.....	2 45	
Menges Pharmacy, drugs, etc.....	1 25	
Madison Brass Works, castings.....	4 86	
Madison Kipp Lubricator Co., pump.....	6 66	
National Blower Works, valve.....	2 60	
Nickles, R. J., merchandise.....	3 60	
Olson & Veerhusen Co., gloves.....	2 00	
Pickarts, L. J., bursar, bills paid.....	1 55	
Powers Regulator Co., fittings, repairs.....	21 55	
Parsons Printing & Stationery Co., stationery.....	25	
Piper Bros., groceries, jars.....	7 20	
Pittsburg Valve & Foundry Co., valves.....	123 12	
Rundle-Spence Mfg. Co., hardware.....	1 32	
Southern Wisconsin Foundry Co., castings.....	15 34	
Sumner & Morris, hardware.....	2 20	
Smith, J. M., express.....	23 79	
Sykes, Vern, hay.....	10 75	
Sinaiko, Alex., feed, oats.....	39 90	
Standard Oil Co., oil.....	37 93	
Store Room, merchandise.....	142 77	
Tripp Co., A. H., compound.....	2 00	
Thorkelson, H. J., superintendent, salary, express.....	301 43	
University pay roll, janitors, etc.....	12,483 28	
United States Express Co., express.....	7 43	
Valvoline Oil Co., oil.....	126 06	
Van Schaack & Sons, P., vitrol.....	24 75	
Viscosity Oil Co., oil.....	79 04	
Wiedenbeck, Dobelin & Co., hardware.....	14 79	
Western Roofing & Shingle Co.....	27 49	
Westinghouse Machine Co., shaft, jets, parts.....	108 91	
Wisconsin Wagon Co., repairs.....	1 65	
Wisconsin Telephone Co., messages.....	3 00	
Wisconsin Demurrage Bureau, demurrage.....	264 00	
Wolff, Kubly & Hirsig, hardware.....	41 28	
Western Union Telegraph Co., messages.....	1 98	
		\$59,296 73

DISTRIBUTED TO THE SEVERAL DEPARTMENTS AS FOLLOWS:

College of letters and science.....	26,001 12	
College of engineering.....	12,452 21	
Physical training, men.....	7,708 27	
General library.....	5,929 64	
Chadbourne hall.....	4,151 07	
Law school.....	1,778 60	
Administration.....	592 97	
College of agriculture and experiment station.....	592 85	
		\$59,296 73

STORE ROOM

American Express Co., express.....	\$22 81	
American Linseed Oil Co., oil.....	18 16	
Automatic File & Index Co., cards.....	8 80	
Armour Glue Works, glue.....	18 00	
Apter Typewriter Supply Co., carbon paper.....	10 00	
American Steel & Wire Co., netting.....	71 12	
American Lead Pencil Co., pencils.....	48 00	
Andrae & Sons Co., J., wire, merchandise.....	155 59	
A. P. W. Paper Co., paper.....	7 25	
American Crayon Co., crayons.....	65 59	
Baker Paper Co., pens, paper.....	184 39	
Besly & Co., C. H., rod.....	2 45	
Black, H. A., brooms.....	41 75	

Bliss & Laughlin, rod.....	11 55
Brady Co., W. M., soap.....	31 35
Blued & Schneider, hardware.....	175 80
Bauer Co., E. A., paper.....	39 00
Babbitt, B. T., lye.....	51 04
Brown & Sharpe Mfg. Co., instruments.....	1 10
Burdick & Murray Co., merchandise.....	31 50
Bollenbeck, Jos., holders.....	1 50
Burger, P., hardware.....	44 35
Capital City Paper Co., twine, paper.....	362 54
Chicago Envelope Co., paper.....	25 40
Castle & Doyle, cement, lime.....	8 00
College Book Store, merchandise.....	5 06
C. & N. W. Ry. Co., freight.....	122 81
C. M. & St. P. Ry. Co., freight.....	300 39
Chicago Brass Co., rods, brass.....	334 77
Carpenter & Co., G. B., packing.....	213 87
Crane Bros., paper.....	215 04
Cantwell Printing Co., printing.....	102 55
Central Broom Co., brooms.....	35 05
Chatfield & Woods Co., paper.....	22 50
Central Electrical Co., zinc, wire, brushes.....	22 63
Chicago Screw Co., screws.....	8 24
Carson, Pirie, Scott & Co., toweling.....	26 57
Democrat Printing Co., printing.....	140 40
Dietzgen Co., E., pencils, tacks, merchandise.....	56 01
Devoe & Reynolds Co., paints, parts.....	32 70
Dearborn Paper Co., paper.....	12 15
Dixon Crucible Co., J., pencils.....	63 26
Diamond Ink Co., paste.....	6 30
Drovers Journal Pub. Co., paper.....	19 00
Dennison Mfg. Co., tags, labels.....	78 05
Dans Duplicating Co., F. F., paper.....	3 75
Diamond Crystal Salt Co., salt.....	46 00
Electric Appliance Co., merchandise.....	69 22
Eimer & Amend, chemicals.....	5 81
Field & Co., M., towels, sheeting, linoleum, merchandise.....	387 17
Fairchild & Bro., M. H., powder.....	3 00
Fairbanks, Morse & Co., fittings.....	34 00
French Battery Co., cells.....	15 00
Faber, E., pencils.....	27 41
Ferguson Bros., sulphate.....	93 34
Globe-Wernicke Co., cards.....	39 36
Gross Hardware Co., P., hardware.....	60 00
Gould, Wells & Blackburn Co., merchandise, salt.....	182 74
Grimm's Bindery, binding.....	2 50
Ginn & Co., books.....	11 52
Hollister Drug Co., drugs.....	13 04
Harris & Co., S., hardware.....	6 10
Huebsch, B. W., year books.....	2 00
Hibbard, Spencer, Bartlett & Co., nails, hardware.....	12 26
Haak, Mrs. J., mending.....	3 77
Holcomb, Mfg. Co., J. I., merchandise.....	170 11
Hartson, Mrs. Emma, making towels.....	3 20
Hoffman Feed Co., corn.....	1 75
Harloff P. F., lamps.....	7 20
Haswell Furniture Co., furniture.....	204 52
Illinois Central Ry. Co., freight.....	4 11
Imperial Brush Co., brushes, dusters.....	224 19
Illinois Electric Co., merchandise.....	261 89
Jones & Laughlin Co., bolts.....	2 03
Johnson & Johnson, gauge, cotton.....	204 75
Johns-Manville Co., H. W., asbestos paper.....	2 91
Keuffel & Esser Co., erasers, paper, instruments.....	160 30
Keeley, Neckerman & Kessenich Co., cement.....	6 00
Kimberly Clark & Co., paper.....	267 40
Knox & Co., S. H., pails.....	1 00
Kiefer-Haessler Hardware Co., checks.....	28 00
Kornhauser & Co., A., towels.....	3 21
Kroncke Bros., hardware.....	19 81
Library Bureau, cabinet, cards.....	23 05
Moseley, J. E., stationery.....	593 58
Morrison, Plummer & Co., alcohol.....	22 71
Marquette Cement Mfg. Co., cement.....	650 16
Machinists' Supply Co., tools, hardware.....	14 90
Madison Paint & Wall Paper Co., paints, brushes.....	21 80
Menges Pharmacy, drugs.....	10 50
Madison Brass Works, castings.....	8 01
McClurg & Co., A. C., books.....	134 13

Mills Electric Co., lamps.....	40 00
Mandel Bros., towels.....	3 27
Mueller, Richard, apparatus.....	13 19
Marsh & Co., hardware, glasses.....	1 84
MacVeagh & Co. F., soap, matches, sapolio, merchandise.....	180 40
Macey Co., The, folders, cards.....	11 13
Metz, Anton, faucets.....	10 00
Mautz Bros., paints.....	283 78
Mayers, A. A., merchandise.....	38 80
National Distilling Co., alcohol.....	398 23
Neenah Paper Co., paper.....	2 50
Newton, Rotherick Mfg. Co., carbon paper.....	185 00
Niedecken Co., H., pens.....	1 44
Nickles, R. J., dry cells, lamps, merchandise.....	55 37
National Carbon Co., dry cells.....	20 31
Ohashi & Co., H., carbon paper.....	27 02
Onward Mfg. Co., casters, shoes.....	9 40
Paper Mills Co., paper.....	76 80
Prescott Chemical Co., disinfectant.....	7 09
Piper Bros., groceries.....	64 70
Peerless Rubber Mfg. Co., packing.....	56 25
Pick Co., A., glassware.....	1 32
Parsons P. & S. Co., stationery.....	896 76
Pritzlaff Hardware Co., J., hardware.....	115 85
Post Co., F., pencils.....	9 00
Pelonge Scale Co., scale.....	2 00
Pickarts, L. J., bursar, bills paid.....	4 51
Riverside Mills, waste.....	91 20
Robertson Soap Co., B., soap.....	20 75
Reid, Murdoch & Co., canned goods.....	16 76
Rundle-Spence Mfg. Co., cups, hardware.....	19 80
Rice Co., J. H., white lead, refund freight.....	136 50
Rich, F. A., Agt., calipers.....	3 27
Remington Typewriter Co., paper, ribbons, stationery, cou- pons, repairs.....	867 20
Smith & Co., B., paper, envelopes.....	68 58
Smith Premier Typewriter Co., ribbons.....	5 00
State Journal Printing Co., printing.....	8 88
Sewell-Clapp Mfg. Co., envelopes.....	245 29
Sheppard Co., C. E., index, holder.....	10 39
Sargent & Co., E. H., chemicals.....	3 00
Smith & Co., S., pads, envelopes, paper.....	22 50
Sumner & Morris, hardware.....	91 78
Sanford Mfg. Co., ink.....	54 29
Standard Oil Co., oil.....	155 35
Shaw-Walker Co., The, indexes.....	5 07
Standard Paper Co., paper.....	312 60
Tracy, Gibbs & Co., printing.....	130 30
Thayer & Chandler, plastina.....	9 00
Thonet Bros., chairs.....	24 00
University Cooperative Co., stationery.....	90 78
United States Express Co., express.....	12 70
University pay roll, janitors.....	12 50
United States Blue Print Paper Co., paper.....	30 56
Universal Portland Cement Co.....	214 20
Valvoline Oil Co., oil.....	26 00
Whiting Paper Co., paper.....	399 72
Western Electric Co., merchandise, batteries.....	41 73
Weber, Costello Co., crayons.....	27 00
Wolff Mfg. Co., L., boiler.....	23 44
Wolff, Kubly & Hirsig, hardware.....	17 55
Wisconsin Telephone Co., messages.....	3 35
World's Scrapbook Co., indexes.....	5 50
West-Williams Co., note books.....	12 25
Western States Envelope Co., envelopes.....	5 10
Wiedenbeck, Dobelin & Co., hardware.....	10 82
White Paper Co., J., paper.....	55 00
Western Union Telegraph Co., messages.....	1 70
Webster Co., F. S., carbon, copy books.....	68 00
Wells Fargo Express Co., express.....	1 45
Yawman & Erbe Co., paper.....	3 50
Yawkey-Crowley Lumber Co., lumber.....	1 92
Correction Memorandum.....	146 50

\$13,349 74

STORE ROOM, 1908-09		
Credit for supplies furnished various departments and charged as follows:		
General account.....	\$1,742 12	
Agricultural college and experiment station.....	1,672 72	
University extension.....	1,512 40	
Laboratory supplies.....	1,116 14	
College of letters and science.....	648 62	
Administration.....	481 70	
College of engineering.....	366 88	
New central plant.....	295 35	
Chadbourne hall.....	168 52	
Heat and water.....	142 77	
Physical training, men.....	141 43	
Architects' office.....	140 63	
Animal husbandry building.....	86 20	
Law school.....	82 29	
General library.....	54 58	
Woman's building.....	31 15	
Biology building.....	21 88	
Military department.....	17 73	
Washburn observatory.....	17 13	
Physical training, women.....	15 01	
Forestry building.....	11 10	
		\$8,765 35
Total		\$4,584 39

DETAILS OF DISBURSEMENTS FOR FISCAL YEAR
ENDING JUNE 30, 1910

COLLEGE OF LETTERS AND SCIENCE	
Ayer, W. F., scholar, salary.....	\$225 00
Armstrong, V., assistant, salary.....	250 00
Arkin, Aaron, salary.....	700 00
Allen, B. M., assistant professor, salary.....	1,400 00
Allen, Ruth E., assistant, salary.....	500 00
Allen, C. E., professor, salary.....	2,833 33
Augsburger, L. F., assistant, salary.....	500 00
Allen, Florence E., instructor, salary.....	1,200 00
Ashmun, Margaret E., instructor, salary.....	1,200 00
Aaron, A. W., assistant, salary.....	500 00
Allen, Katharine, assistant professor, salary.....	1,500 00
Alvord, Katharine S., assistant, salary.....	400 00
Austin, C. B., assistant, salary.....	500 00
Adams, T. S., professor, salary.....	2,700 00
Aluminum Co. of America, wire.....	1 05
Atkinson, Elizabeth F., instructor, salary.....	150 00
Atkinson, Ruth, salary.....	40 00
American Con. of Pharm. Fac., dues.....	10 00
American Seating Co., chairs.....	242 05
Atlas School Supply Co., globe.....	4 00
Automatic Pencil Sharpener Co., blades.....	2 00
Acorn Brass Mfg. Co., castings, tools.....	7 25
Anglers' Bait & Mfg. Co., rats, turtles.....	13 30
Andrew, A. P., salary.....	100 00
Administration pay roll, clerks.....	7,415 02
Andrews Co., A. H., repair, castings, balls, chairs.....	111 08
American Book Co., books.....	29 96
Allyn & Bacon, books.....	19 05
Andrae & Sons Co., J., apparatus.....	35
Armour & Co., gall.....	4 00
American Express Co., express.....	118 78
American Platinum Works, crucibles.....	43 25
Arlington Co., celluloid.....	2 85
Alexander, J., maps.....	51 30
American Museum of Natural History, slides.....	7 10
Association of American Medical Colleges, dues.....	31 50
Atkinson, Meutzer & Drover, books.....	1 84
Appleton & Co., D., books.....	11 17
Beedle, G. E., commissioner of insurance, insurance.....	2,009 09
Billings-Chapin Co., paint.....	12 00
Bishop & Co., Platinum Works, J., platinum.....	81 25
Barnes, W. F. & John, drill.....	157 00
Blued & Co., F. C., printing.....	7 00
Baird & Fatlock, apparatus.....	65 57
Bright, O. T., slides.....	7 70
Bassett, H. K., lecturer, salary.....	1,716 00
Bailey, W. L., instructor, salary.....	1,360 00
Bell, H. C., instructor, salary.....	1,200 00
Billman, I., salary.....	400 00
Byrne, E. H., assistant, salary.....	400 00
Brandt, J. G., instructor, salary.....	1,325 00
Bruns, F., instructor, salary.....	1,100 00
Beatty, Arthur, assistant professor, salary.....	1,500 00
Berkeley, Frances C., instructor, salary.....	1,300 00
Bleyer, W. G., assistant professor, salary.....	1,800 00
Buchanan, H. E., instructor, salary.....	1,400 00
Burgess, H. T., instructor, salary.....	1,200 00
Barnes, R. A., assistant, salary.....	650 00
Blackwelder, Elliot, associate professor, salary.....	2,000 00
Buchanan, Freda M., salary.....	400 00
Bardeen, C. R., dean, salary.....	3,966 66
Bradley, H. C., assistant professor, salary.....	1,600 00
Bunting, C. H., professor, salary.....	3,500 00
Brown, W. H., instructor, salary.....	1,500 00
Baumbach, F. L., assistant, salary.....	550 00
Bredin, E. A., instructor, salary.....	1,800 00

Bergman, Minnie, salary.....	900 00
Bennett, C. A., salary.....	20 00
Banning, Bernice T., fellow, salary.....	400 00
Bidgood, Lee, fellow, salary.....	400 00
Birge, R. T., scholar, salary.....	225 00
Black, J. D., scholar, salary.....	225 00
Battley, Edna H., technician, salary.....	50 00
Birkhoff, G. D., salary.....	173 33
Birchard, R. R., salary.....	15 00
Birge, E. A., dean, salary, expenses, bills paid.....	4,576 34
Becker & Co., F. E., instrument.....	1 35
Brenckle, J. F., fungi.....	8 00
Bausch & Lomb Optical Co., chemicals.....	459 78
Burdick & Murray Co., curtains.....	5 04
Bishop & Co., Platinum Works, J., wire.....	6 78
Boorman, S., rabbits.....	1 00
Birge, E. A., expenses.....	83 09
Breitkopf & Hartel, books.....	9 57
Betz Co., F. S., apparatus.....	63 45
Brown & Sharpe Co., tools.....	8 48
Bauer & Black, plaster.....	14 40
Brinkhoff, Clara G., memecographing.....	9 88
Bird & Co., J. A. & W., flooring.....	27 40
Becton Dickinson & Co., apparatus.....	17 32
Blied & Schneider, hardware, pans.....	21 14
Buffalo Incubator Co., incubator.....	11 00
Burger, Peter, hardware.....	66 32
Bartholomew, E., book, fungi.....	18 30
Bouchar, J. E., plating.....	3 00
Broek Brothers, cases.....	28 00
Bachman, Freda M., expenses.....	1 74
Clark, B., salary.....	100 00
Currie, J. N., instructor, salary.....	900 00
Chamberlin, R. R., assistant, salary.....	400 00
Chaney, G. A., assistant, salary.....	900 00
Cairns, W. B., assistant professor, salary.....	1,500 00
Cunliffe, J. W., professor, salary, expenses.....	3,076 10
Cerf, Barry, instructor, salary.....	1,200 00
Cattell, J. L., instructor, salary.....	1,100 00
Cool, C. D., instructor, salary.....	1,200 00
Coffin, Victor, assistant professor, salary.....	1,000 00
Commons, J. R., professor, salary.....	3,500 00
Chase, W. J., assistant professor, salary.....	800 00
Carter, Fannie W., salary.....	100 00
Chapman, R. E., scholar, salary.....	225 00
Campbell, R. A., fellow, salary.....	400 00
Case, L. C., instructor, salary.....	1,200 00
Conrad, Elizabeth, scholar, salary.....	225 00
City of Madison, water.....	46 12
Castle & Doyle, lme.....	18 80
Cantwell Printing Co., printing.....	1 75
Cunningham, J. W., lettering.....	6 40
College Book Store, stationery.....	1 75
Cronin, M. R., frogs.....	1 40
Corbin Cabinet Lock Co., locks.....	15 02
Cary, C. P., superintendent, dictionary.....	7 00
Cutler Hammer Mfg. Co., rheostat.....	48 00
Comstock, E. H., slides.....	36 00
Chapman & Co., T. A., linoleum, carpet.....	235 17
Central Electric Co., lamps, wire.....	9 60
C. & N. W. Ry. Co., freight.....	213 62
C., M. & St. P. Ry. Co., freight.....	110 86
Cooley, C. F., wood.....	14 00
Capital City Paper Co., paper.....	3 24
Conklin & Sons, coal, ice.....	47 26
Collins, F. S., fascicle.....	10 00
Cadwell, H. W., pigs.....	6 00
Clow & Sons, J. B., pipe.....	126 07
Chicago Slate Co., slate.....	1 44
Curtiss, F. W., photos.....	12 00
Central Scientific Co., sticks.....	9 18
Caproni & Bro., P. P., statuary.....	241 50
Crumpton, K. R., painting.....	10 00
Chestnut Hill Farm, pigs.....	17 60
Commissioners of Public Printing, paper.....	14 77
Cunliffe, J. W., expenses.....	37 96
Cooley, A. S., slides.....	36 86
Culp, S., violinist.....	25 00
Carson, Pirie, Scott & Co., bedding.....	78 10

Chicago Calcium Light Co., guage, gas.....	9 00
Dake, C. L., student assistant, salary.....	380 00
Dondo, M. M., assistant, salary.....	560 00
Dudgeon, M. S., instructor, salary.....	500 00
Dos, H. O., salary.....	25 00
Dodge, R. E. N., assistant professor, salary, bills paid.....	1,701 61
Dickinson, T. H., associate professor, salary.....	2,300 00
Deihl, J. D., assistant, salary.....	950 00
Lenms, L. L., assistant, salary.....	3,000 00
Davison, L. L., assistant, salary.....	38 50
Denniston, R. H., assistant professor, salary, expenses.....	1,504 54
Du Mez, A. G., assistant, salary.....	600 00
Deming, H. G., assistant, salary.....	600 00
Dike, P. H., assistant, salary.....	600 00
Danm, T. M., assistant, salary.....	400 00
Dresden, A., instructor, salary.....	1,200 00
Dowling, L. W., assistant professor, salary.....	2,266 66
Daly, R. A., lectures.....	150 00
Louge, B. O., expenses.....	1 14
Diemer, M. E., salary, slides.....	89 70
Day Co., J. H., fittings.....	2 50
Duncoif, Fred, salary.....	15 00
Dykema, F. W., salary.....	400 00
Dement, Lucia W., salary.....	300 00
Lenker, C. M., lettering.....	45 01
Diamond State Fibre Co., tubes.....	1 37
Democrat Printing Co., printing.....	681 06
Dennison Mfg. Co., tags, napkins.....	5 75
Dunn, D., book.....	1 75
Doyon & Rayne Lumber Co., lumber.....	120 41
Deyrolle, Les Fils D'Emile, specimen.....	13 86
Ernst, A. B., fellow, salary.....	400 00
Erlanger, Joseph, professor, salary.....	3,500 00
Evans, J. S., salary.....	1,750 00
Ellngson, E. O., assistant, salary.....	600 00
Elliott, G. R., instructor, salary.....	1,000 00
Evans, M. B., associate professor, salary.....	2,000 00
Evans, Silas, assistant professor, salary.....	2,500 00
Ely, R. T., professor, salary.....	4,000 00
Elliott, E. C., director, salary.....	3,966 66
Evans, Alice C., scholar, salary.....	90 00
Edelmann, Dr., apparatus.....	187 71
Electrical Supply Co., merchandise.....	3 60
Elastic Tip Co., crayons.....	2 08
Elsom, J. C., medical examiner, salary.....	300 00
Eberle, H. F., expenses.....	2 00
Elmer & Amend, chemicals.....	290 15
Elnout, E. C., expenses.....	6 00
Erlanger, Joseph, bills paid.....	24 08
Fieid & Co., M., sheets.....	11 70
Foote Mineral Co., specimens.....	2 05
Fuller & Fuller Co., chemicals.....	68 85
Fuller, C. A., instructor, salary.....	1,200 00
Frost, W. D., associate professor, salary.....	2,000 00
Fischer, R., professor, salary.....	2,500 00
Fulcher, G. S., instructor, salary.....	1,000 00
Forsythe, W. E., instructor, salary.....	700 00
Fhnt, Helen, salary.....	25 00
Freeman, J. C., professor, salary.....	3,000 00
Feise, E., instructor, salary.....	1,000 00
Fiske, G. C., associate professor, salary.....	2,000 00
Fish, C. R., professor, salary.....	2,500 00
Flynn, Ray, salary.....	68 66
Foerst, J. P., mechanician, salary, repairs.....	1,206 00
Fossler, L., salary.....	300 00
F. F. F. Laundry, work.....	7 71
Frederic son, A. D. & J. V., lumber.....	622 49
Ft. Wayne Electrical Works, wire, lacquer, motor, brushes.....	225 67
Fauerach Brewing Co., gas dioxide.....	6 00
Felton, A. P., keys.....	1 80
Findorff, J. H., furniture.....	45 00
Federal Steel Fixture Co., lockers.....	40 00
Gilbertson & Anderson, repairs.....	3 00
Gigons, H. S., model.....	40 00
Gaertner & Co., Wm., apparatus.....	13 50
Gram, Edward, piano.....	965 00
Greene, E. M., fellow, salary.....	400 00
Gesell, R. A., salary.....	200 00

Gee, W. P., assistant, salary.....	400 00	
Gloyer, W. O., assistant, salary.....	400 00	
Germann, A. O., assistant, salary.....	500 00	
Gage, O. A., assistant professor, salary.....	1,825 00	
Grimes, N. C., instructor, salary.....	1,160 00	
Gesell, G. A., assistant, salary.....	600 00	
Gardner, E. H., instructor, salary.....	1,000 00	
Goodnight, S. H., assistant professor, salary.....	1,600 00	
Galland, J. S., assistant, salary.....	500 00	
Gay, Lucy M., assistant professor, salary.....	1,750 00	
Giese, W. F., associate professor, salary.....	2,200 00	
Gutsch, M. R., assistant, salary.....	420 40	
Garrett, M. B., assistant, salary.....	326 65	
Gilman, S. W., professor, salary, expenses.....	3,007 80	
Gray, L. C., assistant, salary.....	750 00	
Gilman, S. W., expenses.....	12 34	
Gallagher Co., J., awnings.....	27 00	
Gray Co., H. W., subscription.....	1 00	
Greig, G. T., furniture, desk.....	230 35	
Goodyear Rubber Co., tubing.....	43 62	
Gray Herbarium, cards.....	106 60	
Goth, H. J., rabbits.....	9 00	
George, W. R., lecture.....	25 00	
General Electric Co., wire, merchandise.....	43 58	
Geographical Supply Bureau, slides.....	27 20	
Grimm, Rose, making curtains.....	4 00	
Grimm's Bindery, binding.....	4 95	
Ginn & Co., books.....	36 72	
Hart, W. W., expenses.....	6 30	
Haswell Furniture Co., furniture.....	234 40	
Harvard Apparatus Co., apparatus.....	108 90	
Howe Scale Co., scale.....	6 00	
Haak, William, belting.....	6 20	
Heckler, H., case.....	18 00	
Hilger, A., apparatus.....	227 65	
Holmquist, G., singing.....	60 00	
Haynes, Caroline C., book.....	1 50	
Hyland, W. J., mantles.....	3 00	
Hubbard, W. S., fellow, salary.....	400 00	
H'Doubler, F. T., fellow, salary.....	400 00	
Hastings, H. R., fellow, salary.....	400 00	
Harris, T. L., fellow, salary.....	400 00	
Hall, L. B., instructor, salary.....	2,000 00	
Hammer, W. B., bacteriologist, salary, expenses.....	1,003 60	
Hedge, Mabel L., technician, salary.....	600 00	
Holmes, S. J., assistant professor, salary.....	1,800 00	
Harper, R. A., professor, salary, expenses.....	3,108 50	
Hammond, L. D., assistant, salary.....	500 00	
Hill, C. W., instructor, salary.....	488 89	
Hubbard, F. G., professor, salary.....	3,700 00	
Hellman, E. A., assistant, salary.....	500 00	
Hie s, F. C., instructor, salary.....	1,000 00	
Hausmann, J. F., instructor, salary.....	1,200 00	
Haertel, M. H., instructor, salary.....	1,360 00	
Hohlfeld, A. R., professor, salary.....	3,100 00	
Herrick, L. R., instructor, salary.....	1,473 33	
Hooton, E. A., assistant, salary.....	500 00	
Hayes, J. R., assistant, salary.....	500 00	
Hatch R. T., salary.....	60 00	
Harrison, G. L., salary.....	200 00	
Howe, F. O., lecturer, salary.....	1,000 00	
Hoyt, Mrs. E. E., salary.....	51 00	
Hall, E. A., salary.....	50 00	
Hess, R. H., salary.....	160 00	
Haswell Furniture Co., furniture.....	373 85	
Heat and Water, percentages.....	29,097 51	
Heddle, J. E., flora.....	1 94	
Hollister Drug Co., drugs.....	25 51	
Holt & Co., H., books.....	11 90	
Hynson & Westcott, peroxide.....	6 00	
Houghton, Mifflin Co., books.....	1 98	
Hoffman Feed Co., corn, feed.....	13 60	
Hanson & Westcott, instruments.....	3 50	
Heath & Co., D. C., books.....	47 50	
Hutchins, C. P., microscope.....	30 00	
Harris Co., S., tubing.....	4 96	
Howell, E. E., slides.....	6 25	
Huber & Fuhrman, D. M., drugs.....	21 75	

Iyenaga, Y., salary	50 00
Inglis, D. N., assistant, salary	500 00
Ingersoll, L. R., assistant professor, salary	1,800 00
Illinois Central Ry. Co., freight	5 15
Ives, F. W., charts	66 86
International Instrument Co., apparatus	54 70
Illinois Electric Co., bolts, wire	11 21
Illinois Glass Co., vials, jars	64 54
Juday C. lecturer, salary	500 00
Jastrow, J., professor, salary	2,000 00
Jolivet, H., assistant, salary	440 00
Johnstone, A. H., instructor, salary	1,586 66
Jones, R. W., salary	250 00
Jackson, H. H. T., assistant, salary	200 00
Jaap, Otto, specimens	8 32
Johnson, E. R., salary	500 00
Jung, R., apparatus	101 15
Kewaunee Mfg. Co., apparatus	76 95
Kroncke Hardware Co., H. G., hardware	9 35
Kreul Co., W. C., file, guides	45 00
Klueter & Co., corn	1 35
Keelev Neckerman Kessenich Co., carpet	1 25
Kendall, C. N., lectures	100 00
Kirk, C. T., salary	400 00
Kendell, W. H., salary	2 50
Kremers, E., director, bills paid, salary	2,501 90
Koenig, A. E., salary	500 00
Krauskopf, F. C., instructor, salary	1,000 00
Koelker, W. F., assistant professor, salary	1,500 00
Klein D., instructor, salary	900 00
Kahlenberg, L., director, salary	3,100 00
Keyser, C., assistant, salary	400 00
Kind, J. L., assistant professor, salary, postage	1,724 00
Kelly, F. T., assistant professor, salary	1,500 00
King, W. I., salary	250 00
Kerschensteiner, M. J., assistant, salary	500 00
Krey, A. O., fellow, salary	200 00
Kiekhoefer, W. H., salary	50 00
Kny-Scherer Co., skeletons, balances, chemicals, jars	808 81
Keuffel & Esser Co., paper, apparatus	29 50
Klein Co., F., paints, frames	30 05
Kornhauser & Co., A., merchandise	18 52
King & Walker, steel	1 12
Leeds & Northrup Co., apparatus	217 30
Lehn & Fink, drugs	1 81
Library Bureau, cards	5 00
Lequeux, P., instruments	23 14
Lydow, H., fungi	7 94
Luening, E., acting director, salary	3,000 00
Loevenhart, A. S., professor, salary	3,000 00
Leith, C. K., professor, salary	2,000 00
Lenher, V., professor, salary	2,600 00
Littleton, J. T., Jr., assistant, salary	500 00
Lyman, R. L., assistant, professor, salary	2,250 00
Lomer, G. R., instructor, salary	1,100 00
Leonard, W. E., assistant professor, salary	1,500 00
Lathrop, H. B., associate professor, salary	2,000 00
Lalrd, A. G., associate professor, salary	2,000 00
Lunt, W. E., instructor, salary	1,400 00
Lambeck, A. H., assistant, salary	300 00
Lorenz, E. H. J., salary	284 48
Logan, H. E., student assistant, salary	200 00
La Weslee, A. M., salary	30 00
Lawrence, W. H., slides	3 00
Longmans Green & Co., books	4 38
Leybold's Nachfolger, E., apparatus, pump	188 10
Lapheam, Julia, book	17 00
Lorenz Model Co., model	160 00
Loevenhart, A. S., bills paid	23 01
Leitz, E., microscope, instruments	891 21
Lentz & Sons Co., lenses	14 35
Monarch Typewriter Co., stands	26 08
Morse, H., rabbits	3 50
Moon Desk Co., indexes	1 70
Miller, A. V., assistant professor, bills paid, charts	38 00
McKinley Publishing Co., paper	6 70
Meyer, Edw., lecture	200 00
Milwaukee Paper Box Co., trays	19 00

Midland Publishing Co., advertising.....	12 00
McCauley, G. V., fellow, salary.....	400 00
Meek, W. J., instructor, salary.....	1,200 00
Miller, W. S., associate professor, salary.....	2,300 00
Marshall, W. S., associate professor, salary.....	1,200 00
Melhus, I. E., assistant, salary.....	450 00
McDonald, Van Etta, assistant, salary.....	380 00
McAllister, Fred, assistant, salary.....	470 00
Miller, E. R., forecaster, salary.....	300 00
Mead, W. J., instructor, salary.....	800 00
Martin, L., assistant professor, salary, pamphlets.....	1,602 00
Mann, C. A., assistant, salary.....	400 00
Mathews, J. H., instructor, salary.....	1,360 00
Mendenhall, C. E., professor, salary.....	3,000 00
Mason, Max, associate professor, salary.....	2,500 00
Moulton, E. J., instructor, salary.....	1,000 00
Moots, E. E., assistant, salary.....	900 00
Manchester, F. A., instructor, salary.....	1,000 00
Morgan, B. Q., instructor, salary.....	1,000 00
Michell, R. B., instructor, salary.....	1,360 00
Miller, P. G., assistant, salary.....	500 00
Munro, D. C., professor, salary.....	3,566 66
Meyer, E. C., assistant professor, salary.....	1,800 00
McGill, Caroline E., salary.....	100 00
McGilvary, E. B., professor, salary.....	3,966 66
Marquette, W. G., assistant professor, salary, expenses.....	757 48
Merrill, Harriet B., lectures, salary.....	275 00
March, H. W., salary.....	160 00
Madison Brass Works, castings.....	24 60
Moseley, J. E., stationery.....	5 30
McAllister, F., expenses.....	1 77
Music Leader, subscription.....	2 50
Mantz Bros. paints.....	385 44
McClurg & Co., A. C., books.....	137 05
Menges Pharmacy, drugs.....	26 25
Madison Gas & Electric Co. gas, current, mantles.....	6,736 97
McCaffrey, M. E., secretary, bills paid.....	62 50
Meister, E., instrument.....	3 25
Morris, P. J., music.....	8 00
Merck & Co., chemicals.....	13 06
MacMillan Co., The, books.....	24 56
Maloney, Jas., drayage.....	4 50
Mayers, A. A., paint, drugs, merchandise.....	61 36
Neumann, H., salary.....	125 00
Neostyle Co., express.....	1 30
Nvstrom & Co., A. J., diagrams.....	3 18
Niebuhr, E., repairs.....	2 50
Neumann, J. X., student assistant, salary.....	250 00
Nelson, O. O., instructor, salary.....	1,000 00
Nebel, W., assistant, salary.....	400 00
Neilson, A. S., salary.....	500 00
Neidig, W. J., instructor, salary.....	1,000 00
Northern Electrical Mfg. Co., brushes.....	3 20
Newton & Co., lens, apparatus.....	12 77
Nickles, R. J., lamps, shades, guards.....	150 49
Niemann Table Co., tables.....	65 50
Nielson, E. C., slides.....	12 90
Olive, E. W., expenses.....	2 06
Otis Elevator Co., rod.....	3 75
Open Court Publishing Co., books.....	7 65
Overton, J. B., assistant professor, salary.....	1,500 00
Olson, D., salary.....	70 00
Owen, R. W., salary.....	300 00
Olsen, J. E., professor, salary.....	3,070 00
O'Shea, M. V., professor, advertising, salary.....	2,736 00
Otto, M. C., assistant, salary.....	600 00
Owen, E. T., professor, salary.....	1,300 00
Patton Co., J. E., mirror.....	2 00
Peterson, M. S., salary.....	400 00
Pyre, J. F. A., associate professor, salary.....	2,000 00
Perrow, E. C., instructor, salary.....	1,100 00
Prokosch, E., assistant professor, salary.....	1,600 00
Pritchard, F. J., assistant, salary.....	500 00
Parsons P. & S. Co., stationery.....	121 95
Peck & Hills, furniture, book cases, chairs.....	68 58
Perkinson-Marling Lumber Co., lumber.....	89 50
Pickarts, L. J., bursar, postage, bills paid, cash adv.....	763 08
Piper Bros., groceries.....	1 40
Physicians' Supply Co., instruments, bowl.....	15 98

Parks, Davis & Co., soap, pigs.....	11 25
Perkins, R. W., slides.....	2 25
Postal Telegraph Co., messages.....	5 47
Parcy, P., apparatus.....	13 66
Quelle, J. A., maps.....	10 50
Racuber, E. G., expenses.....	3 50
Rund, Mfg. Co., heater.....	89 11
Rundle-Spence Mfg. Co., pipe, hardware.....	124 70
Rau, Wm. H., slides.....	9 20
Remington Typewriter Co., typewriter.....	65 00
Rand McNally & Co., maps.....	26 05
Ravenel, M. P., expenses.....	56 18
Rigden, Effie J., salary.....	40 00
Ross, E. A., professor, salary.....	3,000 00
Reinsch, P. S., professor, salary.....	4,000 00
Root, W. T., instructor, salary.....	1,586 68
Reed, F. O., assistant professor, salary.....	2,000 00
Roedder, E. C., assistant professor, salary.....	1,800 00
Rieder, R. T., salary.....	265 00
Roe, F. W., assistant professor, salary.....	1,800 00
Roebuck, J. R., instructor, salary.....	1,200 00
Rosenberg, P., assistant, salary.....	400 00
Russell, G. A., assistant, salary.....	500 00
Regan, Alice, instructor, salary.....	1,500 00
Robinson, E. E., fellow, salary.....	400 00
Radke, W. F., scholar, salary.....	225 00
Robinson, W. A., scholar, salary.....	225 00
Rossberg-Leipnitz, J., scholar, salary.....	225 00
Rastall, B. M., associate professor, salary.....	400 00
Reed, G. M., expenses.....	5 79
Reisinger, H., carbons.....	2 48
Reimer, Dietrich, map.....	1 73
Ravenel, M. P., professor, salary, expenses.....	1,619 35
Schuchert, Co., maps.....	10 00
Swain, G. R., slides.....	12 80
Stehr, Wm., meat.....	6 92
Stephens, D., stone.....	38 13
Schilling, M., models.....	150 82
Stafford Mfg. Co., E. H. chairs.....	76 05
Stocker, Stella P., recitals.....	50 00
Scott, W. A., expenses.....	10 00
Sphung, A. A., frogs.....	2 00
Store room, merchandise.....	1,160 52
Sargent & Co., E. H., chemicals.....	272 20
Stechert & Co., G. E., books.....	118 40
Smith & Bros., L. C., typewriter, platen.....	63 00
Southern Wisconsin Foundry Co., castings.....	29 55
Scott, Toresman & Co., books.....	7 12
Sanborn & Co., B. H., books.....	3 28
Spencer Lens Co., microscopes, instruments, stage.....	2,063 05
Seaburg & Johnson, frames.....	3 89
Schmidt & Haensch, F., apparatus.....	257 19
Sumner & Morris, hardware.....	28 32
Sellery, G. C., expenses.....	11 56
Smith, A. T., lecture.....	50 00
State Journal Printing Co., printing, advertising.....	223 18
Spencer, Anna G., salary.....	300 00
Staley, F. H., salary.....	15 00
Schmidt, N., salary.....	300 00
St. Peter, L. U., salary.....	20 00
Steindel Trio, The, concert.....	125 00
Smith & Co., B., envelopes.....	3 00
Sinaiko, Alex., corn.....	1 05
Standard Paint Co., paint.....	30 06
Sasse, C. L., frames, paints.....	29 75
Spindler & Hoyer, apparatus.....	76 39
Schaum Engraving & Printing Co., etchings.....	5 53
Streissguth-Petran Engraving Co., half-tones.....	1 62
Smith, V. D., specimens.....	4 00
Schmitt, Wm., hardware.....	1 80
Smith, W. M., ester roaches.....	16 00
Schaffrath, Wm., assistant, salary.....	250 00
Sharp, F. C., professor, salary.....	3,000 00
Simmers, C. L., assistant, salary.....	600 00
Sears, J. B., instructor, salary.....	1,500 00
Starch, D., instructor, salary.....	1,200 00
Secrist, H., assistant, salary.....	900 00
Scott, W. A., director, salary.....	3,700 00
Scott, R. B., professor, salary.....	2,500 00

Schmitt, B. E., assistant, salary.....	400 00
Sellery, G. C., professor, salary.....	2,833 33
Smith, C. F., professor, salary.....	3,000 00
Slaughter, M. S., professor, salary.....	3,000 00
Showerman, G., professor, salary.....	2,500 00
Smith, H. A., professor, salary.....	3,400 00
Schlatter, E. B., assistant professor, salary.....	1,500 00
Sterling, Susan A., assistant professor, salary.....	1,750 00
Steinfert, Selma, assistant, salary.....	750 00
Street, Ida M., salary.....	450 00
Slichter, C. S., professor, paper, salary.....	3,016 00
Skinner, E. B., assistant professor, salary.....	2,200 00
Simpson, T. M., instructor, salary.....	1,050 00
Snow, B. W., professor, salary, telegram.....	5,304 69
Simpson, O. L., assistant, salary.....	500 00
Sherwood, R. G., assistant, salary.....	400 00
Steve, W. F., instructor, salary.....	900 00
Shaw, L. I., assistant, salary.....	600 00
Simons, J. E., student assistant, salary.....	250 00
Steidtman, Edw., instructor, salary.....	1,000 00
Stout, A. B., instructor, salary.....	950 00
Smith, G. M., assistant, salary.....	400 00
Smith, B. G., instructor, salary.....	1,200 00
Stern, Susanna, salary.....	200 00
Sandberg, I G., pianist, salary.....	1,300 00
Severin, H. H. P., fellow, salary.....	400 00
Shepherd, Queen L., fellow, salary.....	400 00
Santayana, Geo., salary.....	300 00
Teubner, B. G., portrait.....	2 70
Tarr, S. S., slides.....	35 00
Torry Botanical Club, cards.....	10 25
Thomas Co., A. H., chemicals, apparatus.....	2,836 65
Tauchnitz, C. H., apparatus.....	5 83
Tully, E. J., expenses.....	3 40
Training of Teachers pay roll, instruction.....	1,500 00
Tully, E. J., salary.....	525 00
Treleven, J. E., assistant salary.....	140 00
Tucker, R. H., salary.....	250 00
Turner, F. J., professor, salary.....	4,570 00
Terry, E. M., instructor, salary.....	1,200 00
Tarrell, A. L., assistant, salary.....	400 00
Tiefenthaler, L. F., scholar, salary.....	225 00
Taylor, H. C., professor, salary.....	1,700 00
Trask & Royston, plumbing.....	133 00
Thordarson Electrical Mfg. Co., transformers.....	170 00
Thompson & Co., A. T., apparatus.....	289 00
Tracy, S. W., plants.....	85 76
Tracy, Gibbs & Co., printing.....	8 25
Teachers' College, slides.....	13 20
Truax, Greene & Co., apparatus.....	47 06
Underwood Typewriter Co., machine, ink.....	32 80
Ullspergerger, H. W., rabbits.....	15 50
University Cooperative Co., stationery.....	32 37
University pay roll, janitors.....	13,426 00
Van Schaack & Sons, P., chemicals.....	13 35
Ver Halen, E. T., awnings.....	11 50
Van Horn, J. L., rugs, furniture.....	194 05
Voss, E., professor, salary.....	2,700 00
Veerhusen, Elsbeth, instructor, salary.....	1,300 00
Van Vleck, E. B., professor, salary.....	3,500 00
Winslow, C. E. A., lecture.....	25 00
Wiedenbeck, Döbelin & Co., hardware.....	52 69
Wisconsin Music Co., music.....	9 00
Wards Natural Science Establishment, specimens.....	104 75
Western Electrical Co., merchandise, fixtures.....	230 42
Williams Surgical Instrument Co., instruments.....	22 67
Wallace-Barnes Co., springs.....	6 00
Whitall-Tatum Co., apparatus, tools, flasks.....	51 94
Wisconsin Medical Journal, advertising.....	54 21
Weishoff, W. W., rabbits.....	23 70
Warner, W. W., stool, music.....	6 75
Weigel, F. O., apparatus, periodicals, specimens.....	43 65
Western Union Telegraph Co., messages.....	8 09
Wells-Fargo Express Co., express.....	50 45
Wolf, Kubly & Hirsig, hardware.....	444 04
Wisconsin Telephone Co., rentals, messages.....	1 90
Willer Mfg. Co., zinc.....	7 50
Whitehead Co., J. H., rivets.....	1 00

Wright, W. H., expenses.....	15 62	
Wick r, G. R. salary.....	400 00	
Whipple, G. M., salary.....	400 00	
Wright, E. D., salary.....	275 00	
Weber-Costello Co., stationery.....	4 20	
Wehrmann, C., blankets.....	1 50	
Wolf Mfg. Co., L., ferrules, fittings.....	33 27	
Woodward, Cora S., dean, salary.....	2,000 00	
Witte, E. E., scholar, salary.....	225 00	
Wakeman, Nellie A., scholar, salary.....	225 00	
Wallace, B. B., fellow, salary.....	400 00	
Wahl, H. R., assistant, salary.....	400 00	
Wagner, G., assistant professor, salary.....	1,400 00	
Williams, F. E., student assistant, salary.....	430 00	
Winchell, A. N., professor, salary.....	2,350 00	
Whitbeck, R. H., assistant professor, salary.....	2,400 00	
Wilcox, W. G., instructor, salary.....	800 00	
Walton, J. H., Jr., assistant professor, salary.....	2,040 00	
Wolff, H. C., instructor, salary.....	1,400 00	
Wales, Julia G., assistant, salary.....	500 00	
Woolley, E. C., assistant professor, salary.....	1,500 00	
Watt, H. A., instructor, salary.....	1,000 00	
Wolfenson, L. B., instructor, salary.....	1,200 00	
Williams, W. H., professor, salary.....	1,000 00	
West, A. B., assistant, salary.....	400 00	
Westermann, W. L., associate professor, salary.....	2,200 00	
Weber, A. W., assistant, salary.....	1,200 00	
Wright, W. K., instructor, salary.....	1,000 00	
Winship, A. E., salary.....	25 00	
Yawman & Erbe, cabinet, desks.....	30 78	
Yawkey-Crowley Lumber Co., lumber.....	236 95	
Young, K., assistant professor, salary.....	1,800 00	
Young, E. B., assistant, salary.....	500 00	
Zehnter Co., J., muslin.....	1 20	
Zollmann, C. F., salary.....	15 00	
Zeiss, C., apparatus.....	820 80	
Zdanowicz, C. D., instructor, salary.....	1,300 00	
Zobel, O. J., scholar, salary.....	225 00	
Correction memorandum.....	276 78	
		\$469,806 66

COLLEGE OF AGRICULTURE AND EXPERIMENT STATION

Administration pay roll, clerks.....	\$3,710 00	
Agricultural College pay roll.....	52,801 66	
Alexander, A. S., salary.....	2,800 00	
Alexander, A. S., expenses.....	60 27	
Andrae & Sons Co., J., merchandise.....	184 23	
Allen Mfg. Co., W. D., hose.....	9 50	
Alexander, A. S., expenses.....	82 04	
Alexander, M., loom.....	25 00	
American Breeders' Association, book.....	2 00	
Alberene Stone Co., stone.....	87 90	
American Berkshire Association, fee.....	10 50	
American Poland-China Association, registry.....	13 00	
American Board & Box Co., cartons.....	224 12	
American Tamworth Swine Association, registry.....	5 00	
American Duroc-Jersey Swine Breeders' Association, book, registry.....	7 50	
American Guernsey Cattle Club, registry, binding.....	22 00	
American Dist. Steam Co., trap, casing, fittings.....	293 92	
Ayrshire Breeders' Association registry.....	3 10	
Association of American Agriculture Colleges, contribution.....	50 00	
American Agricultural Chemical Co., floats.....	2 00	
Association of American Agricultural Colleges & Experiment Stations, fee.....	30 00	
Advance Thresher Co., links.....	2 60	
Agricultural Institute pay roll, workers.....	330 00	
American Southdown Breeders' Association, registry.....	6 50	
American Cheviot Sheep Society, registry.....	7 00	
Aspinwall Mfg. Co., parts.....	1 84	
Alford Bros., laundry.....	6 97	
American Oxford Down Record Association, fee.....	10 00	
Andrew, J. M., rent.....	12 00	
American Hampshire Sheep Association, record.....	5 00	
American Shropshire Registry Association, transfer.....	9 75	
Andrews & Co., A. H., repair parts.....	21 00	

American Injector Co., lubricator	3 24
American School of H. Ec., book.....	72 00
American Clydesdale Association, transfer	8 00
American Jersey Cattle Club, registry.....	8 00
American Sprayer & S. Co., chain, couplings, sprayer.....	76 70
Andrae & Sons Co., J., condulets.....	29 73
American Express Co., express.....	391 17
Bullard & Gormley Co., apparatus.....	7 65
Biscecker, J. S., pails.....	7 00
Bishop & Co. Platinum Works, J., dishes.....	42 86
Bechtner & Son Co., eggs.....	10 00
Badische Co., chemicals.....	2 75
Belda, W. F., eggs.....	5 00
Bouzelet, J. P., seed.....	15 00
Biesanz Stone Co., limestone.....	4 50
Badger Mfg. Co., harrow.....	12 00
Baker Chemical Co., J. T., chemicals, ammonia.....	11 24
Broekhaus, F. A., books.....	86 09
Broughton, A., lambs.....	80 00
Butter and Cheese pay roll, butter and cheese.....	1,675 10
Babcock, S. M., salary.....	3,000 00
Bresee, Emily M., salary.....	350 00
Bramon, W. A., salary.....	320 00
Benkendorf, G. H., salary.....	1,600 00
Boorman, J. A., repairs.....	3 00
Blied & Co., F. C., printing.....	3 50
Beedle, G. E., insurance commissioner, insurance.....	1,194 59
Bowman, W. H., apparatus.....	55 50
Bollenbeck, J., flasks.....	1 09
Ballard, H. H., klip.....	3 10
Barnum, S. H., stand.....	49 00
Beal, W. J., books.....	1 50
Booth & Co., A., storage, cartage.....	113 80
Burmeister & Wains Express Co., separator.....	16 00
Butcher Fold Crate Co., crates.....	18 77
Barbee Wire & Iron Works, net.....	3 60
Brown, A. D., plants.....	3 50
Bingham, D. E., apparatus.....	3 85
Burdick & Murray, merchandise.....	66 61
Bauks, William, horse.....	5 00
Boston Thermometer Co., lens.....	6 00
Banker, C. I., fencing.....	20 00
Booth Fisheries Co., storage.....	79 09
Bird & Co., J. A. & W., flooring.....	40 95
Bouchard, J. A., plating.....	5 50
Blied & Schneider, hardware.....	43 73
Besley & Co., C. H., tubing.....	5 87
Benkendorf, G. H., expenses.....	164 85
Bean, L. S., potatoes.....	3 78
Baldwin, O. A., plants.....	2 28
Burpee & Co., W. A., seeds.....	7 61
Badger Pharmacy, drugs.....	50 11
Barber Creamery Supply Co., A. H., pulleys, supplies.....	378 16
Burger, P., hardware.....	275 81
Bauseh & Lomb, chemicals, tubes.....	810 32
Burroughs Adding Machine Co., machines.....	500 65
Brown, L. W., expenses.....	17 08
Corn Products Mfg. Co., feed.....	55 70
Cudahy Packing Co., polish.....	12 00
Cutaway Harrow Co., implement.....	30 46
Congleton, W. C., potatoes.....	2 00
Capital City Green House Co., plants.....	3 50
Crawford Co., M., plants.....	5 45
Central Science Co., jars.....	13 50
Commissioners of Public Printing, paper.....	64 23
Chase & Son, oats.....	754 85
College Book Store, stationery.....	14 88
Cooley, C. F., wood, coal, lime.....	4,582 61
Central Electric Co., boxes, merchandise.....	213 59
Cambridge Botanical Supply Co., stationery.....	16 15
Cheisingle, L., hay.....	195 00
Chicago Calcium Light Co., oxygen.....	5 05
Childs, S. D., buttons.....	7 50
Chicago Hardware Co., blanks.....	2 00
Chapin & Co., flakes.....	345 00
Challenge Co., pump head.....	4 00
Cornish, Curtis & Greene, boxes.....	8 40
Chamleg, G. W., Jr., steers.....	191 50

Cole, T. J., lectures.....	100 00
Cranmoor Telephone Co., rent.....	21 25
Clay, Robinson & Co., lambs.....	82 13
Carey, J. E., express.....	9 95
Carpenter & Co., G. B., gaskets.....	7 18
Cuppler Envelope Co., S., envelopes.....	13 22
Chicago Flexible Shaft Co., apparatus.....	10 50
Colonial Salt Co., salt.....	10 00
Cutler-Hammer Mfg. Co., rheostat.....	5 50
City of Madison, water.....	86 53
Cottage Grove Co., supplies.....	12 12
Corbin Cabinet Locker Co., locks.....	63 61
Cabot, S., paper.....	18 00
Childs & Co., S. D., buttons.....	13 00
Clow & Sons, J. B., fittings.....	70 62
Canwell Printing Co., printing.....	42 75
Carter-Crume Co., printing, carbons.....	54 95
Chicago Brass Co., tubing.....	1 42
Chestnut Hill Farm, pigs.....	12 50
C, M. & St. P. Ry. Co., freight.....	968 21
C & N. W. Ry. Co., freight.....	1,380 64
Creamery pay roll, milk.....	82,219 10
Cooper, W. H., salary.....	420 00
Cole, L. J., salary.....	1,100 00
Crooks, Nellie, salary.....	100 00
Cunningham, G. C., salary.....	150 00
Capital City Paper Co., paper.....	48 74
Capitol Fence Co., fence.....	81 00
Carman, C., shoeing.....	77 25
Crane Co., pipe.....	91 53
Creamery Package Mfg. Co., supplies.....	521 28
Centralia Hardware Co., hardware.....	20 22
Castle & Doyle, lime, coal.....	61 15
Conklin & Sons, lime, coal, ice.....	357 55
Cyehers Inc. Co., feed, inc.....	34 48
Coe, Converse & Edwards Co., trees.....	35 80
Cooper, W. H., express.....	74 07
Doran & McDonald, excavating.....	200 00
Dan, C. H., labels.....	7 00
Davies, L. R., salary.....	600 00
Dairy & Short Course Instruction pay roll, instruction.....	6,078 03
Douglas Beet Culture Co., O., color.....	11 00
DeKa b Fence Co., fences.....	33 41
Danner Mfg. Co., J., bookcases.....	29 67
Dairy Department College of Agriculture, cream, milk.....	9 27
Dennison Mfg. Co., lab'ls, seals.....	18 54
Deysarqutt, Huot & Moneuse Co., stoves.....	70 40
Davies, L. E., expenses.....	18 98
Dengler, C. M., lettering.....	39 05
Darch & Hunter, seeds.....	4 71
Deming Co., The, apparatus.....	12 60
Doering & Co., C., retinning.....	33 60
Diamond Crystal Salt Co., salt.....	3 00
Dassow, R. P., cheese.....	3 66
Daniher, D. D., bee hives.....	6 00
Detjen, L. R., express.....	94 68
Duluth Grain Supply Co., wheat.....	21 22
Devoe & Reynolds Co., paints.....	58 90
Douglas County Asylum & Poor Farm, board.....	10 00
Dietzgen Co., E., stationery.....	6 50
Daly, J. E., stationery.....	6 50
Dreer, H. A., plants.....	7 64
Diepold, P. J., repairs, shoeing.....	37 80
DeLaval Separator Co., cleaner.....	12 00
Deane Steam Pump Co., rings.....	5 40
Doyon & Rayne Lumber Co., lumber.....	282 89
Des Rivieres Co., G. R., shavings.....	216 53
Department of Horse Breeding, renewal.....	1 50
Des Moines Incubator Co., incubator.....	13 75
Democrat Printing Co., printing.....	1,822 40
Dopp & Watson, hose, gasoline, shears, paint, hardware.....	20 95
Delwiche, E. J., expenses.....	561 29
Emp're Rubber Mfg. Co., hose.....	17 50
Excelsior Shoe Store, sandals, boots.....	28 80
Electrical Supply Co., mdse.....	16 30
Eldridge, E. E., salary.....	800 00
Evans, Alice C., salary.....	135 00
Elliott Co., The, ink, tape.....	18 20

Eastman, J. S., mantles.....	10 00
Eimer & Amend, oxygen, chemicals.....	1,460 45
Elgin Butter Tub Co., tubs.....	235 00
Elastic Tip Co., tips.....	4 90
Ford & Co., C. W., plants.....	3 00
Field Force Pump Co., machine.....	70 26
Farrington, E. H., expenses.....	156 00
Fuller & Johnson Mfg. Co., parts, plows.....	26 90
Fairchild & Bro. M. H., dairy powder, washing powder.....	54 83
Fuller, J. S., salary.....	1,800 00
Ferrington, E. H., salary.....	3,000 00
Fergusson Bros., chemicals.....	94 28
Fuller & Fuller Co., chemicals.....	12 10
Farm Poultry Publishing Co., periodicals.....	11 20
Fox, E. W., expenses.....	9 75
Fritz, C. B. & A. K., poultry house.....	1,700 00
Field & Co., M., yarn.....	8 40
Fuller, J. G., expenses.....	31 30
Ft. Wayne Electrical Works, brushes.....	2 40
Fox, J. H., horses.....	475 00
Federal Steel Fixture Co., cabinets.....	702 00
Fasbinder, H. R., examination.....	5 00
Fitzgerald, C. G., cheese.....	4 27
Frawley, Pat., cheese.....	2 80
Frankfurth Hardware Co., Wm., hardware.....	2 57
Ford Co., J. B., cleaner.....	9 51
Fox, H. L., expenses.....	4 79
Fritz, C. B. & A. K., contract.....	1,200 00
Foley Mfg. Co., glass, doors, lumber, cable.....	930 65
Faultless Rubber Co., tubing.....	71 40
Findorff, J. H., furniture, equipment.....	5,045 89
Felton, A. P., keys, shells.....	2 40
Farmers' Store Co., harness.....	45 50
Frederickson, A. D. & J. V., lumber.....	2,237 96
Fairbanks, Morse & Co., scales, tank.....	42 63
Good, J., soap.....	6 38
General Chemical Co., vitrol.....	20 70
Gimbel Brothers, merchandise.....	54 67
Gross Hardware Co., P., hardware.....	215 25
General Electric Co., merchandise.....	331 25
Gaumer Co., J. T., canners.....	19 50
Gifford, C. M., slides.....	24 92
Gurley, W. & T. E., transit, instrument.....	89 70
Goulds Mfg. Co., fan.....	1 50
Gender, Paesckke & Frey Co., cans.....	49 51
Grand Rapids Mill Co., sacks.....	5 25
Gaynor Cranberry Co., rent, barrels.....	66 50
Gill & Co., A., use of rollers.....	5 85
Green, H. J., thermometer.....	21 20
Gem Incubator Co., coops.....	493 74
Great Northern Nursery Co., trees.....	10 00
Grimm's Bindery, binding.....	266 45
Gugel, Wm., sawing.....	2 00
Goodyear Rubber Co., tubing, hose.....	39 36
Gallagher Co., J., covers, curtains, awning.....	42 50
Gilbertson & Anderson, clocks, watch.....	2 50
Gamm, W. J., spoons.....	46 00
Greig, G. T., desks, furniture.....	451 50
Grasselli Chemical Co., chemicals, acid.....	122 68
Halpin, J. G., expenses.....	62 76
Hopkins & Co., J. L., formula.....	1 75
Holstein-Freisian Association, registry.....	11 50
Hartmeyer, J., butchering.....	4 00
Harris, R. T., salary.....	250 00
Hatch, K. L., salary.....	2,000 00
Hart, E. B., salary.....	3,000 00
Humphrey, G. C., salary.....	2,400 00
Halpin, J. G., salary.....	1,800 00
Hine, G. S., salary.....	190 00
Hastings, E. G., salary.....	2,000 00
Hope, Leona, salary.....	1,200 00
Heim Co., The, paper.....	18 00
Haeger Estate, D. H., tile.....	64 83
Hanson, C. H., tags.....	5 00
Hine, G. S., expenses.....	195 28
Hartford Steam Boiler Insurance Co., insurance.....	100 00
Horton, G., lambs.....	16 00
Hinrichs Dry Goods Co., muslin.....	3 85

Holzworth, C., blasting	3 00
Harris, R. T., express	20 88
Hartmeyer & Braun	149 29
Hills Co., H. V., safe	40 00
Hayes, J. D., shoeing	38 80
Hart, E. B., expenses	9 30
Haberkorn & Co., C. H., furniture	70 80
Hammersmith Engraving Co., half-tones, etching	30 66
Heil Chemical Co., H., weights	4 14
Holstein-Freisian Register, book, register	5 25
Hammersley, E. C., cow	35 00
Hotchkiss, W. O., expenses	5 87
Howe Scale Co., scale	24 86
Harris & Co., S., tubing	4 46
Hatfield, Mrs. H., board	16 00
Humphrey, G. C., expenses	166 05
Hen-e-ta Bone Co., feed	6 75
Hibbard, Spencer, Bartlett & Co., shears	6 70
Hubbard, T. S., plants	8 19
Hokanson Automobile Co., tank	30 00
Hastings, E. G., expenses	20 75
Hatch, K. L., expenses	1,717 75
Hoffman Feed Co., oats, wheat, straw, meal	3,617 36
Hathaway, W., plants	1 75
Hatch, E. E., buckwheat	3 40
Heath & Milligan Mfg. Co., stain, paint	219 31
Hall & McChesney, trial balance	2 50
Hunebaugh, Caroline L., book	15 00
Haswell Furniture Co., furniture	424 30
Hollister Drug Co., drugs	90 59
Haak, Wm., Jr., repairs, belt, parts, gasket	20 86
Hansen, C. F., expenses, supplies	38 58
Henion & Hubbell, pipe, pulleys	60 12
Heat and Water, percentages	3,870 76
International Instrument Co., tubes, burner	12 50
Imperial Mail Case Co., cases	7 78
International Salt Co., salt	15 70
Iron River Hardware Co., hardware, hose, forks	14 15
International Live Stock Exposition, rents	53 35
Imperial Window Glass Co., glass	643 75
International Harvester Co., repairs, parts, twine, tools, coil, battery	682 60
Irvin, J. A., prints	2 94
Illinois Glass Co., tablets, bottles, caps	21 35
Iron River Lumber Co., wood, lumber	7 35
Ilfiff & Co., J. W., maps	38 40
Illinois Central Ry. Co., freight	40 07
International Nitrogen Co., nitrogen	4 90
Janesville Sand & Gravel Co., sand	79 61
Johnson & Johnson, filters	4 19
Jorgenson & Son, Geo., plants	4 52
Josslyn, G., vines	1 94
Jeliff Mfg. Co., C. O., harrow	16 00
Johnson, O. A., sawing	15 50
Johnson Co., M. M., incubator	14 00
Jones, E. R., expenses	175 25
Jurrjens, J. C., salary	710 00
Jones, E. R., salary	1,600 00
Johnson, J., salary	720 00
Jones, L. R., salary	1,500 00
Jewell Nursery Co., trees	34 84
Jones & Laughlin Steel Co., steel	10 00
Johnson & Hill Co., oil, hardware	45 81
Jonas Bros., thread	2 15
Johnson, J., expenses	104 85
Janney, Semple, Hill & Co., mowers	8 40
Jones, L. R., expenses	93 29
Jorgensen & Son, G., trees	1 25
Jensen Mfg. Co., rings	1 32
Knickerbocker Ice Co., ice	131 70
Kirkman Construction Co., forms	157 00
Koeh, Fred, rent	600 00
Kallin & Sons, M., groceries	25 60
King & Walker Co., weights, straps, iron, steel	82 78
Keys, Wm., hauling	126 75
Kiefer, A. J., table	3 00
Knickerbocker Book Shop, books	26 50
Kleinheinz, F., salary	1,800 00

Klein Bros., shellac	2 80
Kent Mfg. Co., stalls, express.....	121 06
Kimble Glass Co., bottles.....	13 74
Kleinheinz, F. K., expenses.....	68 87
Kellogg Bros. Lumber Co., lumber.....	9 96
Kopplin & Kopplin, lumber.....	11 75
King, C. A., scoops.....	9 00
Kleuter & Co., feed, corn.....	2,106 07
Klein, Fred, repairs, painting, glass.....	197 07
Kaempfer, F., rats	4 50
Kassell, B. C., lithographing, printing, engraving.....	216 15
Kroncke Hardware Co., H. G., hardware.....	132 52
King, F. H., lecture.....	15 00
Keuffel & Esser Co., instrument.....	98 07
Kadonsky, J. F., expenses.....	159 31
Keingle, G., horses	400 00
Kellog Co., R. M., plants.....	7 45
Kulms, J. E., plants.....	2 90
Keeley, Neckerman, Kessenich Co., cloth, sheeting, rugs.....	19 10
Kornhauser & Co., A., merchandise.....	96 99
Kny-Scherer Co., chemicals.....	24 12
Linen Thread Co., looms.....	48 00
Libby & Son, F. M., potatoes.....	1 00
Lowell, F., potatoes.....	2 00
Lachmund, R., seed	14 00
Leamon, S. G., shot.....	1 70
Lang, H. J., Sr., eggs.....	5 00
Lee, C. E., expenses.....	44 77
Larson Bros., lumber.....	8 67
Lorenz Model Co., strainer.....	27 00
Laabs, F. W., expenses.....	7 18
London Machinery Co., machinery.....	281 70
Lorenz, E. H. J., mechanician.....	5 28
Loeser & Co., F., book.....	1 15
Lake, D. S., seedlings.....	51 10
Laabs, A. G., expenses.....	9 35
Lee, C. E., salary.....	2,100 00
Loomis, Alice, salary.....	400 00
Library Bureau, cards.....	35
Lee Co., G., incubator.....	14 00
Lloyd-Jones, O., expenses.....	171 60
Mansure & Co., E. G., warp.....	7 65
May & Co., L. L., plants.....	64 18
McCarthy, T. O., labor.....	229 00
Mackey, W. E., expenses.....	4 08
Moore, J. G., expenses.....	148 73
Mackall Bros., seeds.....	9 00
Madison Investment Co., sand.....	1 50
Miller Lock Co., screws, locks.....	44 10
Marshall's Hatchery, N. W., brooder.....	3 40
McKerrow & Son, G., sheep, rams.....	225 00
Moore, R. S., desk.....	15 00
Morse, H., rabbits.....	5 25
Myers & Bro., F. E., repairs.....	1 38
Madison Saddlery Co., snaps.....	8 25
Mitchell, Wm., tests.....	8 00
Miller, L., boxes.....	2 00
McCray Refrigerator Co., refrigerator.....	32 40
McKerrow, G., expenses.....	157 93
Musbach, F. L., expenses.....	55 45
Matson, A., lettering, signs.....	36 48
Marvin, G. A., seed, rent.....	26 40
McMullen, J. H., lambs.....	25 00
Mansfield, F. C., buttermilk.....	25 00
McIntosh Stereopticon Co., apparatus.....	75 10
Mutcher, L., expenses.....	10 45
Martin, G., hogs.....	114 00
Meekin, H. W., steers.....	195 00
Mell, P. H., bulletins.....	2 30
Marshall Dairy Laboratory, extract, color.....	6 67
Minneapolis Brass & Iron Mfg. Co., sampler.....	10 75
Madison Tent & Awning Co., covers.....	17 60
Milwaukee Leather Belt Co., lacing, belting.....	26 81
Margins, J. C., expenses.....	41 98
MacGill, Caroline E., salary.....	100 00
McCullom, E. V., salary.....	1,800 00
Morris, W. E., salary.....	510 00
Moore, J. G., salary.....	1,700 00

Milward, J. G., salary.....	1,200 00	.....
Moore, R. A., salary.....	3,000 00	.....
Marlatt, Abby L., salary.....	2,000 00	.....
Merch & Co., chemicals.....	69 66	.....
Moore, R. A., expenses.....	172 87	.....
Marlatt, Abby L., expenses.....	62 77	.....
Madison Steam Laundry, work.....	5 44	.....
Madison Brass Works, castings.....	29 71	.....
Meyer, F. M., shoeing.....	90 10	.....
Marty, G., expenses.....	47 20	.....
Morris, W. E., expenses.....	479 59	.....
McCaffrey, M. E., secretary, bills paid.....	26 50	.....
Molde, O. G., expenses.....	612 43	.....
Mortenson & Nelson, potatoes.....	12 00	.....
Millar & Co., G. W., towels.....	1 49	.....
Morrow & Morley, sprayer, fittings, pump.....	30 00	.....
McVeagh & Co., F., rice, starch.....	22 19	.....
Milwaukee Bag Co., bags.....	100 23	.....
Michigan Agricultural College, eggs.....	13 00	.....
Mautz Bros., paints.....	185 85	.....
Moseley, J. E., stationery.....	30 88	.....
Madison Engraving Co., etchings.....	19 39	.....
Mayers, A. A., paris green, cups, merchandise, jars.....	246 64	.....
Machinists' Supply Co., tools, hardware.....	13 40	.....
Milward, J. G., expenses.....	641 49	.....
McClurg & Co., A. C., books.....	246 23	.....
Menges Pharmacy, drugs, supplies, thermometer.....	83 62	.....
Madison Gas & Electric Co., gas, current.....	2,923 87	.....
Mahr & Co., M. J., bags.....	19 25	.....
Nelson, N. M., potatoes.....	1 34	.....
Narragansett Machine Co., lockers.....	848 06	.....
National Chemical Co., flakes.....	27 30	.....
Nitrate Agencies Co., soda.....	40 80	.....
Nielson, E. C., negatives, photo.....	33 50	.....
Nadeau, O. C., prints.....	6 65	.....
Noyes, H. J., expenses.....	3 42	.....
Norgord, C. P., salary.....	1,700 00	.....
Napier, J. M., salary.....	800 00	.....
New York Store, net.....	2 70	.....
National Blower Works, trap.....	14 00	.....
Nickles, R. J., merchandise.....	2 45	.....
Norgord, C. P., expenses.....	405 84	.....
Nelson, G., floor.....	80 00	.....
Niemann Table Co., table.....	31 25	.....
Northreys-King & Co., seeds.....	15 43	.....
Owens, Wm., mantles, contract, supplies.....	549 25	.....
Ocock, C. A., expenses.....	33 41	.....
Oosterhuis, A. C., expenses.....	9 07	.....
Owens Co., J. T., fanning mill.....	25 50	.....
Osmundson, M. J., lambs.....	14 00	.....
O'Neil Oil & Paint Co., soda ash.....	7 98	.....
Orton, C. A., salary.....	300 00	.....
Ocock, C. A., salary.....	1,600 00	.....
Otis, D. H., salary.....	2,700 00	.....
Oosterhuis, A. C., salary.....	400 00	.....
Oppel's Fancy Grocery, boxes, groceries.....	4 80	.....
Owen, R. S., maps.....	15 00	.....
Orr & Lockett Hardware Co., hardware.....	5 73	.....
Olds, Seed Co., L. L., seeds.....	461 64	.....
Otis, D. H., expenses.....	183 40	.....
Padelford, W., paper.....	12 00	.....
Phoenix Nursery Co., trees.....	5 00	.....
Pyre, F., hay.....	242 91	.....
Pettingill, J. A., rent.....	100 75	.....
Postal Telegraph Co., messages.....	1 95	.....
Pantagraph P. & S. Co., register.....	1 00	.....
Parke, Davis & Co., pigs.....	12 00	.....
Peterson Mfg. Co., pulverizer.....	28 20	.....
Pierstorff, Wm., hay.....	59 59	.....
Prairie State Incubator Co., incubator.....	35 25	.....
Percheron Society of America, transfer.....	1 00	.....
Petalung Incubator Co., incubator.....	38 67	.....
Peters, A., rabbits, pigs.....	15 25	.....
Pritzlaff Hardware Co., J., hardware.....	2 91	.....
Pecher, F. J., suits, coats.....	16 20	.....
Patten, F. J., pig.....	15 00	.....
Post Publishing Co., printing.....	326 86	.....
Paterson Parch Paper Co., paper.....	80 00	.....
Page Woven Wire Fence Co., fencing.....	125 19	.....

Padelford, W., paper.....	12 00
Pierstorff, H. H., pigs.....	10 00
Palmer, S. H., apples.....	2 00
Powers, F. Y., installing carrier.....	68 25
Pinkerton, A. J., supplies, rent.....	154 70
Peterson, W. H., salary.....	1,000 00
Peterson, P. P., salary.....	1,400 00
Palmer, E. E., negatives.....	3 00
Postmasters' Supply Co., boxes.....	52 10
Pure Gluten Food Co., flour.....	180 00
Patten & Son, C. S., scions.....	8 00
Peoria Drill & Seeder Co., machine.....	22 00
Plew & Motter Co., index.....	2 75
Pasteur-Vaccine Co., vaccine, drugs, syringe.....	21 00
Peper, J. W., repairs, apparatus.....	20 08
Peninsular Box & Lumber Co., paint.....	6 49
Patteson, W. J., secretary, bulletins.....	1 60
Peterson, P. P., expenses.....	6 98
Pieh, J., sand.....	10 00
Piper Bros., potatoes, merchandise.....	76 59
Piper Bros., groceries.....	40 33
Parkinson-Marling Lumber Co., lumber.....	273 66
Peck & Hills, chairs, tables.....	395 40
Parsons, P. & S. Co., stationery.....	110 85
Pickarts, L. J., bursar, postage, bills paid, cash.....	6,444 04
Quaker Oats Co., avena.....	346 50
Remington Typewriter Co., typewriter.....	85 05
Richards, M. W., expenses.....	261 26
Roesch, L., plants.....	2 91
Racine Hatching Co., incubator.....	12 75
Reliable Incubator & B. Co., incubator.....	14 00
Reid, C. & B. S. Co., A. H., faucet.....	2 22
Rasmussen & Miller, paints.....	10 57
Revolving Dairy Filter Co., strainer.....	3 00
Richland County Horse Co., horses, expenses.....	1,605 50
Ripley Mfg. Co., fly remover.....	2 75
Russell, H. L., salary.....	4,000 00
Rogers, A. J., Jr., salary.....	1,100 00
Ravenel, M. P., salary.....	1,500 00
Richards, M. W., salary.....	409 00
Renk Bros., lambs.....	125 00
Richardson, E., water.....	2 25
Rentschler, G., plants.....	5 00
Ravenel, M. P., expenses.....	25 68
Russell, H. L., expenses.....	518 55
Reed Mfg. Co., cultivator.....	28 00
Ricker, P. L., specimens.....	450 00
Rogers, A. J., Jr., expenses.....	153 45
Rundle-Spence Mfg. Co., hardware, pipe.....	138 79
Stubfors & Co., wagon.....	90 50
Smith Groffer Co., W., stump puller.....	61 15
Stevens-Malony & Co., leaves.....	1 05
Stehr, Wm., lard, meats.....	28 04
Schaum Engraving & Printing Co., engraving, half-tones.....	13 68
Singer Sewing Machine Co., machines.....	44 16
Sylvester, W. W., salary.....	648 00
Steenboch, H., salary.....	900 00
Stoddart, C. W., salary.....	1,200 00
Sievers, F. J., salary.....	1,000 00
Spencer, J., salary.....	900 00
Sanders, J. G., salary.....	1,000 00
Sammis, J. L., salary.....	2,000 00
Stone, A. L., salary.....	1,600 00
Stone, A. L., expenses.....	77 57
Suhs, G. H., drafting.....	50 00
Sengbusch Self-Closing Ink-Stand Co., ink-stands.....	15 30
Smith Bros., Typewriter Co., L. C., typewriters.....	180 00
Shaw-Walker Co., cabinet.....	22 37
Simpson & Stengel, repairs.....	1 50
Steenboch, E., labor.....	25 25
Sinaiko, A., oats.....	299 35
Standard Varnish Co., varnish.....	4 00
Science Press, The, subscription.....	1 05
Spencer, C. A., paris green.....	4 80
Sterling Wheelbarrow Co., barrows.....	17 00
Standard Paint Co., roofing.....	51 19
Sammis, J. L., expenses.....	11 11
Smith, W. H., rent.....	78 00
Stone, R. J., lambs.....	14 25

Stubford, A. A., barrels.....	2 00
Siggelkow & Son, H. C., pigs.....	30 00
State Nursery Inspector, fee.....	10 30
Schubert, J. C., prints.....	9 63
Sylvester, W. W., expenses.....	32 30
Salisbury & Co., W. H., hose.....	27 80
Schoell, G., book.....	2 00
Smalley Mfg. Co., parts, cutter.....	15 28
Spafford, S. A., kerosene.....	5 37
Schaum Engraving & Printing Co., etching.....	11 00
Streissguth-Petran Engraving Co., half-tones.....	3 75
Stannard, C. A., oil.....	5 00
Star Milk Cooler Co., tires.....	2 40
State Journal Printing Co., advertising.....	12 55
Schaeffer & Budenberg Mfg. Co., thermometers.....	1 50
Stern & Son, B., bran.....	890 00
Stahl, G. H., incubator.....	24 00
Smith Premier Typewriter Co., repairs, desk, coupons.....	105 72
Sherwin-Williams Co., lead.....	49 60
Storrs & Harrison Co., vines.....	11 00
Slingeland, Effie E., slides.....	52 50
Shultz, Mrs. L., eggs.....	8 00
Schneekloth, T. A., services.....	8 00
Spears & Sons, E. F., seeds.....	25 30
Scarff, W. N., plants.....	2 70
Sumner & Morris, hardware.....	8 95
Shroeder, S. H., hay.....	181 39
Sinaiko Bros., flues, shafting.....	11 25
Stechert & Co., G. E., books.....	571 35
Sumner & Cramton, drugs.....	24 90
Sanders, J. G.....	119 34
Salzer Seed Co., J. A., seed.....	27 87
Stark Bros., trees.....	9 60
Skidmore, R., labor.....	13 00
Stephens, D., stone.....	719 91
Schneider, J. P., repairs, roofing, hardware.....	166 50
Scheler Bros., meats.....	12 75
Swift & Co., fertilizer, scraps, phosphates.....	463 00
Schroeder Lumber Co., J., lumber.....	432 31
Spencer Lens Co., jars.....	45 81
Spooner Lumber Co., plaster, lumber.....	407 83
Sears, Roebuck & Co., lamp, tools.....	23 92
Scott-Taylor Co., sash.....	3 60
Southern Wisconsin Foundry Co., castings.....	4 91
Sumner & Morris, hardware.....	86 75
Standard Oil Co., oil wax, tank.....	72 19
Sievers, F. J., expenses.....	426 19
Sargent & Co., E. H., chemicals.....	2,404 81
Store Room, merchandise.....	3,322 70
Toepfer, O. F., eggs.....	5 00
Troemner, H., scale.....	6 75
Torsion Balance Co., balance.....	36 00
Tormey, J. A., steers.....	231 87
Tottingham, W. E., salary.....	1,400 00
Truog, E., salary.....	720 00
Tormey, J. L., salary.....	1,000 00
Taylor, H. C., salary.....	1,500 00
Tarbox & McDonell, coal.....	3 63
Truog, E., expenses.....	31 83
Thomson & Co., A. T., boxes.....	7 00
Torsch & Tranz Badge Co., buttons.....	24 00
Taylor, H. C., expenses.....	7 80
Thatcher Mfg. Co., bottles.....	46 13
Tracy, Gibbs & Co., printing.....	113 60
Tottingham, W. E., expenses.....	4 07
Thorburn & Co., J. M., seed.....	73 68
Taylor & Gleason, printing.....	89 25
Toepfer, O., calves.....	80 00
Timm, F., calves.....	153 00
Thomas Moulding Co., brick.....	104 00
Tormey, J. L., expenses.....	66 72
Thomas Co., A. H., balances, apparatus.....	1,187 10
University ray roll, janitors.....	4,799 91
Ullsperger, H. W., expenses.....	139 11
University of Kansas, apparatus.....	15 00
University Cooperative Co., stationery.....	33 60
Van Schaack & Sons, P., chloride.....	10 13
Vincent & Sons Co., R., Jr., plants.....	2 55
Van Hise, C. R., expenses.....	13 05

Valvoline Oil Co., oil.....	7 25	
Vaas-Maw Dry Goods Co., oil cloth.....	2 00	
Van Brunt Mfg. Co., discs.....	69 30	
Vaughan's Seed Store, seeds, tools, trees.....	74 52	
Valentine, J. A., expenses.....	67 32	
Whitson, A. R., expenses.....	140 19	
Walker & Pratt Mfg. Co., cabinet.....	63 46	
Warsaw Incubator Co., incubator.....	12 01	
Wileox, R. B., drawings.....	15 00	
Woll, F. W., salary.....	2,700 00	
Whitson, A. R., salary.....	3,000 00	
Walsten, H. L., salary.....	1,100 00	
Weir, W. W., salary.....	450 00	
Wright, W. H., salary.....	900 00	
White, F., salary.....	400 00	
Warner Bros., films, tripod.....	11 20	
Wagner Glass Works, thermometer.....	9 00	
Wausau Quartz Co., quartz.....	15 00	
West-Williams Co., stationery.....	3 50	
Williams, B. H., photo work.....	3 50	
Wolster, H. L., expenses.....	26 92	
Wisconsin Fruit Packing Co., trees.....	11 36	
Wells-Higman Co., baskets, boxes.....	26 50	
Wilbur Lumber Co., lumber.....	5 57	
Waterstreet, Wm., expenses.....	2 38	
West, J. P., medical services.....	27 00	
Wisconsin Wagon Co., repairs.....	2 75	
Williamson & Co., R., fixtures.....	19 57	
Wisconsin Brick Co., brick.....	2 50	
Wisconsin Butter & Cheese S. Ex., cheese.....	2 50	
Wolf Mfg. Co., L., sink, fittings, boiler.....	19 55	
Western Kieley S. S. Co., valve.....	42 00	
World's Scrap Book Co., books.....	3 70	
Whitcomb & Barrows, books.....	3 50	
Weir, W. W., expenses.....	144 59	
Clark, W. W., expenses.....	6 76	
Whitall-Tatum Co., glassware, chemicals, vials.....	44 02	
Western Union Telegraph Co., messages.....	41 30	
Wolff, Kubly & Hirsig, hardware.....	2,159 88	
Wisconsin Telephone Co., messages, toll, rental.....	86 65	
Wiedenbeck, Döbelin & Co., merchandise.....	446 60	
Wehrmann, C., harness, repairs, blankets.....	203 65	
Woll, F. W., expenses.....	85 83	
Wells Fargo Express Co., express.....	243 38	
Young Bros., Co., machine.....	120 00	
Yawkey-Bissel Lumber Co., shavings.....	67 05	
Young, R., stationery.....	2 10	
Yahr & Lange Drug Co., paris green, sulphate.....	15 65	
Yawkey-Crowley Lumber Co., lumber.....	2,382 10	
Yawman & Erbe Mfg. Co., cabinets.....	97 64	
Zenner Disinfectant Co., zenoleum.....	9 23	
Zerbel, L. R., express.....	12 40	
Correction Memorandum, (credit).....	927 46	
Total.....		\$339,851 24

COLLEGE OF ENGINEERING

Allis-Chalmers Co., generators.....	\$730 00	
Andrae & Sons Co., J., panel, merchandise.....	76 78	
Aluminum Co., aluminum, wire.....	4 86	
American Express Co., express.....	40 18	
Advance Machine Co., pot.....	10 00	
American Gas Furnace Co., furnace.....	256 15	
Adams-Bagnall Electric Co., merchandise.....	1 50	
American Peat Society, machine.....	40 00	
Aston, J., salary.....	1,000 00	
Arnold, L. J., salary.....	15 00	
Administration pay roll, clerks, stenographers.....	2,050 31	
Braun, F. C., salary.....	121 42	
Berry, O. C., salary.....	800 00	
Burritt, C. G., salary.....	836 05	
Black, Wm., salary.....	1,200 00	
Beebe, M. C., salary.....	2,700 00	
Bennett, E., salary.....	2,250 00	
Blake, G. B., salary.....	500 00	
Burgess, C. F., salary.....	2,700 00	
Bates, F. E., salary.....	225 00	

Becker, J. W., salary.....	225 00
Breckenridge, J. M., salary.....	225 00
Bausch & Lomb Optical Co., chemicals.....	237 04
Besly & Co., C. H., tools.....	2 91
Biddle, J. G., rheostat, apparatus.....	90 42
Boehm, W. J., apparatus.....	80 00
Burger, P., hardware.....	27 52
Bliss & Laughlin, shafts.....	2 95
Bruce & Cook, lead.....	15 10
Bouehard, J. E., plating.....	1 50
Bishop & Co. Platinum Works, J., weights.....	42 16
Barnes Co., W. F. & J., drill.....	118 75
Beedle, G. E., Insurance Commissioner, insurance.....	760 20
Bljed & Schneider, hardware.....	2 65
Beebe, M. C., expenses.....	8 20
Burnside, C. H., salary.....	209 00
Boley, A. L., salary.....	8 89
Burnett, E. S., salary.....	35 10
Burrill, C. G., expenses.....	6 52
Brawn Corporation, apparatus.....	76 25
Castle & Dovie, clay, lime.....	80 00
Christie, A. G., expenses.....	80 35
Curtiss, N. P., salary.....	1,206 00
Cutler, J. A., salary.....	800 00
Christie, A. G., salary.....	2,025 00
College Book Store, stationery.....	5 75
City of Madison, water.....	37 08
Cantwell Printing Co., printing.....	140 07
Clow & Sons, J. B., flanges, valves.....	19 30
Crosby Steam Gage & Valve Co., gage, apparatus.....	63 90
Crane Co., pipe.....	105 97
C. & N. W. Ry. Co., freight.....	452 17
C. M. & St. P. Ry. Co., freight.....	158 99
Cole, A. W., salary.....	150 00
Cleveland Stone Co., keystones.....	89 05
Cutler-Hammer Mfg. Co., rheostat.....	61 50
Crowe Name Plate & Etching Co., etchings.....	15 75
Channon Co., H., shafting.....	12 40
Chatillon & Sons, J., balance.....	5 25
Craz & Gerlach, plates.....	26 35
Central Scientific Co., blocks.....	1 15
Central Electric Co., merchandise.....	41 01
Commissioner of Public Printing, paper.....	2 29
Cleveland Ice Machine Co., tanks.....	170 00
Conklin & Sons, ice.....	19 80
Calkins Co., The, crusher.....	20 00
Davis, G. J., Jr., salary.....	1,986 54
Disoue, P. C., salary.....	900 00
Dabney, W. L., salary.....	1,250 00
Dorrans, J. M., salary.....	540 00
Dietzgen Co., E., apparatus, paper, washers.....	50 73
Dengler, C. M., lettering.....	17 45
Denver Fire Clay Co., apparatus, furnaces.....	934 45
Democrat Printing Co., printing.....	299 70
Doyon & Ravne Co., lumber.....	28 13
Dresen & Rhodes, frames.....	4 75
Driver-Harris Wire Co., apparatus.....	26 74
Davis, T. T., boxes.....	12 00
Dennison Mfg. Co., seals.....	2 00
Detroit Conner & Brass Rolling Mills, tubes.....	2 16
Denver Engraving Works, apparatus.....	300 00
Excelsior Supply Co., tubes.....	17 60
Esterline Co., The, rheostat, meters, apparatus.....	235 20
Electrical Supply Co., switches, wire, fans.....	10 45
Eimer & Amend, chemicals, drugs.....	521 45
Electric Storage Battery Co., jars.....	4 61
Electrical Appliance Co., switch.....	3 82
Electric Testing Laboratory, testing.....	16 00
Frederickson, A. D. & J. V., lumber.....	396 57
Ft. Wayne Electric Works, motor, pine.....	200 55
Fairbanks, Morse & Co., scale.....	280 85
Fibre Conduit Co., conduit.....	5 28
Freeman's Sons Stack Mfg. Co., stacks.....	92 00
Fox Machine Co., tools.....	151 15
Foote Pierson & Co., instruments.....	136 00
Goodell Pratt Co., vise.....	1 78
Gilbertson & Anderson, clocks.....	2 50
Gamm, W. J., clock.....	4 50
Gill & Co., A., crating.....	60 00

Goldschmidt Thermit Co., chemicals.....	45 95
Gallagher Machine Co., tank.....	140 00
Garner, H. L., salary.....	800 00
Glaettle, J. Jr., salary.....	522 80
Gabriel, P. J., salary.....	536 25
Greg, G. T., desk.....	148 60
Grimm's Bindery, binding.....	27 00
General Electric Co., apparatus, wattmeters.....	285 15
Hinn, W. H., salary.....	1 20
Higson, C. R., expenses.....	25 91
Hollister Drug Co., drugs.....	1 14
Hubbard's Sons, N., pump.....	277 40
Harris & Co., S., tools.....	1 67
Hanson & Van Winkle Co., rine.....	4 34
Hisey-Wolf Machine Co., drill.....	62 90
Harbison-Walker Refractories Co., photos.....	18 50
Henley N. W. Publishing Co., books.....	22 50
Haswell Furniture Co., furniture.....	91 45
Heat and Water, percentages.....	13,887 46
Holden, E. C., expenses.....	57 23
Havard, F. T., expenses.....	285 45
Hambrecht, A. L., salary.....	15 75
Hovey, S. S., salary.....	500 00
Higson, C. R., salary.....	1,008 10
Holden, E. C., salary.....	3,250 00
Havard, F. T., salary.....	1,800 00
Hoskins Mfg. Co., apparatus.....	27 32
Henion & Hubbell, pulleys.....	5 64
Illinois Electric Co., knobs, wire, merchandise.....	119 14
Illinois Central Ry. Co., freight.....	2 54
Ives, F. W., salary.....	805 00
Jones & Laughlin Co., steel, beams.....	8 41
Janesville Cement Co., sand.....	26 08
Johnson & Johnson, cabinet.....	4 80
Jennings, C. E., bits.....	1 74
Jarvis, R. P., shaft.....	131 50
Johnson, P. H., salary.....	500 00
Johnson, S. E., salary.....	960 00
Kny-Scherer Co., chemicals.....	17 75
Kessenich, J. J., tables.....	44 00
Kirkman Construction Co., forms.....	200 00
Kroncke Hardware Co., H. G., hardware.....	1 40
Klein, F., painting.....	3 50
Kastler, E. L., salary.....	10 43
Kately, F., salary.....	65 00
Kommers, J. B., expenses.....	79 50
Keown, R. M., expenses.....	24 30
Koenig, M. C., salary.....	16 35
Kroeschell Bros., Ice Machine Co., rent.....	100 00
Keuffel & Esser Co., slide rules, scale.....	176 29
King & Walker Co., blocks.....	10 26
Kowalke, O. L., salary.....	1,475 00
Kartak, F. A., salary.....	500 00
Kinzie, E. J., salary.....	1,200 00
Keown, R. M., salary.....	1,500 00
Kinne, W. S., salary.....	1,500 00
Kommers, J. B., salary.....	1,250 00
Lunkenheimer Co., fitting.....	2 15
Locke Insulator Mfg. Co., nozzles.....	2 86
L. & D. Co., shifter.....	5 48
Link Belt Co., wheels.....	5 94
Leybold's Nachfolger, E., apparatus.....	102 80
Lottes, W. G., salary.....	360 00
Lent, R., salary.....	36 60
Leitz, Ernst, microscope, apparatus.....	297 45
Leeds & Northrup Co., galvanometers, key, thermometer.....	613 45
Milwaukee Boiler Co., tanks.....	165 00
Machado & Roller, meter.....	84 00
Mossberg Mench Co., countershaft.....	5 70
Maple City Mfg. Co., oiler.....	1 00
Massilon Steel Co., fittings.....	47 68
Majestic Furnace Co., chutes.....	337 57
McCullough, F. M., expenses.....	25 45
Mack, J. G. D., expenses.....	12 24
Mautz Bros., paints.....	84 95
Mattern, L., salary.....	760 00
Mack, J. G. D., salary.....	3,060 00
Mead, D. W., salary.....	3,000 00
Muehlstein, W. C., salary.....	500 00

Millar, A. V., salary.....	1,725 00
Miller, A. H., salary.....	1,100 00
McCullough, F. M., salary.....	1,400 00
Maurer, E. R., salary.....	3,000 00
Morgan, R. V., salary.....	240 00
Maurer, E. R., expenses.....	32 15
Madison Engraving Co., etchings, half-tones.....	1 36
Milwaukee Leather Belt Co., belting.....	63 97
Machinists' Supply Co., tools.....	97 98
Madison Brass Works, castings.....	18 44
McCarthy, T. C., mason work, extras.....	1,672 51
Madison Gas & Electric Co., gas, current.....	2,236 05
National Tube Co., fittings.....	1 48
Nernst Lamp Co., lamps.....	24 40
Nielson, E. C., slides.....	5 60
Nickles, R. J., lamps.....	15 00
New York Central & Hudson River Ry. Co., drawings.....	25 00
National Carbon Co., batteries.....	29 75
Neostyle Co., apparatus.....	37 05
Of, C., apparatus.....	5 00
Orr & Lockett Hardware Co., keys.....	7 56
Owen, E. S., expenses.....	64 09
Orth, H. D., salary.....	900 00
Owen, E. S., salary.....	1,473 33
Olsen & Co., T., apparatus, sieve.....	88 50
Peper, J. W., steel.....	7 50
Prescott Steam Pipe Co., F. M., pump.....	490 00
Pratt & Whiting, apparatus.....	162 00
Paltz, J., renovating.....	2 00
Postal Telegraph Co., messages.....	25
Phillips, J. D., expenses.....	9 15
Parker, H. A., salary.....	100 00
Price, J. R., expenses.....	65 29
Parkinson-Marling Co., lumber.....	14 49
Parsons Printing Co., stationery.....	23 70
Post, L. M., car fare.....	19 30
Payton, M., salary.....	550 00
Price, J. R., salary.....	1,586 66
Parker, E. E., salary.....	1,050 00
Pence, W. D., salary.....	3,000 00
Phillips, J. D., salary.....	3,060 01
Pickarts, L. J., bursar, postage, bills paid.....	249 10
Parker, E. E., expenses.....	73 15
Post, L. M., salary.....	1,200 00
Queen & Co., apparatus, testing.....	172 20
Remington Typewriter Co., parts.....	1 70
Roots Co., P. H. & F. M., ventilator.....	56 25
Roebblings Sons Co., J. A. rope.....	34 56
Roessler & Hasslacher Chemical Co., zinc dust.....	12 00
Rorty, M. C., expenses.....	34 25
Bundle-Spence Mfg. Co., hardware, fittings.....	23 92
Rowse, W. C., salary.....	400 00
Richards, M. W., salary.....	50 00
Reber, L. A., Jr., salary, research.....	42 00
Sculley Steel & Iron Co., steel.....	9 23
Siefert & Kuhn, instrument.....	26 90
Standard Oil Co., oil.....	6 37
Stearns Rogers, Mfg. Co., blue prints.....	3 20
Scientific Materials Co., apparatus.....	109 25
Smith & Co., H. O., hammer.....	1 22
State Historical Society, maintenance.....	8 40
Schaeffer & Budenberg, counters.....	14 00
Sargent & Co., E. H., chemicals.....	10 00
Southern Wisconsin Power Co., pump.....	300 00
Suhs, G. H., salary.....	13 12
Sanford, H. B., expenses.....	63 45
Sturtevant Mill Co., crusher.....	220 00
Smith, A., salary.....	40 00
Sinaiko Bros., paint, shafting.....	17 80
Sumner & Morris, hardware.....	320 87
Schubert, J. C., slides.....	87 60
Schaperograph Co., schaperograph, paper.....	9 20
Stephens, D., stone.....	181 05
Standard Paint Co., paint.....	21 38
Smith, L. S., salary.....	2,300 00
Shealy, E. M., salary.....	1,360 00
Shuster, J. W., salary.....	1,926 66
Sanford, H. B., salary.....	1,000 00
Store Room, merchandise.....	608 06

Smith, G. E., salary.....	500 00	
Steen, J. C., salary.....	2,040 00	
Sladky, P., salary.....	860 00	
Shaver Granite & Marble Co., J., paints, marble.....	44 00	
Steen, J. C., expenses.....	23 09	
Storey, O. W., salary.....	216 80	
Stewart, C. B., salary.....	225 50	
Southern Wisconsin Foundry Co., castings.....	108 25	
Teckemeyer, J., salary.....	80 20	
Thwing, C. B., apparatus.....	136 00	
Thorkelson, H. J., salary.....	2,300 00	
Thomas, C. C., salary.....	3,500 00	
Turneure, F. E., salary.....	4,000 00	
Turneure, F. E., expenses.....	28 18	
Thomas, C. C., expenses.....	67 80	
Taylor & Gleason, printing, apparatus.....	47 00	
Thomas Co., A. H., balance weight.....	101 60	
Thompson & Son, E. E., boots.....	11 00	
Tracy, Gibbs & Co., printing.....	45 50	
Turneure, Florence, notary fee.....	2 35	
University pay roll, janitors.....	8,544 05	
University Cooperative Co., stationery.....	2 07	
Underwood Typewriter Co., ribbon.....	1 35	
Vetter Mfg. Co., hardware.....	17 28	
Van Deusen & Son, A., furniture.....	20 00	
Vosskuehler, J. H., salary.....	1,600 00	
Wells Fargo Express Co., express.....	41 54	
Western Electric Instrument Co., instruments, ammeter.....	1,070 79	
Wolf, Kubly & Hirsig, hardware.....	183 72	
Western Union Telegram Co., messages.....	7 94	
Wiedenbeck Dobelin & Co., hardware.....	446 38	
Westinghouse Electric & Mfg. Co., instruments.....	411 45	
Wisconsin Telephone Co., messages.....	1 05	
Wilson-Maenlen Co., apparatus.....	15 25	
Watts, O. P., salary.....	1,500 00	
Watson, J. W., salary.....	1,825 00	
Weidner, C. R., salary.....	1,150 00	
Wood, L. H., salary.....	90 00	
Withey, M. O., salary.....	1,730 77	
Wood, B. S., salary.....	366 66	
Workman, D. M., salary.....	33 75	
Wehrmann, C., harness work.....	40	
Western Electric Co., merchandise.....	15 00	
West-Williams Co., cards.....	1 20	
Williams & Co., J. H., vise.....	3 00	
Withey, M. O., expenses.....	48 07	
Wickenden, W. E., salary.....	186 66	
Whipple, A. A., Jr., salary.....	25 00	
Westinghouse Lamp Co., lamps.....	3 84	
Yawkey-Crowley Lumber Co., lumber.....	559 48	
Yale & Towne Mfg. Co., locks.....	40 18	
Zucker & Levett & Loeb Co., apparatus.....	40 49	
Correction Memorandum.....	206 26	
		\$146,710 55

GENERAL ACCOUNT

Angell, G. R., indexes.....	\$3 00	
Abbott & Co., A. H., stationery.....	1 12	
Aitchison, Mrs. Leigh, interest.....	500 00	
Albers, Wm., interest on note.....	275 00	
Armour Glue Works, glue.....	22 32	
Administration pay roll, clerks, Gillett's and McConnell's salaries.....	8,696 80	
Allen, C. E., expenses.....	25 28	
American Express Co., express.....	82 98	
Abbott & Co., A. H., apparatus.....	4 87	
American Steel & Wire Co., gates.....	4 78	
American Contractor, advertising.....	12 00	
Burger, Peter, hardware.....	45 40	
Bleyer, W. G., alumni expenses, editor bulletins, salary.....	300 00	
Blicd & Schneider, hardware.....	7 75	
Basset, D. R., expenses.....	70 01	
Bausch & Lomb Optical Co., chemicals.....	12 44	
Burdick & Murray Co., bunting, merchandise.....	21 77	
Besly & Co., C. H., tools.....	5 03	
Burke & James, plates, apparatus.....	6 14	
Barbee Wire & Iron Co., hitching posts, net.....	15 38	

Brocon, S. W., interest.....	100 00
Bried & Co., F. C., printing.....	4 50
Bach, Hugo, services of orchestra.....	465 00
Belden Mfg. Co., wire.....	5 47
Brunswick-Balke Collender Co., furnishings.....	35 00
Bedier, Jos., lecture.....	60 00
Brooks, A. M., lectures.....	200 00
Brown, S. W., interest.....	200 00
Brietenbach, J. M., interest.....	125 00
Bouchard, J. E., plating.....	6 50
Bra�ce, Emma, investigation.....	100 00
Badger Board, badgers.....	408 00
Cunliffe, J. W., expenses.....	23 75
C. & N. W. Ry. Co., freight.....	36 21
Coddington, C. S., photos, prints.....	2 50
Comstock, G. C., salary.....	600 00
Chase, W. J., salary, expenses.....	503 15
Castle & Doyle, lime.....	3 00
Conklin & Sons, ice.....	293 70
Commissioner of Public Printing, paper.....	150 84
C. M. & St. P. Ry. Co., freight.....	22 15
College Book Store, stationery.....	1 50
Crane Co., pipe.....	17 80
Cooley, C. F., lime.....	15 63
Cantwell Printing Co., printing.....	82 75
Cleveland Twist Drill Co., drills.....	3 48
Central Wisconsin Trust Co., interest (Aitchison).....	166 67
Cook, Jacob, interest.....	62 57
Chain Belt Co., mixer.....	800 00
Chicago Hardware Co., key blanks.....	2 41
Carborundum Co., oil stones.....	1 31
Chapman Co., T. A., linoleum.....	19 80
Capital City Green House Co., plants.....	18 50
Clow & Sons, J. B., hardware.....	31 50
Capital City Green House Co., palms.....	26 25
Democrat Printing Co., printing.....	1,435 57
Dowling, L. W., expenses.....	54 03
Dille & McQuire Mfg. Co., mower.....	18 00
Daily Cardinal, subscriptions.....	225 00
Dahl, A. H., Treasurer, interest.....	253 31
Dietzgen Co., E., tables.....	1 40
Dresen & Rhodes, painting.....	127 00
Dennison Mfg. Co., seals.....	3 70
Doyon & Rayne Lumber Co., lumber.....	39 43
Dane County Title Co., posting abstract, recording.....	62 80
Dengler, C. M., lettering.....	9 00
Diebold, P. J., blacksmithing, repairs, tools.....	48 90
Electrical Supply Co., merchandise.....	24 20
Elliott, E. C., expenses.....	12 36
Evans, M. B., expenses.....	41 24
Ellwood Ivins Tube Works, tubes.....	6 69
Esser, Mrs. F., pennants.....	7 75
Felton, A. P., keys.....	2 75
Frederickson, A. D. & J. V., lumber.....	150 00
Ft. Wayne Electric Co., motors, apparatus.....	43 22
Field & Co., M., flags, use of flags.....	37 50
French Battery & Carbon Co., cells.....	24 80
F. F. F. Steam Laundry, laundry.....	79 53
Friedlander Max, lectures.....	250 00
Fairchild, Mrs. Frances B., interest.....	22 50
Fuller, M. E., interest.....	55 42
Fiske, G. C., expenses.....	9 15
Fuller & Johnson, plow.....	50 00
Gilbertson & Anderson, repairing clock.....	10 00
Greig, G. T., furniture.....	54 00
Gallsger Co., J., awnings.....	6 90
Goodnight, S. H., expenses.....	9 73
Gross Hardware Co., P., hardware.....	1 27
General Electric Co., plugs.....	4 00
Goodyear Rubber Co., hose.....	13 30
Haswell Furniture Co., furniture.....	91 60
Hoffman Feed Co., oats, middlings, hay.....	176 24
Hardy & Co., F. A., cards.....	4 53
Herfurth & Son, T., premiums.....	18 49
Hollister Drug Co., drugs.....	30
Henion & Hubbel, dies.....	1 08
Harper, R. A., expenses.....	15 63
Harris & Co., S., bits.....	4 68
Improvement Bulletin, advertising.....	7 60

Illinois Electric Renovator Sales Co., renovator.....	238 50
Inland Type Foundry, type.....	2 03
Isom, Thomas, interest.....	750 00
Johnson & Johnson, plaster.....	3 72
Jefferson Transfer Co., carriage.....	2 25
Janney, Semple, Hill & Co., mowers.....	16 80
Kny-Scherer Co., chemicals.....	10 20
Kahlenberg, L., expenses.....	8 93
Klein, Fred, glass.....	1 30
Klueter & Co., oats.....	13 50
King & Walker Co., castings.....	21 00
Keeley, Neekerman & Kessenich Co., ribbon.....	2 50
Knox & Co., S. H., fans.....	5 00
Kornhauser & Co., A., merchandise.....	3 42
Kassel, B. C., engraving diplomas, printing.....	243 05
King, F. H., interest.....	400 00
Kimberly Clark Co., paper.....	282 58
Kroncke Hardware Co., H. G., hardware.....	22 24
Lamb, C. F., agent, premium.....	5 00
Library Bureau, cabinet.....	19 00
Lumiere North America Co., apparatus.....	6 60
Lyman, R. T., expenses.....	8 85
Laaw Stables, livery, carriage.....	13 00
McClurg & Co., books.....	40
Milwaukee Free Press, advertising.....	2 85
Madison, city of, care of lot.....	10 00
Martendale Merc. Agency, directory.....	10 50
Mott, J. R., lecture.....	100 00
Milwaukee Leather Belt Co., belting.....	12 10
McDowell, W. F., lecture.....	100 00
McCaffrey, M. E., secretary, bills paid.....	68 89
Madison Gas & Electric Co., gas, current, poles, connections.....	282 97
Moseley, J. E., stationery.....	224 97
Mautz Bros., paints.....	48 48
Madison Saddlery Co., breast collar, repairs.....	8 35
Mutchler, I., car fare.....	17 00
Milwaukee Photo Materials Co., supplies.....	81 62
McConnel, A. W., car fare, expenses.....	11 72
Machinists' Supply Co., hardware, tools.....	20 58
Meyer, F. M., horseshoeing.....	52 95
North Central Association of Colleges, fee.....	10 00
National Association of State Universities, fee.....	10 00
Niebuhr, E. J., repairs.....	2 00
Nadeau, N. N., prints.....	1 00
Nicodemus, R. C., premium.....	5 00
Nolen, John, services.....	100 00
National Carbon Co., carbon, batteries, meter, cells.....	95 70
Olson, Berger, repairs.....	7 00
O'Shea, M. V., expenses.....	15 05
Olds Seed Co., L. F., seeds.....	15 30
Orr & Lockett Hardware Co., key blanks.....	32 26
Patton Co., J. E., ladder.....	2 75
Prothers, S. W., lectures.....	200 00
Post & Sons, G. B., services.....	100 00
Post Publishing Co., printing.....	654 95
Parsons P. & S. Co., printing, stationery.....	157 85
Phillips, J. D., expenses.....	26 28
Pickarts, L. J., bursar, postage, bills paid, cash.....	1,029 97
Quan-Scherer Band, services.....	72 00
Roe, F. W., expenses.....	3 50
Rice, C. J. H., glass.....	40 34
Rouzer, P. C., posting.....	5 75
Reimers, Henry, soda.....	1 00
Remington Typewriter Co., typewriter.....	15 00
Rundle-Spence Mfg. Co., hardware, fittings.....	35 29
Sentinel Co., The, advertising.....	6 60
Superior Rubber Tube Co., stars.....	2 44
Sharp, F. C., expenses.....	1 12
Schoelkopf, T. F., horses.....	460 00
Spencer, Anna Garlin, honorarium.....	100 00
Semonds Mfg. Co., knives.....	4 80
Stevens, Amelia F., interest.....	55 42
Strong, Frank, lecture.....	100 00
Simonds Mfg. Co., saws.....	9 34
Sharp, F. C., bills paid.....	11 26
Students' Rooming & Boarding Houses Directory, directories.....	25 00
Smith & Co., B., paper.....	2 50
Salisbury & Co., W. H., hose.....	30 60
Schadauer & Co., J. F., glassware.....	1 15

Sandsten, E. P., interest	150 00	
Store room, merchandise	836 20	
State Journal Printing Co., printing.....	262 46	
Schaum Engraving & Printing Co., printing, etchings, plates.	207 48	
Streissguth-Petran Engraving Co., half-tones, fac-similes.	25 52	
Student Farmer, subscriptions.....	162 50	
Smith, H. A., expenses.....	42 25	
Stephens, D., stone, option.....	89 68	
Sphinx, The, advertising.....	75 00	
Skinner, E. B., expenses.....	71 23	
Sumner & Cramton, drugs, apparatus.....	423 58	
Sumner & Morris, hardware.....	23 60	
Tension Envelope Co., envelopes.....	26 38	
Thompson & Son, E. E., boots.....	6 09	
Thomas, Carl, pictures.....	2 25	
Tressler, A. W., expenses.....	293 55	
Tracy, Gibbs & Co., printing.....	8 75	
Underwood Typewriter Co., typewriter.....	20 00	
University Club, room.....	1 20	
U. S. Electric Tool Co., drill.....	54 00	
University Cooperative Co., stationery.....	3 20	
University pay roll, janitors.....	8,245 68	
Vaughan's Seed Store, seed, plants.....	8 30	
Van Hise, C. R., maintenance of house.....	500 00	
West Bank Note & Engrassing Co., diplomas.....	1,100 00	
Wayman, Victor, plants.....	5 00	
Wolf Mfg. Co., T, pipe.....	8 70	
Whitman, A. R., interest.....	87 50	
Welmann, A. A., replica of Lincoln.....	6,400 00	
Wisconsin Wagon Co., repairs, sleigh.....	73 50	
Wisconsin Engineer, subscriptions.....	150 00	
Western Electric Co., tape, merchandise.....	66 83	
Wisconsin Telephone Co., messages, rentals, operator.....	2,887 59	
Wiedenbeck-Dobelin Co., hardware.....	17 49	
Wisconsin Magazine, advertising, subscriptions.....	325 00	
Whitbeck, R. H., expenses.....	46 98	
Wisconsin Alumni Magazine, advertising, subscriptions.....	487 50	
Western Union Telegraph Co., messages.....	2 70	
Wolf, Kubly & Hirsig, hardware.....	97 50	
Wehrmann, Chas., harness work, blankets, repairs.....	64 80	
Wells Fargo Express Co., express.....	50 94	
Young, Karl, expenses.....	12 62	
Yahr & Lange Drug Co., drugs.....	4 90	
Yawman & Erbe Mfg. Co., cabinet.....	23 50	
Yawkey-Crowley Lumber Co., lumber.....	404 99	
Correction memorandum (credit).....	1,305 68	
		\$47,958 81

ADMINISTRATION

Association of American Universities, assessment.....	\$40 00	
American Journal of Education, advertising.....	10 00	
Administration pay roll, clerks.....	24,923 95	
Ayer & Son, N. W., advertising.....	416 90	
Alford Bros., laundry.....	51 42	
American Express Co., express.....	11 31	
Brigham, C. I., expenses.....	8 08	
Burger, Peter, hardware.....	1 45	
Bardeen, C. W., advertising.....	15 00	
Burdick & Murray Co., merchandise.....	66	
Blied & Co., F. C., printing.....	24 25	
Brown, W. E., expenses.....	41 82	
Buckstaff, Florence G., expenses.....	97 40	
Brinkhoff, Clara G., stenographic work.....	15 00	
Correction memorandum.....	96 25	
C. M. & St. P. Ry. Co., freight.....	25	
Catholic School Journal Co., advertising.....	26 00	
Colorado School Journal, advertising.....	15 00	
Cantwell Printing Co., printing.....	15 00	
Cantwell Printing Co., printing.....	54 00	
City of Madison, water.....	35 24	
Carter-Crume Co., carbons.....	1 38	
Clausen, F. H., expenses.....	37 31	
Carpenter, Imogene H., expenses.....	7 75	
Commissioner of Public Printing, paper.....	35 83	
Dunbar, Nell O., expenses.....	19 83	
Drovers Journal Publishing Co., printing.....	45 35	
Democrat Printing Co., printing.....	869 06	

Dean, Aletta F., salary.....	150 00
Evans, Magdalin, registration work.....	20 69
Ely, R. T., expenses.....	25 00
Field & Co., M., blankets.....	23 70
Fewson, Edna, expenses.....	43 28
Goll & Frank Co., towels.....	70 50
Globe-Wernicke Co., cards.....	4 83
Gillan & Co., S. Y., advertising.....	10 00
Grimm's Book Bindery, binding.....	107 75
Hoard, W. D., expenses.....	129 18
Haswell Furniture Co., furniture.....	4 60
Haverson, G. B., expenses.....	21 10
Heat & Water, percentages.....	438 94
Heat & Water, percentages.....	232 38
Jones, T. J., expenses.....	24 66
Jones, E. L., expenses.....	68 34
Kiggins & Tooker Co., book.....	1 33
Kentzler Brothers, livery.....	8 00
Keller, G., expenses.....	34 22
Library Bureau, cards.....	158 62
Laaw Livery Stables, livery.....	4 00
McClurg & Co., A. C., books.....	16 02
Manual Arts Press, advertising.....	16 00
Missouri School Journal, advertising.....	12 15
Madison Gas & Electric Co., gas, current.....	168 39
Michigan Alumnus, advertising.....	12 00
McConnell, J. E., expenses.....	20 69
McCaffrey, M. E., bills paid.....	44 95
Nicodemus, R. C., premium.....	125 00
Noreross, Pliny, expenses.....	130 25
Nelson, A. P., expenses.....	160 70
Postal Telegraph Co., messages.....	2 35
Parsons P. & S. Co., printing.....	224 25
Piekarts, L. J., bursar, postage.....	1,666 88
Quan-Scherer Band, music.....	23 50
Rand McNally & Co., maps.....	1 00
Roump, Alma B., rent.....	4 00
Rogers, C. B., expenses.....	19 85
Remington Typewriter Co., platin.....	53 17
Ryan, T. H., expenses.....	58 55
State Journal Printing Co., printing.....	5 58
School Education, advertising.....	15 00
Science Press, advertising.....	6 00
Smith Premier Typewriter Co., parts.....	82 75
Schwaab Stamp & L. Co., ribbons.....	1 02
School Century, advertising.....	17 25
Smart, Rose, C., expenses.....	51 87
Sellery, G. C., contingent.....	28 85
Sellery, G. C., salary.....	500 00
State Journal Printing Co., subscription.....	5 00
Superior Rubber Tyne Co., seals.....	2 00
Saltzstein & Bro., C., carbons.....	24 75
Streissguth-Petran Engraving Co., half-tones.....	23 52
Schranck, H. C., expenses.....	35 84
Sumner & Cramton wax.....	1 00
Stechert & Co., G. E., books.....	1 60
Stevens, E. R., expenses.....	14 80
Store Room, merchandise.....	644 60
Tracy, Gibbs & Co., printing.....	59 75
Thuringer, H., ribbon.....	19 25
Thompson, Beulah A., registration work.....	13 00
Trottman, J. F., expenses.....	101 74
Thwaites, F. C., expenses.....	149 45
University day roll, janitors.....	684 75
Underwood Typewriter Co., ribbons, ink.....	73 50
University Cooperative Co., stationery.....	27 84
Van Hise, C. R., salary.....	6,500 00
Van Hise, C. R., bills paid, expenses.....	1,221 42
Wisconsin Telephone Co., messages.....	51 00
Wisconsin Telephone Co., (Milwaukee) messages.....	1 00
Wells Fargo Express Co., express.....	7 09
Wray, J. G., expenses.....	36 90
Whitbeck, A. H., expenses.....	6 80
Williams, F. E., expenses.....	10 70
Western Union Telegraph Co., messages.....	6 19
Western Union Telegraph Co., messages.....	7 66
Yawman & Erbe Mfg. Co., guides.....	4 32
Correction memorandum, stencils (credit).....	17 50

\$41,678 18

FOREST PRODUCTS LABORATORY		
Heat & Water, percentage.....	\$975 80	
Madison Gas & Electric Co., gas.....	22 91	\$998 71
GENERAL LIBRARY		
Administration pay roll, clerks.....	\$903 25	
American Express Co., express.....	30 84	
American Chemical Society, periodical.....	1 02	
American Society of Civil Engineering, books.....	22 50	
American Institute of Mining Engineering, book.....	10 25	
American Political Science Association, dues.....	3 00	
American Society for Test. Mat., book.....	8 00	
American Society for Psyclcal Research, dues.....	10 00	
American Photo Textbook Co., books.....	27 00	
American Math. Society, bulletin.....	5 00	
American Institute of Electrical Engineering, books.....	17 25	
American Economic Association, bulletins.....	1 60	
American Ceramic Society, books.....	3 20	
Actuarial Society of America, subscription.....	3 75	
Anderson Publishing Co., J. books.....	5 25	
American Society of Municipal I., books.....	11 75	
Arnes, Ethel, book.....	5 00	
American Educational Co., book.....	3 50	
American Society of H. & V. Engineering, books.....	70 00	
Andel & Co., T., dictionary, book.....	5 60	
American Association of Labor Legislation, periodical.....	5 00	
Burke, L. C., salary.....	1,291 63	
Bissel, Cora E., salary.....	550 00	
Business Book Bureau, book.....	4 50	
Birge, E. A., periodicals.....	500 00	
Brass World Pub. Co., periodicals.....	2 00	
Benziger Bros., books.....	12 40	
Brunder G., books.....	1 80	
Boston Book Co., books.....	5 90	
Brockhaus, F. A., books.....	266 50	
Coddington H., salary.....	1,500 00	
C. & N. W. Ry. Co., freight.....	199 38	
C. M. & St. P. Ry. Co., freight.....	143 75	
Columbia Planograph Co., books.....	10 00	
Charitus Pub. Co., books.....	5 00	
Commercial West Co., periodicals.....	25 00	
College Book Store, books.....	5 00	
Curlander, M., book.....	4 17	
Davidson, Flora N., salary.....	715 00	
Democrat Printing Co., printing.....	8 18	
Dudlev, W. H., salary.....	1,700 00	
Drovers Journal Co., reading room slips.....	37 50	
Dodd Mead & Co., year-book.....	6 00	
De Bower-Elliott Co., book.....	2 00	
Dowling, J. W., book.....	3 85	
Dovon & Rayne, lumber.....	18 14	
Dunod & Pinat, books.....	2 00	
Engineering Magazine, indexes.....	2 00	
Frederickson, A. D. & J. V., lumber.....	300 67	
Freeman & Co., S. T., catalogs.....	5 25	
Fock, G., books.....	563 31	
Grover, Arlene, salary.....	991 63	
Grimm's Bindery, binding.....	1 90 75	
Government Accountant, books, subscription.....	4 80	
Ginn & Co., books.....	20 00	
Gyldenal Pub. House, books.....	132 19	
Grant, A. H., books.....	31 50	
Gonden, H. J., subscription.....	2 00	
Geological Society of America, bulletins.....	16 75	
Harris, G. D., books.....	22 10	
Harrassowitz, O., book.....	9 76	
Heat & Water percentages.....	6,613 05	
Hodgson, F., books.....	3 50	
Heise, John, book.....	3 50	
Hulbert, H. B., books.....	22 00	
Hough, R. B., books.....	42 50	
Himebaugh, Caroline T., periodicals.....	134 12	
Harden News Co., subscription.....	6 60	
Industrial Press, books.....	1 50	

International Tax Association, books.....	6 00	
Knudson, Agnes, C., salary.....	545 00	
Keramic Studio Pub. Co., books.....	20 00	
Kerr & Co., C. H., books.....	6 00	
Kroch & Co., A., book.....	19 20	
Library of Congress, cards.....	110 47	
Little, Brown & Co., books.....	26 25	
Library Bureau, cabinets.....	16 80	
Lippincott Co., J. B., books.....	8 00	
Lea & Febiger, book.....	6 00	
Login & Son, B., books.....	5 00	
Miner, Sarah H., salary.....	720 00	
Miner, Ruth P., salary.....	655 00	
McCulloch, Isabella, J., salary.....	715 00	
McClurg & Co., A. C., books.....	2,154 08	
Madison Gas & Electric Co., gas, current.....	1,288 75	
Metal Industry, The, files.....	7 50	
Moody, Manual Co., manual.....	12 00	
McCaffrey, M. E., secretary, bills paid.....	2 00	
Moseley, J. E., stationery.....	7 75	
Mann, K. M., book.....	4 25	
Madison News Agency, subscription.....	2 50	
Mautz Bros., paints.....	3 50	
New England Botanical Club, subscription.....	1 00	
National Association of Cement Users, books.....	14 85	
National Education Association, dues.....	2 00	
National German-American Teachers' Seminary, subscription.....	1 50	
New York Botanical Garden, books.....	4 50	
Open Court Publishing Co., book.....	3 00	
Pyre, Amelia, F., salary.....	598 75	
Parsons, P. & S. Co., stationery.....	18 20	
Psychological Review, monographs.....	8 00	
Pratt, W. S., book.....	1 60	
Putnam's Sons, G. P., books.....	4 00	
Prokosch, E., books.....	25 00	
Pickarts, L. J., hursar, postage, bills paid.....	89 12	
Poor's Railroad Manual Co., manual, book.....	15 00	
Riverdale Press, subscription.....	6 00	
Rhoades, S. A., periodicals.....	1 75	
Religious Education Association, dues.....	3 00	
Scribner's Sons, Chas., books.....	47 50	
Schneiders News Depot, subscriptions.....	17 80	
Schaefer, Ellen, salary.....	357 50	
State Historical Society, one-half maintenance.....	881 09	
Schulte, T. E., books.....	5 00	
Sotheran & Co., H., books, periodicals.....	41 24	
School Science & Math., books.....	11 75	
Store Room, merchandise.....	112 51	
Stechert & Co., G. E., books.....	17,507 8	
Smithsonian Institution, books, reports, cards, periodicals.....	65 10	
Smith, W. M., salary, dues.....	2,853 00	
Steinke, Laura, A., salary.....	600 00	
Skidmore, S., salary.....	446 25	
Sanford, Delia, C., salary.....	900 00	
Tracy, Gibbs & Co., printing.....	24 25	
Teachers' College, books.....	3 02	
University pay roll, janitors.....	261 65	
University of Chicago Press, periodicals.....	24 80	
University Press, subscription.....	3 00	
University Cooperative Co., stationery, books.....	6 80	
Wells Fargo Express Co., express.....	10 79	
Western Union Telegraph Co., messages.....	1 83	
Woods Publishing Co., books.....	15 00	
Wood & Co., W. M., subscription.....	6 00	
Williams & Wilkins P. Co., subscription.....	5 00	
Walter, H., subscription, books.....	10 70	
Wilson Co., H. W., subscriptions.....	24 00	
Correction memorandum, cement work.....	185 21	
		\$50,598 25

LABORATORY SUPPLIES

American Express Co., express.....	\$486 79	
American Oxhydric Co., oxygen.....	2 75	
American Civic Association, book.....	1 00	
Arlington Co., The, celluloid.....	1 80	
Anglers' Bait & Mfg. Co., turtles.....	14 50	
Allen, C. A., mirrors.....	5 00	

Abbott & Co., A. H., stationery.....	8 23	
Auto Pencil Sharpener, blades.....	2 00	
Averbeck Jewelry Co., watch, repairs, clock.....	18 50	
Amberg File & Index Co., cabinet.....	33 00	
Armstrong Mfg. Co., tools.....	8 14	
Armstrong Bros. Tool Co., holders.....	34 64	
Administration pay roll, clerks.....	1,026 20	
American Huhn Metallic P. Co., packing.....	13 05	
American System of Reinforcing, spirals.....	37 50	
Aluminum Co. of America, cable, aluminum.....	7 33	
American Electrochemical Society, books.....	16 25	
American Society of Naval Engineers, book.....	1 31	
American Electric Fuse Co., wire.....	6 45	
Accountancy Publishing Co., periodicals.....	7 05	
American Society of Mechanical Engineers, book, subs.....	11 75	
American Platinum Works, dishes.....	163 03	
Alford Bros. laundry.....	7 96	
American Steam Gauge & Valve Mfg. Co., glasses.....	1 50	
American Smelting & Rolling Co., metals.....	42 56	
American Screw Co., nuts.....	15 11	
American Platinum Wire Co., wire.....	59 22	
Ashcroft Mfg. Co., tools.....	15 19	
American Sheet & Tin Plate Co., tin.....	6 00	
Andrae & Sons Co., J., merchandise.....	14 24	
Business Man's Publishing Co., periodicals.....	2 50	
Burdick & Murray Co., merchandise.....	9 60	
Bliss & Laughlin, rod.....	12 43	
Besly & Co., C. H., taps.....	200 00	
Blackburn, C. V., labels.....	4 34	
Roehm, W. J., apparatus, bulbs.....	59 75	
Baumbach, Reichels & Co., ammonia.....	28 08	
Burger, P., boxes.....	85 16	
Blackwelder, E., expenses.....	5 29	
Bled & Schneider, hardware.....	18 55	
Brown & Sharpe Mfg. Co., cutters, saws, tools.....	25 94	
Burritt, G. G., salary.....	30 00	
Bentley, W. A., slides.....	30 10	
Belding Bros. & Co., waste.....	6 00	
Burrowbridge, J., dravage, hauling.....	3 50	
Buckmaster, J. A., lens.....	1 00	
Burke & James, apparatus.....	6 12	
Biddle, J. G., battery parts.....	247 62	
Brimley, C. S., specimens.....	15 25	
Roston Gear Works, gears.....	5 29	
Rishon & Co., J., repairs.....	728 65	
Braun Corporation, envelopes, discs.....	14 44	
Brown & Co., steel.....	9 36	
Bruce & Cook, lead.....	6 34	
Bonchard, J. E., plating, repairs.....	10 25	
Blakestone Son & Co., P., books.....	5 70	
Brashear Co., J. A., prisms.....	5 50	
Reaver Dam Malleable Iron Co., iron.....	32 94	
Brockhaus, F. A., books.....	2 06	
Baker Chemical Co., J. T., chemicals.....	29 62	
Bausch & Lomb Optical Co., chemicals.....	475 66	
Correction memorandum, university photography.....	80 09	
Cooner-Hewitt Electric Co., tubes.....	5 65	
Chaffillon & Sons, J., scale.....	4 35	
Cordley & Hayes, crate.....	7 50	
Cling Surface Co., filler.....	3 50	
Corbin Cabinet Lock Co., locks.....	2 20	
Carborundum Co., stones.....	10 07	
Cleveland Miniature Lamp Works, lamps.....	2 49	
Clow & Sons, J. B., tubing.....	1 31	
Capital City Paper Co., paper.....	11 56	
Cramer Dry Plate Co., G., plates.....	8 07	
Chicago Calcium Light Co., gauge, gas.....	12 15	
Charles Co., T., envelopes.....	70	
Crocker-Wheeler Co., brushes.....	1 50	
Cleveland Twist Drill Co., drills.....	20 94	
Commissioner of Public Printing, paper.....	9 54	
Central Scientific Co., instruments.....	96 41	
Central Electric Co., merchandise.....	4 32	
Cooley, C. F., lime, coal.....	61 40	
Clinton Wire Cloth Co., steel, wire cloth.....	33 72	
Crook, Harry, repairs.....	2 50	
Columbia Tool Steel Co., steel.....	16 20	
Creamery Package Mfg. Co., bottles.....	8 95	
C., M. & St. P. Ry. Co., lost apparatus.....	75 00	

Councils Bibliographies, cards.....	49 42	
Chicago Screw Co., screws.....	45 81	
Cantwell Printing Co., printing.....	9 75	
Central Laboratory Supply Co., rheostat.....	28 50	
Carver File Co., files.....	38 63	
Chicago Carbonic Gas Co., gas.....	97 50	
Cenfield, F. H., thesis.....	6 00	
Conklin & Sons, ice.....	78 81	
Cooper-Hewitt Electric Co., lamp outfit.....	27 00	
Carpenter & Co., J. B., packing.....	7 51	
Comstock, A. S., belt shifter.....	5 00	
Cutler-Hammer Mfg. Co., enamel.....	7 00	
Chicago Steel Tape Co., pins.....	12 00	
Capital City Green House, plants.....	15 80	
Crosby Steam Gage & Valve Mfg. Co., cord.....	32 62	
Cutler, M., thesis.....	4 85	
Castle & Doyle, lime.....	3 40	
College Book Store, letters.....	25	
Cambridge Botanical Supply Co., paper.....	23 90	
Cronin, M. R., frogs.....	6 05	
Chicago Brass Co., tubing.....	1 04	
Crane Co., pipe.....	96 40	
Capital City Green House Co., plants.....	20 95	
C. & N. W. Ry. Co., freight.....	496 37	
C. M. & St. P. Ry. Co., freight.....	608 02	
Democrat Printing Co., printing.....	266 45	
Daigger & Co., A., tube.....	1 30	
Devoe & Reynolds Co., paper, paints.....	9 95	
Doyon-Rayne Lumber Co., lumber.....	23 56	
Dengler, C. M., lettering.....	22 65	
Diamond State Fibre Co., fibre.....	16 14	
Dommeque, E., books.....	18 80	
De Smet, G. W., chemicals.....	3 75	
Department of the Interior, Ottawa, book.....	3 00	
Denver Fire Clay Co., crucibles.....	53 35	
Detroit Copper & Brass Rolling Mills, rod, tubes.....	27 24	
Driver-Harris Wire Co., wire, nichrome.....	64 08	
Dennison Mfg. Co., tags.....	8 82	
Dwyer, Wm., undertaking.....	15 00	
Diedrich, M., groceries.....	8 10	
Dans Duplicating Co., F. F., duplicator.....	4 00	
Dietzen Co., E., apparatus.....	127 23	
Eimer & Amend, chemicals.....	5,269 36	
Electric Railway Journal subscription.....	5 75	
Excelsior Supply Co., tubing.....	6 42	
Erie Forge Co., shafts.....	33 00	
Engineering Magazine, index.....	4 00	
Eastman Kodak Co., apparatus.....	3 00	
Engelhardt, E., hair.....	1 50	
Eride Battery Depots, jars.....	6 92	
Electric Storage Battery Co., supplies.....	4 14	
Engelhard, C., platinum wire.....	45 50	
East Butte Copper Mfg. Co., ore.....	7 50	
Excelsior Shoe Store, umbrellas.....	2 00	
Erlanger, J., cats.....	21 32	
Ellwood Tube Works, tubes.....	16 19	
Eastman, J. S., lamps.....	10 30	
Electrical Supply Co., merchandise.....	16 50	
F. F. F. Steam Laundry, laundry.....	85 04	
Fuller & Fuller Co., sponges.....	38 71	
Franklin Port C. & H. Co., wheel.....	3 90	
Fritzsche Bros., oils.....	10 77	
Foote Mineral Co., minerals.....	121 21	
Felton, A. P., keys.....	23 15	
Frautschi & Son, C., undertaking.....	15 00	
Fox Machine Co., trimmer.....	22 50	
Flint, G. M., screws.....	6 00	
Fuller & Johnson Mfg. Co., lever.....	4 10	
Findorff, J. H., lumber.....	2 25	
Firth-Sterling Steel C., steel.....	53 24	
Fairbanks, Morse & Co., truck.....	20 48	
Ft. Wayne Electric Co., merchandise.....	89 51	
Foote, Pierson & Co., lamp.....	1 50	
Faultless Rubber Co., tubing.....	444 44	
Favor, Ruhl & Co., crayons, paints.....	16 38	
Flynn, Ray, salary.....	20 00	
Fauerbach Brewing Co., gas.....	18 00	
French Battery & Carbon Co., cells.....	4 50	
Fuess, R., apparatus.....	34 25	

Ft. Dearborn Watch & Clock Co., watches.....	28 86
Frederickson, A. D. & J. V., lumber.....	387 16
General Electric Co., voltmeter, motor, merchandise.....	101 55
Gurley, W. & L. E., bearings.....	3 15
Grant Gear Works, castings.....	10 00
Gilbertson & Anderson, engraving.....	14 50
Greve, F. W., Jr., thesis.....	6 30
Gutenkunst & Galdabine, undertaking.....	30 00
Goble & Dyer, expenses.....	15 00
Glaettle, J., Jr., thesis.....	4 00
Gallagher Co., J., awnings.....	2 25
Geiszler Bros. Battery Co., batteries.....	4 00
Gray, T. C., salary.....	17 33
Goder-Heimann Co., specimens.....	90 25
Goodyear Rubber Co., hose.....	91 77
Gross Hardware Co., P., hardware.....	18 38
Geneva Optical Co., apparatus.....	12 00
Gisholt Machine Co., oil.....	13 92
Grant, D. M., salary.....	2 40
Galloway Glass Co., mirrors.....	2 00
Gayton, O. F., thesis.....	2 00
Gaertner & Co., Wm., apparatus.....	51 02
Grasselli Chemical Co., chemicals.....	669 00
Gillespie, H., minerals.....	7 15
Gray, T. C., salary.....	20 00
Grimm's Bindery, mounting.....	118 70
Hollister Drug Co., drugs.....	145 52
Hartmeyer & Braun, specimens, lard.....	3 70
Hough, H. B., books.....	6 80
Helke, C., services.....	15 60
Hough, Co., W. B., mineral.....	1 00
Hooker Co., H. M., glass.....	2 50
Haswell Furniture Co., furniture.....	42 35
Harison, W. B., maps.....	9 50
Hawley, F. W., glasses.....	3 00
Hoffman Feed Co., middlings.....	1 22
Hamon & Van Winkle Co., tanks.....	22 40
Hendey Machine Co., repairs.....	1 60
Hunt, E. H., liquids.....	4 00
Henion & Hubbell, castings, pulleys.....	6 30
Hardy & Co., F. A., model.....	1 58
Hegg, F. A., photos.....	1 40
Haak & Son, A., jars.....	16 00
Hogseth, M. P., undertaking.....	15 00
Hildebrand, F. A., undertaking.....	30 00
Hunter, P., atlas.....	7 41
Haggertv, E. L., snakes heads.....	6 00
Harris & Co., S., apparatus.....	54 57
Ill. Paper Box Co., boxes.....	25 62
Ill. Steel Co., steel.....	7 35
International Harvester Co., coils, supplies.....	10 25
International Textbook Co., books.....	25 88
Illinois Glass Co., bottles.....	81 46
International Acheson Graphite Co., tubes.....	31 30
Illinois Electric Co., wire.....	23 08
Industrial Press books.....	14 00
Illinois Central Railway Co., freight.....	16 40
Johns-Manville Co., H. W., wood, oil.....	21 33
Jewell Belting Co., compound.....	5 00
Jenkins Bros., packing.....	5 95
Jackson, G. W., hardware.....	50 61
Johnson-Scheller Co., cray fish.....	1 80
Janesville Cement Co., sand.....	5 62
Jones & Laughlin Steel Co., steel.....	167 69
Keuffel & Esser Co., tapes.....	60 53
Knox & Co., S. H., merchandise.....	65
Knott Apparatus Co., L. E., fittings.....	4 05
Kornhauser & Co., A., linen.....	6 75
Koniglichen Porzellan Mfg. Co., apparatus.....	134 74
Kelsev Press Co., press.....	34 59
Klueter & Co., oats.....	90
King & Walker Co., blocks, castings.....	20 08
Krantz, Dr. J., specimens.....	12 44
Kohl, Max, apparatus.....	165 12
Klein, F., paints.....	3 10
Kny-Scherer Co., chemicals.....	3,130 22
Kupfer Bros. Co., paper.....	13 00
Kowalke, O. L., analysis.....	3 00
Leybold's Nachfolger, E., apparatus.....	115 40

Lester Co., F. E., books.....	2 50
Lumiere North America Co., apparatus.....	7 86
Madison Steam Laundry, laundry.....	13 29
Lentz & Sons, C., knives.....	8 75
Livingston, B. E., apparatus.....	3 50
Lilly & Co., E., drugs.....	5 01
Leeds & Northrup Co., repairs, lamps.....	29 80
Laclede-Christy Clay Products Co., brick.....	31 65
Lehm & Fink, chemicals.....	56 55
Le Sage, A. P., services.....	75 00
Les Fils D'Emile Deynolle, apparatus.....	15 73
Leitz, E., microscopes.....	2 61
Lunkenheimer Co., parts, packings, fittings.....	13 43
Lorenz, E. H. J., salary.....	47 96
Lambert, F. D., specimens, plants.....	34 40
Leith, C. K., expenses.....	35 57
McCaffrey, M. E., bills paid.....	29 70
McClurg & Co., A. C., books.....	204 01
Milwaukee Photo Material Co., supplies.....	4 45
Moseley, J. E., stationery.....	8 80
Madison Tent & Awning Co., covering.....	95
Milwaukee Leather Belt Co., belting.....	132 09
Batsuke, B., paper.....	12 00
Madison Brass Works, castings.....	144 59
Merck & Co., chemicals.....	113 53
Mautz Bros., paints.....	93 45
Martin, L., expenses.....	12 55
McKinley Publishing Co., maps.....	4 00
Miller Lock Co., locks.....	107 61
Mead, W. J., expenses.....	33 82
Muller, R., apparatus.....	70 30
Mayers, A. A., merchandise.....	39 99
Menges Pharmacy, drugs.....	149 15
New York Store, felt.....	2 13
Meinecke Toy Co., wheels.....	1 50
Marine Biological Laboratory, specimens.....	54 10
Machinists' Supply Co., tools, files, hardware.....	167 14
Madison Saddlery Co., leather.....	1 20
Madison Fuel Co., coke.....	5 25
Madison Saddlery Co., leather.....	3 00
Murison & Son, G., undertaking.....	30 00
Mietz, A., hardware.....	6 07
Midvale Mining & Mineral Co., mineral.....	11 25
Madison Gas & Electric Co., gas, current.....	1,243 00
Nanantuck Chemical Co., acid.....	10 80
Nernst Lamp Co., glowers.....	51 67
Norton Co., emery wheels.....	4 05
Norberg Mfg. Co., valves.....	3 54
National Carbon Co., carbons.....	1 44
Nvstrom & Co., A. J., maps.....	25 00
National Phonograph Co., repairs.....	8 70
Nielson, A., necturns.....	6 00
Nusbaum, J. A., undertaking.....	15 00
Niebuhr, E. M., rent.....	5 00
Nelson & Polk, frame.....	5 85
Nitolas & Co., G. J., lacquer.....	1 00
National Distilling Co., alcohol.....	29 87
Neunfeldt, E. P., rabbits.....	11 25
Orr & Lockett Hardware Co., keys, hardware.....	4 35
Olds Seed Co., L. L., seeds.....	14 12
Owen, R. S., pigeons.....	1 25
O'Neil Oil & Paint Co., ash.....	5 30
Oxford Trnoll Co., flour.....	9 45
Ottawa Selica Co., sand.....	25 20
Owens, Wm., supplies, plumbing.....	2 04
Pickarts, L. J., hursar, postage.....	132 54
Pieh, J. F., sand.....	3 75
Parsons P. & S. Co., stationery.....	46 14
Philadelphia Gear Works, gears.....	2 80
Piner Bros., groceries.....	34 73
Parkinson-Marling Lumber Co., lumber.....	40 18
Post Co., F., tapes.....	20 80
Pecher, F. J., coats.....	1 00
Polynhos-Gesell, E., apparatus.....	29 64
Powell Co., Wm., parts.....	2 00
Pettibone, J. F., thesis.....	4 00
Plant Study Co., fungi.....	3 02
Packard Machine Co., O. L., tools, pulley.....	24 68
Payton, M., salary.....	33 00

Post, L. M., fare.....	4 85
Pritzlaff Hardware Co., J. tin, handles.....	12 34
Plant Study Co., specimens.....	5 03
Peper, J. W., pipe.....	40 03
Postal Telegraph Co., messages.....	1 36
Rice Co., J. H., opaleti.....	2 10
Rhodes & Co., J. H., chemicals.....	15 92
Roller-Smith Co., acid, repairs.....	41 00
Rich, F. A., agent, tools.....	36 67
Root & Co., A. L., bees.....	12 60
Reisinger, H., carbons.....	11 96
Ricketson & Schwartz, brick.....	28 75
Rehholz & Co., A. J., maps.....	3 00
Rosner, R., repairs, apparatus.....	4 00
Roessler & Hasslacher Chemical Co., chemicals.....	13 50
Ritter & Deutsch Co., expenses.....	30 00
Remington Typewriter Co., machine.....	50 00
Reed Mfg. Co., tools.....	12 43
Ryerson & Son, J. T., steel.....	139 63
Rock River Machine Co., shear.....	19 00
Roebblings Sons Co., J. A., rope, sockets.....	22 48
Rundle-Spence Mfg. Co., pipe.....	29 20
Store Room, merchandise.....	2,139 89
Sehlingen, F. M., slab.....	12 30
Sunbeam Incandescent Light Co., wire.....	1 44
Superintendent of Public Property, books.....	6 00
Standard Oil Co., oil.....	3 41
Small & Stevens Co., parts.....	6 25
Segell, J., drafting.....	1 05
Sphung, A. A., frogs.....	28 00
Standard Paint Co., roofing.....	2 63
Sinaiko, A., oats.....	1 95
Schaeffer & Budenberg Mfg. Co., thermometers, instruments.....	465 54
Steward Mfg. Co., D. M., bushings.....	10 08
Shaver Granite & Marble Co., J., slabs.....	2 50
Stephens, D., stone.....	34 17
Sherwin-Williams Co., paint.....	1 50
Steidmann, E., expenses.....	7 38
Standard Paper Co., paper.....	6 50
Smith, L. S., expenses.....	261 09
Sumner & Morris, hardware.....	29 23
Stephens, H. M., specimens.....	4 13
Siemens & Halske, apparatus.....	8 45
Scully Steel & Iron Co., steel.....	17 17
Schmidt, A. F., leather.....	1 00
Sumner & Cramton, drugs.....	29 39
Southern Wisconsin Foundry Co., castings.....	224 27
Standard Oil Co., oil.....	16 94
Sheppard Co., C. C., files.....	5 48
Sinaiko Bros., zinc, lead.....	15 70
Stehr, William, lard.....	4 78
Sears, Roebuck & Co., photo, apparatus.....	17 36
Street & Co., R. R., pulley.....	11 48
Spencer Lens Co., apparatus.....	27 00
Stechert & Co., G. E., books.....	1,082 98
Smith Casting Co., G. H., castings.....	17 32
Stoelting Co., C. H., apparatus, burners, seives, desk.....	57 67
Steeg & Reuter, Dr., apparatus.....	171 96
Stocker, G. P., thesis.....	4 50
Sasse, C. L., shellae, frame.....	4 54
Superintendent of Documents, almanac.....	2 00
Storer, R. F., thesis.....	2 25
Sartorius, F., apparatus, instruments.....	15 96
Strelinger Co., C. A., merchandise.....	1 20
Starratt Co., L. S., tools.....	10 72
Schulte, F. E., atlas.....	7 50
Sturtevant Mills Co., discs.....	15 00
Sargent & Co., E. H., apparatus, chemicals.....	1,522 40
Truax, Greene & Co., instruments.....	10 79
Toch Bros., paint.....	2 50
Tomlinson, W. H., rock sections.....	4 03
Tool Holder Co., "O K", tool.....	37 50
Taylor & Gleason, printing.....	8 25
Tracy, Gibbs & Co., printing.....	17 00
Thordarson Electrical Mfg. Co., transformers.....	5 00
Trempealeau County Asylum, undertaking.....	6 00
Thomas & Co., A. H., chemicals, apparatus.....	974 32
University Cooperative Co., stationery.....	357 92
United States Naval Institute, book.....	1 00

University of Chicago Press, periodicals.....	4 50	
University pay roll, janitors.....	3,966 25	
United Gas Imp. Co., apparatus.....	25 00	
Van Schaack & Sons, P., chemicals.....	143 97	
Viscosity Oil Co., oil.....	25 23	
Vitter Mfg. Co., glasses.....	6 50	
Valvoline Oil Co., oil.....	220 21	
Vaas-Maw Dry Goods Co., muslin.....	1 38	
Vaughan's Seed Store, seeds.....	6 59	
Wells Fargo Express Co., express.....	206 70	
Wallace Barnes Co., springs.....	3 00	
Wahl, H. R., rabbits.....	6 80	
Webster, L. B., thesis.....	6 00	
Wolf, Kubly & Hirsig, hardware.....	365 45	
Williams, F. E., bills paid.....	2 80	
White Dental Mfg. Co., S. S., oxygen.....	46 27	
Williams & Co., J. H., posts.....	12 03	
Wehrmann, C., harness.....	7 50	
Winshop, W. W., putty.....	1 00	
Woodward, F. E., book.....	2 30	
Wisconsin Telephone Co., messages.....	2 90	
Wolf Mfg. Co., L., tank.....	4 90	
Wilder Co., C., thermometers.....	6 00	
Ward & Co., M., couch.....	16 95	
Wausau Quartz Co., quarts.....	5 00	
Wisconsin Brick Co., brick.....	2 25	
Western Union Telephone Co., messages.....	23 46	
Westinghouse Electric & Mfg. Co., water meters.....	8 16	
Wisconsin Workshop for the Blind, gaskets.....	9 00	
Wisconsin Engineer, subscription.....	10 50	
Whitcomb, Dr. R. C., expenses, express on body.....	22 00	
Williams & Peters, coal.....	262 58	
Weston Electrical Instrument Co., ammeters.....	234 44	
Whitall-Tatum Co., chemicals.....	635 98	
Woldenberg & Schaar, pipette.....	5 00	
Western Electric Co., condensers.....	59 92	
Westinghouse Lamp Co., lamps.....	2 64	
Wagner, G., eggs.....	2 70	
Wiedenbeck-Dobelin Co., hardware.....	142 66	
Warner, W. W., bows.....	5 00	
Yale & Towne Mfg. Co., locks.....	9 00	
Yahr & Lange Drug Co., acid.....	24 50	
Yawman & Erbe Mfg. Co., cord.....	61 20	
Yawkey-Crowley Lumber Co., lumber.....	24 74	
Zeiss, C., carbons.....	130 91	
Zanesville Stoneware Co., jars, covers.....	28 25	
Schmidt & Haensch, F., microscope.....(credit)	31 20	
Correction memorandum, models, merchandise.....(credit)	285 33	
		\$37,928 21

UNIVERSITY EXTENSION

Allyn & Bacon, books.....	\$0 89	
American City Publishing Co., subscription.....	1 00	
American School of Correspondence, books.....	4 00	
Andrae Electric Co., H., work.....	21 00	
Administration pay roll, clerks, field organizer.....	13,953 28	
American Book Co., books.....	1 38	
American Express Co., express.....	108 16	
Adams Co., A. H., tables.....	9 00	
Amen, Elisabeth, refund.....	8 00	
American Home Economics Association, dues.....	2 00	
Adams, R. W., refund.....	12 00	
Baker, J. W., refund.....	10 00	
Bird, H. A., refund.....	6 00	
Blied & Schneider, hardware.....	1 80	
Boorman, Ryland, refund.....	5 00	
Bennet, G. R., refund.....	2 00	
Blueprint Department University of Illinois, slides.....	16 85	
Bailey, W. S., refund.....	14 00	
Burger, Peter, hardware.....	1 50	
Becker, O. M., expenses.....	5 60	
Burdick & Murray Co., merchandise.....	40	
Blied & Co., F. C., printing.....	7 00	
Billman, Irwin, instruction, expenses.....	58 89	
Butler, R. S., expenses.....	9 70	
Brady, Joseph, refund.....	6 00	
Burke & James, training board, boxes.....	10 75	

Beatty, Arthur, salary, instruction, clerical work.....	543 75
Bascom, Lelia, salary.....	900 00
Babeock, P., signs.....	6 00
Brandt & Sons Co., R., shelving.....	7 25
Bosch, Robert, refund.....	2 00
Brown, H. H., trunks.....	17 00
Basset, H. K., instruction.....	6 38
Cooley, A. S., slides.....	2 40
Castle & Doyle, plaster.....	3 60
Cantwell Printing Co., printing, ribbons, books.....	15 25
Cooley, C. F., cement.....	1 35
Chicago Envelope Co., envelopes.....	9 70
Central Scientific Co., apparatus.....	3 50
Capital City Paper Co., paper.....	2 89
Castle-Pierce Printing Co., rent.....	63 00
C., M. & St. P. Ry. Co., freight.....	3 06
Commissioners of Public Printing, paper.....	27 63
Correy, Margaret, cleaning offices.....	15 00
Cambria Steel Co., books, hand book.....	16 00
Cannon, J. F., instruction.....	22 00
College Book Store, stationery, letters.....	6 60
C. & N. W. Ry. Co., freight.....	8 79
Chase, W. J., instruction, salary, expenses.....	968 80
Craigo, R. T., salary.....	1,560 00
Dietzgen Co., E., paper, tables, stationery.....	166 41
Dennison Mfg. Co., labels.....	4 25
Dond, A. F., expenses.....	77 40
Dickinson, T. H., instruction.....	2 25
Decker, R. P., refund.....	5 00
Doyon & Rayne Lumber Co., lumber.....	9 00
Devine Co., W. A., guide.....	3 00
Drew, J. M., refund.....	6 00
Domestic Engineering, books.....	15 60
Dreher, A. C., expenses.....	214 41
Denniston, R. H., instruction.....	12 75
Du Mez, A. G., instruction.....	10 13
Dengler, C. M., lettering.....	23 25
Democrat Printing Co., printing.....	1,315 87
Estes, R. T., parts.....	7 60
Eggers Veneer Supply Co., panels.....	21 35
Eaton, E. T., instruction.....	3 00
Fleischfresser, M. R., refund.....	1 00
Froso, W. D., instruction, expenses.....	223 54
Frederickson, A. D. & J. V., lumber.....	69 89
Funk & Wagnalls Co., book.....	1 25
Fischer, Richard, expenses.....	10 23
Forbes, Jas., instruction.....	3 00
Fiellin, F. L., refund.....	5 00
Faulkner, W., refund.....	2 00
Flarity, J., refund.....	20 00
Guell, A. F., refund.....	21 75
Gesell, G. A., expenses.....	14 82
Grieg, G. T., furniture.....	281 50
Gaylord Bros., envelopes.....	1 00
Geiss, C. E., refund.....	20 00
Gile, B. M., refund.....	5 00
Griffith, E. M., instruction.....	50 00
Goodnight, S. H., expenses, instruction.....	54 12
Gorrow, E. M., expenses.....	462 39
Gilman, S. W., instruction, expenses.....	95 11
Grinde, Mrs. Anna E., instruction.....	53 62
Globe-Wernicke Co., book case, merchandise.....	61 45
Gray, T. C., instruction.....	9 00
Ginn & Co., books.....	4 55
Galland, J. S., salary, instruction.....	412 63
Hudson, D. W., refund.....	2 00
Hartman, Lorraine, refund.....	12 00
Heyer, Oscar, refund.....	3 00
Holt & Co., H., book.....	2 70
Heath & Co., D. C., books.....	4 57
Hammersmith Engraving Co., engraving, etching, printing.....	96 33
Hutchins, T. A., salary, expenses.....	1,590 95
Hollister Drug Co., drugs.....	60
Henley Publishing Co., N. W., books.....	64 40
Hinds, Noble & Eldredge, book.....	4 40
Haswell Furniture Co., furniture.....	160 65
Hauenstein, W. A., refund.....	9 00
Hastings, E. G., expenses.....	12 63

Houghton-Mifflin Co., books.....	11 52
Hammer, M. R., salary, expenses.....	1,420 83
Hoyt, R. W., expenses.....	69 50
Hawley, R. S., expenses.....	21 08
Hool, G. A., salary, expenses.....	2,046 18
Hess, A. H., instruction.....	30 50
International Text Book Co., books.....	13 41
Illinois Iron & Bolt Co., copying press.....	4 55
Johnstone, A. H., salary, expenses.....	98 79
Jackson, Mrs. H. H., refund.....	10 75
Judd, G. T., expenses.....	121 64
Johnson, C. H., clerical work, instruction.....	14 28
Jenkins, Ray, refund.....	4 00
Janskey, C. M., salary, expenses.....	2,474 71
Keown, R. M., instruction.....	50 00
Kroncke Hardware Co., H. G., hardware.....	3 70
Koch, F. H., refund.....	9 00
Kiekhaefer, E. A., refund.....	6 00
Kamm, Karl, refund.....	2 00
Kirchoffer, W. G., secretary, books.....	15 00
Krauskopf, F. C., instruction.....	30 37
Keuffel & Esser, paper.....	3 54
Knight, O. D., refund.....	3 00
Kelling, M. J., refund.....	6 95
Klug, J., instruction.....	15 00
Kowalke, O. L., expenses.....	6 03
Lighty, W. H., expenses, salary.....	2,385 47
Library Bureau, cabinets, cards.....	10 40
La Crosse Box Co., boxes.....	3 60
Ludlow Mfg. Co., book.....	1 07
Leiserson, W. M., instruction.....	7 63
Lyman, R. L., expenses, instruction.....	64 45
Moseley, Anna B., instruction.....	5 50
Mautz Bros., paints.....	9 00
Monroe, Nellie G., refund.....	18 00
Morse, W., expenses.....	9 25
Municipal Engineering Co., subscription.....	2 00
McDaniel, A. S., instruction.....	3 00
Moore, C. L., instruction.....	9 00
McCaffrey, M. E., secretary, bills paid.....	4 00
MacGill, Caroline E., instruction.....	29 00
Municipal Publishing Co., subscription.....	2 00
MacArthur Co., The, book.....	12 00
Municipal Journal, subscription.....	3 00
Meyer's News Service Co., clippings.....	27 50
McMullen, Mrs. H. Y., refund.....	8 00
Marlatt, Abbey L., expenses.....	26 39
MacGregor, F. H., salary, expenses.....	1,348 49
Moore, W. U., instruction.....	3 75
Madison Tent & Awning Co., covers.....	7 50
McIntosh Stereopticon Co., stereoptical, rheostat, lens.....	230 09
Moseley, J. E., stationery.....	26 73
Madison Engraving Co., etchings, half-tone.....	2 80
McClurg & Co., A. C., books.....	67 47
McGraw-Hill Book Co., books.....	2 27
Meng, G. H., refund.....	18 00
Nevin, C. B., refund.....	18 00
National Com. of Charities, reprints.....	1 05
Northwestern Furniture Co., filing cases, desks.....	111 40
Noss, C. F., instruction, salary.....	30 00
Neystrom, P. H., salary, expenses.....	2,269 94
Neighbors, R. E., expenses.....	772 84
Norris, E. B., salary, expenses.....	1,961 24
Niemann Table Co., table.....	5 75
Orth, H. D., drafting.....	143 55
Oshkosh Gas Light Co., cord, light, current.....	23 65
Owen, H. E., instruction.....	10 13
O'Shea, M. V., instruction, expenses.....	215 63
Otto, M. C., instruction.....	26 62
Ocock, C. A., instruction.....	9 00
Pitman, Annie M., salary.....	200 00
Pratt, H. K., instruction.....	14 25
Parry, J. W., salary, expenses.....	1,335 84
Poltz, G. H., refund.....	15 00
Pettijohn, J. J., salary, expenses.....	924 13
Piper, C., instruction.....	7 50
Postal Telegraph Co., messages.....	56
Prokosch, E., clerical work, instruction.....	235 98
Pickarts, L. J., bursar, postage, bills paid, outlines.....	2,248 02

Pabst Brewing Co., rent.....	605 00
Polk & Co., R. L., gazetteer.....	7 00
Payne, W. A., expenses.....	8 40
Parsons P. & S. Co., stationery, postage.....	90 15
Remington Typewriter Co., books.....	1 74
Remington Typewriter Co., machine.....	20 00
Rice, C. C., refund.....	10 00
Ravenel, M. P., expenses, lectures.....	99 97
Richter, A. W., instruction, expenses.....	256 05
Rowell, Fannie, refund.....	18 00
Rowe, D. I., services.....	5 00
Reinhard, Eugene, salary, services.....	1,502 00
Ross, E. A., instruction, expenses.....	46 05
Reber, T. E., salary, expenses.....	4,352 58
Rastall, B. M., salary, expenses.....	2,604 04
Smith & Bros. Typewriter Co., L. C., typewriter.....	45 00
Swain, G. R., slides.....	17 60
Stafford Mfg. Co., E. H., chairs.....	13 46
Steckel, S. J., instruction.....	6 00
Streisguth-Petran Engraving Co., half-tones.....	7 80
Sommer, G. & Figlio, lantern.....	4 30
Smith Co., C. C., standards, paper.....	80 60
Scott, R. B., instruction.....	3 00
Smith, Beulah E., refund.....	12 50
Sewall-Clapp Mfg. Co., envelopes.....	14 08
Scholg, R. P., instruction.....	30 00
Survey, The, subscription.....	2 00
Smith, K. G., salary, expenses.....	1,380 28
Smith Premier Typewriter Co., repairs, parts.....	16 00
Southern Wisconsin Foundry Co., castings.....	17 95
Sass, George, refund.....	11 40
Shibata, G., salary.....	350 00
Saxe Sign Co., lettering.....	4 50
Scott, Laura, mimeograph.....	8 00
Schlatter, E. B., instruction.....	63 62
Starch, D., instruction.....	30 38
Sanders, J. G., expenses.....	8 73
Stechert & Co., G. E., books.....	1 50
Scott, Almerle L., salary.....	710 00
Scott, W. A., instruction, expenses.....	37 96
Shealy, E. M., instruction.....	165 00
Store Room, merchandise.....	1,847 05
Smith, Gertrude, fees refunded.....	20 00
Troy & Kieth, slides.....	8 40
Thiessen, F. C., drafting, clerical work.....	28 80
Tracy, Gibbs & Co., printing.....	123 70
Taylor & Gleason, printing.....	1 50
Tension Envelope Co., envelopes.....	10 50
Underwood Typewriter Co., typewriters.....	143 50
University Cooperative Co., stationery, supplies.....	74 75
University pay roll, janitors.....	350 75
University Extension Society, book.....	10 02
Van Nostrand Co., D., book.....	2 50
Van Hoesen Co., H. M., letters.....	27 25
Van Duesen, Sarah, H., salary.....	900 00
Wilson Co., H. W., books.....	4 00
West Co., H. H., easel, furniture, blackboard.....	32 25
Wilbur Lumber Co., lumber.....	8 60
Walker, E. E., expenses.....	189 62
Wall, S. F., instruction.....	6 00
Wied, J. C., instruction, clerical work.....	88 00
Williams, W. G., shelf.....	7 35
Whitbeck, R. H., instruction.....	26 62
Wells Power Co., current, power.....	63 43
Wooley, J. W., Jr., salary, expenses.....	1,224 95
Williamson, R. C., clerical work, instruction.....	24 88
Wood, L. H., instruction, drafting, drawings.....	149 40
Wehrman, Chas., harness work.....	9 00
Wilke, H. M., refund.....	10 00
Wells Fargo Express Co., express.....	32 65
Warner Music Co., W. W., dictating machines, bows, music.....	231 35
Wisconsin Telephone Co., messages, rent, service.....	154 98
Willey & Sons, J., book.....	4 25
Wolf, Kubly & Hirsig, hardware.....	75 75
Western Union Telegraph Co., messages.....	47 85
Yawman & Erbe Mfg. Co., trays.....	6 24
Yawkey-Crowley Lumber Co., lumber.....	72 82
Correction memorandum, University Photographer.....	37 20
	\$64,285 75

LATHROP HALL		
Administration pay roll, clerks.....	\$1,350 00	
American Express Co., express.....	9 60	
Burley & Co., dishes.....	104 01	
Burger, P., hardware.....	39 60	
Bartels, F., groceries.....	78 00	
C. M. & St. P. Ry. Co., freight.....	13 49	
C. & N. W. Ry. Co., freight.....	77 49	
Chocolat-Menier, cocoa.....	23 87	
Carson Pirie Scott & Co., linen.....	394 13	
Commissioner of Public Printing, paper.....	9 06	
Celluloid Co., checks.....	12 32	
Democrat Printing Co., printing.....	23 90	
Dairy Department of Agricultural College, butter.....	52 38	
Dennison Mfg. Co., napkins.....	24 00	
F. F. F. Laundry, work.....	29 05	
Grieg, G. T., furniture.....	8 00	
Garbaldi & Cuneo, groceries.....	86 15	
Heisey & Co., A. H., candle sticks.....	16 40	
Hayden & Co., J. B., expenses.....	2 60	
Hawley, W. B., dishes.....	1 42	
Illinois Central Ry. Co., freight.....	51	
Kornhauser, A., merchandise.....	4 30	
Knox & Co., S. H., shades.....	6 00	
Libby, McNeill & Libby, meats.....	110 18	
Lansing Wheelbarrow Co., wagon.....	10 69	
Lamson Con. S. S. Co., cashier.....	9 00	
Lathrop Hall pay roll, service.....	571 14	
McCoy & Ward, mills.....	55 31	
McCaffrey, M. E., secretary, bills paid.....	94	
Madison, City of, garbage collection.....	18 00	
Madison Gas & Electric Co., gas.....	144 94	
Niedecken Co., H., stationery.....	5 00	
Orr & Locket Hardware Co., hardware.....	17 35	
On Sing Co., china.....	35 05	
Oneida Community, silverware.....	409 99	
Parson P. & S. Co., stationery.....	1 92	
Polakoff & Co., M. R., furniture.....	20 00	
Piper Bros., groceries.....	57 16	
Peck & Co., A., machine, bottles.....	14 70	
Parson P. & S. Co., stationery.....	5 60	
Pickarts, L. J., bursar, postage, bills paid.....	9 50	
Red Wing Union S. W. Co., faucets.....	7 00	
Store Room, merchandise.....	64 73	
State Journal Printing Co., advertising.....	55	
Steele-Wedeles Co., fruit.....	61 90	
Smiley, B. E., tuning.....	5 00	
Schadaver & Co., J. F., canopies.....	1 80	
University pay roll, janitors.....	798 03	
University Cooperative Co., stationery.....	95	
Van Schaak & Sons, P., soda.....	2 68	
Western Union Telegraph Co., messages.....	1 53	
Waltzinger's, ice cream.....	62 35	
Wolf, Kubly & Hirsig, hardware.....	10 95	
Wisconsin Telephone Co., messages.....	85	
Wells Fargo Express Co., express.....	1 30	
Correction memorandum.....	392 69	
		\$5,335 09
ADDITION TO ENGINEERING BUILDING		
Administration pay roll, clerks.....	\$942 25	
American Contractor, advertising.....	6 45	
C. & N. W. Ry. Co., freight.....	155 02	
Chronicle Co., advertising.....	1 13	
Conklin & Sons, coal.....	13 66	
Gross Hardware Co., P., hardware.....	400 00	
Huebsch, B. W., year-books.....	1 50	
Improvement Bulletin, advertising.....	4 00	
Janesville Cement Co., sand.....	47 96	
T. C., McCarthy, contract.....	19,000 00	
Milwaukee Free Press Co., advertising.....	1 95	
Mueller Co., The, heat plant.....	75 00	
Store Room, merchandise.....	769 35	
State Journal Printing Co., advertising.....	2 60	
Stephens, D., stone.....	651 93	

Sentinel Co., advertising.....	5 10	
Trenton Oil Cloth Co., linoleum.....	312 38	
University pay roll, janitors.....	212 34	
Correction memorandum	279 62	
		\$22,882 24

VOGEL FELLOWSHIP

Rasmussen, Peter, fellow.....	\$400 00	
-------------------------------	----------	--

MILITARY DEPARTMENT

Atkins, W. G., salary.....	\$550 00	
American Express Co., express.....	70	
Brown, A. W., expenses.....	12 35	
Band pay roll, musicians.....	450 00	
Cantwell Printing Co., book.....	9 00	
C. & N. W. Ry. Co., freight.....	1 12	
C. M. & St. P. Ry. Co., freight.....	8 35	
Democrat Printing Co., printing.....	7 84	
Esser Co., L., medals.....	27 00	
Field Officers' pay roll, prizes.....	175 00	
King, Chas. expenses.....	9 73	
Kalasben, M. J., horn.....	50 00	
Kassell, B. C., engraving.....	11 50	
Kornhauser, A., merchandise.....	2 40	
Lilley & Co., M. C., medals, sabres, flags, trumpets.....	177 25	
Madison Saddlery Co., dressing.....	6 77	
Mautz Bros., paints.....	12 20	
McCoy, Ralph, commutation of quarters.....	432 00	
Mann, C. A., salary, music.....	214 50	
Northwestern Lithograph Co., warrants.....	28 30	
Nicodemus, R. C., premiums.....	86 20	
Parson P. & S. Co., stationery.....	40	
Pickarts, L. J., bursar, bills paid, postage.....	9 55	
Peper, J. W., boiler plate.....	3 05	
Regimental Officers' pay roll, refund.....	500 00	
Store Room, merchandise.....	16 91	
Severson, C. F., expenses.....	4 85	
Sumner & Morris, hardware.....	6 24	
University Cooperative Co., stationery.....	75	
University pay roll, janitors.....	10 48	
Wells Fargo Express Co., express.....	3 85	
Wolf, Kubly & Hirsig, hardware.....	8 30	
Yawkey-Crowley Lumber Co., lumber.....	11 50	
		\$2,848 07

ARCHITECT'S OFFICE

American Express Co., express.....	\$1 85	
Administration pay roll, clerks.....	3,889 30	
Burger, Peter, hardware.....	20	
Commissioner of Public Printing, paper.....	1 57	
C. & N. W. Ry. Co., freight.....	23	
Democrat Printing Co., printing.....	13 68	
Frederickson, A. D. & J. V., lumber.....	12 50	
Kroncke Hardware Co., H. G., hardware.....	1 60	
Pickarts, L. J., bursar, postage, bills paid.....	40 25	
Parsons P. & S. Co., printing.....	9 74	
Postal Telegraph Co., messages.....	1 72	
Store Room, merchandise.....	62 99	
Soltman, E. G., contracts.....	5 00	
University Cooperative Co., stationery.....	3 40	
University pay roll, janitor.....	17 86	
Wisconsin Telephone Co., messages, rentals.....	1 75	
Western Union Telegraph Co., messages.....	1 02	
Wells, Fargo Express Co., express.....	1 30	
		\$4,066 79

CHADBOURNE HALL

Alford Brothers, bleaching.....	\$2 40
American Express Co., express.....	7 15
Alvord, Katherine S., salary.....	800 00
Administration pay roll, clerks, nurse.....	1,567 50
American Soap & Chemical Works, soap, kleansall.....	87 87
Art Bedstead Co., bedsteads.....	415 70
Brown & Sharpe Mfg. Co., cutters.....	88
Bartels, F. J., Jr., groceries, flour.....	172 84
Burger, Peter, hardware.....	52 51
Burdick & Murray Co., merchandise, curtains.....	20 18
Blakeslee & Co., G. S., repair parts, basket, merchandise.....	15 75
Beedle, G. E., insurance commissioner, insurance.....	380 10
Badger Creamery, cream.....	2 40
Blief & Schneider, hardware.....	1 40
Cudahy Packing Co., meats.....	33 13
Commissioner of Public Printing, paper.....	31
Conklin & Sons, wood.....	7 50
Capital City Paper Co., paper.....	2 03
Capital City Greenhouse Co., plants.....	9 00
Cooley, C. F., wood, lime, coal.....	30 25
Central Electric Co., portable, shades, merchandise.....	22 17
C. & N. W. Ry. Co., freight.....	146 08
C. M. & St. P. Ry. Co., freight.....	16 80
Chadbourne Hall pay roll, kitchen service.....	6,701 12
Capital City Soap Works, soap.....	65 24
Carson, Pirie, Scott & Co., toweling, rug, quilts, linen.....	110 07
Connor, T., honey.....	3 43
Cantwell Printing Co., printing.....	6 25
Cronin, M. R., refund on potatoes.....	12 92
Castle & Doyle, lime.....	2 00
Democrat Printing Co., printing.....	5 42
Dairy Department of College of Agriculture, milk, cream, butter.....	3,368 59
Diederich, M., groceries.....	135 71
Doyon & Rayne Lumber Co., lumber.....	26 29
Electric Supply Co., merchandise.....	9 10
Engelhardt, E., davenport.....	42 50
Ft. Wayne Electric Works, merchandise.....	16 08
Field & Co., M., blankets, quilts, rugs, linen.....	240 07
Frederickson, A. D. & J. V., lumber.....	142 74
Goll & Frank Co., towels, cloth.....	10 13
Goodyear Rubber Co., tubing.....	270 00
Greig, G. T., furniture.....	429 97
Galloway Glass Co., repairs.....	8 67
Garibaldi & Cuneo, vegetables, fruits, groceries.....	1,187 51
Gender Paeschke & Frey Co., cans.....	7 19
Grasselli Chemical Co., chemicals.....	33 34
Holcomb Mfg. Co., J. I., maps.....	7 60
Herfurth & Son, Theo., premium.....	31 50
Haswell Furniture Co., furniture.....	30 50
Heat & Water, percentages.....	4,629 14
Hinrichs Dry Goods Co., muslin.....	3 90
Hollister Drug Co., drugs.....	40
Hull, R. D., renovating.....	10 20
Klein, F., paints.....	17 50
Kohnstamm & Co., H., starch.....	18 75
Kaillin & Sons, M., soap, groceries.....	29 94
Korten Bros. Co., coffee.....	166 40
Kornhauser & Co., A., merchandise.....	5 80
Kroneke Hardware Co., H. G., hardware, locks.....	15 49
Keeley, Neckerman & Kessenich Co., rugs.....	13 00
Knickerbocker Ice Co., ice.....	69 70
Libby McNeill & Libby, meats.....	1,526 78
Moseley, J. E., stationery.....	35
Madison Tent & Awning Co., curtain.....	10 50
Milwaukee Leather Belt Co., belting.....	1 73
Merrill Springs Farm, milk.....	40 15
Middleton, H. C., eggs, vegetables, sausage.....	362 30
Model Creamery Co., milk, cream, cheese.....	7 90
Madison, City of, water, garbage collection.....	210 23
Madison Steam Laundry, laundry.....	415 80
Madison Gas & Electric Co., gas, current, doors, tubing.....	2,680 87
Mantz Bros., paints.....	58 42
Owens, Wm., plumbing.....	7 40
Oppels Fancy Grocery, groceries.....	5,876 08

Orr & Lockett Hardware Co., utensils, pails, hardware.....	45 69	
Peterson & Co., S., coffee, olives.....	38 25	
Peck & Hills, furniture.....	71 75	
Paltz, J., renovating, upholstering, rugs.....	31 05	
Postal Telegraph Co., messages.....	53	
Pickarts, L. J., bursar, bills paid, postage.....	16 10	
Peik Co., Albert, dishes, bottles.....	266 75	
Piper Bros., groceries, salt, merchandise.....	139 07	
Peoples' Cash Meat Market, meats.....	2,976 14	
Roebling's Sons Co., J. A., rope.....	36 25	
Rabb, S. O., meat.....	108 69	
Rundle-Spence Mfg. Co., pipe, fittings.....	55	
Robbins-Meyers Co., desk fans.....	16 00	
Sumner & Morris, hardware.....	1 50	
Southern Wisconsin Foundry Co., castings.....	30	
Simon Bros., fruits.....	78 65	
State Historical Society, iron pipe.....	6 42	
Store Room, merchandise.....	140 87	
Smith, W. M., roach exterminating.....	34 78	
Steinmeyer Co., Wm., gelatine, groceries, fruit, ammonia.....	171 37	
Taylor & Gleason, printing.....	5 00	
Taylor, Mrs. Rowena H., bills paid, contingent.....	317 87	
Tracy, Gibbs & Co., printing.....	10 00	
University pay roll, janitors.....	2,710 44	
Vaas-Maw Dry Goods Co., oil cloth.....	1 75	
Wilbur & Sons, H. O., cocoa.....	23 35	
Wisconsin Workshop for the Blind, hampers.....	6 00	
Wolf, Kubly & Hirsig, hardware.....	38 88	
Wisconsin Telephone Co., moving phones, message.....	1 25	
Wells Fargo Express Co., express.....	4 00	
Weinand, Peter, milk, potatoes.....	981 03	
Western Electric Co., merchandise, fixtures.....	56 21	
Yawkey-Crowley Lumber Co., lumber.....	10 68	
Correction memorandum, (credit).....	386 17	
		\$40,837 07

LAW SCHOOL

Association of American Law Schools, dues.....	\$10 00	
American Express Co., express.....	3 20	
American Law Book Co., books.....	18 60	
Administration pay roll, clerks.....	1,760 95	
Bird, G. W., reports.....	87 45	
Beedle, G. E., insurance.....	162 95	
Blied & Schneider, screws.....	10 42	
Baker Paper Co., paper.....	2 17	
Bender & Co., M., books.....	14 00	
Burger, Peter, hardware.....	1 70	
Boston Book Co., books, subscription, index.....	302 00	
Baneroft Whitney Co., books, reports.....	21 50	
Cook, W. W., salary.....	3,000 00	
Cole, T. L., books.....	136 09	
Collignon, J. J., correcting papers.....	5 00	
Citator Pub. Co., subscriptions.....	3 00	
C. M. & St. P. Ry. Co., freight.....	5 43	
Callaghan & Co., books, reports.....	1,308 59	
Canada Law Book Co., books.....	673 75	
Carswell Co., books, periodical, reports.....	117 05	
C. & N. W. Ry. Co., freight.....	6 61	
Dengler, C. M., lettering.....	3 85	
Democrat Printing Co., printing.....	26 45	
Fiske & Co., books.....	3 50	
Frederickson, A. D. & J. V., lumber.....	40 00	
Gilmore, E. A., salary.....	3,666 66	
Gaylord Bros., paper.....	2 02	
General Electric Co., electric switches.....	45 08	
Grimm's Bindery, binding.....	102 35	
Grossepup, P. S., lectures.....	10 00	
Heat & Water, percentages.....	1,983 93	
Journal of Criminal Law, subscription.....	3 00	
Jones, G. I., books.....	5 00	
Jones, B. W., salary.....	970 00	
Kroncke Hardware Co., hardware.....	15 84	
Keefe-Davidson Co., books.....	6 50	
Libbie & Co., C. F., books.....	35 73	
Library Bureau, cards.....	3 00	
Lawyers' Cooperative Pub. Co., books, reports.....	17 50	

Menges Pharmacy, drugs.....	10	
Mautz Bros., paints.....	6 62	
Madison, city of, water.....	4 00	
Madison Gas & Electric Co., gas, current.....	320 70	
Moore, W. U., salary.....	3,055 55	
Nickles, R. J., lamps, merchandise.....	41 61	
Orvis, W. H., reports.....	3 00	
Olin, J. M., salary.....	820 00	
Parsons P. & S. Co., stationery.....	8 90	
Piekarts, L. J., bursar, postage, bills paid.....	69 85	
Richards, H. S., salary.....	4,000 00	
Rundell, O. S., correcting papers.....	2 00	
Remington Typewriter Co., machine parts.....	1 25	
Rundle-Spence Mfg. Co., hardware.....	2 37	
Richards, H. S., expenses.....	1 00	
Smith, H. L., salary.....	3,500 00	
Statute Law Book Co., books.....	125 93	
Shepard Co., Frank, books.....	3 00	
Store Room, merchandise.....	87 29	
Sanford, J. B., salary.....	880 00	
Tracy, Gibbs & Co., printing.....	11 00	
Taylor & Gleason, cards.....	3 00	
Thompson Co., E., books.....	24 25	
University pay roll, janitors.....	763 93	
Winston & Co., J. C., books.....	28 80	
Waumbaugh, Eugene, salary.....	400 00	
Western Electric Co., merchandise.....	43 56	
Williamson & Co., R., merchandise.....	43 78	
Wells Fargo Express Co., express.....	2 58	
Western Pub. Co., books.....	454 25	
Wolff, Kubly & Hirsig, hardware.....	4 20	
Yawkey-Crowley Co., lumber.....	9 00	
		\$29,315 35

PHYSICAL CULTURE—MEN

Administration pay roll, clerks.....	\$471 45	
American Air Cleaning Co., cleaning apparatus.....	1,400 00	
American Express Co., express.....	1 00	
Alford Bros., laundry.....	140 12	
Barry, I. A., salary.....	2,000 00	
Beedle, G. E., insurance.....	380 09	
Burdick & Murray, merchandise.....	24	
Banker, C. I., guards.....	36 00	
C. & N. W. Ry Co., freight.....	10 09	
C. M. & St. P. Ry. Co., freight.....	1 53	
Driver, E. S., salary.....	200 00	
Dottl, Jos., goals.....	14 75	
Doyon & Rayne Lumber Co., lumber.....	7 47	
Democrat Printing Co., printing.....	28 09	
Elson, J. C., salary.....	2,025 00	
F. F. F. laundry, laundry.....	135 61	
Faber, M. E., changing lock combinations.....	25 00	
Frederickson, A. D. & J. V., lumber.....	8 00	
Hyland, W. J., mantles.....	3 00	
Hollister Drug Co. drugs.....	4 95	
Hutchins, C. P., salary.....	1,460 00	
Heat and Water, percentages.....	8,597 09	
Klein, Fred, painting, glass.....	7 50	
Kroncke Hardware Co., H. G., hardware.....	12 09	
Keeley, Neckerman, Kessenich Co., carpet.....	1 35	
Kornhauser & Co., A., merchandise.....	30	
Lathrop, J. G., salary.....	540 00	
Menges Pharmacies, drugs, thermometer.....	2 35	
Mautz Bros., paints.....	50 41	
McChesney, H. D., salary.....	240 00	
Madison Gas & Electric Co., gas, current.....	793 73	
Moseley, J. E., stationery.....	3 56	
Malce & Brother, repairs.....	21 15	
Miller Lock Co., locks.....	3 52	
Madison Tent & Awning Co., canvas, covering.....	51 00	
Madison Steam Laundry, work.....	176 33	
Main, Gilbert, salary.....	423 50	
Madison, City of, water.....	38 89	
Medart Mfg. Co., F., wands, apparatus, mats.....	708 45	
Mayers, A. A., paints, jars.....	205 00	
Nespor, Z., salary.....	480 00	

Narragansett Machine Co., apparatus, lockers.....	34 80	
Parsons P. & S. Co., stationery.....	75	
Pickarts, L. J., bursar, postage, bills paid.....	22 30	
Rundle-Spence Mfg. Co., hardware.....	3 00	
Store Room, merchandise.....	246 56	
Spalding & Bros., A. G., plates.....	2 70	
Sladky, A. C., repairs.....	4 20	
Smiley, B. E., tuning.....	2 50	
Southern Wisconsin Foundry Co., castings.....	11 40	
Sumner & Morris, hardware.....	11 97	
Ten Eyck, E. H.....	1,199 96	
Tracy, Gibbs & Co., printing.....	1 25	
University pay roll, janitors.....	2,523 02	
University Cooperative Co., stationery.....	126 25	
Wolff, Kubly & Hirsig, paints, hardware.....	21 33	
Wehrmann, Chas., blankets, repairs.....	20 55	
Yawkey-Crowley Lumber Co., lumber.....	8 10	
Zeidlhack, Felix S., salary.....	500 00	
Zarfos, L. N., salary.....	407 50	
Correction memorandum.....	49 78	
		\$26,473 00

PHYSICAL CULTURE—WOMEN

Atkinson, Elizabeth E., salary.....	\$900 00	
Administration pay roll, clerks.....	111 30	
American Express Co., express.....	3 25	
Bassette, F. A., books.....	6 75	
Burdick & Murray Co., merchandise.....	3 32	
Burger, Peter, hardware.....	75	
C. & N. W. Ry. Co., freight.....	26	
Com. of Pub. Printing, paper.....	2 55	
Dobson, Josie Helen, salary.....	1,500 00	
Democrat Printing Co., printing.....	26 95	
Illinois Central Railway Co., freight.....	1 97	
Illinois Electric Co., wire.....	5 25	
Knox & Co., S. H., merchandise.....	1 30	
Klein, Fred, painting.....	25	
Keeley, Neckerman & Kessenich, merchandise.....	9 49	
Kornhauser & Co., A., merchandise.....	28 05	
Larned, Grace T., salary.....	280 00	
Lynch, Pat, straps.....	3 00	
Mautz Bros., paints.....	1 00	
Menges Pharmacy, drugs.....	6 80	
Mayhew, Abbey S., salary.....	1,700 00	
Moseley, J. E., stationery.....	15 23	
Narragansett Machine Co., belts.....	25 00	
Pickarts, L. J., bursar, postage.....	8 95	
Pickarts, Mary E., salary.....	650 00	
Parsons P. & S. Co., stationery.....	1 15	
Physicians' Supply Co., instruments.....	24 30	
Store Room, merchandise.....	212 86	
University pay roll, janitors.....	220 60	
University Cooperative Co., stationery, supplies.....	112 70	
Wolff, Kubly & Hirsig, hardware.....	10 25	
Wyman, Clare S., salary.....	800 00	
Warner, W. W., tuning, music.....	11 38	
Correction memorandum.....	1 50	
		\$6,685 26

AGRICULTURAL INSTITUTE FUND

American Express Co., express.....	\$29 53	
Agricultural Institute pay roll, clerks, workers.....	6,737 50	
Brackett, G. A., photos.....	1 50	
Cantwell Printing Co., printing.....	9 50	
C. & N. W. Ry. Co., freight.....	32 49	
C., M. & St. P. Ry. Co., freight.....	45 08	
Com. of Public Printing, paper.....	1,908 88	
Capital City Paper Co., paper.....	6 84	
Democrat Printing Co., printing.....	4,002 07	
Hildebrand, R. F., photos.....	1 75	
Illinois Central Railway Co., freight.....	30	
Leader Publishing Co., half-tones.....	133 72	
McKerrow, G., expenses, salary, dues.....	6,705 02	
Nicodemus, R. C., bond.....	7 50	

Pickarts, L. J., bursar, postage, bills paid, cash.....	2,677 42	
Parsons P. & S. Co., printing.....	6 35	
Store Room, merchandise.....	48 58	
Western Union Telegraph Co., messages.....	90	
Wisconsin Staats Zeitung, printing.....	9 60	
Wells Fargo Express Co., express.....	34 46	
Correction memorandum.....	487 93	
		\$22,966 92
SUPERINTENDENT OF BUILDINGS		
Alford Bros., laundry.....	\$29 45	
Administration pay roll, clerks.....	1,358 35	
Burger, P., hardware.....	11 60	
C., M. & St. P. Ry. Co., freight.....	29	
C. & N. W. Ry. Co., freight.....	1 40	
Carman, Chas., shoeing.....	24 70	
Democrat Printing Co., printing.....	1 98	
Diebold, P. J., repairs.....	20 00	
F. F. F. Laundry, work.....	285 69	
Frederickson, A. D. & J. V., lumber.....	10 21	
Goodyear Rubber Co., fittings.....	10 30	
Hollister Drug Co., drugs.....	5 60	
Hyland, W. J., mantles, globes.....	12 50	
Hayes, J. D., shoeing.....	18 80	
Hoffman, Feed Co., oats, hay.....	75 32	
Johns-Manville Co., H. W., perolin.....	3 50	
Kornhauser & Co., A., merchandise.....	20	
Lyon & Healy, truck.....	29 00	
Madison Steam Laundry, work.....	52 39	
Mautz Bros., paints.....	7 00	
Menges Pharmacy, drugs.....	3 45	
Nickles, R. J., shades.....	4 95	
National Case & Carton Co., napkins.....	8 00	
Pickarts, L. J., bursar, postage.....	6 00	
Rasmussen, G., services.....	5 00	
Store Room, merchandise.....	889 46	
Sumner & Morris, hardware.....	3 60	
University pay roll, janitors.....	2,020 80	
Western Union Telegraph Co., messages.....	39	
West, J. P., veterinarian.....	5 50	
Wiedenbeck, Dohelin Co., hardware.....	5 25	
Wisconsin Wagon Co., pole, repairs.....	11 50	
Wehrman, Chas., harness, repairs.....	19 90	
Yawkey-Crowley Lumber Co., lumber.....	8 00	
Correction memorandum, transfer.....	205 00	
		\$5,155 88
WASHBURN OBSERVATORY		
Administration pay roll, clerks.....	\$416 65	
American Express Co., express.....	40	
Beedle, G. E., insurance commissioner, insurance.....	162 90	
Cooley, C. F., coal.....	12 00	
Central Electric Co., lamps.....	3 11	
Conklin & Sons, coal.....	366 87	
Comstock, G. C., salary.....	3,200 00	
Democrat Printing Co., printing.....	1 91	
Flint, A. S., salary.....	2,000 00	
Menges Pharmacy, drugs.....	85	
Madison Gas & Electric Co., gas, current.....	17 04	
Pickarts, L. J., bursar, postage.....	11 00	
Sears, Roebuck & Co., lamps.....	3 91	
Store Room, merchandise.....	27 98	
University pay roll, janitors.....	794 93	
Wolff, Kubly & Hirsig, hardware.....	21 30	
		\$7,070 85
FEES REFUNDED		
Atwood, Nellie P.....	\$3 00	
Alexander, Jesse.....	25 00	
Ascham, R. E.....	25 00	
Aukeny, S. H.....	25 00	
Anderson, J. B., Jr.....	22 20	

Ash, B. C.	37 00
Boleng, T. H.	9 00
Blackburn, P.	7 00
Blanchard, G. W.	10 00
Burnham, Margaret M.	10 00
Burke, Le Roy.	4 80
Blodgett, C. W.	6 00
Barret, Grace M.	6 00
Boothby, E. L.	7 20
Butler, C.	8 20
Biere, Russell.	25 00
Bennet, B. F.	25 00
Blake, G. B.	25 00
Bosson, Amy G.	25 00
Browning, E. E.	25 00
Bunker E. F.	25 00
Bischoff, A. L.	12 00
Berg, O. T.	50 00
Benson, Ida B.	10 40
Barber, S. L.	25 00
Ballard, C. M.	17 20
Blowers, L. E.	7 60
Brennen, Ursula.	25 00
Barnum, C. T.	25 00
Cairns, G. D.	37 00
Cameron, E. H.	11 00
Campbell, Harlette.	6 60
Cornelius, Geo.	8 80
Clark, R. C.	2 00
Carpenter, F. G.	25 00
Cowan, G. P.	25 00
Cushing, W. T.	25 00
Christienson, I. C.	4 80
Corse, Marian.	12 00
Crawford, Fannie.	12 00
Conron, T. W.	7 60
Coup, F. T.	25 00
Dora, Grace E.	5 00
Davey, C. M.	12 80
Del Marcelle, C. C.	10 00
Dreutzer, C. E.	10 00
Druen, D. E.	25 00
Denslow, R. A.	25 00
Dickhoff, J. F.	3 00
Drews, P. P.	12 00
Dunlap, Fred.	15 00
Day, C. E.	15 20
Dickens, R.	12 00
Davies, F. E.	17 00
Ellingson, E. O.	15 00
Esch, G. A.	25 00
Ernst, Claude.	25 00
Graff, Einar.	25 00
Ellsworth, Frances.	25 00
Ewing, D. K.	7 80
Frankenburger, Dorothy.	15 00
Fretz, L. A.	7 00
Frost, R. E.	8 40
Force, Henry.	25 00
Frudden, F. A.	50 00
Fargo, Helen M.	12 00
Friis, Hans.	13 00
Greifenhagen, P. F.	15 00
Grady, Agnes.	15 00
Grinde, Hazel.	6 00
Gottschalk, H. W.	6 40
Goeke, O. F.	25 00
Grimes, Jack.	8 00
Greenwood, C. H.	17 00
Greeley, Helen K.	28 00
Gross, C. D.	13 60
Harker, J. J.	6 60
Houch, F. E.	12 80
Hughes, A. F.	11 00
Henning, R. B.	8 80
Hoskins, Mark.	4 00
Heuer, Josephine.	4 00

Hardy, Ella M.	4 00
Halls, J. C.	4 40
Henry, L. L.	12 00
Hoffman, E. R.	25 00
Handy, E.	25 00
Hobart, A.	25 00
Hookstadt, Carl.	25 00
Hawkins, P. H.	11 20
Hutchinson, E. D.	4 80
Hornbeck, B. B.	22 20
Horton, E. R., Jr.	25 00
Hanrahan, Alice K.	55 00
Hawkins, E. C.	13 00
Hangl, G. H.	9 60
Irwin, B.	42 00
Imme, F. W.	37 00
Jensen, F. W.	11 00
Johnson, Axel.	15 00
Johnson, J. H.	25 00
Johnson, H. G.	25 00
Jones, Q. J.	25 00
James, Mary.	12 00
Jones, O. D. V.	42 00
Jungeheinz, Ilma.	42 00
Klemm, J. P.	28 00
Klofanda, R.	8 80
Kierman, L. J.	32 00
Kelley, Mabel.	25 00
Koenig, A. E.	15 00
Kennedy, J. P.	25 00
Kennedy, R. C.	28 00
Kimball, C. H.	13 00
Kaster, J.	12 00
Lawson, H. H.	28 80
Lavor, Arnold.	20 00
Lunde, P.	25 00
Lau, F. W.	12 00
Lamb, B.	18 50
Lawson, Lillian E.	12 00
Lorenz, H. B.	2 40
Lake, G. B.	7 40
Lawrence, W.	17 00
Lee, Olive M.	12 00
Megan, F. P.	11 00
Mitchell, S. R.	12 80
McKay, Cecile.	10 00
Monroe, Nellie G.	7 20
Mellin, O. W.	25 00
Miller, L. W.	25 00
McCann, W. R.	25 00
Morrison, R. A.	25 00
Murray, Frances.	25 00
Mitchell, M. B.	25 00
Mapel, D. R.	13 00
Merkin, A. E.	35 00
McGee, B. A.	25 00
Moore, R. J.	25 00
Miner, Marajorie.	12 00
Nescner, Wm.	3 45
Noe, P. W.	2 20
Neuman, J. X.	25 00
Opie, Howard.	25 00
Oidham, L. L.	12 00
Olsen, T. J.	38 00
Plagge, H. J.	15 00
Pope, D. I.	11 00
Payne, C. A.	12 80
Phelps, G. R.	12 80
Pope, D. I.	10 00
Poston, Virgil.	14 40
Peirce, W. A.	25 00
Parent, Mary.	25 00
Parsons, Ed.	25 00
Preston, W. M.	12 00
Pease, Edna C.	50 00
Pickarts, L. J., bursar, refunds, bills paid.	956 00
Parke, N. C.	30 40
Parker, W. H.	37 00

Peters, J. W.....	12 00
Rhoades, L. C.	10 00
Reirerson, Einer. .	10 00
Raymond, Geneva. .	6 00
Rhodes, Florence M.	8 00
Raymond, Alice H. .	6 00
Rutherford, W. L. .	25 00
Rouzer, P. C.	25 00
Ralson, F. L.	17 00
Ritchie, P. C.	25 00
Raithel, A. G.	7 40
Reinert, W. J.	6 80
Robertson, A. F. .	25 00
Ritchie, P. C.	25 00
Richardson, P.	50 00
Rees, R. L.	29 60
Rakow, Bertha.	9 60
Robinson, C. T.	12 00
Robinson, Katherine Y.	12 00
Stevenson, J. A. .	9 00
Scott, V. E.	6 00
Steve, W. F.	15 00
Schabel, F. M.	8 80
Steven, J. B.	11 00
Smith, Irene M. .	35 00
Shapiro, Estelle. .	16 00
Speck, R. J.	36 00
Smith, E. J.	2 20
Steppler, J.	6 60
Simpson, H. G.	7 00
Shonat, Archie. .	9 00
Schilling, C. F. .	16 00
Schiffbauer, P. P. .	25 00
Schmidt, J. J.	25 00
Shoesmith, H. J. .	7 00
Sanders, V. A.	10 00
Stephens, N. G. .	12 00
Sheffer, R. J. .	9 60
Skinner, A. W. .	38 00
Springer, L. W. .	18 00
Swail, Hazel T. .	25 00
Sorenson, B.	6 80
Stevenson, Claire .	1 50
Shoesmith, H. J. .	7 40
Sunstrom, Lillian .	3 50
Trewatha, J. G. .	15 00
Titsworth, W. A. .	15 00
Turner, Laura J. .	11 00
Talbot, C. H.	25 00
Tucker, R. H.	10 00
Thompson, J. S. .	25 00
Taylor, Clara I. .	25 00
Thompson, Lucy B. .	25 00
Talbot, R. G.	10 20
Vantine, L. A.	6 60
Westenhaver, Lula M.	8 00
Wiese, W. F.	4 40
Walter, R. W.	9 00
Wilson, J. G.	12 00
Walters, L. D.	25 00
Weed, F. J.	25 00
White, L. L.	25 00
Walley, Henry .	35 00
Williams, M. B. .	7 00
Wilcox, W. G.	15 00
Woo, Nae Tsung. .	10 00
Wilder, F. B.	17 00
Wilson, H. A.	42 00
Wahl, H. R.	17 00
Woodard, S. C. .	25 00
Weise, Otto.	25 00
Weinhagen, A. B. .	17 00
Zimmerman, F. R. .	25 00
Zander, F. W.	10 40

\$5,033 35

RENT		
Pickarts, L. J., bursar, bills paid.....	\$21 00	
SCHOOL OF ECONOMICS LIBRARY FUND		
Clark, A. H., books.....	\$16 00	
HISTORICAL SOCIETY		
Correction memorandum.....	\$10 20	
PERELES LAW SCHOLARSHIP		
Colignon, J. J., scholar.....	\$250 00	
BIOLOGY BUILDING		
Administration pay roll, clerks.....	\$928 00	
American Express Co., express.....	75	
Mautz Bros., paint.....	6 00	
Peabody, A., expenses.....	20 22	
Store Room, merchandise.....	40 75	
Wells Fargo Express Co., express.....	50	
Wisconsin Telephone Co., messages.....	3 00	
		\$999 22
EQUIPMENT OF WOMEN'S BUILDING		
Andrews, A. H., chairs.....	\$56 00	
American Express Co., express.....	1 85	
Berger & Co., Wm., couches.....	85 72	
Central Electric Co., electricity.....	116 92	
C. & N. W. Ry. Co., freight.....	180 01	
C., M. & St. P. Ry. Co., freight.....	264 29	
Darragh & Smail, mat.....	59 50	
Daniels, A. P., scenery contract.....	433 40	
Fischer Furniture Co., C. W., furniture.....	193 50	
Findorf, J. H., door.....	9 50	
Frederickson, A. D. & J. V., lumber.....	232 04	
Gimbel Bros., canvassing, decorating.....	5,275 00	
Greig, G. T., furniture.....	92 00	
Illinois Electric Co., merchandise.....	7 98	
Keeley, Neckerman & Kessenich, rugs.....	5 00	
Kickchefer Elevator Co., A., elevator.....	2,128 33	
McCarthy, T. C., contract.....	46 35	
Madison Tent & Awning Co., curtains.....	7 00	
Mautz Bros., paint.....	339 56	
Nelson Furniture Co. M. L., desk, mirrors.....	124 80	
Narragansett Machine Co., lockers.....	5,329 04	
Owens, Wm., plumbing.....	314 98	
Pritzlaff Hardware Co., hooks.....	13 00	
Peck & Hills, furniture.....	161 00	
Sasse, C. L., shellac.....	2 80	
Sumner & Morris, hardware.....	3 75	
Store Room, merchandise.....	39 50	
Thurber, W. S., picture.....	22 00	
Troy Laundry Machine Co., dressing room.....	245 44	
University pay roll, janitors.....	761 31	
Wisconsin Telephone Co., messages.....	35	
Wolf, Kubly & Hirsig, hardware.....	32 44	
Wisconsin Iron & Wire Works, enclosure.....	700 00	
Wells, Fargo Express Co., express.....	45	
Western Union Telegraph Co., messages.....	29	
Wiedenbeck-Dobelin Co., hardware.....	17 85	
Yawkey-Crowley Lumber Co., lumber.....	14 40	
Correction memorandum.....	69 00	
		\$17,386 55

EQUIPMENT OF ANIMAL HUSBANDRY BUILDING		
American Seating Co., chairs.....	\$130 00	
Bird & Co., J. A. & W., flooring.....	10 85	
Corbin Cabinet & Lock Co., locks.....	6 85	
Findorf, J. H., desk.....	15 00	
Frederickson, A. D. & J. V., lumber.....	144 00	
Gallagher Co., J., curtains.....	164 94	
Goodyear Rubber Co., tubing.....	10 30	
Haswell Furniture Co., furniture.....	30 00	
Ill. Electric Co., merchandise.....	27 75	
Klein, Fred, painting.....	43 96	
Louden Machinery Co., tools.....	293 55	
Madison Gas & Electric Co., connection.....	4 50	
Mautz Bros., paint.....	5 52	
Neimann Table Co., tables.....	4 75	
Sumner & Morris, hardware.....	8 00	
Southern Wisconsin Foundry Co., castings.....	24 05	
Store Room, merchandise.....	6 30	
Wilmarth, T. W., lanterns.....	100 00	
Wolff, Kubly & Hirsig, hardware.....	33 10	
Wiedenbeck-Dobelin Co., hardware.....	1 19	
Wehrmann, Chas., repairs.....	32 00	
Yawkey-Crowley Lumber Co., lumber.....	73 89	
		\$1,169 50
AGRONOMY BUILDING		
McCarthy, T. C., contract.....	\$200 00	
AGRICULTURAL ENGINEERING BUILDING		
McCarthy, T. C., contract.....	\$325 00	
ADDITION TO ADMINISTRATION BUILDING		
McCarthy, T. C., contract.....	\$280 00	
ALUMNI FELLOWSHIP IN JOURNALISM		
Lockner, L. P., fellow.....	\$400 00	
CARNEGIE FUND		
Daniells, W. W., salary, emeritus.....	\$1,462 03	
Henry, W. A., salary, emeritus.....	1,833 28	
Kerr, Alex., salary.....	825 00	
Parkinson, J. B., salary.....	1,585 78	
Parker, F. A., salary.....	1,310 73	
		\$7,016 87
TUNNELS		
Crane Co., pipe.....	\$1,715 12	
C. & N. W. Ry. Co., freight.....	53 92	
C., M. & St. P. Ry. Co., freight.....	39 94	
Cooley, C. F., lime.....	2 80	
Carroll & Goetz, sand.....	165 30	
Fairbanks, Morse & Co., tank.....	31 00	
Frederickson, A. D. & J. V., lumber.....	5 65	
Gazette Printing Co., advertising.....	1 31	
Keown, R. M., drawings.....	53 75	
McCarthy, T. C., balance of contract.....	524 00	
Madison Gas & Electric Co., gas.....	83 39	
Mueller Co., The, brackets, contract, piping.....	21,645 81	
Quinn, N., contract, labor, concrete work.....	8,950 00	
Stephens, D., stone.....	1,251 85	

Sentinel Co, advertising.....	27 50	
Store Room, merchandise.....	1,651 10	
Transfer from day book.....	264 92	
University pay roll, janitors.....	208 33	
Western Union Telegraph Co., messages.....	27	
Western Kieley S. S. Co., valve.....	16 80	
Wiedenbeck-Dobelin Co., hardware.....	10 83	
Correction memorandum, transfer.....	6 50	
		\$36,772 09
BILLS PAYABLE		
Albers, Win., note.....	\$11,000 00	
Central Wisconsin Trust Co., Atchison note.....	10,000 00	
		\$21,000 00
UNIVERSITY GROUNDS		
Breitenbach, John, land.....	\$4,831 25	
Fuller, M. E., land.....	1,700 00	
Gay, L. W., option, commissions.....	800 00	
Icke, J. F., survey and plat, map.....	54 00	
Olin, J. M., land.....	3,425 00	
Sterens, Amelia F., land.....	1,700 00	
		\$12,510 25
COLLEGE OF MEDICINE, BOOKS		
Stechert & Co., G. E., books.....	\$421 10	
MILWAUKEE DRUG COMPANY'S SCHOLARSHIP IN PHARMACY		
Sandahl, N. S., scholarship.....	\$35 00	
WOMEN'S GYMNASIUM BUILDING		
Administration pay roll, clerks.....	\$495 00	
American Express Co., express.....	80	
Beedle, G. E., insurance.....	380 10	
Burger, Peter, hardware.....	35	
Central Electric Co., merchandise.....	131 50	
Castle & Doyle, lime.....	7 50	
Crane & Co., pipe.....	65 24	
C. M. & St. P. Ry. Co., freight.....	317 91	
C. & N. W. Ry. Co., freight.....	227 48	
Doyon & Rayne, lumber.....	25 00	
Dengler, C. M., lettering.....	1 00	
Electrical Supply Co., merchandise.....	70	
Ehret Magnesia Mfg. Co., covering.....	17 50	
Frederickson, A. D. & J. V., lumber.....	77 08	
Ft. Wayne Electric Co., motor, apparatus, pine.....	91 46	
Gimbel Bros., chairs.....	1,148 40	
Hardgrove & Sharratt, scraper.....	27 00	
Illinois Central Ry. Co., freight.....	1 37	
Illinois Electric Co., merchandise.....	27 24	
Keyes, William, rent.....	16 00	
Madison Gas & Electric Co., gas.....	25 75	
Madison, City of, water.....	18 53	
Miller Lock Co., locks.....	1 80	
Mautz Bros., paint.....	4 50	
Mott Iron Works, J. T., electroliers.....	334 00	
McCarthy, T. C., contract, extras.....	48,598 60	
Mueller Co., The, radiators, screens.....	117 00	
Olds Seed Co., L. L., seeds.....	3 25	
Owens, William, supplies, plumbing.....	48 92	
Paulus Hardware Co., P., hardware.....	1,200 00	
Passow & Sons, bowling alleys.....	1,487 26	
Postal Telegraph Co., messages.....	25	
Peabody, A., expenses.....	17 91	
Peper, J. W., plumbago, pipe.....	3 54	

Reynolds, E. S., drayage.....	62 74	
Rosenberg Elevator Co., F., elevators.....	72 00	
Rob Rom Co., fittings.....	58 14	
Racine Refrigerator & Ice Machine Co., refrigerator.....	1,311 60	
Stephens, D., stone	93 75	
Scaife & Sons Co., Wm. B., filters.....	1,297 71	
Sturtevant & Co., B. F., ventilating apparatus.....	2,850 00	
Sumner & Morris, hardware.....	17 62	
Store Room, merchandise	1,159 32	
Trenton Oil Cloth & Linoleum Co., linoleum.....	1,173 82	
University pay roll, janitors.....	2,247 93	
Wilmarth Co., T. W., fixtures.....	1,942 84	
Western Kieley S. S. Co., valve.....	26 40	
Wisconsin Iron & Wire Works, fencing.....	538 00	
Western Union Telegraph Co., messages.....	1 07	
Western Electric Co., wire, merchandise.....	35 06	
Wisconsin Telephone Co., messages.....	1 55	
Wolf, Kubly & Hirsig, hardware.....	157 95	
Yawman & Erbe Mfg. Co., cabinets.....	50 00	
Correction memorandum	218 29	
		\$68,235 73

ADDITION TO DAIRY BUILDING

Administration pay roll, clerks.....	\$853 95	
American Express Co., express.....	1 45	
American Contractor, advertising.....	6 45	
C. & N. W. Ry. Co., freight.....	129 06	
Conklin & Sons, coal.....	47 13	
C. M. & St. P. Ry. Co., freight.....	18 90	
College Book Store, stationery.....	2 25	
Chronicle Co., advertising	1 12	
Gazette Publishing Co., advertising.....	1 22	
Huebsch, B. W., yearbooks.....	1 50	
Improvement Bulletin, advertising	4 00	
Illinois Electric Co., wire.....	35 64	
Janesville Cement Shingle Co., gravel, sand.....	75 19	
Milwaukee Free Press Co., advertising.....	1 95	
Mueller Co., The, temperature of heat.....	40 00	
McCarthy, T. C., contract.....	11,000 00	
State Journal Printing Co., printing.....	2 60	
Stephens, D., stone	156 40	
Sentinel Co., advertising	5 10	
Store Room, merchandise	468 68	
Trenton Oil Cloth & Linoleum Co., linoleum.....	210 21	
University Cooperative Co., stationery.....	2 50	
University pay roll, janitors.....	169 65	
Correction memorandum	40 40	
		\$13,275 35

NEW CENTRAL HEATING PLANT

Administration pay roll, clerks.....	\$3 00	
American Express Co., express.....	1 20	
Babcock & Wilcox, boilers.....	7,547 00	
Bishop, H. A., mason work.....	1,873 50	
Crane Co., pipe	59 85	
Conklin & Sons, ice.....	30 06	
C. M. & St. P. Ry., freight, demurrage.....	62 03	
C. & N. W. Ry. Co., freight.....	11 32	
Deane Steam Pump Co., pump.....	435 00	
Doyon & Rayne Lumber Co., lumber.....	4 10	
Frederickson, A. D. & J. V., lumber.....	127 65	
Hainler Eddy Smoke Recorder Co., recorder.....	100 00	
Hell Co., The, breeching, spouts.....	1,365 00	
Henion & Hubbell, pump, pipes.....	410 11	
Ingersoll-Rand Co., apparatus.....	412 00	
Keown, R. M., drawings.....	43 25	
King & Walker Co., straps.....	8 75	
Kerkman Construction Co., labor.....	360 00	
McCarthy, T. C., contract, pit, extras.....	11,680 11	
Owen, R. S., drawings.....	12 50	
Pittsburg V. F. & C. Co., valves.....	2,070 00	
Roebblings Sons Co., J. A., rope.....	12 95	
Store Room, merchandise	27 50	
Southern Wisconsin Foundry Co., castings.....	56 64	
University pay roll, janitors.....	546 72	

Wiedenbeck-Dobelin Co., hardware	5 38	
Wolf, Kubly & Hirsig, hardware.....	32 27	
Westinghouse Machine Co., stoker.....	1,857 08	
Wisconsin Brick Co., brick.....	335 80	
Yawkey-Crowley Lumber Co., lumber.....	29 00	
Correction memorandum, transfer, correction.....	15 60	
		\$29,535 37
ANIMAL HUSBANDRY BUILDING		
Administration pay roll, clerks.....	\$50 00	
Allen's Sons Co., N. R., tan back.....	326 70	
Art Bedstead Co., couch.....	16 60	
American Express Co., express.....	1 50	
Bird & Co., J. A. & W., flooring.....	7 20	
Chapman Co., T. A., linoleum.....	55 00	
C. & N. W. Ry. Co., freight.....	214 72	
C., M. & St. P. Ry. Co., freight.....	5 88	
Correction Memorandum, Swenson & Coyne, correction.....	13 54	
Darragh & Small, mats.....	240 00	
Frederickson, A. D. & J. V., lumber.....	23 18	
Gross Hardware Co., P., hardware.....	40 87	
Greig, G. T., furniture.....	13 50	
Haswell Furniture Co., furniture.....	17 00	
King & Walker Co., straps.....	83 95	
Lansing Wheelbarrow Co., cart.....	55 00	
Mott Iron Works, J. L., boxes.....	52 60	
Madison Gas & Electric Co., connections.....	4 50	
McCarthy, T. C., contract, grading, extras, brick.....	21,912 65	
Nickles, R. J., merchandise.....	118 47	
Store Room, merchandise.....	85 05	
University pay roll, janitors.....	269 41	
Wolf, Kubly & Hirsig, hardware.....	1 92	
Western Electric Co., merchandise.....	126 32	
		\$23,735 56
CAMBRIAN BIBLICAL ALLIANCE FELLOWSHIP		
Davies, H. D., fellowship.....	\$1,000 00	
J. J. HILL RAILWAY LIBRARY FUND		
Boyd, I. S., books.....	\$175 00	
Grimm's Bindery, binding.....	2 30	
McClurg & Co., A. C., books.....	5 20	
Pickarts, L. J., postage.....	15 00	
Rosenthal's Antiquariat, L., book.....	7 39	
Stechert & Co., G. E., books.....	39 90	
		\$244 79
REMODELLING OF CHADBOURNE HALL		
Blied & Schneider, hardware.....	\$10 25	
Barbed Wire & Iron Works, guards.....	38 25	
Castle & Dovy, lime, plaster.....	14 30	
C. & N. W. Ry. freight.....	6 41	
C., M. & St. P. Ry., freight.....	12 96	
Central Electric Co., electric bills, wire.....	201 85	
Doyon & Rayne, lumber.....	26 44	
Dengler, C. M., lettering.....	2 10	
Electric Supply Co., electric merchandise.....	4 00	
Frederickson, A. D. & J. V., lumber.....	266 15	
Illinois Central Railway, freight.....	1 09	
Mautz Bros., paint.....	26 64	
Parkinson-Marling Co., lumber.....	19 20	
Priest, A. J., plastering.....	489 00	
Rudle-Spence Mfg. Co., hardware.....	272 65	
Roebings Sons & Co., J. A., rope.....	13 64	
Store Room, merchandise.....	211 68	
Sumner & Morris, hardware.....	17 63	
Smith Paint & Wall Paper Co., wall paper.....	41 75	
Stephens, D., cut stone.....	38 95	
University pay roll, janitors.....	1,917 97	
Wolf, Kubly & Hirsig, hardware.....	99 63	

Wiedenbeck-Dobelin Co., hardware.....	6 32	
Western Union Telegraph Co., messages.....	35	
Yawkey-Crowley Co., lumber.....	1,281 16	
		\$5,020 37

HEAT AND WATER

American Express Co., express.....	\$9 70	
Administration pay roll, clerks.....	1,528 20	
Burger, Peter, hardware.....	34 55	
Besly & Co., C. H., rod.....	9 03	
Builders' Iron Foundry, charts.....	10 00	
Bourbon Copper & Brass Works, hydrants	748 00	
C., M. & St. P. Ry. Co., freight.....	238 25	
City of Madison, water.....	41 47	
Crane Co., pipe.....	728 25	
Clow & Sons, J. B., pipe.....	325 35	
Chapman Valve Co., valve.....	12 50	
Cooley, C. F., coal.....	381 60	
Capital City Paper Co., paper.....	4 60	
C. & N. W. Ry. Co., freight.....	57 04	
Danielson, Mueller & Simpson, gloves.....	4 50	
Diebold, P. J., repairs.....	9 85	
Electrical World, advertising.....	10 00	
Ft. Wayne Electric Works, coil, motor, merchandise	45 80	
Fairbanks, Morse & Co., tickets.....	1 48	
Frederickson, A. D. & J. V., lumber.....	3 00	
General Electric Co., merchandise, lamps.....	7 11	
Gisholt Machine Co., oil.....	7 25	
Goodyear Rubber Co., tubing.....	26 60	
Gilbertson & Anderson, repairs.....	2 50	
Hill Pump Valve Co., valves.....	28 10	
Haak, Wm., Jr., belting.....	1 12	
Hamler-Eddy Smoke Recorder Co., can.....	15 00	
Henion & Hubbell, pipe.....	22 40	
Ill. Central Ry. Co., weighing.....	11 00	
Imperial Brass Mfg. Co., washers.....	36 80	
Jenkins Bros., packing.....	48 63	
Johns-Manville Co., H. W., asbestos.....	55 63	
Johnson Service Co., zines, diaphragms.....	24 90	
Jones & Laughlin Steel Co., beams, steel.....	25 48	
Kowalke, O. L., analysis.....	40 00	
Link Belt Co., supplies, chain, parts.....	493 02	
Madison Gas & Electric Co., gas.....	1,437 01	
Machinists' Supply Co., hardware, tools.....	12 90	
Milwaukee Leather Belt Co., belting.....	5 04	
Manhattan Rubber Co., hose.....	15 00	
McCarthy, T. C., labor.....	10 00	
Mueller Co., oil.....	35 88	
Piper, J. W., belt, plumbago.....	9 00	
Powers Regulator Co., repairs.....	17 25	
Power & The Engineer, advertising.....	6 25	
Postal Telegraph Co., messages.....	60	
Pickarts, L. J., bursar, bills paid.....	80	
Rundle-Spence Mfg. Co., pipe, hardware.....	108 41	
Roebling Sons Co., J. A., rope.....	30 45	
Store Room, merchandise.....	187 73	
Standard Oil Co., oil.....	33 59	
Schaeffer & Budenberg, charts.....	15 00	
Sunnyside Coal Co., coal.....	44,740 12	
Scully Steel & Iron Co., tubes, steel.....	62 78	
Thorkelson, H. J., superintendent, expenses, salary	342 21	
Tripp & Co., A. H., compound.....	2 50	
University pay roll, janitor.....	17,200 20	
Valvoline Oil Co., oil.....	151 59	
Viscosity Oil Co., oil.....	49 47	
Wells Fargo Express Co., express.....	2 00	
Westinghouse Machine Co., castings, grates.....	455 14	
Western Roofing & Shingle Co., gaskets.....	22 05	
Wisconsin Telephone Co., messages.....	1 75	
Western Union Telegraph Co., messages.....	70	
Wolf Mfg. Co., L., washers.....	2 37	
Western Kieley S. S. Co., valves.....	42 00	
Wiedenbeck, Dobelin & Co., hardware.....	21 81	
Wolf, Kubly & Hirsig, hardware.....	16 10	
Correction memorandum, time.....	178 86	
		\$70,265 97

DISTRIBUTED AS FOLLOWS:

College of letters and science.....	\$29,097 51
College of engineering	13,887 46
Physical training—men.....	8,597 00
General library	6,613 05
Chadbourne hall	4,629 14
Agricultural college and experiment station.....	3,820 76
Law school	1,983 93
Forest products laboratory	975 80
Administration	661 82
	\$70,265 97

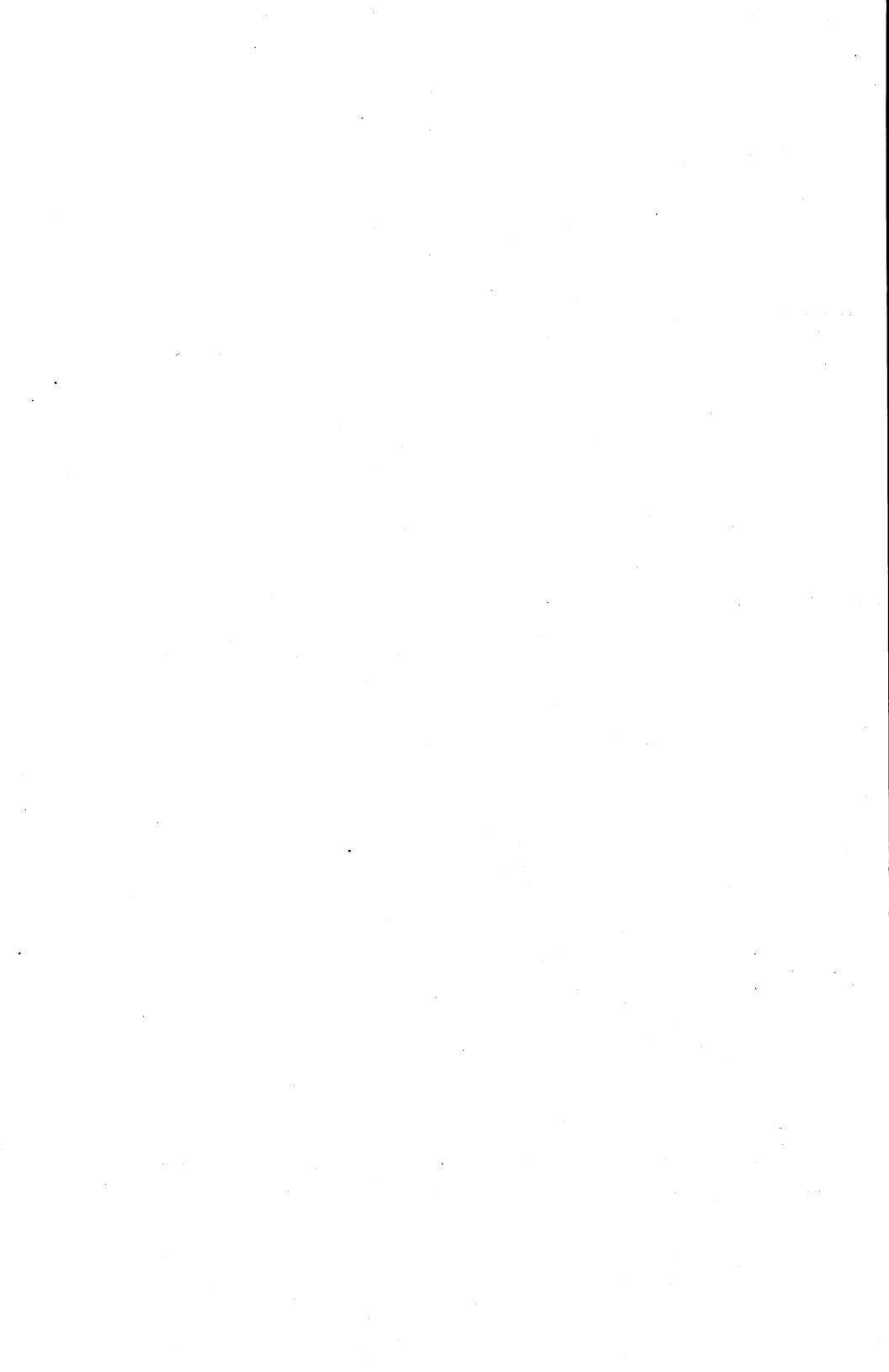
STORE ROOM

Andrae & Sons Co., J., lamps, merchandise.....	\$900 34
American Crayon Co., crayons.....	24 00
A. P. W. Paper Co., paper.....	72 50
American Lead Pencil Co., pencils.....	120 00
Albany Perforated Wall Paper Co., paper.....	145 00
Alford Bros., laundry	27 93
American Linseed Oil Co., oil.....	39 10
Allyn & Bacon, books.....	19 20
American Book Co., books.....	58 56
American Linseed Co., oil.....	205 74
American Express Co., express.....	10 75
Baker Paper Co., paper.....	253 58
Brunswick & Balke Mfg. Co., holders.....	4 50
Boston Thermometer Co., thermometer.....	12 00
Blied & Schneider, hardware.....	20
Bouer Co., E. A., paper.....	223 96
Black, H. A., brooms.....	37 00
Burdick & Murray Co., merchandise.....	11 55
Besly & Co., C. H., tools.....	82
Barbee Wire & Iron Co., hardware.....	20 35
Burger, Peter, hardware	26 65
Brady & Co., W. M., salt.....	11 00
Bauer & Black, oxide.....	9 60
C. M. & St. P. Ry. Co., freight, demurrage.....	1,777 78
Crane Bros., paper	322 64
Carpenter & Co., G. B., parking.....	406 21
Charles Co., Thomas, envelopes.....	5 28
Corbin Cabinet Lock Co., locks.....	10 45
Commissioners of Public Printing, paper.....	2 89
Chicago Label & Box Co., labels.....	1 40
Central Electric Co., merchandise, lamps.....	156 50
Carson, Pirie, Scott & Co., toweling, quilts.....	71 06
Capital City Paper Co., paper.....	221 62
Chicago Envelope Co., envelopes.....	65 75
Corbin, P. & F., latches.....	39 19
Cantwell Printing Co., printing, note books.....	60 48
C. & N. W. Ry. Co., freight.....	358 89
Dietzgen Co., F., stationery, tables, apparatus, paper.....	311 87
Detroit Copper & Brass Mills, rod, brass.....	123 74
Drovers Journal Publishing Co., paper.....	33 50
Democrat Printing Co., printing.....	253 65
Diamond Ink Co., paste.....	10 50
Diamond Crystal Salt Co., salt.....	26 00
Dixon Crucible Co., J., pencils.....	73 35
Dearborn Paper Co., paper.....	21 38
Dennison Mfg. Co., seals, labels, tags.....	103 15
Electrical Supply Co., merchandise.....	14 98
Ferdinand & Co., L. W., cement.....	64 00
Faber, E., pencils, bands, stationery.....	228 96
Field & Co., M., toweling, batting.....	106 20
Fairbanks, Morse & Co., truck.....	20 15
French Battery Co., cells.....	45 00
Gimbel Brothers, merchandise, batting.....	67 00
General Electric Co., merchandise.....	277 51
Grimm's Bindery, binding	45 00
Gender, Paeschki & Frey Co., pails.....	7 06
Globe-Wernicke Co., cards	29 94
Goodyear Rubber Co., hose, tubing.....	29 10
Ginn & Co., book.....	17 76
Goll & Frank Co., towels.....	284 78
Haswell Furniture Co., furniture.....	276 41
Heath & Co., D. C., books.....	20 65

Haak, Mrs. John, making towels.....	4 00
Hinds, Noble & Eldredge, books.....	24 00
Harris & Co., S., tools.....	75
Huebsch, B. W., books.....	6 65
Holcomb Mfg. Co., J. I., brushes.....	79 85
Hogan Envelope Co., envelopes.....	3 55
Hibbard, L. L., testing.....	14 00
Hibbard, Spencer, Bartlett & Co., tools, shears, hardware.....	47 37
Ill. Central Ry. Co., freight.....	4 23
Ill. Nail Co., nails.....	189 20
Ill. Electric Co., merchandise, wire.....	102 64
Imperial Brush Co., brushes, merchandise.....	135 64
Joannes Bros. Co., jars, mops.....	81 53
Johns-Manville Co., H. W., felt, wick.....	25 54
Johnson & Johnson, gauze, plaster.....	193 51
Jenkins Bros., packing.....	282 10
Keuffel & Esser Co., paper, apparatus.....	197 19
Keeley, Neckerman & Kessenich Co., merchandise.....	9 00
Kimberley, Clark & Co., paper.....	257 17
Klein, F., paints.....	3 60
Kroncke Hardware Co., cord, hardware.....	20 00
Lee Co., J. E., bandages, gauze.....	733 95
Little, A. P., paper.....	14 25
Machinists' Supply Co., tools, emery hardware.....	67 35
MacMillan Co., books.....	38 40
Mac Veagh & Co., F., merchandise.....	294 51
Mills Electric Co., lamps.....	40 00
Madison Gas & Electric Co., lamps.....	40 00
Morgensen, Mrs. S. T., making towels.....	4 00
Meyer Broom Co., brooms.....	16 75
Menges Pharmacies, drugs.....	16 63
Moseley, J. E., ink, stationery.....	468 93
Mautz Bros., paints.....	287 15
McClurg & Co., A. C., books.....	333 92
Marquette Cement Mfg. Co., cement.....	6,719 64
Mayers, A. A., oil, merchandise, racks.....	197 52
National Distilling Co., alcohol.....	600 21
National Enameling Co., cans.....	10 15
Nickles, R. J., merchandise.....	216 67
National Carbon Co., cells.....	43 91
Newton-Rotherick Mfg. Co., carbons, paper.....	180 00
Owens, Wm., plumbing.....	25
Paper Mills Co., paper.....	134 43
Pilcher-Hamilton Co., paper.....	77 72
Parsons P. & S. Co., printing.....	547 88
Prescott Chemical Co., disinfectant.....	21 00
Piper Bros., groceries, mops, salt.....	68 15
Pritzlaff Hardware Co., J., glue, hardware, can, casters.....	124 44
Riverside Mills, waste.....	107 61
Robertson Soap Co., T. B., soap.....	27 14
Remington Typewriter Co., paper, ribbons, coupon.....	603 25
Row, Peterson & Co., books.....	11 57
Rundle-Spence Mfg. Co., plumbing material, hardware.....	12 42
Rubdry Towel Co., towels.....	327 18
Rice Co., J. H., lead.....	270 00
Standard Oil Co., oil.....	322 29
Shaw-Walker Co., cases.....	6 60
Sewell-Clapp Mfg. Co., envelopes, papers.....	114 46
Scribner's Sons, C., books.....	46 08
Smith Premier Typewriter Co., coupons, repairs.....	15 00
Sanford Mfg. Co., inks.....	170 53
Swinyer, W. W., pens.....	4 50
Sasse, C. L., paints, putty.....	15 98
Shea, Smith & Co., envelopes.....	6 50
Sumner & Morris, hardware.....	12 40
Smith Paint & Wall Paper Co., paint.....	31 53
State Journal Printing Co., printing.....	2 17
Smith & Co., Bradner, paper, envelopes.....	175 49
Smith & Bros. Typewriter Co., L. C., coupons, typewriter.....	20 00
Standard Paint Co., paint.....	40 00
Standard Paper Co., paper.....	348 52
Tracy, Gibbs & Co., tags, printing.....	21 40
Teckmeyer Candy Co., candy.....	1 20
Thompson & Norris Co., tubes.....	10 43
Trenton Oil Cloth Co., linoleum.....	604 69
Underwood Typewriter Co., ribbons, coupons.....	56 00
U. S. Blue Print Paper Co., paper.....	10 03

University pay roll, janitor.....	15 60	
University Cooperative Co., stationery.....	90	
Valvoline Oil Co., oil (credit).....	2 01	
Van Schaack & Sons, P., chemicals, alcohol.....	121 60	
Wolff, Kubly & Hirsig, hardware.....	159 85	
Weber, Costello & Co., stationery.....	12 00	
West-Williams Co., stationery, cards.....	166 59	
Whitall-Tatum & Co., apparatus.....	18 48	
Whiting Paper Co., paper.....	260 42	
Webster Co., F. S., ribbons.....	27 75	
Wehrmann, Chas., harness.....	2 00	
Western Union Telegraph Co., messages.....	1 05	
Wiedenbeck, Dobein & Co., hardware.....	18 20	
Wells Fargo Express Co., express.....	12 51	
Wellington Co., H. W., cord.....	43 88	
Yawman & Erbe Mfg. Co., folders.....	16 50	
Correction memorandum.....	34 40	
		\$25,512 45
STORE ROOM, 1909-1910		
Credit for supplies furnished various departments and charged as follows:		
Agricultural college and experiment station.....	\$3,317 50	
Laboratory supplies.....	2,139 89	
University extension.....	1,847 05	
Tunnels.....	1,651 10	
College of letters and science.....	1,160 52	
Woman's building.....	1,159 32	
Superintendent of buildings.....	889 46	
General account.....	836 20	
Addition engineering building.....	760 45	
Administration.....	644 60	
College of engineering.....	608 06	
Addition dairy building.....	468 68	
Physical training, men.....	246 53	
Physical training, women.....	212 86	
Remodeling Chadbourne hall.....	211 68	
Heat and water.....	187 73	
Chadbourne hall.....	140 87	
General library.....	112 51	
Law school.....	87 29	
Animal husbandry building.....	85 05	
Lathrop hall.....	64 73	
Forestry building.....	1,913 28	
Architects' office.....	62 99	
Agricultural institute fund.....	48 58	
Biology building.....	40 75	
Equipment woman's building.....	39 50	
Washburn observatory.....	27 98	
Central heating plant.....	27 50	
Military department.....	16 91	
Equipment animal husbandry building.....	6 30	
		\$19,035 90
FORESTRY BUILDING		
Administration pay roll, clerks.....	\$578 53	
American-District Steam Co., fittings.....	386 95	
American Express Co., express.....	2 10	
Cooley, C. F., lime.....	11 38	
Clow & Sons, J. B., pipe.....	272 39	
C. M. & St. P. Ry. freight.....	100 73	
Central Electric Co., merchandise.....	99 25	
C. & N. W. Ry. Co., freight.....	325 39	
Democrat Printing Co., printing.....	4 00	
Electrical Supply Co., merchandise.....	9 54	
Frederickson, A. D. & J. V., lumber.....	9 00	
Gazette Printing Co., advertising.....	5 00	
Goodall-Pratt Co., tools.....	2 75	
General Electric Co., merchandise.....	188 25	
Illinois Electric Co., merchandise, wire.....	54 45	
Johns-Manville Co., H. W., gaskets.....	6 53	
Janesville Cement Shingle Co., sand.....	160 20	

Kirkman Construction Co., contract.....	38,780 00	.....
Madison Gas & Electric Co., fittings.....	22 00	.....
Mueller Co., The, labor.....	52 00	.....
Milwaukee Free Press, advertising.....	5 20	.....
Mautz Bros., paints.....	1 44	.....
Owens, Wm., plumbing.....	112 00	.....
Olds Seed Co., L. L. seeds.....	12 65	.....
Rundle-Spence Mfg. Co., hardware.....	7 41	.....
Sentinel Co., advertising.....	9 60	.....
Sumner & Morris, hardware.....	1 15	.....
Stephens, David, stone.....	507 85	.....
Sinaiko Bros., tubing.....	4 00	.....
Store Room, merchandise.....	1,913 28	.....
University pay roll, janitors.....	811 34	.....
Wells, Fargo Express Co., express.....	1 20	.....
Western Union Telegraph Co., messages.....	25	.....
Wisconsin Brick Co., brick.....	7 30	.....
Wolff, Kubly & Hirsig, hardware.....	7 12	.....
Wisconsin Telephone Co., service.....	80	.....
Correction memorandum.....	204 00	.....
		\$44,677 05



APPENDIX B

Details of Pay Rolls

DETAILS OF UNIVERSITY PAY ROLLS, 1908-09

ADMINISTRATION PAY ROLL		
Angell, Oscar A., drafting.....		\$145 00
Austin, Eric W., student assistant.....		88 75
Adams, Florence, herbarium work.....		3 60
Briggs, Sorbie M., law librarian.....		799 92
Rodman, Emily, clerk and stenographer.....		900 00
Bradee, Emma B., nurse Chadbourne hall.....		500 00
Blenkenægle, Emil C., student assistant.....		85 00
Benson, Guy A., student assistant.....		192 00
Breitenbach, Agnes E., stenographer.....		227 93
Bendi, Jay, clerical work.....		52 42
Bensenbrugga, B., mechanical work.....		24 00
Butler, Inez, L., student assistant.....		13 70
Burke, Thos., clerk.....		18 01
Bragg, C. H., clerk.....		1 00
Berry, Rose, stenographer.....		15 18
Buetow, W. C., lettering.....		38 55
Brereton, C. F., card writing.....		5 00
Breese, Emily M., card writing.....		20 60
Brahant, Louis J., clerical work.....		109 24
Reak, C. A., student assistant.....		1 70
Collins, George T., clerk.....		793 23
Conlin, John, messenger.....		105 00
Commer, Julius, drafting.....		100 00
Conlin, Joseph, clerical work.....		89 12
Corroll, Edna M., stenographer.....		180 00
Cohen, Ruth, clerical work.....		3 60
Cooper, Jane, herbarium work.....		15 40
Clark, Georgiana, student assistant.....		7 46
Cunningham, J. W., drafting.....		10 00
Chandler, Horace G., clerical work.....		60
Cook, James K., student assistant.....		4 20
Conhen, Jos. D., clerk.....		18 40
Conohen, Ed., clerk.....		8 00
Crooks, H., clerk.....		11 20
Calahan, W. B., messenger.....		15 42
Doc, E. A., editorial assistant.....		675 00
Dreher, Arthur C., field organizer.....		198 00
Deke, M. G., herbarium work.....		21 40
Djeruf, J. M., stenographic work.....		5 00
Davis, Jennie B., clerk and stenographer.....		57 80
Davidson, James, student assistant.....		9 75
Doback, Mary J., card writing.....		14 00
Dillmar, W. J., student assistant.....		6 50
Davis, Agnes, addressing envelopes.....		3 00
Dodge, P. C., computing.....		25 20
Drives, Alex., clerk.....		15 80
De Merit, M. W., student assistant.....		1 40
Dake, C. L., student assistant.....		20 00
Dodd, Roy, L., cleaning.....		6 10
Evans, M., stenographer.....		628 40
Felthoff, R., drafting.....		21 25
Fewson, Edna, purchasing agent, salary.....	1,500 00	
Friedland, Jennie, clerk and stenographer.....		525 00
Furlin, C. W., assistant purchasing agent.....		20 03
Ford, Stella E., student assistant.....		3 70
Fusch, Julia A., clerk and stenographer.....		410 00
Fieldhouse, Myrtle, student assistant.....		25 50
Foley, Nellie, card writing.....		18 10
Fisher, S. M., student assistant.....		23 25
Faber, M. E., drafting.....		17 10
Froelich, Arne, clerk.....		6 15
Farnam, C. B., clerk.....		18 60

Fitch, G. W., clerk.....	6 00
Fry, W. G., clerk.....	21 20
Fliegge, Emily, nurse.....	50 00
Farnham, F. F., student assistant.....	2 10
Gilbert, G. L., clerk.....	589 48
Godfroy, Alice S., clerk and stenographer.....	498 33
Gallistel, A., draughtsman.....	1,175 00
Glen, Mary A., stenographer.....	900 00
Geyer, D. L., statistical work.....	37 15
Gayton, O. F., drafting.....	140 70
Gillett, C. M., university editor.....	804 96
Gedney, Kathryn, clerical work.....	30 00
Gesell, G. A., student assistant.....	24 90
Gratz, Rose, stenographer.....	32 50
Goldschmidt, W. J., assisting bursar.....	14 40
Gilman, E. D., student assistant.....	73 20
Glaetli, John, Jr., student assistant.....	63 60
Hart, Anna, bill clerk.....	720 00
Hayner, Grace H., clerk.....	850 00
Hiestand, W. D., registrar.....	2,491 65
Herfurth, Ida, clerk.....	1,383 28
Hean, C., librarian.....	535 00
Hariacher, Edith C., clerk and stenographer.....	900 00
Hankey, Ira A., stenographer.....	590 00
Hill, Edna M., clerk and stenographer.....	400 00
Howard, Mary V., stenographer.....	157 14
Howley, Bryan M., clerk.....	104 20
Harrn, Jane W., stenographer.....	90 00
Holland, Ambrose, messenger.....	90 00
Hart, Clara, stenographer.....	69 01
Hanchett, D. S., student assistant.....	136 40
Heinz, Adolph, clerk.....	10 00
Hutchins, F. A., secretary public discussion.....	100 00
Ives, Fred W., student assistant.....	141 70
Jones, C. A., drafting.....	9 50
Johns, E. F., clerk.....	3 60
Johnson, S., clerk.....	6 00
Joachim, C. A., clerk.....	10 40
Johnson, Horace G., student assistant.....	18 08
John, H. W., student assistant.....	48 20
Jencks, W. A., clerical work.....	18 70
Kelley, Minnie, stenographer.....	5 00
Kruell, G. J., computing.....	39 52
Kerschtensteiner, M. J., assistant.....	40 00
Kiemle, Katharine, student assistant.....	6 80
Kennedy, N. P., inventory work.....	6 00
Koenig, Herman, mechanical work.....	51 37
Kronquist, Emil, messenger.....	63 42
Koehler, W. E., clerk.....	13 42
Kellogg, Clara, clerk of purchasing agent.....	61 66
Kelly, Nettie M., card writing.....	30 25
Leonard, A., clerk.....	245 00
Lyons, Florence J., card writing.....	23 70
Lorigan, Anna, card writing.....	15 10
Lundquist, Frances, card writing.....	13 30
Lawrence, E. J., messenger.....	290 00
Lundberg, Emma O., stenographer.....	38 35
Lee, H., clerk.....	21 40
Law, J. R., drafting.....	260 00
Logan, H. E., student assistant.....	40 00
Lotter, Genevieve, card writing.....	10 60
Landesca, Jack, student assistant.....	5 15
Lyons, Frances E., stenographer.....	320 04
Loprich, H., draftsman.....	325 00
Lyons, Nettie R., stenographer.....	204 00
Laute, Helma, clerk and stenographer.....	566 66
Miller, K. F., student janitor.....	16 20
Milliren, R. L., student assistant.....	18 25
Myers, H. B., student assistant.....	23 35
Watson, Bertha R., clerk and stenographer.....	220 00
Miller, Wm. W., library assistant.....	25 00
Mitchell, Morris B., student assistant.....	40
MacKenzie, F. W., university editor.....	217 60
Martagh, Mamie, clerk and stenographer.....	33 45
Moss, Lester M., stenographer.....	16 80
Murphy, Nell C., student assistant.....	15 75
Myrland, Lillian, herbarium work.....	23 80
McGuan, Cecilia, stenographer.....	295 96

McLean, J. D., student assistant.....	3 70
Marquis, J. O., agriculture editor.....	850 00
McKee, Elizabeth, stenographer.....	600 00
Merz, Aine, clerk and stenographer.....	710 00
McKee, Anna O., clerk and stenographer.....	500 00
McConnell, A. W., superintendent of buildings.....	1,200 00
Martin, Georgia M., record clerk.....	655 00
Merrick, George B., accountant.....	1,200 00
McCaffrey, M. E., secretary.....	1,983 26
Natwick, F. J., student assistant.....	16 20
Neighbor, R. E., field organizer.....	1,125 00
Nickerson, F., messenger.....	250 00
Nebel, Albert, clerk.....	95 00
Orth, H. D., drafting.....	48 00
Outzen, Andrew N., clerk.....	36 70
O'Keefe, Anna, clerk.....	10 00
Olson, H. M., drafting.....	89 10
Piper, Raymond F., student assistant.....	37 73
Porter, Anna, student assistant.....	15 00
Post, Mabelle M., stenographer.....	480 00
Peabody, Arthur, architect.....	3,000 00
Pickarts, Lucien J., bursar.....	1,800 00
Park, A. C., clerk.....	21 40
Rockwell, Ethel, student assistant.....	1 10
Rinder, Matilda L., clerk.....	40 00
Refelstorf, Caroline D., student assistant.....	11 40
Reif, Walter, student assistant.....	60
Robinson, E. E., student assistant.....	4 60
Roump, Alma B., clerical work.....	7 00
Rubloff, F. O., map making.....	8 50
Reid, Mary E., herbarium work.....	6 40
Richards, M., lantern work.....	103 85
Randolph, Mabel, clerk and stenographer.....	901 50
Sasman, Eunice, clerk and stenographer.....	345 00
Stickney, Mary E., student assistant.....	2 40
Sherwood, C. M., student assistant.....	4 40
Swanson, Ada E., student assistant.....	12 88
Scott, Almere, student assistant.....	152 50
Sheafor, Jean T., student assistant.....	16 85
Smith, Glen E., student assistant.....	28 75
Smith, L. W., clerical work.....	12 60
Smith, Susie, stenographer.....	56 85
Strang, C. J., library assistant.....	25 00
Stone, Emma D., copy holder.....	10 75
Sotter, Hortense M., stenographer.....	50 00
Staley, Jennie B., stenographer.....	3 90
Shapiro, S., clerk.....	12 20
Steen, A. L., clerk.....	6 00
Stebber, E., clerk.....	5 00
Steeve, Meta E., student assistant.....	1 20
Soposs, D. J., student assistant.....	1 00
Smith, Maud E., clerk.....	105 20
Schwartz, Susie, stenographer.....	30 88
Stromme, Esther, stenographer.....	93 35
Stark, O. W., clerical work.....	50 00
Sehell, Marjorie, stenographer.....	118 75
Scott, Laura, student assistant.....	26 10
Sheehy, Etta, stenographer.....	135 00
Stafford, H. T., inventory work.....	3 75
Sage, May L., clerk and stenographer.....	600 00
Sanford, Fannie G., stenographer.....	720 00
Sullivan, Helen, clerk and stenographer.....	710 00
Smith, J. M., chief operating engineer.....	1,487 50
Schmelzer, Henry, store keeper.....	450 00
Snyder, Matilda L., clerk.....	767 31
Spencer, Katharine, stenographer.....	999 94
Toeass, O. F., copy holder.....	60
Timberlake, Violet S., record clerk.....	120 00
Tate, Edythe, stenographer.....	5 18
Thompson, Alice A., clerk and stenographer.....	26 40
Thomas, Marie, stenographer.....	13 85
Trane, Jessie M., student assistant.....	4 00
Thompson, W. L., student assistant.....	21 10
Turneure, Florence, clerk and stenographer.....	793 26
Taylor, Romena H., matron Chadbourne Hall.....	916 64
Tressler, A. W., inspector of high schools.....	1,980 00
Thompson, Beulah A., clerk and stenographer.....	638 46
Tolg, Clarence C., student assistant.....	69 90
Toelner, W. A., stenographer and clerk.....	98 84

Upson, D. D., student stenographer.....	90 00	
Vernon, Mrs. Amy, secretary to Mrs. Woodward.....	38 44	
Van Horn, I. H., clerk.....	1 60	
Van Aucken, Clarice, student assistant.....	46 08	
Van Dusen, Sara H., clerk and stenographer.....	400 00	
Van Auken, Claude L., copy holder.....	22 45	
Van Auken, Kenneth, student assistant.....	42 65	
Van Vleck, Winnifred, student assistant.....	52 50	
Woodward, W. L., assistant to purchasing agent.....	597 20	
Werner, Max, draughtsman.....	262 30	
Wales, H. A., field organizer.....	714 20	
Wileox, Jessie E., clerk.....	250 00	
Woodward, Cora S., advisor of women.....	500 00	
Welsh, Ira A., librarian.....	178 00	
Webster, L. B., stenographer.....	12 25	
White, Rhoda M., clerical work.....	10 00	
Wilkie, Eda M., student assistant.....	38 35	
Weber, Earl S., student assistant.....	43 60	
Wadsworth, M. H., stenographer.....	77 46	
Webb, Alice L., clerk and stenographer.....	745 00	
Wulflng, Alice, stenographer.....	540 00	
Wilkinson, Julia M., president's secretary.....	999 96	
Yates, Bertha, clerk and stenographer.....	537 50	
Zabel, W. P., clerk.....	1 00	
		\$80,096 20

UNIVERSITY PAY ROLL

Armstrong, Ver, student assistant.....	\$1 50	
Aloy, Vito, laborer.....	4 00	
Allen, Lena, charwoman.....	25 65	
Armstrong, William, laborer.....	18 00	
Anderson, Harry, laborer.....	275 40	
Albers, William, with team.....	347 65	
Anderson, George, janitor.....	455 60	
Appuhn, William, janitor.....	610 00	
Anderson, George (colored), laborer.....	460 62	
Anslinger, Jacob, laborer.....	18 00	
Alexander, J., laborer.....	54 00	
Anderson, Chas., laborer.....	89 50	
Braun, F. C., machinist.....	487 11	
Butler, George, laborer.....	22 50	
Boyle, F. E., attendant.....	6 00	
Bartels, Leo, drayman.....	25 00	
Bridgeman, B. W., lantern work.....	26 40	
Burke, Michael, laborer.....	282 60	
Boyd, Merritt, laborer.....	80 60	
Beyler, Annie, charwoman.....	24 30	
Biesker, Annie, charwoman.....	18 15	
Brokaw, V. S., student assistant.....	3 50	
Blake, Mrs. A. E., charwoman.....	4 05	
Butler, Chas., laborer.....	14 80	
Benson, Guy A., student assistant.....	15 00	
Brabant, L. J., student assistant.....	25 00	
Brannon, James, laborer.....	23 60	
Burke, LeRoy, student assistant.....	6 75	
Butler, Mrs. Chas., charwoman.....	21 60	
Batty, Chas. H., janitor.....	662 00	
Brockway, R. A., elevator man.....	540 00	
Budd, F. C., night watch.....	660 00	
Bunker, Alex., janitor.....	600 00	
Blumenstein, Walter, janitor.....	168 75	
Bolz, John, janitor.....	660 00	
Babcock, J. O., janitor.....	660 00	
Borsack, K. K., student assistant.....	46 95	
Borgen, William, student assistant.....	91 70	
Bauhs, John, drayman.....	720 00	
Billig, C. W., with team.....	749 50	
Bersenbrugge, B., student assistant.....	7 50	
Briggs, L. F., painter.....	288 66	
Clarkin, Patrick, janitor.....	236 55	
Conohan, John E., janitor.....	660 00	
Cass, Lewis L., night watch.....	720 00	
Cliffcorn, Henry, fireman.....	720 00	
Casserly, Frank, helper.....	660 00	
Coyne, Chas. O., carpenter.....	792 88	
Check, Frank steamfitter.....	836 50	
Cline, William, laborer.....	610 00	

Cline, James, laborer	60 28
Cutler, Cora, janitress	48 00
Comstock, Geo., with team	18 00
Connor, F. J., laborer	9 00
Cripp, Sidney A., laborer	43 40
Craven, Kate, night watch	17 00
Cunningham, William, laborer	19 80
Coates, Margaret, charwoman	20 70
Callahan, W. B., messenger	5 50
Cunningham, J. W., student assistant	18 00
Churchill, G. R., laborer	2 80
Church, Maggie, charwoman	3 45
Clark, Georgiana, student assistant	1 80
Cortelyou, F., student assistant	15 35
Carr, C. C., student assistant	5 00
Deards, W. W., janitor	600 00
Dresen, John, janitor	581 00
Doescher, John, janitor	660 00
Donlin, J. D., janitor	600 00
Dodd, Roy L., cleaning	27 50
Diebold, William, teamster	602 00
Dyer, Harry, fireman	720 00
Dohr, Hugh, carpenter	814 20
Davidson, W., laborer	5 40
Dale, Mrs. Wm., charwoman	19 50
Duke, John, laborer	87 00
Daniels, Minnie, charwoman	3 50
Dake, C. L., student assistant	8 55
Dittmar, W. J., student helper	12 40
Daniels, Minnie, charwoman	25 50
Diebold, John, laborer	2 20
Dean, A. T., tank attendant	23 00
Eastman, J. A., Sunday watch	102 00
Ellis, Thos., chief engineer	960 00
Egan, J., laborer	22 50
Foss, C., laborer	476 85
Fitzpatrick, Frances, bell maid	15 46
Fitzpatrick, Maud, bell maid	23 00
Feeley, Lizzie, charwoman	13 50
Fry, W. G., mechanician	34 56
Fitzpatrick, Margaret, bell maid	50 51
Fuss, Mary, night watch	72 40
Farragher, P., laborer	13 50
Farley, A., with team	32 25
Ford, Stella E., student assistant	6 40
Fr'ev, H. J., laundry attendant	7 60
Firth, J. M., student assistant	4 00
Godding, Frieda, janitress	360 00
Grasser, Mary, janitress	360 00
Grant, D. M., shop work	53 10
Geyer, D. L., student assistant	16 40
Gyles, S., carpenter	496 32
Gross, G. A., mechanician	733 18
Goth, F. W., laborer	464 75
Gottachell, E., laborer	51 30
Gesell, G. A., statistical work	11 10
George, Jos., laborer	5 80
Garner, H. L., laborer	8 80
Graham, H. M., cleaning	1 20
Grunert, Minnie, charwoman	24 30
Giesse, Mary, charwoman	5 25
Gleason, I. C., laborer	12 60
Gunheim, T. H., carpenter	331 16
Gartmann, H., laborer	5 36
Grade, E., page at library	174 00
Helm, C., janitor	655 00
Hare, K. R., student assistant	53 70
Hammersley, William, teamster	692 00
Herrlein, V., laborer	660 00
Haak, J., laborer	600 00
Harrison, James, fireman	720 00
Huebner, W. G., plumber	900 00
Halleck, F. E., mechanician	960 55
Hipple, J. S., mechanician	983 47
Homuth, E., student assistant	35 40
Hitzel, H. C., student assistant	21 35
Haak, E., with team	1 50
Haak, Mrs. J., charwoman	22 20
Heddle, J. A., student assistant	15 00

Hungerford, R. M., laborer.....	38 15
Hartwick, F., laborer	35 00
Hendrickson, J., laborer	9 40
Hanchett, D. T., student assistant.....	18 00
Herrlein, Joseph, laborer	10 70
Hammersley, Wm., Jr., laundry attendant.....	17 70
Hibbard, C. F., student assistant.....	4 00
Heise, G. W., swimming attendant.....	14 80
Harrington, Mary, charwoman	20 85
Heid, Mary, charwoman	8 80
Imboden, D. E., student assistant.....	10 40
Isam, D., laborer	3 50
Jaquith, A. F., tank attendant.....	31 00
Janes, M. A., mason.....	402 60
John, E. F., work in museum.....	20 00
Johnson, M. L., janitor.....	160 04
Kennedy, James P., student assistant.....	39 20
Koenig, H., student assistant.....	7 50
Kohlmeyer, G., laborer	34 20
Kinder, L., laborer	33 75
Kennedy, James, laborer	84 60
Kempf, J., laborer	22 50
Kateley, F.,	110 00
Kane, C. C., janitor.....	350 00
Luik, Elizabeth, janitress.....	247 50
Longfield, J., toolroom attendant.....	205 92
Luik, Leo, page at library.....	83 33
Lampert, D. H., student assistant.....	10 90
Jund, J. E., engineer	720 00
Le Hem, Orley, engineer.....	840 00
Larson, Gustave, laborer.....	329 26
Lyford, W., electrician.....	814 64
Lang, C. H., laborer.....	39 60
Lewis, L., laborer.....	71 80
Longfield, J., laborer.....	150 30
Larson, H., laborer.....	55 00
Law, Naney, chambermaid.....	27 00
Landers, P., laborer.....	4 40
Lewis, P. S., clerk at gymnasium.....	50 00
Le Cleve, Louria, charwoman.....	13 50
Lemberger, G., laborer.....	67 80
Lynaugh, P., janitor.....	440 00
Luik, Ellen, charwoman	330 00
Miller, K. F., student assistant.....	64 00
Morse, W., janitor.....	660 00
Morschhauser, E., supply clerk.....	600 00
Morgenson, S. T., janitor.....	600 00
Miller, J., janitor.....	515 00
Mahoney, Lizzie, charwoman.....	231 00
Mutchler, I., chief carpenter.....	1,200 00
Moll, F., carpenter.....	828 92
Miles, E. L., steamfitter.....	669 23
McCabe, T., laborer.....	37 13
Meyers, J., with team.....	40 80
Mustroritz, A., laborer.....	9 55
McCremmer, Flora, charwoman.....	14 85
McGowan, Annie, charwoman.....	3 30
Moll, J. E., tank attendant.....	3 60
McClenahan, J. B., laborer.....	53 60
Moscita, J., laborer.....	4 00
McCabe, A., with team.....	277 75
Millrin, B. L., student assistant.....	28 50
Meisner, H., student assistant.....	4 40
Nolan, M., janitor.....	360 00
Nalon, Kate, charwoman.....	360 00
Nee, P. J., student assistant.....	39 70
Nelson, Amanda, charwoman.....	10 80
Nelson, M. V., student assistant.....	50 10
Neu, C., laborer.....	63 00
Otis, Arthur, janitor.....	421 20
Outzen, A. N., electrician.....	291 60
Otis, Chas., with team.....	47 22
O'Malley, Leo, laborer.....	110 10
Olsen, H., laborer.....	166 60
Oison, H. M., drafting.....	166 60
Post, Wm., janitor.....	660 00
Post, L. I., janitor.....	600 00
Podesta, Mabel, charwoman.....	42 15

Partridge, Elra E., student assistant.....	136 36	
Pahmeier, Fred, laborer.....	19 13	
Plaener, F. C., laborer.....	15 50	
Post, M. G., with team.....	192 75	
Philamalee, H. A., with team.....	18 00	
Peyton, M., foundryman.....	81 00	
Piper, H., page at library.....	10 00	
Parson, Anna, charwoman.....	22 70	
Poeffle, Augusta, charwoman.....	5 40	
Piper, R. F., clerical work.....	3 80	
Peterson, V. H., laborer.....	10 00	
Richards, Clark, page at library.....	43 00	
Rider, J. H., valve inspector.....	360 00	
Russell, Jesse, engineer.....	840 00	
Rasmussen, G., painter.....	844 90	
Riley, B. D., laborer.....	39 38	
Rapp, F., with team.....	122 50	
Redel, Robert, machinist.....	139 97	
Reese, Lucy, chambermaid.....	41 15	
Roberts, Wm., student assistant.....	5 10	
Roberts, H. M., work in museum.....	2 50	
Roberts, Frank, student assistant.....	2 50	
Richards, M., lantern work.....	27 30	
Rhodes, Augustus, laborer.....	80 60	
Rehming, Tonie, laborer.....	4 00	
Ragnio, D., laborer.....	4 00	
Reese, Minnie, charwoman.....	42 00	
Schanel, R. J., supply clerk.....	720 00	
Sperling, Fred, janitor.....	604 00	
Schoenung, P., janitor.....	540 00	
Steffen, A. W., janitor.....	660 00	
Stafford, H. T., laundry attendant.....	83 70	
Swenson, Chris, carpenter.....	723 86	
Sandberg, S. E., steamfitter.....	1,015 00	
Scheibel, Herman, steamfitter.....	400 00	
Starr, James, plumbing assistant.....	320 33	
Shriner, H. F., mechanician.....	914 60	
Schmelzer, G., foreman of grounds.....	900 00	
Schofield, Henry, laborer.....	605 00	
Steenbock, Henry laborer.....	353 80	
Sargent, W., laborer.....	49 40	
Schmidt, A. P., laborer.....	8 50	
Shay, Daniel, laborer.....	125 30	
Smith, Frank E., laborer.....	80 00	
Sladky, Paul, machinist.....	64 40	
Steinke, Laura A., student assistant.....	82 80	
Schmidt, W., laborer.....	13 50	
Stout, A. B., student assistant.....	8 80	
Scheibel, Mrs. H., charwoman.....	10 75	
Sweemer, L. L., janitor.....	100 00	
Shriner, Chas., toolroom attendant.....	26 66	
Seary, Sarah, charwoman.....	25 65	
Sidell, Jennie, charwoman.....	22 95	
Snaddon, Jessie, charwoman.....	21 60	
Suttle, C. T., painter.....	80 92	
Sargent, L. H., laborer.....	7 20	
Short, Albert, laborer.....	50	
Scheibel, Lizzie, charwoman.....	24 60	
Swanson, Ada E., clerical work.....	2 20	
Scott, Laura, student assistant.....	4 80	
Schiller, M., playing piano.....	3 75	
Talbot, I. A., cleaning.....	18 70	
Thompson, Andrew O., electrician.....	1,200 00	
Temple, Wm., laborer.....	688 00	
Tingstad, John, laborer.....	219 40	
Teckmeyer, G., laborer.....	3 40	
Teckmeyer, Edw., laborer.....	43 60	
Toellner, Wm. janitor.....	15 00	
Terry, Chas. E., janitor.....	5 32	
Toig, C. C., clerical work.....	9 75	
Vetter, E., elevator man.....	424 90	
Van Auken, Clarice, student assistant.....	139 13	
Vitz, F. E., student assistant.....	117 75	
Van Derzee, G. W., student assistant.....	15 25	
Van Auken, Kenneth, student assistant.....	1 70	
Van Auken, Claude, student assistant.....	1 60	
Willett, George, janitor.....	660 00	
Wuitowski, L. R., clerk at gymnasium.....	385 19	

Wehrle, George P., laborer.....	589 80	
Wetzell, Wm., engineer.....	480 00	
Wallace, Irving D., painter.....	277 78	
Wolff, John, laborer.....	538 80	
Wall, Thos., laborer.....	52 60	
Westburg, Frank, laborer.....	10 60	
Westburg, Arthur, laborer.....	10 60	
Watkins, Mary E., student assistant.....	12 70	
Walters, Salmon, laborer.....	34 60	
Wilke, Eda M., student assistant.....	4 10	
Young, Wm., janitor.....	170 80	
Zurian, G., laborer.....	5 94	
		\$63,925 56

COLLEGE OF AGRICULTURE PAY ROLL

Ahrens, Wm., teamster.....	\$580 00	
Anderson, A. L., foreman.....	600 00	
Accola, John, swineherd.....	885 00	
Andrew, J. M., laborer.....	148 75	
Allen, Geo., A., dairy tests.....	23 74	
Astell, K., picking fruit.....	3 10	
Abrahamson, O., threshing.....	6 00	
Busse, W., laborer.....	435 77	
Bibbs, I., clerk and stenographer.....	480 00	
Backhaus, F. J., laborer.....	111 00	
Barker, W. J., with team.....	324 99	
Bethke, E., laborer.....	50 00	
Brewster, Antoinette, clerk and stenographer.....	668 00	
Bond, Margaret, charwoman.....	400 40	
Bloomer, J., picking fruit.....	3 30	
Bloomer, Leo, picking fruit.....	3 50	
Bakken, T., picking fruit.....	3 25	
Brandtmeyer, Viola, picking fruit.....	2 25	
Billie, G., laborer.....	9 70	
Billie, E., laborer.....	1 90	
Brabant, J., clerk.....	60	
Bigelow, A. D., laborer.....	323 74	
Beecroft, A. B., student assistant.....	6 75	
Barker, O. J., laborer.....	39 00	
Charles, R., laboratory assistant.....	252 80	
Charles, D. B., janitor.....	660 00	
Cotter, G., laborer.....	50 00	
Carey, J., laborer.....	90 00	
Curtis, J., student assistant.....	55 34	
Charles, Lucille, clerk and stenographer.....	99 13	
Cross, Hugo, assistant.....	20 00	
Craneffeld, P., picking fruit.....	1 60	
Craneffeld, Marian, picking fruit.....	1 90	
Charles, M., clerical work.....	7 20	
Butler, Cora, charwoman.....	25 80	
Cooper, W. H. clerical work.....	35 80	
Dodge, N. picking fruit.....	4 05	
Dauck, H., teamster.....	300 00	
Dahlke, P. A., student assistant.....	3 60	
Dreger, E. L., dairy tests.....	78 76	
Dunkam, C. H., dairy tests.....	22 96	
Dauck, H., teamster.....	300 00	
Dauck, Henry, foreman.....	600 83	
Delwiche, O. J., herdsman.....	825 00	
Delwiche, E. J., superintendent.....	1,475 00	
Douglas County Poor Farm, labor with team.....	154 41	
Durnford, G. A., dairy tests.....	61 19	
Enders, W. E. shepherd.....	96 00	
Ensch, W. P., dairy tests.....	27 48	
Esser, Agnes, clerk and stenographer.....	631 00	
Elsom, B., picking fruit.....	2 65	
Evans, W., picking fruit.....	2 95	
Erickson, A., laborer.....	3 20	
Freestone, Wm., laborer.....	1 85	
Fehlandt, Elsie, stenographer.....	2 85	
Fox, E. W., dairyman.....	885 00	
Fox, Chas. W., dairyman.....	595 00	
Fiedler, Anna K., clerk and stenographer.....	900 00	
Gratz, M., picking fruit.....	3 05	
Goldben, Nina, picking fruit.....	2 25	
Grigsby, Anna, charwoman.....	6 00	

Guth, A., assistant.....	40 00
Gauert, F., cement worker.....	636 00
Gundlach, A., laundry work.....	26 19
Gaynor, Mrs. J., boarding.....	72 00
Griffiths, Nellie E., clerk and stenographer.....	825 00
Goldbin, Lizzie, charwoman.....	19 50
Gardner, W. H., dairy tests.....	600 62
Harris, A. E., dairy tests.....	55 96
Hall, Margaret, student assistant.....	2 00
Hatch, J. A., dairy tests.....	165 63
Hall, G., laborer.....	65
Harmon, Chas., picking fruit.....	2 70
Hunt, Roy, labor.....	4 80
Hutton, G., foreman.....	900 00
Henning, Wm., teamster.....	546 00
Hoffman, J., carpenter.....	838 50
Haak, Augusta, charwoman.....	48 89
Henwood, Elizabeth, bookkeeper.....	835 00
Hansen, C. F., with team.....	332 13
Hanson, H. C., laborer.....	367 21
Hayes, E. H., student assistant.....	12 90
Johnson, J., student laborer.....	285 04
Johnston, F. R., dairy tests.....	378 68
Jewett, N. L., student assistant.....	4 65
Juhl, E., labor.....	36 35
Johnson, L. M., labor.....	2 00
Jorgenson, W., labor.....	6 65
Jones, Myrtle, clerk.....	9 98
Kirst, Ernest, laborer.....	402 50
Kruegar, Alma, stenographer.....	87 50
Kissenger, Henry, laborer.....	47 50
Kelley, Minnie, clerk and stenographer.....	635 00
Kleinheinz, Monica, clerk and stenographer.....	470 00
Kleinheinz, Adelaide, clerk.....	132 75
Kahl, Laura, clerk.....	27 55
Lassetter, W. C., laboratory work.....	16 20
La Plante, Laura, typewriting.....	5 80
Lathrop, A. T., student assistant.....	6 40
La Claire, Carlos A., student assistant.....	33 60
Lynch, Margaret, clerk and stenographer.....	5 5 00
Leith, D. B., clerk.....	80
Lewis, Chas. L., laborer.....	26 25
Logan, E. H., clerk.....	56 14
Larkin, Danford, laborer.....	478 80
Lachmund, Robt., dairy tests.....	185 78
Mathews, Jos., teamster.....	606 00
Moen, Herman C., laborer.....	546 00
Meisner, Frank, fireman.....	184 35
McConrillo, J. L., labor.....	76 15
Mitchell, Wm., foreman.....	78 98
Markey, W. E., general assistant.....	885 00
Mills, Sadie A., stenographer.....	600 00
Marvin, Geo. A., labor.....	131 87
Musbach, F. L., field assistant.....	120 00
Marshall, R. R., field assistant.....	80 00
Maloney, Wm., picking fruit.....	3 70
Malde, O. G., superintendent.....	1,075 00
Markey, Walter H., dairy tests.....	256 02
Minch, Lillian, clerk.....	20 56
Nolan, John, laborer.....	579 00
Newhall, H. M., student assistant.....	12 40
Neuman, Minnie, stenographer.....	5 00
Nelson, H. P., dairyman.....	87 00
Nielson, Amanda, charwoman.....	10 05
O'Conner, Celia, charwoman.....	4 50
O'Conner, Margaret, charwoman.....	6 00
O'Brien, Henry, labor.....	21 74
O'Brien, Geo., labor.....	50
Oesterich, L. J., laborer.....	388 56
Oakey, Mildred, stenographer.....	575 00
Oosterhuis, A. C., student assistant.....	58 00
Peters, John R., laborer.....	397 00
Petran, Margaret, stenographer.....	535 00
Petrie, M. E., herdsman.....	80 00
Post, E. H., laborer.....	134 20
Peterson, Wm., laborer.....	388 68
Polley, Flossie I., clerk.....	265 19
Parr, Wm., picking fruit.....	2 50

Pataska, Martin, labor.....	10 00	
Peterson, Otto, labor.....	3 00	
Ploeckelmann, Wm., carpenter work.....	50	
Parks, D. C., creamery helper.....	75 32	
Potter, George F., labor.....	495 00	
Peek, H. M., dairy tests.....	282 88	
Potter, Byron S., dairy tests.....	6 00	
Quan, Clara E., clerk.....	349 54	
Rabideau, Orrille, labor.....	8 42	
Rogers, Rachel, charwoman.....	181 64	
Ryner, John, labor.....	35 52	
Roeder, George, labor.....	37 27	
Roberts, F. J., laborer.....	39 00	
Rowley, Silas, picking fruit.....	2 60	
Rowley, Henry, picking fruit.....	1 35	
Roeder, Fred, labor.....	21 00	
Raskell, E., laborer.....	282 00	
Rogers, J. H., laborer.....	400 00	
Rogers, J. H., fireman.....	120 93	
Richards, M. W., labor.....	25 70	
Snaddon, James, laborer.....	611 78	
Singler, J. J., instructor.....	32 50	
Steffen, Herman, deliveryman.....	720 00	
Showers, W. L., clerk.....	600 00	
Schuntzer, Anna, laundry work.....	35 41	
Sandell, Harvey, assistant.....	799 92	
Smith, L. W., student assistant.....	2 00	
Selke, Geo. H., student assistant.....	10 00	
Schwichtenberg, Wm., dairy tests.....	137 91	
Skeflo, Paul, dairy tests.....	673 87	
Swartz, Susie, clerk and stenographer.....	557 00	
Schell, Marjorie, stenographer.....	3 15	
Stenjem, Eldon, picking fruit.....	1 80	
Sale, Irwin, picking fruit.....	2 45	
Stehr, Tilly, picking fruit.....	2 50	
Sharp, Raymond, laborer.....	8 25	
Stephans, Wm., labor.....	1 00	
Sheehy, Etta, stenographer.....	265 00	
Silbernagel, Mabel, clerical work.....	17 63	
Shine, Maggie, charwoman.....	160 20	
Tollefson, M., laborer.....	60 45	
Turner, Chas. L., dairy tests.....	243 59	
Tennet, Alfred, laborer.....	23 98	
Trantin, Ernest, picking fruit.....	2 25	
Tallmadge, J. J., labor.....	42 00	
Thorkelson, C. B., dairy tests.....	26 75	
Theurwachter, Louis H., student labor.....	117 59	
Tretsven, O. J., herdsman.....	211 50	
Voss, A., laborer.....	370 03	
Voss, Wm. R., assistant.....	643 00	
Vitense, Glenn, picking fruit.....	2 01	
Veerhusen, Letta, clerk.....	54 98	
Warner, E. E., with team.....	26 25	
Wendt, Fred, with team.....	418 30	
Weiffenback, F., laborer.....	472 22	
Weymouth, F. R., dairy tests.....	36 49	
Whitby, A. J., shepherd.....	202 50	
Walters, John, labor.....	25 00	
Wendt, Arthur, labor.....	3 45	
Waters, R. M., student assistant.....	3 20	
West, R. N., dairy tests.....	124 12	
Weir, W. W., student assistant.....	2 85	
West, Bertha, stenographer.....	18 00	
Whitby, A. J., shepherd.....	111 00	
Yates, Bertha, clerk and stenographer.....	5 88	
Zerbil, Lewis R., assistant.....	775 00	
		\$43,170 80

DAIRY INSTRUCTORS' AND SHORT COURSE PAYROLL

Bolstead, L. L., instructor.....	\$225 00	
Cross, Hugo, instructor.....	31 32	
Cooper, W. H., instructor.....	240 00	
Ebbins, Frank, instructor.....	100 00	
Guth, A., instructor.....	61 00	
Garlid, G., instructor.....	375 08	
Jahr, M. E., instructor.....	41 75	

Johnson, Jas., instructor.....	16 80	
Jacobs, J. A., instructor.....	328 00	
Laabs, A. G., instructor.....	490 00	
Laabs, F. W., instructor.....	323 33	
Leverich, E., instructor.....	14 50	
Marty, G., instructor.....	916 66	
Michels, M., instructor.....	900 00	
Messmer, John, instructor.....	10 00	
Mihills, D. C., instructor.....	1 25	
Meisner, Frank, instructor.....	200 00	
Morris, W. E., instructor.....	10 00	
Newhall, H. W. instructor.....	2 80	
O'Brien, J. P., instructor.....	100 00	
Post, H. L., instructor.....	125 00	
Porter, W. L., instructor.....	11 40	
Peterson, L., instructor.....	50 00	
Reinhard, F. L., instructor.....	100 00	
Ruebensaal, F. J., instructor.....	50 00	
Quigler, J. J., instructor.....	742 50	
Stadky, A. G., instructor.....	2 25	
Selke, G. H., instructor.....	7 75	
Morris, Wm. E., instructor.....	8 50	
Smith, L. W., instructor.....	2 00	
Totman, W., instructor.....	106 68	
Tuttle, Merle I., instructor.....	234 82	
Tormey, J. L., instructor.....	254 00	
White, Wm., instructor.....	6 68	
		\$6,289 07

CREAMERY PAY ROLL

Adams, E., milk.....	\$238 67	
Adams, C. F., milk.....	149 42	
Allis, F. W., cream.....	1,249 75	
Behnke, Fred, milk.....	549 13	
Behnke, Wm., milk.....	381 71	
Buss, Chas., cream and milk.....	2,628 72	
Brown, E. W., milk.....	48 67	
Binger, Theo., hauling.....	111 00	
Bible, Guy, hauling.....	94 75	
Buskager, Louis.....	28 54	
Byrne, Patrick, milk.....	42 51	
Byrne, J. D., milk.....	266 07	
Blizzard, Geo., milk.....	274 23	
Bakken, Carl, milk.....	17 84	
Bush, H., cream.....	16 94	
Bartlett, Seth, cream.....	73 49	
Beck, J. D., cream.....	82 98	
Chynoweth, H. E., milk.....	121 18	
Conlin, John, milk.....	110 48	
Conlin, A., milk.....	29 13	
Dinkler, Henry, milk.....	292 52	
Dryer, C. D., milk.....	280 54	
Diederich, Peter, cream.....	5 01	
Dreger, Carl, cream.....	164 53	
Douck, J., milk.....	185 18	
Easermann, Chas., milk.....	180 18	
Fisher, Gus, milk.....	97 55	
Fergen, Geo., milk.....	180 94	
Fisher, H. C., milk.....	44 29	
Fosslick, Geo. W., milk.....	44 66	
Foreman Brothers, milk.....	43 84	
Foreman, Mrs. J., milk.....	54 16	
Fisher, Gus, milk.....	83 82	
Grabbert, Emil, milk.....	1,174 19	
Gay, Wm., milk.....	175 19	
Gillette, Rufus, cream.....	221 63	
Grabbert, Rudolph, cream and milk.....	1,766 00	
Grath, E. F., milk and cream.....	9,933 19	
Good, G. F., cream.....	821 28	
Gallagher, Erwin, cream and milk.....	204 89	
Gay, H., milk.....	6 97	
Gallagher, R. F., cream.....	27 25	
Hinrichs, D., milk.....	99 38	
Hammersley, Geo., milk.....	531 38	
Hoppmann, H. C., milk.....	224 46	
Huston, Alford, milk.....	201 12	

Huston, H. C., milk.....	199 00	
Huston, J. A., milk.....	354 16	
Huston, D. W., milk.....	637 09	
Homburg, A., cream and milk.....	158 30	
Hassett, Jas., milk.....	193 83	
Harris, W. H.,	4 94	
Henderson, A., milk.....	57 49	
Helegland, S. L., milk.....	44 97	
Hermesmeier, John, milk.....	84 34	
Hopkins Bros., cream.....	940 22	
Hankey, R., milk.....	32 25	
Hatfield, H., milk.....	14 47	
Henwood, Elizabeth, cream.....	21 47	
Hathaway, Chas., milk.....	187 23	
Holmer, T. E., milk.....	13 33	
Klerer, F., milk.....	172 16	
Kennedy, M. J., cream.....	37 18	
Klerer, Henry, milk.....	64 33	
Kennedy, J. L., cream.....	43 91	
Lynch, E., cream.....	103 37	
Lynch, H., cream.....	32 33	
Lapley, F. B., cream.....	24 31	
Leslie, M., cream.....	178 70	
Maher, T., milk.....	130 95	
Mahaney, J. H., milk.....	19 85	
Mitchell, P., cream.....	512 02	
McKee, E. J., cream.....	181 53	
Mehrhoff, Louis, cream.....	39 14	
Motley, J., cream.....	38 86	
Masche, C., hauling.....	849 00	
Miller, W. H., milk.....	80 39	
Meister, L., milk.....	124 93	
Niehus Bros., milk.....	385 53	
Noonan, Wm., milk.....	120 80	
Noyer, H. J., milk.....	257 69	
Niehus, C., milk.....	437 52	
O'Brien, E. S., cream and milk.....	400 53	
Pierstorff, H., milk.....	199 88	
Pierstorff, H. C., milk.....	22 59	
Penfield, A., milk.....	163 14	
Prieha, C., cream.....	25 74	
Penfield, R., milk.....	1 25	
Purcell, A. J., milk.....	53 43	
Reichart, Thos., milk.....	10 20	
Riegle, Geo. W., milk.....	60 82	
Rodefeld, C. H., cream.....	330 25	
Sharp, Wm., milk.....	929 81	
Showers, J. E., milk.....	376 98	
Storck, C., milk.....	273 08	
Slater, J., milk.....	305 60	
Sprecher, G., milk.....	22 53	
Stolte, A., milk.....	84 07	
Schulenberg, J., milk.....	41 60	
Schwenn, E., milk.....	2 43	
Toepfer, A., cream.....	121 17	
Toepfer, O., cream.....	123 20	
Tiedeman, F. C.,	5 17	
Uphoff, E., cream and milk.....	230 73	
University Farm, milk and cream.....	1,691 80	
Vetter, C., milk and cream.....	150 42	
Vroman, J., cream.....	25 92	
West Middleton Dairy Association, milk.....	27,552 52	
Wrabetz & Semb, milk.....	505 24	
West, Stanley.....	139 58	
Walbridge, L. J., milk.....	62 36	
Ward, C., milk.....	96 88	
Williams, J. L., cream.....	106 17	
Warner, E. N., milk and cream.....	7 25	
Wilwer & Brother, E., milk.....	91 32	
Wallin, B., milk.....	13 43	
Walters, J., milk.....	2 51	
Walters, Minnie, milk.....	4 63	
		\$64,112 49

AGRICULTURAL INSTITUTE PAY ROLL		
Bradley, W. C., institute worker.....	\$385 00	
Bingham, D. E., institute worker.....	230 00	
Bussey, W. P., institute worker.....	5 00	
Buxton, A. J., institute worker.....	10 00	
Buxton, Mrs. A. J., institute worker.....	10 00	
Briggs, H. A., institute worker.....	10 00	
Conrey, Thos., institute worker.....	310 00	
Comings, G. F., institute worker.....	140 00	
Clift, Edith L., institute worker.....	380 00	
Church, Miss E. A., institute worker.....	100 00	
Culbertson, H. M., institute worker.....	12 50	
Griswold, H. D., institute worker.....	255 00	
Goarder, Bertha, institute worker.....	100 00	
Herbst, J. L., institute worker.....	255 00	
Hill, G. C., institute worker.....	10 00	
Hill, C. L., institute worker.....	22 50	
Howie, Mrs. Addie, institute worker.....	150 00	
Imrie, D., institute worker.....	340 00	
Jacobs, E. C., institute worker.....	305 00	
King, F. H., institute worker.....	10 00	
Luisse, C., institute worker.....	5 00	
Liebenberg, H. H., institute worker.....	10 00	
Legler, L. G., institute worker.....	10 00	
Martiny, L. P., institute worker.....	305 00	
Matteson, C. E., institute worker.....	20 00	
McKerrow, W. A., institute worker.....	180 00	
Nordman, E., institute worker.....	370 00	
Perkins, Mrs. Norah E. A., institute worker.....	245 00	
Roberts, R. E., institute worker.....	305 00	
Scott, L. E., institute worker.....	325 00	
Scribner, F. H., institute worker.....	385 00	
Stiles, W. F., institute worker.....	310 00	
Stubley, Fred, institute worker.....	220 00	
Sater, I. Adella, institute worker.....	300 00	
		\$8,260 00
CHADBOURNE HALL PAY ROLL		
Blacklock, Sara E., waitress.....	\$135 19	
Crass, Neleado, cook.....	58 07	
Caroll, Margaret, meat cook.....	65 39	
Davis, R. W., mopping.....	62 65	
Dougherty, Mayme, dishwasher.....	10 29	
Dobeck, Mary, fruit canning.....	2 30	
Ellsworth, Clara, fruit canning.....	5 13	
Frase, Louise, cook.....	112 16	
Fitzpatrick, Frances, bell maid.....	40 75	
Flood, Julia, cook.....	5 00	
Fitzpatrick, Margaret, bell maid.....	165 00	
Gorman, Rose, dish washer.....	153 53	
Greibr, Mary, pastry cook.....	185 07	
Holland, Loretta, laundress.....	132 65	
Hanson, Lena, waitress.....	14 29	
Holland, Loretta, laundress.....	75 75	
Hughes, Helen M., kitchen help.....	50 24	
Homme, Aleda, dish washer.....	126 15	
Kerin, Mary, cook.....	14 29	
Maloney, Marv, bell maid.....	13 27	
Murphy, Jewell, waitress.....	37 19	
Ninneman, Lena, cook.....	333 44	
O'Keefe, Jennie, waitress.....	131 29	
Premo, Pearl, waitress.....	82 94	
Pederson, Anna C., d'shwasher.....	20 72	
Prieve, Meta, cook.....	172 32	
Premo, Charity M., waitress.....	65 49	
Retzlaff, Louise, cook.....	51 47	
Reese, Lucy, cleaner.....	232 00	
Rasmussen, Anna, waitress.....	136 16	
Sayle, Mary, cook.....	346 85	
Splinter, Edith, waitress.....	118 10	
Sullivan, Mary, laundress.....	107 60	
Sweemer, Aline, cook.....	17 84	
Shank, Addie, waitress.....	39 46	

Velter, Emma, night watch.....	234 00	.....
Wheeler, Agnes, waitress.....	479 49	.....
Wendels, Anna, student assistant.....	9 55	.....
		\$4,104 10

REGIMENTAL OFFICERS' PAY ROLL

Bessey, J. M.,	\$20 00	.....
Colladay, E. B.,	20 00	.....
Flynn, M. H.,	20 00	.....
Griswold, E. C.,	20 00	.....
Hammond, L. M.,	20 00	.....
Kerr, H. S.,	20 00	.....
Mihills, D. A.,	10 00	.....
Mann, C. D.,	20 00	.....
Newman, J. R.,	20 00	.....
Ordway, A. B.,	20 00	.....
Saxton, R. G.,	20 00	.....
Schulte, W. B.,	20 00	.....
Schuette, H. A.,	20 00	.....
Wille, L. M.,	20 00	.....
Wagner, K. E.,	50 00	.....
Welsh, J. T.,	20 00	.....
		\$310 00

BAND PAY ROLL

Blake, E. B., salary.....	\$10 00	.....
Blake, G. B., salary.....	28 50	.....
Cleary, G. E., salary.....	10 00	.....
Davies, F. E., salary.....	14 50	.....
Deihl, J. D., salary.....	14 00	.....
Grindell, D. D., salary.....	30 00	.....
Gottschalk, E. A., salary.....	27 50	.....
Geyer, A. N., salary.....	29 00	.....
Leicht, G. J., salary.....	25 00	.....
Oehler, A. G., salary.....	28 00	.....
Parr, T. C., salary.....	29 50	.....
Pengelly, R. L., salary.....	25 00	.....
Rees, E. L., salary.....	4 50	.....
Stanley, S. W., salary.....	25 50	.....
Springer, B. F., salary.....	18 50	.....
Scudder, O. M., salary.....	27 50	.....
Farrell, A. L., salary.....	25 50	.....
Williams, F. E., salary.....	18 50	.....
Wittwer, H. L., salary.....	18 50	.....
Witherall, A. L., salary.....	10 00	.....
Zobel, O. J., salary.....	20 50	.....
		\$450 00

TRAINING OF TEACHERS

Bascom, Llia, instruction.....	\$100 00	.....
Burdick, Mary L., instruction.....	30 00	.....
Chynoweth, Edna R., instruction.....	30 00	.....
Christensen, Etta O., instruction.....	10 00	.....
Dengler, Clare, instruction.....	30 00	.....
Edgar, Mary L., instruction.....	30 00	.....
Fitch, Helen F., instruction.....	30 00	.....
Huber, Dora, instruction.....	30 00	.....
Jenkins, Sarah D., instruction.....	100 00	.....
Jones, Renette, instruction.....	30 00	.....
Joice, Bradley S., instruction.....	30 00	.....
Kleinpell, Irma, instruction.....	30 00	.....
McClernon, Marie, instruction.....	30 00	.....
Murphy, Julia, instruction.....	100 00	.....
Marvin, Adeline R., instruction.....	30 00	.....
Mihleis, Alice M., instruction.....	30 00	.....
Nelson, Florence, instruction.....	30 00	.....
Newtoon, Blanche M., instruction.....	30 00	.....
Pelunek, Viola, instruction.....	30 00	.....
Reichart, C. Lorena, instruction.....	30 00	.....
Sawyer, Elsa, instruction.....	30 00	.....
Shannahan, W. D., instruction.....	100 00	.....
Sherman, Jessie E., instruction.....	30 00	.....

Surrey, M., instruction.....	100 00	
Stegeman, Louise, instruction.....	30 00	
Terry, Sadie, instruction.....	30 00	
Thomas, Anna L., instruction.....	15 00	
Warning, Minnie, instruction.....	100 00	
White, M. J., instruction.....	100 00	
Whitney, Florence, instruction.....	30 00	
Whaley, M. Irene, instruction.....	30 00	
Wirth, Eva M., instruction.....	30 00	
Young, Carolyn M., instruction.....	30 00	
		\$1,445 00
ADMINISTRATION PAY ROLL		
Allberg, Arthur, clerk.....	\$102 00	
Abbott, Eveline P., student assistant.....	27 00	
Adams, Ellen, clerical work.....	1 00	
Aten, Ruth, clerical work.....	5 50	
Adams, Florence, herbarium assistant.....	2 00	
Atkinson, Ruth, pianist.....	13 50	
Ayer, Mary L., clerical work.....	31 10	
Angell, O. A., draftsman.....	900 00	
Bradee, Emma, nurse.....	500 00	
Buenzli, Frank, blue printing.....	120 41	
Beasley, P. W., drafting.....	46 20	
Butler, Walter, messenger.....	13 00	
Blankenagel, Emil C., clerk.....	19 10	
Bolt, W. C., clerical work.....	9 10	
Buser, R., salary.....	10 25	
Bodman, Emily, clerk and stenographer.....	825 00	
Boyd, W. F., clerical work.....	5 70	
Buchanan, F. L., assistant supply clerk.....	145 07	
Benson, G. A., typewriting.....	2 20	
Bichard, R., clerical work.....	2 40	
Barney, W. W., clerk.....	11 70	
Briggs, Sophie M., librarian.....	800 00	
Borsack, K. K., student assistant.....	100 90	
Brown, Leslie W., photographer.....	1,000 00	
Baumgartner, W. F., inventory work.....	7 25	
Brand, Bessie, secretary.....	450 00	
Bassler, J., messenger.....	54 75	
Butler, Ina, stenographic work.....	5 25	
Bondi, J., clerk.....	83 34	
Blumenstein, W., houseman.....	50 00	
Breitenbach, Agnes, stenographer.....	220 00	
Brinkhoff, Clara G., stenographer.....	462 50	
Camp, Elizabeth F., salary.....	1,350 00	
Carroll, Moniva R., clerk and stenographer.....	180 00	
Cooper, Belya, writing.....	2 40	
Conlin, J., messenger.....	235 00	
Curran, Gwendolin, clerk.....	159 00	
Chapman, R. E., computing.....	4 20	
Collins, G. T., clerk.....	891 66	
Cronin, Alice, clerk.....	480 00	
Cadigan, J. A., clerical work.....	5 00	
Culver, H. E., drafting.....	9 00	
Casey, Eunice M., stenographic work.....	106 07	
Curtiss, E. F., drafting.....	24 60	
Colignan, J. J., librarian.....	50 00	
Carroll, Edna M., stenographer.....	60 00	
Culbertson, H. E. student assistant.....	24 80	
Collmann, Miss P. M., nurse.....	39 00	
Corey, Mrs. Margaret, cleaning.....	45 00	
Crafer, T. W. B., clerical work.....	152 85	
Dreher, A C., field organizer.....	1,026 00	
Dahmer, Frances, clerk.....	274 61	
Durbrow, H. M., bookkeeper.....	733 31	
Daly, Anna L., assistant stenographer.....	456 90	
Diehl, A. R., drafting.....	7 00	
Davis, Jennie B., typewriting.....	54 95	
Dahn, E. F., clerical work.....	2 00	
Doe, Ethelyn A., editorial assistant.....	240 60	
Dierup, J. Mayme, stenographic work.....	15 00	
Dyke, Le Grande G., herbarium assistant.....	16 80	
Davis, Helen, herbarium assistant.....	20 20	
Dudgeon, S. B., clerical work.....	26 40	
Davy, F., page.....	44 40	
Deming, Rose E., stenographic work.....	101 41	

Ester, N., stock room attendant.....	126 66
Evans, Magdalin, clerk.....	280 00
Edwards, Guy, clerical work.....	80
Fery, Luciene, stenographer.....	120 00
Fewson, Edna, salary.....	1,775 00
Fauerbach, W., messenger.....	29 17
Foulkes, Marie N., clerical work.....	44 90
Fielman, H., messenger.....	92 50
Farnham, F. F., salary.....	4 63
Farlin, C. W., assistant purchasing agent.....	900 00
Fries, J. F., stenographic work.....	481 25
Fryette, Evangeline, copy holder.....	60
Firth, J. M., student assistant.....	11 75
Foreman, C. J., indexing.....	114 00
Ford, J. P., assistant.....	15 00
Friedland, Jennie, clerk.....	705 00
Gillett, O. C., university editor.....	440 00
Griffin, Grace, teaching swimming.....	3 00
Gesell, R. A., inventory work.....	1 00
Gayton, O. F., draftsman.....	12 30
Gayton, O. F., salary.....	19 20
Gray, C. F., repairs.....	32 13
Graff, Einar, clerical work.....	30 00
Geyer, A. A., clerical work.....	11 80
Geyer, D. L., salary.....	36 35
Goldsmith, Wm. J., clerical work.....	11 50
Griffiths, T. B., clerical work.....	102 70
Gaiski, Anna, waitress.....	17 50
Gorrow, E. M., field organizer.....	1,100 00
Glaettle, J. J., clerical work.....	22 50
Gilman, E. D., drafting.....	2 55
Gillett, C. M., university editor.....	1 050 01
Godfroy, Alice S., clerk.....	595 00
Glew, Mary A., clerk.....	1,083 34
Gilbert, G. L., clerk.....	1,000 00
Gallistel, A., salary.....	1,200 00
Hankey, Ira A., salary.....	765 00
Hammer, B. W., examinations.....	100 00
Herfurth, Ida, clerk.....	1,491 66
Higbee, Hazel B., stenographic work.....	101 10
Hambrecht, A. L., drafting.....	7 20
Hart, R. W., drafting.....	11 00
Hean, C., salary.....	835 00
Hill, Edna M., stenographer.....	670 00
Hoppert, M. J., inventory work.....	1 50
H'Doubler, Margaret, teaching swimming.....	2 50
Hambrecht, Lulu, clerical work.....	1 20
Holm, J., clerk.....	73 58
Hunsaker, A. F., clerk.....	15 00
Hayner, Grace H., clerk.....	900 00
Hart, Anna, clerk.....	775 00
Hiestand, W. D., salary.....	2 500 00
Howard, Mary V., stenographer.....	103 22
Hall, Jennie, addressing envelopes.....	3 80
Hickman, Mary, clerical work.....	9 60
Hare, K. R., student assistant.....	2 80
Harm, Jane M., clerk.....	68 00
Hanchett, D. S., stenographer.....	225 63
Hart, Clara, stenographer.....	37 50
Hollister, Leslie J., clerical work.....	10 45
Holland, Ambrose, messenger.....	62 00
Heinrich, A. A., stenographer.....	182 00
Harlacher, Edith, clerk and stenographer.....	1,010 00
Ives, F. W., addressing bulletins.....	7 22
Judd, G. R., field organizer.....	1,382 57
Jencks, M. A., clerical work.....	31 10
Johnson, Horace G., assistant.....	1 05
Johns, E. F., drafting.....	125 00
Jahr, M., copy holder.....	16 90
John, H. W., clerical work.....	43 80
Johnson, LeRoy, stenographer.....	1 35
Johnson, J. L., clerical work.....	5 37
Jewett, N. L., typewriter.....	6 65
Ketcham, Edna M., stenographer.....	384 00
Kronquist, E., clerical work, assistant.....	219 42
Kitchell, Gertrude, teaching swimming.....	3 75
Kinne, B. I., clerical work.....	6 95
Kruell, G., draftsman.....	191 70

Koenig, H., mechanician.....	13 30
Kellogg, Clara, clerk.....	600 00
Kinne, A. W., lantern work.....	18 60
Koehler, W., Clerk.....	170 00
Koenig, M. C., drafting.....	46 20
Klein, Catherine H., stenographic work.....	230 00
Kastler, B. L., tracing.....	7 20
Kennedy, J. P., salary.....	4 25
Kirk, W. E., clerical work.....	1 63
Kuehnsted, Hertha, stenographer.....	207 00
Lyons, Nettie E., clerk.....	480 00
Lindas, Ida, copy holder.....	3 00
Lent, W. F., blue printing.....	6 75
Leonard, A. O., clerical work.....	66 65
Lyons, Frances, stenographer.....	150 00
Link, Leo, page.....	92 31
Leeden, Hebe, clerical work.....	8 85
Law, J. R., draftsman.....	500 00
Langwill, J. S. typewriter.....	10 60
Leute, Helena, clerk.....	710 00
Lovett, C. H., clerical work.....	80
Loprich, H., draftsman.....	900 00
McGowan, Genevieve, stenographer.....	344 48
Murley, Eva, pianist.....	27 60
Mahoney, E. P., clerical work.....	2 95
Milward, Daisy, assistant.....	450 00
Morris, G. C., lantern work.....	76 50
Martin, R., typewriter.....	6 40
Martin, H. R., student assistant.....	6 70
McCaffrey, M. E., salary.....	2,137 50
Murphy, Nell, clerical work.....	1 60
Mitchell, A. R., drafting.....	4 80
Myriand, Lillian, herbarium work.....	40 60
McConnell, A. W., superintendent grounds and buildings.....	1,355 35
McKee, Elizabeth, stenographer.....	650 00
McGrath, W. F., clerical work.....	49 65
Merz, Aline, stenographer.....	720 00
McKee, Anna C., salary.....	600 00
Merrick, G. B., accountant.....	1,250 00
Messer, Vera, clerk.....	319 23
Marquis, J. C., agricultural editor.....	1,383 34
Mills, G. H., clerical work.....	55 50
McGuan, Celia, stenographer.....	50 00
Meisser, H. V., janitor.....	8 80
Marek, F., student janitor.....	8 60
McComb, A., assistant.....	25 00
Mann, C. A., assistant.....	3 60
Matson, Bertha R., stenographer.....	450 00
Martin, Georgia M., clerk.....	655 00
Neighbors, R. E., salary.....	1,575 00
Nee, P. J., student assistant.....	41 65
Nance, A. W., salary.....	2 25
Norris, Vincent, messenger.....	36 00
Nimmons, Mary R., clerk.....	439 61
Ninabuck, W. L., clerk.....	1 00
Nelson, R. F., clerical work.....	52 90
Nickerson, F., messenger.....	311 20
Obata, S., clerk.....	1 00
Orchard, M., assistant.....	25 00
Orth, H. D., drafting.....	45 75
Outzen, A. N., inventory work.....	4 75
Peabody, A., salary.....	3,000 00
Porter, Anna, clerical work.....	50 40
Proud, Sara, copy holder.....	9 20
Pickering, H. G. stenographer.....	6 00
Perry, Hallie, copy holder.....	3 15
Partridge, Elva E., assistant.....	132 65
Prosser, B. C., clerical work.....	2 00
Post, Maybelle M., clerk.....	585 00
Paine, F. R., student assistant.....	9 00
Pickarts, L. J., salary.....	1,891 67
Ryder, Helen W., stenographer.....	540 00
Richards, Anna, copy holder.....	3 00
Rasmussen, Edith, clerical work.....	50 00
Regan, M., messenger.....	50 00
Richardson, Pearl, teaching swimming.....	2 50
Reid, Mary E., herbarium assistant.....	3 60
Ross, Lenora M., stenographer.....	25 00

Randolph, Mabel, clerk.....	317 50	
Richards, C., assistant.....	92 15	
Richards, M., lantern work.....	29 95	
Rau, Erwin, typewriter.....	1 60	
Sullivan, Helen, salary.....	720 00	
Schuette, Henry A., mailing letters.....	3 40	
Schiller, M., pianist.....	15 00	
Schauel, E. J., supply clerk.....	770 00	
Schoenbeber, Gretchen, teaching swimming.....	5 00	
Smith, J. M., chief engineer.....	1,500 00	
Sullivan, Mrs. Nellie, clerk.....	120 00	
Schell, Marjory, stenographer.....	170 00	
Smith, Maud, holding copy.....	6 00	
Swanson, Ada E., clerical work.....	35 65	
Sachs, John, student assistant.....	18 16	
Schmelzer, R. J., blue printing.....	31 20	
Schmelzer, Henry, messenger.....	480 00	
Schmelzer, Frederich, page.....	163 50	
Sanford, Fannie G., clerk.....	830 00	
Spencer, Katherine, salary.....	1,183 33	
Sage, May L., salary.....	710 00	
Stocker, G. P., work.....	33 10	
Smith, Bernadatte, procter.....	9 75	
Scott, Laura, typewriting.....	9 00	
Shatto, Ethel, clerical work.....	2 60	
Stark, C. W. librarian.....	52 90	
Schuckhart, Evelyn M., stenographer.....	20 35	
Spence, Elizabeth, teaching swimming.....	3 25	
Smith, Lawrence, clerk.....	200 00	
Snyder, Matilda, salary.....	780 00	
Silbernagel, Mabel, copy holder.....	60	
Spoor, Leone, statistician.....	540 00	
Taylor, Rowena, H., salary.....	1,000 00	
Thompson, Beulah A., clerk.....	180 00	
Turneure, Florence, clerk.....	800 00	
Tsai, C. T., clerk.....	22 50	
Thiessen, F. C., drafting.....	19 20	
Tressler, A. W., high school inspector.....	2,150 00	
Tolg, Clarence C., making charts.....	5 40	
Upson, L. D., clerical work.....	70 00	
Vitense, Glen, office boy.....	41 33	
Viles, Josephine, teaching swimming.....	2 00	
Van Auken, Clarice, clerical work.....	5 70	
Van Auken, Kenneth, clerical work.....	14 60	
Vitz, F. E., student assistant.....	90	
Vernon, Amey, clerical work.....	10 80	
Van Dusen, Mrs. S. H., assistant.....	170 00	
Van Auken, Claude, copy holder.....	11 00	
Van Vleck, Winifred, student assistant.....	113 23	
Walker, E. F., field organizer.....	252 41	
Wilke, Eda M., clerical work.....	14 70	
Wulfging, Alice, salary.....	45 00	
Wilkinson, Julia M., clerk.....	1,183 33	
Wood, L. H., drafting.....	24 90	
Weber, Edna, herbarium assistant.....	11 20	
Webb, Alice L., clerk.....	815 00	
Waldo, Alfred T., draftsman.....	520 00	
Whipple, A. A., Jr., drafting.....	3 45	
Wright, Mollie, pianist.....	7 20	
Wescott, Joanna, clerk.....	84 56	
Woodward, Judith C., attendant.....	26 00	
Weber, Earl S., writing card.....	125 85	
Wadsworth, Harriet, typewriting.....	4 46	
Whisman, H. M., writing letters.....	1 60	
Workman, D. M., drawings.....	3 00	
Wolley, Hilda, stenographer.....	392 31	
Witt, Wm. H., clerical work.....	6 80	
Wileox, Jessie E., stenographer and clerk.....	75 00	
Williamson, R. C., stenographer.....	60 00	
Youngman, F. A., clerical work.....	13 70	
Yates, Bertha, stenographer.....	600 00	
		\$78,814 14

DETAILS OF UNIVERSITY PAY ROLLS 1909-1910

UNIVERSITY PAY ROLL		
Anderson, Geo., janitor	.....	\$600 45
Anslinger, J. H., janitor	.....	331 15
Anderson, Geo., laborer	.....	147 48
Anslinger, Jacob, laborer	.....	31 73
Appuhn, Wm., janitor	.....	550 00
Batty, Chas. janitor	.....	662 00
Brown, Geo., janitor	.....	192 31
Budd, F. C., night watch	.....	660 00
Bunker, Alex., janitor	.....	600 00
Bolz, John, janitor	.....	660 00
Brockway, R. A., elevator man	.....	540 00
Babeock, J. C., janitor	.....	660 00
Blumenstein, Arthur, janitor	.....	24 90
Brown, Maggie, charwoman	.....	8 85
Bauhs, John, drayman	.....	720 00
Bowen, Wm., engineer	.....	300 00
Burke, M., labor	.....	671 20
Bridge, C. M., carpenter	.....	697 24
Bailey, Frank F., painter	.....	556 20
Buergen, W. J., Jr., lathing	.....	60 00
Boyle, W. E., mason help, labor	.....	86 18
Brewer, Wm. F., steam fitter	.....	151 55
Barth, Fred, labor	.....	187 43
Beyler, A., labor	.....	231 09
Braun, F. C., machinist	.....	470 08
Blackburn, C., laborer	.....	92 93
Blumenstein, Walter, laborer	.....	108 69
Billig, C. W., laborer	.....	272 76
Barnes, C. M., laundry work	.....	4 50
Buchanan, Mabel, janitress	.....	24 97
Bradley, W. H., painter	.....	8 16
Blake, Annie, janitress	.....	20 40
Buchanan, Ethel, janitress	.....	15 52
Borsack, K. K., page	.....	16 20
Briggs, L. F., painter	.....	292 40
Bergstein, E., laborer	.....	2 70
Breitenbach, Clara, janitress	.....	63 73
Bush, A. O., laborer	.....	166 73
Bitney, Edith, janitress	.....	91 35
Boisen, A. P., tank attendant	.....	13 20
Bren, August, laborer	.....	370 21
Bartholomew, F., labor	.....	142 43
Brissee, James, labor	.....	218 00
Bresser, Francis, fireman	.....	30 50
Corry, T., labor	.....	2 50
Cline, W., laborer	.....	513 99
Curnyn, Jno., labor	.....	2 03
Charles, Robert, labor	.....	2 03
Conners, P. W., labor	.....	32 17
Cunningham, T., laborer	.....	29 48
Cline, James, laborer	.....	144 90
Cass, L., janitor	.....	228 84
Creasor, Mrs. Jas. janitress	.....	1 85
Cutler, H. E., labor	.....	103 95
Carpenter, Fred, labor	.....	209 18
Conners, John, labor	.....	311 64
Check, Frank, steam fitter	.....	757 64
Coyne, Chas. O., carpenter	.....	850 72
Casserly, Frank, helper	.....	661 96
Clifeorn, Henry, fireman	.....	780 00
Cass, Chas., janitor	.....	515 38

Cutler, Cora, janitress.....	68 43
Conohan, J. E., janitor.....	660 00
Clerkin, Patrick, janitor.....	690 00
Cribben, F., labor.....	5 50
Duke, John, laborer.....	50 00
Donlin, James, janitor.....	67 28
Dodge, Hannah, janitress.....	18 46
Doyle, E. P., laundry.....	2 50
Dresen, John, houseman.....	8 33
Dyer, Clayton, labor.....	40 50
Dolen, Fred, carpenter.....	283 46
Dyer, Harry, fireman.....	630 00
Dohr, Hugo, carpenter.....	859 90
Diebold, Wm., teamster.....	615 00
Dale, Mrs. Wm., janitress.....	55 50
Doescher, John, janitor.....	690 00
Davis, Albert, janitor.....	114 00
Danielson, John, elevator man.....	383 84
Dyke, LeGrande G., janitor.....	87 80
Deards, W. W., janitor.....	645 00
Egelhoff, R. E., lettering.....	24 15
Ellis, Howard, laborer.....	212 18
Emory, John, steam fitter.....	521 61
Ellis, Thos., engineer.....	960 00
Eastman, John, watch.....	124 30
Franzen, Phillip M., painter.....	455 36
Fuss, Gertrude, charwoman.....	30
Farmer, Nellie, janitress.....	48 60
Fuss, Mary, janitress.....	128 75
Fritz, C., labor.....	95 64
Farley, Alex., laborer.....	346 72
Ford, Margaret, janitress.....	18 90
Faber, M. E., clerical work.....	6 00
Fowler, J. F., laborer.....	12 00
Fuss, Kate, janitress.....	24 45
Fuss, Lizzie, janitress.....	21 60
Foss, Carl, laborer.....	471 17
Fuss, Chas., laborer.....	410 42
Gleason, J., labor.....	25 21
Gray, C. F., mechanician.....	21 30
Green, Wm. S., laborer.....	3 60
Gottschell, E., laborer.....	6 08
Grunenthal, Kate, janitress.....	23 70
Green, E. L., janitor.....	14 40
Garton, John, laborer.....	349 89
Griffin, Grace, tank.....	2 75
Grasser, Mary, janitor.....	347 45
Gyte, G., labor.....	105 30
Goth, W. F., laborer.....	508 16
Gwin, Herbert, laborer.....	62 15
Gross, G. S., mechanician.....	968 05
Gyles, Sampel, carpenter.....	529 92
Gwin, Henry, assistant drayman, labor.....	96 76
Grant, D. M., labor.....	60 00
Hart, Ray W., assistant.....	15 75
Harrison, Jas., fireman.....	226 00
Haywood, Fannie, janitress.....	7 50
Haak, Gusta, janitress.....	4 05
Hosken, Wm., laborer.....	32 00
Herrlein, Jos., laborer.....	28 00
Hopson, E. D., laborer.....	62 03
Hughes, J., laborer.....	305 66
Haak, John, laborer.....	600 00
Herrlein, Val., laborer.....	670 00
Hansen, H. M., mechanician.....	275 28
Halik, F. E., mechanician.....	963 11
Hipple, J. S., mechanician.....	962 13
Henning, Julius C., plumber.....	263 53
Huebner, Wm. G., plumber.....	995 01
Hoiby, C. H., carpenter.....	402 78
Haugrud, John, carpenter.....	230 24
Harrington, Mrs. M., janitress.....	15 45
H'Doubler, Margaret, tank attendant.....	1 50
Hoppert, M. J., tank attendant.....	8 00
Harrington, C. L., tank attendant.....	9 10
Hammersly, Wm., teamster.....	700 00
Helm, Chas., janitor.....	665 00
Huss, Peter, janitor.....	407 60

Hodge, Hannah, janitress.....	322 50
Imboden, D. C., laundry work.....	1 80
Illegan, Daisy, janitress.....	154 45
Jahr, M. E., laborer.....	48 38
Janes, M. A., mason.....	842 50
Jacquith, A. F., laundry.....	54 60
Judkins, S. B., labor.....	9 00
Kelley, Edw., laborer.....	36 45
Kateley, Fred, machinist.....	14 00
Kelley, Mabel, janitress.....	25 05
Kroncke, L. W., electrician.....	251 60
Kenwick, T., paint.....	50 00
Knutson, S., painter.....	16 50
Kennedy, Jas. P., laundry.....	13 10
Kerby, Alvina, lockers.....	41 50
Kitchell, Gertrude, tank attendant.....	3 00
Kenney, Alice, tank attendant.....	13 50
Lamore, Wm. H., labor.....	139 28
Laffash, W., labor.....	29 48
Loy, Joe, laborer.....	49 15
Lavene, Hugh, labor.....	87 53
Loomis, C. M., machinist.....	57 76
LeHew, Orley, engineer.....	490 00
Lecolm, B., laborer.....	2 03
Lampert, B. H., laundry.....	4 00
Link, Leo, page.....	23 00
Lang, C. H., laborer.....	20 25
Ludwig, Mrs. L., janitress.....	26 70
Larson, Gustave, laborer.....	248 85
Leonard, G., laborer.....	310 42
Lyford, Walter, electrician.....	370 58
Longfield, S. H., carpenter.....	581 98
Lund, J. E., engineer.....	720 00
Lamson, R. A., tank attendant.....	37 00
Longfield, Jos., tool room attendant.....	295 00
Link, Ellen, charwoman, dressing room.....	137 45
Maloney, Stephen, laborer.....	160 43
Mueller, John, janitor.....	12 00
Miller, Karl F., janitor.....	9 20
Miller, Edw., carpenter.....	21 76
McCabe, T., laborer.....	320 41
Murphy, Jno, P., labor.....	311 64
Meyers, John, painter.....	91 94
Murphy, Walter, plumber.....	83 33
Miles, E. L., steam fitter.....	720 00
Mellentine, Harvey, electrician.....	325 36
Moler, Fred, carpenter.....	12 92
Moll, Frank, carpenter.....	359 90
Mutchler, Irving, chief carpenter.....	1,200 00
Murphy, Annie, charwoman.....	10 88
Milward, Minnie, charwoman.....	8 10
McClosky, Mary, charwoman.....	33 90
Mahoney, Lizzie, janitress.....	360 00
Marek, Frank, student janitor.....	53 00
MacLean, Frank, janitor.....	144 68
Morgansen, S. T., janitor.....	645 00
Morschauer, Ernst, supply clerk.....	600 00
Morse, Willis, janitor.....	660 00
Nelson, Anna, charwoman.....	5 45
Nalon, Kate, charwoman.....	300 00
Nolan, Mike, janitor.....	360 00
Nash, E. R., laundry.....	403 84
Newcomb, Maud, housekeeper.....	90 00
Newcomb, Walter, janitor.....	164 58
Neubaaver, F., labor.....	20 70
Newton, Emil, janitor.....	7 75
Otis, C., laborer.....	64 00
Oldenberg, Emory, labor.....	142 90
Outzen, Andrew N., electrician.....	324 75
Otis, Edw., janitor.....	32 64
Otis, Arthur, janitor.....	550 00
Osterfund, E., janitor.....	26 88
Pool, G., laborer.....	8 11
Palmeir, Fred, laborer.....	132 72
Pudesta, Mabel, charwoman.....	68 00
Post, L. I., janitor.....	200 00
Partridge, Elva E., assistant.....	15 33
Pharo, Clarence, machinist.....	315 70

Prieve, Meta, charwoman.....	18 55	
Parker, W. H., janitor.....	24 75	
Post, Wm., janitor.....	600 00	
Quinlan, Tom, labor.....	44 55	
Russell, Jessie, engineer.....	376 10	
Reilly, B. D., laborer.....	42 53	
Reese, Lucy, janitress.....	23 35	
Richards, Clark, page.....	2 50	
Ruddy, Elizabeth, janitress.....	17 70	
Rogers, J., laborer.....	364 42	
Rasmussen, Gabe, painter.....	834 18	
Rider, J. H., valve inspector.....	360 00	
Richardson, Pearl, tank attendant.....	1 25	
Rutishauser, Mildred, charwoman.....	21 00	
Rossmassler, O. C., janitor.....	278 85	
Rowley, Clarence, janitor.....	113 00	
Rapp, F., laborer.....	170 93	
Ruggles, John, labor.....	203 85	
Short, Thomas, labor.....	138 38	
Sweeney, Jerry, labor.....	51 75	
Schimmelpfennig, A. E., machinist.....	8 84	
Smith, John O., labor.....	61 43	
Scherer, George, laborer.....	289 38	
Sladky, Alex., machinist.....	24 45	
Schimming, G., laborer.....	67 99	
Sweemer, Alice, janitress.....	14 85	
Scheibel, Herman, steam fitter.....	115 00	
Schumm, Mary, janitress.....	30 30	
Sherman, Edw., painter.....	46 24	
Shriner, H. F., mechanician.....	144 76	
Stafford, H. S., laundry work.....	4 20	
Schoening, P., janitor.....	50 00	
Sperling, Allie, janitor.....	15 00	
Schanel, R. J., supply clerk.....	60 00	
Sherman, Edw., painter.....	23 12	
Schubring, Arthur, painter.....	64 80	
Seary, Sarah, janitress.....	27 75	
Sehmelzer, Ben, labor.....	85 28	
Schwartz, John, laborer.....	459 79	
Schofield, H., laborer.....	660 00	
Sehmelzer, G., foreman.....	901 80	
Strothman, O. E., machinist.....	2 75	
Sladky, Paul, machinist.....	207 60	
Sanderson, Forrest, laborer.....	422 87	
St. John, E. B., carpenter.....	536 50	
Starr, James, steam fitter.....	638 85	
Sandberg, S. E., steam fitter.....	1,025 00	
Sale, H., carpenter.....	75 00	
Swenson, Chris, carpenter.....	848 34	
Starr, Ellen, charwoman.....	15 45	
Spence, Elizabeth, tank attendant.....	1 50	
Schoenleber, Gretchen, tank attendant.....	3 00	
Scoles, J. C., labor.....	25 00	
Scheibel, Herman, steam fitter.....	101 60	
Sullivan, D. T., tank attendant.....	30 20	
Steffen, A. W., mechanic.....	715 00	
Sandberg, H. T., patterns, tool room attendant.....	63 00	
Sperling, Fred, janitor.....	645 00	
Sargent, W. J., mason work, labor.....	13 28	
Thiessen, Frank C., drafting.....	12 90	
Townley, Mary, janitress.....	7 50	
Thompson, A. O., electrician.....	1,200 00	
Tukey, William, helper.....	4 38	
Temple, William, laborer.....	737 50	
Trask, Mary, charwoman.....	40 00	
Tandberg, A., tank attendant.....	58 70	
Thompson, J., labor.....	173 49	
Utter, Chas., labor.....	198 00	
Utter, John, labor.....	59 85	
Vierk, John, carpenter.....	180 88	
Vitz, F. E., assistant.....	18 30	
Van Auken, Clarice, assistant.....	14 80	
Vosen, Herman, labor.....	277 89	
Van Vliet, Chas., carpenter.....	25 84	
Vetter, Edw., elevator man.....	600 00	
Wallace, Irving, painter.....	633 76	
Weyher, Jos., plumber.....	151 43	
Wise, Calvin Z., janitor.....	223 07	
White, Louise, janitress.....	23 10	

Winn, William, laborer	12 15	
Welmert, Barbara, janitress	2 70	
Woitowski, L. R., clerk	42 30	
Wolf, Edwin, labor	218 08	
Wolf, Michael, labor	239 05	
Wills, Morris, carpenter	408 31	
Welsh, Michael, laborer	216 98	
Wolff, John, laborer	669 00	
Wetzel, William, engineer	480 00	
Woodward, Mrs., janitress	60 60	
Wehrle, George, hauling	584 64	
Westerfield, George, janitor	73 00	
Willet, George, janitor	660 00	
Young, William, janitor	600 00	
Zachow, C. W., repairs	2 00	
		\$75,076 52

AGRICULTURAL COLLEGE PAY ROLL

Ackeret, J. J., testing	\$97 88	
Allen, George A., testing	49 33	
Andrew, J. M., labor	36 75	
Albers, George T., labor	167 00	
Ahrens, William, salary	600 00	
Anderson, A. L., salary	710 00	
Almsmeyer, E. C., labor	342 68	
Anderson, Gilbert, painter	10 00	
Atkinson, William, labor	4 00	
Anderson, Nels, labor	10 00	
Accola, John H., herdsman	702 50	
Acker, John, laboratory assistant	424 80	
Busse, W., salary	39 79	
Beceroft, A. B., library assistant	2 25	
Bellie, Grover, labor	3 78	
Bibbs, Idalyn, stenographer	502 00	
Brann, John W., clerk	44 65	
Borland, A. A., clerk	12 20	
Burroughs, C. G., poultryman	368 33	
Bayloss, George, labor	3 00	
Bethke, Edmund, salary	564 87	
Barker, W. J., labor	274 45	
Bartholomew, R. P., surveyor, labor	5 65	
Blank, G. A., laborer	22 60	
Blair, E. T., labor	4 38	
Baker, Martin, labor	4 50	
Baird, W. L., testing	15 72	
Backhaus, F. G., assistant shepherd	357 75	
Bewick, W. M., tests	75 52	
Bond, Mrs. Margaret, charwoman	359 15	
Brewster, Antoinette G., stenographer	682 00	
Coleman, Mary, stenographer	120 40	
Crandall, W. F., testing	62 29	
Carey, J. E., labor	225 00	
Charles, Robert, helper	101 20	
Curtis, J. C., assistant	68 32	
Cunningham, R. N., labor	175 00	
Chapman, A. J., carpenter	51 80	
Christie, Antony, labor	9 00	
Cherry, J. W., blacksmith	5 25	
Cobb, Homer A., tests	92 19	
Cooper, W. H., salary	358 00	
Caldwell, W. G., drafting	10 00	
Cunningham, G. C., labor	32 50	
Cook, J. C., tests	34 00	
Cramton, B. L., tests	39 98	
Colwell, I. P., testing	114 42	
Clark, John H., testing	10 00	
Charles, D. B., janitor	605 00	
Charles, Lucille, clerk	111 45	
Challoner, Agnes, student assistant	15 00	
Cutler, Mrs. Cora, charwoman	90	
Daniells, Wm., labor	7 00	
Durnford, Geo. A., testing	120 34	
Detjen, L. R., inspector	148 75	
Davies, L. R., testing	67 10	
Dudgeon, S. B., testing	39 66	
Dauck, Herman, salary	588 46	
Dauck, Henry, labor fireman	627 40	

Delwiche, O. J., herdsman.....	895 00	
Drescher, H. A., assistant.....	3 00	
Delwiche, E. J., superintendent.....	1,775 00	
Douglas County Poor Farm, labor.....	105 52	
Daly, Richard E., foreman.....	91 10	
Dale, Mrs. Will, charwoman.....	26 50	
Enders, Frances, berry picking.....	2 85	
Elsom, Cernaldo, picker.....	1 00	
Ellerman, Harvey, labor.....	5 00	
Ericeson, Frank, labor.....	2 40	
Ebert, F. E., assistant shephard.....	374 00	
Esser, Agnes, stenographer.....	680 00	
Foran, Margaret, clerk.....	5 80	
Penton, Edwin, surveying.....	4 40	
Framer, L. M., student assistant.....	18 30	
Fox, E. W., herdsman.....	900 00	
Fox, O. W., assistant herdsman.....	714 80	
Fox, Howard L., assistant herdsman.....	261 00	
Fletcher, A., labor.....	75	
Fisher, G. B., testing.....	65 20	
Fiedler, Anna K., stenographer.....	900 00	
Golambeski, Wm., labor.....	8 50	
Gardner, W. H., testing.....	277 50	
Griffiths, Nellie E., stenographer.....	75 00	
Goldbin, Mrs. Lizzie, charwoman.....	11 40	
Garlid, Geo., assistant.....	3 66	
Gaynor, Jas., labor.....	9 40	
Georges, Robt., labor.....	12 00	
Gaynor Cranberry Co., cleaning berries, labor.....	12 85	
Gauert, F., salary.....	702 00	
Geneteskie, E. F., labor.....	81 35	
Guth, Albert, assistant.....	335 00	
Gundlack, A., laundress.....	26 65	
Germanson, H., assistant.....	123 60	
George, W. R., tests.....	44 26	
Gaynor, Mrs. Jas., boarding.....	123 50	
Grabner, L. F., clerk.....	81 20	
Hoffman, Otis, labor.....	49 00	
Heineman, Bertha, stenographer.....	8 00	
Hall, George, labor.....	1 50	
Holz wurst, Loretta, picker.....	3 55	
Helmer, Max, work.....	1 00	
Haines, Geo. C., labor.....	80 00	
Hubbard, Isaac, teamster.....	6 30	
Hayes, Edwin D., assistant.....	10 50	
Hostrawser, Paul, labor.....	1 25	
Hornbeck, Earl D., labor.....	42 00	
Hyatt, G. W., surveyor.....	4 40	
Harmon, G. W., surveyor.....	11 00	
Hutton, Geo., salary.....	955 00	
Hoffmann, J. H., labor.....	505 00	
Henry, L. L., labor.....	81 35	
Hoffman, John, carpenter.....	900 00	
Haak, Augusta, charwoman.....	76 89	
Henwood, Emma M., bookkeeper.....	880 00	
Henning, Walter, salary.....	576 00	
Holm, Geo. O., labor.....	10 38	
Hansen, Carl F., labor.....	434 27	
Hansen, H. T., foreman.....	85 77	
Hansen, H. C., labor.....	629 83	
Hayden, Frank, labor.....	45 16	
Hans, Enoch, tests.....	31 86	
Harris, R. T., testing.....	332 17	
Hayes, E. H., student assistant.....	27 50	
Hausmann, Minnie O., stenographer.....	112 00	
Irving, Clifford, labor.....	1 25	
Jencks, M. A., clerk.....	21 19	
Johnston, E. O., tests.....	138 68	
Jewett, Norman T., student assistant.....	22 00	
Jahr, M. E., labor.....	27 00	
Jorgensen, Waldemar, labor.....	14 71	
Johnston, Frank R., testing.....	547 26	
Juhl, Ervin, labor.....	26 62	
Johnson, J., labor.....	57 68	
Johnson, Carl, labor.....	4 00	
Jorgenson, Arthur, labor.....	3 01	
Jones, Myette, stenographer.....	127 58	
Kadonsky, J. F., grubber.....	120 00	

Kinne, A. W., labor.....	15 00	.....
Kornstad, Matt, labor.....	13 75	.....
Knudson, Albert, student assistant.....	15 00	.....
Kraut, Leo, labor.....	60	.....
Kennedy, Harry, labor.....	1 25	.....
Koaulke, Henry, labor.....	23 75	.....
Kirst, F., salary.....	434 96	.....
Krueger, Alma H., stenographer.....	324 15	.....
Kreiner, A. G., labor.....	78 18	.....
Kroll, John M., testing.....	298 97	.....
Kennedy, Roy, assistant herdsman.....	250 50	.....
Kissinger, Jacob, labor.....	6 50	.....
Kissinger, Henry, labor.....	190 88	.....
Kelley, Minnie, stenographer.....	682 00	.....
Kleinheinz, Monica, stenographer.....	590 00	.....
Kleinheinz, Adelaide, stenographer.....	421 90	.....
Luceck, S. M., labor.....	86 54	.....
Lathrop, A. T., student assistant.....	6 60	.....
Lassetter, W. C., laboratory work.....	83 40	.....
Leith, B. D., assistant.....	10 50	.....
LeClair, Carlos A., assistant.....	71 63	.....
Larson, Gustav, labor.....	287 46	.....
LaPlant, Laura, stenographer.....	57 00	.....
Lloyd Jones, R., assistant.....	53 40	.....
Linton, G. A., testing.....	17 25	.....
Lachmund, Robert, testing.....	118 88	.....
Lauderdale, Roy, testing.....	102 28	.....
Lynch, Margaret, stenographer.....	677 00	.....
Lippert, Frances, clerk.....	46 98	.....
Lloyd-Jones, Alice, assistant.....	161 20	.....
Morris, W. E., labor.....	91 00	.....
Miller, C. F., drayage.....	4 25	.....
Mitchell, S. B., clerk.....	3 55	.....
Matthews, L. G., student assistant.....	6 30	.....
Morris, M. B., labor.....	9 00	.....
Merz, Frieda, clerk.....	24 23	.....
McGovern, Thos., testing.....	2 50	.....
Mathews, Joe, salary.....	669 00	.....
Meisner, Frank, salary.....	244 63	.....
Meyer, F. M., horseshoes.....	80 77	.....
McConvill, J. L., salary.....	646 00	.....
Martin, W. H., labor.....	318 48	.....
Murray, Reid T., clerk.....	4 25	.....
Mullon, N. M., stenographer.....	13 75	.....
Martins, Emil J., fireman.....	29 13	.....
Moen, H. C., salary.....	440 86	.....
Markey, W. E., general assistant.....	901 50	.....
Moen, H., herdsman.....	50 00	.....
Mills, Sadie, stenographer.....	655 00	.....
Marvin, G. A., labor.....	51 88	.....
Mitchell, Chas., labor.....	125 20	.....
Moore, Frank, labor.....	29 60	.....
Markey, W. H., testing.....	228 31	.....
Morris, Geo. C., testing.....	60 55	.....
Mosely, R. W., testing.....	22 93	.....
McCarthy, G. J., testing.....	112 46	.....
Malde, O. G., superintendent.....	1,200 00	.....
Moran, Mary, stenographer.....	90 38	.....
Norton, M. E., labor.....	10 50	.....
Newbauer, F., labor.....	245 40	.....
Nutt, Ed., labor.....	11 60	.....
Nolan, J., salary.....	576 00	.....
Oakey, Mildred, stenographer.....	600 00	.....
Oldenberg, E., labor.....	22 49	.....
Oestach, L. J., salary.....	180 00	.....
O'Brien, Henry, labor.....	31 10	.....
O'Brien, Geo., labor.....	5 00	.....
Oosterhuis, A. C., testing.....	38 97	.....
Potter, Byron G., testing.....	1 40	.....
Parmeter, Earl, labor.....	5 25	.....
Polley, E., labor.....	120 00	.....
Peterson, Clara, clerk and stenographer.....	50 00	.....
Pierce, Lester, labor.....	1 25	.....
Post, E. H., labor.....	97 30	.....
Petrie, M. E., assistant herdsman.....	162 30	.....
Patoska, Martin, carpenter.....	5 00	.....
Pease, J. W., labor.....	46 73	.....
Parson, H. E., labor.....	72 45	.....

Potter, Geo. laborer.....	327 31	
Peterson, Bert. labor, drayman.....	13 85	
Peterman, L. A., tinner.....	7 17	
Peterson, Wm., labor.....	446 27	
Petran, M., stenographer.....	495 00	
Peltier, G., labor.....	44 45	
Peters, John, student assistant.....	287 90	
Polley, Flossie I., stenographer.....	377 81	
Quan, Clara, stenographer.....	179 45	
Richards, M. W., inspector.....	255 00	
Ross, Lenora, stenographer.....	7 50	
Roeder, Fred, labor.....	16 62	
Roeder, George, labor.....	21 87	
Rabideau, George, labor.....	1 44	
Rabideau, Orville, labor.....	1 44	
Rau, Erwin, clerk.....	2 80	
Renard, Ernst D., labor.....	1 50	
Rogers, Dr. E. M., services.....	4 50	
Richardson, Willie, labor.....	31 37	
Randall, O. A., tests.....	146 25	
Richards, Griffith, assistant.....	23 10	
Rauchenstein, Emil, student assistant.....	69 80	
Reid, W. A., testing.....	57 73	
Rogers, Mrs. Rachel, washing.....	152 03	
Reinking, Otto A., testing assistant.....	205 75	
Schmelzer, Mrs. Anna, laundering.....	34 01	
Silbernagle, Mabel, clerk.....	17 15	
Swenholt, Casper, picker.....	2 15	
Starck, Minnie, clerk.....	28 05	
Snaddon, J., salary.....	600 00	
Shepard, C. A., labor.....	71 55	
Schulz, A. F., labor.....	71 96	
Showers, W. L., clerk.....	820 00	
Steffen, Herman, deliveryman.....	720 00	
Schroeder, H. A., labor.....	211 60	
Stevenson, Rolland, assistant.....	127 95	
Sheehy, Etta, stenographer.....	595 00	
Smith, Ira, labor.....	33 65	
Smith, Alfred, labor.....	18 75	
Schwecktenberg, Wm., testing.....	263 22	
Sutton, Luther F., student assistant.....	28 00	
Schwartz, Susie, stenographer.....	652 00	
Santos, R. W., labor.....	59 51	
Sandell, Harvey, assistant.....	799 99	
Shine, Maggie, charwoman.....	153 30	
Skidmore, Ralph, labor.....	45 00	
Sutter, Henry, carpenter.....	107 40	
Sharp, Raymond, labor.....	19 19	
Thibodeau, Elmer F., labor.....	83 25	
Tulloch, G. A., fireman.....	5 50	
Thompson, Carl, clerk.....	18 25	
Turner, Chas. L., testing.....	371 15	
Urguhart, Geo., labor.....	35 00	
Ullsperger, H. W., assistant, labor.....	131 50	
Van Ostrand, Dewitt, labor.....	26 25	
Voss, A., salary.....	588 07	
Voss, W. R., science assistant.....	715 00	
Weifenbach, F., foreman.....	720 00	
Wendt, Fred, labor.....	379 30	
Whiting, F. H., tests.....	96 64	
Wick, W. F., tests.....	45 50	
Weymouth, Fred R., assistant.....	406 97	
Wheir, Joe, labor.....	18 00	
Wendt, Walter, labor.....	85	
Wendt, Arthur, labor.....	1 85	
Williams, Geo., labor.....	1 25	
Wallace, Geo., labor.....	1 25	
Warner, E. E., labor.....	47 00	
Zerbel, L. R., salary.....	835 00	
		\$52,801 66

DAIRY AND SHORT COURSE INSTRUCTORS' PAY ROLL

Bruhn, Axel, assistant, salary.....	\$100 00	
Clavadatscher, Tobias, instructor, salary.....	150 00	
Emerson, H., instructor, salary.....	150 00	
Guelzow, A. F., assistant, salary.....	100 00	

Garlid, Geo., instructor, salary.....	220 00	
Guth, Albert, assistant, salary.....	160 00	
Gunderman, F. A. instructor, salary.....	50 00	
Jones, Orren L., instructor, salary.....	200 00	
Jenks, A. H., instructor, salary.....	225 00	
Koller, F. W., instructor, salary.....	10 97	
Kohlman, R. P., assistant, salary.....	50 00	
Laabs, F. W., assistant, salary.....	300 00	
Laabs, A. G., instructor, salary.....	810 00	
Morris, V. E., instructor, salary.....	150 00	
Marty, G., instructor, salary.....	999 93	
Meisner, Frank, instructor, salary.....	332 15	
Newland, W. W., assistant, salary.....	100 00	
Peterson, L., instructor, salary.....	475 00	
Sipsma, Jacob, instructor, salary.....	84 95	
Singler, J. J., instructor, salary.....	835 00	
Totman, Ward, instructor, salary.....	450 00	
Towle, Tim, assistant, salary.....	125 00	
		\$6,078 03

CREAMERY PAY ROLL

Adams, E. A., milk.....	\$139 14	
Buss, Gus, milk.....	15 35	
Bible, Guy, hauling.....	91 75	
Behnke, Fred, milk.....	777 90	
Behnke, Wm., milk.....	384 36	
Brown, P. W., milk.....	94 71	
Buss, Chas., milk.....	2,577 13	
Binger, Theo., hauling.....	975 00	
Beecher, Chas., milk.....	86 63	
Byrne, Pat, milk.....	81 23	
Blizzard, G. A., milk.....	353 24	
Byrne, James, B., milk.....	180 51	
Bodreau, Jas., milk.....	161 35	
Backus, Frank, milk.....	186 72	
Conlin, John, milk.....	141 45	
Chynoweth, H. E., milk.....	169 53	
Cottage Grove Creamery Co., milk.....	7,524 14	
Dryer, Chas., milk.....	280 19	
Dinkler, Henry, milk.....	253 47	
Easerman, Chas., milk.....	209 64	
Fosdick, Geo. W., milk.....	83 93	
Farm, U. W., milk.....	1,561 64	
Frisch, Andrew, milk.....	250 94	
Fergen, Geo., milk.....	180 95	
Gay, Harry, milk.....	8 18	
Grabbert, Emil, milk.....	1,233 14	
Grabbert, R., milk.....	1,223 27	
Gillette, Rufus, milk.....	219 76	
Good, G. F., milk.....	189 10	
Groth, E. F., milk.....	17,458 33	
Hinrichs, David, milk.....	5 23	
Hammersley, F. W., milk.....	601 00	
Huston, H. C., milk.....	280 65	
Huston, J. A., milk.....	349 10	
Huston, D. W., milk.....	804 31	
Homberg, Aug., milk.....	209 48	
Huston, W. R., milk.....	14 60	
Huston, Alford, milk.....	253 80	
Hassett, Jas., milk.....	163 16	
Harris, W. H., milk.....	28 10	
Hoppmann, C. H., milk.....	501 68	
Klever, Fred, milk.....	50 56	
Kinney, Andrew, hauling.....	15 50	
Klever, Henry, milk.....	444 75	
Little, J., milk.....	28 00	
Meinke, Ludwig, milk.....	73 21	
Meyer, Carl, milk.....	167 53	
Maher, Timothy, milk.....	114 65	
Mahaney, Jas., milk.....	161 36	
Merrick, Harry, milk.....	44 50	
Marks, Henry, milk.....	266 01	
Mutchler, Philip, milk.....	513 35	
Nichus Brothers, milk.....	910 08	
Noonan, Wm., milk.....	146 29	
Orth, Fritz, milk.....	67 75	

O'Brien, Ed. S., milk.....	355 61	
Pierstorff, Wm., milk.....	83 39	
Pureell, Mrs. J., milk.....	103 79	
Pierstoff, H. H., milk.....	361 91	
Pierstoff, H. C., milk.....	418 33	
Richert, Thos., milk.....	6 28	
Reigle, Geo., milk.....	15 83	
Richert, Thos., milk.....	138 52	
Sprague, Geo., milk.....	87 93	
Sprague, Henry, milk.....	39 65	
Schlotthauer, F., milk.....	113 98	
Stace, Geo., milk.....	125 24	
Sharp, Wm., milk.....	1,312 55	
Slater, John, milk.....	317 72	
Showers, J. E., milk.....	376 61	
Sprecher, Geo. W., milk.....	21 66	
Storck, Casper, milk.....	249 02	
Toepfer, Aug., milk.....	196 01	
Thomson, A. L., milk.....	70 82	
Uphoff, Ed., milk.....	30 57	
Warner, E. N., milk.....	22 29	
Wrabetz & Semb, milk.....	250 75	
West, Stanley, milk.....	118 99	
Ward, Clarence, milk.....	123 63	
West Middleton Dairy Assn., milk.....	34,105 74	
Walbridge, L. J., milk.....	204 41	
		\$82,219 10

AGRICULTURAL INSTITUTE PAY ROLL

Bingham, D. E., salary.....	\$200 00	
Bradley, W. C., conductor, salary.....	370 00	
Clift, Miss Edith L., cooking.....	310 00	
Charles, D. B., janitor.....	55 00	
Convey, Thomas, swine and dairy expert.....	340 00	
Comings, G. F., salary.....	100 00	
Durand, Grace G., salary.....	10 00	
Fenton, Marie, salary.....	90 00	
Griffiths, Nellie E., clerk and stenographer, salary.....	825 00	
Griswold, H. D., assistant, salary.....	280 00	
Herbst, J. L., assistant, salary.....	280 00	
Imrie, David, conductor, salary.....	340 00	
Jacobs, E. C., assistant, salary.....	305 00	
Kelly, A. L., Mrs., salary.....	270 00	
McKerrow, W. A., assistant, salary.....	155 00	
Matteson, C. E., poultry.....	280 00	
Maxwell, Nellie, cooking, salary.....	250 00	
Martiny, L. P., assistant, salary.....	280 00	
Nordman, Ed., conductor, salary.....	370 00	
Parrish, J. O., salary.....	115 00	
Roberts, R. E., assistant, salary.....	305 00	
Ross, Miss Mae E., assistant, cooking.....	110 00	
Scott, L. E., conductor, salary.....	370 00	
Scribner, F. H., conductor, salary.....	370 00	
Stubley, Fred, assistant, salary.....	267 50	
Stiles, W. F., conductor, salary.....	340 00	
		\$6,987 50

CHADBOURNE HALL PAY ROLL

Blumenstein, Walter, houseman.....	\$494 06	
Blankenheim, Emma, assistant headwaitress.....	390 30	
Blankenheim, Lottie, student assistant.....	87 45	
Blacklock, Sara, waitress.....	17 15	
Crass, Neleoda, assistant cook.....	20 15	
Callahan, Byrdie, waitress.....	4 00	
Callahan, Charlotte, waitress.....	85 05	
Davis, Robert W., assistant janitor.....	69 17	
Dougherty, Mayme, dishwasher.....	14 29	
Erickson, Mary, waitress.....	235 16	
Fitzpatrick, Margaret, bellmaid.....	20 00	
Fitzpatrick, Maude, waitress.....	13 04	
Flood, Julia, waitress.....	146 00	
Garski, Anna, waitress.....	56 75	
Greiber, Mary L., assistant cook.....	55 72	
Gorman, Rose, dishwasher.....	206 90	
Ganser, Pauline, waitress.....	50 63	

Ganser, Celia, assistant pastry cook.....	172 60	
Holland, Loretta, laundress	66 78	
Homme, Aleda, bellmaid	75 00	
Harmon, Hazel, waitress	20 00	
Hendrickson, Mabel, assistant cook.....	174 40	
Hofer, Frieda, waitress	139 28	
Hanson, Sena, waitress	188 57	
Hanson, Mary, waitress	21 00	
Halverson, Celia, laundress	174 40	
Jarvis, Geneva, waitress	88 68	
Kerin, Mary, assistant cook.....	122 86	
Lutzerath, Alfreda, student assistant.....	26 72	
Lawrence, Grace, waitress	86	
Lynch, Maybell, waitress	60 62	
Link, Ellen, assistant cook, dishwasher.....	134 47	
Link, Elizabeth, dishwasher	150 77	
Monn, Josie, waitress	72 66	
Murphy, Jewell, waitress	35 17	
Ninneman, Tena, meat cook.....	463 17	
Osterfund, Aleda (nee Homm), bellmaid.....	148 00	
O Kefe, Jennie, waitress	44 62	
Palmatier, Nellie, waitress	5 50	
Prieve, Meta, waitress	44 43	
Reese, Lucy, janitress	313 00	
Rockney, Emma, waitress	22 03	
Rockney, Martha, waitress	30 02	
Retzloff, Louise, assistant cook.....	55 72	
Ryan, Rose waitress	50 32	
Rasmussen, Anna, waitress	122 15	
Schmitz, Ella, student assistant.....	26 72	
Sprecher, Elda, waitress	23 17	
Short, Nellie, waitress	124 19	
Spann, Barbara, dishwasher	21 80	
Sullivan, Mary, laundress	230 84	
Sayle, Mary, pastry cook	461 31	
Schmitz, Lena, waitress	65 43	
Upton, Etta, waitress	18 85	
Vetter, Emma, night watch.....	317 00	
Walser, Ella, waitress	81 80	
Wendels, Anna, assistant bellmaid.....	42 27	
Wheeler, Agnes, waitress	209 35	
Zink, Elizabeth, waitress	69 80	
		\$6,701 12

LATHROP HALL PAY ROLL

Anderson, Juni, waitress	\$1 50	
Armstrong, Margaret, waitress	10 50	
Braum, Grace, assistant cook.....	14 00	
Blankenheim, Emma, waitress	2 00	
Barney, W. W., dining room.....	1 00	
Blankenheim, Lottie, waitress	4 00	
Blumenstein, Arthur, janitor	24 83	
Curtin, Margaret, waitress	3 00	
Cummings, Alice, waitress	1 50	
Curtin, Hannah, waitress	6 00	
Curtin, Kate, waitress	4 50	
Crabtree, Esther, waitress	9 25	
Dykesten, Emma, dishwasher	5 14	
Deadman, Orpha, pastry cook.....	82 37	
Dale, Bridget, charwoman	9 15	
Gauser, Pauline, waitress	1 00	
Hendrickson, Mabel, waitress	2 00	
Hucke, Lizzie, waitress	18 00	
Hughes, Adele, assistant	80	
Hughes, Cora, waitress	6 80	
Hanson, Mary, assistant cook.....	37 00	
Klein, Clara, waitress	11 75	
Lavin, Sadie, waitress	8 00	
Lutzerath, Alfreda, waitress	15 68	
Matheson, Louisa, meat cook	12 84	
Miner, Elizabeth, assistant	117 48	
McCarthy, Lena, assistant cook.....	3 60	
Malaney, Teresa, cook	20 91	
Ninneman, Tena, waitress	1 50	
O'Brien, Mamie, waitress	4 25	
Osterfund, Aleda, waitress	1 00	
Palmatier, Nelle, waitress	2 00	

Prien, Meta, assistant cook.....	16 00	
Rannenberg, Susan, waitress.....	8 50	
Rittshausen, Mildred, assistant cook.....	1 05	
Schmitz, Ella, waitress.....	9 25	
Sauven, Elmira, head waitress.....	45 14	
Schmitz, Lena, waitress.....	8 50	
Schubring, Louise, waitress.....	4 50	
Seefeldt, Esther, cashier.....	6 00	
Trask, Mary, waitress.....	4 60	
Teude, Edna, waitress.....	1 50	
Woodward, Judith, waitress.....	16 75	
Zurian, Henrietta, assistant cook.....	6 00	
		\$571 14

REGIMENTAL OFFICERS' PAY ROLL

Algio, H. L., 1st lieutenant, refund.....	\$20 00	
Barclay, A. J., 1st lieutenant, refund.....	20 00	
Drake, H. D., captain, refund.....	20 00	
Coleman, J. R., captain, refund.....	20 00	
Doe, A. B., captain, refund.....	10 00	
Ell's, W. H., 1st lieutenant, refund.....	10 00	
Esau, G. W., captain, refund.....	20 00	
Esau, C. W., captain, refund.....	20 00	
Heberd, L. L., captain, refund.....	20 00	
Holmes, D. S., 2nd lieutenant, refund.....	10 00	
Hensey, J. L., captain, refund.....	20 00	
Hammond, L. M., captain, refund.....	20 00	
Knight, O. D., 1st lieutenant, refund.....	10 00	
Mihills, D. R., refund.....	10 00	
Martin, P. H., captain, refund.....	20 00	
Moritz, C. J., captain, refund.....	20 00	
Mann, K. M., captain, refund.....	20 00	
Mann, C. A., captain, refund.....	20 00	
Newman, J. R., major, refund, prize.....	45 00	
Rees, R. L., refund.....	10 00	
Schutte, H. A., major, refund, prize.....	45 00	
Schulte, W. B., colonel, refund, prize.....	70 00	
Thomas, J. L. B., Jr., 2nd lieutenant, refund.....	20 00	
Talbot, L. R., captain, refund.....	20 00	
Williams, F. E., refund.....	20 00	
White, H. D., captain, refund.....	20 00	
Welsh, J. T., lieutenant colonel, refund, prize.....	70 00	
Wagner, K. E., major, refund, prize.....	45 00	
		\$675 00

BAND PAY ROLL

Blake, G. B.....	\$27 00	
Davies, F. E.....	27 50	
Deibl, J. D.....	28 50	
Geyer, A. N.....	27 50	
Grindall, D. D.....	23 50	
Hoeveler, J.....	26 00	
Kujama, P. J.....	29 50	
Lange, E. G.....	9 00	
Morris, P.....	12 00	
Parr, T. C.....	14 50	
Pengelly, R. L.....	29 50	
Plagge, H. J.....	26 00	
Rees, R. L.....	28 00	
Robertson, A. H.....	30 00	
Rankin, E. I.....	12 00	
Springer, B. F.....	30 00	
Tarrell, A. L.....	15 00	
Williams, F. E.....	29 00	
Wittwer, H. L.....	25 50	
		\$450 00

TRAINING OF TEACHERS

Barnes, V. G., salary.....	\$100 00	
Bauman, M. H., salary.....	30 00	
Bowers, Della J., salary.....	30 00	
Burdick, Mary L., salary.....	30 00	
Clough, Jesse M., salary.....	30 00	

Dengler, Clare, salary.....	30 00	.....
Edgar, Mary L., salary.....	30 00	.....
Fitch, Helen F., salary.....	30 00	.....
Hatch, Eva M., salary.....	5 00	.....
Huber, Dora, salary.....	30 00	.....
Huff, Mary S., salary.....	30 00	.....
Jones, Renette, salary.....	30 00	.....
Jenkins, Sarah D., salary.....	100 00	.....
Leonard, Clara B., salary.....	30 00	.....
McClellan, Marie, salary.....	85 00	.....
Marvin, Adeline R., salary.....	30 00	.....
Mihleis, Alice M., salary.....	30 00	.....
Morgan, Cora A., salary.....	30 00	.....
Murphy, Julia A., salary.....	100 00	.....
Newton, Blanche M., salary.....	30 00	.....
Olson, David, salary.....	100 00	.....
Reichert, Dorena, salary.....	30 00	.....
Skidmore, Vashti L., salary.....	30 00	.....
Sloane, Elizabeth A., salary.....	30 00	.....
Sell, Martha E., salary.....	100 00	.....
Tormey, Ella, salary.....	10 00	.....
Warning, Winnie C., salary.....	100 00	.....
White, M. J., salary.....	100 00	.....
Whitney, Florence, salary.....	30 00	.....
Wirth, Eva M., salary.....	30 00	.....
Young, Caroline M., salary.....	100 00	.....
		\$1,500 00

BIENNIAL REPORT
OF THE
COMMISSIONERS
OF
PUBLIC LANDS
OF THE
STATE OF WISCONSIN

For the Fiscal Years Ending June 30, 1908, and June 30, 1910



MADISON, WIS.
DEMOCRAT PRINTING COMPANY, STATE PRINTER
1910

CLERICAL FORCE

The following persons constitute the clerical force of the State Land Office at date of this report and during term covered by the same, except occasional help from other Departments.

W. H. BENNETT.....Chief Clerk
MATT LAMPERT.....Asst. Chief Clerk
MYRTLE UNDERHILL.....Stenographer

BIENNIAL REPORT
OF
Commissioners of the Public Lands
OF THE
STATE OF WISCONSIN

For the Biennial Fiscal Term Ending June 30, 1910.

OFFICE OF COMMISSIONERS OF THE PUBLIC LANDS,
MADISON, WIS., Nov. 1, 1910.

HON. J. O. DAVIDSON, *Governor*.

SIR:—In compliance with law, we place before you our report of the transactions of the Land Department for the biennial fiscal term ending June 30, 1910.

Tabulated statements, marked Exhibits A to I, inclusive, show in detail the transactions of the Department and status of lands and trust funds for the term covered by this report. From these it is shown that while 10,000 acres of land have been sold, there is now an aggregate of 314,994 acres held by the state, or 35,906 acres more than two years ago. This is accounted for by the fact that some 20,000 acres have been granted by the United States, and several thousand acres having been purchased for the State Forest Reserve since report of June 30, 1908.

Exhibit D shows that there are carried on the books of the Department old loans aggregating \$1,097.04, on which no interest has been paid for more than forty years. Some action to discontinue the carrying of these accounts from year to year should be taken.

General Report.

Other exhibits show that the transactions of the Department have been as voluminous and varied as during any like term for several years, involving no less labor. This has been with reduced force and at the disadvantage of removing the office and records from old quarters to inconvenient and inadequate rooms in the new east wing of the Capitol. Provision should be made for better care of the records of such great value as the basis of title to millions of acres of land, and for the transcribing of many records and documents that in the course of time and handling have become almost illegible and more or less mutilated.

Respectfully submitted,

Signed

J. A. FREAR, Secretary of State.

A. H. DAHL, State Treasurer.

F. L. GILBERT, Attorney General.

Commissioners.

Statement of Receipts.

EXHIBIT A.

Statement of Lands Sold since June 30, 1908, and Lands held by State June 30, 1910.

Counties.	No. of acres sold July 1, 1908, to June 30, 1910.	No. of acres held June 30, 1910.
Adams.....	160	420
Ashland.....		6,337
Barron.....		40
Bayfield.....		5,543
Brown.....	40	
Buffalo.....	647	623
Burnett.....	1,699	20,852
Chippewa.....	120	724
Clark.....		1,106
Columbia.....	80	108
Crawford.....	33	1,248
Dane.....	77	
Door.....		559
Douglas.....	469	9,716
Dunn.....	80	884
Eau Claire.....	200	739
Florence.....		3,803
Fond du Lac.....		40
Forest.....	1	35,427
Grant.....	12	84
Green Lake.....	82	80
Iron.....		29,873
Jackson.....	200	2,128
Jefferson.....	42	
Juneau.....	194	324
La Crosse.....		200
Langlade.....		2,900
Lincoln.....	320	5,383
Marathon.....	120	280
Marquette.....	400	5,596
Marquette.....	40	177
Monroe.....		800
Oconto.....	240	1,522
Oneida.....		53,311
Outagamie.....		80
Pepin.....		148
Pierce.....	40	63
Polk.....	40	2,121
Portage.....	157	160
Price.....	4	29,516
Richland.....		13
Rusk.....	80	3,443
St. Croix.....	40	
Sawyer.....		14,210
Shawano.....	80	417
Taylor.....	1,002	4,303
Trempealeau.....	166	120
Vernon.....	77	737
Vilas.....	78	58,260
Washburn.....	2,855	9,796
Waupaca.....	12	40
Wood.....	40	740
Totals.....	10,035	*314,994

Number of acres School Lands outside Forest Reserve.....	3,104
Number of acres School Lands within Forest Reserve.....	13,566
Number of acres University Lands.....	245
Number of acres Agricultural College Land.....	40
Number of acres Normal School Land.....	200
Number of acres Swamp Land, outside Forest Reserve.....	17,501
Number of acres Swamp and other Land within Forest Reserve.....	280,338
Total acreage.....	314,994

State Lands Sold.

EXHIBIT B.

Receipts to various funds for lands sold in the several counties, in two years ended June 30, 1910, including sales on forfeitures:

Counties	School Fund	Sundry Funds	Forest Reserve Fund	General Fund.	Total
Adams	*\$240 00			\$375 00	\$615 00
Brown.....	*10 68				10 68
Buffalo.....	80 00			2,080 00	2,160 00
Burnett.....	1,037 00		\$2,210 00	20 00	3,267 00
Chippewa.....	500 00				500 00
Columbia.....	345 00				345 00
Crawford.....				40 00	40 00
Dane.....	6,400 00				6,400 00
Douglas.....			1,150 00		1,050 00
Dunn.....				400 00	400 00
Eau Claire.....	600 00	u65 00		200 00	865 00
Forest.....			48 30		48 30
Grant.....				55 00	55 00
Green Lake.....				90 00	90 00
Jackson.....	80 00			800 00	880 00
Jefferson.....	105 00			40 00	145 00
Juneau.....	480 00			260 00	740 00
Lincoln.....			1,145 00	410 00	1,555 00
Marathon.....				300 00	300 00
Marinette.....			2,630 00	1,000 00	3,630 00
Marquette.....		n400 00			400 00
Oconto.....	87 09			576 00	663 09
Pierce.....		u65 00			65 00
Polk.....	142 00				142 00
Portage.....				508 00	508 00
Price.....			21 52	600 00	621 52
Rusk.....			200 00	159 50	359 50
St. Croix.....	3 00				3 00
Shawano.....				974 00	974 00
Taylor.....				9,390 00	9,390 00
Trempealeau.....	1 00			270 00	271 00
Vernon.....	32 00			110 00	142 00
Vilas.....	388 25				388 25
Washburn.....	1,075 00		11,231 00		12,306 00
Waupaca.....				455 00	455 00
Wood.....				100 00	100 00
Total	\$11,606 02	\$530 00	\$18,535 82	\$19,212 50	\$49,884 34

* "u" University. "n" Normal School.

Statement of Receipts.

EXHIBIT "C."

ACCOUNT OF LAND SALE CERTIFICATES.

Receipts to various funds on land contracts since June 30, 1908 and balance due on same July 1, 1910- by counties.

Counties.	School fund paid.	University fund paid.	Ag. Col. fund paid.	Normals fund paid.	Drainage fund paid	Balance due.
Adams.....	\$93.00			\$158.00		\$793.00
Barron.....	112.00					
Bayfield.....						65.00
Brown.....	60.68					60.68
Buffalo.....						77.00
Burnett.....	62.00					105.00
Calumet.....						40.00
Chippewa.....						186.00
Crawford.....	120.00					60.73
Dane.....						226.00
Douglas.....	185.00					
Dunn.....						111.00
Eau Claire.....						199.00
Florence.....						64.00
Iron.....						111.00
Jackson.....	81.00					461.60
Juneau.....						123.00
Kenosha.....						181.00
La Crosse.....						237.00
Manitowoc.....	60.00			112.00		282.00
Marathon.....	54.00					
Marquette.....						260.00
Monroe.....	55.00					187.00
Oconto.....				36.00		1,089.00
Outagamie.....	37.00					146.00
Pepin.....						249.00
Pierce.....		260.00				413.00
Polk.....	43.00		1,275.00			6,815.00
Portage.....	48.00					44.00
Richland.....						50.83
Rock.....						274.00
St. Croix.....	419.15					231.20
Sauk.....						119.95
Shawano.....						94.00
Trempealeau.....	10.00					27.00
Vernon.....						545.70
Vilas.....						68.00
Waukesha.....						90.00
Waupaca.....	52.00					188.00
Washara.....	50.00					37.00
Winnebago.....					182.00	
Total.....	\$1,541.83	\$260.00	\$1,275.00	\$306.00	\$182.00	\$14,410.09

Payments on Land Contracts.

EXHIBIT D.

Statement of loans to individuals, and on Racine city lots for the term ending June 30, 1910, compared with same for the term ended June 30, 1908. No loans of this class made since 1865.

County.	Balance due July 1, 1908.	Balance due July 1, 1910.	Fund.	Remarks.
Iowa*	\$799 24	\$799 24	School.	Unsecured and worthless.
Juneau	300 00	300 00	Normal.	
Manitowoc	450 00	450 00	Normal.	
Marquette	481 50	481 50	School.	
Racine	400 00	400 00	Normal.	
Racine city*	297 80	297 80	School.	Unsecured and worthless.
Total	\$2,708 54	\$2,708 54		

*No interest paid on either of these claims for more than 20 years.

EXHIBIT E.

The following tables show the number of acres held on contract in the several counties and amounts due, that were forfeited for non-payment of interest and charges, during the two fiscal years ending June 30, 1910.

For year to June 30, 1909

Counties.	Class.	Acres.	Amount due.	Remarks.
Brown	School	40	21 14	Bid in by Thomas Farrell.
Burnett	School	40	45 40	Bid in for State.
Columbia	School	107.80	270 72	" " " "
Pierce	University	49	80 90	" " by Charles Floody
St. Croix	School	80	11 60	" " Celta Murphy
Sauk	School	40	58 90	" " for State
Trempealeau	School	40	10 50	" " by Frank Konkel
Total for year		387.80	499 16*	

For year to June 30, 1910.

Adams	School	40	53 40	Bid in by Frank Higgins
Columbia	School	80	388 90	" " " Richard Cole
Eau Claire	University	40	80 90	" " " Henretta Bryon
Oconto	School	120	108 63	" " " R. A. Sharp
St. Croix	School	40	4 03	" " " Nels T. Nelson
Total for year		320	635 86	
Aggregate of 2 years		707.80	\$1135 02*	

* Includes interest, taxes and cost of advertising.

Statement of Individual Loans.

EXHIBIT F.

Received from all sources and credited to various funds during the year
July 1, 1908, to June 30, 1909.

	Received.	Total,
SCHOOL FUND PRINCIPAL:		
From land sales	\$4,396 93	
Dues paid on certificates.....	734 98	
On school district loans.....	164,129 37	
On Loans to Counties and Municipalities	47,403 45	
Income.....	57,628 75	
		\$274,293 48
UNIVERSITY FUND PRINCIPAL:		
From land sales	65 00	
Dues paid on certificates.....	109 00	
On school district loans.....	791 66	
On Loans to Counties and Municipalities	12,901 09	
Income.....	3,394 32	
		\$17,261 07
AGRICULTURAL COLLEGE PRINCIPAL:		
Dues paid on certificates.....	518 00	
On Loans to Counties and Municipalities	22,157 61	
Income.....	7,088 85	
		29,764 46
NORMAL SCHOOL PRINCIPAL:		
Land sales.....	\$400 00	
Dues paid on certificates	270 00	
School district loans.....	25,664 73	
On Loans to Counties and Municipalities	80,629 03	
Income.....	38,280 85	
		145,244 61
DRAINAGE FUND:		
Income.....	\$39 20	
		39 20
FOREST RESERVE FUND PRINCIPAL:		
Land sales.....	\$8,491 00	
Materials sold, rent, etc.....	22,213 99	
		\$30,704 99
GENERAL FUND:		
Land sales	\$8,940 60	
Interest, penalties, patent fees, etc.....	420 61	
Miscellaneous fees.....	890 29	
		\$10,251 50
Delinquent tax fund	\$71 20	\$71 20
Total amount for year 1908-1909.....		\$507,630 51

Statement of Individual Loans.

EXHIBIT F.

Received and credited to various funds during the year, July 1, 1909, to June 30, 1910.

	Received.	Total.
SCHOOL FUND PRINCIPAL:		
Land sales.....	\$1,803 46	
Dues paid on certificates.....	801 85	
School district loans.....	124,557 55	
Loans to Counties and Municipalities.....	34,068 16	
Income.....	60,767 24	\$221,998 26
UNIVERSITY FUND PRINCIPAL:		
Land sales.....	\$85 00	
Dues paid on certificates.....	151 00	
School district loans.....	891 66	
Loans to Counties and Municipalities.....	13,636 09	
Income.....	4,054 69	\$18,798 44
AGR. COLLEGE PRINCIPAL:		
Dues paid on certificates.....	\$757 00	
Loans to Counties and Municipalities.....	24,974 27	
Income.....	8,725 95	\$34,457 22
NORMAL SCHOOL PRINCIPAL:		
Dues paid on certificates.....	\$36 00	
School district loans.....	22,043 05	
Loans to Counties and Municipalities.....	91,656 81	
Income.....	36,753 63	\$150,489 49
DRAINAGE FUND PRINCIPAL:		
Dues paid on certificates.....	\$182 00	
Income.....	23 31	\$205 31
FOREST RESERVE PRINCIPAL:		
Land sales.....	\$10,044 82	
Materials sold, rent, etc.....	7,882 16	
Government reforestation.....	671 60	\$18,598 58
GENERAL FUND PRINCIPAL (LAND SALES):		
Interest, penalties, pat. fees, etc.....	\$11,296 28	
Miscellaneous fees.....	338 83	
	1,087 92	\$12,723 03
Taxes.....	\$173 07	\$173 07
Total for year.....		\$457,443 40
Total amount for year 1908-1909.....		\$507,630 51
Total amount for year 1909-1910.....		\$457,443 40
Total amount for two years.....		\$965,073 91

Loans to School Districts.

EXHIBIT "G".

Loans to counties, cities, towns and villages from July 1, 1908 to June 30⁴ 1910.

Date.	Loan to	County.	Fund.	Amount.
Oct. 1, 1908	Marshall Town Board School Directors	Rusk.....	Normal.....	\$4,500 00
Feb. 5, 1909	Monico Town Board School Directors	Oneida.....	Normal.....	3,500 00
Feb. 13, 1909	Village of Cashton	Monroe.....	Normal.....	15,000 00
Feb. 15, 1909	Village of Mt. Horeb	Dane.....	University...	8,000 00
Feb. 20, 1909	City of Jefferson Board of Education	Jefferson...	University...	5,000 00
Apr. 15, 1909	Crandon Town Board School Directors	Forest.....	Agricultural.	4,000 00
Feb. 25, 1909	City of Cumberland	Barron.....	Normal.....	25,000 00
Mch.10, 1909	Town of Bayfield	Bayfield...	Normal.....	8,000 00
Mch.10, 1909	Jefferson County	Jefferson...	Agricultural.	20,000 00
Mch.10, 1909	Richland County	Richland...	Normal.....	20,000 00
Mch.12, 1909	Town of Mondovi	Buffalo...	Normal.....	4,700 00
Mch.12, 1909	City of Mondovi	Buffalo...	Normal.....	3,100 00
Mch.22, 1909	Sugar Camp Town Board School Directors	Oneida.....	University...	1,200 00
Apr. 21, 1909	Stanley Town Board School Directors	Chippewa...	Normal.....	18,000 00
July 23, 1909	Brule Town Board School Directors	Douglas....	University...	3,500 00
July 23, 1909	Solon Springs Town Board School Directors	Douglas....	University...	1,000 00
Aug. 9, 1909	Village of Shell Lake	Washburn..	University...	2,500 00
Aug. 9, 1909	West Marshland Town Board School Directors	Burnett....	University...	800 00
Aug. 10, 1909	City of Madison	Dane.....	Agr. college..	30,000 00
Jan. 24, 1910	Town of Onli	Bayfield...	University...	2,000 00
Aug.10, 1909	City of Richmond	St. Croix..	Normal.....	6,000 00
Jan. 25, 1910	Town of Hixon	Clark.....	Normal.....	5,000 00
Feb. 19, 1910	Wabeno Town Board School Directors	Forest.....	Agr. college.	15,000 00
Feb. 23, 1910	Town of Arena	Iowa.....	University...	3,000 00
Feb. 25, 1910	Village of Cashton	Monroe.....	University...	3,000 00
Mch. 1, 1910	Town of Chetek	Barron.....	University...	5,000 00
Mch. 1, 1910	Village of Cambridge	Dane.....	University...	4,000 00
Mch.18, 1910	County of Richland	Richland...	Normal.....	10,000 00
Mch.18, 1910	Town of Roosevelt	Taylor.....	Agr. college.	6,000 00
Mch.20, 1910	Town of Day	Marathon..	Agr. college.	1,700 00
Mch.24, 1910	Town of Bergen	Marathon..	Normal.....	2,400 00
Mch.24, 1910	City of Grand Rapids	Wood.....	Normal.....	10,000 00
Mch.24, 1910	Madison City Board of Education	Dane.....	School.....	30,000 00
Apr. 20, 1910	Town of Grow Board School Directors	Rusk.....	Agr. college.	800 00
Apr. 20, 1910	Town of Arena	Iowa.....	School.....	7,000 00
Apr. 20, 1910	County of Vernon	Vernon.....	Normal.....	16,000 00
June 6, 1910	City of Black River Falls	Jackson....	School.....	12,000 00
June 6, 1910	City of Black River Falls	Jackson....	Normal.....	2,000 00
June 10,1910	Village of Loyal	Clark.....	Agr. college.	4,500 00
June 20,1910	County of Rusk	Rusk.....	School.....	10,000 00
Total....				\$333,200 00

Total School fund.....	\$59,000 00
Total Agricultural college fund.....	82,000 00
Total Normal fund.....	153,200 00
Total University fund.....	39,000 00

Total all of funds for two years..... \$333,200 00

Loans to School Districts.

EXHIBIT "H".

STATEMENT OF LOANS TO SCHOOL DISTRICTS.

Amount paid since June 30, 1908 and amount outstanding in each District
June 30, 1908 and June 30, 1910.

SCHOOL FUND.

No.	District.	Outstanding July 1, 1908.	Principal paid 1908-1909.	Principal paid 1909-1910.	Outstanding July 1, 1910.
Adams County.					
Jt. 3	Adams and Lincoln	180 00	60 00	60 00	60 00
Jt. 1	Adams and Preston.....	1,000 00	250 00	250 00	500 00
Jt. 1	Adams and Preston.....	500 00	125 00	125 00	250 00
Jt. 1	Adams and Preston.....	360 00	90 00	90 00	180 00
5	Lincoln.....	300 00	50 00	50 00	200 00
4	Adams.....	350 00	50 00	50 00	250 00
4	Rome.....	2 0 00	100 00	100 00	in full
4	Rome.....	832 00	64 00	64 00	704 00
Jt. 2	New Chester and Eaton...	375 00	125 00	125 00	125 00
5	Leola.....	1,150 00	100 00	100 00	950 00
7	Rome.....	300 00	30 00	30 00	240 00
6	Colburn.....	700 00	70 00	70 00	530 00
Jt. 5	Dell Prairie and New Haven.....				800 00
5	Rome.....				350 00
Ashland County.					
3	La Pointe.....	125 00	125 00		in full
Barron County.					
3	Maple Grove	64 40	32 20	32 20	in full
7	Chetek.....	182 00	26 00	26 00	130 00
Jt. 1	Barron city and town.....	2,100 00	700 00	700 00	700 00
6	Cumberland.....	750 00	100 00	100 00	550 00
Jt. 5	Rice Lake and Stanford...	75 00	25 00	25 00	25 00
17	Cumberland.....	150 00	75 00	75 00	in full
6	Dallas.....	472 50	157 50	157 50	157 50
6	Maple Grove.....	66 00	22 00	22 00	22 00
Jt. 5	Chetek city, town, and and town Dover.....	800 00	200 00	200 00	200 00
10	Chetek.....	200 00	50 00	50 00	100 00
1	Stanley.....	225 00	112 50	112 50	in full
Jt. 2	Cedar Lake Rice Lake and Oak Grove.....	400 00	80 00	80 00	240 00
Jt. 1	Cumberland city and town	10,000 00	1,000 00	1,000 00	8,000 00
Jt. 5	Chetek city, town, and Dover.....	4,000 00	400 00	400 00	3,200 00
1	Maple Grove.....	400 00	80 00	80 00	240 00
4	Cedar Lake.....	500 00	100 00	100 00	300 00
3	Stanford.....	500 00	125 00	125 00	250 00
6	Turtle Lake.....	300 00	75 00	75 00	150 00
5	Lakeland.....	540 00	90 00	90 00	300 00
Jt.10	Dallas, Maple Grove and Prairie Farm.....	450 00	50 00	50 00	350 00
2	Oak Grove.....	615 38	61 54	61 54	492 30
10	Maple Grove.....	200 00	100 00	100 00	in full
Jt. 1	Barron and Stanley.....	450 00	50 00	50 00	350 00
Jt. 7	Clinton and Cumberland..	500 00	50 00	50 00	400 00
7	Lakeland.....	180 00	60 00	60 00	60 00
4	Barron.....	1,000 00	100 00	100 00	800 00
Jt. 3	Village of Almena and Turtle Lake.....	3,600 00	450 00	450 00	2,700 00
Jt. 3	Oak Grove and Bear Lake	3,900 00	300 00	300 00	3,300 00
2	Vance Creek.....	800 00	100 00	100 00	600 00
9	Stanford.....	676 94	61 54	61 54	553 86
3	Clinton.....	700 00	100 00	100 00	500 00

Loans to School Districts.

EXHIBIT "H"

STATEMENT OF LOANS TO SCHOOL DISTRICTS—Continued.
SCHOOL FUNDS—Continued.

No.	District.	Outstanding July 1, 1908.	Principal paid 1908-1909.	Principal paid 1909-1910.	Outstanding July 1, 1910.
Barron County--continued.					
4	Clinton.....	1,833 34	166 66	166 66	1,500 02
Jt. 5	Chetek city and town and Dover.....	4,200 00	300 00	300 00	3,600 00
8	Crystal Lake.....	700 00	100 00	100 00	500 00
1	Clinton.....	933 34	66 66	66 66	800 02
Jt. 1	Dallas (see Dunn county)	600 00	50 00	50 00	500 00
Jt. 5	Stanford.....	700 00	100 00	100 00	500 00
4	Dallas.....	2000 00	200 00	200 00	1,600 00
Jt. 10	Prairie Farm Village.....				
	Ashland, Prairie Farm and Dallas and Maple Grove.....			30 00	225 00
5	Turtel Lake.....			50 00	200 00
3	Summer.....			200 00	2,800 00
6	Clinton.....			100 00	1,400 00
5	Village Prairie Farm.....			100 00	900 00
1	Lakeland.....			100 00	1,100 00
4	Crystal Lake.....			150 00	1,350 00
7	Crystal Lake.....			200 00	1,800 00
9	Chetek.....				150 00
Jt. 3	Maple Plain and Crystal Lake.....				1,000 00
Jt. 6	Dallas town and village.....				640 00
Jt. 1	Prairie Farm town and village.....				3,000 00
4	Arland.....				1,200 00
Bayfield County.					
2	Pilson.....				1,100 00
Brown County.					
3	Lawrence.....	200 00	100 00	100 00	Paid in full
2	City of Depere.....	1,000 00	500 00	500 00	Paid in full
3	Bellevue.....	2,250 00	250 00	250 00	1,750 00
2	Suamico.....	1,100 00	100 00	100 00	900 00
6	Preble.....			200 00	400 00
5	Morrison.....				2,000 00
Jt. 3	Morrison and Coopertown (see Matitowoc county).....				2,000 00
Buffalo County.					
Jt. 1	Mondovi, city and town, Naples and Albany (Pepin County).....	2,666 68	333 33	333 33	2,000 02
Jt. 1	Mondovi, city and town, Naples and Albany (Pepin County).....	4,400 00	400 00	400 00	3,600 00
4	Maxville.....	434 00	62 00	62 00	310 00
Jt. 1	Modena and Gilmantown	1,600 00			1,600 00
1	Gilmantown.....				8,000 00
Burnett County.					
4	La Follette.....	100 00	25 00	25 00	50 00
7	Rusk.....	200 00	50 00	50 00	100 00
Jt. 1	Grantsburg, vil. and town	3,200 02	266 67	266 67	2,699 98
4	Wood Lake.....	44 00	44 00		paid in full
5	La Follette.....	280 00	40 00	40 00	200 00
8	Jackson.....	350 00	50 00	50 00	250 00

Loans to School Districts.

EXHIBIT "H."

STATEMENT OF LOANS TO SCHOOL DISTRICTS—Continued.

SCHOOL FUND—Continued.

No.	District	Outstanding July 1, 1908.	Principal paid 1908-1909	Principal paid 1909-1910	Outstanding July 1, 1910.
Burnett County continued					
6	Anderson.....	\$400 00	\$100 00	\$100 00	\$200 00
11	Grantsburg.....	250 00	50 00	50 00	150 00
Jt. 4	Roosevelt and Dewey.....	300 00	100 00	100 00	100 00
7	Wood River.....	600 00	100 00	100 00	400 00
6	Daniels.....	500 00	100 00	100 00	300 00
4	Daniels.....	400 00	33 33	33 33	333 34
9	Menon.....	.....	.....	30 00	270 00
4	Anderson.....	.....	.....	100 00	400 00
9	Jackson.....	.....	.....	60 00	540 00
5	Dewey.....	.....	.....	100 00	.....
Jt. 4	Daniels and Wood River..	.....	.....	.....	600 00
Columet County.					
Jt. 1	Chilton city and town....	7,700 00	700 00	700 00	6,300 00
Jt. 5	New Holstein, vil. & town	8,000 00	1,000 00	1,000 00	6,000 00
Jt. 5	New Holstein, vil. & town	4,500 00	500 00	500 00	3,500 00
Jt. 2	Brillion and Rantoul.....	12,000 00	800 00	800 00	10,400 00
Jt. 2	Brillion and Maple Grove	1,500 00	750 00	750 00	paid in full
Chippewa County.					
4	Wheaton.....	70 00	70 00	.....	in full
11	Edson.....	60 00	60 00	.....	in full
15	Edson.....	100 00	50 00	50 00	in full
8	Sampson.....	50 00	25 00	25 00	in full
4	Edson.....	60 00	60 00	.....	in full
14	Edson.....	87 76	87 76	.....	in full
Jt. 8	Wheaton and Tilden.....	100 00	100 00	.....	in full
10	Wheaton.....	150 00	100 00	50 00	in full
10	Wheaton.....	30 00	30 00	.....	in full
1	Sigel.....	350 00	70 00	70 00	210 00
2	Wheaton.....	600 00	100 00	100 00	400 00
6	Sigel.....	400 00	100 00	100 00	200 00
Jt. 4	Bloomer, vil. and town....	5,000 00	1,000 00	1,000 00	3,000 00
5	Edson.....	600 00	100 00	100 00	400 00
Jt. 4	Bloomer vil. and town....	5,000 00	.....	.....	5,000 00
10	La Fayette.....	630 00	90 00	90 00	450 00
Jt. 2	La Fayette and Seymour (Eau Claire Co.).....	420 00	60 00	60 00	300 00
2	Anson.....	400 00	100 00	100 00	200 00
Jt. 5	Sampson and Rusk (Rusk Co.).....	300 00	100 00	100 00	100 00
10	La Fayette.....	175 00	25 00	25 00	125 00
5	Holcombe.....	360 00	40 00	40 00	280 00
Jt. 1	La Fayette and Wheaton	540 00	60 00	60 00	420 00
13	Bloomer.....	550 00	50 00	50 00	450 00
2	Holcombe.....	2,150 00	143 33	143 33	1,863 29
16	Edson.....	.....	.....	100 00	900 00
9	Holcombe.....	.....	.....	150 00	1,350 00
Jt. 1	Auburn and Grant (Dunn Co.).....	.....	.....	133 33	1,866 67
4	Sigel.....	.....	.....	.....	1,500 00
Jt. 9	Arthur and Anson.....	.....	.....	.....	1,200 00
Clark County.					
Jt. 1	Hixon & Hoard.....	50 00	50 00	In full	.....
5	Worden.....	120 00	60 00	60 00	In full
7	Levis.....	69 00	34 50	34 50	In full
1	Pine Valley.....	60 00	30 00	30 00	In full
4	Washburn.....	150 00	50 00	50 00	50 00
4	Sherwood.....	200 00	100 00	100 00	In full

Loans to School Districts.

EXHIBIT "H."

STATEMENT OF LOANS TO SCHOOL DISTRICTS—Continued.

SCHOOL FUND—Continued.

No.	District.	Outstanding July 1, 1908	Principal paid 1908-1909	Principal paid 1909-1910	Outstanding July 1, 1910.
Clark County—continued.					
5	Hoard.....	\$180 00	\$45 00	\$45 00	\$90 00
5	Longwood.....	500 00	100 00	100 00	300 00
Jt. 1	Sherwood.....	187 50	62 50	64 50	62 50
Jt. 2	Withee and Reesburg.....	200 00	50 00	50 00	100 00
2	Hewitt.....	500 00	100 00	100 00	300 00
1	Mayville.....	300 00	60 00	180 00	180 00
3	Reeseburg.....	200 00	100 00	100 00	In full
2	Hewitt.....	1,000 00	200 00	200 00	600 00
7	Freemont.....	666 66	66 66	66 67	533 33
1	Longwood.....	1,800 00	300 00	300 00	1,200 00
5	Thorpe.....	480 00	40 00	40 00	400 00
Jt. 1	Colby, Mayville, village Abbotsford.....	10,800 00	900 00	900 00	9,000 00
Jt. 4	Pine Valley, city Neills- ville.....	18,000 00	1,500 00	1,500 00	15,000 00
Jt. 3	Hixon and Withee.....	400 00	100 00	100 00	200 00
Jt. 1	Thorp town and village and Withee.....	500 00	250 00	250 00	In full
5	Hixon.....	200 00	200 00	In full	In full
Jt. 4	Wooden and Edson (Chip- peewa county).....	350 00	50 00	50 00	250 00
Jt. 4	Grant and York.....	5,200 00	400 00	400 00	4,400 00
Jt. 4	Pine Valley and city of Neillsville.....	1,500 00	500 00	500 00	500 00
2	Withee.....	350 00	50 00	50 00	250 00
Jt. 4	Pine Valley and city of Neillsville.....	1,200 00	300 00	300 00	600 00
Jt. 1	Hixon, Hoard and village of Owen.....	6,000 00			6,000 00
Jt. 1	Colby City and town (Hull, Marathon Co.).....	6,500 00	500 00	500 00	5,500 00
Jt. 4	Neillsville and Pine Val- ley.....	1,500 00	300 00	300 00	900 00
Jt. 4	Thorp and Withee.....	700 00	50 00	50 00	600 00
Jt. 8	Meade, Reeseburg and Worden.....			80 00	720 00
1	Beaver.....			100 00	1,400 00
Jt. 1	Eaton, Warner and city Greenwood.....			200 00	1,800 00
Jt. 2	Green Grove and Colby.....			180 00	720 00
Jt. 4	Hoard and Mayville.....			266 67	3,733 33
Jt. 4	Pine Valley and city Neillsville.....			300 00	1,200 00
4	Colby.....				1,000 00
Jt. 1	Reeseburg and Withee.....				350 00
Jt. 1	Loyal and Beaver.....				375 00
Jt. 4	Pine Valley and city Neillsville.....				1,500 00
2	Lynn.....				1,800 00
Columbia County.					
1	Vyocena.....	1,600 00	400 00	400 00	800 00
Jt. 6	Otsego and Fountain Prairie.....	2,000 02	166 66	166 66	1,666 70
Jt. 4	Dekora, Arlington and village Poynette.....	18,200 00	1,400 00	1,400 00	15,400 00
Jt. 7	Arlington and Leeds.....	2,400 00	300 00	300 00	1,800 00
Jt. 4	Louisville and Leeds.....	500 00	500 00		In full
Jt. 4	Arlington, Dekorra and village Poynette.....			166 67	2,333 33
Jt. 4	Kilburn village and town Newport and Dell Prairie (Adams Co.).....				6,000 00

Loans to School Districts.

EXHIBIT "H."

STATEMENT OF LOANS TO SCHOOL DISTRICTS—Continued.

SCHOOL FUND—Continued.

No.	District.	Outstanding July 1, 1908.	Principal paid 1908-1909	Principal paid 1909-1910.	Outstanding July 1, 1910.
Crawford County.					
Jt. 2	Marietta and Eastman village of Steuben.....	\$300 00	\$50 00	\$50 00	\$200 00
Jt. 2	Wauzeka town and vil- lage.....	2,500 00	300 00	300 00	1,900 00
Jt. 11	Wauzeka and Marietta....	66 00	33 00	33 00	In full
2	Wauzeka town and vil- lage.....	95 00	95 00	.....	In full
Jt. 11	Clayton and Utica and village Bell Center and Gays Mills.....	5,200 00	400 00	400 00	4,400 00
Jt. 4	Clayton and village Sol- diers Grove.....	6,933 34	533 33	533 33	5,866 68
Jt. 4	Clayton and village Sol- diers Grove.....	6,533 33	466 67	466 67	5,599 99
2	Haney.....	800 00	100 00	100 00	600 00
18	Clayton.....	800 00	80 00	80 00	640 00
2	Scott.....	.....	.....	200 00	800 00
Dane County.					
Jt. 9	Cross Plains & Springdale	160 00	80 00	80 00	Paid in full
Jt. 5	Deerfield, town and vill. ...	750 00	250 00	250 00	250 00
Jt. 5	Roxbury, Beiry, Dane and Springfield.....	50 00	50 00	.....	Paid in full
Jt. 1	Madison and Middleton....	300 00	150 00	150 00	Paid in full
Jt. 4	Montrose, Exeter and vill. of Belleville.....	3,000 00	500 00	500 00	2,000 00
Jt. 4	Montrose, vill. Belleville, etc.....	1,400 00	200 00	200 00	1,000 00
Jt.	Black Earth H. S.	7,700 00	700 00	700 00	6,300 00
	Verona H. S.	3,600 00	600 00	600 00	2,400 00
Jt. 4	Windsor & vill. DeForest.	2,291 66	208 34	208 34	1,874 98
10	Cottage Grove.....	400 00	200 00	200 00	Paid in full
10	Cottage Grove.....	400 00	200 00	200 00	Paid in full
4	Blue Mounds.....	150 00	150 00	.....	Paid in full
10	H. S. vill. Mt. Horeb.....	4,500 00	500 00	500 00	3,500 00
	Cottage Grove.....	200 00	100 00	100 00	Paid in full
Jt. 5	Christiana, village Cam- bridge and Oakland (Jefferson Co.)	15,600 00	1,200 00	1,200 00	13,200 00
	Verona H. S.	1,500 00	250 00	250 00	1,000 00
Jt. H.S.	Westport and vill. Wau- naakee.....	2,799 98	233 34	233 34	2,333 30
2	Springdale.....	1,800 00	120 00	120 00	1,560 00
11	Madison.....	10,600 00	.....	757 00	9,843 00
Jt. 13	Brooklyn, Oregon, Union, Rutland and vill. Brook- lyn (Rock & Green Co.s) .....	.....	.....	666 67	9,333 33
11	Madison.....	.....	.....	233 33	3,266 67
Jt. 9	Primrose (Dane county) New Glarus (Green Co.) .....	.....	.....	400 00	400 00
3	Windsor.....	.....	.....	.....	2,500 00
Dodge County.					
7	Oak Grove.	2,000 00	500 00	500 00	1,000 00
4	Clyman.....	200 00	200 00	.....	In full
Jt. 6	Lowell and vill. of Reese- ville.....	3,900 00	650 00	650 00	2,600 00
7	Hustisford.....	6,000 00	500 00	500 00	5,000 00
Jt. 2	Lowell, town and vill.	1,200 00	300 00	300 00	600 00
Jt. 3	Theresa, town and vill.	1,200 00	200 00	200 00	800 00

Loans to School Districts.

EXHIBIT "H."
STATEMENT OF LOANS TO SCHOOL DISTRICTS—Continued
SCHOOL FUND—Continued.

No.	District.	Outstanding July 1, 1908.	Principal paid 1908-1909.	Principal paid 1909-1910.	Outstanding July 1, 1910.
Door County.					
Jt. 8	Nesewaunee and Sturgeon Bay.....	\$100 00	\$50 00	\$50 00	Paid in full
4	Egg Harbor.....	700 00	100 00	100 00	\$500 00
4	Forestville.....	400 00	200 00	200 00	Paid in full
3	Sevastopol.....	2,168 68	166 67	166 66	1,733 34
4	Jacksonport.....	360 00	90 00	90 00	180 00
5	Liberty Grove.....	133 34	133 34	.....	Paid in full
3	Sevastopol.....	1,040 00	80 00	80 00	880 00
3	Jacksonport.....	1,325 00	132 50	132 50	1,160 00
2	Bailey's Harbor.....	840 00	80 00	60 00	720 00
3	Union.....	700 00	100 00	100 00	500 00
3	Brussels.....	2,800 00	200 00	200 00	2,400 00
1	Washington.....	.....	.....	.....	500 00
1	Brussels.....	.....	.....	.....	4,200 00
Jt. 1	Brussels and Gardner.....	.....	.....	.....	1,800 00
Douglas County.					
	Nebagaman School Dist....	500 00	500 00	.....	Paid in full
2	Hawthorne.....	1,000 00	.....	.....	1,000 00
1	Highland.....	900 00	90 00	90 00	720 00
Dunn County.					
Jt. 7	Colfax and Tainter.....	120 00	40 00	40 00	40 00
Jt. 4	Grant and Otter Creek....	150 00	50 00	50 00	50 00
3	Colfax.....	390 00	130 00	150 00	130 00
2	Otter Creek.....	50 00	50 00	.....	Pd. in full
Jt. 2	Colfax, Grant and Auburn (Chippewa County).....	1,350 00	150 00	150 00	1,050 00
Jt. 1	Wilson and Dallas (Bar- ron Co.).....	1,400 00	200 00	200 00	1,000 00
Jt. 8	Tainter and Sherman.....	450 00	50 00	50 00	350 00
Jt. 2	Elk Mound and Wheaton (Chippewa Co.).....	3,200 00	400 00	400 00	2,400 00
Jt. 6	Hay River and Sherman....	650 00	50 00	50 00	550 00
Jt.10	Spring Brook (Dunn Co.) Red Cedar.....	680 00	170 00	170 00	340 00
5	Weston.....	1,000 00	100 00	100 00	800 00
2	Rock Creek.....	700 00	140 00	140 00	420 00
1	Spring Brook.....	.....	.....	150 00	1,350 00
3	Dunn.....	.....	.....	250 00	1,750 00
Jt. 3	Stanton and vill. Knapp....	.....	.....	400 00	5,400 00
Jt. 4	Hay River.....	.....	.....	200 00	1,000 00
Jt. 4	Lucas and Weston.....	.....	.....	150 00	650 00
Jt. 3	Colfax town and village....	.....	.....	.....	14,000 00
Eau Claire County.					
	City Eau Claire.....	8,000 00	2,000 00	2,000 00	4,000 00
6	Clear Creek.....	30 00	30 00	.....	Pd. in full
2	Pleasant Valley.....	200 00	50 00	50 00	100 00
Jt. 4	Ludington and Lincoln....	100 00	100 00	.....	Pd. in full
Jt. 1	Bridge Creek and City of Augusta.....	11,333 34	1,133 33	1,133 33	9,066 67
3	Union.....	600 00	300 00	300 00	Pd. in full
Jt. 1	Pt. of Bridge Creek and City of Augusta.....	3,600 00	300 00	300 00	3,000 00
Jt. 3	Pleasant Valley, Clear Creek and Washington....	1,050 00	150 00	150 00	750 00
5	Ludington.....	2,000 00	200 00	200 00	1,600 00
6	Clear Creek.....	600 00	50 00	50 00	500 00
2	Seymour.....	.....	.....	.....	800 00
5	Fairchild.....	.....	.....	.....	800 00

Loans to School Districts.

EXHIBIT "H."
STATEMENT OF LOANS TO SCHOOL DISTRICTS—Continued.
SCHOOL FUND—Continued.

No.	District.	Outstanding July 1, 1908.	Principal paid 1908-1909.	Principal paid 1909-1910.	Outstanding July 1, 1910.
Florence County.					
5	Homestead.....	\$200 00	\$100 00	\$100 00	Pd. in full \$210 00 400 00
3	Commonwealth.....	350 00	70 00	70 00	
2	Commonwealth.....	500 00	80 00	80 00	
Fond du Lac County.					
Jt.11	Fond du Lac. Now Village North Fond du Lac and Friendship.....	1,800 00	600 00	600 00	600 00
Ji.11	Fond du Lac. Now Village North Fond du Lac and Friendship.....	600 00	150 00	150 00	300 00
Jt.11	Fond du Lac. Now Village North Fond du Lac and Friendship.....	4,900 00	700 00	700 00	3,500 00
Jt.12	Auburn, Ashford and Vil- lage of Campbellsport....	4,666 68	583 33	583 34	3,500 05
Jt. 4	Oakland Town and Village	4,800 00	400 00	400 00	4,000 00
Jt. 4	Lamartine.....			56 67	743 33
Jt. 4	Metomen(Fond du LacCo.) and Green Lake (Green Lake Co.).....				7,000 00
Jt.11	Fond du Lac, Friendship and Village North Fond du Lac.....				10,060 00
Forest County.					
2	Crandon.....				2,500 00
Grant County.					
2	Waterstown.....	800 00	160 00	160 00	480 00
2	Ellenboro.....	500 00	100 00	100 00	300 00
Jt. 4	Liberty and Lancaster....	700 00	100 00	100 00	500 00
1	Hazel Green H. S.....	8,000 02	666 66	666 66	6,666 68
Jt. 9	Smelzer, Hazel Green and vil. Cuba city and Bur- ton (LaFayette Co.).....	8,002 02	666 66	666 66	6,666 68
6	Hazel Green.....	700 00	100 00	100 00	500 00
Jt. 1	Clifton & Mifflin (Iowa Co)	700 00	100 00	100 00	500 00
Jt. 9	Wyalucing & Bloomington	4,600 01	333 33	333 33	3,333 35
Jt. 9	Smelzer, Hazel Green and vil. Cuba city & Burton (LaFayette County).....	5,200 00	400 00	400 00	4,400 00
5	Little Grant.....	1,000 00	100 00	100 00	800 00
Jt. 3	Potosi and Harrison.....	400 00	100 00	100 00	200 00
6	Bloomington.....	700 00	100 00	100 00	500 09
5	Liberty.....	1,100 00	110 00	110 00	880 00
3	Fennimore.....	1,000 00	100 00	100 00	800 00
Jt.10	Wyalucing & Patch Grove	1,000 00	125 00	125 00	750 00
Jt. 5	Lancaster and Potosi.....	1,400 00	100 00	100 00	1,200 00
10	Platteville.....	800 00		80 00	720 90
1	South Lancaster.....			250 00	750 00
11	Beetown.....			333 33	4,666 67
Jt. 8	Cassville and Glen Haven.				600 00
Green County.					
8	Albany.....	765 00	255 00	255 00	255 00
7	Exeter.....	300 00	150 00	150 00	Paid in full

Loans to School Districts.

EXHIBIT "H."
STATEMENT OF LOANS TO SCHOOL DISTRICTS—Continued.
SCHOOL FUND—Continued.

No.	Districts.	Outstanding July 1, 1908.	Principal paid 1908-1909.	Principal paid 1909-1910.	Outstanding July 1, 1910.
Green Lake County.					
Jt. 4	Princeton and Macon (Marquette Co.).....	\$125 00	\$125 00	.....	Paid in full
Jt. 3	Mackford & vil. Markesan.....	4,666 67	333 33	\$333 33	\$4,000 01
Jt. 2	Princeton & vil. St. Marie.....	5,000 00	500 00	500 00	4,000 00
Iowa County.					
Jt. 8	Highland town and vil....	900 00	300 00	300 00	300 00
4	Mifflin.....	600 00	300 00	300 00	Paid in full
1	Arena.....	1,200 00	300 00	300 00	600 00
15	Brigham.....	3,000 00	333 33	333 33	2,333 34
1	Waldwick.....	320 00	80 00	80 00	160 00
3	Pulaski.....	150 00	150 00	.....	Paid in full
Jt. 1	Linden town and village..	2,100 00	700 00	700 00	700 00
7	Moscow.....	480 00	60 00	60 00	360 00
Jt. 11	Arena and Wyoming.....	560 00	40 00	40 00	480 00
Jt. 6	Moscow (Iowa Co.) and Blanchard (LaFayette Co.).....	.....	.....	133 34	666 66
1	Moscow.....	.....	.....	220 00	1,980 00
Jt. 16	Brigham and Ridgeway....	.....	.....	80 00	720 00
Jt. 4	Mifflin and vil. Rewey.....	.....	.....	.....	7,500 00
	Arena High School.....	.....	.....	.....	5,000 00
1	Arena Graded.....	.....	.....	.....	2,000 00
Iron County.					
1	Vaughn.....	4,666 66	666 66	666 66	3,333 34
Jt. 1	Vaughn and Montreal.....	9,000 00	1,000 00	1,000 00	7,000 00
Jt. 1	Vaughn and Montreal.....	5,000 00	1,000 00	1,000 00	3,000 00
Jackson County.					
Jt. 1	Albion and City, Black River Falls.....	6,400 00	800 00	800 00	4,800 00
Jt. 1	Melrose and Irving.....	1,548 00	258 00	258 00	1,032 00
Jt. 8	Garden Valley, Alma and Cleveland.....	80 00	40 00	40 00	Paid in full
5	Millston.....	160 00	40 00	40 00	80 00
Jt. 1	Melrose and Irving.....	2,000 00	.....	.....	2,000 00
Jt. 1	Alma, Garden Valley and vill. Alma Center.....	1,500 00	250 00	250 00	1,000 00
5	Brockway.....	250 00	50 00	50 00	150 00
8	Brockway.....	300 00	50 00	50 00	200 00
Jt. 8	Springfield, Franklin Pres- ton, Trempealeau Co.....	500 00	100 00	100 00	300 00
4	Garfield.....	150 00	50 00	50 00	50 00
5	Knapp.....	1,500 00	150 00	150 00	1,200 00
2	Albion.....	1,000 00	100 00	100 00	800 00
6	Franklin.....	1,200 00	171 42	171 43	857 15
2	Albion.....	.....	.....	.....	400 00
5	Curran and Springfield....	.....	.....	.....	6,000 00
1	Alma, Garden Valley and Village Alma Center....	.....	.....	.....	1,800 00
Jt. 5	Manchester.....	.....	.....	.....	1,300 00
Juneau County.					
6	Armenia.....	50 00	25 00	25 00	Paid in full
Jt. 1	Wonewoc town and Vill- age Summit and Wood- land (Sauk County).....	1,000 00	1,000 00	1,000 00	Paid in full

Loans to School Districts.

EXHIBIT "H".

STATEMENT OF LOANS TO SCHOOL DISTRICTS—Continued.
SCHOOL FUND—Continued.

No.	Districts.	Outstanding July, 1908.	Principal paid 1908-1909.	Principal paid, 1909-1910.	Outstanding July, 1910.
Juneau County—Con.					
Jt. 1	New Lisbon city & town and Clearfield.....	\$7,000 00	\$,000 00	\$1,000 00	\$5,000 00
Jt. 9	Kildare and Vil. Lyndon...	400 00	100 00	100 00	200 00
5	Clearfield	43 50	14 50	14 50	14 50
Jt. 1	Lindina, Lemonweir and city of Mauston.....	1,500 00	500 00	500 00	500 00
8	Armenia	200 00	50 00	50 00	100 00
1	Aamenia	400 00	100 00	100 00	200 00
2	Wonewoc.....	400 01	133 33	133 34	133 34
3	Fountain.....	3,250 00	250 00	250 00	2,750 00
3	Lyndon.....	350 00	50 00	50 00	250 00
Jt. 4	Orange and village Camp Douglas.....	8,000 00	533 33	533 33	6,933 34
Jt. 1	New Lisbon & Clearfield	9,000 00			9,000 00
1	Orange.....			100 00	900 00
Kenosha County.					
7	Salem (Trevor).....	1,750 00	250 00	250 00	1,250 00
Kewaunee County.					
Jt. 3	Casco and Luxemburg.....	1,400 00	200 00	200 00	1,000 00
Jt. 1	Lincoln and Brussels Door county.....	1,200 00	300 00	300 00	600 00
1	Lincoln.....	1,400 00	200 00	200 00	1,000 00
8	Luxemburg.....	4,000 00			4,000 00
Jt. 1	Lincoln and Brussels Door county.....	1,500 00	250 00	250 00	1,000 00
2	Casco.....	3,000 00	200 00	200 00	2,600 00
7	Ahnapee.....			200 00	2,200 00
La Crosse County.					
5	Shelby.....	300 00	100 00	100 00	100 00
Jt. 6	Hamilton and village West Salem.....	1,500 00	250 00	250 00	1,000 00
4	Hamilton.....	400 00	200 00	200 00	Paid in full
2	Onalaska.....	200 00	100 00	100 00	Paid in full
Jt. 3	Holland and Onalaska....	857 14	71 43	71 43	714 28
1	Holland.....			100 00	700 00
La Fayette County.					
Jt. 6	Shullsburg city and town.	2,000 00	1,000 00	1,000 00	Paid in full
Jt. 5	Belmont town and village	4,800 02	533 33	533 33	3,733 36
Jt. 5	Belmont town and village	1,200 02	133 33	133 33	933 36
3	Belmont.....	300 00	100 00	100 00	100 00
Jt. 1	Blanchard village Blanch- ardville Moscow (Iowa County.) and York (Green County).....	18,000 00			18,000 00
9	Wayne.....	1,260 00	140 00	140 00	980 00
1	Wyota.....	600 00	200 00	200 00	200 00
Jt. 1	Town Benton and village.	20,000 00	1,666 66	1,666 66	16,666 68
Jt. 2	Belmont and Kendall.....			133 33	1,866 67
Jt.11	Willow Springs and Dar- lington.....				500 00
Jt.11	Lamont, Wiota and Argyle				500 00
Langlade County.					
7	Antigo.....	142 50	47 50	47 50	47 50
6	Langlade.....	150 00	75 00	75 00	Paid in full
4	Polar.....	600 00	300 00	300 00	Paid in full

Loans to School Districts.

EXHIBIT "H".

STATEMENT OF LOANS TO SCHOOL DISTRICTS—Continued.
SCHOOL FUND—Continued.

No.	District.	Outstanding July 1, 1908.	Principal paid 1908-1909.	Principal Paid 1909-1910.	Outstanding July 1, 1910.
Langlade County—Con.					
1	Neva.....	\$2,400 00	\$400 00	\$400 00	\$1,600 00
7	Ackley.....	1,200 00			1,200 00
4	Price.....	600 00	60 00	60 00	480 00
4	Price.....	600 00	60 00	60 00	480 00
6	Ackley.....	800 00	200 00	200 00	400 00
4	Rolling.....	2,000 00	400 00	400 00	1,200 00
5	Ainsworth.....	1,500 00	300 00	300 00	900 00
4	Ainsworth.....	150 00	50 00	50 00	50 00
1	Peck.....	1,000 00	100 00	100 00	800 00
4	Elton.....			900 00	3,600 00
5	Antigo.....			225 00	2,025 00
4	Peck.....			100 00	900 00
Jt. 5	Peck and Ackley.....			200 00	1,400 00
4	Evergreen.....			300 00	1,200 00
1	Upham.....			1,000 00	4,000 00
6	Ainsworth.....			200 00	1,000 00
2	Price.....			198 00	2,772 00
1	Price.....				1,800 00
5	Ackley.....				2,000 00
Lincoln County.					
Jt. 3	Russell and Schley.....	120 00	60 00	60 00	Paid in full
1	Harrison.....	300 00	50 00	50 00	200 00
3	Schley.....	1,200 00	100 00	100 00	1,000 00
2	Schley.....	1,733 34	133 33	133 33	1,466 68
Jt. 7	Schley and Merrill.....				1,000 00
Manitowoc County.					
Jt. 1	Maple Grove, Rockland and vill. Reedsville.....	1,500 00	500 00	500 00	500 00
Jt. 1	Michicott and Gibson.....	1,800 00	900 00	900 00	Paid in full
4	Cooperstown.....	1,500 00	500 00	500 00	500 00
Marathon County.					
3	Wien.....	50 00	50 00		Paid in full
5	Wien.....	100 00	60 00	60 00	Paid in full
5	Halsey.....	120 00	60 00	60 00	Paid in full
Jt. 2	Mosinee village.....	1,600 00	800 00	800 00	Paid in full
Jt. 2	Halsey, Reitbrock, John- son vill. and Athens.....	440 00	220 00	220 00	Paid in full
3	Weston.....	118 00	59 00	59 00	Paid in full
4	Pike Lake.....	50 00	50 00		Paid in full
1	Frankfort.....	67 50	22 50	22 50	22 50
4	Cleveland.....	320 00	80 00	80 00	160 00
5	Cassell.....	240 00	80 00	80 00	80 00
6	Texas.....	200 00	50 00	50 00	100 00
4	Hewitt.....	200 00	50 00	50 00	100 00
Jt. 3	Johnson.....	400 00	100 00	100 00	200 00
Jt. 1	Kronewetter & Knowlton.....	400 00	100 00	100 00	200 00
1	Eau Pleine.....	420 00	70 00	70 00	280 00
3	Spencer.....	600 00	100 00	100 00	400 00
7	Texas.....	400 00	200 00	200 00	Paid in full
Jt. 5	Eau Pleine and Frankfort.....	685 00	95 00	95 00	475 00
Jt. 5	Eau Pleine and Frankfort.....	600 00	150 00	150 00	300 00
6	Wien.....	600 00	100 00	100 00	400 00
5	Maln.....	420 00	60 00	60 00	300 00
1	Maln.....	300 00	150 00	150 00	Paid in full
Jt. 3	Brokaw village.....	1,400 00	200 00	200 00	1,000 00
Jt. 3	Norrie and Ringle.....	1,400 00	260 00	260 00	Paid in full
1	Ringle.....	520 00	50 00	50 00	100 00
4	Texas.....	200 00	50 00	50 00	100 00
7	Cassell.....	200 00	100 00	100 00	Paid in full
5	Johnson.....	700 00	100 00	100 00	500 00

Loans to School Districts.

EXHIBIT "H."

STATEMENT OF LOANS TO SCHOOL DISTRICTS—Continued.

SCHOOL FUND—Continued.

No.	Districts.	Outstanding July 1, 1908.	Principal paid 1908-1909.	Principal paid 1909-1910.	Outstanding July 1, 1910.
Marathon County—Con.					
Jt. 2	Weston and Wausau.....	\$933 34	\$66 66	\$66 66	\$800 02
2	Cleveland.....	500 00	100 00	100 00	300 00
3	Eau Pleine.....	800 00	200 00	200 00	400 00
6	Halsey.....	990 00	110 00	110 00	770 00
6	Cleveland.....	720 00	80 00	80 00	560 00
Jt. 2	Johnson, Reithbroek, Hal- sey, Berne and village of Athens.....	9,324 00	666 00	666 00	7,992 00
2	Frankfort.....	900 00	100 00	100 00	700 00
2	Hull.....	1,200 00	100 00	100 00	1,000 00
Jt. 1	Cassell and city and town of Marathon.....	8,000 00	800 00	800 00	6,400 00
2	Rib Falls.....	1,200 00	200 00	200 00	800 00
4	Reitbroek.....	990 00	66 00	66 00	858 00
3	Eau Pleine.....	500 00	.....	.....	500 00
Jt. 6	Bergen and Day.....	.....	.....	100 00	600 00
5	Cleveland.....	.....	.....	2,000 00	8,000 00
Jt. 3	Norrie and Ringle.....	.....	200 00	200 00	600 00
2	Bern.....	.....	.....	100 00	200 00
3	Holton.....	.....	.....	150 00	1,350 00
Jt. 6	Cassell and vill. of Edgar.....	.....	.....	.....	3,500 00
3	Franzen.....	.....	.....	500 00	2,000 00
2	Bergen.....	.....	.....	220 00	1,980 00
Jt. 2	Johnson, Reitbroek, Hal- sey, Bern and village of Athens.....	.....	*	400 00	5,600 00
Jt. 3	Emmett and Bergen.....	.....	.....	.....	4,000 00
1	Pike Lake.....	.....	.....	.....	200 00
4	Elderon.....	.....	.....	.....	4,000 00
5	Cleveland.....	.....	.....	.....	3,500 00
5	Hewitt.....	.....	.....	.....	850 00
5	Harrison.....	.....	.....	.....	1,500 00
Marinette County.					
10	Peshigo.....	66 00	33 00	33 00	Pd. in full
7	Amberg.....	700 00	350 00	350 00	Pd. in full
12	Peshigo.....	120 00	40 00	40 00	40 00
8	Peshigo.....	90 00	30 00	30 00	30 00
6	Peshigo.....	180 00	45 00	45 00	90 00
2	Grover.....	266 67	133 33	133 34	Pd. in full
13	Peshigo.....	100 00	100 00	.....	Pd. in full
9	Pound.....	1,661 10	237 30	237 30	1,186 50
8	Pound.....	700 00	100 00	100 00	500 00
6	Grover.....	700 00	100 00	100 00	500 00
1	Colman village.....	3,500 00	500 00	500 00	2,500 00
14	Pound.....	455 00	65 00	65 00	325 00
13	Pound.....	350 00	50 00	50 00	250 00
3	Grover.....	800 00	100 00	100 00	600 00
9	Beaver.....	700 00	100 00	100 00	500 00
8	Athelstane.....	.....	.....	.....	1,000 00
Marquette County.					
1	Moundville.....	1,600 00	.....	200 00	1,400 00
Jt. 1	Nashkora town and vill. ...	5,400 00	600 00	600 00	4,200 00
Jt. 2	Oxford and Jackson (Mar- quette and Adams Co.)..	.....	.....	.....	1,000 00
Milwaukee County.					
Jt. 6	Wauwatosa and city Mil- waukee.....	630 00	630 00	.....	Pd. in full
	City West Allis.....	3,000 00	1,000 00	1,000 00	1,000 00

Loans to School Districts.

EXHIBIT "H."

STATEMENT OF LOANS TO SCHOOL DISTRICTS—Continued.
SCHOOL FUND—Continued.

No.	District.	Outstanding July 1, 1908.	Principal paid 1908-1909.	Principal paid 1909-1910.	Outstanding July 1, 1910.
Milwaukee County—Con.					
17	Greenfield.....	\$2,000 00	\$500 00	\$500 00	\$1,000 00
9	Lake.....	3,200 00	800 00	800 00	1,600 00
Jt.17	Granville and Village N. Milwaukee.....	19,230 75	1,923 08	1,923 08	15,384 60
17	Greenfield.....	2,600 00	200 00	200 00	2,200 00
4	Village E. Milwaukee.....	8,500 00	566 66	566 66	7,366 68
5	Granville.....	2,000 00	400 00	400 00	1,200 00
8	Wauwatosa.....			1,000 00	3,000 00
6	Wauwatosa.....			320 00	4,480 00
Monroe County.					
Jt. 1	Portland, Jefferson and Village of Cashton.....	1,800 00	300 00	300 00	1,200 00
2	Grant.....	100 00	25 00	25 00	50 00
Jt. 1	Portland, Jefferson and Village Cashton.....	1,633 33	233 33	233 34	1,166 66
Jt. 6	Byron and Scott.....	150 00	50 00	50 00	50 00
1	City of Tomah.....	20,000 00			20,000 00
3	New Lynn.....	162 50	32 50	32 50	97 50
Jt. 1	Wellington, Ridgeville and Wilton Town and Village.....	5,000 00	1,000 00	1,000 00	3,000 00
Jt.13	Greenfield, Adrian, Angels and La Fayette.....	150 00	30 00	30 00	90 00
1	City of Tomah.....	3,333 34	333 33	333 34	2,666 67
2	Byron.....	400 00	100 00	100 00	200 00
4	Grant.....	250 00	50 00	50 00	150 00
Jt. 1	Wellington, Ridgeville and Wilton Town and Village.....	2,500 00			2,500 00
Jt. 8	Scott and Lincoln.....	720 00	60 00	60 00	600 00
1	Portland.....	400 00	100 00	100 00	200 00
9	Byron.....	500 00	100 00	100 00	300 00
Jt. 3	Glendale and Village of Kendall.....	4,285 71	714 29	714 29	2,857 13
3	Byron.....	2,100 00	150 00	150 00	1,800 00
1	City of Tomah.....	2,500 00			2,500 00
Jt.13	Lincoln and Grant.....			100 00	900 00
Oconto County.					
2	Lena.....	400 00	200 00	200 00	Paid in full
4	Lena.....	100 00	50 00	50 00	Paid in full
4	Gillett.....	156 25	156 25		Paid in full
2	Maple Valley.....	330 00		110 00	110 00
7	Oconto Falls.....	550 00		275 00	275 00
3	Spruce.....	330 00	110 00	110 00	110 00
2	Oconto Falls.....	9,000 00	1,000 00	1,000 00	7,000 00
2	Brazeau.....	750 00	150 00	15 00	450 00
4	Maple Valley.....	166 67	166 67		Paid in full
2	Lena.....	750 00	115 00	150 00	450 00
3	Howe.....	1,833 33	166 66	166 67	1,500 00
Jt. 6	Little River and Lena.....	1,200 00	400 00	400 00	400 00
4	Little River.....	100 00	100 90		Paid in full
2	Breed.....	500 00	100 00	100 00	300 00
4	Gillett.....	1,200 00	150 00	150 00	900 00
4	Maple Valley.....	1,300 00	100 00	100 00	1,100 00
Jt. 6	Stiles and Ocsnto Falls.....	200 00	50 00	50 00	100 00
1	Chase.....	541 67	108 33	108 33	315 01
7	Maple Valley.....	1,400 00	100 00	100 00	1,200 00
2	Chase.....	200 00	100 00	100 00	Paid in full
1	Underhill.....	1,000 00	100 00	100 00	800 00
2	Gillett.....	900 00	150 00	150 00	600 00
2	Little River.....	1,000 00	125 00	125 00	750 00

Loans to School Districts.

EXHIBIT "H".

STATEMENT OF LOANS TO SCHOOL DISTRICTS.—Continued.
SCHOOL FUND.—Continued.

No.	District.	Outstanding July 1, 1908.	Principal paid 1908-1909.	Principal paid 1909-1910.	Outstanding July 1, 1910.
Oconto County—Con.					
7	Chase.....	700 00	100 00	100 00	500 00
9	Spruce.....			150 00	1,350 00
Jt. 3	Howe and Maple Valley.....			226 67	1,773 33
4	Spruce.....			150 00	1,350 00
2	Underhill.....			100 00	400 00
Jt. 3	Gillett, town and village.....			600 00	8,400 00
Jt. 4	Underhill and Gillett.....			200 00	1,000 00
6	Oconto.....				1,500 00
Outagamie County.					
6	Seymour.....	270 00	90 00	90 00	90 00
1	Bovina.....	1,200 02	133 33	133 33	933 36
1	City of Appleton.....	13,333 34	1,333 34	1,333 33	10,666 66
6	Black Creek.....	2,100 00	300 00	300 00	1,500 00
8	Seymour.....	586 67	33 33	53 34	480 00
Jt. 2	Kaukauna city and town villages Little Chute and Vanderbrook.....	6,000 00	1,000 00	1,000 00	4,000 00
Jt. 2	Cicero an Maine.....	280 00	70 00	70 00	140 00
7	Deer Creek.....	400 00	100 00	100 00	200 00
1	Seymour.....	3,264 90	217 66	217 66	2,829 58
Jt. 1	Vanderbrook and Little Chute.....			500 00	3,000 00
Jt. 1	Maine and Navarino, Sha- wano County.....			100 00	1,100 00
5	Cicero.....				1,500 00
Jt. 3	Kaukauna and Vander- brook.....				1,900 00
Jt. 1	Bovina and village, Shio- ton.....				2,200 00
Ozaukee County.					
Jt. 1	Port Washington city and town.....	10,000 00	1,000 00	1,000 00	8,000 00
Jt. 4	Port Washington city and town.....	5,600 00	466 67	466 67	4,666 66
Jt. 2	Cedarbury and town and city.....	25,000 00	1,500 00	1,500 00	22,000 00
Pepin County.					
5	Albany.....	\$150 00	50 00	50 00	50 00
1	Pepin.....	3,900 02	433 33	433 33	3,033 36
1	Stockholm.....	2,808 00	234 00	234 00	2,340 00
Jt. 4	Durand and Lima.....	1,080 00	120 00	120 00	840 00
Jt. 4	Pepin and Frankfort.....	360 00	40 00	40 00	280 00
6	Albany.....	1,100 00	110 00	110 00	880 00
Jt. 4	Stockholm, Pepin and Maiden Rock (Pierce County.).....			100 00	400 00
Pierce County.					
3	Trimbelle.....	62 50	62 50		Paid in full
6	River Falls.....	700 00	100 00	100 00	500 00
6	Spring Lake.....	1,125 00	375 00	375 00	375 00
1	Isabelle.....	2,800 00	200 00	200 00	2,400 00
1	Trimbelle.....	1,400 00	100 00	100 00	1,200 00
Jt. 3	Maiden Rock, vil. & town	9,000 00	600 00	600 00	7,800 00
2	Elm Rock.....	1,000 00	200 00	200 00	600 00
Jt. 5	Salem, El Paso, etc.....	2,000 00	200 00	200 00	1,600 00
1	Isabelle.....	1,200 00	100 00	100 00	1,000 00

Loans to School Districts.

EXHIBIT "H."

STATEMENT OF LOANS TO SCHOOL DISTRICTS—Continued.
SCHOOL FUND—Continued.

No.	Districts.	Outstanding July 1, 1908.	Principal paid 1908-1909.	Principal paid 1908-1910.	Outstanding July 1, 1910.
Pierce County—Con.					
Jt. 4	El Paso.....			\$100 00	1,000 00
3	Maiden Rock, Union and Salem.....				800 00
Jt. 6	Union.....				800 00
	Elm Rock, Spring Lake vil., Edmunds and Wes- ton (Dunn Co.).....				5,000 00
Polk County.					
6	Clear Lake.....	40 00	40 00		Paid in full
3	Balsam Lake.....	220 00	55 00	55 00	110 00
2	Clayton.....	200 00	50 00	50 00	100 00
5	Clayton.....	120 00	40 00	40 00	40 00
3	St. Croix Falls.....	1,225 00	245 00	245 00	735 00
3	Luck.....	1,350 00	150 00	150 00	1,050 00
Jt. 1	Beaver and Apple River..	189 00	27 00	27 00	135 00
3	West Sweden.....	900 00	300 00	300 00	300 00
1	Osceola.....	420 00	70 00	70 00	280 00
3	Luck.....	280 01	23 33	23 33	233 35
2	Osceola.....	100 00	100 00		Paid in full
4	Apple River.....	280 00	40 00	40 00	200 00
4	St. Croix Falls.....	1,050 00	150 00	150 00	750 00
1	Clam Falls.....	500 00	100 00	100 00	300 00
1	Balsam Lake.....	1,566 67	133 33	133 33	1300 01
1	Georgetown.....	747 00	53 00	53 00	641 00
2	Black Brook.....	500 00	100 00	100 00	300 00
7	Eureka.....	933 33	66 67	66 67	799 99
4	Eureka.....	1,000 00	66 67	66 67	866 66
4	Garfield.....	300 00	60 00	60 00	180 00
Jt. 1	Osceola.....			120 00	1,680 00
Jt. 1	Osceola, St. Croix Falls and village.....			1,200 00	16,800 00
Jt. 5	Lincoln and vil. Amery..			733 33	10,266 67
Jt. 2	Balsam Lake vil. & town			300 00	4,200 00
Jt. 3	Osceola and Garfield..			200 00	2,800 00
3	Black Brook.....			100 00	500 00
Portage County.					
5	Carson.....	200 00	50 00	50 00	100 00
Jt. 2	Almond and Oasis (Waus- shara County).....	7,333 33	666 67	666 66	6,000 00
6	Pine Grove.....	900 00	150 00	150 00	600 00
3	Almond.....	780 00	130 00	130 00	520 00
3	Amherst.....	1,200 00	150 00	350 00	900 00
1	Flover.....	640 00	320 00	320 00	Paid in full
2	Linwood.....	200 00	100 00	100 00	Paid in full
Jt. 2	Lanark and Farmington (Waupaca County).....	700 00	100 00	100 00	500 00
4	Grant.....	500 00	100 00	100 00	300 00
4	Grant.....	300 00			300 00
Jt. 5	Linwood.....	633 34	158 33	158 33	316 68
9	Plover and Buena Vista..	550 00	50 00	50 00	450 00
7	Carson.....	1,400 00	175 00	175 00	1,050 00
5	Amherst.....	1,306 67	93 33	93 33	1,120 01
7	Alban.....	1,400 00	100 00	100 00	1,200 00
3	Amherst.....	1,150 00	76 67	76 67	996 66
6	Pine Grove.....	1,150 00	85 00	85 00	680 00
Jt. 9	Pine Grove and Grant....	850 00		100 00	400 00
7	Plover.....				1,200 00
5	New Hope.....				1,500 00
7	Hull.....				750 00
Jt. 8	Carson and Eau Claire..				

Loans to School Districts.

EXHIBIT "H".

STATEMENT OF LOANS TO SCHOOL DISTRICTS—Continued.
SCHOOL FUND—Continued.

No.	Districts.	Outstanding July 1, 1908.	Principal paid 1908-1909.	Principal paid 1909-1910.	Outstanding July 1, 1910.
Price County.					
5	Prentice.....	100 00	50 00	50 00	Paid in full
4	Knox.....	69 00	34 50	34 50	Paid in full
3	Lake.....	500 00	100 00	100 00	500 00
2	Park Falls village.....	3,500 00	700 00	700 00	2,100 00
Jt. 1	Kennan and Georgetown.....	360 00	90 00	90 00	180 00
Jt. 2	Park Falls.....	1,800 00	300 00	300 00	1,200 00
Jt. 2	Prentice and Knox.....	400 00	50 00	50 00	300 00
8	Lake.....	420 00	300 00	60 00	60 00
Jt. 1	Omega and Prentice.....	100 00	100 00	.....	Paid in full
Jt. 8	Prentice, town and village.....	2,450 00	350 00	350 00	1,750 00
Jt. 3	Kennan and Georgetown.....	2,000 00	250 00	250 00	1,500 00
Jt. 2	Catawba and Kennan.....	1,866 67	133 33	133 33	1,600 01
2	Hill.....	400 00	100 00	100 00	200 00
2	Park Falls village.....	9,000 00	1,000 00	1,000 00	7,000 00
1	Brennan.....	1,633 33	116 67	116 67	1,399 99
3	Catawba.....	500 00	100 00	100 00	300 00
4	Hill.....	600 00	60 00	60 00	480 00
3	Brennan.....	.....	.....	80 00	720 00
4	Eisenstein.....	.....	.....	.....	300 00
Jt. 4	Georgetown and Harmony.....	.....	.....	.....	500 00
5	Eisenstein.....	.....	.....	.....	500 00
Jt. 4	Ogema and Catawba.....	.....	.....	.....	3,500 00
2	Park Falls Village.....	.....	.....	.....	8,000 00
Racine County.					
21	Mt. Pleasant.....	300 00	300 00	.....	Paid in full
1	Waterford.....	500 00	500 00	.....	Paid in full
Jt. 18	Mt. Pleasant & Caledonia.....	1,500 00	250 00	250 00	1,000 00
4	Mt. Pleasant.....	560 00	80 00	80 00	400 00
5	Mt. Pleasant.....	1,190 00	170 00	170 00	850 00
Jt. 20	Mt. Pleasant & Caledonia.....	3,200 00	400 00	400 00	2,400 00
4	Mt. Pleasant.....	8,400 00	600 00	600 00	7,200 00
1	Rochester.....	4,606 67	333 33	333 33	4,000 01
4	Mt. Pleasant (Corliss).....	1,700 00	133 33	133 33	1,433 34
7	Burlington.....	.....	.....	240 00	960 00
7	Waterford.....	.....	.....	.....	1,500 00
5	Mt. Pleasant.....	.....	.....	.....	1,600 00
Richland County.					
5	Forest.....	190 50	63 50	63 50	63 50
Jt. 3	Buena Vista Vil. Lone Rock and Spring Green (Sauk County).....	5,805 00	645 00	645 00	4,515 00
Jt. 2	Richland town and city.....	5,400 00	600 00	600 00	4,200 00
Jt. 1	Buena Vista and Orion.....	2,076 92	230 77	230 77	1,615 38
Jt. 2	Richland and city of Richland Center.....	5,099 98	566 67	566 67	4,066 64
Jt. 10	Rockbridge & Henrietta.....	100 00	100 00	.....	Paid in full
3	Westford.....	185 71	92 86	92 85	Paid in full
5	Orion.....	769 21	76 93	76 92	615 36
Jt. 9	Viola Vill. Forest, town Kickapoo and Liberty (Vernon County).....	.....	.....	500 00	6,500 00
Jt. 9	Viola Vill. Forest town & Kickapoo & Liberty, (Vernon County).....	.....	.....	500 00	6,500 00
Jt. 2	Dayton ond Akan.....	.....	.....	500 00	4,500 00
8	Eagle.....	.....	.....	.....	1,200 00

Loans to School Districts.

EXHIBIT "H".

STATEMENT OF LOANS TO SCHOOL DISTRICTS—Continued.

SCHOOL FUND—Continued.

No.	Districts.	Outstanding July 1, 1908.	Principal Paid 1908-1909.	Principal Paid 1909-1910.	Outstanding July 1, 1910.
Rock County,					
6	Plymouth.....	880 00	220 00	220 00	440 00
Jt. 8	Fulton and city Edgerton.	4,000 00	1,000 00	1,000 00	2,000 00
Jt. 3	Center and Porter.....	595 00	85 00	85 00	425 00
Jt. 4	Bradford.....	1,260 00	180 00	180 00	900 00
Jt. 1	Rock, Janesville, Ply- mouth and Center.....			190 00	1,710 00
Rusk County.					
10	Big Bend.....	280 00	70 00	70 00	140 00
1	True.....	400 00	400 00		Paid in full
9	Big Bend.....	59 00	59 00		Paid in full
17	Big Bend.....	42 00	42 00		Paid in full
Jt. 1	Thornapple and village of Bruce.....	3,666 68	333 33	333 33	3,000 02
Jt. 3	Stubbs and Strickland.....	2,400 00	200 00	200 00	2,000 00
Jt. 7	Atlanta.....	300 00	100 00	100 00	100 00
Jt. 1	Strickland and Stubbs.....	500 00	100 00	100 00	300 00
6	Stubbs.....	420 00	35 00	35 00	350 00
9	Atlanta.....	350 00	130 00	130 00	130 00
10	Atlanta.....	437 50	62 50	62 50	312 50
11	Atlanta.....	400 00	100 00	100 00	200 00
Jt. 7	Big Bend and Stubbs.....	800 00	106 66	53 33	640 01
5	Strickland.....	800 00	53 33	53 33	693 34
5	Strickland.....			26 67	373 33
12	Atlanta.....			175 00	525 00
2	Strickland.....			150 00	750 00
6	Washington.....			43 33	606 67
St. Croix County.					
1	Ceylon.....	130 00	130 00		Pd. in full
5	St. Joseph.....	120 00	60 00	60 00	Pd. in full
Jt. 9	Hammond and Erin.....	225 00	75 00	75 00	75 00
Jt. 1	City New Richmond, Rich- mond, Star Prairie and Stanton.....	700 00	700 00		Pd. in full
Jt. 1	City New Richmond, Rich- mond, Star Prairie and Stanton.....	1,000 00	1,000 00		Pd. in full
7	Baldwin.....	320 00	80 00	80 00	160 00
3	Springfield.....	500 00	100 00	100 00	300 00
6	Glenwood.....	250 00	50 00	50 00	150 00
Jt. 4	Hammond and Baldwin town and village.....	7,666 67	766 67	766 66	6,133 34
2	Kimmickinnic.....	400 00	200 00	200 00	Pd. in full
3	Hudson.....	500 00	100 00	100 00	300 00
4	Ceylon.....	420 00	70 00	70 00	280 00
Jt. 4	Hammond and Baldwin town and village.....	1,600 01	133 33	133 33	1,333 35
2	Kimmickinnic.....	400 00	200 00	200 00	Pd. in full
Jt. 1	Richmond, Star Prairie, Stanton and City of New Richmond.....	23,215 00	1,785 00		21,430 00
Jt. 4	Somerset and Star Prairie.	1,866 67	133 33	133 33	1,600 01
Jt. 1	Hammond Town and vil- lage.....	1,500 00	100 00	100 00	1,300 00
5	Forest.....	800 00	80 00	80 00	640 00
1	Springfield.....	3,000 00	200 00	200 00	2,600 00
6	Emerald.....	300 00	75 00	75 00	150 00
5	Emerald.....			50 00	200 00
Jt. 5	Glenwood and Springfield			100 00	600 00
Jt. 3	Emerald.....			100 00	300 00
5	Cady.....				600 00

Loans to School Districts.

EXHIBIT "H".

STATEMENT OF LOANS TO SCHOOL DISTRICTS—Continued.
SCHOOL FUND—Continued.

No.	Districts.	Outstanding July 1, 1908.	Principal paid 1908-1909.	Principal paid 1909-1910.	Outstanding July 1, 1910.
Sauk County.					
Jt. 9	Excelsior and Village of				
	Ableman.....	1,246 10	207 70	207 70	830 70
6	Baraboo.....	2,384 00	298 00	298 00	1,788 00
13	Lavalle.....	75 00	25 00	25 00	25 00
Jt. 1	Freedom and village of				
	North Freedom.....	4,000 00	400 00	400 00	3,200 00
Jt. 3	Bear Creek and Ithica				
	(Richland Co.).....	625 00	125 00	125 00	375 00
Jt. 2	Lavalle, town and vil-				
	lage.....	6,066 67	433 33	433 34	5,200 00
4	Woodland.....	750 00	250 00	250 00	250 00
Jt. 2	Spring Green town and				
	village.....	15,000 00	1,000 00	1,000 00	13,000 00
Jt. 7	Spring Green and Frank-				
	lin.....				1,200 00
Shawano County.					
3	Navarino.....	100 00	50 00	50 00	Paid in full
	City of Shawano.....	7,200 00	800 00	800 00	5,600 00
Jt. 7	Biramwood town and				
	vil. Norrie and Plover				
	(Marathon County).....	2,279 97	253 33	253 33	1,773 31
	City of Shawano.....	2,000 00	200 00	200 00	1,600 00
3	Richmond.....	450 00	90 00	90 00	270 00
5	Angelica.....	320 00	80 00	80 00	160 00
1	Witclberg.....	5,000 00	500 00	500 00	4,000 00
1	Hutchins.....	600 00	120 00	120 00	360 00
2	Maple Grove.....	900 00	150 00	150 00	600 00
Jt. 2	Fairbanks & vil. Tigerton	6,600 00	600 00	600 00	5,400 00
3	Almon.....	200 00	200 00		Paid in full
3	Fairbanks.....	250 00	50 00	50 00	150 00
Jt. 2	Green Valley and Gillette				
	(Oconto Co).....	560 00	80 00	80 00	400 00
2	Wescott.....	200 00	100 00	100 00	Paid in full
5	Washington.....	4,000 00	500 00	500 00	3,000 00
1	Germania.....	500 00	50 00	50 00	400 00
5	Biramwood.....	800 00	100 00	100 00	600 00
Jt. 2	Fairbanks vil. Tigerton..	2,600 00	200 00	200 00	2,200 00
6	Witclberg.....	600 00	200 00	200 00	200 00
Jt. 6	Hutchins & vil. Mattoon	3,500 00	500 00	500 00	2,500 00
Jt. 6	Green Valley, Gillette				
	Underhill etc., (Oconto				
	County).....	3,733 33	266 67	266 66	3,200 00
1	Grant.....	3,420 00	380 00	380 00	2,660 00
Jt. 1	Angelica & Maple Grove.,	1,500 60	100 00	100 00	1,300 00
6	Belleplaine.....	1,000 00	200 00	200 00	600 00
Jt. 7	Biramwood town & vil.				
	(Norrie & Plover (Mar-				
	athon County).....			113 34	1,586 66
4	Angelica.....			100 00	400 00
Jt. 1	Lessor Hartland, Angelica			50 00	450 00
	and Maple Grove.....				
Jt. 5	Maple Grove, Angelica,				
	Pittsfield & Chase, (Ocon-				
	to and Brown counties.)..				6,000 00
2	Almon.....				600 00
Sheboygan County.					
3	Lima.....	450 00	150 00	150 00	150 00
7	Sheboygan.....	900 00	100 00	100 00	700 00
1	Village Elkhart Lake.....	4,000 00	400 00	400 00	3,200 00
5	Sheboygan.....	500 00	100 00	100 00	300 00

Loans to School Districts.

EXHIBIT "H".

STATEMENT OF LOANS TO SCHOOL DISTRICTS—Continued.

SCHOOL FUND—Continued.

No.	District.	Outstanding July 1, 1908.	Principal paid 1908-1909.	Principal paid 1909-1910.	Outstanding July 1, 1910.
Sheboygan County—Con.					
Jt. 8	Plymouth city and town..	\$15,000 00	\$1,666 66	\$1,166 67	\$11,666 67
6	Lyndon.....	4,200 00	700 00	700 00	2,800 00
	Village Cedar Grove.....	4,620 00	330 00	330 00	3,960 00
8	Sheboygan Falls.....	1,000 00	100 00	100 00	800 00
6	Sheboygan.....	1,500 00	100 00	100 00	1,300 00
Jt. 2	Holland and village Cedar Grove.....				500 00
Taylor County.....					
3	Deer Creek.....	75 00	75 00		Paid in full
7	Holway.....	150 00	50 00	50 00	50 00
5	Medford.....	100 00	50 00	50 00	Paid in full
3	Chelsea.....	100 00	100 00		Paid in full
5	Rib Lake.....	300 00	100 00	100 00	100 00
3	Rib Lake.....	420 00	60 00	60 00	300 00
3	Goodrich.....	400 00	200 00	200 00	Paid in full
2	Goodrich.....	500 00	100 00	100 00	300 00
6	Maple Hurst.....	500 00	50 00	50 00	400 00
Jt. 1	Medford city and town...	21,666 68	1,666 67	1,666 66	18,333 35
1	Holway.....	400 00	100 00	100 00	200 00
5	Chelsea.....	150 00	50 00	50 00	50 00
11	Medford.....	1,080 00	120 00	120 00	840 00
1	Browning.....	1,000 00	100 00	100 00	800 00
2	Aurora.....			450 00	4,050 00
Trempealeau Co.....					
Jt. 6	Etrick and Preston.....	50 00	25 00	25 00	Paid in full
Jt. 1	Hale, Chimney Rock and Burnside.....	150 00	50 00	50 00	50 00
13	Arcadia.....	100 00	100 00		Paid in full
Jt. 2	Lincoln, Preston and vil. White Hall.....	500 00	500 00		Paid in full
1	Albion.....	3,600 00	400 00	400 00	2,800 00
Jt. 2	Lincoln, Preston and vil. White Hall.....	1,500 00		500 00	1,000 00
2	Hale.....	533 34	53 34	53 33	426 67
Jt. 1	Preston and vil. Blair.....	8,000 00	800 00	800 00	6,400 00
Jt. 7	Chimney Rock and Albion	450 00	50 00	50 00	350 00
8	Chimney Rock.....	300 00	50 00	50 00	200 00
Jt. 2	Chimney Rock and Hale..	350 00	50 00	50 00	250 00
Jt. 6	Burnside and village.....				
	Independence.....	1,500 00	500 00	500 00	500 00
Jt. 2	Unity and Albion.....	100 00	100 00		Paid in full
Jt. 5	Etrick and Franklin				
	Jackson Co.....	360 00	120 00	120 00	120 00
Jt. 2	Etrick and Gale.....	5,490 00	392 15	392 15	4,705 70
Jt. 5	Unity and Sumner.....	500 00	100 00	100 00	300 00
6	Sumner.....	600 00	100 00	100 00	400 00
4	Gale and vil. Galesville..	25,000 00	1,666 66	1,666 66	21,666 68
6	Etrick.....			100 00	900 00
1	Hale.....			150 00	1,350 00
1	Hale.....				1,000 00
Jt. 5	Tempealeau and Dodge...				2,300 00
Vernon County.					
9	Jefferson.....	160 00	80 00	80 00	Paid in full
Jt. 3	Hillsboro town and vil. Greenwood.....	1,866 66	266 66	266 67	1,333 33
Jt. 15	Stark and vil. La Farge..	2,100 00	300 00	300 00	1,500 00
Jt. 1	Readstown and vil. of Kickapoo.....	4,175 00	475 00	475 00	3,225 00
1	Stark.....	180 90	60 00	60 00	60 00

Loans to School Districts.

EXHIBIT "H".

STATEMENT OF LOANS TO SCHOOL DISTRICTS—Continued.
SCHOOL FUND—Continued

No.	District.	Outstanding July 1, 1908.	Principal paid 1908-1909.	Principal paid 1909-1901.	Outstanding July 1, 1910.
1	Whitestown	\$200 00	\$50 00	\$50 00	\$100 00
Jt. 9	Christiana and Coon.....	200 00	50 00	50 00	100 00
5	Harmony	599 98	66 67	66 67	466 64
3	Whitestown	250 00	50 00	50 00	150 00
4	Franklin	600 00	100 00	100 00	400 00
Jt. 15	Stark and vil. La Farge...	3,823 52	294 12	294 12	3,225 28
4	Stark	600 00	100 00	100 00	400 00
3	Webster.....	700 00	100 00	100 00	500 00
Jt. 7	Christiana & vil. Westby.	500 00	109 00	100 00	300 00
2	Coon	700 00	100 00	100 00	500 00
7	Jefferson.....	1,000 00	125 00	125 00	750 00
Jt. 3	Hillsboro town and vil. Greenwood.....	2,400 00	200 00	200 00	2,000 00
Jt. 7	Christiana & vil. Westby	.....	.....	1,333 33	18,666 37
Jt. 12	Sterling and Freeman Crawford Co.....	.....	.....	100 00	900 00
3	Hamberg .....	.....	.....	.....	4,000 00
12	Franklin .....	.....	.....	.....	900 00
Jt. 1	Christiana and Portland, Monroe Co.....	.....	.....	.....	500 00
Walworth County.					
Jt. 7	Walworth, Delavan, Ge- neva and Linn.....	600 00	\$300 00	\$300 00	Paid in full
Jt. 1	Walworth, town & village	5,000 00	1,000 00	1,000 00	\$3,000 00
3	Fontana (Walworth).....	800 00	200 00	200 00	400 00
7	Darien.....	1,000 00	1,000 00	.....	Paid in full
4	Troy.....	3,000 00	200 00	200 00	2,600 00
Jt. 10	Darien and Sharon.....	.....	.....	200 00	2,800 00
2	Bloomfield.....	.....	.....	1,000 00	15,000 00
7	Delevan.....	.....	.....	.....	1,666 00
9	Linn.....	.....	.....	.....	6,000 00
Washburn County.					
10	Spooner	75 00	75 00	.....	Paid in full
5	Minong	300 00	100 00	100 00	100 00
4	Loomis	2,400 03	266 67	266 67	1,866 69
7	Mills.....	376 90	53 85	53 85	269 20
9	Chicog.....	400 00	100 00	100 00	200 00
3	Casey.....	185 00	37 60	37 00	111 00
1	Spooner.....	425 00	85 00	85 00	255 00
11	Brooklyn.....	400 00	40 00	40 00	320 00
5	Spooner.....	250 00	50 00	50 00	150 00
Jt. 2	Chicog and Casey.....	300 00	75 00	75 00	150 00
11	Spooner.....	500 00	100 00	100 00	300 00
Jt. 14	Brooklyn and Chicog.....	350 00	50 00	50 00	250 00
3	Minong	160 00	80 00	80 00	Paid in full
10	Spooner.....	500 00	100 00	100 00	300 00
13	Chicog.....	450 00	50 00	50 00	350 00
1	Gull Lake.....	560 00	80 00	80 00	400 00
7	Bashaw.....	420 00	60 00	60 00	300 00
6	Minong	420 00	60 00	60 00	300 00
8	Bashaw.....	480 00	40 00	40 00	400 00
2	Baronette.....	180 00	60 00	60 00	60 00
4	Rashaw.....	550 00	50 00	50 00	450 00
2	Trego.....	466 67	33 33	33 33	400 01
1	Minong	2,240 00	160 00	160 00	1,920 00
3	Spring Bro k.....	1,000 00	100 00	100 00	800 00
4	Spring Brook.....	1,300 00	86 00	86 00	1,128 00
6	Stinnett.....	900 00	90 00	90 00	720 00
Jt. 1	Spooner, town & village..	3,000 00	300 00	300 00	2,400 00
7	Minong.....	400 00	100 00	100 00	200 00
2	Bashaw.....	.....	100 00	100 00	200 00
8	Minong.....	.....	.....	82 50	742 50
Jt. 4	Spring Brook.....	.....	.....	.....	750 00
Jt. 4	Sarona, Langlade, Bear Lake and Oak Grove, (Barron County).....	.....	.....	73 34	1,006 66

Loans to School Districts.

EXHIBIT "H".

STATEMENT OF LOANS TO SCHOOL DISTRICTS—Continued.

SCHOOL FUND—Continued.

No.	District.	Outstanding June 30, 1908.	Principal paid 1908-1909.	Principal paid 1909-1910.	Outstanding July 1, 1910.
Washington County.					
1	Erin	\$200 00	0		Paid in full
Waukesha County.					
3	Menomonee	2,000 00			\$2,000 00
Waupaca County.					
2	Little Wolf.....	1,144 80	381 60	\$381 60	381 60
Jt. 1	Iola, town and village.....	2,400 00	600 00	600 00	1,200 00
Jt. 2	Mukwa and Lebanon	1,800 00	200 00	200 00	1,400 00
Jt. 7	Farmington.....	200 00	100 00	100 00	Paid in full
Jt. 7	Scandinavia and St. Lawrence.....	280 00	140 00	140 00	Paid in full
Jt. 1	Royalton, Little Wolf and Mukwa.....	2,500 00	500 00	500 00	1,500 00
Jt. 1	Royalton, Little Wolf and Wukwa.....	600 00	109 00	100 00	400 09
Jt. 2	Little Wolf and village of Manawa.....	5,000 00			5,000 00
2	Harrison.....	400 00	100 00	100 00	200 00
Jt. 2	Little Wolf and village of Manawa.....	1,993 34	153 33	153 33	1,686 68
Jt. 2	Matteson and village Embarrass.....	6,500 00	500 00	500 00	5,500 00
1	Dayton.....	1,750 00	250 00	250 00	1,250 00
3	Little Wolf.....	1,000 00	100 00	100 00	800 00
6	Wyoming.....				700 00
Jt. 9	Waupaca and Lind.....			150 00	1,350 00
Jt.12	Lind, Dayton and Saxeville, Waushara Co.....				1,600 00
2	Waupaca.....				1,500 00
Waushara County.					
Jt. 9	Plainfield, town and village, and Oasis.....	3,200 00	800 00	800 00	1,600 00
Jt. 9	Plainfield, town and village, and Oasis.....	2,800 00			2,800 00
Jt. 1	Wautoma, town and village, and Dakota.....	3,200 00	800 00	800 00	1,600 00
Jt. 2	Rose and Springwater.....	3,600 00	400 00	400 00	2,800 00
Jt. 1	Wautoma, town and village, and Dakota.....	3,000 00			3,000 00
Jt. 2	Mt. Morris and Marion.....	350 00	50 00	50 00	250 00
7	Marion.....	100 00	100 00		Paid in full
1	Warren.....	800 02	66 66	66 66	666 70
3	Plainfield.....	680 00	340 00	340 00	Paid in full
Jt. 6	Wautoma and Deerfield... ..	300 00	100 00	100 00	100 00
Jt. 7	Deerfield and Richford....	600 00	200 00	200 00	200 00
3	Marion.....	1,300 00	100 00	100 00	1,100 00
Jt.11	Hancock and Deerfield.....	900 00	100 00	100 00	700 00
Jt. 9	Hancock, town and village.....	11,200 00	800 00	800 00	9,600 00
2	Coloma.....	8,400 00	560 00	560 00	7,280 00
Jt. 2	Springwater and Mt. Morris.....			100 00	400 00
Jt. 2	Rose, Springwater, Wautoma, and village of Wild Rose.....				5,250 00

Loans to School Districts.

EXHIBIT "H".

STATEMENT OF LOANS TO SCHOOL DISTRICTS—Continued.

SCHOOL FUND—Continued.

No.	District.	Outstanding June 30, 1908	Principal paid 1908-1909.	Principal paid 1909-1910.	Outstanding July 1, 1910.
Winnebago County,					
Jt. 2	Winneconne town and vil- lage.....	2,400 00	600 00	600 00	1,200 00
Jt. 2	Winneconne town and vil- lage.....	400 00	100 00	100 00	200 00
6	Oshkosh.....	627 25	104 54	104 54	418 17
Jt. 5	Omro and village.....				7,000 00
Wood County.					
1	Grand Rapids.....	100 00	100 00		Paid in full
Jt. 5	Auburndale and Arpin.....	30 00	30 00		Paid in full
5	Hiles.....	200 00	50 00	50 00	100 00
Jt. 1	Wood and city Pittsville..	300 00	100 00	100 00	100 00
4	Dexter.....	340 00	85 00	85 00	170 00
4	Rock.....	100 00	100 00		Paid in full
3	Cary.....	150 00	50 00	50 00	50 00
6	Rock.....	300 00	50 00	50 00	200 00
6	Hansen.....	200 10	100 00	100 00	Paid in full
1	Sherry.....	440 00	40 00	40 00	360 00
7	Milladore.....	450 00	50 00	50 00	350 00
7	Remington.....	420 00	60 00	60 00	300 00
Jt. 2	Dexter and Remington....	150 00	50 00	50 00	50 00
2	Dexter.....	300 00	100 00	100 00	100 00
4	Hiles.....	550 00	50 00	50 00	450 00
2	Hansen.....	200 00	100 00	100 00	Paid in full
6	Arpin.....	700 00	100 00	100 00	500 00
3	Sherry.....	199 99	16 67	16 67	166 65
2	Saratoga.....	300 00	50 00	50 00	200 00
Jt. 1	Wood, Dexter & city Pitts- ville.....	1,200 00	150 00	150 00	900 00
1	Hansen.....	1,575 00	225 00	225 00	1,125 00
Jt. 2	Milladore, Sherry, Eau Pleine and Carson (Port- age County).....	5,413 33	383 67	383 67	4,639 99
Jt. 4	Seneca, Hansen and Cran- moor.....	600 00	150 00	150 00	300 00
Jt. 1	Port Edward & Cranmoor.	700 00	100 00	100 00	500 00
Jt. 2	Arpin and Hansen.....	1,000 00	100 00	100 00	800 00
4	Port Edwards.....	700 00	70 00	70 00	560 00
1	Hansen.....				500 00

Loans to School Districts.

EXHIBIT "H"

STATEMENT OF LOANS TO SCHOOL DISTRICTS—Continued.
UNIVERSITY FUND

No.	District.	Outstanding July 1, 1908.	Principal paid, 1908-09.	Principal paid, 1909-10.	Outstanding July 1, 1910.
	Buffalo County.				
Jl. 1	Mondovi city and town, Naples and Albany Pe- pin county.....	\$8,000 02	\$666 66	\$666 66	\$8,636 67
	Burnett County.				
Jt. 5	Daniels and Woodriver....				1,200 00
	Door County.				
1	Washington.....	825 00	75 00	75 00	675 00
	Langlade County.				
5	Norwood.....	100 00	50 00	50 00	Paid in full
	Wood County.				
1	Richfield.....	200 00	100 00	100 00	Paid in full

Loans to School Districts.

"EXHIBIT H".

STATEMENT OF LOANS TO SCHOOL DISTRICTS—Continued.

NORMAL SCHOOL FUND-- Continued.

No.	District.	Outstanding July 1, 1908.	Principal paid 1908-1909.	Principal paid 1909-1910.	Outstanding July 1, 1910.
	Adams County				
4	Eaton	\$490 00	\$70 00	\$70 00	\$350 00
	Barron County.				
8	Chetek.....	520 00	260 00	260 00	Paid in full
Jt. 1	Stanard, and village				
	Cameron.....	4,800 00	400 00	400 00	4,000 00
Jt. 3	Barron, Maple Grove and Stanley.....	600 00	100 00	100 00	400 00
	Buffalo County.				
Jt. 1	Modena and Gilmantown.	333 34	333 34	.....	Paid in full
	Brown County.				
1	Pittsfield .....	.....	.....	.....	2,000 00
	Burnett County.				
5	Jackson	700 00	100 00	100 00	500 00
	Calumet County.				
Jt. 1	Chilton, city and town....	6,400 01	533 33	533 33	4,933 35
	Chippewa County.				
7	Village of Cadott.....	2,100 00	300 00	300 00	1,500 00
Jt. 11	Auburn, town and village and Dore (Barron Co.)...	3,900 00	300 00	300 00	3,300 00
	Clark County.				
5	Washburn.....	400 00	50 00	50 00	300 00
Jt. 2	Hixon and village Withee	.....	.....	.....	1,500 00
Jt. 1	Colby City, Colby, Hull, Clark and Marathon....	.....	.....	.....	12,000 00
	Crawford County.				
	Seneca High School.....	2,100 00	300 00	300 00	1,500 00
	Dane County.				
Jt. 7	Springdale, Blue Mounds and village Mt. Horeb....	700 00	100 00	100 00	500 00
Jt. 3	Stoughton, town and city and Dunkirk.....	18,000 00	2,000 00	2,000 00	14,000 00
2	Burke.....	.....	.....	.....	2,000 00
	Dodge County.				
Jt. 2	Hubbard, Oak Grove and city of Horicon.....	16,466 68	1,266 66	1,266 66	13,933 36
Jt. 3	Theresa town and village.	7,800 00	600 00	600 00	6,600 00
	Door County.				
Jt. 1	Sturgeon Bay & Sevastopoi	800 02	66 66	66 66	666 70
7	Liberty Grove.....	.....	.....	.....	2,500 00

Loans to School Districts.

EXHIBIT "H".

STATEMENT OF LOANS TO SCHOOL DISTRICTS—Continued.

NORMAL SCHOOL FUND—Continued.

No.	Districts.	Outstanding July 1, 1908.	Principal Paid 1908-1909.	Principal Paid 1909-1910.	Outstanding July 1, 1910.
Dunn County.					
2	Stanton.....	\$300 00	\$100 00	\$100 00	100 00
2	Colfax.....				800 00
Jt. 6	New Haven and Tiffany Forest Glenwood (St. Croix County).....				1,200 00
Eau Claire County.					
Jt. 3	Seymour and Lafayette (Chippewa County).....	600 00	200 00	200 00	200 00
Grant County.					
Jt. 4	Platteville city and town.	12,000 00	1,000 00	1,000 00	10,000 00
3	Mt. Ida.....	720 00	90 00	90 00	540 00
Jt. 4	Platteville city and town.	6,500 00	500 00	500 00	5,500 00
Jt. 9	Wyalusing & Bloomington				2,100 00
Jt. 1	Cassville town and village				18,000 00
Green Lake County.					
Jt. 3	Mackford and village Markesan	14,000 00	1,000 00	1,000 00	12,000 00
Jackson County.					
11	Melrose.....	1,050 00	150 00	150 00	750 00
Jt. 5	Alma & village Merrillan.	1,750 00	250 00	250 00	1,250 00
Jefferson County.					
Jt. 7	Jefferson and Farmington	500 00	500 00		Paid in full
Kewaunee County.					
Jt. 1	City of Algoma and Ahnapee.	10,400 00	800 00	800 00	8,800 00
La Crosse County.					
Jt. 3	Holland and Onalaska....	2,000 02	166 66	166 66	1,666 70
Langlade County.					
5	Neva.	600 00	100 00	100 00	400 00
3	Ackley.....				2,000 00
Marathon County.					
6	McMillan.....	108 34	108 34		Paid in full
Jt. 1	Brighton Unity & village of Unity (Clark County)				12,000 00
Marinette County.					
1	Athelstane.....	500 00	50 00	50 00	400 00
Milwaukee County.					
1	City of West Allis.....	3,850 00	550 00	550 00	2,750 00
7	Wauwatosa.....	1,500 00	500 00	500 00	500 00
5	Lake.....	5,200 00	400 00	400 00	4,400 00
8	Wauwatosa.....				25,000 00

Loans to School Districts.

EXHIBIT "H".

STATEMENT OF LOANS TO SCHOOL DISTRICTS—Continued.

NORMAL SCHOOL FUND—Continued.

No.	Districts.	Outstanding July 1, 1908.	Principal paid 1908-1909.	Principal paid 1909-1910.	Outstanding July 1, 1920.
Monroe County.					
8	Lincoln.....	\$693 34	\$53 33	\$53 33	\$426 68
4	New Lyme.....				600 00
Outagamie County					
1	City of Appleton.....	23,333 33	1,666 67	1,666 66	20,000 00
Ozaukee County					
Jt. 1	Grafton, town and village	8,666 68	666 66	666 66	7,333 36
Polk County.					
Jt. 3	West Sweden and village of Frederic.....	950 00	100 00	100 00	750 00
2	Balsam Lake.....	2,680 00	268 00	2,412 00	Paid in full
3	Clam Fall.....	600 00	50 00	50 00	
5	Luck.....				
Portage County.					
2	Alban.....	1,050 00	150 00	150 00	750 00
10	Carson.....	420 00	40 00	40 00	340 00
Price County.					
4	Lake.....	420 00	140 00	140 00	140 00
Jt. 3	Kennan, Georgetown and village of Kennan.....				1,000 00
Richland County.					
4	Orion.....	800 00	100 00	100 00	600 00
Jt. 1	Bloom and Forest.....				2,000 00
Rock County.					
5	Milton.....	8,166 70	733 33	733 33	6,600 04
St. Croix County					
4	Glenwood.....	857 14	71 43	71 43	714 28
3	Somerset.....				3,000 00
2	Ceylon.....				800 00
Sauk County.					
Jt. 5	Merrimac, town and vil- lage, and West Point (Co- lumbia Co.).....	2,800 00	400 00	400 00	2,000 00
Sheboygan County.					
2	Sheboygan.....	1,260 00	180 00	180 00	900 00
St. 3	Rhine and Schleswig (She- boygan and Manitowoc county).....				1,500 00
Taylor County.					
8	Maplehurst.....	420 00	60 00	60 00	300 00
5	Aurora.....				1,600 00

Loans to School Districts.

EXHIBIT "H"

STATEMENT OF LOANS TO SCHOOL DISTRICTS—Continued.

NORMAL SCHOOL FUND—Continued.

No.	District.	Outstanding July 1, 1908.	Principal paid, 1908-09.	Principal paid, 1909-10.	Outstanding July 1, 1910.
	Trempealeau County.				
3	Ettrick.....	\$600 00	\$100 00	\$100 00	\$400 00
	Walworth County.				
Jt. 1	Geneva, Linn, Lyons and city Lake Geneva.....	24,000 00	3,000 00	3,000 00	18,000 00
	Washburn County.				
Jt. 1	Spooner, town and village	12,000 00	1,000 00	1,000 00	10,000 00
6	Long Lake.....	300 00	100 00	100 00	100 00
4	Stinette.....	560 00	70 00	70 00	420 00
	Waupaca County.				
Jt. 3	Dupont and village of Marion and Grant, (Sha- wano county).....	7,125 02	791 66	791 67	5,541 99
1	Mattison.....				2,000 00
	Waushara County.				
1	Warren.....	3,200 02	266 66	266 66	2,666 70

Productive Trust Funds.

PRODUCTION TRUST FUND.

The following statements show the amount of the trust funds, outstanding and productive, June 30, 1909, and June 30, 1910.

SCHOOL FUND

Invested in.	Outstanding June 30, 1909.	Outstanding June 30, 1910.
State Certificates of indebtedness.....	1,563,700 00	1,563,700 00
Dues on Land sale certificates.....	7,985 54	6,506 13
School District Loans.....	1,457,435 30	1,461,819 17
Loans to Individuals.....	1,260 74	1,260 74
Racine City Loans.....	297 80	297 80
Bonds of Ashland county.....	20,000 00	20,000 00
Bonds of Bayfield county.....	24,000 00	14,000 00
Bonds of Durand city.....	20,200 00	19,400 00
Bonds of Wauwatosa city.....	11,000 00	10,000 00
Bonds of Grand Rapids city.....	53,000 00	52,000 00
Bonds of Ashland city.....	25,000 00	25,000 00
Bonds of Chilton city.....	7,600 00	7,600 00
Bonds of Columbus city.....	25,000 00	25,000 00
Bonds of Elroy city.....	7,000 00	7,000 00
Bonds of Eau Claire city.....	30,000 00	30,000 00
Bonds of Milwaukee city (school).....	30,000 00	20,000 00
Bonds of Superior city.....	272,000 00	272,000 00
Bonds of Boscobel city.....	5,000 00	4,500 00
Bonds of Tomahawk (city hall).....	4,800 00	4,000 00
Bonds of Oconomowoc city.....	9,500 00	9,500 00
Bonds of West Bend city.....	6,000 00	6,000 00
Bonds of Mondovi city.....	14,600 00	14,000 00
Bonds of Berlin city.....	.....	20,000 00
Bonds of Westby village.....	1,200 00	5,400 00
Bonds of Highland Village.....	1,200 00	800 00
Bonds of Chilton town.....	17,400 00	17,400 00
Bonds of Coon town.....	.....	9,000 00
Loan to Brown County.....	8,700 00	4,350 00
Loan to Chippewa county.....	12,631 52	10,105 20
Loan to Oneida county.....	2,000 00	.....
Loan to Trempealeau county.....	34,000 00	29,000 00
Loan to Richland county.....	13,333 35	12,000 02
Loan to Ashland county.....	21,333 31	18,666 64
Loan to Grant county.....	13,169 00	10,535 20
Loan to Rusk county.....	.....	10,000 00
Loan to Menasha city.....	4,000 00	3,000 00
Loan to Oconto city.....	28,750 00	24,500 00
Loan to Madison city, Board of Education.....	6,000 00	.....
Loan to Mineral Point city.....	24,000 00	23,000 00
Loan to Madison city.....	25,000 00	55,000 00
Loan to Whitewater city.....	2,850 00	2,700 00
Loan to Sturgeon Bay city.....	15,000 00	15,000 00
Loan to Black River Falls city.....	.....	12,000 00
Loan to Viola village.....	9,000 00	9,000 00
Loan to Loyal village.....	17,000 00	16,105 27
Loan to De Forest village.....	10,000 00	10,000 00
Loan to Blanchardville village.....	7,000 00	7,000 00
Loan to Florence town, board school directors.....	700 00	.....
Loan to Sugar Camp and Pine Lake towns.....	240 00	80 00
Loan to Superior town.....	18,000 00	16,200 00
Loan to Morse town, board school directors.....	5,333 35	4,800 02
Loan to Arena town.....	.....	7,000 00
	\$3,893,199 91	\$3,926,226 19

Productive Trust Funds.

UNIVERSITY FUND.

Invested in.	1909	1910
State Certificates of Indebtednes.....	111,000 00	111,000 00
Due on Land certificates of sale.....	1,192 00	911 00
School District Loans.....	8,233 36	8,541 70
Bonds of Greenwood city.....	2,000 00	2,000 00
Bonds of Deperre city.....	8,000 00	6,000 00
Loan to Antigo city.....	1,500 00	.....
Loan to Sturgeon Bay city.....	6,000 00	5,400 00
Loan to Rhinelander city.....	900 00	300 00
Loan to Madison city Board of Education.....	2,200 00	1,100 00
Loan to New London city.....	10,000 00	10,000 00
Loan to Rice Lake city.....	3,500 00	3,000 00
Loan to Eau Claire city, Board of Education.....	8,666 68	8,000 02
Loan to Whitewater city.....	10,260 00	9,720 00
Loan to Jefferson city, Board of Education.....	5,000 00	3,350 00
Loan to Thorp village.....	1,750 00	1,125 00
Loan to Prairie Farm village.....	1,366 25	1,045 00
Loan to Wonewoc village.....	1,590 92	1,272 74
Loan to Benton village.....	2,250 00	2,100 00
Loan to Argyle village.....	12,000 00	11,000 00
Loan to Mt. Horeb village.....	8,000 00	8,000 00
Loan to Shell Lake village.....	.....	2,500 00
Loan to Cambridge village.....	.....	4,000 00
Loan to Cashton village.....	.....	3,000 00
Loan to Brule town, Board of Scho I Directors.....	240 00	3,620 00
Loan to Hixon town.....	250 00	.....
Loan to Thorp town.....	420 00	210 00
Loan to Green Valley town.....	700 00	350 00
Loan to Elcho town, Board of School Directors.....	500 00	250 00
Loan to Saxon town.....	250 00	.....
Loan to Grant town, Board of School Directors.....	480 00	320 00
Loan to Springbrook town.....	850 00	800 00
Loan to Laona town.....	3,000 00	2,500 00
Loan to Lake town, Board of School Directors.....	1,400 00	1,200 00
Loan to Hiles town, Board of School Directors.....	4,800 00	4,200 00
Loan to Enterprise town.....	3,000 00	2,000 00
Loan to Casey town.....	1,000 00	500 00
Loan to Sugar Camp town Board of School Directors.....	1,200 00	1,140 00
Loan to Solon Springs town.....	.....	1,000 00
Loan to West Marshland town.....	.....	800 00
Loan to Oulu town.....	.....	2,000 00
Loan to Arena town.....	.....	3,000 00
Loan to Chetek town.....	.....	5,000 00
	223,439 21	232,255 46

Productive Trust Funds.

AGRICULTURAL COLLEGE FUND.

Invested in,	1909.	1910.
State Certificates of indebtedness	\$80,600 00	\$80,600 00
Due on land sale certificates	6,747 00	5,990 00
Bond of Westby village	1,500 00	1,000 00
Bond of Winneconne village	5,400 00	4,800 00
Loan to Iron county	4,000 00	3,000 00
Loan to Barron county	6,000 00	3,000 00
Loan to Kewaunee county	20,000 00	18,000 00
Loan to Jefferson county	20,000 00	19,000 00
Loan to New London city, board of education	7,000 00	6,000 00
Loan to Wausau city	25,000 00	22,500 00
Loan to Sturgeon Bay city	3,000 00	1,500 00
Loan to Chetek city	4,500 00	4,200 00
Loan to Menomonee city	3,000 00	.....
Loan to Greenwood city	14,000 00	13,000 00
Loan to Neillsville city	1,599 96	1,466 63
Loan to Elkhorn city	20,571 44	18,857 16
Loan to Elkhorn city, board of education	11,000 00	10,000 00
Loan to Whitewater city	15,390 00	14,580 00
Loan to Madison city .....	.....	30,000 00
Loan to New Glarus village	7,000 00	6,000 00
Loan to Westby village	2,000 00	2,000 00
Loan to Goyal village .....	.....	4,500 00
Loan to Bayfield town	1,000 00	500 00
Loan to Oconto Falls town	1,400 00	1,200 00
Loan to Crandon, Nashville and city of Crandon	21,500 00	19,500 00
Loan to Peck town	500 00	300 00
Loan to Manitowoc town	750 00	500 00
Loan to Saxon, town Board of School Directors	250 00	.....
Loan to Hackley town	2,500 00	2,000 00
Loan to Wyoming town	2,000 00	1,500 00
Loan to Anderson town Board of School Directors	1,000 00	500 00
Loan to Crandon town	4,000 00	3,500 00
Loan to Wabeno, town Board of School Directors .....	.....	15,000 00
Loan to Day town .....	.....	1,700 00
Loan to Roosevelt town .....	.....	6,000 00
Loan to Grow town .....	.....	800 00
Total	\$273,208 40	\$302,993 79

Productive Trust Funds.

NORMAL SCHOOL FUND.

	1909	1910
State Certificate of Indebtedness.....	515,700 00	515,700 00
Due on Land Sale Certificates.....	677 00	575 00
School District Loans.....	202,825 91	275,582 86
Individual Loans.....	1,150 00	1,150 00
Bonds of Ashland county.....	25,000 00	25,000 00
Bonds of La Crosse county.....	85,000 00	85,000 00
Bonds of Berlin city.....	13,000 00	12,000 00
Bonds of Shawano city.....	10,000 00	9,000 00
Bonds of Stoughton city.....	34,000 00	30,750 00
Bonds of Ashland city.....	22,000 00	22,000 00
Bonds of Antigo city.....	14,000 00	12,200 00
Bonds of Beaver Dam city.....	1,000 00	.....
Bonds of Hudson city.....	20,000 00	20,000 00
Bonds of La Crosse.....	10,000 00	10,000 00
Behds of Merrill city.....	35,000 00	30,000 00
Bonds of Columbus (city hall).....	2.0 0 00	1,000 00
Bonds of Clinton city.....	5,500 00	5,500 00
Bonds of Mauston city.....	10,000 00	10,000 00
Bonds of Cambridge village.....	4,000 00	.....
Bonds of Cameron village.....	1,800 00	1,500 00
Bonds of Glenwood town.....	3,000 00	2,000 00
Loan to Door county.....	30,000 00	27,000 00
Loan to Chippewa county.....	4,473 68	3,578 94
Loan to Washburn county.....	30,000 00	27,750 00
Loan to Eau Claire county.....	84,916 72	78,500 06
Loan to Grant county.....	32,000 00	24,000 00
Loan to Waupaca county.....	41,500 00	37,350 00
Loan to Shawano county.....	6,000 00	5,000 00
Loan to Marinette county.....	17,000 00	16,000 00
Loan to Dane county.....	20,000 00	15,000 00
Loan to Richland county.....	20,000 60	29,000 00
Loan to Vernon county.....	.....	16,000 00
Loan to Madison city, board of education.....	12,000 00	9,000 00
Loan to Fond du Lac city.....	7,000 00	6,000 00
Loan to Menomonie city.....	55,000 00	55,000 00
Loan to New London city.....	2,000 00	1,000 00
Loan to Prairie du Chien city.....	6,000 00	5,000 00
Loan to Light Horse Squadron, (to be paid by city of Milwaukee).....	30,000 00	30,000 00
Loan to Kewaunee city.....	1,900 00	.....
Loan to Portage city.....	3,000 00	4,500 00
Loan to Crandon city.....	5,000 00	4,000 00
Loan to Sturgeon Bay city.....	40,000 00	40,000 00
Loan to Wausau city.....	13,200 00	12,100 00
Loan to Barron city.....	7,733 31	6,786 64
Loan to Colby city.....	8,400 00	7,800 00
Loan to Black River Falls city.....	21,000 00	21,500 00
Loan to Eau Claire city.....	21,000 00	19,500 00
Loan to Grand Rapids city Board of Education.....	55,000 00	55,000 00
Loan to Madison city.....	45,000 00	42,500 00
Loan to Marinette city.....	10,000 00	9,000 00
Loan to Madison city Board of Education.....	35,000 00	35,000 00
Loan to Waupaca city.....	11,000 00	10,000 00
Loan to Elroy city.....	9,000 00	8,500 00
Loan to Cumberland city.....	25,000 00	.....
Loan to Mondovi city.....	3,100 00	23,611 11
Loan to Stanley city Board of Education.....	18,000 00	2,583 33
Loan to New Richmond city.....	.....	18,000 00
Loan to Grand Rapids city Board of Education.....	.....	6,000 00
Loan to Whitefish Bay village.....	.....	10,000 00
Loan to Galesville village.....	900 00	600 00
Loan to Amery village.....	2,000 00	2,000 00
Loan to Thorp village.....	600 00	300 00
Loan to Hazel Green village.....	4,000 00	4,000 00
Loan to Wonewoc village.....	4,500 00	4,200 00
Loan to Blanchardville village.....	4,166 67	3,333 34
Loan to Birnamwood village.....	5,200 00	4,350 00
Loan to LaFarge village.....	7,000 00	6,500 00
Loan to Alma Center village.....	15,000 00	15,000 00
Loan to Argyle village.....	9,000 00	8,500 00
Loan to Iola village.....	3,440 00	3,440 00
	1,885 71	1,571 42

Productive Trust Funds.

NORMAL SCHOOL FUND—Continued.

	1909.	1910.
Loan to Bloomer village.....	14,000 00	13,600 00
Loan to Cashton village.....	15,000 00	14,250 00
Loan to Finley town.....	600 00	500 00
Loan to Richmond and Wescott towns.....	1,750 00	1,500 00
Loan to West Kewaunee town.....	1,000 00	.....
Loan to Brule town Board School Directors.....	2,666 66	2,333 33
Loan to Cary town.....	1,200 00	600 00
Loan to Iron River and Hughes towns.....	600 00	400 00
Loan to Flambeau town Board of School Directors.....	2,000 00	1,000 00
Loan to Jacobs town.....	4,000 00	3,000 00
Loan to Wausaukee town Board School Directors.....	2,000 00	1,000 00
Loan to Hiles town.....	3,000 00	3,000 00
Loan to Arpin town.....	8,000 00	8,000 00
Loan to Newbold town.....	1,200 00	1,000 00
Loan to Menomonie town.....	1,000 00	.....
Loan to Waubeno town Board School Directors.....	14,000 00	11,750 00
Loan to Shell Lake and village Shell Lake.....	8,500 00	8,000 00
Loan to Eaton town.....	250 00	.....
Loan to Washington town.....	6,000 00	5,500 00
Loan to Bayfield town Board School Directors.....	4,800 00	4,200 00
Loan to Elcho town Board School Directors.....	500 00	250 00
Loan to Three Lakes and Piehl.....	2,500 00	2,000 00
Loan to Navarino town.....	1,350 00	1,200 00
Loan to State Line town Board School Directors.....	1,000 00	500 00
Loan to Solon Springs town Board School Directors.....	2,700 00	2,400 00
Loan to Emerson town.....	1,080 00	960 00
Loan to Marshall town Board School Directors.....	4,500 00	4,000 00
Loan to Monico town Board School Directors.....	3,500 00	3,150 00
Loan to Bayfield town.....	8,000 00	7,500 00
Loan to Mondovi town.....	4,700 00	4,177 78
Loan to Hixon town.....	.....	5,000 00
Loan to Bergen town.....	.....	2,400 00
	1,927,965 66	1,956,863 81

PROCEEDINGS

OF THE

EIGHTH ANNUAL CONVENTION

OF THE

Association of Trustees and Superintendents of County Asylums for the Insane

OF WISCONSIN

Public printing authorized by section 335c of the Statutes.



MADISON, WIS.

DEMOCRAT PRINTING COMPANY, STATE PRINTER

1910

OFFICERS, 1909.

President, J. E. COFFLAND, Richland Center, Wis.
Vice President, A. J. WHIFFEN, Sheboygan, Wis.
Secretary, F. M. SMITH, Osseo, Wis.
Treasurer, GEO. H. SEELEY, Menomonie, Wis.

STANDING COMMITTEES.

FINANCE COMMITTEE.

Anton Mehl, Wausau, Wis.
C. E. Langworthy, Edgerton, Wis.
Andrew Reis, Green Bay, Wis.

PROGRAM COMMITTEE.

Mrs. D. M. Barlass, Janesville, Wis.
Mrs. E. J. Perkins, Dodgeville, Wis.
Andrew Reis, Green Bay, Wis.
F. M. Smith, Osseo, Wis.
A. J. Whiffen, Sheboygan, Wis.

ON CARE OF TUBERCULOUS PATIENTS.

L. P. Edwin, Verona, Wis.
E. J. Perkins, Dodgeville, Wis.
Jos. Roehl, Wausau, Wis.

ON WAGES AND SALARIES.

T. D. Wheeler, Appleton, Wis.
G. R. Downer, Green Bay, Wis.
C. M. Hayward, Weyauwega, Wis.

EIGHTH ANNUAL CONVENTION

OF THE

Association of Trustees and Superintendents of County Asylums for Insane in Wisconsin

Held at Madison, Wis., 15-17, 1909.

TUESDAY.

June 15, 8:00 P. M.

Music.

Meeting called to order by President J. E. Coffland.

Address of Welcome by Hon. J. E. Schubert, Mayor, Madison.

Response by Pres. J. E. Coffland.

Paper—The Work of Our Association—Pres. J. E. Coffland.

Music.

Address—Hon. A. H. Dahl, State Treasurer.

Paper—The Ideal Bill of Fare for Inmates of County Asylums—

Mrs. Nellie Gullickson, Matron, La Crosse County Asylum.

Address—Politics and Eleemosynary Institutions—Fred Wilkins, Supt. Vernon County Asylum.

WEDNESDAY.

MORNING SESSION.

Appointment of Finance Committee.

Paper—The Relation of the County Board and the County Asylum.—Hon. O. A. Buslett, Trustee Waupaca County Asylum.

Discussion.

4 *Trustees and Superintendents of County Asylums.*

Paper—Kindness and Patience, the Ruling Spirits in our Institutions.—L. P. Edwin, Supt. Dane County Asylum.

Paper—Little Things about our Work.—Henry Wernecke, Trustee, Manitowoc County Asylum.

Discussion.

AFTERNOON SESSION.

Address—Agricultural Extension Work—Dr. H. L. Russell, Dean College of Agriculture, University of Wisconsin.

Paper—Horticulture on the Asylum Farm—Wm. Roblee, Appleton, Wis.

Address—Farm Management—C. P. Norgord, Professor of Agronomy, College of Agriculture, University of Wisconsin.

Visit to Agricultural Buildings and Farm.

EVENING SESSION.

Paper—Classification and Segregation of the Insane.—C. Christensen, Supt. Sauk County Asylum.

Paper—The Care of Tuberculous Insane in County Institutions.—Dr. J. W. Coon, Supt. Sanatorium, Wales.

Discussion.

Paper—How Shall we Employ and Entertain our Patients.—Joseph Roehl, Supt. Marathon County Asylum.

Address, Illustrated—Home Care for the Insane.—Miss Julia C. Lathrop, Member Illinois State Board of Charities.

THURSDAY.

MORNING SESSION.

Business Session.

Committee appointed to investigate with reference to the proper care of Tuberculous Insane in County Asylums and report its findings to the next annual convention.

Committee on Program appointed.

Committee to investigate the question of salaries and wages in County Asylums and in conjunction with the State Board of Control make recommendation at the next annual convention of the association.

Report of Treasurer adopted.

Election of Officers.

Green Bay selected as the place of the next annual convention.

Paper—Paroles—How and When they should be granted—E.

J. Perkins, Supt. Iowa County Asylum.

Paper—Our Sympathy with the Insane—Geo. W. Mayhew, Trustee Milwaukee County Asylum, Milwaukee, Wisconsin.

AFTERNOON SESSION.

Launch ride to the Wisconsin State Hospital, Mendota, Wis.

Address—Industrial Re-education of the Insane—Dr. Almah J.

Frisby, Member Wisconsin State Board of Control.

Paper—Practical Employment for the Insane—P. H. Johnson, Supt. Trempealeau Co. Asylum.

Visit and Inspection of Wisconsin state hospital buildings, farm and work done by inmates.

EVENING SESSION.

Paper—County Asylum Employees. How shall we secure and keep the best—T. D. Wheeler, Supt. St. Croix Co. Asylum.

Resolution—Vote of thanks tendered to all who had helped to make the convention in Madison a success.

Meeting adjourned.

PROCEEDINGS

OF THE

EIGHTH ANNUAL MEETING OF THE TRUSTEES AND SUPERINTENDENTS OF COUNTY ASYLUMS OF WISCONSIN.

Held at Madison, Wis., June 15, 16 and 17th, 1909.

Tuesday Evening, June 15, convention called to order by Hon.
J. E. Coffland, of Richland Center, President of the Association.

ADDRESS OF WELCOME.

By J. C. SCHUBERT, Mayor of Madison.

Mr. Chairman, ladies and gentlemen: As mayor of this beautiful city it gives me a great deal of pleasure and I consider it quite an honor to welcome you in behalf of the state and the citizens of Madison. You have come here, of course, primarily to consider such matters as may properly come before this convention, but after all, there are more than the mere duties of the convention. You expect to have some vacation and a change from the work which you have to perform each day. I feel as though you ought to have a vacation and in fact more of a vacation than is provided for in a convention of this kind. I wish

that you could take time to stay with us long enough to be able to see all of Madison and to enjoy the beauties of the city.

We have always felt that Madison ought to do more than the average city throughout the state, because it is not only the city of Madison, but it is really the home of the state, when you consider that the state is maintaining institutions here for which the appropriation runs into millions—the University and State Capitol here. I never inquired or took pains to see just how much they spent around here; perhaps Mr. Tappins, or the State Treasurer, who is back there, could give you an idea. I know that the city of Madison spends a good deal of money each year to beautify its city. When I say Madison spends a good deal of money to beautify the city, that is in addition to what the ordinary city requires for its running expenses, but Madison believes that it should keep up with the state in making Madison a beautiful place, and in consequence of that, we have built a good many miles of drive, something like thirty miles, and maintain a good many acres of park, about which we feel a good deal like a woman does with a new dress,—that it is no good if we can't show it, and we are always glad to have visitors come to Madison and see just what we are doing.

I suppose there is no other city the size of Madison that maintains a landscape architect, a city builder and park superintendent. For the size of the city, I think that is doing a great deal, and I suppose Madison would not do that if it were not for the good work the city is doing.

I feel that in this program which is arranged for you that you ought to take more time for yourselves for pleasure and recreation; and if you cannot do that, stay a day or two longer after your convention adjourns, because I know you will enjoy yourselves, and I know that Mr. Tappins or Mr. Conover will gladly give you a little extra time after the convention. They haven't said so, but I presume that they would.

I want to thank you for having selected Madison for the place of holding your convention and I trust that the convention will be a thorough success, and that you will not regret having selected Madison.

I wish you God-speed and come again. I thank you.

RESPONSE.

By Hon. J. E. COFFLAND, President.

Mr. Mayor: In extending to you the thanks of this association for the hearty welcome to your city, I feel that I am voicing the unanimous sentiment of those in attendance.

We are all loyal citizens of the great state of Wisconsin, and have an especial pride in the city of Madison, the most beautiful capital city in the west.

An eastern friend of mine, in making a tour of the west a number of years ago, remarked, after visiting your city that "if one arrived there at night and awoke at sunrise, looking over your beautiful lakes and scenery that he would think he was in Paradise." What a high tribute to a city. This, too, was before the days of your drives and parks which so beautify your city of today. One can drive around your most beautiful lakes and be in a park almost the entire distance. To make Madison a more beautiful city it is only necessary to carry to completion the elaborate plan advocated by some members of the legislature, as well as your citizens, of parking the entire grounds lying east of the capitol to Lake Monona. The completion of this would make the most beautiful capitol park in the United States, not even excepting the National grounds at Washington.

The ruler of all things endowed your city with nature's most beautiful surroundings and the handiwork of man is only necessary to carry it to its completion.

Yes, Madison is most beautiful and we can assure you that it is a great pleasure to hold this, our eighth annual convention, in your midst. While here many of us hope to be able to take time to visit many of your different places of interest. None should fail to visit the State Library, second only to the Congressional Library. The University buildings and grounds as well as the Experimental farm and buildings, each of which is acknowledged to be the strongest in the west.

In responding to your welcome I can not refrain from calling the attention of your citizens to the great work that is being carried on by the members of this association.

At this time we are caring for and administering to the wants

of over 4500 insane wards of the state. Eight years ago fifteen county asylum officials conceived the idea that much benefit could be derived by holding annual conventions, thereby imparting to each other the benefits of their experiences.

Today we have as active members the officials of nearly every county asylum in the state. We have the hearty co-operation of the members of the State Board of Control as well as the assistance and advice of the superintendents and matrons of the several state charitable institutions. In addition to these we have the pleasure of the attendance of some of the leading philanthropists of the country who are willing to lend us their aid and counsel in making ours the most perfect system of caring for the chronic insane. We are all working in unison to bring our county asylum system up to the highest standard of management and perfection.

We are *not* satisfied to have our institutions referred to as asylums for the insane but are striving to bring them to a point where each inmate will look upon them as his or her home.

But little encouragement can be given them for recovery; the best we can do is to offer a word of comfort here and there, extend cheerfulness and if possible bring happiness to them so that they may rid themselves of that ever present thought that they have but little to live for. Until we get our institutions next to perfection this association will have work to perform. We will still need to extend advice to each other and advance ideas for the better management, care and comfort of the mentally afflicted wards entrusted to our care.

During our sessions we will have numerous addresses and papers that will have as their keynote the upbuilding of our charitable institutions and I desire to extend through you, as the official head of this city, a cordial invitation to your citizens to attend our meetings. Let them lend their encouragement in this great work.

I again thank you, Mr. Mayor, on behalf of the members of the association for the welcome extended to your city and can assure you that it is a great pleasure to be with you.

POLITICS AND ELEEMOSYNARY INSTITUTIONS.

FREDERICK WILKINS, VIROQUA.

Mr. Wilkins prefaced his address by recalling the fact that originally the supervision of all state and county penal and charitable institutions were in charge of two bodies,—the State Board of Supervision, which directed the financial and business government of state institutions, while the sole or human side and interests of the wards of the state therein was under the control and supervision of the then state board of charities and correction. The benefit of such division of the controlling bodies is obvious. The temperament, qualifications and attributes in each instance being radically different. The one being of the financial expenditures and business side of the institutions, the other of the human interests and care of the wards of the state.

The expert politician and good citizen is not a danger, but to the contrary knowing where politics should enter and legitimately predominate, excluded the consideration or toleration of their influence when not legitimate in either the control or as affecting in the slightest degree the government thereof.—Continuing he said:—

What is to be and must be guarded against and incessantly opposed is the appointment to office of the ward heeler and second or third rate politician. It is unquestionably true that the Governor himself and the State Board of Control are subject to pressure from such sources which do in some instances affect the character, and influence the appointments made, to the injury of the penal and charitable institutions of the state. The Governor and the State Board of Control are not to blame. You, myself, and other voters and citizens of the state are to blame. Publicity is the remedy, coupled with education of citizens on the questions involved and upon which legislation is asked from the legislature by the Board of Control.

Were such an agency provided no such legislative fiasco could occur as in the case of the state penitentiary binder twine affair—at one session voting upwards of \$100,000, since expended on the preliminary provisions for the manufacture of twine, then at the next succeeding session, refuse further appropriation to

utilize and complete the equipment already installed. Just think of the stupidity of it.

In the University Extension department now doing such splendid and affective work in this state, it appears to me the agency exists for the education of our citizens on questions vital to the highest and best interests of the wards of the penal and charitable institutions, and concerning which the Board of Control is asking legislation, and on which, in the absence of such information and education, both legislature and citizen are to be excused for failing to understand and support. Our University does, in its department of political economy, sociology, etc., under the control of men of international renown, such as Professors Ely, Ross and Commons, educate the students on this most important phase of state administration,—the care of the insane, the feeble minded, the criminal, etc. All colleges and schools should supplement this work by elementary instruction therein.

The Civil Service Law passed by the legislature some years ago, I hold to be an absurdity in which little realization of practical needs and possibilities and hard common sense enters. Appoint the State Board of Control by the Supreme Court, subject to removal only under impeachment proceedings for causes assigned. The superintendents of all state institutions will then be appointed only because of fitness and qualifications for the position. They in turn will appoint their subordinates for like reasons, and down to the scrub woman, the tenure of positions of such subordinates will likewise be permanent, because the interests, success and reputation of the Board of Control and superintendents, is absolutely dependent on the experience and effective service of those appointed by them, respectively.

All bodies and officers in control of penal and charitable institutions, as well as state officers, by law or custom and public opinion, held responsible for the success, fault or failure of the trust confided to their keeping, should have full power to appoint and discharge employees for causes, recorded in the official records of the institution or state department, open at any and all times to the governor of the state and the Board of Control.

On this point, in conclusion I would say that it is demonstratively impossible and absurd to attempt to ascertain the qualifications and fitness for positions as attendants for service in hos-

pitals or asylums for insane by written examinations. The attributes necessary, of self control, tact, kindness, power to act in emergency with judgment and promptness, cannot be secured through such examination. Only the knowledge of human nature possessed by those having experience therein can secure a reasonable degree of success in such selection.

WEDNESDAY.

MORNING SESSION.

By vote of the convention the president was authorized to appoint the finance committee. The following committee was appointed:

ANTON MEHL, Wausau, Wis.

C. E. LANGWORTHY, Edgerton, Wis.

ANDREW REIS, Green Bay, Wis.

THE RELATION OF THE COUNTY BOARD AND THE
COUNTY ASYLUM.

HON. O. A. BUSLETT.

Mr. Chairman, Ladies and Gentlemen:

I believe in home rule. Having said this you have the gist of all I am going to say in this paper.

But why do I believe in home rule?

It is the common doctrine that the people are the state, and when we talk about the state the doctrinal man thinks of the people as a whole, but the ordinary man thinks of the state government, thinks of the state as a creation by the people and for the people.

I take the ordinary man's view of the state and look upon it as I do upon a corporation, and to speak you my mind I must say that the people do not rule; the government does the ruling;

for the people can speak only once a year at the town meeting, once in two years they can nominate and elect county and state officials by a ballot that a few of the people have prepared, and these few are the candidates for the offices and the politicians. So this government by the people is really a half and half affair between the people as a state and the state as a creation for the people. Now, where can we find the real governmental powers in this creation: the congress, legislature, county board, and town board?

Congress is bound and hampered by the constitution and so is the legislature, and that to such an extent that our lawyers and courts cannot agree as to what is law and what is not. The nearer I come to the people the more powers do I find; there rests comparatively more real powers with the town board than with any other body in the state. The three members of our town board can do more under the laws of the state without following strictly all rules laid down, than any other branch of our government. Next in line comes our county boards. On this board we find as a rule the best and ablest men in the county, the town chairmen, village and ward supervisors. These men know the needs not only of their own community, but of the whole county by personal knowledge, and are, therefore, the best qualified representative body in the state. I go so far as to say that the county board is better qualified to govern the county than the legislature is to govern the state, and the state should keep hands off from the county affairs, more so than it does, for every community knows better the needs of its own than another community miles off can possibly know. This fact is plainly seen in the legislature when the southern part of the state tries to make laws for the northern part, or vice versa. A law that may be very good for Milwaukee may be very bad for some northern county. For this reason and many other reasons the state should give counties all possible powers to establish home rule, and, furthermore, make it the state policy to come nearer and nearer to the people, which policy would be quite contrary to the policy in vogue now.

The county board is the county legislature, and the state should so consider it.

And from this standpoint, I view the county asylum, which, by the way, should be termed the county hospital. The state

should make no attempt to usurp more powers over these institutions than it now has; the people can be trusted to take care of these hospitals, through the trustees, who are elected by the county board, and depend on it, the county board will not elect the poorest stick in the field for a trustee, nor will the trustees elect any small man for a superintendent for their institution—depend on it; for these trustees stand too near the people and must give an account directly, both to the county board, and to almost every body in the county. This, then, comes nearer being the people's state than any other form of government. It is very well that the State Board of Control, visits our county hospitals once in a while and sees to it that the state's moneys are being well spent, but this board should not undertake to advocate any measure that would take any of the powers of the trustees away from them; for these trustees stand nearer to the county and the inmates of the hospitals than this state board will ever stand, and the trustees must have full powers over the government of their institution, which they would not have if the superintendent should be appointed by the Board of Control. The superintendent would, if so appointed, be a part of the political machine and would not have to consider what the trustees might want or not want.

I say the State Board of Control should have hesitated before they recommended to the legislature any measure tending to take from the trustees the right to elect the asylum superintendent.

I don't think it is right to centralize all powers in the hands of a few men, and then call these few men the people! I know that the reform-idea of the past ten or more years has been running into that ocean of central-power, which, if continued, must end in a kingdom of some kind. If this republic of ours shall not remain a lie, but be in truth a state by and for the people, this centralization-idea must be washed out! Give us home rule!

KINDNESS AND PATIENCE, THE RULING SPIRITS IN OUR INSTITUTIONS.

BY L. P. EDWIN.

"The quality of mercy is not strain'd.
It droppeth as the gentle rain from heaven
Upon the place beneath: it is twice bless'd;
It blesseth him that gives, and him that takes."

If there is anything we ought to be truly thankful for, it is the privilege of living in this age of progress and advanced civilization, and above all, that the American people enjoy the enviable position of carrying the Banner and marching at the head of the procession. No one can appreciate this fact except those who have seen the crude methods and primitive facilities made use of in some of the other countries. The progress that our own state alone has made in the last fifty years in education, agriculture, transportation, and last but not least, the advanced facilities and humane methods in caring for the dependent and unfortunate class of our society, is such, that only those can realize it who have had the privilege of living under former and present conditions.

The tax-payers of the state and of the several counties have been exceedingly generous and liberal in providing good, comfortable homes, equipped with the most modern facilities for the care and comfort of this unfortunate class. But the most important feature, and by far the most essential element necessary to make our charitable institutions as near as possible an ideal home, is yet to be supplied. This can only be accomplished when those in charge honestly and intelligently enforce the Golden Rule of our Master: "To do unto others as you would that others should do unto you," and always to remember that we are our brother's keeper, for some day we must give an account of our stewardship. If our institutions are permeated with this kind of atmosphere from the cellar to the garret, then and only then will our work bear public inspection.

Kindness, what a jewel, who can estimate its value? Like a diamond sparkling in the sunlight it will reflect and illuminate the most bewildered and befogged brain, sending its cheerful rays of light into the sad and lonely heart. Would that each one of us enforce by precept and example strict adherence to this virtue.

In addition to a bountiful supply of good wholesome food for the patients, I would recommend as a special diet for the officers and all the employees the following, to-wit: As a tonic to be taken as soon as you arise in the morning, half a glass of patience, then fill it with faithfulness, and if it is a little bitter to the taste, add the Lord's Prayer. This is the best tonic that I know of to prevent nervousness and indigestion. As a breakfast food I would recommend a Brand known as Gentlemanly and Ladylike conduct, sweetened with sobriety. For dinner, a bountiful supply of patience, seasoned with a dash of no politics. For supper a light meal of patience well seasoned with sympathy and no gossip. And instead of Chloral to cause sleep, I would recommend an ounce of honesty taken with an equal portion of good morals. This, taken regularly will produce a calm and peaceful slumber and a sure preventative against Nightmare. Thus safely sheltered beneath the roof of our modern and up-to-date buildings, breathing the pure and invigorating air of kindness and feasting upon the everlasting supply of patience and sympathy, an institution may become an ideal home of its kind, a credit to those in charge and a blessing to all those who so liberally help to support it.

In conclusion allow me to add a few verses composed simply to guide and direct me in caring for those whom the authorities of the state and county have placed in my charge.

While plodding along the journey of life,
 Strewn with many a pleasure, sorrow and strife,
 Beware and select all the good in sight
 And shun the balance with all your might.

And if you find a brother here and there
 Who weary worn may need your care,
 Then do your sacred duty as man towards man
 And help your brother while you can.

Kind deeds are like the seed you sow,
 When scattered along the path you go
 Will multiply and grow as in the parable of old
 And bear rich fruit an hundred fold.

Then teach us Lord each day to pray
 That we may cheerfully the Golden Rule obey,
 To render help where help is due
 Is the Master's call to me and you.

And if ever you become discouraged
 Pray for greater strength and holy courage
 And your Heavenly Father from on high,
 Will crown your efforts by and by.

THE LITTLE THINGS ABOUT OUR WORK.

BY HENRY WERNECKE, Trustee of Manitowoc County Insane Asylum.

When the secretary wrote me to prepare a paper on the subject, "The Little Things About Our Work," I was in doubt what was really wanted by the person proposing the subject. Whether he meant the little things about the work of our convention and association, or that of the management of the asylum, or that connected with the work of the trustees. In order to be certain to meet his demands, I thought I should try to present a little of all of them, although I do not feel as though I can do justice to the second, relating to the management of the asylum, but I hope the discussions will bring forth that in which I shall fall short.

The success of any undertaking depends upon the little things surrounding it. Our association can only prosper and every one of us can only benefit by it, by obtaining some information from his fellow associate in some particulars in which he excels. Therefore it is necessary for each and everyone of us to take an active part in the discussions when the subject is such that interests us.

You may think it is not worth while to express your opinion on a subject, or that it might sound ridiculous to ask for some information of things not clear to you, but remember that these little things are the ones that make perfect.

When we arrive at our meeting and the officers have distributed the badges, we ought to feel as though we belong to one family and in meeting one with such badge, we should not wait for an introduction, but to speak to one another and not hesitate at a meeting for this is not an assemblage of educators, to show how well and how correctly we can express ourselves, but we are here to promote the work that has been placed into our hands. This informality may seem to be only a small matter, but the success of a meeting like this, depends largely upon the sociality of those present. You may think it a matter of little importance whether you are present at the opening of the meeting or at the closing session, but the interest taken in any convention can safely be measured by the attendance at the opening

and closing sessions. If you have this work at heart, you want to hear the first and last of it and thereby encourage the officials in whose hands you have placed the arrangement of the program.

To prepare an interesting program is quite a task, but it is still more difficult to secure enough persons to prepare the different subjects selected for the program. If in the future it should strike you to be asked to prepare a subject, and it is not possible for you to present it, it is a small matter for you to assist the program committee by naming or securing someone that will present the subject and thereby take the greatest burden from their hands.

As to the management of the asylum let it be simple, for the nearer it can be brought to home life, the closer we shall come to this idea that induced those that were the originators of the present system of taking care of insane in the State of Wisconsin, viz., the County Asylum System. In order to do this, we must observe the little things that make home life perfect. If the matron and superintendent are looked upon as mother and father by the helpless inmates, and they in return feel the responsibility as a parent does, that the welfare and comfort of those placed in their care, rests entirely upon them, then the spirit of home life must reign in such institution. But the model asylum is measured by the minor things, for that is what impresses the visitor most strikingly.

Many shady trees and a well trimmed lawn, especially near the walls and around the trees, enough settees and lawn swings, freshly painted, for the comfort of the inmates, a number of flower beds during the summer and such games as croquet at hand for the amusement of the patients, finding the furniture polished, dusted and well larraned, and the corners of the rooms perfectly clean the patients dressed with clean and neat garments and on Sunday or holidays a better suit to distinguish the day, the walls decorated with pictures, and in winter, bouquets of cut flowers taken from the green house kept for that purpose, canary birds scattered throughout the wards to cheer the inmates and a well aired dormatory with well regulated rows of beds covered with white spreads during the day, are the little things that brighten the interior of an institution.

When we find a clean kitchen with a place for everything and

everything in its place, every day a change of the bill of fare, when you find that the matron, superintendent and attendants have a kind and cheerful word for the patients whenever they meet them, and also show their appreciation for the service rendered to both attendants and patients by presenting them a small gift occasionally as you do at home, you may rest assured that the inmates are not in want, but in charge of a model management.

But how is it possible for the matron and superintendent to perform these little acts of kindness and charity? If the board of trustees do not cooperate with the management, if we trustees keep away from the asylum premises for weeks and months, and wait for others to bring complaints, and then make it a point to burden the management with same, it will be impossible for them to do their duty properly. If a trustee acquaints himself thoroughly with the affairs of the asylum, it is his duty and only a small matter for him to renounce any false accusation against the management of his institution. The trustee as well as the employee must take a vital interest in the welfare of the unfortunate inmates by encouraging and proposing acts of kindness and gifts as mentioned before. This can be done only by frequent visits not only at the institution but also the farm and yard; by freely discussing matters with matron and superintendent and pointing out such minor things that may have escaped their attention. I should like to impress forcibly upon the minds of the trustees that we are not appointed to criticise only, but to assist and encourage. If the trustees notice that any employee, from superintendent to watchman, for years has shown a sympathy for those in his charge and untiringly seeks to comfort them, they should show their appreciation by a small increase in salary. I say small increase occasionally, for we are all human and consider it an act of kindness and appreciation.

The trustee, whenever he is satisfied with the work of the management, should let them feel that he is pleased, for nothing is more encouraging to know that your work is done and done well.

A trustee should acquaint himself with the inmates and converse with them, for I have noticed that the majority feel honored if a visitor spends a few minutes talking to them. He also should encourage prominent citizens to visit the institution,

thereby arousing a sympathy for those unfortunates, and you may rest assured that in this way you can accomplish much more, than if there is a fear of a prominent politician of the county board.

To many of you, these little things may seem unimportant, but remember, the man who masters the details of his profession builds upon a foundation that will withstand the severest tests of time and circumstances.

DISCUSSION.

Pres. Coffland: Mr. Wernecke's paper is now open for discussion.

Mr. Wernecke: When the Teachers' Institute was there last year, we invited the teachers to go through the asylum. The State Rural Inspector was there, and I would like to have his opinion as to what impression it had upon the teachers.

Mr. Larson: When I was a County superintendent I planned at every teachers' institute to take the teachers out to see different things. One year we went through the county asylum, and I believe it was a good thing. When the subject of county government is taken up, the teachers can then describe one of the county institutions that she has visited, and the institution becomes more real. Very few of the teachers would otherwise get an opportunity to look into this institution and the property connected with it. Besides, the teachers come in contact with many people throughout the county and there is an opportunity in this way to disseminate knowledge regarding the institutions and create an interest in it. Many of the teachers expressed themselves as being very much pleased with the trip and said that they had seen and learned things they had no conception of before. Wherever there is a chance to do objective teaching, we ought to do it.

WEDNESDAY AFTERNOON.

HORTICULTURE ON THE ASYLUM FARMS.

WM. ROBLEE, Appleton, Wis.

It is a fact, too well known, that the work of horticulture is being neglected, to an alarming extent, throughout perhaps the entire state of Wisconsin. Some 45 to 50 years ago, as soon as the new pioneer could spare a few rods of land it was his desire and the height of his ambition to place out fruit trees and to give them care, thus in the near future receiving a reward for his efforts. This work was carried on with satisfaction for a considerable time, or until there were numerous orchards dotted here and there through the land. Soon the timber being cleared away, and more land employed for the growing of grains, etc., our people conceded to the idea, that they could grow crops to better advantage and let the other fellows grow fruit. There is where the mistake originated, the mistake that is the cause at this time of high prices for common stocks of fruit. Then the introduction of farm machinery produced another effect, this being more decided, as farming could now be carried on to better advantage, consequently there was too much trouble and fussing in the old orchard, sprouts and superfluous limbs were allowed a prominent position, no care was taken as to the soil, no new stock placed out as a supplement, and the final result was, the once thrifty pioneer orchard had served its time. Such a condition ought not to exist. The demand for fruit is great, and with a few exceptions, each county should be able to grow within its boundary, as much fruit as could be consumed, or nearly so. In placing out a young orchard, I know of only one rule to be governed by. Exercise common sense to the best of our ability and then whatever we may lack in this line, it will be a very easy matter to make up, if we just speak out. There are those that are ready to assist us if we let our wants be known. There are many points to be considered, if we are to make a success in the culture of fruit. Varieties of soil, latitude, preparation of land, varieties adapted to location, distance apart in setting out, depth in planting, always barring the soddy condition. Heavy soil is considered more satisfactory if well drained. Trees placed in

sandy soil will make a more rapid growth, as in small grains, and will become earlier bearers, but are very apt to be of a shorter life. A flat plat of land is not very apt to bring forth real good results. It has been conceded by many farmers that because the fruit is small and of inferior quality that the soil is at fault, when the fault lies largely in the person in charge. A sharp jack-knife carried at all times is a very good companion to tie to. A plenty of fertilizer is the one essential part, but in this, cooperation in other ways is necessary. No list can be given that will prove to be satisfactory in all localities. A variety that would do splendid under certain environments considering location, etc., would fall very much below the average in other fields. In Outagamie county there are a great many varieties that are doing well, but our people, as in other sections, have that untoward feeling, "takes too long to grow the tree that is to produce the crop." The leaders with us are the old standbys, some of which we enumerate: Alexander, Astrachan, Fameuse, Golden Russett, Longfield, N. W. Greening, Tetofsky, Tolman Sweet, Utter, Wealthy, Wolf River, Yellow Transparent and the Duchess of Oldenberg. For a limited number for the farm orchard, we make no mistake if we plant out the Wealthy, Wolf River, Duchess and Tetofsky. In the Crab Apple family the Brier Sweet, Whitney, and Sweet Russett, all play an important part in the makeup for the average housewife. Occasionally we observe a tree that gets lazy and won't produce as it should. In some cases we have noticed people driving old rusty nails into the trunk of a tree in order to make it yield a crop of apples. In my opinion, after these efforts have exhausted, the results would be the same, better cut out one half the top and then take good care of the other half. I would rather have a barrel of good fruit than a wagon load of inferior good for nothing stuff, that is really unfit for cider, though they tell us that inferior stocks make choice drinks, but being a little sceptical in this matter our drinks are limited. The foregoing may be considered as a gentle outline of what could be accomplished by a reasonable effort, and at a limited expense.

The principal feature of my topic, is Horticulture on the Asylum Farm. The experience of the writer, as to conditions, at this time, cannot be so fully brought out, as perhaps we might expect by the Superintendent in charge.

Some fifteen years ago, it was conceded by the management that it would be advisable to grow fruit on the farm. It was no experiment, our people were well aware that this work could be accomplished. A three acre tract of land was platted and some three hundred trees were placed out, embracing the most hardy varieties. This plat of land, sloping gradually to the West, so far as we are able to observe, those trees have done remarkably well, occasionally one dying out and being replaced by the cherry tree to a considerable extent.

In 1897, another tract of land was platted, the slope was largely to the north. This plat consisted of six acres of land and on this plat some six hundred trees were placed out, the distance being 16x20 feet either way. In the early or Harvest varieties, 100 trees, 4 varieties. Fall Apple 200, 7 varieties. Winter, 190, 8 varieties. In addition 25 Plums were added and 50 crab apples. Varieties, 15 Transcendant, 8 Marthy, 15 Hyslop, 10 Excelsior. The varieties of plums I am unable to state. I do not think that our people bank very heavy on those varieties of crabs here listed, though all are considered hardy, but not of the best quality. The six acre plat is composed of 50 Duchess, 50 Wealthy, 50 Longfield, 50 N. W. Greening, 25 Tolman Sweet, 25 Walbridge, 25 Haas, 25 Golden Russet, 25 Pewaukee, 25 Wolf River, 20 Seeknofarther, 15 Yellow Bellflower, 15 Transparent, 15 Fameuse, 15 Early Harvest, 10 Pound Sweets, 10 Quebecs sweets, 10 Ben Davis, 10 Mann, 10 Wine Saps, 10 Tetofsky, 10 Ounce Pipin, 10 Early Strawberry. The Strawberry apple is not very much in favor, barring this and maybe one or two other varieties, we have every reason to believe that no better collection could be made up, that would be more satisfactory and withstand the rigid winter weather, that they are subject to in the latitude of which we speak. I do not wish to go on record as stating that the above list could not be improved upon, for there are other varieties that I know nothing about, that could, without a doubt, strengthen this list very materially. Occasionally there will be a dead tree, this is replaced by some hardy stock. This six acres plat is tilled the same as any other part of the farm, that is in cultivated crops, such as beans, cucumbers, etc. We contend that we cannot afford to give away the right of a six acre or ten acre field to the orchard proper, when we can grow several hundred dollars worth of other crops

and not imperil the trees in any way. The choice for a crop in this event would be anything that will bare shoal culture, so not to impair, to any considerable extent, the life of the tree. We are not in the field as boasters, but we do an unusual amount of boasting, and our claim is this: when you people visit the Outagamine farm, you will have the desire to come again. We could add very much more to the question of culture, etc., but, however, time without a doubt, will be well taken on other topics. With us, in the grape, the Concord, Worden, Niagara and Delaware, seem to do well. Blackberries, Sydner, and Briton. Raspberries, Black, Cumberland, Gregg, Red, Cuthbert, Marlboro. Currants, Red Dutch, Victoria and Fays Prolific. In the strawberries there are many varieties that are right. The Bederwood, Clyde, Dunlap, Sample, Splendid and Warfield are very hardy and productive. For two varieties only, the Warfield and Dunlap are two of our leaders. In my little home garden in Appleton, last year from a plat of land, by measurement 20x60 feet, my people picked and measured 127 quarts of the Senator Dunlap berry, besides, as I am a real hand in a strawberry patch, there were many picked and canned, as we may say, Johnny on the spot. In conclusion, I wish to make this question plain, that while we may know something about Horticulture and growing of fruits, there are many things we do not know. The object of this paper has been to interest at least some of those present and obtain knowledge from those that do know. This being the situation, any person present, has a perfect right to ask questions in regard to the subject here contained. It is the discussion that brings results. So those present that do know, should assist in the discussion. This will strengthen our efforts very materially.

FARM MANAGEMENT.

C. P. NORGORD, Professor of Agronomy, Collge of Agriculture,
University of Wisconsin.

Ladies and Gentlemen: Your presence here to-day indicates that, in addition to the problems connected directly with your institution and patients, you are also interested in the improvement of crops and agricultural methods on your farms and among farmers of your respective communities. It is therefore with much pleasure that we greet you and show you this institution which you and your fellow citizens have established to lead agricultural development in this State.

During the past year the Department of Agronomy has cooperated with a number of your institutions and I have visited these in handling this work. I am therefore pleased to have an opportunity to present a few facts concerning this work before entering upon the subject assigned to me.

The purpose of this work from the standpoint of the Experiment Station is to disseminate Station bred seed grains and introduce, among farmers of the State, improved methods of agriculture through the institutional farms as seed distributing and demonstration farms.

In accomplishing this purpose the institutional farms would be benefited by being supplied with the seed grains and from the sale of seed grains. They would also be benefited by the application upon them of improved methods of handing crops and soils.

In carrying out this work, we have this year furnished thirteen farms with corn, barley and oats. Methods of breeding corn have been introduced which will insure a high quality of corn in the future and add prestige to the farms as seed growing centers. Other lines of work have also been carried on with alfalfa, testing farmers' seed corn, the treatment of grain for smut, soilage crops for cows and hogs and the rotation of crops. Demonstration meetings are to be held in the near future on each farm. At these meetings the farmers will be taken to the fields in which the work is in progress where talks will be given thoroughly explaining the work.

The line of improvement for which there seems to be most

need at the present time is crop rotation and the place of cultivated crops and legumes in the rotation. This condition has led me to select my present subject for discussion, to-day.

Many farmers are of the opinion that they are following a proper system of rotation and are therefore not always ready to listen to advice on this subject. This is partly because a rotation system extends over a number of years. The farmer makes plans for only one year at the time and without proper records he does not know the exact history of his fields.

On many institutional farms, the failure to practice a proper rotation has left the soil low in fertility and devoid of organic matter. Low yields result. The absence of organic matter in the soil packs the soil and shuts off aeration, moreover, since no binding material remains, the soil is subject to much washing.

A good rotation provides for a proper succession of crops, so that each crop is preceded by another crop requiring different food elements and soil treatment, favorable to the succeeding crop as well as itself. This may be noticed by the vigorous growth of grain crops following a cultivated crop.

No best rotation for all soils and crops can be cited. The local requirements in each individual case must determine the rotation most suitable. However, the following three rotations are practiced extensively.

	1st year.	2nd year.	3rd year.	4th year.	5th year.
No. 1....	Corn.....	Grain	Hay & manure	.....	.....
No. 2....	Corn.....	Oats.....	Barley.....	Hay.....	Hay or pasture manure.
No. 3....	Corn.....	Barley...	Oats.....	Hay.....	Hay or pasture manure.
No. 4....	Corn.....	Grain	Hay.....	Hay or pasture manure.	.....

Rotation No. 1 is practiced by many good farmers. Its many good points lie in the fact that it does not permit the formation of old sod. Regularly the hay land will be one year old. With the failure of seeding which sometimes occurs, meadows will sometimes stand two years, but seldom longer. Farmers who have lost crops or found difficulties in getting perfect stands of corn because of insects will appreciate the fact that beetles, grubs, cut-worms, corn root worms, and other insects attacking the roots of corn cannot find time to develop in the

one year of hay nor can they thrive in the absence of a stiff sod. Land in a fair state of cultivation and fertility can usually be kept so and in a good mellow tilth under this rotation. However, it must be emphasized that this is not the rotation proper for building up poor land. It should also be noted that this rotation permits of only one third of the farm in hay. This does not usually meet the needs of our dairymen. Hence, for the larger part of Wisconsin this rotation cannot be recommended. Rotations Nos. 2 and 3 are very similar. Both provide a large amount of grain and more hay than No. 1. No. 2 is particularly favorable for grass seeding as it provides for barley as a nurse crop. With this rotation, there is however, danger of the lodging of the oats, as this crop follows corn, the most favorable place for a vigorous growth of straw. Because of this danger, rotation No. 2 can be recommended only for land of medium fertility. Rotation No. 3 follows corn with barley, a stiffer strawed crop than oats, and the oat crop is placed in the third year where the fertility has been reduced by the two previous grain crops. This will counteract the danger of lodging and make it possible to use oats as a nurse crop for grass seeding. This rotation is therefore to be preferred above No. 2 for lands in a high state of fertility. No. 4 is very similar to 2 and 3 but provides for only one year of grain with one-half of the farm into hay. This is a rotation practiced on the Station Farm, the best soil building rotation, especially adapted to dairy farming. Seldom indeed do we find soil too rich for corn. This rotation adds fertility to the soil by the large amount of leguminous crops and the practice of applying manure every four years immediately preceding corn.

In practicing this rotation, the manure may be applied to the hay land during the winter and spring of the second hay year, in which case an abundant crop of hay will result in the year when the hay is often poor. The roots of this crop will also hold the fertility and prevent it from leaching down out of the reach of crops or washing away. Moreover this will permit of hauling the manure from the barn direct to the field during the winter and still allow fall plowing for corn.

If this plan cannot be followed, the manure should be applied during the early fall and winter preceding the corn crop. The sod may then be plowed early in the spring just before planting or late during the preceding fall. It is easy to see

that a sod cover keeps the soil from washing during the winter and by the growth the legumes present in the fall and early spring may add some nitrogen to the soil. Since plants by their transpiration rapidly remove moisture from the soil, a heavy growth of grass before plowing may deplete the soil moisture to such an extent as to seriously affect the following corn crop if the season be dry. Another serious drawback to spring plowing lies in the fact that the grass crop covered with a coating of manure and plowed under so close to planting time will lie for a long time as an unrotted mass under the corn thus destroying capillarity and drying out the soil. When manure is applied to the preceding hay crop or at least early in the fall preceding the corn it is possible to plow for corn early in the fall. Whenever this is done, sufficient time is given for the vegetable matter plowed under to rot thoroughly before the corn is planted. The furrow slice can then settle down against the bottom of the furrow so as to permit perfect capillary action to bring up moisture from below. Moreover land plowed in the fall is ready to work in the spring earlier than that which is to be plowed in the spring. This means much in Wisconsin where there is danger of too short a season to ripen corn.

All hay raised by any of these rotations should be fed upon the farm. The amount of stock on a farm should be determined by the amount of hay produced. This will in many cases mean an increase in the herd and will in other instances make necessary the purchase of concentrates.

On many institutional farms the attempt is being made to raise sufficient corn for silage and fattening purposes and also to produce potatoes sufficient to supply the institution. This usually results in too large a proportion of cultivated crops and too little clover seeding. The cultivated crops must be kept within their proper proportions in order to practice any rotation.

The remainder of the afternoon was spent in visiting and inspecting the barns and stables, the horticultural building, creamery and the farm of the College of Agriculture, of the University of Wisconsin.

EVENING SESSION.

CLASSIFICATION AND SEGREGATION OF THE
INSANE.

C. CHRISTENSEN, Reedsburg, Wis.

Mr. President, Ladies and Gentlemen:

It is good to be here and very gratifying to me to look into the faces of so many of you who are engaged in the work in which I have spent so many years, and I deem it an honor for the privilege of being permitted to address such a representative body of men and women.

When seeking membership in orders and many fraternal organizations, a candidate is invariably subjected to a thorough initiation. I was not aware that you made use of this pernicious practice here, but evidently our worthy secretary had this in mind when he assigned to me the task of addressing you on "Classification and Segregation of our Insane."

The problem of "Classification and Segregation of our Insane" is a very large one, far too large to be intelligently analyzed by me in the few moments at my disposal, the hour being late, and the more eminent speakers who are to follow, I am sure will have something to say that will be of interest to us all.

This question, Ladies and Gentlemen, is one that has received the most careful thought and consideration of eminent statesmen, legislators and scientific men throughout the civilized world.

We as a nation, and as a state, have done much for this class of sick people, and to alleviate distress and misery wherever found.

But in spite of our boasted civilization and benevolent charity, there is much room for improvement.

Wisconsin does not occupy a seat in the "dress circle" in the matter of classification and segregation of her insane. Wisconsin still permits her insane convicts to be housed with her innocent insane. All good men and women are agreed, that this is an injustice to both classes of patients, and to the management as well. Wisconsin ought to have an institution for her crim-

inal insane, located near one of our State Hospitals, far enough removed from such to avoid association between patients and near enough to enable the same management control of both.

The question of separating or keeping apart the criminal and innocent insane was discussed in this state as early as 1875, thirty-four years ago.

At a meeting held in Milwaukee on March 15, 1875, the then State Board of Charities and Reform voted the following:

“That the removal of insane criminals to the Hospitals for the Insane is a great wrong to the innocent insane, injurious in its effect, and imposes upon the superintendents of such Hospitals, a labor incompatible with the proper discharge of their other duties, and our state hospitals in their crowded condition, with their inadequate provisions for classification furnish no suitable accommodations.”

On June 2, 1875, Dr. Walter Kempster, an alienist of national reputation, and for many years superintendent of the Northern Hospital, in a letter to the Hon. E. E. Chapin of Columbus, Wis., a member of the State Board of Charities and Reform, says among other things pertaining to this subject:

“The insane who commit violent acts under the influence of insane delusion, form but a small percentage of the whole number confined in a given general hospital from the nature of the institution, the person committing such an act must be placed in the same ward with from 15 to 30 other insane. Not one of whom perhaps has ever committed an act which in a sane person would be called criminal.

The delusion which impelled the person to commit a violent act does not cease when he shall have been admitted into a hospital, he still retains the same insane ideas and not infrequently labors earnestly with those with whom he is associated to impress the same ideas upon them and secure the co-operation in carrying out the delusion.

The insane are imitative, they are swayed by either good or bad impulses, and one person entertaining pernicious ideas or uttering threats, and behaving in an unseemly manner, will sometimes disturb the whole hall and subvert discipline to the detriment of all concerned.

It is the experience of superintendents generally that the criminal insane exert an influence over the other patients with

whom they associate. They are less answerable to discipline, are generally plotting mischief themselves or inciting others to criminal acts of violence and are constantly plotting escapes, and urging weak minded persons to do so.

Dr. W. A. Gordon, Superintendent of the Northern Hospital, than whom there are no higher authority (on mental diseases) in this country, has repeatedly called attention to the injustice of keeping criminals in our insane hospitals.

Let me quote from Dr. Gordon's report to the State Board of Control, dated Oct. 1, 1900.

"During the biennial period there have been 31 convicts and 9 criminals in the hospital. These undesirable patients have been a source of constant anxiety. There should be a separate building for this class of insane. At Mendota or at this place there should be a building with a capacity sufficient to care for the convict and criminal insane and for certain state at large cases that are now in the county asylums and for certain boisterous chronic patients that are to be found in nearly every county asylum. A building capable of accommodating 200 persons would be large enough for present purposes and would relieve all the existing institutions of persons who are a constant menace to their peace and comfort.

Again, in his report to the State Board of Control, dated July 1, 1907, he says: "The attention of the Legislature should again be directed to the fact that Wisconsin is years behind the times in compelling her insane convicts and her insane epileptics to be housed under the same roof, Wisconsin needs an epileptic colony, Wisconsin should have a separate building or institution for her convict insane.

I will pass on and show you what other states have done for the most to be pitied beings, the epileptics, in their care of these unfortunates. Ohio easily stands as a pioneer by establishing a colony for them at Gallipolis in 1890 where all kinds of employment is furnished, schools maintained, etc.

California as a close second established a colony for epileptics the same year.

Massachusetts in 1895 opened a colony for epileptics at Monson.

New Jersey opened a colony for epileptics in 1898 at Skillman.

A colony for epileptics that has attained great prominence is at Buhfield, Westphalia, Germany, at present caring for more than 3,500 people suffering from this dread disease, was founded in 1867.

Dr. Frederick Peterson of New York recognized as an authority on the subject of epilepsy, made a visit of investigation of this colony in 1886. His writings on this subject following his investigation attracted much attention, resulting in the establishment of the now celebrated Craig Colony at Sonyea, New York, in 1894.

Kindly bear with me for a moment, while I quote Dr. Peterson as to what constitutes an ideal colony for epileptics, he says:

“There is but one kind of an institution that can meet the case of those who suffer with this disease. No asylum, no large hospital, no single vast building in a large city is appropriate for the purpose. It must be an establishment combining many unusual features, it must have schools and teachers for the young epileptic, it must have offices, shops of all kinds, stores, dairy farm, gardens, granaries, for as they grow up, these patients should acquire trades or professions, it must have a group of small hospitals and asylum buildings, where such as are sick or mentally infirm can be cared for. It must have skilled physicians; it must have a church, amusement hall, gymnasium and bathing establishment; it must have finally a pathological laboratory, presided over by the keenest pathologist, obtainable, so that in course of time a cause and cure may be discovered for this terrible disease. Such a place would not be a hospital in the ordinary sense of the term, it would be a village in itself, a colony for epileptics.

This would require many years to complete. The cost of a colony in its inception should not be so great as to deter the attempt at establishing one, in fact, I believe a mistake would be made in trying to accomplish the ultimate object too early. I am convinced of the advisability of providing a large acreage, at least one acre for each prospective inmate. This is desirable, both from a hygienic and economical standpoint.

I fear that I have by this time taken too much of your valuable time and in view of the eminent authorities quoted, I feel that it would be supererogatory for me to further enlarge upon this subject. Ladies and gentlemen, I thank you.

CARE OF THE TUBERCULOUS INSANE.

DR. J. W. COON, Supt. Wisconsin State Tuberculosis Sanatorium.

Mr. President, Ladies and Gentlemen :

During the past ten years the subject of tuberculosis has, as never before, attracted wide attention, not only of the medical profession, but of thousands of the most intelligent lay men and women of the world.

I beg to assure you that it is no less a pleasure than an honor to be permitted to address the members of this association upon one phase of the subject which has within the past five years begun to receive the attention which its importance warrants, i. e., the care of the tuberculous insane.

The same factors which enter into the consideration of the subject of tuberculosis as a whole are, very largely, identical with and inseparable from those of any of its special phases and I would therefore call your attention to a few of these common factors before proceeding to discuss that phase of it in which you are specially interested.

Briefly stated, then, tuberculosis is a disease capable of being transmitted from one person to another, or from some of the lower animals to man, or vice versa, by means of a specific germ, the tubercle bacillus. The disease has existed for centuries and was accurately described by Hippocrates some 400 years B. C. It is pre-eminently a house disease and thrives most among those who are obliged to live or work in dark, poorly ventilated rooms or apartments, and whose systems are thereby rendered less resistant to the encroachment of the disease process. It is as distinctly contagious as is small pox, diphtheria, measles or any other of the contagious diseases, although the period of incubation is ordinarily much longer and varies in different individuals, depending upon their powers of resistance.

No fact has been more conclusively demonstrated than that the best way to prevent the spread of tuberculosis among the well, is to segregate the sick, especially the advanced cases.

Tuberculosis is now known to be not only preventable, but, un-

der proper conditions, positively curable. At the National Congress for the Study and Prevention of Tuberculosis, held at Washington last month, Dr. Wm. Osler, formerly Professor of Medicine at John Hopkins University, now Regius Professor of Medicine of Oxford University, made the statement that, if it were possible to put into operation all those factors which we now know enter into the cause, prevention and cure of tuberculosis, the disease could be completely eradicated within the next two generations. When we consider the centuries the disease has held sway, these are strong words, but to one familiar with the subject, not too strong to be warranted by the facts.

If it *be* true, then what must be done to do away with this enormous waste of human life that is annually causing more than 150,000 deaths in the United States, that every year is responsible for upwards of 2500 deaths in Wisconsin alone.

Beyond question, the answer lies in the education of the masses as to the true nature of tuberculosis, its cause and method of propagation, together with the best means of prevention and of caring for those already infected. Then, with the co-operation of the educated laymen, the skilled physicians, and the representatives of national, state and city government, we can hope and believe that the statement of Dr. Osler may be taken as a prophesy and that the prophesy may be fulfilled.

It is a pleasure to state that in our own country the campaign against tuberculosis is being prosecuted with great vigor, that in practically every state in the Union, societies or organizations are being formed for the purpose of carrying on the work of education.

The following table shows a partial result of the work which has been accomplished up to August 1, 1908, in the United States and Canada, as published by the National Association for the Study and Prevention of Tuberculosis in its publication: "The Campaign Against Tuberculosis in the United States."

Sanatoria, Hospitals and Day Camps for the treatment of tuberculosis in the United States and Canada.....	(14,014 beds)	240
Hospitals for the insane making special provision for their tuberculous patients in the United States.....	(2,000 beds)	55
Penal Institutions making special provisions for their tuberculous inmates in the United States.....		17

Dispensaries and clinics for the special treatment of tuberculosis in the United States and Canada.....	158
Tuberculosis classes in the United States.....	23
Associations and committees for the study and prevention of tuberculosis in the United States and Canada.....	195
States and territories in which legislation has been enacted for the prevention of tuberculosis.....	48

As it may be of special interest to the members of this association, I present herewith a detailed list of the hospitals for the Insane in the United States making special provisions for their tuberculous patients, together with the special means provided, and, so far as obtainable, the number of patients provided for in each.

State	City	Means Provided	Beds	Remarks
Alabama	Mt. Vernon	Separate wards		
Alabama	Tuscaloosa	Separate ward for women		
California	Patton	Group of cottages	36	
California	Talmage	Tents and cottages	100	
Connecticut	Middletown	Single rooms of large cottages	30	
Delaware	Farnhurst	Separate building	20	Built in 1903, cost \$1,000 per bed.
District of Columbia	Washington	Separate two-story building	71	
Georgia	Milledgeville	Tents and shacks		Planning to erect separate building.
Illinois	Elgin	Segregated in wards		
Illinois	Peoria	Tent colonies and separate building	104	Started in 1905.
Illinois	Hospital	In temporary structures		
Illinois	Watertown	Tents		
Indiana	Logansport	Isolation wards for each sex		
Indiana	Richmond	Two cottages		
Iowa	Mt. Pleasant	Tents		
Kansas	Topeka	Separate building for women		
Louisiana	Jackson	Special buildings	72	
Maryland	Sykesville	Tents		
Maryland	Catonville	Tents		
Maine	Bangor	Separate buildings	44	\$30,000 appropriated by legislature. All tuberculous insane of state will be sent to this hospital.
Massachusetts	Harding	Separate buildings for sexes	32	
Massachusetts	Hawthorne	Specially constructed wards	40	(Patients received from other hospitals.)
	Medfield	Wards and pavilions		
	Westborough	Special buildings	20	
	State Farm	Small ward		
	Tewksbury	Partially in shacks		
	Worcester	Isolated wards	23	
Michigan	Kalamazoo	Separate wards	30	
	Pontiac	Special wards with attached verandas	25	
	Traverse City	Separate building for women		
Minnesota	Faribault	Separate building	28	
	St. Peter	Pavilions and special ward	30	New building specially constructed will be opened during the present year.

Mississippi	Asylum	Tents and cottages.....	45
New Hampshire	Concord	Inclosed verandas	100
New York	Binghamton	Tuberculous pavilion	18
	Buffalo	Separate building for women.....	106
	Central Islip	Special pavilion	77
	Gowanda	Special building	140
	Kings Parks	Special wards	100
	Manhattan	Frame pavilions and tents.....	100
	State Hospital	Two story wooden pavilion.....	100
	Ogdensburg	Two cottages, one for each sex..	20
	Poughkeepsie	Isolation wards	70
	Rochester	Special pavilion	50
Ohio	Willard	Special pavilion	66
	Columbus	Tent colony	66
Pennsylvania	Norristown	Two cottages	15
	South	Inexpensive pavilions and tents..	50
	Mountain	Separate building	30
	Warren	Pavilion for men.....	25
Rhode Island	Howard	Special building	70
Vermont	Waterbury	Farm colony for men; concrete	40
Virginia	Petersburg	block building for women.....	14
	Williamsburg	New building specially constructed	
Wisconsin	Milwaukee Co. Hospital	Separate pavilion	
	for Insane		

One to be built for men this year.
Capacity will be provided for 100 soon.

Begun in 1901.

Pavilion for women to be built in 1909.

In our own state much has already been, and is now being done to carry forward the educational propaganda. A State Anti-Tuberculosis League has been organized under the auspices of the State Medical Society. Various county medical societies are actively engaged in the work and are doing most effective service.

Under the supervision of the State League, and in conjunction with the University Extension Course, a Tuberculosis Exhibit is being sent into all parts of the state, accompanied by competent lecturers and demonstrators. This exhibit is efficiently supported and aided by the medical profession and intelligent lay men and women of the localities visited and a special effort is being made to interest the school children, in some places the schools being closed to allow teachers and pupils an opportunity of visiting the exhibit and attending the lectures and demonstrations.

The writer was greatly pleased while in attendance upon the meeting of the National Congress at Washington to hear frequent mention of, and quotations from, the Wisconsin statutes with reference to the subject of tuberculosis, and it was apparent that the Wisconsin Law, so-called, is considered by leaders of the tuberculosis crusade, a model law and one to be, and which has been in a number of instances, adopted by other states.

As a partial outcome of the work which has been done in Wisconsin, there has been established the State Sanatorium for Tuberculosis at Wales, which has a capacity of 80 patients, and which will, no doubt, be enlarged in the near future. Milwaukee County has built a tuberculous annex to its County Hospital, with a capacity for 50 patients, which is constantly filled.

The Blue Mounds Sanatorium near Milwaukee, a semi-charitable institution with about 25 beds, is constantly filled and doing a splendid work.

River Pines, a high class private sanatorium at Stevens Point, has accommodations for about 25 patients, and has a waiting list most of the time.

A special pavilion for the tuberculous insane has been erected at the Milwaukee County Hospital for Insane at Wauwatosa with a capacity for caring for 14 patients, male and female. Added to these are several free dispensaries which have been established in Milwaukee and other larger cities of the state where free advice and treatment may be had.

Altogether provision is made in the institutions above named for about 200 patients. Homer Folks of New York, Vice President of the National Society for the Study and Prevention of Tuberculosis, in his opening address, maintained that at the lowest possible estimate, there should be provided in every state or municipality for the advanced cases of tuberculosis alone, one half as many beds as there are deaths annually from that disease. Wisconsin has approximately 2500 deaths each year from tuberculosis and, measured by Mr. Folk's standard, should have public provision for 1250 of its advanced cases alone. In the institutions above mentioned there is provision for only 200 cases all told, or less than one-sixth the number which should be provided, and of the 200 beds, but 50 which are intended primarily for advanced cases.

When we consider thoughtfully the foregoing, we must be very forcibly impressed with the fact that much hard work remains to be done before we can feel that we of Wisconsin have accomplished our share of this great movement which has for its object the eradication of the great white plague from off the earth.

Wisconsin has today, in its state hospitals and county asylums approximately 7000 insane. Estimating that 3 per cent. of these are tuberculous, and this is in reality a low estimate, there should be provision for caring for 210 patients in especially constructed buildings. So far as the writer is able to learn, such special provision is made for less than 50 cases in the whole state.

To make sufficient and proper provision for the advanced cases, as advocated above, which should include the tuberculous insane and criminals, would require not less than 1500 beds, which could be provided at a first cost of \$500 per bed, and would cost about \$1.25 per bed per day to maintain. (This would mean an initial outlay of \$750,000 for buildings and equipment, and about \$700,000 per year for maintenance.)

To one who has given this subject careful thought, there could be no question, but what this would be a wise, and, in the long run, an economical expenditure of money, but I doubt seriously if our legislators would so consider it until much more work had been done in our campaign of education which must be made to show conclusively the actual money value to any commonwealth of the lives of its labor producing citizens.

Lest I be considered extravagant in my recommendations let me state that the Health Commissioner of Pennsylvania asked

the present legislature of that state for \$2,000,000 to carry on the state campaign against tuberculosis begun in 1907, in addition to \$1,000,000 for the general expenses of his office. The measure has passed the House and has been favorably reported by the Senate Finance Committee.

Chicago has recently decided, by a large popular vote of its citizens, to provide a Municipal Hospital for Tuberculosis at a cost of \$500,000, together with a sum sufficient for its maintenance.

St. Louis has recently enacted an ordinance providing for \$25,000 per year for five years, for educational work and investigations alone.

The state legislature of New York has just given the city of Buffalo authority to erect a Municipal Hospital for Tuberculosis, with \$25,000 for temporary treatment and \$200,000 for the permanent institution.

In Ohio a special election was recently held in Cleveland to vote on the question of \$250,000 bond issue for erection of Municipal Hospital for Tuberculosis. A majority of votes were cast in its favor, but as a two-thirds vote was required, the measure was lost.

I mention these facts to show that other states and cities are thoroughly alive to the situation and are making liberal provision for combating tuberculosis.

Is there any good reason why Wisconsin, with her great wealth and magnificent resources, should do less than her neighbors?

For the successful treatment of tuberculosis it is essential, first, that the disease be recognized in its early state, as it is now agreed that the percentage of good results obtained is in inverse proportion to the time of beginning treatment and varies from 85 to 90 per cent. in the incipient cases to 10 per cent., or less, in the far advanced. The time at my disposal will not permit of going into the details of the methods employed in making early diagnosis, which might reasonably occupy the time allotted to the whole paper. It may be stated, however, that any well informed physician who is willing to take the necessary time for a careful physical examination, need have no difficulty in detecting the early lesions of tuberculosis. As a most efficient aid to the early diagnosis, we now have at our command the various tuberculin preparations, which will sometimes show the presence

of tubercular lesions which a very careful physical examination may fail to locate. While there are some five or six of these preparations which may be used for diagnostic purposes, nearly all of which are familiar to the general practitioner, I need mention but one which seems specially adapted for use in the tuberculous insané. I refer to the Tuberculin Ointment, which is used for the Moro percutaneous diagnostic test. This consists of a 50 per cent. mixture of "Old Tuberculin" with lanolin and vaseline. It is applied by the manufacturers usually in capsules containing a sufficient quantity for one test. This test is very simple indeed, the contents of one capsule being applied to any portion of the surface where the skin is thin, preferably the epigastrium or axillary region. This is very carefully rubbed in for about three minutes, care being taken not to abrade the skin or to apply it to any portion where there is any abrasion. If tuberculosis is present in the system a papular eruption appears at the site of the inunction in about three days. This test causes no constitutional reaction, is very reliable, and the eruption fades away within two or three days.

I would suggest that a routine temperature examination of *all* the patients of your institutions be made at regular intervals of, say, three or four months, for the purpose of detecting tuberculosis in its incipient stage for when pulmonary tuberculosis has so far developed as to be revealed by positive physical signs or clinical symptoms, it is, especially in the cases of chronic dementia, already too late for successful treatment under the most favorable plan that can be provided. The first day the temperature of each patient should be taken four times. If a deviation from the normal is found, the record should be continued for several consecutive days, and if a suspicious elevation persists, for which no cause can be found, or the weight chart shows a loss, there should be given a careful physical examination supplemented by one of the tuberculin diagnostic tests.

Following its early diagnosis, three well known factors are recognized as essential to the successful carrying out of what is known as the sanatorium method of treatment.

These are (a) an abundance of pure air, practically every hour of the 24 of every day; (b) a sufficiency of properly prepared, wholesome food and (c) constant and closely supervised and regulated rest and exercise.

While these general factors govern the successful treatment of the insane equally with the sane, you need hardly be told that their practical application is vastly more difficult in the one than the other.

The splendid results obtained in institutions similar to yours, however, shows conclusively that they can and are being carried into successful operation.

The special provisions for housing may consist of separate wards, screened porches, tents, portable or permanent cottages, or independent buildings.

Whatever plan is adopted, provision should be made for the most perfect ventilation, and of a maximum amount of sunshine. They should face the south or southeast, and be so placed as to be protected to the greatest possible degree from the prevailing cold winds which in Wisconsin are from the north and northwest. Doors and windows should be screened to keep out flies and other insects which are not only annoying to patients, but may be the means of conveying this contagion to other portions of the institution.

While it is not essential that the sleeping rooms should be warmed, it is essential that a comfortably warmed dressing room be provided.

Provision should be made for dormitories for attendants, separate from the tuberculosis quarters. Usually it will be found preferable to provide female nurses for the male patients.

The diet should be liberal and varied, but no extreme ideas in regard to the character of food is to be recommended, as there is no doubt that a mixed diet is more acceptable to the patients and better digested and assimilated. In addition to the regular diet, special diet consisting of milk, eggs and made dishes should be prescribed by the attending physicians in cases requiring it. It would be well in addition to the three regular meals, to serve a lunch to all patients at 10 a. m. and 3 p. m.

Perhaps the most serious problem confronting us is, Where shall the tuberculosis insane be cared for? And three answers to this problem are suggested.

First: To have each county asylum make such provision for its own patients as their number and the means at hand will warrant.

Second: To have provision made at several of the county asylums for the care of patients from conveniently adjacent

counties; the cost of maintenance to be apportioned to the several counties pro rata, with appropriation from the state to provide for additional cost.

Third: To provide one or more state institutions conveniently located, where all the tuberculosis insane of the state might be cared for.

Each of these methods provides its own peculiar advantages as well as disadvantages. I think we are all satisfied that it is utterly impossible to properly care for the tuberculosis insane at the county asylums, without involving an expense that would, under existing conditions, be practically prohibitive. Then patients should be under constant medical supervision and cared for by competent nurses and attendants. How many of the asylums represented here would be able to furnish such care?

The plan of having one or more state institutions would involve a large initial outlay of money—and one that I fear we would not be able to obtain for years to come.

Another argument against this plan is that it would remove the patients too far away from their homes where they could not be visited by their friends and relations. I do not think this a good argument, but it is one that would have to be met.

On the whole, then, the plan that seems to be most feasible and offers to my mind the least objection is that of special provision being made to care for the patients of several counties at one convenient asylum.

To properly care for them will of necessity involve a considerable expense, but this could be met, by an appropriation from the state to the county caring for them, to compensate for the additional cost.

The following special regulations regarding the care of tuberculous insane, I offer as suggestions only. They may be modified to suit the needs or conditions of the individual institutions, but will, on the whole, be found such as to conduce to the best interests of the patients. Without exception all tuberculous patients should be separated from other patients.

1. Each patient to be given a general bath and change of underclothes twice a week.

2. Change all outer garments once a week.

3. Keep all patients comfortably and neatly clad, special care being taken to provide suitable clothing to allow them to remain out-of-doors with comfort in cold or stormy weather.

4. See that the face and hands of each patient are bathed before meals, using disinfected soap.

5. Have teeth and mouth of each patient cleaned daily with some antiseptic mouth wash.

6. Keep finger and toe nails closely trimmed.

7. Shave all male patients' faces once a week and allow no beards to be worn.

8. Do not permit patients to spit on floors, porches, in wash bowls, sinks or slop jars, nor upon the grounds of the institution.

9. As far as possible have patients use sputum cups with removable paper fillers. If they will not use them, use paper or muslin handkerchiefs.

10. All soiled handkerchiefs, paper napkins, sputum cups to be collected daily and burned.

11. Where cuspidors must be used, keep in them a disinfecting solution, and have them thoroughly cleansed at frequent intervals.

12. All articles of clothing, bedding, etc., should be kept separate from those used by other patients and boiled or sterilized before being sent to the laundry.

13. All table ware, eating utensils, etc., should be thoroughly washed in hot water and kept separate from those used by other patients.

14. See that all patients take their food regularly and in sufficient quantity, as upon this in a great measure depends their improvement.

15. See that all food given is thoroughly cooked and served in an attractive manner.

16. Patients having a temperature of 101 or higher should be kept in bed, and those with temperature of 99 or over, required to do no work.

17. All patients who are not prevented by high temperature or other special reason, to take a walk or some other form of recreation each day.

18. Give each patient, able to work, some light employment.

19. Patients should be kept out-of-doors as much as possible and not allowed to sit or lounge around the sleeping tents, cottages or dining rooms.

20. Allow all who desire, the privilege of lying down or sleeping from 1 to 3 o'clock daily.

21. Have reported to the visiting physician *any* patient spitting blood, coughing, having night sweats, pain, loss of appetite, or other symptoms.

22. In order to detect tuberculosis as soon as possible after arrival of new patients, have carefully taken the temperature, respiration and pulse. Note the condition of bowels, digestion, etc., for ten days or longer, and if any suspicious indications are found, refer to the attending physician for a physical examination.

23. Weigh each tubercular patient once a week and keep accurate record of weights.

24. Floors should be cleaned daily, using preferably brush brooms and when mopping a disinfecting solution.

25. Wipe off all tables, bedsteads, chairs and other furniture with cloth dampened with disinfectant solution. Use no feather or wool dusters for this work.

26. All doors, windows and other woodwork should be washed at least once a week.

27. Air and sun all bedding and bedsteads every morning except Sunday, and mattresses and bedding should be put out in the sun once a week.

28. During the day keep the sides of tents, and all windows and doors open, except in severe weather. At night keep tents and cottages open sufficiently to admit plenty of fresh air.

29. Each tent and room should be disinfected once in two weeks by the use of formaldehyde gas.

30. Above all, and including all rules, the entire premises should be kept absolutely clean, and all infected matter destroyed or thoroughly disinfected.

In conclusion, the points I would specially emphasize are:

First—That tuberculosis is, with proper attention to the disposal of sputum, and the thorough disinfection of all infected material, very largely preventable.

Second—That it is distinctly curable, if proper treatment is instituted in its early stage.

Third—Its early diagnosis is not difficult, providing sufficient care and time are used in making a physical examination, especially if supplemented by the use of tuberculin in the form mentioned, which involves no unusual skill and is attended with no danger.

Fourth—That the early diagnosis is assisted by a regular and systematic taking of temperatures of *all* patients at regular intervals, following up carefully those cases showing any abnormal rise.

Fifth—That there should be provided not less than 1250 institutional beds in the state of Wisconsin for the advanced cases of tuberculosis, *not insane*.

Sixth—That for the present, the plan offering the best form of caring for the tuberculous insane, is for one county asylum to make provision to care for the patients of several adjacent counties as well as its own, that special and suitable care be provided for these cases and that the necessary additional cost be met by an appropriation for that purpose from the state.

Permit me to express my regret that this important subject should have been presented in such a disconnected and incomplete manner, but if it shall arouse an interest that will bring forth a thorough discussion and that will lead to some united intelligent effort whereby the condition of these unfortunates may be greatly improved, as I am sure may be done, I will have accomplished the object for which this paper was written.

Dr. Coon: I am well aware that you cannot carry out these instructions strictly with the tuberculous insane, but you would have to do the best you can.

Just a word I want to add, and that is this: The proper care of tuberculous insane must of necessity involve considerable added expense to that which you are accustomed for the care of your patients in the institutions. I think that the estimate I made, \$1.25 per day, is about as conservative as it can be made. The importance of taking some active step in caring for the tuberculous insane, as well as advanced cases that are not insane, I want you to carry in your minds when you talk with the members of the Senate and Assembly of your district, and impress upon them the necessity for making this special provision. If we can reduce this disease, I think that the money will be well spent. We must bear in mind and impress upon our legislators the actual money value of the life of every citizen of this state to the state. Only in that way can we persuade them to appropriate the money for this purpose.

There ought to be provided in the state in every municipality one half as many beds for the advanced cases of tuberculosis as

there are deaths in that locality. The great problem is, what shall we do with the advanced cases. We have ample provision for the incipient cases. It is for the advanced cases of tuberculosis that I am pleading here tonight.

HOW SHALL WE EMPLOY AND ENTERTAIN OUR PATIENTS?

JOSEPH ROEHL, Wausau, Wis.

Mr. President, members, superintendents and matrons of the Wisconsin Association of Trustees and Superintendents of County Asylums, Ladies and Gentlemen: On May 12, 1909, I received from our secretary, Mr. F. M. Smith, a communication asking me to read a paper on "How shall we employ and entertain our people?" giving special attention to the matter of entertainment.

I am satisfied that Mr. Smith was not acquainted with me or he surely would have selected some other member of this association, more intelligent and better posted to read said paper for the simple reason that above title covers nearly all of our duties, 24 hours a day, 7 days a week, 30 days a month, and 365 days a year.

However, I thank Mr. Smith for entrusting this task to me, and I will try and do justice to same, as far as I know, and beg to be excused by all my associates here for anything I will say which is not in conformity to your ideas on above subject.

I claim that all our work and duties should be entertainment for the poor unfortunates entrusted in our charge.

The foundation and success of our work in the hands of the Board of Trustees, by allowing their respective superintendents a liberal pay roll, thus enabling them to engage good, competent and conscientious help and enough of it.

After this has been accomplished the rest is not so hard, and the Superintendents are in a position, if they do their duty, to fully accomplish the hard and tedious task of employment and entertainment of insane patients.

Allow me to walk through an asylum with you all for one day: In the morning the doors are opened by the attendant and the

patients greeted with a "good morning." Please get up, boys and girls (as the case may be), it is time.

After they are up the attendant should encourage them to wash, comb, and dress themselves neatly, being careful not to irritate them in any way with harsh and arbitrary language, as this is the time of the day you must, if possible, get the good will of the patients.

Next, see that the windows are opened and the beds well aired.

Then comes breakfast, with a neat dining room, linen table-cloths, and a hot, well cooked meal, your entertainment is well started.

After breakfast is over, have all the patients that are capable, busy themselves by doing something, such as making up beds, cleaning the respective wards, cutting wood, taking care of horses and stock, garden and farm work, picking berries, weeding in the garden, gathering vegetables, and many other things as the season permits. Without fail have a green house, hot beds and plenty of flowers for the old grandmas to busy themselves. Others go to the laundry, sewing room, kitchen, dairy room, etc.

After the ward work is done (say about 9 a. m.), have the patients go out for exercise; if in the winter let them go for a walk, in warm weather take them to the grove or pavilion, where there should be sufficient benches and tables.

An hour before dinner have the patients and employes come to the building in order to give them ample time to wash and tidy themselves for the main meal, which should be served on white linen table-cloths with nourishing food, well-cooked and served hot.

After this meal have the patients remain in the building until 1 p. m., after which have them go to the places assigned them, never forgetting the word "*please.*"

Patients not otherwise employed should be taken for their regular exercise, the same as in the forenoon.

At 5 p. m. have them come to the building in order to get ready for the evening meal.

After supper until bed-time paroled patients who work, all or most of the day, should be allowed certain privileges, such as fishing, playing ball, tennis, swinging, picking flowers, billiards, pool, cards, chess, skating, sleigh and bus rides, and many amusements as the season permits.

Then comes bed time, and by following this routine I will state here that 90 per cent or more of our patients go to bed, with a wish of good night to you by the attendants, satisfied, concerning their mental condition, that the day was an entertainment.

Good night.

Now we have finished the day's task. How about the long night? The night attendants should be instructed to wait on the patients during the night more particularly than during the day. Outside of the night watch clock system, both male and female night attendants should be more closely under our observation than the day attendants, because some of our people have their little wants and wishes and it does not cost anything to have their little wishes attended to.

If we all manage our asylums as above stated we cover at least part of this great problem of employing and entertaining our charges.

Entertainment of patients in general is a problem that I am unable to do justice to, because any person familiar in this line of work could write a book on this subject, and as before stated, we Superintendents and Matrons are in a position to gain the confidence of our patients if we entertain them, and treat them cheerfully at all times, encouraging them, and appreciating everything they do, even though we know and are satisfied that they should do differently.

I claim that cheerful wards kept as light as possible, bright woodwork, walls painted in light cheerful colors, bright ceilings, meaning by that, that institutions of our kind should not, which is now customary, modern as we might call it, have all their beds, woodwork, furniture, etc., painted in dark green or I might call it black, and give our charges the real cheap coffin effect while they already are morose and down-hearted.

Have plenty of plants around your wards, in hanging baskets, or on small tables, but not on window sills or even worse, on shelves or stands in front of the window, as it prevents your patients from looking out of the windows and deprives them of the sun and light given to us by nature. Besides having the shades uniformly drawn, there should be white curtains at all the windows in the institution, as they can be purchased at a low

price. (We use the batiste and have our ladies make tassels as trimmings.

Clothing, both for male and female, should come under the head of entertainment. What difference does it make to us by satisfying the wants of our people in regard to style and colors, especially for ladies. The cost of purchasing a pink dress is the same as a blue dress; the same with men's suits. Our seamstresses can, under the direction of the Matron, have the ladies' dresses made according to the patient's wishes, without any additional cost or labor; and by all means let our people have their Sunday and Holiday clothes, as they look forward to those days even more than we do.

On Saturday let us go to the different newspaper offices and gather up all the reading matter and magazines possible. (We have five local papers in our city, and they furnish us all the interchange papers every Saturday, besides our citizens freely contribute magazines.)

At this rate, on Sundays we have papers enough for each and every one and many of them spend the entire day with this literature, even those that can not read, enjoy the different advertisements and illustrations.

At least every two (2) weeks our patients should enjoy either a dance, concert or some other entertainment gotten up by the employes, Asylum band or some of our singing or social societies. We will find in these particular entertainments a more soothing nerve stimulant than if we gave them \$25.00 worth of drugs.

Do not let us overlook the different holidays of the year. Christmas, let us give each and every one a suitable present outside of their delicacies, such as nuts, candy, cookies, fruits, etc. We can have these packages made up in the way of a need which we would have to furnish them in a short time, and by doing this we are not adding any additional expense to the running of our institutions, and on the patients side it is considered a Christmas gift by our people and highly appreciated. Let us not forget to have our charges sit down to a Christmas dinner such as we all used to enjoy when we were at home in our teens.

Also let us remember Lincoln's and Washington's birthdays, and decoration day by special entertainments, as many of our people have fought under the Stars and Stripes.

Easter Sunday is another day which should be brought be-

fore them as a holiday and celebrated by a special dinner, coloring of eggs, and a concert in the evening if possible.

July Fourth, one of the most noted holidays of the American people, should also be celebrated in the customary manner, an out-door picnic, music, dancing, and fire-works will do justice to this day.

Thanksgiving is next in rotation. In any way possible have your poor unfortunate people enjoy their Thanksgiving dinner as you would yourself, with turkey, cranberries, celery, pumpkin pie, with a dance or concert in the evening.

Let us next see how we can entertain our people by labor. We have amongst them a number of mechanics of all kinds, such as carpenters, masons, tailors, shoe-makers, painters, blacksmiths, etc. We can make their work both beneficial to their mental condition as well as to the interests of the institution, meaning by that, that they are only happy by having employment and passing time along their old lines.

To illustrate this I will quote, that one of my patients who formerly, when in good health was a skilled wagon-maker, and without giving him any orders or detailing his work he works as follows: He selected a small room in the basement, went to the woods, cut his own timber and erected a wagon-maker's bench out of a log. Ever since he keeps an open eye on all our wagons and farm implements, such as spokes, whiffletrees, eveners, poles, neck-yokes, and such like thus saving the institution many dollars during the year. One particular thing I wish to mention in this case is making wheel-barrows, and while we all know that we can buy a wheel-barrow for a small amount, this patient will perhaps spend two (2) weeks in building this old and well-known vehicle out of a log, besides doing his own blacksmithing, and it is amusing to see how much satisfaction and entertainment he derives therefrom.

Outside of our skilled mechanics, we have another class of people very useful, and after the first flurries of snow they get what we call the lumber-jack fever and can only be entertained during the winter months by having a piece of timber land in connection with the institution where they can spend the winter months logging and cutting wood for fuel, and in this way it proves not only entertaining for this class of people, but also proves a good investment when this can be applied.

Last but not least. While we have in this paper employed and entertained our people in their mental state, how about when they become physically ill? First of all, let us be well informed in regard to their religious denominations, and thereby having their respective pastors or priests call on them in a friendly and soothing manner, not exciting the condition of the patient. See that the attendants wait on them as we would wait upon our own loved ones, and even though, as it often occurs, might be only an imaginary disease, let us all bear in mind that we are subject to the same disease. We can not help but make even sickness an entertainment by granting some of their wishes and being kind to them when they have some physical ailments while already being mentally sick. I deem it advisable on request of the patient to call the attending physician even oftener than necessary and thus making it an entertainment also. In short, let us all follow the Golden Rule "Do unto others as you would have others do unto you and yours." Thank you.

HOME CARE FOR THE INSANE.

MISS JULIA C. LATHROP, Chicago, Member of Illinois Board of State Charities.

To an audience like this I need not offer elaborate proofs that the care of the insane is a subject of great importance to the general public. At the present moment there are behind locked doors in the United States in the care of State institutions, and in county poor houses probably two hundred thousand men and women suffering from the terrible ailment which we call insanity. We can remind ourselves that whatever happens, the number of the insane seems to increase. We don't know whether it really does, but we do know that in the State institutions there is an increasing number of insane persons. In my own State of Illinois this increase is between three hundred and four hundred annually; in New York State between seven and nine hundred. This means an increasing burden to the taxpayer and we are justified in asking whether the institution system of to-day be so modified by home care as to reduce this burden of public

expense. Still more are we justified in trying to learn whether the discomfort or unhappiness of any considerable number of patients may be decreased by home care:

If any one is willing to stimulate his imagination as to the sufferings of the insane, let him read a wonderful book lately written by Mr. C. W. Beers entitled "How a Mind Found Itself." This remarkable human document is a simple and convincing narrative of Mr. Beers' experience in various hospitals, during two years in which he was insane, and the book is certainly destined to play a great part in securing wiser care for the insane in America.

It is plain that home care necessarily means care which is largely in the hands of women. If I interpret my subject broadly to include the care of the insane by women in hospitals, it will be a frank straining of my title, but I think that we cannot deal with the village or family care of the insane to advantage without reviewing carefully all the care which the insane person should receive. The village care or the family care is for most cases a final condition and especially at the present time we cannot afford to consider a final condition without considering all the steps that lead to it, and without asking whether it may in some measure be prevented. I shall venture then to briefly review some aspects of the modern care of the insane in which women are chiefly concerned.

I suppose you all know how the insane person would be cared for in this city between the period when he is taken from his home and the time when he is sent to an asylum. I do not, but I do know how he would probably be taken care of in a town of about this size in many states or in most of the largest cities in this country. He would be sent to the jail or the police station as a rule, and he would be kept there until the judge summoned a jury or commission of doctors to pass upon his mental state. He might die in the violence of acute mania overcome in a struggle with the police in charge of the station, or he might beat his hands against the bars of the cell until serious injury resulted; or a respectable woman becoming suddenly delirious in her boarding house at night might be taken in a hastily summoned patrol wagon and placed in a restraint chair in a basement cell. There would be nobody to think of these people as sick and their first experience would be this terrifying one of imprisonment with more severity of treatment than is accorded

to the ordinary criminal under arrest. After the patient has been adjudged insane perhaps by a commission of two doctors, but more usually by a jury trial, the journey to the institution for the insane is made in charge of a sheriff or his deputies, thus continuing the atmosphere of a criminal procedure. It is needless to point out how such treatment must prejudice an insane patient's chance of recovery.

I am sure it will be of interest to describe a very different method of care and commitment which is now in vogue in Glasgow. The Duke St. Infirmery is a general hospital corresponding to the free public hospitals found in most American cities. It is an excellent modern structure with about 700 beds, and is built of brick around in irregular square. One side is devoted to the mental wards. This side is a two-story building; one story for men and one for women. Each floor consists of one large ward with a few small rooms and the necessary baths and offices. The wards are flooded with sunlight and in every respect wholesome and comfortable. The service is in charge of a nursing staff precisely as are the other parts of the hospital. The women nurses take six months service there; three months on day, and three months on night duty. There are no locks, no bars at the windows, no suggestion that the wards are for any purpose except to serve the comfort of sick people who occupy the beds.

These wards are the creation of Dr. Carswell, a physician employed by the parish of Glasgow to have charge of the commitments to the asylums for the insane. When a person becomes insane, the proper notice is at once sent to Dr. Carswell and he promptly visits the patient in his home. It is true that if the patient had become violent or homicidal that the police might have been summoned and would have remained in the house to protect the family and the patient in need of the service of the doctor, but under no circumstances would the police take the patient away from the house or perform any other office than that of keeping the peace.

When the doctor arrived and examined the patient, if he thought the case one which would be benefited by immediate hospital treatment, the patient would be sent to the Duke St. Infirmery which I have just described. If on the other hand the case was plainly unimprovable, Dr. Carswell would secure the

medical certificates from two physicians and the patient would be sent to one of the outlying Glasgow asylums for the insane.

In the little infirmary wards are all sorts of violent patients, homicidal, suicidal, many delirium tremens cases. At the time of my visits the wards were under a slender young woman as head nurse, who could never have obtained a place as attendant in one of the institutions where a vigorous physique is made the condition of employment. Women were in charge of the men's wards assisted by men assistants or orderlies. I saw no restraint in use during either of my visits, although I was told that under extreme circumstances a jacket was used. The quietness and order of the wards was most extraordinary.

It is not for the layman to say how effective the modern suggestion of being treated like a sick man instead of like a mad man may be in changing a mad man into a quiet sick man, and thence into a well man.

I went to Scotland last winter largely to see the organization of the Stirling Asylum at Larbert which has a system of nursing for the insane quite original and considered by many to be well worth study and imitation. The whole nursing service for men and women alike is under a head matron, so-called, who is a trained nurse, a graduate of one of the best hospitals in Great Britain; we would call her a superintendent of nurses. Under her is a group of assistant matrons all of them graduates of excellent hospital training schools. Each one has charge of a ward or groups of wards and of the patient and attendants in those wards. About two-thirds of all the attendants are women. The order and homely comfort of the men's wards in charge of women nurses and attendants was extremely marked. The institution was absolutely without mechanical restraint.

There were single rooms but the keyholes had been covered over so that it was impossible to lock them. The night service was in charge of the assistant head matron who made at least three rounds during the night and was always on call. The assistant matrons instructed the attendants under them in the personal care of the patients and by their supervision enabled the attendants to have time to be the play-fellows and work-fellows of the patient in a way which I have never before seen. For instance, one might see three women in a row scrubbing the floor, the middle woman an attendant with a patient on either

side. I am sure that the moral effect of such participation is invaluable and I contrasted it in my mind with the picture I have often seen of a stiffly starched, trim attendant directing the patients about their work, and with muttered protest I have heard from a patient of gentle birth as she went along with her scrubbing pail, "These girls are hired to take care of us and this is the way they do it."

I have seen many forms of mechanical restraint by which patients could be kept safely in their beds, but I have never seen anything more effective than one I saw at the Stirling Asylum. A restless man patient, a burly old fellow, was completely restrained by the little hand on his shoulder of the young girl attendant who was perched at the head of his bed and who with her other hand at the same time was playing checkers with another patient just emerging from a state of stupid indifference and to whom this gentle stimulus was most grateful.

I take it that these simple approximations to the motherly relation of a woman and her children are not only humane and comforting but they are in effect the highest scientific expression that we have thus far reached in the daily routine care of insane.

I have spoken of Glasgow and Stirling because I have seen them recently and because while there are other similar instances in the world there are certainly none better. I know of very few at all, comparable with them.

But there is another aspect with which we are more concerned to-night, that of the family or village care of the insane. To some it seems a remote subject and the suggestion of transplanting such care to this country seems extravagant. Let me first describe to you as well as I can some instances of such care abroad and then we can consider briefly whether the time may not be ripe for gradual introduction of similar care here.

The earliest instances of family care is believed to be that bestowed in the village of Gheel near Antwerp in Belgium. For more than one thousand years insane people have been brought to the shrine of St. Dymphna at Gheel to pray and be prayed for, and the villagers long ago became accustomed to these sad boarders, and from generation to generation have handed down the traditions of simple hospitality—of taking insane persons to board in their families, allowing them to go in and out and to

participate in the family life as much as possible in the way sane boarders would.

At the present time the commune of Gheel, ten miles across, consisting of the principle village and various outlying hamlets, has a population of perhaps 6,000 sane persons and its chief industry is the care in families of about 2,000 insane, epileptic and imbecile persons.

At the end of the main street of the village is a little hospital with a pretty garden and pleasant white-curtained dormitories. An air of great calm broods over it for it is almost empty. The superintendent resides here and to this hospital is brought for observation each new patient, that the superintendent may observe him or her and decide if family care fits the case. To the hospital are returned patients who by reason of physical illness or violent outbreak cannot be cared for in the families.

Under the superintendent a staff of physicians and supervisors are constantly visiting the patients in the boarding places and taking care that the regulations on their behalf as to rooms, cleanliness, food, etc., are fully observed.

It was believed for a long time that this remarkable village must remain unique; this pious legend of St. Dymphna could not be transplanted and it was thought that such simple lack of fear of the insane could not be found in any other community, nor without religious sanction. In the early 80's, however, the authorities of Belgium felt the need of further provision for the insane and determined to try to open another village colony. They chose Lierneux in southern Belgium. At first there seemed difficulties; the burgomaster said that no disease was so catching as insanity and that no insane person should be received in the village while he was burgomaster. But the imperial authorities prevailed and the arrangements for the colony went forward. According to the latest available report they were more than 500 patients at Lierneux; the villagers were glad to receive them as boarders at the rates paid; the general organization for supervision was similar to that at Gheel and the experiment at Lierneux may be counted as complete proof that any body of intelligent people who desire to take boarders can be readily taught to care for boarders whom we call insane.

Nearly ten years ago I went to Scotland for the express purpose of seeing the family care of the insane there. In that

country about twenty per cent of the total insane population is cared for in families. Unlike the Belgium villages or French colonies of which I shall speak later, the Scotch patients are scattered in many villages from the Lowlands to the Hebrides, and the authorities take great pains that there shall nowhere be so large a group of patients that any one community can be remarked as having a population in which the insane are conspicuous.

I spent a day with the officials of the lunacy commission visiting the insane boarded out in the village of Lanark which stretches for miles along the upper reaches of the Clyde river. Perhaps part of my enthusiasm and satisfaction was due to the novelty of the experience and to the picturesque charm of the country and villagers, but I think that after all allowances are made, I am not mistaken in believing that the patients were happier and more comfortable in those simple cottages without locks or bars than are patients of the same mental class in the best equipped institutions.

I well remember one old lady who was peacefully lighting her pipe at the fireplace and who was pointed out to me as a patient sent from the asylum on trial because she was considered a rather high tempered person quite ready to lift her stick when contradicted. She had grown milder in the freedom of her cottage boarding house and was much given to a grandmotherly fussing over some young boys from a neighboring parish who were boarded out in the same family. Thus with her pipe and the children she had a real nibble at some of the joys which some old people take for granted.

In another village we saw men patients. One of them had been a gardener and helped the master of the cottage who was himself a nursery-man; the other was a simple young fellow. They came into the house to see us but the young man soon disappeared and the hostess asked me after a few minutes if I would like to see where John had gone. I followed her into the next cottage which belonged to her son. We found John sitting on a cricket joyfully rocking an old-fashioned low, wooden cradle in which was a little baby. The mother of the baby said she did not see how she could get along with her work if it were not for John, because the baby fretted and John took care of her all the time.

I well remember an old woman standing in a locked ward in an American asylum who could have lived outside very well, the attendant said, if there had been any one to look after her a little. She was a skilled knitter and when she heard that there was a new baby in the family of one of the asylum doctors living in a building a few hundred feet from her, she sent a pair of socks of her own knitting to this child whom perhaps she would never see. She lived in a far grander building than did John, a building set in a noble park, and she was maintained at a higher per capita, but for my part I should choose the lot of John.

It is perhaps necessary to reiterate that only carefully selected patients are suitable for family life and that in order to make it satisfactory and safe there must be a well administered system of supervision so that the patient may be protected from any injudicious or unscrupulous caretaker, and so that the caretaker may in turn be protected from unsuitable boarders. The Scotch patients are boarded out by parish authorities corresponding to our county authorities and are visited and inspected by the parish authorities and also by the deputies of the lunacy commission. The records of accident among the boarded out patients compare most favorably with the institution records, and the cost of maintenance is considerably less. The improvement in the mental condition and behavior of many of the patients supposably chronic cases is noticeable. The proportion of boarded out patients in Scotland has remained almost stationary for a number of years at about twenty per cent. Some authorities believe that it might be increased but however that may be, it forms an integral and valuable part of the whole Scotch system.

It seemed to me, though in this I may be mistaken, that the freedom of the village patients was reflected in such institutions as I saw in a far more homelike atmosphere. Perhaps the fact that the women in the villages care for the patients both men and women, has aided in stimulating the Scotch asylums in their extensive employment of women attendants and nurses for men patients.

I am informed that the boarding out of insane patients in families is a means of care increasingly employed in almost all the continental countries from Norway to Spain and lower Austria.

There is a small international society for the promotion of such family care and its organ called "L' Assistance Familiale," has frequent reports of the establishment of family care in some new quarter.

Some years ago, the French authorities, finding the asylums of the Department of the Seine overwhelmed by the numbers of insane patients, sent out a commission to examine the boarding-out system in Belgium, Germany and Scotland. Upon the basis of their reports two colonies have been established in the center of France; one for women at Dunn-sur-Auron and one at Ainay for men. These villages are in a part of France which has had various industrial reverses. It was a vine country but was devastated by the phylloxera and has never been replanted. It once had a great iron industry and a porcelain industry both of which by means of the discovery of better ore or the neglect of the railways have fallen into nothing. The most vigorous young people go up to Paris and there is left a population containing many persons who are glad to add to their incomes by taking as boarders patients sent to them from the Paris asylums. The method follows closely that of Belgium. In each village there is a little hospital and the superintendent with a staff of assistants supervises the patients and is in constant communication with the whole colony.

The colony for women was first established and proved immediately successful. It now embraces over 600 souls. The early reports of the physician who established the colony for men are especially interesting. It was plain from the first that if the colony for men was to be established the caretakers must be women—in some cases widows or women with no men in their families. At first there was great alarm and the superintendent encountered many difficulties in persuading anybody to make the attempt. The experiment once tried, however, it proved almost humiliatingly successful—the men patients according to the superintendent's report, being much more popular than women patients because they do not gossip nor interfere in the household nor fuss about the kitchen.

In the village of Ainay there is a large club room where the patients from the village and from the nearer surrounding hamlets come at will to smoke and read the papers and play cards. Evidently the colony is popular and its good repute has gone

back to the Paris asylums as the superintendent says in one of his reports that patients often come to him who say, when he begins to instruct them as to their rights and limitations in the village, "Oh, yes, Dr., we know that we are free to stroll about. We can work for ourselves and get the pay, but we must not go to the wine shop and we must come back at meal time." I was told at Ainay that a large proportion of the patients do some sort of work for which they receive small sums of money; their board is amply paid by the state and their hosts have no claim upon their time. Many work for the railroad, one was said to have recovered the furniture in the parlors of the village; another, an old regimental bandmaster taught music and many do little services in the care of the cattle and the fowls, cutting wood and fetching water and one constantly saw them acting as nurses for the children. In this connection I might refer to a statement made in an old report by the superintendent at Lierneux. He said it was a great mistake to think that insane people should not be with children. He said that most insane people were fond of children and were kind to them and could be trusted with them, and that as for the child it was a good thing for him to learn that an insane person was sick, somebody to be looked out for tenderly and protected, not an object of fear nor an object of ridicule.

I am sure what I have said of the French region in which these colonies are situated must remind you of the conditions in parts of New England, and it is of interest to know that in one of the New England states—Massachusetts—the effort to board out the insane in families is being made with good results. The experiment was first tried some twenty-five years ago but for various reasons was not carried on with vigor. Now, under the present Committee on Insanity, it is being very carefully worked out, and the cases which I saw in one scattered village about an hour out from Boston seemed in every way well cared for and contented.

We have long since abandoned the idea that insane persons are possessed of devils. We have long since accepted the theory and fact that they are sick people. We are slowly learning how to treat them as sick people, and we of the laity are slowly learning to believe that in time medical wisdom may discern methods of prevention and cure for this as for more obvious

bodily ailments. But when all is said and done insanity has its own sad and irremediable disabilities. The loss of authority over one's own person and conduct; the legal extinction; the intermittent flashes of self-realization which characterizes seemingly all insane save those sunk in dementia, make the state of the insane unspeakably pitiable. To restore them by every possible expedient as nearly as can safely be done to some semblance of the ordinary social life in society not only appeals to our humanity, but it is now receiving the sanction of science.

At one end we are striving to give the suddenly stricken insane patient the same medical and nursing atmosphere which we would give the patient attacked with acute and obvious bodily illness—for all the insane in all the intermediate states of helplessness and irresponsibility institutions of various sorts must be provided—while at the other end of the long gamut we can conceive that there may develop in this country a system of boarding-out a large proportion of the inoffensive, quiet insane. Perhaps the most natural and simple beginning will be by a sort of colonization under the supervision of the institution authorities, a method we can borrow from Germany and adapt to our own different conditions; but whatever the ultimate method, is not the time ripe for considering the whole question?

At the close of this address Miss Lathrop presented a number of stereoptican views illustrating the institutions and methods described by her. The most interesting pictures were those concerning insane persons who are subjects of home care.

THURSDAY.

MORNING SESSION.

Business session.—A committee of three was appointed to make investigations with reference to the proper care of tuberculous insane in county asylums, and report its findings to the next annual convention.

The following committee was appointed:

L. P. Edwin,
E. J. Perkins,
Jos. Roehl.

The following program committee was appointed:

Mrs. D. M. Barlass,
Andrew Reis,
R. M. Smith,
A. J. Whiffin.

A committee of three was appointed to make a study of the question of wages paid to employees of county institutions and in conjunction with the State Board of Control make recommendations, at the next annual meeting of the association. The following committee was appointed:

T. D. Wheeler,
G. R. Downer,
C. M. Hayward.

It was decided to hold the next convention June 14, 15 and 16, 1910, at Green Bay.

Report of the Treasurer, Mr. Geo. H. Seely, read and accepted.

The following officers were elected for the ensuing year:

President, J. E. Coffland, Richland Center.
Vice President, A. J. Whiffin, Sheboygan.
Treasurer, Geo. H. Seely, Menomonie.
Secretary, F. M. Smith, Osseo.

OUR SYMPATHY FOR THE INSANE.

GEO. W. MAYHEW, Milwaukee, Wis.

A person who becomes insane should at once be placed in a Hospital where the appliances are complete, where the surroundings are pleasant and as homelike as possible, and should be isolated entirely from the chronics, the epileptics and the imbeciles. It is of the greatest importance that they be segregated. This, in my opinion, is the ground work for a start to cure insanity. The three classes above mentioned should not be colonized, under any circumstances. To do so, would not only be impolitic, unwise, injurious but wicked, and should not be tolerated in a well regulated community, where common sense, if nothing more, has a hold on the minds of the people, regardless of a higher and more proficient education. The object in placing the patient in a Hospital is the cure, if it be among the possibilities. I believe that if a cure is not accomplished within two years, the case is nearly or quite hopeless. Restoration to a sound mind, after the first two years' struggle, is rare, therefore, these cases in their incipiency should have the best care that can be given by man or men who are way up in the profession.

It goes without saying, that a great responsibility rests upon this class who have or should have the ability in that direction. To the laymen, but little is comprehended in regard to a cure for this awful malady which affects so large a class of humanity, and which seems to be continually growing with greater rapidity as time goes on.

I presume the causes of insanity, however intricate they may be, are much easier elucidated. A writer has said, that: "Insanity is a generic term applied to certain morbid mental conditions produced by defect or disease of the brain. The synonyms in more or less frequent use are mental disease, alienation, derangement or aberration, madness, unsoundness of mind. There are many diseases of the mental faculties which, either on account of their transient nature, from their being associated with the course of a particular disease, or from their slight intensity are not included under the head of insanity proper."

“The insanities are sharply divided into two great classes—the congenital and the acquired. In most treatises on the subject will be found discussed the bearing which civilization, nationality, occupation, education, etc., have, or are supposed to have, on the production of insanity.” “Such discussions are generally eminently unsatisfactory, founded as they are on common observation, broad generalizations, and very imperfect statistics.” Volumes have been written upon the subject of the causes, but there are so many phases of insanity which might be compared to the different shades of color, that it is difficult or impossible to get anything like a unanimity of opinion, hence, no satisfactory conclusion.

The cure therefore, is of the greatest importance, since this disease is here in all its horrors, and must be met as best it may. As I have already indicated, it is of the greatest importance to have educated men in the profession, who have, no doubt, given the subject their best thought and study, and who are still diligently at work on these lines, and will undoubtedly delve deeper into the mysteries of this disease, and possibly make discoveries in the future which will be of immense value to the sufferers. They have already accomplished some good for the insane. Within the last twenty years, the progress made in surgery for instance, has been almost phenomenal. It has astonished the world. There is still more to be done, and we must wait patiently for greater achievements. If so little has been done for the insane by the profession, what can be expected of the laymen, who are only pygmies in comparison. We can and should do all that is possible for the physical comfort of the insane, and at least treat them with the utmost kindness, which to them is a benefaction, and a great pleasure. When I think of the little we laymen know, of the curative principles necessary for the benefit of the insane, I am forcefully reminded of a few lines which I have recently read. With your kind indulgence, I will give them for what they are worth:

“What right has a blacksmith to pry into a grand piano to find out wherein the exquisite harmony of the instrument lies? Who has the right to ask the artist how he blended the colors that crowned his picture with immortality, or the poet to explain his pain in the birth of a mood which moved the world.”

Filthiness is an abomination and above all things should not be tolerated in any of our public institutions. Soap is cheap and water in plenty, and the appliances for its use are in perfect order for the work. The authorities should insist upon its proper application to the patients. It is an old saying, "That cleanliness is next to Godliness." It certainly tends to a good appetite, good looks, good morals and good health. Let it be used for all it is worth.

Chronic patients should have indulgent restraint, occupation, amusements without end, fresh air, good wholesome food, and enough of it, plenty of encouragement and good cheer from those in authority, who ought to treat them with kindness, tenderness and compassion and have them feel that they believe them to be of a higher order than the brute creation. If this is done, I am sure we will be rewarded by seeing them enjoy life to the fullness of their capacity, whatever that may be. A kind word occasionally spoken costs little, but has its effect upon the recipient. Vinegar is a commercial commodity, and is valuable in its proper place, but for catching flies it is not a success. Sweets are much better and work like a charm. We should remember that there are means which if properly used, will accomplish the ends in view.

I am growing more and more of the opinion that the use of drugs for the benefit of the insane, or for others, as to that matter, is about played out. This belief I apprehend is growing faster than most of us are aware of. The fact that one eminent physician of this western world gives his sanction to this theory, simply shows the trend of thought at the present time. For proof of his idea, I will quote from an article taken from a magazine of recent date, it is as follows:

"At a recent meeting of the American Medical Association in Chicago a physician of national reputation openly declared that within twenty years materia medica would be regarded as a relic of barbarism—that doctors of the future would prescribe right living in the place of medicine, for said he, those who live rightly will need no medicine, and those who live wrongly can never be kept well on drugs."

In starting out with my paper, my proposition was that the three classes, chronics, epileptics and the imbeciles, should be segregated. I wish to quote some authorities which I have gathered in a cursory manner to substantiate this proposition:

T. D. Crothers, M. D. Supt. of the Walnut Lodge Hospital, Hartford, Conn., D. Hack Tuke, M. D., England, C. Eugene Riggs, A. M. M. D., who was Chairman of the meeting of the Association, and who read a very interesting paper upon "Progress in the Care of the Insane in the Last Twenty Years," Stephen Smith, M. D., of New York, formerly State Commissioner of Lunacy, Frederick H. Wines, L. L. D. Supt. of the State Asylum of Illinois.

I would like to impress upon the minds of every layman in our association the importance of reading the "*Proposed Changes of the Legal Status of the Insane, in Accordance with our Present Knowledge of the Nature of Insanity, for the Purpose of Securing for them more Rational and Efficient Treatment,*" by Stephen Smith M. D. of New York, member of the State Board of Charities, formerly State Commissioner in Lunacy. This article is found in the report of the Fourth Section of the International Congress of Charities and Philanthropy, held in Chicago, June, 1893. Our Medical Professors are familiar with it. I must say that it impresses me more favorably than any article I have read in the Medical Books. It must be very interesting to any one connected with our system of management of the insane. It is good policy for us to keep up as close to the profession as possible, and watch out for results.

I want to say a few words in regard to the treatment, etc., of each particular case of acute insanity. It is an undisputed fact that most of the cures are accomplished from the ranks of the acute insane, hence the importance of a thorough examination as soon as the patient reaches the hospital. This is the critical time for doing something for their benefit. It seems to me that there are too few cases cured. I am afraid that the thought and study, the time and attention given by the profession is not adequate to the demands of the subject. We may have reached the point where effort is useless, but I am not a convert to that proposition. Our motto should be "Let us do or die in the attempt."

I quote a part of a lengthy paper written by Stephen Smith, M. D., where he sets forth graphically what has and what has not been done for the insane, to-wit:

"It is surprising how completely the one idea of the construction of asylums and the methods of managing the details of

their affairs absorb even the best medical officers and how little thought is given to the critical study of individual patients with a view of their prompt treatment and recovery. The reports of superintendents, of boards of trustees, and lunacy commissioners, abound with the details of new constructions, the results of good farming and gardening, the economics, the receipts and expenditures, but scarcely a word is said of improved methods of treatment and the remarkable number of recoveries by new processes of treatment. A writer in a journal devoted to mental science has said while commenting on the reports of the English Lunacy Commission, "Their reports (blue books) show that, on the whole, there is an immense amount of thought, and care, and efforts on the treatment of the insane by all who have to do with them. Year by year the efforts towards a more perfect system of treating and managing them moves steadily in all but one direction. That spasmodic and individual efforts are made in this direction is true, but on the whole the medical treatment of the diseases which are comprised under the term insanity stands still as compared with the asylum buildings, general management, etc. Three books about a disease with nothing medical in them. Everything that concerns the treatment of those laboring under this disease professedly gone into, not a word about medicine! Talk of modern skepticism—the reports of the commissioners and the reports in lunacy are the finest examples of medical skepticism extant; for they don't deride or damm with faint praise, they simply ignore the whole science and its professors. It may be that this will be better in the long run for the medical treatment of insanity but it is hard to see it if its practical effect is to encourage asylum doctors to ignore the medical aspects of patients and sink into a state of lethargic indifference to the unsolved problems in brain pathology, diagnosis and therapeutics that daily come before them.

Severe as this criticism is of English administration, it applies with full force to our own methods. We have built upon the same faulty foundations and have reared the same anomalous superstructure. Our popular conceptions of insanity being false, the entire system of treating the insane is defective and unworthy of civilization."

I wish to make one more quotation which is still warm, from the paper read by Frank B. Sanborn of Massachusetts before

the Buffalo Conference of Charities on the eleventh day of this present month on "The Interesting Story of Half a Century's Progress in the Treatment of Insanity." The fact is, I got this item so late it was impossible to get it into my paper where it properly belongs. He says:

"Separation of the recent from the chronic insane is one of the points always in dispute, but to a certain degree this separation is inevitable and is usually advisable, if we may test it by experience. Perhaps it is best performed in establishments including both classes under one management, but with the chronics in detached buildings or colonies. When built exclusively for the chronic, these asylums should be small, with much arable land about them, as in Wisconsin, where such small asylums have supplanted the old mixed county poor-houses, and are well administered, at a cost rather below that of equally good care elsewhere. So far as this one state is concerned, the problem of separation is solved, and well settled; and nothing better, on so large a scale, was seen by me in Europe. Wisconsin needs to supplement it, however, by improving her curative hospitals, and adopting family care, as in Scotland."

Mr. President, Ladies and Gentlemen of the Association: It may be somewhat presumptuous for a layman to read a paper before this learned organization, but I have made the venture. If I am not greatly mistaken our Milwaukee County Asylum Board cannot be successfully charged with furnishing too much literature for occasions of this kind, or of taking up too much valuable time of the conventions. We have been as quiet as a church mouse. Others have done the work and we have been perfectly willing they should. We ought to do something for the cause as we are in perfect sympathy with the work of the association, and are confident the discussions and the interchange of ideas among the members may result in doing much good. If what I have to say does the least amount of good, I shall be more than satisfied.

AFTERNOON SESSION.

INDUSTRIAL RE-EDUCATION OF THE INSANE.

By DR. ALMAH J. FRISBY.

The history of the insane shows that their conduct has always been largely determined by the treatment they received. When they were called mad men and women, and treated as such, they were wild creatures with unkempt hair and ragged garments, who were supposed to be possessed by evil spirits. It was thought to be inevitable that insane people should look and act like that.

Those who took patients from the old mad-houses connected with the poor houses twenty-five years ago, into the first county asylums that were built in this state, tell gruesome tales of the condition in which these patients were found. They also relate what good treatment did in the way of humanizing these poor creatures again. The improvement in the appearance and conduct of the insane is chiefly due to better care and kinder treatment.

But the fact that conditions now are vastly better than they used to be, does not warrant our assuming that present conditions cannot be improved upon.

There is sufficient evidence to show that the insane can be re-educated in the self-control and persistency of effort which they have lost through the mental enfeeblement resulting from insanity. Their condition is analagous to that of the feeble minded, and it has been found that the best way to develop such mental capacity as this class of defectives have is through manual training. The dormant faculties of the apathetic patient are aroused by training the hand, and it also affords an outlet for the morbid and excessive mental and physical activity of the disturbed patient.

On the other hand, enforced idleness and restraint, aggravates the condition of both the demented and the disturbed patient, sometimes until it is past remedy.

The brain is enfeebled by disuse just as the muscles are. The best mind in the world would deteriorate if it received no stimulus from the outside.

It is unpleasant to think what we might ourselves become if we were simply fed and clothed and condemned to brood day after day within four walls. I suspect that very few of us would fail to become gibbering idiots, and yet that has been the accepted way of treating a diseased mind.

The effect of confinement and monotony is illustrated by the frequency with which prisoners become insane. Work is a boon to the prisoner as well as to the patient in the asylum, and the attitude of labor unions towards prison labor is unreasonable and cruel. Somebody has suggested that we pray: "Give us this day our daily work." Work insures bread and is the saving clause in the world.

The intellectual stimulus of work helps to dissipate delusions and banish melancholy in the case of sane as well as insane people. On the other hand overwork and worry cause mental and physical depression, sometimes resulting in insanity. There is danger that the good patients and willing workers may be overworked, and superintendents and matrons should be careful that this does not occur. Occupation for the insane is too apt to be considered entirely from the financial standpoint and its effect upon the patient is not taken into consideration. In many cases it ought to be looked upon as one of the most important means of treatment and the physician should be frequently consulted with reference to it. The work should not overtax the patient either physically or mentally, or it will injure rather than help him.

Incidentally, the re-education of the insane will result in financial profit, but the first and most important consideration is the salutary effect on the patient. The tendency of the insane is to deteriorate in habits and conduct, and nothing that can check this tendency should be neglected.

There is a marked difference in the character and condition of the patients in an institution where those who cannot perform useful labor are left largely to their own devices, as compared with one where careful attention is given to their personal appearance and habits, and persistent effort is made to occupy as many of them as possible. Insane people should be treated as individuals. All cannot be treated alike. The peculiarities of each patient must be taken into account. For this reason the successful industrial teacher must be fertile in

resources and skillful in adapting them to the needs of the patient.

If we could get rid of the idea that the care of the insane is altogether or even chiefly a matter of keeping them in more or less close custody, and substitute the idea of occupation and training, it would result in a great improvement in conditions.

This would require more attendants, and in many cases more intelligent attendants, but it would pay in dollars and cents in the long run. To employ as few and as cheap attendants as possible is a "penny-wise, pound-foolish" policy.

The accumulation of demented patients who are helpless and hopeless burdens, and of noisy and destructive patients who are even more of a burden, can, I am convinced, be largely prevented by faithful and intelligent effort to arouse one class of patients and to quiet the other by occupying and amusing them.

The longer they are neglected, the more difficult the task becomes in either case.

This work requires some natural talent for it, together with training and experience. Not everyone, for instance, who can knit, sew, make rugs, etc., has the perseverance and tact to interest insane women in the work.

But that "the demand creates the supply" is an old axiom in political economy. If we have an ideal and are not satisfied with attendants who are simply capable of caring more or less indifferently well for the patients' physical wants, we shall be much more likely to get a more competent class of attendants in the course of time and we shall be likely to get them sooner if we are progressive enough to take advantage of any opportunities for improvement in this direction.

A four weeks summer course for institution attendants was given in Chicago last summer for the benefit of the attendants in Illinois institutions, but those from other states were received. The course was so much of a success that it is to be repeated this summer and if there are in the county institutions some bright and ambitious attendants with a natural aptitude for the work, as there undoubtedly are, they should be encouraged, and if necessary, helped to take the course with the understanding that they will remain in the institution for a reasonable length of time afterward. It would be a good investment for any institution to make and I hope the state institutions will set the example.

The idea that the insane are capable of industrial re-education is not as recent as might be supposed, considering how very little has yet been done in this direction. Miss Dix, through whose efforts the first state institutions for the insane were established, in her memorial to the Illinois Legislature in 1847, advocated the industrial re-education of the chronic insane for "humane, medical and economic reasons." The State Board of Charities of Illinois, in its report to the legislature of 1907, said that with the exception of the water treatment and the more thorough instruction of physicians, its recommendations were the same as those made by Dorothy L. Dix, just sixty years before.

It seems almost incredible that she should have been so far ahead of her times, but people are occasionally born with this foresight, or perhaps it would be better to say insight, into conditions.

They are not listened to now with the respect which they received when they were called seers, prophets, etc. Hence, more than half a century had passed before the wisdom of Miss Dix's suggestion was fully appreciated.

A cursory examination of reports of state boards and institutions seems to show that more is being done in the line of industrial training in the western hospitals and asylums than in those of the east.

The State Board of Insanity of Massachusetts in advocating colony care for the insane (and that is what our county asylum system is, viz., a colony system) says: "The chief aim of the colony should be the utilization of the enormous waste of energy in the host of idle demented in our institutions, un-used because of their mental torpor, damaged brains and weakened powers of application, but capable of quickening and partial re-generation and re-development into useful activity.

"Although the labor of patients with initiative and of others easily induced to perform common duties, is now quite generally and fully employed, the great task of re-education of the stupid demented is practically untouched, so far as it demands special organization, painstaking training and persistency, comparable in a measure to the efforts and methods of industrial education of the feeble minded, and promising as great returns in production and happiness of patients."

The early treatment of acute cases in psychopathic hospitals

and the industrial re-education and colony or home care of chronic cases are, at present, the most hopeful signs of progress in the treatment and care of the insane.

PRACTICAL EMPLOYMENT FOR THE INSANE.

P. H. JOHNSON, Whitehall, Wis.

Mr. President, Ladies and Gentlemen of the Convention: I have known our secretary for many years and always had a great deal of confidence in him as a man of good judgment, but when he called on me to present a paper to this convention for information or entertainment or both, then I began to waver in my faith as to his soundness on that point. I *am* aware and you *will* be before I proceed very far that literary work and public speaking is not one of my strong points. In view of this I felt like declining this honor, but realizing that if all should do the same we would have no program nor convention.

I believe it is the duty of all members of this association to aid the officers, more strictly the secretary upon whom devolves most of the thankless task of making the arrangements for these meetings, in responding cheerfully to their call by giving what we have, even though our productions may not be pure wisdom or gems of literature.

We are here to tell one another our experiences and what we are doing. And when sandwiched in between the many learned discourses usually arranged for at these conventions, it will help to fill the time if nothing else. It is somewhat like a light lunch between the more substantial meals.

But don't be alarmed, I will promise you this paper will have one virtue, that of brevity.

All authorities seem to agree upon this point that exercise, good care and kind treatment can do more for the mentally deranged than medicine.

The State Board of Control has made it one of the conditions necessary for a county wishing to establish an asylum for the chronic insane to procure a suitable farm upon which the

patients can have employment. A very wise provision. How much more sensible it is to have the patients perform the various work on the farm while getting their needed exercise and thus help to produce the vegetables, meat, milk, cream, butter, eggs, etc., needed for their sustenance, than to make them grind the soles of expensive shoes on equally expensive sidewalks to the detriment of both with only the one gain, that of exercise.

Walking or marching if pursued along the same path daily becomes monotonous and as there is no direct economic gain from it many patients see nothing in it but an unnecessary waste of effort. A useless task imposed on them by their keeper, while most of them see and understand when at work they accomplish something and are usually as bright as any to discover short cuts or methods by which to save labor in the performance of their work. I find that most of them take as much delight in seeing things accomplished by their efforts as any one, especially if the superintendent or attendant in charge will show his or her appreciation by some special favor or attention to the faithful.

Those institutions having large farms will have no trouble in finding remunerative employment for their male patients during the summer, but those which have small farms in comparison with their population, or in the larger institutions where several thousand are kept in the same place, a farm large enough to furnish plenty of employment would be impracticable, especially if the topography of the country was such as not to admit of the location of the buildings at or near the center, as too much time would be consumed in going to and from the work. Such may find it necessary to resort to non-productive exercise for many of their able bodied patients, much energy which might be turned into productive labor is thus wasted. In such cases a little time spent in industrial education might be a good investment.

Many patients learn things as readily as sane persons. I have seen patients who never danced soon learn to go through the figures of quadrille, learn to play various games of cards, become adepts at such games as croquet, quoits, tennis, bowling and baseball. Patients who can drive a team, mark or plant a straight row across your corn field, steer a breaking plow, build a good stack of grain or do any other farm work intelligently,

can learn most any kind of trade, such as mould a cement block, brick or fence post, make a broom, roll a cigar, make a basket or weave a carpet or rug, and numerous other things. The number of such industries that can be operated in asylums depends largely upon the ingenuity of the manager.

We have a farm of 525 acres and a population of 125 of which about 70 are males; thus about $7\frac{1}{2}$ acres for each male patient, on our farm is considerable timber land which makes much work such as cutting wood and posts, grubbing, clearing and breaking, not found on wholly improved farms. But still, in addition to the regular farm work there is time, especially during the winter, for other work, and to fill in I have the last few years raised a small area of broom corn and during the winter make this into brooms. This is work many of them enjoy, it is not hazardous nor laborious and patients who had never seen a broom made soon learned to make good brooms. We have made from 60 to 80 dozen brooms each winter. They sell readily and it makes a nice industry in connection with the regular farm work. Broom corn is easily raised, is not hard on the land and about as safe a crop as corn. I have so far prosecuted this only as an experiment but the result is gratifying. I have perhaps in all since I commenced raised 5 acres of broom corn expended about \$50.00 for machinery and about \$225.00 for supplies including some broom corn for hurl and made \$810 worth of brooms without any extra outlay for help.

This spring I conceived the idea of making some cement fence posts. I made a couple of forms and a few posts myself, then one patient who took considerable interest in the performance took over the supervision of the cement post factory and made in the course of two months about 100 posts, costing about 20c each.

It is a delight to see with what satisfaction these patients will look upon their finished product.

My broom makers go with me occasionally when I take a load to market and are given a chance to do some trading on their own account. The cement post maker never misses an opportunity to extoll the neatness and lasting qualities of his posts and pride himself on the beauty and durability of the fence constructed with them.

As before stated these instances are only experiments but seem

to me highly successful and it is my belief that such industries can be carried on in asylums to good advantage, thus helping to solve the problem of physical exercise by making it remunerative exercise, converting all available energy into useful and productive labor, rather than dressing them in uniforms, drilling and marching, which, while it may be good exercise, entails expense and produces nothing.

Patients should not be held too strictly to their work; they should be allowed when they feel like it to take walks and as much as possible to go unattended. They enjoy fishing and trapping and should not where there is an opportunity for such sport, be denied the diversion when not incompatible with their condition. They also enjoy a ride and picnic, a trip to town occasionally. Let those go who work best, it pays, they work so much better. Most patients like to have money in many instances. It is possible also to gratify this wish as money can be given them and they can be steered so as to buy such things as you otherwise would have to buy for them, and still the satisfaction remains that it was procured by themselves for their own money.

Many people who have seen the ingenious work of many insane think that when a person becomes insane he also becomes a genius. I do not mean to convey that idea and do not wish to be so understood. I have not found it so among those who have come under my observation, but I have found that many insane persons can learn to do work they never did while sane, and do it right. Of course among the population of any asylum there are many whose mentality has so far deteriorated as to be almost a total blank; they can not learn anything. On the other hand there are many who have delusions, that is, deranged on one or more subjects, but retain all their intellect in all other directions. These if naturally apt, easily become good workers at almost anything.

A person takes more pleasure in doing that which requires a great deal of skill, something that everybody can not do, than in doing common work which any one can do. Insane are like others in this respect, the more skill required in the work the more satisfaction it gives when successfully accomplished, and according to the amount of satisfaction derived from their labor is the benefit derived therefrom by the patient; work may become a recreation or a drudgery according as a person likes or dislikes it.

Persons who hustle for themselves will always seek such work as they like. Insane who are restrained of their liberty have not the opportunity to exercise such choice. It therefore devolves upon those having them in custody to find for those under their charge such employment as each enjoys as far as possible. It is humane and it is economy to give some time and study on that subject. I thank you.

Following the reading of the above, Mr. Johnson exhibited brooms made by inmates of the Trempealeau county asylum, the broom corn having been grown upon the farm. He also exhibited specimens of cement fence posts and several other articles made by patients under his direction.

The afternoon session was concluded by an inspection of the hospital buildings, barn and stables, experimental work done by the University, the farm and the work done by the inmates.

EVENING SESSION.

COUNTY ASYLUM EMPLOYEES. HOW SHALL WE SECURE AND KEEP THE BEST.

T. D. WHEELER, New Richmond, Wis.

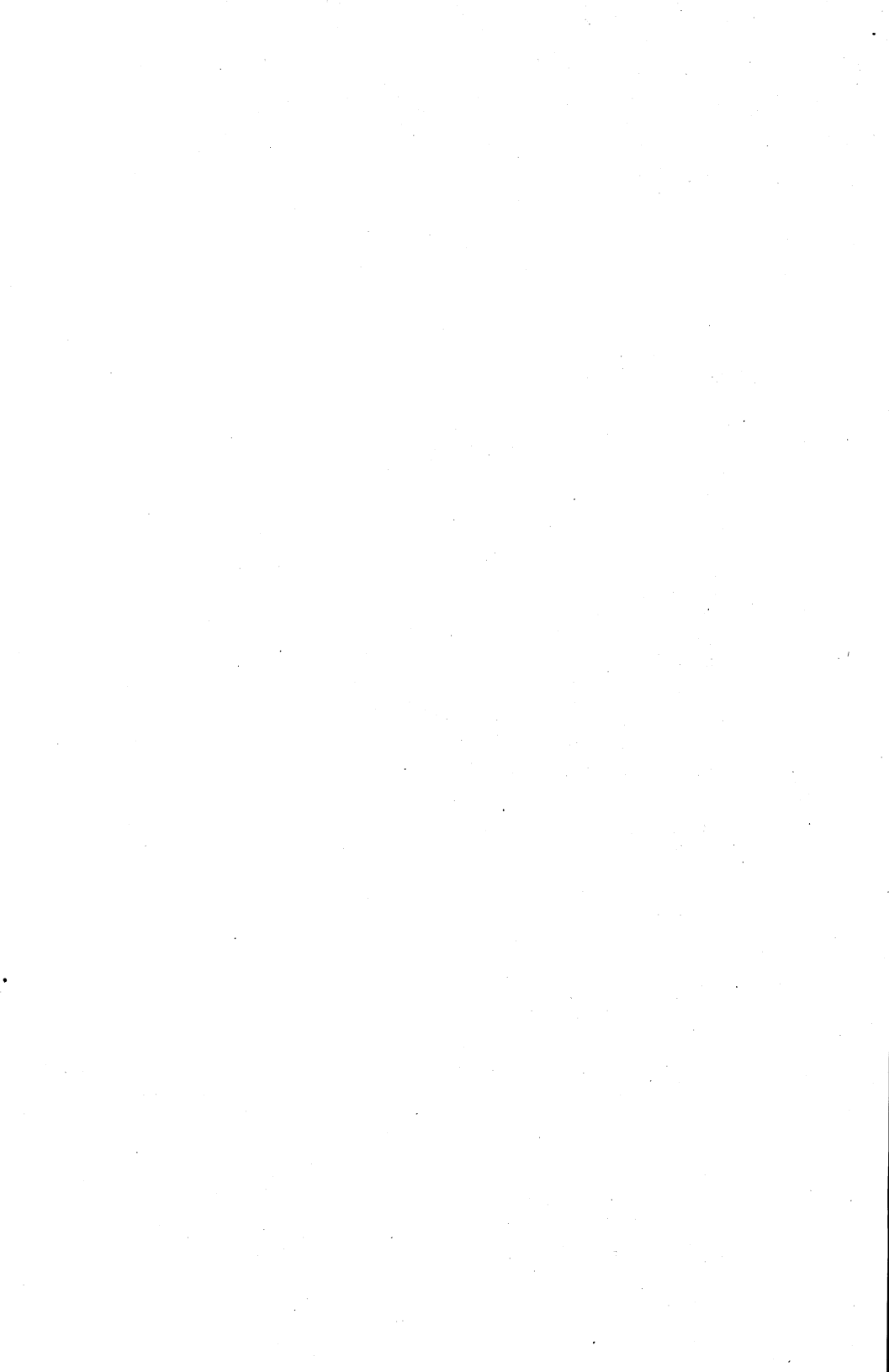
Mr. President, Ladies and Gentlemen: We have in the state of Wisconsin in county asylums, say nothing about the state institutions, between five and six hundred employees. Where do we get them? I will tell you where I get them—through employment agencies, etc., and up to the present time, have been very fortunate in securing good help. Many states have arranged for training schools, where they educate men and women for these important positions. Those of us who have been in the business some time, know how hard it is to secure and keep good attendants, male or female. I think that we should have in this state a training school, something that will fit people for the duties of caring for the insane and giving them the comfort and attention that they really require. I believe that to be efficient, attendants must have training. They ought to be able to go into any ward and educate and interest the patients.

Not long ago I was talking to some of the members of the State Board of Control of Minnesota. They informed me that they had several years ago established training schools in a number of their state institutions, but they haven't been successful in keeping good help in their institutions. The reason why, they told me, was that people came and took the training, became efficient, and then go outside the institution and receive better salaries. I think that we do not pay our attendants the salaries that they should receive. Some of us have been very fortunate in securing good help and keeping it. I have two people at my institution now who have been with me six or seven years, but the balance we change, I guess, twice a year.

I dare say that the State Board of Control have noticed when they visit the county institutions, that we have not efficient help. I don't propose to make a long speech along this line, but I wanted to get this matter before you, and I think, Mr. President, if there is any legislation needed, it is along this line. Talking with Prof. Norgord this afternoon, he tells me that they are training people for the sort of work Mr. Johnson exhibited today, in our University here in Wisconsin. Now, it might require special effort to train attendants for the institutions, but we need trained attendants and I think we ought to do something towards securing them. The expense would not be great.

There is another thing I want to call your attention to, and that is some of our county institutions are paying \$16 to \$18 a month for female and from \$25 to \$30 a month for male help. Others are paying female help from \$20 to \$25 and male help from \$35 to \$40. I think the Association ought to take this matter up. I believe that the work of the several institutions in this state does not differ so much, that there should be such a variation in the wages. I think we ought to have a uniform scale of wages in the institutions. The idea of establishing a training school for attendants, struck me this afternoon when Mr. Johnson introduced the line of work he had been teaching the patients in his institution. The patients in the institutions demand work. I think we ought to have skilled instructors.

In closing the session the Association tendered a vote of thanks to the people of Madison and all who had done so much to make the convention both pleasant and profitable.



PROCEEDINGS

OF THE

NINTH ANNUAL CONVENTION

OF THE

Association of Trustees and Superintendents
of County Asylums for the Insane

OF WISCONSIN

Public printing authorized by Chapter 332, Laws of 1903, as amended
by Chapter 221, Laws of 1905



MADISON, WIS.
DEMOCRAT PRINTING Co., STATE PRINTER
1911

OFFICERS, 1911.

J. E. COFFLAND, Richland Center, Wis.

A. J. WHIFFIN, Sheboygan, Wis.

GEO. H. SEELY, Menomonie, Wis.

F. M. SMITH, Osseo, Wis.

NINTH ANNUAL CONVENTION

OF THE

Association of Trustees and Superintendents of County Asylums for Insane in Wisconsin

PROGRAM.

TUESDAY.

June 14, 8:00 P. M.

Music.

Address of Welcome—Hon. Winfred Abrams, Mayor of Green Bay.

Response—Mr. A. J. Whifflin, Vice Pres. of the Association.

Music.

Address—What Class of Patients should be Kept in Our County Asylums, Hon. Elmer Grimmer of the Wisconsin State Board of Control.

Discussion.

Music.

WEDNESDAY.

June 15, 9:00 A. M.

Paper—The Duties of a Trustee—Hon. Lewis Peterson, Brown County.

Paper—Caring for the Insane Previous to Commitment and Transfer to the State Hospital—Mr. Joseph Roehl, Supt. Marathon County Asylum.

Address—The Dairy Cow on the Asylum Farm—Prof. G. C. Humphrey of the Wisconsin College of Agriculture.

1:30 P. M.

(As the guests of Supt. F. M. Loftus and the management of the Brown County Asylum, the Association will spend the afternoon visiting the Brown County Institutions, the State Reformatory and other places of interest.)

8 P. M.

Paper—How Shall We Entertain and Employ Our People—Mr. A. H. Gorges, Trustee, Outagamie County.

Address—The Care of Disturbed and Destructive Patients—Dr. H. A. Tomlinson, Supt. State Hospital, St. Peter, Minn.

THURSDAY.

June 16, 9:00 A. M.

9 A. M.

Business Session.

Reports of Officers and Committees.

Election of Officers.

Miscellaneous Business.

Paper—The Asylum Farm—Mr. Roland Kolb, Farm Superintendent, Manitowoc County.

Paper—The Supervision of Paroled Patients—Dr. Richard Dewey, Wauwatosa.

Address—My First Week as Asylum Superintendent—Mr. Herman Arpke, Superintendent Sheboygan County Asylum.

1:30 P. M.

Paper—Care of the Needy and Defective—Mr. A. J. Whiffin, Sheboygan.

Paper—The Cost of Maintenance in County Asylums—Mr. Peter Lochen, Superintendent Washington County Asylum.

Paper—The Ideal Matron—Mr. Wm. Riggert, Reedsburg.

Paper—Special Training for Attendants—Mrs. C. Christenson, Matron, Sauk Co. Asylum.

Paper by Dr. Harper—Tuberculosis.

PROCEEDINGS

OF THE

NINTH ANNUAL MEETING OF THE TRUSTEES AND SUPERINTENDENTS OF COUNTY ASYLUMS OF WISCONSIN.

Held at Green Bay, Wis., June 14-15-16, 1910.

Tuesday evening, June 14th, convention called to order by Hon. J. E. Coffland, of Richland Center, President of the Association.

ADDRESS OF WELCOME.

By HON. WINFRED ABRAMS, Mayor of Green Bay.

Ladies and Gentlemen:—A short time ago I received a communication from your Secretary stating that it was the desire of your organization to hold its 9th Annual Meeting in our city. I can assure you it was a pleasure to me, as well as the citizens of this city to be so highly honored, that you should have chosen our city as your place of meeting. The citizens of our city are proud to have you with us.

Green Bay, as you know, is an old historical place, being discovered by one Jean Nicolet in 1634, who was commissioned by Governor Champlain to explore these districts and enter into treaties with the Indians; the history of which is written all along the shores of the Great Lakes, Green Bay and the Fox River. Green Bay also figured prominently in the building up

of the great Northwest. On the west side of Fox river, near the Northwestern depot is a stone tablet marking the site where the old fort once stood, that was held so successfully by the French and English and again by the French and by the United States. Green Bay also boasts of the oldest building in Wisconsin, the building that has been known in late years as the Tank Cottage. This building was moved from its old site along the Fox River to its present site in Union Park and is now used for historical and library purposes. You have no doubt all read the book "Lazarre" written by Mrs. Catherwood. The Tank Cottage mentioned in that book is the identical one that now stands in Union Park. If history is true, Louis Fourteenth (Elizar Williams) the lost Dolphin and heir to the throne of France, was stolen and placed with an Indian by the name of Thomas Williams who lived just south of here at a point called Little Chute. Mrs. Catherwood came here and wrote the novel, which was afterwards dramatized and presented for its first appearance at Green Bay by Otis Skinner, the noted actor, this being the home of Elizar Williams, the hero of the play.

Green Bay, in the last ten years has made rapid strides in growth and prosperity and Green Bay is now a commercial city. I suppose there is more building going on in this city than in any other place in Wisconsin outside of Milwaukee. We have just completed a Federal building costing \$175,000; and we have a new court house nearing completion, to cost \$275,000; we are building a high school at a cost of \$150,000, and a new bascule bridge that cost \$162,000; the first single leaf bridge in Wisconsin. We are also building a great many paved streets. We are proud of our parks and public buildings and invite you to inspect them. We are sorry you cannot remain with us longer but we know your own people desire your early return. But while you do remain with us, let me say to you that you are welcome to everything we have; the freedom of the city is yours; we know you are honorable citizens and know you will not abuse any privileges granted you, and in behalf of the citizens of this city, I extend to you a hearty welcome and hope your pleasure in being here will be as great as ours is in having you here.

President Coffland:

We have with us Superintendent Whiffin, who has been a superintendent for 28 years and who is the proper person to make the response:

RESPONSE.

By A. J. WHIFFIN, Sheboygan.

Mr. President and Ladies and Gentlemen: That is the part of the program I don't like; as I looked at it I thought it was wrong and I think so yet. When we have a man who has been president for seven consecutive years, and whom you all know is more able—and you all know I cannot fill the bill as well as he.

Such being the case and I am here you will have to take what you can get. I wish, Mr. Mayor, on behalf of this convention to return our sincere and heartfelt thanks for the welcome you have extended us. I was in Green Bay a good part of last week and I know something of the manner in which Green Bay entertains people. They had a crowd of 1,300 people outside of the casual visitors and I assure you they were well cared for and every one expressed themselves as being highly pleased with the meeting of the Grand Lodge of Odd Fellows. I wish to ask the Mayor to attend as many of these meetings as he can. You all should be interested in your insane asylums. There is no greater work on earth, in which every man should interest himself. I am sorry to say that in most counties they do not take the interest in the insane asylums they should. If there is a place where they should take an interest, it is in the insane asylums. As I look around tonight I miss a good many of the faces I used to see; some have died and some have quit the work like myself—I am out of it—while we mourn their loss we wish to extend a hearty fellowship to their successors. They are taking hold of a work that is going to be arduous and I am glad of the privilege to be here. I hope and expect we will have a good and prosperous session. I put in 28 years of my life in the insane asylum work; my days of usefulness are most past, as days of usefulness in an insane asylum. I expect to be of some use but not in that capacity, and people who are serving in that capacity should have the sympathy of every citizen of

the state of Wisconsin. I wish to thank you for this meeting and I wish, Mr. Mayor, to invite your people, as many as possible, to attend and learn what we are doing and what we are trying to do.

President Coffland: We have with us tonight Hon. Elmer Grimmer, President of the State Board of Control, who will favor us with an address on

WHAT CLASS OF PATIENTS SHOULD BE KEPT IN OUR COUNTY ASYLUMS.

I was informed a short time ago that I would be expected to have a paper at this meeting and not being much of an orator and not having much experience in addressing public gatherings, I found out about the same time that Mr. Lochen of West Bend would be on the program and I dropped in and talked matters over with him and he said "Never mind, you can make it as short as you want as I have a long one that will keep them busy for a while." I understand his paper was so bulky he couldn't bring it with him and he sent it up by express.

In thinking over the matter of what topic to discuss before you people, I decided to bring up the proposition that has caused our board a great deal of trouble. It commenced a few years ago and every year is getting worse; this year it has been worse than it has ever been before. My paper is very short but I hope when I get through it will give some light on the subject and we hope to enlist your aid in trying to adjust the matter. The paper which I have deals with the patients we commit direct to the county asylums.

First of all most cases of senile dementia should go to the county asylum because there is no possible chance for such cases to recover. They are but little, if any, benefited by active treatment. By sending direct to county asylums they can be placed among a quiet, peaceable class of patients who are not as apt to injure them as the acute cases in the state hospitals are, and they are not annoyed and disturbed by the coming and going of the acute insane. When a senile dement is sent to one of the state hospitals it is only a matter of a few weeks until he is recommended for transfer to a county institution. When, had he been sent there in the first place, he would have had to be moved

only once; the danger to his life would have been lessened, as change of residence and food always has an unfavorable influence upon the health of old people, and the cost of permanently locating them in an institution would have been materially lessened.

However, the County Judge and examining physician should exercise great care in these examinations and commitments as the danger is that many cases that could be well cared for in a home are taken out of the homes and placed in County Asylums, and the family of the patient relieved of the burden of maintenance and the state charged therefor.

About 37% of that class are taken to a County Judge and by him adjudged insane and taken to a County Asylum and as I said before that is getting worse and worse every month. When a person is adjudged insane and placed in an asylum the state has to pay one-half of their keep; looking after the interests of the state I don't like to see that, but I do think that placing the brand of insanity on that family is a thing that ought to be considered very carefully. As a rule the powers given to County Judges to commit patients to County Asylums direct are not abused, but it would seem that in some instances those powers are grossly abused. One day last week a county judge committed to a county Asylum ten senile dementia cases and a few days afterward another County Judge committed from the Poor House of his county four senile dementia cases.

It is undoubtedly true that in some cases the family of the patient are anxious to get rid of the patient because it is not pleasant to have him in the home; and in many of those cases the patient could be cared for in the home instead of becoming a burden to the State and County of which he is a resident.

This is a matter that ought to be discussed among the officers of the County Asylums for the reason that they have more familiarity with the classes of patients that come under their care and would have a pretty accurate idea as to whether some of the senile dementia cases that are committed to their care could not be cared for in homes.

Section 584 of the Statutes prohibits the admission to either State Hospital for the Insane any person idiotic from birth or any person physically infirm or mentally imbecile and not deemed dangerous when at large. At the time of the enactment

of that statute it seemed to be the policy of the State to not permit the commitment of senile dementia cases so that they would become public charges. That law was first enacted in Chapter 176, Laws of 1872, and amended by Chapter 336, Laws of 1878. That was before the creation of any County Asylums. The first County Asylum was created in 1881 under a law enacted in 1880, which gave to counties power to erect and maintain County Asylums. The history of Section 584 seems to indicate that it was not intended to provide for the care of senile dementia cases in public institutions.

The agitation of the question among County Asylum Officials who would have some influence with the members of the Legislature, might result in the support of a bill which would correct some of the abuses that might be exercised by the Courts in committing some of the cases to County Asylums.

Second. Mild cases of insanity which have existed for a number of years, mostly demented, and which it is apparent to the ordinary observer can not be much improved by treatment of an active character. These cases are usually good workers and are happy and contented in the County Asylums.

Third. Some cases of Chronic Alcoholic insanity. But the physician and County Judges should be thoroughly familiar with the history of the patient before such commitment is made.

Fourth. Inmates of the Home for Feeble Minded after they have passed the reproductive stage. For the first time in the history of the state of Wisconsin our board will meet at Chippewa Falls the latter part of this month to take up the case of inmates of the Home for the Feeble Minded who are over 45 years of age, which we have to commit to the County Asylums.

Cases of parietic dementia are not suitable cases for County Asylums notwithstanding the fact that they are chronic, as they usually die within two or three years, and are frequently quiet and tractable for long periods. My reason for this opinion is, that certain ones of them after long periods of quiet become noisy, disturbed and violent, their bones are very easily broken, cases of this type probably furnishing more fractures than those of all other forms of insanity together. It is needless to say that when such an unfortunate thing as a fracture does occur it is better to have the patient in a State Hospital than in a County Asylum. The number of patients being small in the County

Asylums makes it possible for the Superintendent and matron to become intimately acquainted with each patient and to know his individual peculiarities which is of great importance in their efforts to make him contented and happy.

The patients can be given much more liberty in the County Institutions and can be interested permanently in gardening, farming, caring for the stock, working on the lawn or among the flowers and general housework.

The patients live practically on out of door life which is conducive to health and happiness. At the same time they are being re-educated to assist in increasing the products of the institution and in this way causes a decrease in the cost of his maintenance. What minds they have are occupied, their physical health is improved, their appetites and sleep are good, and they are apt to be contented.

In many cases it is a great comfort to members of a family to have a patient sent to a County Asylum because it is more convenient and less expensive for them to visit the patient, and in some cases the patient can be taken home when the mental condition will permit.

I would like to have a discussion on this senile dementia as it may help us, as I said before, in coming to some conclusion as to what to do and perhaps we could have a bill introduced in the next session of the legislature, that would give us something to work on. The Attorney General recently gave his opinion that our board has no authority to turn down a commitment executed by the County Judge, committing him to the County Asylum but our authority is to say whether he shall go to state Hospital or County Asylum and it may be that you people feel that all these cases should be paid for by the state but it is a very serious proposition and I would like to have a general expression.

DISCUSSION.

President Coffland: This subject is now open for discussion.

Dr. Gorst: The care and treatment of chronic insane in Wisconsin is different than in practically any other state in the Union. We believe it is the best method adopted by any state for the reason that it separates or segregates the chronic from the acute, giving the acute a better chance to be treated and cared for in small numbers in the institution, also giving the chronic cases a

better chance to be divided into small numbers in several institutions and become interested in the various lines of work that can be found for people to do who still have some mental capacity. Every person, according to the intention of the law, in the state, who is insane and whose condition is such that treatment will not be beneficial, was intended to be sent to a County Asylum to spend the rest of their days unless the case may improve or the condition of the family become so the patient may be paroled and cared for by the family. I believe there are many in the County Asylums now who could and should be cared for by their own relatives. A case of senile dementia that is not violent should not be made a burden to the State or County so long as the family have means to care for them. Sometimes it is a matter of family pride to get a patient out of the way; in other cases it is a matter of getting hold of property. Sometimes it is a matter of where the property is given to the children with the understanding that they should care for them and after the children wish to get rid of them and have them committed to the County or state institutions, usually to the state. I believe something should be done along this line. I know many persons are a burden to the state and county while relatives at home have plenty to care for them and I think the condition of the patient should be decided by competent authority and when the patient can be cared for at home and the relatives are able to take care of them, they should do so. There is no use of treating a case of senile dementia because it is nothing more or less than degeneration of the grey cells of the brain and there is no difference in that to the muscular cells of the leg. The trip of that patient to the State institution and from there to a County should not be made. I had a talk with a Judge in Chicago who told me the worst thing they had to deal with was medical evidence that was for sale and I should think there should be some way of knowing that a patient should not be committed unless necessary. An imbecile should not be sent to a state institution. An idiot should not be sent to a state institution.

Mr. L. P. Edwin: I don't know as I can give you more light than Mr. Grimmer or Dr. Gorst did on that subject but I can see no reason why as stated before, that senile dementia cases first go to the state hospital and then are transferred to County asylums. That has been done time and again. I know a case at

our County institution to-day. The gentleman I refer to has some means but limited; he hasn't enough to care for himself if he had to do it unless the family took hold and helped him. You are not supposed to lock a poor man in, if a pauper wishes to leave you he can and you cannot hold him and there is no law in the state that will support you in detaining that man unless he is committed to hard labor and then you are making him a prisoner, but if he is not committed and he wants to walk away he can do so and you cannot compel him to come back. My plan is this:—I take them to the asylum when I find I cannot keep them at the poor house without locking them in with lock and key. I have taken them there for two or three months to see if that habit would cure them of wandering away and if it did, I would bring them back but if they persisted in getting away my last resort would be to have them examined and committed. I don't care whether they go to the County or state but they have to be cared for by somebody. We ought to have enough confidence in those at the head of the institution so that what they do is for the benefit of the institution; have no thought of the dollar but do all the good you can for the poor individual you are caring for and if you do that and "do to others as ye would that others should do unto you" you are doing your best and making no mistake.

Joseph Roehl: I am in favor of discontinuing this discussion as we will have a paper to-morrow on detention and then I will be in favor of taking this up.

President Coffland: It is doubtless as Superintendent Roehl says and we want to get all we can out of this. We will close the evenings' program with music by the orchestra.

MORNING SESSION, WEDNESDAY JUNE 15TH, 1910.

THE DUTIES OF A TRUSTEE.

L. W. PETERSON, Brown County.

Mr. President and Ladies and Gentlemen: I thought I knew a good deal about our duties but found yesterday we had got a few new ones which account for our absence at the previous meeting.

An asylum trustee, more than most people in whom a public trust has been placed, holds a peculiarly difficult position and when Lincoln said that you cannot fool all the people all the time, he might have added that you cannot please all the people all the time. A trustee's position is difficult because he must guard the interests of the County in regard to all bills for merchandise furnished to the County, he is responsible to the County for all duties that may fall upon him, he must see that the inmates are comfortable and well cared for and look to their general welfare and at the same time it is almost impossible to be sufficiently well acquainted with all conditions to do these things as well as the welfare of the institution demands. The Statutes prescribe the duties of a trustee but we are aware that a person may live up to the letter of the law and still not be a very desirable citizen and in the same way a trustee may live up to the letter of the law and still not make a very good trustee as there are so many conditions arising where the law has no special bearing, and one must rely on his own good sense. A trustee should be a good manager, a good business man and equally as important, he, together with the Superintendent, should be good farmers. With every asylum should be connected a good sized farm both because it gives useful and healthy exercise for the inmates and because it can be made the means of paying for a large part and in some cases, all the cost of maintenance of the institution and the trustees and the County Board should encourage the Superintendent to keep blooded stock. Let the horses be any of the heavy kinds. The cows, in my opinion should be one of the dairy breeds and the pigs and

the poultry of whichever breed that suits the fancy of those in charge. He should also be encouraged to farm according to the latest improved methods, not alone because of the greater gains that will be obtained but that the county farm may become an object lesson to the surrounding farmers. The trustees should also encourage gardening to some considerable extent of these asylum farms, as it is from them that so large a variety of the daily food must be procured and the market is always ready for any surplus that the garden may be made to produce. Our asylum is one of the oldest in the State and through a lack of foresight our asylum was built on a small farm of very poor quality and there are probably more in the state in the same boat. This certainly is a handicap to an institution as no County Board can feel justified in using the amount of money it will require to build and equip an Asylum when they realize that they will be called upon to pay the greater part of the maintenance from year to year. This condition also places the Trustees in a very unfavorable position as they would naturally get in case they could take it out of the proceeds of their own farm. I believe that the very conditions under which a trustee is elected and his duties, tend to create between the county board and the trustees a little estrangement that for the good of the Asylum as well as the County should not exist. I believe if the people of the county could elect the trustees, thereby placing them more on the same footing as the Supervisors that the two bodies would work more in harmony for the welfare of the institution. I believe that when the trustees wish to petition the County Board for any considerable sum of money for improvement of any kind at the asylum, they should present their petition in good season in order that the members may have ample time to discuss the merits of the project among themselves and with the board of trustees. To illustrate, I will cite an experience of our own. At our last County Board meeting we asked our county board to appropriate \$3,000.00 for a cold storage plant and while some of the members took very favorably to the idea, some thought it was too much money to invest for the good that could be gained and some thought that the board should have more information before taking any action. In consequence the project was laid over until the next session

when we feel confident that steps will be taken by the County Board to provide our Asylum with a cold storage plant.

DISCUSSION.

Mr. Roehl: I very much enjoyed the paper but I would like to have a suggestion made before this convention. I think every man on the board of trustees ought to serve a week every year as Superintendent and get more familiar with the work.

L. W. Peterson: I presume that is a way of trying to allow a person to get out of the rut. I know it is the same on the farm, if we stay home every day we do a lot of work but if we take a few days off once in a while we might get a good idea about how to do the work.

CARING FOR THE INSANE PREVIOUS TO COMMITMENT, AND TRANSFER TO THE STATE HOSPITAL.

By JOSEPH ROEHL.

It is rather a hard task for a layman to attempt to explain the above subject as it is one that should not only be carefully considered in this country but all over the wide world. For the past fifteen years, I have seen the necessity of it, but have not been given any support, nor was I listened to, because nearly every body on the outside world is afraid of an insane person. About one year ago, I tried to influence the County Board of Marathon County, to annex a detention Hospital to our County Home and Hospital. But, oh, what a task this was; detention Hospital? What is it? Never heard of such a thing; what do you want to use it for? I then fully explained what a detention Hospital was intended for. "Oh well," they said, "we have an Asylum for that." I then again tried to gain their confidence by saying: Gentlemen: Don't you know that we are all subject to the same disease as these people in our charge? It may happen to me, to you, your parents, your children, your brother or sister, yes to some of your dearest friends, then what? Is it not better to have a detention Hospital, well equipped, and home-

like, not in the Asylum, but a special small Hospital away from the Asylum for just that purpose, with a trained nurse, and enough intelligent attendants, under the direction of the Asylum physician, who has had years' experience with insane people. Or is it better to have our Police, Sheriffs, or Marshals, of small towns, come and lock one of us up in what we call jails, some of them elaborate, but many of them in an unsanitary condition, perhaps good enough for a law breaker, for which they are intended, but not for a poor, unfortunate, supposed insane person. Yes, but now how about these terrible taxes? When I come home now, what will the constituents in my district say? Taxes are too high now. Perhaps they are, but how about the expenses of sending some one to a State Hospital that could be treated and sent home in ten days or two weeks at perhaps a cost of \$2.50 per week, while the sheriff's expenses in our County costs us from \$30.00 to \$40.00 a patient, to take to the State Hospital, to say nothing about the cost of maintenance while there. I finally succeeded in getting the detention Hospital, but under great doubt of some of the members. It looked as strange to them as the new comet we read so much about. Next I had to explain the meaning of this Hospital in County Court. It was built and ready to receive patients August 13, 1909, but not until Dec. 7th, 1909, did I receive my first patient. You may well understand my feelings, the first case. What was it? An old man, 71 years old, lost his way home one evening, was in the woods lost all night. He was picked up by a Marshal, and sent to County Jail. He was insane in the eyes of the Marshall because he was old and lost his way. The County Judge sent this old man to the Detention; I got an interpreter and took his name and place of residence and wired his people. His daughter arrived on the next train to meet her father, not in the County Jail but in a Hospital, as good a room as he was ever in, attended by a trained nurse. Oh what a meeting this was, to find her lost father. The daughter would not leave his bedside and 14 days later took the old gentleman home with her, well nourished and rested up, and apparently sound in mind, only old and feeble.

The second and third case came to the Hospital by County Judge's order December 9, 1909. The second case was sent home rested up the 9th day. All we could learn about case 2

was that she was overworked, physically run down and needed rest. She went home well, and is there now enjoying good health.

The third case was a sad case, it was a case of family troubles, and we could do nothing for her because the husband and neighbor's testimony was listened to. I convinced the judge that it was better to have her taken to the State Hospital by an asylum nurse, than by the sheriff's force. He consented and the actual expenses were \$8.70, instead of \$32.50 besides the humane way of transferring this lady about 50 years old, to a State Hospital.

The fourth case was sent to the detention Hospital by the Municipal Judge, on request of neighbors signing a petition to send him to Oshkosh. He was a saloon keeper and he himself was his best customer. After being in the detention 8 days I took him back to Court. He signed not only a pledge but took an oath to sell his saloon and he did so. The last I heard of this case he was working in a saw mill, getting along fine. He does not indulge in liquor and has a happy home.

The fifth case was one of the saddest and best cases to illustrate the necessity of a detention Hospital. This man was 30 years old, married, was working in a stone quarry near here. He came from Norway and when he first arrived there was nobody to speak to him, or console him. A petition was filed in County Court, for an examination of his sanity. This man was sent to the detention Hospital. We got an interpreter and soon learned the cause of his troubles. He left a wife and two small children in Norway, some one telling him at home about this great country and that he would be able to earn enough money here in a month to send for his family, but on arriving here he found he could not earn enough to keep himself. I then thoroughly investigated the reason for said petition to the Court and his arrest, and learned that he was homesick, and cried at night. Good cause for insanity and a big job for the village Marshal to collect fees, as he perhaps had no occasion for fees for some time. I further learned that he had two brothers living in Dakota, well to do farmers. I wired them and had a reply in less than an hour, saying "under no circumstances let my brother go. We will be on the next train." On the second day after this man was brought here for observation,

his two brothers came, met their supposed insane brother and I will say right here that there could not have been a more pleasant meeting anywhere on earth, and I very much doubt in heaven. At the Hospital office, the brothers wrote out a check for transportation of their brother's wife and family and took him with them to Dakota. This man was insane, according to the evidence of his fellow boarders because he prayed and cried at night. The last I heard of him was that the three brothers were living happy together in Dakota and the wife of the supposed insane man is keeping house for all of them since the brothers are single.

The sixth case is one who arrived from Russia about six months ago and after being in the detention Hospital for 10 days I learned the facts about this case through the assistance of an interpreter. We got in communication with the Government Deportation Department explaining the case as the man was weak and feeble minded apparently since birth. This case was deported to Russia, his home.

The seventh case was brought to the detention Hospital in a dying condition, only living one day after his arrival.

The eighth case was at the Hospital six days and sent home.

The ninth case was an old man and was at the hospital 15 days, sobered him up, joined his family, which he had left for some time. They agreed to take care of him thereafter, now seeing the case in a different light. They were living happily together, at last notice.

The tenth case was an old man who lost his way and needed care and rest. He was transferred from the Detention to the Home the fifth day, and is now a dependent and too old to work or earn a living.

The eleventh case was a very peculiar and sad one, which was learned while in Detention for 9 days. This man was a wealthy business man, his wife was a quarrelsome woman and finally got after him with a horse whip at one time and a piece of fire wood at another. He naturally defended himself and returned some of the compliments. The result was an arrest. This woman on the following day with some of the feminine neighbors petitioned the Court to send this man to Oshkosh. The court could not see it that way but sent him to the detention Hospital. After nine days he was returned to Court with the above infor-

mation and his wife was sent for. She received a well earned lecture from the Court, who realized that the wife instead of the husband ought to be taken care of, if she would not be more congenial in the future and make the home a happy one. They went home together and are living a happy life today, instead of his being in an asylum.

The twelfth case: The wife and daughter of this man petitioned the Court. He was sent to the detention Hospital. The following day I received an inquiry by his wife, why I took said man to the detention Hospital, saying they wanted him taken to Oshkosh, as they did not want him near home. We investigated the case and found that some time before two of his daughters were married to poor farmer boys. The father of the two girls is a wealthy farmer and unbeknown to him, his wife supported these two other families by selling grain, etc. The father objected to any such deals without his consent. The consequence was the two son-in-laws by orders of their wife's mother, mother-in-law as we call it, ejected the father from his premises, saying he was insane. The father instead of taking the right way, the law, went on what we call a good time, or spree, with the result of landing in jail, and a petition to court for examination of his sanity. He was sent to the detention Hospital. After eight days, we had gathered the above information. We had the wife appear in Court, receiving a severe lecture with instructions to treat her husband the same as she did before the marriage of her two daughters, or she would get the County Jail instead of her husband. I have seen this couple several times since, enjoying health and happiness.

The thirteenth case was one who attempted suicide and after five days in Detention, was found insane, two asylum attendants were ordered by Court to take him to Oshkosh. Total expenses were \$18.70.

The fourteenth case was an old lady drawing \$28.00 pension per month. The old lady was a little care on the daughter, so the easiest way to do was to have her pronounced insane, thinking this was a good way of getting rid of her and in her ignorance, entertained the idea that she would get the \$28.00 instead her mother. After 16 days this daughter learned she could not get this money, so she consented to take care of the

old lady herself. No doctor could find this woman sane, as she was old and feeble, and would have to be sent to an Asylum had we no detention Hospital to ascertain above facts.

The fifteenth case was a wealthy man disappointed in love, indulged heavy in intoxicants and became temporarily insane. He was sent to the Hospital for observation and instead of being sent to Oshkosh, I am sorry to say, he went home after 15 days taking one of our best nurses with him, and married her.

The sixteenth case was a very amusing case. A man just arrived from Poland, went to a small town, only one tavern in the place called a Hotel and the only place that he could stop over night. As was customary in his country, he carried a large prayer-book, and before going to bed was accustomed to say his prayers out of this book. Upon arriving in his room he found they only had light in the bar room, thinking it nothing strange or out of the way, he knelt down in the bar room and said his prayers, which was a mistake in the eyes of the Marshal, who happened to be present. This man was arrested and taken to a small lock-up over night, instead of a bed. Next morning he was taken to the County Jail, had a hearing in Court, and sent to the detention Hospital, for observation for three weeks, but we could find no mental or physical disease, except that he said his prayers in the morning and evenings. This man was called for by his brother from Chicago, who was able to converse with him in his native tongue. I think this Marshal was in need of praying before he retired.

The seventeenth case was a man 52 years old, who was sent to the detention Hospital. This man has been feeble and weak-minded all his life and his mother took care of him until her old age of 89, when she became sick, and her son wandering the streets, not being able to care for himself, was upon application to the State Board of Control, left here at the Home Asylum. Thus not only saving the County the expenses of sending him to the State Hospital, but leaving him near home, where his old mother visits him at least once a week which she could not have done had he been sent to Oshkosh.

The eighteenth case was sent to the detention Hospital for observation, but found no mental trouble, only old and feeble. Instead of being taken to an Asylum, he was transferred to the Home as a dependent.

The nineteenth case will clearly show the necessity of a detention Hospital for every county interested in their charges. About a year previous to the opening of our Hospital, I was called out at 2. A. M. saying there was an insane man about two miles from the Asylum, and by all appearances one of our cases. I went out in the country at once and found an insane man belonging to our county. I learned during the conversation, that he eloped from the State Hospital. As I had no authority of taking the patient, and no detention hospital, I sent for the sheriff. Next day I learned in the newspapers that he was a paroled patient, that his parole had expired, consequently a new commitment had to be rendered, and sent to the State Hospital for Insane. On a recent occasion, I visited said hospital and while being shown through by one of the assistant doctors, we finally reached the greenhouse. An elderly man recognized me and said: "Hello, don't you remember me"? I said "No." After a few moment's conversation, I learned that he was the man I met at the country road on that 2 A. M. call. I said to the assistant doctor "why don't you send that man to us, if you have any chronic cases belonging to our county, he is certainly one." "Oh my," he answered, "this patient is as good as a gardener, he takes good care of this greenhouse, he is better than some of our help, we could not very well spare old John." "Ah," I said, and no more, but I can readily see under a detention system this patient would be in our County Asylum, where he belongs, doing us some good but under the prevailing system, I am rather afraid he will never become chronic, unless he becomes disabled and troublesome.

The twentieth case was a man 32 years old and was sent to the detention Hospital, after his mother's death, and was found degenerate and not able to care for himself. This case was left at the Home Asylum on approval of the commitment by the State Board of Control.

The County Court of our County finally got very interested on Detention and looked up the report previous to December 7, 1909. It was surprising to learn that from March 5, 1909, to October 21, 1909, in eight months' time, nineteen cases from Marathon County were taken to the State Hospital at an expense of from \$32.65 to \$45.18 a patient. From December 7, 1909, to date, we had in detention 20 cases. Out of these 20

cases, one was deported, three were sent to the Home Asylum, and only two sent to Oshkosh, and the other 14 cases were sent to their homes where they belong.

A surprising feature of a detention, I noticed by looking at the statistics from December 7, 1909, to April 15, 1910, in four months we had 20 detention cases, and the last two months not even one. It appears to me that the detention Hospital has either cured some of the insane in our community or that people are waking up, realizing that it is not such an easy problem to send people to the State Hospital, unless it is absolutely necessary.

Now for the remedy. I am of the opinion that this organization consisting of Trustees, Superintendents and Matrons of Wisconsin Hospitals are the only ones that can and should put their shoulders to the wheel and change present conditions in a body, one and all of us certainly must see it. I am looking forward and recommend that this organization will appoint a committee to influence our State Legislature first, to compel every Judge in the State of Wisconsin to send every supposed insane person to a detention Hospital for observation and when properly examined after this observation period and legally committed to a State Hospital, that such State Hospital authorities should send their trained and experienced attendants to call for said patient and bring patient to the State Hospital in a humane way, as a sick person should be taken care of, and not as a prisoner, as I have seen some sheriffs treat them.

I could mention more cases and more proof than I have, showing the absolute necessity of a detention Hospital in every county.

In this paper, I have tried to convince every one of my fellow members and associates of the necessity of a detention Hospital.

If I have been rather explicit in my writing, it is because of my interest in the subject. I thank you.

DISCUSSION.

Dr. Gorst: The question always is and should always be carefully considered by the two physicians who make the examination when appointed by the county judge to determine whether or not a man is insane.

Statistics show not only in Wisconsin, but throughout white men's civilization that out of 100 cases committed, 25 less sooner than more get well enough to go home and are reported cured, improved, slightly improved and go home to get along the best they can, and 5 die and 70 become chronic. These statistics are based on commitments made to various institutions all over the land in this and European countries as well. I say Mr. Roehl's is a wonderful statement. Do the cases go to the hospital sent by the county court after examination by two physicians according to law?

Mr. Roehl: No, they are just sent there for observation.

Dr. Gorst: These cases were not committed by the county judge after examination of two physicians according to law. They were sent to the detention Hospital; they were placed there and found not to be insane; 14 out of 20 not insane. Did the county judge send those people, were they brought by the Marshal or you?

Mr. Roehl: They usually notify me and I go and get them.

Dr. Gorst: The condition of this detention Hospital is something similar to the one in Cook county, in Chicago. Every Monday morning they use the Cook county detention hospital the same as a bank clearing house. Every Monday morning the accounts are settled and they are sent out to go and get drunk again. These 14 people were not examined by two physicians. I would dislike very much to have the medical profession shown to have examined a lot of cases of this kind and report them insane and they then be found sane. Of course we make mistakes some times; some doctors do, I never made one myself. When you send men who drink whiskey to excess because they have been intoxicated and become a nuisance those should not be classed as for inspection for insane. As good an authority as I know says that a man is not under the influence of alcohol until he reaches a condition of delirium tremens. When he reaches that condition he is never well again. He may if he quits drinking, go on with his business, but the grey cells of the brain are affected and he is never right again. If you sent all those to the Detention of course they would be in shape to go home. Perhaps the best thing done so far on the scientific principle is what is called Sycopathy. I have recommended that to the State Board and I think the time will come

when we will have a building with 50 patients on one side and 50 on the other and patients will be brought there for scientific investigation and diagnosis made and where not insane they will be sent to where they belong. I don't know as Wausau is large enough to have a detention Hospital but Madison should have a place where they have people who get drunk and perhaps Milwaukee should have one but I want you to understand that these were not insane cases with commitment by the court on recommendation of physicians. The question of what is insanity is a very large question. We must not conclude that a man is insane until we can show that he has a fixed delusion, out of which he cannot be brought without the ordinary methods of reasoning. That is conceded to be the test by the medical profession and Courts; so these people didn't have this delusion and were not insane. There is one thing I do very much agree with in that paper and have had a good many talks with our heard about it. In the first place it is not right to allow a sheriff to be elected for only two years and not be allowed to be elected again. He is not the proper man to take care of the insane. He is in a nervous state and goes with the idea that the man is dangerous and brings him hundreds of miles across the country and every body says what a brave man the sheriff is and what a bad man the patient is, while we would bring him without straps and sit in the car and nobody know he was a patient.

THE DAIRY COW ON THE ASYLUM FARM

BY PROF. G. C. HUMPHREY.

Ladies and Gentlemen.—I assure you that it is a pleasure for me to be here and meet with you. I feel that it is an honor to be called before such a meeting of men who are entrusted with the care of our most unfortunate class of people, the insane, and as I have listened to your discussions, I have felt that Wisconsin is to be congratulated upon having such men,—yes, and when I say men, I mean women too, since they are men's better halves—at the heads of our institutions, and you ought to have the esteem of every man and woman in the state to the ex-

tent that they will never begrudge the taxes and expenses required to maintain these institutions, which are caring for these unfortunates.

I am glad to hear your discussions and I believe the watch-word of your meeting has been spoken by the man who said: "Let us not be old fogies, let us be progressive." "Let us be progressive,"—that is the watch-word and can well be adopted by us all.

This convention is a grand good thing for the state and a grand good thing for you. You are getting much good out of it by being together and exchanging ideas; it is a grand good thing for the inmates who are committed to your care that you get together and talk things over.

My topic has nothing to do with the direct care of the inmates; it has to do with the dairy cow on the farms connected with your institutions, and thus I believe it plays an important part in the management of your institutions. I believe that you each appreciate a good farm, one that is productive, well kept and equipped, and the dairy cow is an important part of the equipment. I am not here to pass any criticism or cast any reflection on the management and the dairy cows of these farms, which may have to do with the past or present. I am here to talk to you from my own point of view and experience, and what I know of dairy cows in the state of Wisconsin,—what I know of cows and their possibilities in producing milk and its by-products.

The dairy cow is a wonderful animal when properly bred and selected, and demands proper feeding, proper housing, and good care in order to be most profitable. You may not agree with me in all that I shall say and you may want me to say more than I shall say, but I hope to make my talk clear and at the same time suggestive, so that in the discussion which may follow you can make the topic most beneficial.

We have a good many dairy cows in the state of Wisconsin. We have gained a reputation as dairymen from the results of the magnificent work done by those interested in the dairy cow. They have come to recognize the importance of distinct dairy breeds and of caring for them in a manner to achieve some remarkable results. We are all inclined to boast of Wisconsin as a great dairy state and we can take pride in what has been

accomplished. However, when we take into consideration all the cows in Wisconsin—something like 1,150,000 head,—and consider that their average production per head is only 150 to 200 pounds of butter per cow—barely enough to pay for their keep, we are less inclined to boast and can see where there is plenty of opportunity for improvement in the breeding, feeding and managing of our cows.

In Marathon county we had the Guernsey cow, Yeksa Sunbeam, whose production of 14,920 pounds of milk and 998 pounds of butter held the world's record for butter production for a time. In Fond du Lac county we have the Holstein cow, Colantha 4th's Johanna, who now holds the world's record with a production of 27,432 pounds of milk and 1,247 pounds of butter.

We have many excellent herds of distinct dairy breeds which are producing high average productions of milk and butter fat. Our University Dairy Herd, comprised of four distinct dairy breeds, which we maintain for demonstration purposes, last year produced on the average for the year ending in May, 8,493 pounds of milk, 363 pounds of fat, equivalent to 424 pounds of butter, and returned a net profit over and above the cost of feed of \$63.44. I mention these productions in order that you may realize and understand the possibilities there are in breeding, feeding, and milking cows of distinct dairy type and breed.

As I look at your institutions in various parts of the state, it seems to me that there is a splendid opportunity for herds to be developed which will be of great use to you and of great credit to the state of Wisconsin. These herds can be made splendid demonstrations that will do the farmers of your respective counties a vast amount of good. A good dairy cow will help to bear the burden of taxes. A good dairyman never complains of taxation; it is the man who has the poor, unprofitable cow who lives hand to mouth, who is complaining of the taxes he has to pay to support your institutions. There is no reason why you cannot have herds on each of your farms that will be the best herds of the state. That is what I am here to advocate. It simply means more of that "progressive spirit" on your part, it means some thought and more attention to the cows you have in your herds, and more than that; care as to the man you employ to manage the herd—you have other du-

ties to look after—and give careful attention to the matter of selecting, breeding, feeding, and a lot more that has to do with what you are to get out of the dairy cow for the support of your institution in the way of milk and other products.

When speaking of dairy cows, I am speaking of those that produce dairy products and not the common ordinary cow which gives some milk and some beef, and perhaps not much of either. There are two distinct types of cattle—beef cattle on the one hand, highly adapted for the consumption of feed which is converted very largely into beef, and on the other hand, dairy cattle, which are especially adapted for consuming feed and converting it into large quantities of milk and butter fat. We see many cows that fall in between these two distinct types and it is somewhere in between that we find the unprofitable types, which are the result of promiscuous breeding and are neither beef nor dairy, so far as their being profitable cows are concerned. If you want dairy cows on your asylum farms, you must get cows of dairy type which are profitable and to get them you must select some one of the distinct dairy breeds; breeds that have been selected and carried along from one generation to another for no other purpose than milk production. Such a class of cows is what I would recommend for your dairy herds. If you want cows for meat production, I would suggest some other breed. I am not here to tell you which breed of dairy cattle you should select. You may discuss this question among yourselves and decide.

To secure herds of profitable dairy cows is easier said than accomplished with the scarcity of good cows there is in the country. The most important selection to make in the beginning is the dairy sire. I do not know where you could go and select all the cows necessary to establish the most profitable herds on your farms and have them all of one distinct type and breed without going to considerable expense. Some of you may think it possible, and it is possible, to go out and purchase some of the best cows, but you will find it necessary to depend mostly upon good pure-bred registered sires to which your cows can be mated and made to produce offspring which will be an improvement over cows which are the result of "Duke's Mixture" in too many cases. The persistent use of pure-bred registered sires on common native cows will produce high grade cows

whose production may equal that of pure breeds. The advantage of pure-bred cows is that you take less chances in getting offspring that may prove a disappointment and the male calves from pure-bred cows and by pure-bred sires can be sold for breeding purposes and thus command higher prices. The only men succeeding today in the dairy business are the men who secure the very best animals possible and then persistently use with them a pure-bred registered sire in order that improvement may be made, or at least the standard of excellence maintained as the offspring are developed, and put into the herd.

I do not expect that you will go home and dispose of your herds and replace them with better cows. I hope, however, that you will go home and secure pure-bred registered sires, if you do not already have them, and commence the work of improving your herds by persistently and consistently breeding your cattle in a manner to insure the greatest improvement and the most success-production of milk and butter fat. This is what I wish to emphasize in my talk to you today and I believe you can select good sires and use them to a great advantage. Possibly you can exchange them with one another in such a way as to retain the use of the very best sires, which you will find only by trying them out. Several asylums in a given district can cooperate in the use of such sires and then be insured against using sires which have never been tried out and which may prove a disappointment. Where possible to secure pure-bred cows for a foundation, it will be worth while to do so for your results will be much more certain with pure blood than with the blood of animals which are perhaps only a few generations removed from the "Duke's Mixture" type. I know that some of you have made an excellent start and have herds of uniform type and color, which is usually the mark of profitable production of milk, other conditions being favorable.

I believe you can well afford to employ a good man who would serve as an expert herdsman so that there would be as few disappointments as possible, due to the lack of proper management; just the same as to employ the trained nurse to look after and direct the work of attendants who care for your patients. The dairy cow should be cared for by a man who understands her; otherwise she is apt to be a failure, however well bred she may be. One good man in charge, with the help of

the better class of inmates, will be worth all he will cost. I can refer to our work at the University. We pay our herdsman a good salary. There is a herd of 25 to 30 cows, besides the young stock, and we can afford to pay a herdsman a good salary who can do the things necessary to make the herd profitable. You can afford to pay a good herdsman considerable more than you pay the average help, because he can earn it for you. Our University herd last year paid a cash return of something over \$5,500 from milk and surplus stock sold. With a poor man at its head, I can readily see how this amount would have been greatly reduced. Where you will find the right man, I am unable to tell you to-day, since the demand for good cows and good men is alike greater than the supply; when you do find him you should pay him enough to enable you to keep him. I do not take much credit for the success we have had in building up our University dairy herd, although I have had general supervision of it since coming to Wisconsin. I give credit to the man who is up at 4 o'clock in the morning, dishing out the feed to her, milking her at regular intervals each day of the year that she is giving milk, watching at all times to see that she is in proper condition as she goes to and from the barn and that the barn conditions are such that she has plenty of fresh air and every comfort; in other words, the man who understands the nature of cows and can feed them according to their capacity and production and at the same time keep them in perfect health and reproducing offspring regularly.

We find men who intend to do well in feeding their cows, but who work without having studied the problem of feeding dairy cows enough to know what constitutes a good ration, or the proper amount of feed which should be given. I recall an instance of this in the management of a herd at one of our state institutions. It was my privilege, or rather my duty, at the time, to take charge of that herd. It was in the hands of a man who loved Shorthorn cattle. The matter of sleekness of form pleased his eye, rather than the matter of milk production. He was a liberal feeder for that reason and as I watched him in the feeding of the herd, which was composed of something like 17 cows, as I recall, of Holsteins, Jerseys, and a few representatives of other breeds, I learned that his method was to take a grain basket well heaped with a mixture of corn meal

and wheat bran and divide it, usually between four cows, regardless of the nature of the cow or any other factor than that she was liberally fed. The milking was done by students who were not concerned with the feeding. I took account of what was fed each cow and what each cow was producing in milk, and by figuring the amount of feed which each cow was earning, learned that there was feed enough wasted in feeding the herd to have made it well worth while to have hired a man at \$45 per month to do nothing more than figure out and dictate how much feed each cow should receive.

Some cows were getting much more than they earned; others were apparently not getting enough to produce up to their full capacity. This is where many of us may fail in the management of our herds. The dairy cow must be fed right and handled right because she is a machine that consumes and converts large quantities of corn silage, hay and grain into milk when thus handled. She must be properly housed and given plenty of fresh air in order that her health and working capacity is not impaired. She must be in the hands of a man, which I again emphasize, who understands, or at least appreciates, all that pertains to making her a most efficient machine.

In the organization of your farms, your labor and your finances do not overlook the proper organization of your dairy herd. It will pay you well and I believe your county boards and our state legislature will better appreciate your efforts and deal liberally with you in giving you funds to make not only your dairy herds more desirable, but your institutions more useful and more satisfactory to you.

I have advocated a dairy cow for your dairy herds. The Michigan people have adopted Holstein cattle for all of their state institutions. This breed ranks largest in size, cows weighing 1200 and 1400 pounds per head, and produces the largest quantity of milk, which tests in the neighborhood of 3½ per cent butter fat. We have another distinct dairy breed in the Guernsey, a smaller sized cow, weighing 1050 pounds on the average, producing less milk than the Holstein, but milk of a richer fat content, testing 5 to 6 per cent. The Jersey cow is quite similar to the Guernsey as regards the fat content of her milk. In size she is apt to average somewhat smaller in body size. The Ayrshire is Scotland's native dairy breed, and

possesses many excellent characteristics. Her milk tests about $\frac{1}{4}$ per cent and she is noted for her hardiness and good rustling qualities. As I have said, the matter of breed is one for you to study and decide for yourselves.

I took the pains to secure some data from Michigan institutions regarding their dairy herds and have here a report of the Traverse city herd, which in substance is about the same as that of the other institutions of that state.

Dairy cattle at Michigan institutions. Traverse City herd report.

How large a farm does your Institution maintain? 728 acres, including forests, lawns, etc.

How large a dairy herd is maintained? 116 including yearlings and calves, male and female.

Number of pure bred cows? 68, including heifers (2 yr.) or in calf.

Number of grade cows? None.

Number of dairy bulls? Two, sometimes a third.

Do you keep other than Holsteins? No.

In what manner do you dispose of the milk? Used by the inmates to drink and in cooking. No butter made. Milk is a good food.

How do you dispose of surplus stock and do you have any difficulty in selling this stock for breeding purposes? All sold as fast as old enough. At times have 12 to 15 calves, heifers, promised not yet born. Could sell 2 or 3 car-loads of cows, heifers and calves to-day if we had them.

How is the herd managed with reference to herdsmen, milkers, and other help required about the barns. Have chief herdsmen, and 5 milkers who do all milking, feeding, preparing feed, as cutting roots in winter, silage in summer, and the oversight of the team employed assisted by 4 patients as below.

Do you make use of the inmates of your institution for any work of this kind and are they capable of rendering satisfactory service? We use 4 of our most trusty patients to assist in cleaning the stables, brushing and currying the cows, but not to feed or milk the cows.

Do you consider the dairy herd a profitable investment for the institution from the standpoint of milk production and the

production of surplus stock over and above the cost of equipment, feed and labor to maintain it? We do consider the herd profitable. 1st for milk production. The report of 1909 shows 10 cows milked including 7 two year old heifers. They gave 575,848 lbs. of milk, milking 16209 days of 270.16 days an average. This was an average of 1572 lbs. per day or 9564.13 lbs. per cow, 35.4 lbs. per cow per day for the time.

Do you co-operate with other of your state institutions in the use of pure bred sires? We sell to and buy from them, favoring them when we can. We know what the other institutions have, better than what strangers and speculators have, and the others know what we have. We have sold to the three other Asylums and have bought from one. Have sold to many County poor farms.

These statements are supplemented by the following letter, which I will read;

NORTHERN MICHIGAN ASYLUM.

Traverse City, Mich., June 3, 1910.

Professor George C. Humphrey,
College of Agriculture,
Madison, Wis.

Dear Sir:—

Your letter of the 26th ult., with the questions about Dairy Herd, to our Superintendent, was placed in my hands for answer. I have filled in the blanks as well as space will permit, but I think it well to add to, to some parts.

A word of the history of our herd, the first pure bred herd in a state institution. Some twenty years ago a pure-bred Holstein sire was bought to use with a lot of common cows purchased as we could. Two years later another bull and a cow were bought from one of the best herds in the state, nearly all of which have been recently imported. Sixteen years ago we bought sixteen more pure bred animals from a fine herd in this state, one of them a bull. Then for the first time in the history of the institution did we have milk enough for use without buying and we have bought none since. Two years later we bought ten more pure bred cows from Iowa, and began

to dispose of grades, usually fattened them for beef to be used in the institution. Soon only a few, the very best, grades were left. Then as the herd increased, the grades grew less and the weeding out of the pure bred cows began. The male calves, grades or pure bred, were sought for by farmers nearby for use as sires or to fatten for beef. We fattened all undesirable females and butchered them. We vealed all calves that were not good enough to improve the herd by keeping. For sixteen years we have kept a milk record of every milking of every cow in the herd and have the same now whether monthly or yearly record. Some ten years ago we refused to sell any calf that we could not register as pure bred and would not raise for keeping in our herd. Of course we vealed many, especially when there was a question as to breeding, health, and vigor, or the character of the dam, and only the best sires were used. As to the disposition of surplus, we had only good stock and that always sells well. Our cows were all well bred, large, vigorous, good producers, persistent milkers, free from disease, not an imperfect quarter or udder in the herd, milking until sixteen to eighteen years of age, often giving from 12,000 lbs. to 17,000 lbs. of milk a year. Butter fat 3.5 per cent and upward. Bulls have been sold into nearly every dairy county in the state and into the states of New York, Ohio, Indiana, and Canada, while foundation herds have gone from here to Vermont, Massachusetts, New York, Ohio, and a carload to Wisconsin and to Minnesota. Six of the test cows in the great Field Herd in Massachusetts were bred and reared in this herd.

I enclose you a circular used by us, but has to be so much amended that a new one is needed. As to the value of this surplus sold for breeding, perhaps the biennial report for 1906 shows this fact, that "the cash receipts for breeding stock sold during the past two years has been 6,830, or 2,825 more than all the money paid out by the institution for pure bred stock since the beginning of the herd and leaving the value of the herd greater than at any former period." In the past year, 1909, over \$1,500 worth of calves have been sold for breeding purposes, and the herd today is greater in number of animals and in the value of the same than a year ago and no purchases have been made. Besides milk and stock used and sold, we

fatten old and non-breeding cows and some calves for veal, which adds each year to the production of the herd.

Hoping that I have answered all your inquires and made myself understood, I remain.

Very truly yours,

(Signed) C. L. Whitney,

Steward.

I think what has been done by the Michigan institutions is possible to do in any of our states, and I am anxious that Wisconsin shall do at least as well as the Michigan people. I am here to represent the dairy cow in Wisconsin, not only in your institutions, but on every farm in the state, and I believe that you have a great opportunity to better the cattle and make them more profitable on your farms and to make your herds of great value to your respective communities in being a demonstration of what can be accomplished by good breeding, good feeding, and good management. Perhaps you have reached a point where you are satisfied, but my experience and observation have not shown me a true dairyman who is satisfied. Even Mr. Gilléte, who has the champion dairy cow of the world, is not satisfied. He would like to produce another.

I hope I have not wearied you with my talk, but have encouraged you in the work of organizing and conducting your dairy herds so that they may prove most profitable to your institutions and be the pride of the dairymen in your respective counties.

DISCUSSION.

Mr. Edwin: On all asylum farms we want milk and a big lot of that, but also need meat. Would you advise changing the herd of almost pure Durhams, giving sufficient amount of milk and butter for the population of 250, as we know the Durham is not in demand, would you advise changing that into a pure dairy cow herd. We have in our place 150 head of cattle. We have never used anything but a pure-bred bull for 30 odd years and my predecessor started with pure-bred cows. I have been there over 17 years and never used anything but a thoroughbred bull. They are perhaps not as great milkers as Jerseys or Guernseys, but they give us butter, milk and enough meat to supply the institution. Those that are poor

milkers we put in with the stock for killing and I don't know of any stock that would give us better results all through. Would you advise changing this herd to a pure dairy herd?

Professor Humphrey: That is a very important question and one which has been discussed before and which has gotten me into some trouble on account of my views on the subject. I say trouble, when there is no trouble about it. It is just a difference of opinion, the same as you men may have different opinions on subjects relating to your work. The dairy cow is a wonderful machine. She has been selected and improved for many generations to economically produce a given amount of milk from a given amount of feed, on the other hand, the beef animal consumes a given amount of feed and converts it into meat. In other words, we have in the two types of cattle two different machines. When you have a cow which you try to make produce both meat and milk in satisfactory quantities, you usually have an animal which is deficient in one quality or the other, or else deficient in both the production of milk and of beef, and thus is unprofitable.

Your position is one in which you say you have enough cattle to produce enough beef and enough milk, and what more do you want? So far as supplying your wants is concerned, you do not need anything more; you have milk enough and you have beef enough, but the question is whether you get that in the most economical manner. With the size of farm, the buildings, the help and the feed you have, are you getting the greatest return possible out of the class of cattle you are keeping. They are satisfactory in many ways and are kept on a good many farms, but as I figure and believe, they are not the most economical and profitable class of animals you can keep and spend your time and money to feed. I believe that if your farm is properly organized, you can produce more milk with less barn room and less feed and labor from fewer cows of a distinct dairy breed. What you save in feed, labor, and equipment will buy much more meat than you will lose by having dairy animals in place of both beef and milk cows. You may not agree with me and there may be arguments on the other side of the question, but when you come to milk Short-horn cows for six to eight years, and milk such cows just for the sake of having a good beef animal when you are through

milking her, I claim that is the most expensive beef you can produce. I would rather milk strictly dairy cows and produce beef by feeding a few steers each year. Dairy cows will produce calves which if males can be vealed, or if pure-bred, sold for breeding purposes, and if heifers, they can be sold for dairy purposes or retained to take the place of cows in the herd. The demand for good cows is so great that you will have no difficulty in disposing of all surplus dairy cows and heifers at very good prices. As I look at it from an economical point of view and consider all the arguments which can be produced on both sides, I am convinced that where one attempts to milk cows at all he will find the dairy cow by far the most profitable.

Question: What grain do you recommend for summer time?

Answer: Where cows are turned to good pasture, they do not need much grain—in fact will not eat much. We find a small amount of wheat bran, sometimes mixed with a few oats or dried distillers' grains good in the summer to coax the cows to their stalls.

EVENING SESSION.

Wednesday Evening, June 15, at Bay View Pavilion.

The management of the disturbed and destructive patient presents one of the most difficult, and yet, in many respects, the most interesting problem we have to solve in the care of the insane. However, if we look upon this class of patients as a burden, or as a serious menace to the welfare of the institution; their care is a custodial problem only, and the difficulties that arise are the ones connected with our efforts to subdue and restrain them.

If, on the contrary, in dealing with the disturbed patient, we recognize that his excitement, and even his destructiveness, are reactions, natural enough in themselves, to what he believes to be untoward conditions in his environment that menace his welfare; then the problem assumes a different aspect. Instead of being merely custodial, the care of these patients becomes the

subject of investigation, with systematic study of the individual, as to what are the reasons for his attitude toward the conditions in his environment, and for his hostility toward those among whom he lives.

The understanding of what is constituted in the mental attitude of this class of patients, will be facilitated by the consideration of the conditions out of which this same attitude develops among the sane. There is no difference in kind between the anger, violence, or even the destructiveness of the insane and the sane! For while the sane man may be restrained by prudence or fear of money loss, from destroying property or clothing, the desire and willingness are fully as strong as they are in the insane man, who has lost his capacity for restraint, and on account of his confusion, his appreciation of the consequences. We have only to go back to our own childhood to know how instinctive and natural is the impulse to destructiveness; and we know that adults, in a mob, and even as individuals commonly give way to this tendency; especially if they believe themselves free from risk of detection. We know, too, that people considered to be sane and intelligent, give way to anger and violence under the strain of fancied imposition on the part of others, and that, under the influence of alcohol, men may show all of the characteristics of temper and conduct, generally considered to be peculiar to the lower animals. Among children also, these same characteristics are common. That is, easily provoked and heedless violence, as well as wanton destructiveness. In other words, the child is an animal, and the tendency, even in the adult, is to revert to the attributes of the animal; under the influence of conditions that lessen or destroy his capacity for restraint. Just as children are taught, or learn by example, that their welfare, comfort and convenience, are best attained by abstaining from resentment by force; by learning to conform to the social amenities; and to recognize the effect of their conduct upon their relations with others, do they acquire the self control that constitutes sanity in the adult. This capacity varies greatly among individuals, and of course disappears as mental deterioration takes place.

The sane man resents what he believes to be injustice. He tries to avoid anticipated sources of danger: Also, if he be-

believes that these untoward conditions result from the actions of others, he will try to protect himself. It is a fact that, under the influence of fatigue, pain, or distress, men are disposed to remove their clothing; and this is particularly true of women; the restraint of whose garments adds to their distress. If angry or greatly agitated, they move restlessly about, will throw things about the room, or even destroy them in sheer wantonness—I feel sure all of you might recall such observations, although I would not accuse any of you of having had such experiences. These outbreaks vary from these unconsidered manifestations, to the shooting up of the saloon or town on the frontier; the destruction of the shanty and its contents in the woods; the tearing or burning of clothing, or spoiling it with filth. The trampling of flower beds; tearing up of shrubbery, and the defacement of buildings in the settled community. Such conduct is described as vandalism, if it is public. If it is domestic it has numerous designations, according to the social position of the individual.

None of these acts differ from the manifestation of these same tendencies in the insane in our hospitals; but in the institution these people are conspicuous because there are a number of them together, and they are under constant observation. The unruly conduct of both has its basis in the belief of the individual that some one is trying to injure him; that he is revenging himself for some wrong; getting even with the individual or community for some slight or neglect; or else he is satisfying the merely savage resentment of physical or mental discomfort. The difference between the sane and the insane man who is disturbed, is not in his conduct, but in the relation of his conduct to the conditions in his environment, as they affect his welfare. In order to appreciate what conditions and controls these relations, it is necessary that we should study the individual patient comparatively, to learn why he is disturbed, and what is the significance of his destructiveness: Because, unless we do study these manifestations individually, we shall not be in a position to deal with them intelligently; nor will we be able to control these untoward actions and prevent their recurrence.

It should require superficial observation only to make us aware of the fact that people are naturally either aggressive

or seclusive, and the study of the history of the mental disturbance in the individual who is insane will show soon to which class he belongs. For instance, two men may hear voices threatening them with harm, or making slanderous accusations. One of these men will denounce his enemy or accuser. In his turn threatening revenge or retaliation; while the other man, on the contrary, will cringe, hide, or beg to be protected. He may even become intensely depressed and attempt suicide, as the lesser of two evils. If either man finds himself balked in his efforts at revenge or escape his disturbance or agitation increases, he grows constantly more restless; until finally, in his extreme discomfort or distress, he pulls off his clothing, moves the furniture about, or even destroys it. I do not mean, of course, to include those individuals who are so much reduced mentally, that they are children intellectually, with the impulses of the adult, who pull their clothing to pieces, or destroy the furniture, just as the baby does, or the child breaks his playthings, or runs amuck with a hatchet. Neither do I include in this category the exalted individual, whose condition is analogous to that of intoxication with alcohol. The fact that many demented patients are not either disturbed or destructive, makes it necessary for us to look further for the cause of these habits when they exist. Clinically we find constantly present indigestion, constipation, enfeebled circulation, and the evidence of defective elimination of the waste products of the body activities; and just in proportion as we are able to relieve these physical disabilities, do these patients become quiet and well behaved in a proper environment. Post mortem, in this class of cases, the evidence of the physical basis for the disturbance is found in the interference with the nutrition of the brain, and the accumulation of fluid over its surface in the anterior portion.

There is, therefore, another aspect to this subject, which in my experience is usually the most important, but that does not receive the consideration it should. That is, the physical condition of the patient and its bearing upon the conduct of the individual. Here, again, we have only to compare our everyday experience and observation with what we see in the insane. We all know how the physical discomfort associated with indigestion, headache, the pain of a tooth ache, or the exhaustion of overwork affect the disposition of the individual.

No matter how good natured he may be under ordinary circumstances, it is easy to picture the ill temper, and even profanity and violence of the average man with the jumping tooth ache, or a throbbing head ache, when things go wrong at home or in his place of business. The least imposition, or the most trivial interruption of the routine of life may be enough to break down restraint; with the result that there is an outbreak of temper and violence, varying with the natural disposition of the individual, and the degree of his suffering. Again the man may, under these same conditions, hide himself away, and keep from contact with his fellows until his discomfort has subsided. We have been too prone to ignore the possibility of the presence of physical discomfort as a cause of mental disturbance in the insane, and to take for granted that no physical cause exists, because it is not readily apparent, and we do not look for it. I am confident, from my own experience, that practically always an outbreak of mental disturbance, or destructiveness, has for its antecedent some source of physical discomfort, or the disturbance of the functions of the body that have to do with digestion and elimination. The more chronic and persistent manifestations of disturbance, indicate some continuous source of brain irritation. This may be, and usually is, the accumulation of fluid over the anterior portion of the brain, on account of degenerative changes in the blood vessels; interfering with the blood supply to the brain, as well as with the carrying away of the waste products of brain activity. However, even if these physical changes be present, there is suggested at once the necessity for such remedial measures as will stimulate the nutrition of the brain, and aid in the elimination of the accumulated cause of irritation. It is for this reason that there is so often marked temporary improvement in these chronic cases, after a severe acute illness with high temperature, or after an operation on the head. The increased rapidity of the circulation of the blood, or the draining off of the fluid relieves the pressure.

It is with the class of cases here referred to that hydrotherapy is so useful, because we know that there is no better equalizer of the circulation of the blood than water properly applied, nor any other means so efficient in eliminating waste. Besides, the application of water at the proper temperature,

and in the right way, is a stimulant or a sedative to the nervous system, at the will of the physician who knows how to use it intelligently. Drugs, too, have a function, as they aid digestion, stimulate the heart, the skin, and the functional activity of the kidneys. Investigation, with the aid furnished by the laboratory, may, and commonly does discover some form of organic disease which is a constant source of irritation, or there may be some condition like hernia, chronic appendicitis, or gall bladder disease, that will require operative interference for its relief. Indeed, it is astonishing how the recognition and removal of these sources of irritation change the whole aspect of the case, and make an orderly industrious individual out of a man whose condition has been for a long time that of disorder and aggressive violence. The same is true with regard to women. The removal of local sources of irritation in the pelvis, is very efficient in the elimination of irritability and restlessness. I do not mean to say that the disease condition requiring operative interference is the direct cause of the mental disturbance, nor that the operation is curative in any way directly, as applied to the mental condition of the patient. The effect is indirect, and the operative interference is successful just in proportion as the removal of the diseased condition restores the processes of nutrition and waste to their normal state. There is another class of disturbed and destructive patients, however, where we cannot determine so definitely the relation between the physical condition of the patient and the mental disturbance. To this class belong those individuals who hear voices, see objects, or people who threaten them, or through the perversion of the other special senses they may believe themselves to be the victims of witchcraft, of the application of the electric current, or of poisoning. But even among these people, who are violent on account of what they hear or see, or who are destructive to their clothing or the furniture, in their effort to get rid of something that is disagreeable or offensive, there is the perversion of sensation which very commonly has its origin in the disturbance of the processes of digestion, or interference with the function of elimination, so that poisonous substances are circulating in the blood, that act as irritants to the nervous system, give rise to uncomfortable or painful sensations; that to the confused

mind of the insane man suggest what he dreads and fears. Therefore, even if we have to use other measures to control the man who believes that he is to be murdered; that someone is traducing him, that his family is being harmed, his property destroyed, or that he himself being poisoned and is disposed to violently resist; still it is important for us to be sure that we have eliminated all sources of physical disturbance, before we begin or attempt to carry out preventive measures of another kind.

We have next to consider those conditions in the environment of the disturbed and destructive patient, that add to the difficulty in caring for him and interfere with his control. I know of nothing more applicable to this class of people, than the old saying, "Satan finds some mischief still for idle hands to do." Indeed, it might be said that if these patients were not idle they would not be disturbed. Their idleness results primarily, of course, from the difficulty that exists in all public institutions, in providing room and occupation for this class of patients. It is one of the paradoxes of institution management, that the class of patients requiring the most room, and the greatest amount of individual attention, receive the least of both. Besides, on account of the fact that they are disagreeable to be with, that their conduct is alarming, and is so distressful to those unfamiliar with them, these people receive none of the sympathy of the philanthropic. In the public mind the disturbed patient is regarded either as a wild animal, or as a criminal, to be restrained and controlled by force and seclusion, and it is never for a moment considered that he is either affected by his environment, or is capable of being influenced by consideration and care. Consequently, we have heretofore, as has been the rule with all philanthropic undertakings, gone to work at the wrong end in dealing with this class of patients from the disciplinary standpoint. I have frequently seen a disturbed patient, who was extremely violent, destructive and filthy, who was taken with some acute illness, which required constant personal care and supervision, become quiet, orderly and good natured, remaining so permanently sometimes, and always so, until necessity compelled the return of the patient to his former environment of overcrowding and lack of individual care. Here is the key to the

management of the disturbed and destructive patient: Individual care and occupation. If these could be provided from the time the patient comes into the hospital, or as soon afterward as he is physically able to take advantage of them, this problem we are discussing would practically never present itself. To quote from a paper by the writer on an analagous subject, "The whole of the art of the personal care of the insane man, is to know how to let him alone. If his treatment has been begun early enough, and carried out intelligently; he will seldom reach the state where physical restraint should be necessary. The behavior of the insane man is very much what is expected of him and even after he has, in a great measure, lost his self control, his conduct will be the reflex of his surroundings and of the attitude of his care takers toward him. So that, in the treatment of the mental aberration, more is dependent upon the trained intelligence of the care taker, than upon the conventional routine methods commonly in use." It seems to me obvious then, that this class of patients need the most intelligent medical and supervisory care; that they must be studied and treated as individuals, and that means must be provided to keep them busy; to direct their physical energy into definite channels, where it may be utilized for their own advantage and for the welfare of the institution. These results can not be accomplished by restraint, seclusion, the use of drugs, or tramping about the grounds. These are the methods generally in use in the management of disturbed and destructive patients, but they utterly fail as the rule, while in the exceptional case they are palliative only.

The first essential, then, to the proper management of this class of cases is the systematic study and treatment of the patient by the physician, and then the exercise of the trained intelligence of the care taker. Because of his constant association with the patient, we must rely upon his tact, patience, judgment and sympathy to carry out the necessary measures to gain the confidence of the individual and to induce him to expend, in some way that will be agreeable and useful, the mis-directed energy that is evidenced in his unruly conduct. It is true also, that the physician in charge of these patients must himself have the necessary knowledge and training to make him know the importance of studying the individual patient,

and the conscientious desire to do the necessary work; so that he may advise the nurse how to best direct his activities. The measures necessary for the accomplishment of this purpose, are obviously best applied before the condition of the patient becomes chronic, and his disturbance persistent. Consequently, in every institution for the insane, provisions should be made for the necessary preventive measures. It is true that this means more room and a proportionately larger number of nurses. It means, also, that the nurses in charge of these patients should be the most intelligent, as well as the most conscientious and sympathetic; and that they should have the facilities to provide a sufficient variety of occupation, so that every patient might be induced from the beginning to do something with his hands that will maintain his intellectual capacity and stimulate his intelligence. The mental capacity becomes reduced from disuse, just as does muscular power, and the insane man gives his time and attention to the perverted mental processes which brought him to the institution, because there is nothing in his surroundings to take him away from his morbid self consciousness, or to stimulate activity in some definite direction.

While I believe all that I have said here to be true; and that, if it was practical and possible to carry out these measures with all patients that come into the hospital, we would have none that were disturbed and destructive patients; and while I know that the conditions surrounding these people have been almost revolutionized during the past 25 years, still I appreciate fully that the care of this class of patients is a serious and a difficult problem. However, what has been done in the last quarter of a century proves the contention in my paper, and assures me that I have not exaggerated the possibilities that should result from the application of the measures that I have described. It is true that the conditions existing in our public institutions are never exactly alike in any two of them, so that no hard nor fast rules may be laid down that would be applicable indiscriminately, but I believe, from my own experience, that modifications of the plan described may be made to meet the conditions in any institution, and I am equally as confident that the basis for any successful effort in this direction must be the careful and systematic study of the physical condition of the

patient, and the application of such remedial measures as will remove all sources of irritation; to provide, so far as is possible, a sound body in which we may attempt to restore a sound mind. To do these things we must necessarily combat tradition, superstition, preconceived ideas, and we must overcome the inertia of custom. This means, of course, the education of public opinion to the appreciation of the economy, as well as the desirability of this work; and through this enlightened public opinion, we must seek the provision by the state of a competent medical staff, with skilled nurses to help them, and the necessary facilities to carry their work to a successful issue. To quote again from the paper before referred to: "The great difficulty in the way of progress in the medical treatment of the insane, is that we are prone to think of the future in terms of the present. When we consider the doing of an act in the future, we have always a picture of the present in our minds. Therefore, when we try to consider insanity as a manifestation of disease, just as we would scarlet fever or pneumonia, there springs up in our minds the picture of the wild eyed individual, with matted hair and torn garments, whose presence fills us with superstitious fear, and we instinctively think of him as the victim of demoniac possession, forgetting that, like the scarred victim of smallpox, or the hopeless case of tuberculosis, he is simply the result of the conditions our ignorance and superstition have placed him in."

WEDNESDAY, JUNE 15, 1:30 P. M.

As the guests of Superintendent F. M. Loftus and the trustees of the Brown County Asylum, members of the association were given an automobile ride which included visits to the Wisconsin State Reformatory, under the management of Superintendent Bowron, and to the Brown County Asylum.

The ride also included a visit to Bay View Beach, where, through the bounteous hospitality of our hosts, we were served with an elaborate banquet, after which Dr. Tomlinson, superintendent of the Minnesota State Hospital at St. Peter, presented his paper upon "The Care of Disturbed and Destructive Patients."

JUNE 16TH, 1910, 9 A. M.

Convention called to order by President Coffland.

Report of Committee on Tubercular Insane and Poor:

WAUSAU, WIS., JUNE 14TH, 1910.

The committee appointed at the last convention held at Madison, Wis., for the purpose of taking care of the tubercular insane and poor, and to recommend some plan to this convention at Green Bay, had a session at the State Board of Control's office in the Capitol at Madison, Wis., April 14th, 1910. The meeting was called to order by the chairman of the committee, L. P. Edwin. Joseph Roehl, Jr., was elected secretary.

Present: L. P. Edwin, E. J. Perkins and Joseph Roehl, Jr., the full committee.

The following communication addressed to the superintendent of the Marathon County Asylum was read:

APRIL 12, 1910.

Mr. Joseph Roehl, Jr.

Superintendent of Marathon County Asylum for the Chronic Insane.

Wausau, Wisconsin.

Dear Sir:—Last summer after the meeting of the Association of Superintendents and Asylum Trustees you asked me how many persons in the Marathon County Asylum had tuberculosis; I replied, "I did not know, but would find out." With your approval and the approval of the asylum trustees, we purchased enough Moro ointment to test the inmates of the asylum and home.

These tests revealed the following facts:

Insane:

Men, 106; reactions, 39.

Women, 85; reactions, 34.

Home:

Men, 31; reactions, 9.

Women, 4; reactions, 2.

Total, 226, with 84 reactions, or 38-6 per cent. have tuberculosis.

This seems almost inconceivable, yet the statistics of the Cook County Hospital in Chicago, the largest hospital in the west, shows that seven out of ten deaths *from all causes* in that institution are found to be tubercular.

There are probably not over seven or eight who are in a contagious state at the present time and should be isolated.

Yours very truly,

H. L. ROSENBERRY,

Asylum Physician.

After reading this letter, the committee unanimously decided to recommend that each and every institution in the state should make a tuberculosis test to ascertain the amount of cases in their charges.

That the contagious tuberculosis should be isolated in the following manner:

During the mild seasons, sufficient tents and cots should be on the Asylum grounds, far enough away from the buildings, so as not to make them prominent, where there is good fresh air and sunlight, with trained attendants in charge.

That all institutions should build verandas on the south side of both wings, and, where possible, on the east and west side, with glass fronts to be used during the cold seasons with a separate dining room, and all other conveniences, so they in no way can come in contact with the other patients.

It is the opinion of the committee that in our asylums we have a number of patients that have been with us for years and are accustomed to the surroundings, and call it their home; it would shorten their lives by removing them to a new hospital, taking them further away from their dear ones, where they certainly could not be visited as often as under this mode of treatment; besides, in this way each and every county that has an asylum can, with a trifle expense (called an improvement), take care of their own tubereular insane patients and keep them in their midst.

Signed:

L. P. EDWIN,

Chairman.

JOSEPH ROEHL, JR.,

Secretary.

President Coffland: It seems to me if we are going to have these meetings successful, we must decline the banquet proposition; it interferes with the papers and makes it very inconvenient to the local people at which the convention is held. There is no objection to a glass of lemonade, but a banquet

interferes with the work, and there is not a superintendent or matron who would be offended if there was no banquet.

Mr. Whiffin: I am very glad indeed that you brought this before the convention; if you hadn't, I would have. I had it directly in mind; I believe it is right. We don't want to put the counties to the trouble and expense it makes. I have witnessed enough to know that the superintendents and matrons are put to enough inconvenience. The trouble is, we don't get to our business when we have to wait for banquets, and it takes too much of the time we ought to put in at other things. I have never been to a convention where I didn't have to pay for my meals at the hotel, and might just as well have them at the hotel instead of at a banquet, and I make a motion that hereafter we have no banquets where the convention is held, and further that at future conventions the secretary be instructed to prepare his programs so that the local asylum officials at which the convention is held shall not serve any banquet to the convention. Motion seconded and carried unanimously.

THE COST OF MAINTENANCE IN COUNTY ASYLUMS.

BY MR. PETER LOCHEN.

Mr. President, Ladies and Gentlemen:

"The Cost of Maintenance in County Asylums" is the subject assigned to me by the executive officers of our Association of Trustees and Superintendents of County Asylums in the State of Wisconsin.

The cost of maintenance is not alike in all county asylums, because it depends on existing conditions and facilities by means of which, under proper management, we are enabled by the productive labor rendered by the aid of the inmates, to produce articles of subsistence which would otherwise have to be bought, or to produce something which may be transformed into money for which subsistence may be procured.

Whatever we are able to produce towards the maintenance of the asylum and its inmates we do not need to buy, and then it depends upon the proper preparation and utilization thereof

without any unnecessary waste. Whatever we have to buy costs more now than it did five years ago; therefore it naturally follows that whatever we produce towards the said maintenance is worth more than formerly. Ward attendants cost today fully one-third more than they did five years ago, per month, and the same conditions apply to everything that is necessary for the maintenance of an asylum and its inmates or for the maintenance of a private family. Consequently the cost of maintenance in county asylums is necessarily higher than it was ten years ago. We are all aware that we cannot and should not economize in the amount of nourishment necessary for the physical body; and in regard to wages and salaries for the hired help, we are compelled to pay what they are able to get elsewhere and sometimes more, and if we take into consideration the long hours during which the attendants have to be on duty and the arduousness of the work which they have to perform, it is a wonder that we are able to secure the necessary help at any price. The requirements of the Board of Control as to the asylum proper and the care of its inmates has to necessarily keep pace with the progress of the world, but the amount for care, bed and board and medical attendance is limited by law to three dollars a week or forty-three cents a day, which amount, together with the amount expended for clothing, we have to advance during the whole fiscal year and after the year is up have to wait yet for eight months before reimbursement is made by the state. These conditions do not seem to be in harmony with the progress of the world and its extravagances of today. I am making these statements from the standpoint of an asylum superintendent, but it seems to me that if a change is desired from present to better conditions it would be a matter for the consideration of our superiors, the Honorable Board of Trustees of the County Asylums.

DISCUSSION.

A Member: I agree with the paper; it is costing us more right along, but I cannot see where we would be benefited at \$4.00 a week. We have to pay it and I think we can take care of it as well as we did years ago. As we have to pay it directly or indirectly, we might as well pay it direct. I think we would take a few state patients at \$3.00 a week.

Mr. Barlass: I am glad this subject has come up. When I started in a year ago and sent out statements to 20 or 25 for board, I had nothing to go by but would have found it if I had looked into the statutes, but I made it \$2.00 a week and there were a few who paid \$1.50 and the county judge held they should pay \$1.50 and the guardians claimed we would have to make up anything over \$1.50.

Mr. Hayward: Our county always charged \$1.50 for self-supported patients until last year, and we have a new county judge who is a lawyer and I asked him why Waupaca county patients didn't pay the same as the outside patients and I said we always got \$1.50 a week from the other judge, but I said if we have patients who have the money—and there will be money left after they are dead—why shouldn't we charge \$3.00, and if they don't like it, to take them to some other institution, and we made our bills at \$3.00 last year and got every cent of it.

Mr. Edwin: I think Judge Lyon gave an opinion when he was on the State Board of Control and he said it should not exceed \$3.00 a week; that where there were funds enough to collect \$3.00, and not injure anybody, we might collect the \$3.00.

Mr. Hayward: We have a case just now transferred to Waupaca county. Her husband was over to see me last week. He has a \$12,000 farm and several thousand dollars out on interest and he came to me and asked me what I would charge and I told him \$3.25 a week and he said he couldn't stand it and I said all right, take her away, and as long as she is here you pay \$3.25 a week.

Mr. Loehen: There is no question the amount is limited by statute to \$3.00 a week and a claim for more will not be recognized.

Mr. Edwin: As I understand it, this discussion is in regard to raising the state aid from \$1.50 to \$1.75.

Mr. Coffland: From \$3.00 to \$3.50.

Mr. Edwin: I don't think that is right. If, for instance, the distribution of state patients could be made for every county, I would not object to it, but as it is entirely left with the State Board of Control, they have the arbitrary power to say whether this asylum have twenty-five and this asylum none, and I object to paying for that county who have a population

sufficient to support their own patients and after so many years have to pay to help other counties to support their patients.

Mr. Hayward: I think the county that has no institution is the one on top of the heap today. I think the county who has no institution should be raised to \$3.50 a week and the others left as they are. We cannot pay ourselves and let the others off.

Mr. R. N. Smith: I cannot see why any body should be against getting \$3.50 a week; that is, I cannot see why any body representing a county which has an asylum should oppose it, but if they do not have any asylum I can see their reasons for opposing it.

Mr. Buslett: I will answer that: Because we are honest men.

Mr. R. N. Smith: Allowing that you are honest men, can any of you keep men for that price?

Mr. Buslett: I will leave my superintendent to answer that.

Motion prevailed that the session continue through the noon hour so as to give time to complete the program before adjournment.

THE ASYLUM FARM.

BY MR. ROLAND KOLB.

I must first beg your forbearance for appearing before you on this occasion. In the program schedule it had not been intended that I should appear. The request came to Mr. Goedjen to speak on "The Management of County Asylum Farms," based on his experience of having a university graduate as an encumbrance on his farm. But he, realizing how difficult it would be without hurting my feelings, turned it over to me. For me to do so is impossible, as I have been working with Mr. Goedjen for less than a year and in that short space of time it is impossible to state whether we will be able to accomplish our ends or not. I will merely attempt to take up a few points that to me appear vital in the management of county farms.

The idea of having a farm in connection with the asylum is as old as the asylums and I think there are at present no asylums in the state that are not running a farm in connection.

The original idea was merely to have a farm so as to afford an opportunity to give the patients healthy exercise. This has been the first aim, and rightfully so, as in some cases this was even carried to extreme—as, for instance, filling a silo by means of baskets instead of an elevator attachment so as to have abundant exercise for the patients. During the last few years a secondary aim has sprung up in the management of these farms and that is to have them as a source of revenue for the county. This move seems entirely reasonable and does not for a moment antagonize the first motive, for it is just as easy to give the patient healthy exercise with the financial side in view as it is when the motive is merely to kill time. And as far as my experience goes, to show the better class of patients are better workers when the work is of a nature to arouse ambition than when it is merely for exercise. For even the insane man often realizes the absolute absurdity of his sane brother's doings.

The idea of making these farms sources of revenue has to my mind one objection. Experience has shown that the best farms, the best farmers and the best results are obtained when the owner farms his own acres, and the cases where large farms, that are run and worked entirely by hired help and paying good dividends, are few. Any asylum farm must necessarily be run on a little larger scale and of course by hired help. Moreover the idea of the layman invariably is that the "pocket-book of the county is large and so can afford anything." This produces innumerable leaks through which run the profits. And yet these leaks do also exist with the first intention of "healthful exercise only," and so the objection would still not hold good.

At present most of the asylum farms are run by the superintendent with the assistance of a farm foreman—the superintendent carrying all the responsibility and the foreman practically none. The objection to this method is this: The superintendent must necessarily spend a large part of his time in the office and around the house and in that way it is impossible for him to give the farm his personal supervision. Especially is this true where the farm lies scattered in different sections. The foreman, as before stated, carries little responsibility and my experience has been that this class of men usually refuse to take any responsibility and he must necessarily get along with the rest of the hired help—and he usually does—to the

detriment of his employer. Where, however, a responsible man is put in direct charge of the work and of the farm, he will usually see that there are no laggards and that there is no time filtered away.

One opportunity in the management of the county farm is the employment of a man on the farm who is able to put things down in black and white. I will show later on where this can be of benefit, but will merely say for the present that every man, no matter how small or inconspicuous he is, has his plans—and some of them are good ones—and he also does things. Where a place is run by hired help there is necessarily often a change in the help and management which is not true in the case of a private owner. If, then, an old man leaves and a new one starts in he must start at the foot simply because he was not aware of his fererunners plans. If, however, the leaving man leaves behind him records of his plans and his doings, the new man can step right in where the old left off without making it necessary for him to wade about for a year or two in order to get his bearings, at the same time making new plans which he in turn leaves unfinished.

As for the farm management proper—there are special opportunities for the county asylum farms. The growing and producing of pure bred seeds and cattle is one opportunity. In this line especially there seems to be a splendid opportunity for the county farm. The objections to registered stock are these: they are expensive and the breeding of stock is an art and many farmers are not artists nor have they the necessary cash to invest. Not that I mean to say that I do not believe that it would not pay the average farmer to invest \$100 or more in a pure bred sire. I believe that no farmer, however poor, can afford to breed his cows to anything less than a pure-bred. The question is merely this—if you haven't the dollar you cannot invest and if the county hasn't the dollar it has unlimited credit and anything that is a paying proposition in the end it can afford to enter no matter what the cost. Another objection to registered stock is the fact that the average farmer is not an advertiser and if you are in the pure-bred stock or seed business you must needs advertise so as to be able to sell your surplus. Every asylum carries with it an abundant supply of free advertisement and so whatever it has to sell advertises itself to

quite an extensive measure. So none of the objections to pure bred stock or seed hold good in the case of county farms.

Another line is the marketing of produce. Those of us who watch the markets know that there are many things placed on the market that are in poor condition and hence commands but a medium price and thus depress the markets. "The best of everything for the best of price" should be everyone's motto. Many farmers are entirely unable to do this, however, as they have not sufficient help with which to prepare an article in the proper manner. And the labor question is certainly no handicap at an insane asylum. Time can be taken to produce and prepare everything in the best possible manner.

Another point is the rotation of crops. Most farmers rotate their crops to a greater or less extent and rotation is an essential in permanent agriculture. But farmers are in it for a life time and can adopt almost any sort of rotation. With the asylum farm it is different. Where the farm management is changed frequently a system should be adopted that is more or less permanent and by having a system to follow a proper rotation can be successfully carried on.

Another point is in demonstration work. For the last few years our Experiment Station has been carrying on a campaign of education by means of demonstration work among farmers. The idea is to get the knowledge obtained at the Station before the farmers so that practical use can be made of it. In this way the asylum farms can be of a great benefit. They are naturally better equipped than the average farm and are thus better able to do demonstration work. Moreover, as was said before, they naturally carry with them an abundance of free advertisement.

I have thus far attempted to briefly outline a few of the points that offer opportunities in the management of the asylum farms. I will now attempt briefly to state a few things that we are planning on our own farms.

In our situation we are a little unfortunate. Our institution is in the city, but the farm is out for a mile or two and lies scattered. Our farm consists of 270 acres which are scattered into nine different sections. One section of about 50 acres surrounds the buildings, but the rest lies out, the farthest being nearly two miles away. In this manner we necessarily lose much time on the road. There is no running water on any of this land nor a well excepting one, so our pasture facilities are poor. We have,

however, opportunity to rent quite cheaply pasture for our dry stock. Advantages that we enjoy are that we are able to have city water, light, sewage disposal and fire protection at a very reasonable rate. Like all the lake shore regions, we are abundantly supplied with weeds of all kinds. Otherwise our land is good, the soil being mostly of a clay loam and some of it is quite fertile. Now as to some of our plans in our farm management. To combat against the loss of time on the road, we have divided our farm into three great divisions. Each of these will in one year produce the same crop so that while we are engaged in one work as haying, for instance, we will never be obliged to transport our men or machinery any great distance for change of operations. This will eventually save us considerable time.

Our combat against the weeds is not one of eradication but rather one of control. We do not expect to get rid of them, but we intend to raise crops in spite of them. To do this our plan is to have a short rotation of only three years' duration. The rotation consists of corn, grain and hay. We seed to clover and take from it but one season's growth, when we manure it and plow it down and the following year plant it with corn. This we work to perfection. This spring we covered our corn land five times with a spring harrow, at the same time having a crew of some twenty men on it with forks digging up quack roots. When we planted our corn the field was like a garden and we expect to cultivate it all summer. We plant our corn in check-rows so as to better facilitate thorough cultivation. When we get through with our corn we are ready to take off a grain crop and we don't expect to be bothered by weeds and the same year we seed down to clover. Our grain crops are barley, oats, rye and peas. There is no pasture in this rotation and we don't plan for any. To offset this, we have taken the fifty acres near the buildings and divided it into another three years' rotation, consisting of garden truck, peas and oats mixed and clover. The garden truck affords opportunity for cultivation, the peas and oats mixed are for green feeding and silage as substitute for pasture as is also the clover. We intend to divide this into small paddocks to furnish hog-pasture, exercise lots for the cews, calves, etc.

The herd consists of some eighty animals in all, with about forty milk cows and our plan is to increase it. The herd is of Holstein grades, but we are starting in with pure-breds, but not

to do away the grades. We have purchased a few choice registered cows and we are running them alongside of our grades. Every animal in the herd is numbered and entered in a herd book and an accurate record is kept of her performance at the pail and also in offspring. This gives us an opportunity to gradually weed out the poor ones and retain the good ones. We have a separate herd book for our calves into which each animal is entered as it is dropped together with the name and number of the sire and dam. Thus in time we will be able to furnish a pedigree with each animal, even though it be but a grade.

Our hogs are treated in a like manner. By the way, I believe that the hog is one of the best assets to an asylum farm. With patients for milkers, I believe that a cow will never reach her maximum in milk production, but a hog will thrive under patient supervision. We haven't a hog on the place that is not entered in the book and we have some 140 of them. Accurate records are kept of the performance of every breeding animal and the undesirables are weeded out while the offspring of the large litters are kept. You may think that this is useless bother, but we are already obtaining results. Last summer when we started our herd book our average size litter was seven pigs. This year it is eight. At that rate it is a matter of about fifty pigs a year for us. At present prices of pork, fifty pigs ought to be able to pay for a little bookkeeping.

It would be unfair to leave this subject without going a little further into our pig project. You will notice that pigs are my hobby, and I have the reputation of spending more time in the pig barn than in the parlor. Situated as we are, outside of the corn belt, I believe that Wisconsin should attempt to produce a bacon hog rather than a lard hog. With that end in view, we have started out with Tamworths, the most prolific, the longest, the most rugged, as well as the homeliest of all breeds. Our intention is to produce a bacon that is specially bred, specially fed and specially prepared and produce it for fancy trade. With what success we will meet remains to be seen, but at present our grade Tamworths are outgrowing our Poland Chinas and Chester Whites by two and three months and they are just as lively and homely as ever while doing it.

Besides this, we have chickens, garden truck and small fruits, but these are mostly for home consumption and our plans are

not so extensive for these and I will not tax your patience by telling about them.

This, in brief, comprises our plans or at least part of them. They are open to criticism, I am sure, and no doubt many of them will never materialize, but to what extent we are successful, we will be better able to tell you in a few years from now.

DISCUSSION.

Mr. Bogue: I will ask if when he has got as old as I am he will not change his mind. He believes in short rotation. I lived on a prairie farm and I sowed clover on the whole farm and it would come out beautifully but the hot weather would kill it off and in the spring the frost would kill it; how are you going to follow the rotation then, when a crop fails three or four years in succession? It may be the heat of summer or the frosts of winter.

Mr. Kolb: I will expect to meet those things as they come up. We haven't had any trouble of that kind for ten years.

Mr. Bogue: How about the heat of last August, I want to know where we get the clover?

Mr. Kolb: I would not have clover that year.

Professor Norgard: I didn't come to say anything. I came to listen. I was going to answer the question brought up as to whether we should practice rotation because we have a failure in clover. I don't think that because we fail to get a catch of clover when we want it that that ought to cause us to discontinue rotation. We have got to have rotation and if we do not get it this year we must try again until we get it and we don't want to sit down just because we didn't get a catch of clover. I believe the longer you practice rotation the less trouble you will have in getting clover. I believe the longer you practice rotation, the better you get your soil except as to moisture. I like the idea brought out by Mr. Kolb that you ought to plant your farm to suit that rotation not to have a patched farm but to have a large range so when you start out at one end of the farm with an empty wagon, you land at the barn with a full wagon and that all goes with the subject of crop rotation. I think the question of farming is one that takes the whole attention of a good man and a man handling the institution cannot

give his whole attention to the farm and I believe you should have the best man you can get on the farm and look after that line and for that reason I like to see the superintendent get the best man they can to handle the farm and keep both heads together. I believe it pays. I have seen farms this year where a change was made from the farmer who had his hand on the situation to a new man and one single farm of 60 acres lost more to the institution than the wages of the man. I wish I could emphasize this so we could consider whether it is advisable to look about to find a man who has the knowledge and experience and above all should have the ambition to put the whole attention on the farm. I think the one word ambition is one we should look for. The man who has ambition to put his time and attention to the farm is the one who is going to do the best with the farm. I have found this to be true. It is important to get good men with ambition and knowledge and you have to pay pretty fair wages to get them. A man who has not the ambition will not get the knowledge, but the man who has the ambition will get the knowledge to handle that farm in the best way and so I believe in getting a good man and I would be glad to help farmers get good men and in traveling about the state I have an opportunity to know where these men are. The county farm should have the best of everything; it ought to have soil that is the best, that is prepared well with management which has put fertility into it, so that the acreage of the county farms are models to farmers of the community. I believe county farms can be a good thing for the farmers in the community.

I am glad of this opportunity of looking into your faces and thanking those men who I have co-operated with this year and the kind feeling that has been shown me in my work over the state. I hope to met a good many of you this year and expect your co-operation in our work.

HOW SHALL WE ENTERTAIN AND EMPLOY OUR
PEOPLE?

BY MR. A. H. GORGES.

How can we best entertain and employ our unfortunate people in the insane asylums?

A write in Harper's Weekly says there is no stronger proof of human progress than the modern treatment of the insane. They have been treated with great brutality but those days are happily past; there was a time when the question of how best to entertain the inmates of our asylums was not thought of in the sense we now think of it; we realize a duty towards those unfortunate ones; we want to do the very best for their betterment and comfort; they are now housed in comfortable asylums where doctors and nurses use their best efforts on behalf of their charges.

The insane are treated with the best methods for their entertainment and betterment. There are certainly no new ideas that I could bring before this body of men and women interested in this matter of helping those in our asylums bereft of their right use of their minds.

At the best I might call the attention to some thoughts; it seems to me the great problem for us to solve is to understand the real needs and the conditions of the inner life of those we desire to help. If we fail on this line, we will fail in our efforts. Without real sympathy with the unfortunate ones, without being able to enter into the feeling of the one we are to help, we cannot be at our best; thus our question comes down to me of love, wisdom and sacrifice. The story is told of a young doctor who had been quite successful in the treatment of the insane. Among his patients there was one on whom none of his methods would work with success. This was a young man. The doctor made this case a matter of special study. He came to the conclusion of devoting himself exclusively to him, giving up all his other practices, his home, his friends, his comforts, his society, in fact everything for the time being. He lived with the young man; he played, laughed and wept with

him; in short he became as much as possible like him, thus getting as perfect an understanding of the one he was to help. He had the satisfactory reward that this work of sacrifice and love was not in vain. He was a help and a blessing to him; this illustrates the idea I wish to present.

The insane are members of our family, they are our brothers and sisters. They need our help. We, who are blessed with the ability of the use of our minds must bring all the comfort, light, and cheer into their beclouded lives, we are capable of; this can be done by giving musical concerts and singing, speaking and also religious meetings.

Whatever the method may be of entertaining its greatest aim must always be to relieve the monotony by diverting their minds with something cheerful and to try to stimulate faith, hope, patience and courage in the hearts.

They should also have the proper employment. What this is must be determined through a careful study of the individual. The man should be given work in the field, barn and garden and all kinds of needle work, house work, fancy work and anything that might interest the women.

THE DESIRABILITY OF MORE COMPLETE CLASSIFICATION OF THE INSANE AND ESPECIALLY OF A SEPARATE INSTITUTION FOR CARE AND CURE OF EPILEPTICS, BOTH SANE AND INSANE.

BY DR. RICHARD DEWEY, WAUWATOSA.

Few distinctions are drawn among the insane, in the public mind today, and little or nothing is known of any differences among them, but all "look alike" to the ordinary observer. Some regard the insane with curiosity, some with abhorrence, but few indeed with intelligent sympathy or with a practical knowledge of their needs. Those who are charged with the care and treatment of the insane, and those who have studied the problems bound up with suitable provision for all, know that there are grave questions connected with the large and increasing numbers in whom insanity is complicated by crime, by drunkenness, by epilepsy, and by feeble-mindedness.

The increasing enlightenment and humane impulses pervading all departments of charitable work in our own day, and the high specialization in each department, are leading to an effort to separate the individual somewhat further from the class, and to treat every case upon its own merits rather than, as in times past, to manage the individuals only as so many units all of the same value in "making the wheels go round" in the daily routine of a great institution, but even yet the institution is apt to be regarded as the important thing and the individual is lost sight of. Yet experience has gradually shown that the personality even of insane paupers, whether epileptic, feeble-minded, criminal or alcoholic is a distinct thing, which, for the best results, must be recognized and understood so that the peculiar requirements of each class may be taken into account. And this last mentioned fact increases greatly the labors of those conducting institutions for the insane, who in aiming at the highest measure of usefulness, recognize the need of attention to individual conditions, peculiarities and wants, in each one of the hundreds under their care, and yet are charged with maintaining economy, discipline, safety and order throughout a large establishment.

It therefore appears that in the important economical questions arising from the magnitude of numbers of the insane; in the essentially wide differences separating different classes of insane persons, and in the effort to individualize more thoroughly each case upon its own merits many difficulties are encountered which merit earnest attention since they must be overcome if progress is to continue.

A recent writer has estimated that if all these classes increase in the same ratio, another century or two would see the "wind-up" of our civilization and the entire population involved in insanity and degeneracy.

These masses of mental defectives may be compared to a bundle of rods held threateningly over the prosperity of our communities. Combined as one whole, they are formidable, and it is only by separating and attacking them in detail that we can hope to break their force for evil and overcome at last these great obstacles lying in the path of social progress.

In this brief sketch I desire to suggest some means which are perhaps available for simplifying the vexed questions, especially with reference to the epileptic.

I would first emphasize the fact that there are certain groups or classes into which the insane naturally fall, whose wants should be separately considered, and among these groups the treatment of the epileptic ought properly to be conducted on principles different from those guiding the treatment of the ordinary insane. Furthermore, a large majority of the epileptics are not strictly insane. There are all degrees of capacity and incapacity among them, and there are hundreds of practically sane, industrious, capable men and women who but for these fatal attacks (occurring sometimes at intervals of months), would be useful, self-supporting citizens.

As the number of insane increases in any given community we find the element of epilepsy continually coming to the front and attracting attention, by reason of the special difficulties, dangers and inconveniences encountered in the management of these cases, thrown as they are, promiscuously into all our ordinary asylums. Epileptic patients are peculiarly objectionable and injurious to their fellow inmates. Their attacks produce alarm, distress, and confusion when witnessed by the insane, and in a large proportion of epileptics, periods of violence and dangerous homicidal and violent demonstrations are met with. For this reason, now for many years we have heard the urgent plea put forth by those in charge of the insane, that the needed special separate care and provision in institutions of their own should be provided for this unfortunate class. This plea has won its cause with increasing frequency until now the states of New York, Ohio, Massachusetts, New Jersey, Pennsylvania, Texas, Kansas and Maryland have provided institutions for the epileptic. But Wisconsin, otherwise so humane, enlightened, "up to date" and "in the van," is still lagging in the rear of the more progressive states.

The epileptic insane form a class not fitted for association with ordinary insane persons. Indeed, they are, wherever possible, refused admission in most of our asylums, and are thrown in great numbers upon the county infirmaries, jails and prisons.

Two years ago the lamented Gordon made an eloquent plea for the epileptic before the State Medical Society. At that time he stated that there were 275 in the state and county institutions, and these were but a handful compared with the entire number in the state which may be moderately reckoned in the

proportion of at least one to every thousand of our population, which would amount to 2,230 in Wisconsin.

Now, in providing for this class certain principles have been worked out by experience in other states and have become established as to the wise policy of the state.

The colony or "village" form is the only suitable one for the epileptic by reason of the necessity for agriculture; for industries of various kinds; for the wide separation of the harmless and violent; the weak-minded and the intelligent; the industrious, and those who are incapable of any useful employment. Finally, separate departments for the sane and insane are necessary and should be so distinct as to avoid any injurious contact between the two, and yet convenient, so that the frequent transfers could readily be made which are necessitated by the fact that almost all epileptics are subject, at the periods of their attacks, to access of illness, insanity or violence, often of brief duration.

A large tract of good arable land, convenient to a good-sized town should be selected and not less than one acre for each individual accommodated should be allowed. The construction of such an institution should be upon the "detached ward" or "village" or "cottage" plan, this being cheaper as well as better for the patient. Two main divisions, one for the sane and one for the insane epileptics, should be established, so located as to be distinct and free from personal contact of the inmates, yet in close touch and under the same direction. There should also be a department for children, as epilepsy begins in infancy and many cases could be permanently cured if treated early and efficiently, as they almost never are in their homes.

The great majority of the inmates could occupy buildings with large dormitories, where the night supervision they require would be practicable and the construction would thus be simplified and cheapened.

To the insane department of such an institution every known insane epileptic in any given state should be committed, whether at present in or out of an asylum.

Thus would be avoided many of the frightful tragedies of which we read, in which one or more revolting acts of violence have been committed, without warning, by an insane epileptic, for whom admission had perhaps been vainly sought at the overcrowded asylum, or for whom friends, as he was "sane most of

the time," had never taken steps to have proper provision made.

One fact in regard to massing epileptics together should be taken into account. They do not, even those that are insane and violent, appear to have any mutual repulsion, but rather are peculiarly prone to find congenial society among themselves, as has been often observed. Their malady appears to make them peculiarly sympathetic. They take an interest, one in the other, gladly associate, care for and protect one another. When epilepsy has gone to the length of producing insanity it may be said that both the epilepsy and the insanity are practically beyond relief, and care and control for the remainder of life will be necessary for such subjects.

Now, as to the sane department of the epileptic colony, it is capable of being developed so as to be largely a self-supporting industrial institution, with a large number of trades and handicrafts yielding the most beneficent results for the hundreds of intelligent, useful, well-disposed epileptics who are thrown out of all ordinary avocations and employments by their unfortunate, though infrequent attacks. Hundreds who now become tramps and paupers would be rendered self-supporting and useful citizens.

Another important aim in connection with epilepsy would be promoted by the institution for epileptics. I refer to the marriage of epileptics which is forbidden by law in many states. It has been found that epilepsy is hereditary in a great degree and for this reason laws have been passed against marriage but they are to some extent "dead letters" upon the statute book. The institution for epileptics could and should have, after it has been established a few years, a complete register of the epileptics of the state and they could thus be taken care of, identified and much more largely controlled so as to prevent intermarriage.

Finally, the scientific study and treatment of epilepsy in the institution for this class, equipped as it should be, with the greater facilities that advanced knowledge places within our reach, would result in cure and amelioration of inestimable value.

DISCUSSION.

Dr. Frisby: No doubt in time we will separate the epileptic from the others but I find in the newer colonies for epileptics they are not including the insane epileptics. In Indiana I find they are providing for the epileptic where they are not insane and they explained that they were good workers while the others were not and that they were uneasy and wanted to get out and they expect that a great deal of work will be done for this class of epileptics; I want to say that before we provide for the epileptic insane we must have another home for the feeble minded. Our home at Chippewa Falls is full. It was intended for 1,000 and they now have that many and we must provide for another home and then we should have a colony for epileptics.

Mr. Whiffin: I would like to know what the state board has done with the \$100,000 that was appropriated for the home for violent and destructive insane.

Dr. Frisby: It is to be at the Northern Hospital. The plans are made and they are making the specifications for the building. Mr. Conover went all over and visited institutions for criminal insane but they have not been able to get anything to come within the appropriation. We have got to build a kind of a moat around the grounds, not a wall; the excavations can be made by the patients and it will not be so very expensive. I suppose some think the board is slow but we have been getting after this as fast as possible.

Thursday, June 16, 9 A. M.

The question of next meeting place was taken up at this time:

Mr. Parks: In behalf of the trustees and superintendent of Rock county I invite you all to hold the next meeting at Janesville.

Waukesha was proposed for the next meeting place.

Dr. Reed: It looks kind of barefaced to ask the convention to come to Jefferson but I asked them last year but they were to come here but if you will come to Jefferson we will show

you 140 patients as near well and as near sane as any institution can be.

Motion prevailed that all ex-members of this association hereafter become honorary members.

Motion prevailed that the next meeting of this association be held at Jefferson, Wis.

Motion prevailed that the officers who have been serving the last year be re-elected as a whole.

Mr. Whiffin: I would suggest that hereafter when the address of welcome is made by the mayor of the city that the response be made by the president and not by the vice president.

Mrs. Downer: I would like, on behalf of the ladies of this association, to extend their thanks to the ladies of Green Bay as well as those connected with the Brown county institution, for the automobile ride this morning. Motion carried.

TREASURER'S REPORT.

Balance on hand last meeting.....	\$62.88	
Received for dues.....	125.00	\$187.88
Bills paid and audited by our finance committee		186.90
Leaving a balance of.....		\$.98

SPECIAL TRAINING FOR ATTENDANTS.

By MRS. C. CHRISTENSON.

Mr. President, Ladies and Gentlemen:

The subject, special training for attendants, is a very large problem, and I shall not attempt to describe to you how this special training may be best accomplished. In this, each one must be governed largely by the different conditions that exist every where, also by the class of attendants who are to receive the training.

This is a subject that is receiving much attention in institutions everywhere, and I can do no better than to tell you of our experience at the Sauk county institution.

You will remember that at our last convention at Madison,

we had the pleasure of listening to the able address by Miss Julia C. Lathrop, of Illinois. Miss Lathrop was formerly a member of the State Board of Charities and Reform, in her state, and at present the vice president of the executive committee of the Chicago School of Civics and Philanthropy.

This celebrated school, among its many excellent courses, also gives a course in the special training for hospital attendants. This is a summer course lasting about a month, (last year from June 29th to July 31st) and the training there imparted, goes far toward enabling the attendant to become a real companion and teacher rather than a keeper; in his relation to the patient.

Through the liberal and intelligent attitude of the trustees of our institution, I was enabled to take this course last summer, and I feel that it has been a great help to us.

The training there received is in turn imparted to the patients, numerous occupations may thus be taught patients on the wards without any elaborate equipment. A specialty was there made of the coarser materials adapted for both men and women patients who could not use the finer fabrics; the variety of materials used enabled the attendants to give their patients such occupation as would interest and enlist all grades of them; including the so-called "back ward patients" Special emphasis was placed upon those lines of work which assist in the re-education of the mind and hand and aid in the curative treatment of certain cases. In addition to teaching handicraft, weaving, working in brass, leather, clay, paper, card-board, basketry, stenciling and book-binding, they are instructed in a course of out-door and in-door amusements, exercises and games. An hour each morning is devoted to lectures, delivered by eminent alienists, and superintendents from the various state institutions.

The value of this course of instruction in occupation has been widely recognized; it arouses the patients pleasurable interests and stimulates their minds by individual attention, thereby gradually leading them back to productive work and possibly self-support.

From our experience at our institutions, I am firmly convinced that much can be done to ameliorate the condition of the insane and still more can be done to prevent a case from

reaching the state of profound dementia. Generally after the morning's work is done you have a large number of people in comparative idleness with a long day before them. If you take the same number of sane people and subject them to the same treatment, you would soon have trouble and a lot of it.

Here then, is where the special training of the attendant is needed to assist in keeping the patient occupied by intelligent and sympathetic advice and encouragement. This in many instances materially lessens the number of cases requiring restraint.

Among the articles we make, I may mention the making of baskets, jardinieres, mats, etc., out of reed; work in brass and of raffia, twine-holders, hand-bags, slippers and numerous other articles all so simple that any child may learn and with no tools other than the hand. We also upholster furniture, cane chairs, and have installed a loom where we weave carpets and rugs, aside from the benefit accruing to the patients by affording them occupation, this work is likewise a source of profit to the institution, in the sale of the manufactured articles.

We find that this kind of re-education affords employment, amusement, recreation and to a great degree, contentment.

I will say that we have brought a lot of our work done by patients for exhibition.

DISCUSSION.

Dr. Frisby: I want to say that although you have forbidden the men to speak that this is a subject that should interest the men. We are going to send four men from the state institutions. There is just as much that can be done on the men's side as on the women's side. Mrs. Christensen has done as much could be done on the male side. I wish some of the other asylums could send their matrons to these summer schools, they would be a great benefit to the institutions.

Mr. Hayward: I think this sending our female help down to the school is a step toward marriage. I think the proper one to send is the matron, one who is supposed to stay there as long as she gives satisfaction.

THE IDEAL MATRON.

Mr. Wm. Riggert.

A noted German writer says: "Yes, it has been growing better in the world, and if preachers tell us a thousand times that the world is growing worse—in the world it is getting better." Whatever we may think of the "Good old times," whether we believe that they have passed away never to return, or whether we are convinced that they never existed, save in the memory of good old people, we certainly cannot deny, that as far as the treatment of the insane is concerned, the world is growing better every day.

It is not so very long ago that the insane were kept in Poorhouses and in Jails. Keeping them in Poorhouses was to a certain extent excusable, because outside of the home there was no other place for them, but confining them in jails certainly implied that they were looked upon as people, who themselves were responsible for the condition they were in, or in other words, they were looked upon as criminals. No doubt, it was realized then as it is now, that it is the duty of the community according to the laws of God and man, to care for these unfortunates, but the word "care" with reference to the insane had a different meaning at that time from what it has to us to-day. Looking upon the insane as people who themselves were responsible for their condition, it was thought that the duty of the community was fulfilled by giving them shelter and food and in this way simply sustain and prolong their wretched existence. To-day we interpret the word care differently. We believe, yes we know, that it is not only our duty to give the insane shelter, clothing and food, but in addition to that also provide for them at least that degree of comfort, amusement and recreation, which in their condition, they may be able to appreciate or capable to enjoy.

If we interpret our duty to care for the insane in this light, we find that it is not an easy task to perform it. If insanity was a disease like many physical diseases that attack the human body in one case the same as in the next, it would

be comparatively easy to perform our duty in caring for the insane, but as long as there are hardly ever two cases of insanity alike, the question of treatment of all these different cases becomes difficult and perplexing. This difficulty is well realized to-day and consequently we have quite a lot of seemingly complicated machinery to perform this work. We have a State Board of Control, State Hospitals, County Insane Asylums, Physicians, County Boards, Boards of Trustees, Attendants, Superintendents and Matrons. All these agencies play their important part in caring for the insane and all are necessary, but after the insane have left the State Hospitals and have been committed to a county Asylum, the most important part to perform of all the agencies just named in caring for the insane falls upon the Asylum Matron. The successful management of a county Asylum depends more upon the matron than upon anyone or anything else. From this statement, I do not except the Board of Control, the County Board, the Board of Trustees nor do I expect the Lord and Master of the Matron—the Superintendent. The reason why, in my opinion, the Matron is of the utmost importance is, because the successful management of the Asylum consists mainly of a lot of details and of an intimate acquaintance with every patient. One of the greatest philosophers has said of woman: “Justice is a masculine virtue, pity the virtue of woman.” The idea of seeing a woman filling the office of magistrate is laughable, but sisters of Charity are worth more than Brothers. It seems to me, if he had an Asylum Matron in mind when he wrote this, he could not have described her any better in as few words.

The power of the Board of Control with reference to the management of County Asylums is only general; it is limited as to the details of such management. To name just one reason for this, The Board has no voice in the selection of the Trustees, Superintendent and Matron. Nevertheless, we must admire the foresight and wisdom of those men who originated and devised the so-called Wisconsin System of caring for the insane, and laid broad and deep the foundation of this structure. If it was not for the Board of Control, we would, for instance, not have the magnificent County Asylum Buildings we boast of to-day, the newer ones outranking the State In-

stitutions. It is mainly because the Board of Control has fixed the high standard of these buildings that we do have them, and in saying this, it is not in the least my intention to criticise any County Board or any Board of Trustees.

The County Board does not deal with the Asylum direct, but only indirect through the Trustees, and for this reason the influence of the County Board as to details of the management is limited. The Trustees elect the Superintendent and Matron and are responsible to the County Board; they may and do give their instructions to and confer with the superintendent, tell him in a general way how they wish the Asylum managed and he will carry out the wishes of the Trustees, but the Superintendent has a lot of things to look after; he will issue his orders to the employees and of course will see to it that they are carried out, but the actual doing of all these things, the showing to the employees how they should be done, the actual treatment of the insane, the looking after individual difficult cases, in short, the daily and hourly intimate contact with the patients depends to the largest extent upon the Matron. She is the one to manage the thousand and one little affairs of the Asylum, and unless these little affairs are managed properly, the management as a whole will not be a success.

If what I have said concerning the County Asylum is true, then what should be expected of a Matron in order to carry out successfully her important part of the Asylum work? I have in mind an Ideal Matron and with your permission, I will describe to you my Ideal.

The Ideal Matron is never elaborately, never carelessly, but always plainly and neatly dressed. She has no use for the Merry Widow hats nor for French lace gowns. She is never cross, always looks and feels happy. She is far too busy to do any hard manual labor herself, but she knows how a floor should be scrubbed and varnished and polished and is able to instruct some one else how to do it. She is a living cyclopaedia of anything pertaining to the Asylum. She knows instantly where to lay her hands on a package of pins when it is wanted and knows where the Threshing machine has been stored away for the winter. She never has time to entertain visitors a whole day or even half a day, but she al-

ways receives them at the door when they arrive; she turns them over to an attendant to be "shown through" and then goes about her work. But she has the faculty of turning up again when the visitors are ready to leave, bidding them good-bye and asking them to come again. She never thinks that she can take the place of the Physician, but she is as efficient as a trained nurse and in case of an emergency she knows what has to be done until the doctor arrives. She is as familiar in the kitchen as she is in the sick room. She never passes an inmate or patient without some word of recognition; she visits every room and sees every corner in the Asylum at least twice a day. She never commands but always asks. She is religious, but knows no creed. She is on friendly terms with all employees but knows how to retain her dignity; she does justice to all but shows no preference to no one. She sees to it that no part of the time of employees, that is paid for by the County and needed by the patients, is whiled away in idleness, but she insists that no employees must work over time, except there are grave reasons that demand it, and that all of them get their regular vacations. She realizes that the chances for waste, especially of food and clothing, are great, and pays the closest attention to prevent it. She attends personally to the purchase of all articles used and consumed in the kitchen and sewing room and knows the cost and value of everything in the asylum. A clean house is her hobby and she simply will not have it otherwise. She is a keen judge of human nature, and under any and all circumstances considers first the welfare of her patients. When she sees that certain work is disagreeable or even repulsive to a patient, she will find some one else to do that work and will not rest until she has every patient of the asylum perform just that work which he or she not only can but also likes best to perform.

I believe, more than anything else, patience is required in an insane asylum, consequently the Ideal Matron possesses an inexhaustible supply of this virtue, she never under any circumstances loses her temper. Re-education is the watchword of the day, and as re-education of the insane above everything else requires patience and again patience, this laborous task falls to the lot of the Matron. Walking through

an Asylum, the most pitiful sight that meets my eye is a physically strong patient sitting idly in a corner from morning till night; I am informed that nothing can be done for this patient, he simply is beyond any help. But the ideal Matron knows better. No matter how many hours or days or weeks it requires to arouse in this patient the first faint interest in something, she will not give up until she has detected it and then keep on developing this interest until finally John makes raffia baskets or weaves rag carpets. The ideal Matron is a perfect housekeeper. I do not care to go into details concerning this point, because it embraces practically everything the Matron has to do.

Although our great Government in Washington may decree that legally a married woman has no occupation, I believe the noblest calling on earth is that of a woman who can and does make a home homelike for her family. Only a few days ago in an address at Syracuse, N. Y. Chancellor Day said: "The greatest woman is the woman who brings to a man a home. She is greater than the suffragette or the female temperance lecturer." Let me tell you that in my opinion the greatest Matron is the matron who can and does make her Asylum more homelike than any other Matron. If more women understood the art of keeping a perfect home and practiced it, we would not need as many temperance lecturers as we have now—nor would we need as many Asylum Matrons.

But above all, the Ideal Matron is mother and in order that the patients may love her as a mother, she must be full of sympathy and extend this sympathy to them; she must always not only be able but also willing to understand their troubles and their joys. In a well regulated family the man is the head but the mother is the crown. In the Asylum the Superintendent is the head and must be recognized as such by all, but let the Matron be the crown. As sure as there is something wrong in that family where the child does not come running to its mother for comfort and assistance when it has been hurt, just as surely is there a good deal wrong in that asylum where the patients do not come to the Matron with their cares and troubles. She must at all times be ready to help them in their distress and also, which is of equal or

even greater importance, she must share with them their little joys and pleasures. In no other sphere of life is it more true than in an Asylum that divided sorrow is only half sorrow, but that a divided joy is double joy.

Do you think I am asking too much of the Ideal Matron; do you believe that her task is too hard and her duties are too arduous? Then let me quote to you these words of Fra Elbertus:

“The less you require looking after, the more able you are to stand alone and complete your tasks, the greater your reward. Then if you can not only do your work, but direct intelligently the efforts of others, your reward is in exact ratio, and the more people you direct, and the higher the intelligence you can rightly lend, the more valuable is your life.”

DISCUSSION.

Mr. Whiffin: I am not going to take long or say very much but I have some ideas of my own and they will call for discussion and you will not agree with me but they are my honest convictions and I am going to stick by them. This question covers two classes of persons; there are the needy persons who are not defective and there are those who are both needy and defective and I believe there is no place in the world where those classes are taken care of better than in the United States. I don't think there is a State in the Union which cares for them as well as the State of Wisconsin. We have prepared homes suitable for their welfare; there is no place in the state of Wisconsin where the needy are suffering; if there is a class of needy who are suffering it is the class who are too proud to let their wants be known and consequently they struggle along without asking aid. There are worthy persons who should receive aid and do not. When you come to the defective class it covers the idiotic. They are numerous and we have thousands of them all over the world but I think they are taken care of as well as it is possible to do. A number of years ago I was authorized by the State Board of Charities to make an investigation of this class of persons

in our County. I went out with the Trustees and looked up every person in the county who was aided in any way. I found them all. I found on that trip persons who were cared for and by people hired by the county to care for them and others cared for by their relatives and friends in a humane manner. These places being built to-day for the care of this class are better than their own homes. The question is why the rapid increase of this class? I don't think there is an increase in this population. There is an increase when people find out their relatives can be better cared for than in their homes. On that visit I found a person who was 25 years of age, idiotic from birth. When I went there I asked if they had a person which the county was paying \$25 for the care of and who wasn't in their right mind and I asked to see her and she said no she aint to see and nobody could see her and I said it is my business and I must see her and I said is your husband at home and she called him and he came and I stated my business to him and he said she is our child and that is my business and I said it is my business and I am going to see her before I go away. When they found out that I was going to see her the mother carried a blue denim skirt where the child was kept and took her out and I said I must see the room and she said no and I said I must see it and I went in and found in the corner a bunch of straw and she was in a nude condition and the county paid her parents \$125.00 a year for her care. I found others but none as bad as that. That was the worst I ever saw or heard of. When I got back I reported the case and I had orders to get that person as soon as possible and take her to an asylum but before I got the order from the county judge through some reason or cause she died. It is the best thing that could have happened to her. I have known of cases in our county and while they were not kept in that condition, it was pretty close to it and we have taken them and put clothes on them and got them to where they are quite useful persons. You couldn't believe they were the same persons. I believe the same is true of most every county in the state and as I said I believe they are being cared for much better than any in their homes.

Mr. President: We are sorry that Mr. Arpke has begged off on his paper. He wanted to be excused but I told him I would not excuse him but he has gone any way.

The committee on Resolutions presented the following resolutions, which were unanimously adopted:

It having pleased our Heavenly Father to call from our midst, Ralph P. Dickinson, of Chippewa Falls, after having served as superintendent of the asylum of Chippewa county for 14 years, we, the Association of Trustees, Superintendents and Matrons of County Asylums of Wisconsin, in convention assembled, at Green Bay, Wis., this 16th day of June, 1910, hereby express our appreciation of his valued labors for our unfortunates and extend our sympathies to his bereaved family, and be it further

Resolved, That a copy of this resolution be spread upon the records of this Association and printed in the proceedings and a copy thereof be mailed to his widow.

O. A. BUSLETT,
GEO. W. MAYHEW,
L. P. EDWIN,
Committee.

It having pleased our Heavenly Father to call from our midst Mrs. T. D. Wheeler, of New Richmond, Wis., matron of the St. Croix county asylum, the Association of Trustees, Superintendents and Matrons of County asylums of Wisconsin, in convention assembled at Green Bay, Wis., this 16th day of June, 1910, express our appreciation of her valued labors for the unfortunate and extend our sympathies to her bereaved family, and be it

Resolved, That a copy of this resolution be spread upon the records of this Association and published in the proceedings, and a copy thereof be mailed to her husband.

O. A. BUSLETT,
GEO. W. MAYHEW,
L. P. EDWIN,
Committee.

Whereas, in the past year it has pleased our Heavenly Father to call from our midst Mr. Bird Miller, of Wyocena, superintendent of Columbia county asylum, we hereby express our ap-

preciation of his valued labors for the unfortunate, and extend our sympathies to his bereaved family, and be it

Resolved, That a copy of this resolution be spread upon the records of this Association and published in the proceedings, and that a copy be mailed to his widow.

O. A. BUSLETT,
GEO. W. MAYHEW,
L. P. EDWIN,
Committee.

The Association of Trustees, Superintendents and Matrons of the County Asylums of Wisconsin, assembled in yearly convention, at Green Bay, Wis., June 14th, 15th and 16th, 1910, extend the hearty thanks of the Association and each member thereof for the cordial welcome and generous hospitality and entertainment accorded this convention by the mayor, managements of the Brown County Asylum, the State Reformatory, members of the Elks and Eagles Lodges, in whose halls our meetings have been held, and in fact all of Green Bay's citizens, who have made our visit to this, the oldest city in the state, one long to be remembered.

Resolved, That a copy of this resolution be spread upon the records of this Association and printed in the proceedings and that a copy be mailed to the mayor, the asylum management and others.

O. A. BUSLETT,
GEO. W. MAYHEW,
L. P. EDWIN,
Committee.

PAPER ON TUBERCULOSIS.

By DR. C. A. HARPER.

Ladies and Gentlemen:—

I have been asked by a committee of your association to prepare a report upon tuberculosis in relation to county institutions and to confine myself mainly to the statistical and medical side of this disease. In my statement to you I shall endeavor

to show you the necessity of a change in your present methods of handling individuals afflicted with this disease both from a preventive and semi-curative standpoint.

It is to be remembered that little was known concerning tuberculosis until the discovery of the bacillus or germ by Dr. Koch in 1882. Prior to that time tuberculosis was supposed to be an inherited disease and, therefore, an inevitable evil, always with us. Since the discovery of the germ, however, the hereditary idea is practically abandoned and the disease is classed as one of an infectious and contagious nature. As a result of this, new ways and means for its control have been devised and the method of handling this disease in the last twenty-eight years has been entirely different from the consideration of this malady in past centuries. The disease itself dated from the history of civilization, or further still, the history of mankind.

Since the nature of the transmission of this disease has only been known during the past twenty-eight years, of necessity, therefore, it has taken a great deal of labor on the part of scientists and sanitarians to educate the public to the fact that the disease can be prevented; and in many instances cured. Preceding generations never questioned the hopelessness of the situation. There is no race, no nationality, no station in life that this disease does not attack. The educated and the ignorant, royalty and the peasant have as history shows, all been made victims of its ravages.

The general prevalence of tuberculosis is astounding. All individuals advanced in years who die of disease other than tuberculosis, and on whom postmortem examinations have been made, show that infection was present at some time of life in 98% of them. It has recently been stated by an eminent Russian specialist, that practically all individuals in Russia past thirty-five years of age on whom post mortems have been made, and death resulted from diseases other than tuberculosis, show tuberculosis lesions. One-seventh of the deaths in the United States is caused by tuberculosis; one-fourth of all the deaths in the United states in individuals between the ages of twenty and fifty is caused by tuberculosis. In the black man one-half of all of the deaths between the ages of eighteen and fifty is caused by tuberculosis,

In the civil war for a period of four years fighting, over 200,000 deaths resulted from the conflict. In this country alone during the four years ending 1908, 800,000 deaths from tuberculosis have been recorded. This disease is more serious and more fatal than all of the other contagious diseases combined. The dreaded diphtheria, scarlet fever, small pox, measles, whooping cough and typhoid fever dwindle into insignificance in comparison with this one infectious disease.

Tuberculosis claims in Wisconsin 2,500 victims annually out of the 27,000 deaths reported. Health boards and sanitarians have long realized the seriousness of the situation but not until recent years have any methods become generally known and well established, which would bring about a cessation of the trouble.

Dr. Bodington of Sutton, Warwickshire, England, in 1840 established the first sanatorium for the treatment and cure under modern methods, of tuberculosis, and when he published the principles of preventing the spread of tuberculosis, and his methods of cure, he was regarded as a lunatic. His patients were driven from his institution, "which by the irony of fate he was compelled to turn into an asylum for the reception of the insane."

Fifty-four years ago, however, England realized the importance and necessity of doing something to take care of their large number of sufferers from this fatal malady and as a result that government established tuberculosis hospitals for the advanced cases of tuberculosis. It became the custom that all indigent, as well as many non-indigent cases suffering from tuberculosis, were housed in these special institutions. As a result of taking care of the advanced cases of tuberculosis in England, the death rate from this disease in fifty-four years has been reduced a little over one-half. I do not mean by this that these advanced cases of tuberculosis were cured. I simply want to emphasize to you that this general death rate was reduced, from the fact that these advanced cases were housed in such a manner that the general public was protected from infection thrown off from this character of cases.

France on the other hand did nothing toward taking care of her advanced cases of tuberculosis and as a result during this fifty-four year period, the death rate remained practically the

same. Three centuries ago leprosy was as prevalent in Germany as tuberculosis is prevalent in the United States to-day. Nineteen hundred leper hospitals were established by that government and all the cases of leprosy were treated in these hospitals. To-day there is scarcely a case of leprosy in the Empire of Germany.

I am mentioning these points to show you that the advanced cases of tuberculosis are the ones that must receive careful housing attention before any great headway can be made against the disease as a whole. Had England fifty-four years ago started institutions to take care of the incipient cases as well as the advanced cases, she would have made a record that would have astounded the world in the advancement of medical science, and preventive medicines.

The tuberculosis question now confronts the civilized world upon a scientific basis and the eradication of this disease depends entirely upon the uniform action of the citizens in putting up a determined effort for its elimination and of taking care of the incipient and advanced cases. The advantages of institutions, or sanatoria for taking care of the incipients are that cures can be produced in from 60 to 75 per cent of the cases, and, therefore, individuals availing themselves of such sanatoria treatments are returned to the community healthy, strong, wage-earning citizens. The wisdom of institutions for taking care of the advanced cases are not so much in hope of bringing about a cure as it is in providing a proper housing for these individuals who if left at large would be the means of keeping the disease spread broadcast and the efforts put forth on the incipient class would bear little fruit in the general war against this disease.

It is certainly, therefore, an established scientific principle that either the federal government, the state government, or the county government, or in many localities, the municipal government must develop a system by which the advanced cases can be properly housed before we can save annually in the United States a large number of the victims from this disease, the contagious nature of which is better known than any other disease that afflicts mankind.

We must burn the candle at both ends to successfully combat this disease. In the city of London, one-half of the individuals in the advanced stages of tuberculosis are a charge upon the government, either fully or to a partial extent. That is to say,

one-half of the people who finally die from tuberculosis become either entirely, or partially a charge on the government, or upon charitable associations that are endeavoring to render assistance to those afflicted sufferers.

There is also not only the general prevalence of tuberculosis throughout the country, but there is a special prevalence of this disease among the class of individuals who are either indigent or of the lowest earning element, where the housing conditions are most unfavorable, and where the character of the work engaged in is especially liable to lessen the resistance of such individuals and thereby increase in a large proportion, the number of cases of tuberculosis with people who in health are almost a charge upon society but who in sickness become entirely dependent upon the government or charitable institutions. To the tax paying element, therefore, it matters but little from the commercial and economic standpoint, whether this responsibility shall rest upon the state or upon the county, and in the more densely populated districts upon the smaller municipal organizations. The responsibility and the burden, as it might be called, is with us. The question then that now confronts us is the best way of taking charge of the facts as we know them.

In Wisconsin there are over 20,000 cases of tuberculosis. A large percentage of these cases are in the second, or advanced stage. They are not fit subjects for state tuberculosis sanatoria taking care of the incipient cases of tuberculosis. It has never proven a wise plan to combine the incipient and advanced cases in one institution. The method of handling the incipient and advanced cases of tuberculosis are entirely different. Of necessity, therefore, there must be separate institutions for these two classes of cases. In order to make tuberculosis sanatoria a paying proposition to the state and government at large, the advanced cases as well as the incipient cases should be taken care of. By so doing not only will immediate gain be made in eliminating this disease, but in the course of a generation or two the disease can be wiped out in its entirety. That tuberculosis can be almost absolutely controlled if all forces are put to work, cannot be questioned. The disease of leprosy has succumbed to concerted, positive government action against it.

Medical science has made great strides. In the last three centuries the life of all individuals born into the world has been double in the average civilized country. In Prussia, where sani-

tary science has been applied to the fullest extent and obedience to sanitary laws has been observed, the lives of the individuals born in that country have been lengthened from twenty years, three centuries ago, to fifty-four years at the present writing. If the known sanitary principles of preventive medicine in this country were applied to-day as it is in Prussia, the life of a citizen in the United States can be lengthened from forty years to fifty-six years, and under the conservation idea this means much to the wealth of the government. Health and wealth go together.

In New Zealand where the health of the people is carefully safeguarded, the wealth per capita is greater than in any other place in the world. It is economy not only to the individual but to the government at large in the prevention of sickness.

In Wisconsin last year, reckoning the value of time lost on the part of those suffering from the infectious and contagious diseases at \$1.50 a day, we find that there was a loss in earning capacity in this state alone as a result of these diseases of over sixteen millions of dollars. Tuberculosis was the foremost factor in lowering the earning capacity of our citizens.

I cannot believe that if the development of a system by which infectious and contagious diseases may be controlled were put upon a business basis and commercialism should enter into the proposition, but what there would be large capitalists or corporations willing to take up the measures purely from dollars and cents standpoint. I know that to you people here that the element of expense in housing the unfortunates in this state is always an important factor and it is frequently difficult to obtain sufficient appropriations by which the proper housing can be established and maintained. For this reason, therefore, I want to emphasize the fact that expenditures put forth in behalf of taking care of those sick and suffering from diseases of this character, is not money wasted, but it will give returns in the end, many fold, to every community that advances measures for its prevention. If then, as is true, there is economy in the end commercially from the development of such measures, the additional plea that is made upon us from a humanitarian standpoint to relieve the suffering of the sick, there should be no question as to the advisability of uniting upon some general plan that will be the means of bringing about the establishment of institutions that will take care of or give relief to, and protect the public

from the most dangerous enemy that the human race ever confronted.

Why have we been indifferent so long? Simply because we have become educated from childhood to associate with this evil and as so often stated "familiarity breeds contempt." Would the citizens of Wisconsin remain idle if the plague should come within our boundary lines and carry off 2,500 of our citizens a year? If Asiatic cholera should attempt to cross our lines and produce such havoc as tuberculosis; if an invading army from the North or the South should threaten to destroy the young men and young women of this commonwealth in the prime of life? No, not for a moment. That is because we are not accustomed to have life destroyed by these forces. And yet, in civilized communities bubonic plague, Asiatic cholera and invading armies are but child's play in comparison to the dreaded foe that lurks in while we are sleeping, and at work, and plants its deadly poison in the system when we know not.

As I have stated, a large per cent of the individuals suffering from tuberculosis eventually becomes a charge either upon the government or charitable organizations. It is a disease that lasts for years with many individuals. The wage earning capacity of a person after he is affected with tuberculosis gradually diminishes until an individual who earns \$25 a week is obliged to change to occupations less remunerative, until he is reduced to an average earning of about \$4 per week, when he becomes so ill that he must cease work altogether. Then for about a period of nine months, he has no earning capacity and must live upon the little that he has saved or upon charity.

If the state should establish hospitals for taking care of the advanced cases of tuberculosis, it would need a large expenditure of money for the development of many institutions and it would be much more difficult to send the sorely afflicted to such institutions as they would be a long way from home and friends. It would either take many years of educational work, or very rigid laws on the part of the legislature and their enforcement in order to compel entrance into such an institution, of all of those individuals who are a burden and a danger to themselves, to their friends, and to the public. In establishing state institutions of this character, the county institutions now existing would not be relieved of conditions that are constantly within them.

During the calendar year of 1908, out of the total of 655 deaths

reported from the various county insane asylums and poor farms, 138 of the deaths were due to tuberculosis, or 21 per cent. The disease during that year was found to be present in twenty-four different county institutions in the state.

During the calendar year of 1909, 166 deaths from tuberculosis out of a total of 765 deaths were reported, or 21.8 per cent. For 1909 the disease was shown to be present in 23 different institutions. You may put forth stringent efforts as has been done by the management of some county institutions to keep out tuberculosis patients, but in spite of it all tuberculosis inmates are almost constantly present. Under the present system of management in county insane institutions and county indigent farms there are no places in which these individuals may be segregated and therefore the agencies of infection are rife practically at all times, endangering not only all of the inmates, but also all the official forces of such institutions.

It seems mandatory that special provisions must be made in the county institutions for taking care of individuals afflicted with tuberculosis, segregating this class of people from the present population of such institutions. If this is true under the present condition, and the statistics of death yearly verify such an assumption to be a fact, the system is wrong and the method of procedure should be changed. Many individuals at large suffering from advanced tuberculosis become a charge upon the counties or communities, either through the official regime, or through charitable organizations. If the county institutions established a building adjacent to the present institutions for the housing of their present tubercular population, they could also provide facilities by which these indigents and some pay patients could be taken care of, that are now burdening society and spreading the disease to their families and intimate friends. Such a procedure would be the means of segregating a very large element of our dangerous population and at the same time relieve the county institutions from the dangers now existing.

A shack in conjunction with each county institution built at small expense similar to the plan of the shack at the State Tuberculosis Sanatorium at Wales, would furnish housing capacity for twenty tuberculosis patients. Such a proposition, I am confident, would work very satisfactorily in connection with the indigent farms. Some different methods, undoubtedly, should be estab-

lished for the insane institutions, as the habits and tendencies of the insane class are such as to require confinement.

The argument has been advanced in several county insane asylums to unite in establishing a tuberculosis pavilion in connection with one of the county insane institutions and by special provision having all the tuberculosis insane housed in this one pavilion. The principle of this could undoubtedly be worked out. The state would probably be willing to become a factor in assisting in the maintenance of insane pavilions for segregating the tubercular insane.

I am confident, however, that such measures would not prove satisfactory with the county indigent institutions, as the per cent. of the tubercular indigent in the state not insane is so great in comparison with the county tubercular insane that too large an institution, if several counties united, would be necessary for such housing. Each county institution that is now existing in the state of Wisconsin should have a special provision for taking care of the advanced indigent tubercular people from the county as a whole. These chronic cases are by far the most dangerous. They are able to be about for years and the amount of infection thrown off by such individuals is practically beyond description. One individual suffering from chronic tuberculosis throws off, under favorable conditions, enough germs in a few days to infect the entire citizenship of the United States.

People are becoming thoroughly aroused to the dangers from tuberculosis and, therefore, the individual suffering from the advanced tuberculosis is practically becoming an outcast on society. The people are afraid of him, and if he is careless in his habits, they have a right to be afraid of him. An individual suffering from advanced pulmonary tuberculosis, careless in his habits, visiting his friends, traveling on public transportation conveyances, frequenting restaurants, changing his housings, is the most dangerous individual with whom we can come in contact. Yet such an individual, careful in his habits, taking care of his excretions, is absolutely harmless as far as the public health is concerned. It has been frequently shown that the safest place, as far as tuberculosis is concerned, is in a well regulated tuberculosis sanatorium.

There is not as much danger of contracting a disease on the part of a healthy individual in a tuberculosis sanatorium as there is a workshop, the street, the restaurant, the hotel, and

the public transportation conveyances of this state; therefore, the presence of a large number of tuberculosis patients in a county institution in a building arranged for the segregation does not add any danger to the other inmates or the officials of such institutions, but instead it furnishes a means by which those now in these institutions suffering from this disease may be segregated and thereby making the county institutions much safer both from the inmate and the official standpoint, than it is at the present time.

The medical care necessary in these advanced cases is very limited. Good food, fresh air, rest and exercise are the fundamental agencies employed in this disease. An occasional visit from the physician, after the patient is instructed as to his course of procedure is all that is necessary. One good nurse will be able to take care of a large number of cases of tuberculosis in a building properly arranged for such purpose. The necessary expense outside of the building, as far as the official force is concerned in properly taking care of a large number of tuberculosis patients, is very small.

The results of the establishment of such institutions will be far reaching and the good they will do could scarcely be estimated in the amount of suffering that would be relieved and the economy to the community as a whole from a commercial standpoint. Humanity demands local institutions for taking care of the indigents and pay patients or advanced cases of tuberculosis. No one but the medical man knows the degree of anguish and suffering in some of the poor homes where the bread winner or the mother of a large family is dying by degrees in poverty from this dreaded malady. The poor are the ones that suffer the most and this disease makes the poor poorer, and therefore the suffering all the greater. I am sure there will be but little difficulty in getting the advanced cases of tuberculosis to go to county institutions in pavilions for this purpose. Such individuals will be close to their friends and relatives and therefore can be visited from time to time. The difficulty encountered by the state taking charge of such a class of people would be practically eliminated under the county system and in the counties where there are large cities, undoubtedly the large city as a municipality should assist the county specially or develop a method of its own in taking care of this class of people. No public health measure has received so much study

from eminent sanitarians as has the care and treatment of individuals suffering from tuberculosis, and the solution of the question has resolved and is resolving itself in the county or municipal unit system.

The province of Ontario is establishing and has established institutions for the incipient and advanced cases. In the ten years since their establishment the death rate has been reduced 40 per cent. from this disease. Every time a series of cases are prevented by the taking care of an advance case of tuberculosis just that much is the number of cases reduced, and therefore a proper ratio in lessening the number of cases and eliminating in the future the necessity in maintaining many such institutions.

I cannot refrain from relating an incident well known in the city of Madison which well illustrates the possibilities of the spread of infection from a chronic uncared for case of tuberculosis. For several years there lived a man in Madison suffering from this disease. He was unmarried and had no relatives. He made his home in different rooming houses. To look at this man there was nothing especially characteristic that this disease was present. His personal appearance and an income of about three and one-half dollars a week enabled him to obtain admission to lodging houses without question. It was only when his persistent cough disturbed and caused suspicion of other roomers that he was requested to vacate his room. Seldom was he allowed to remain in one place longer than a few weeks. Often he was obliged to change his room twice in a week or ten days. Thus during each year, and he lived for many years, he was exposing to infection the inmates of from fifteen to twenty lodging houses a year. During the latter stages of the disease he changed his lodging some twelve times in three months. All of these places were infected. There was no place for him to go. He was too far advanced for the state institution. The contagious hospital would not take him, finally he became an outcast. His usual haunts were no longer open to him. The drug stores, hardware stores, blacksmith shops, where he had been in the habit of frequenting, had closed the doors to him. He was driven from one restaurant to another and eventually barred from all, and failing in strength he became dependent upon the few people interested in him for his food. Finally, when compelled to leave the last lodging house, he was too

feeble to seek further for accommodations and he was made comfortable in a coachman's room of the attending physician's barn. His meals were taken to him in this place. Here he found rest for the few remaining weeks of his life.

This was a typical chronic case, many of which can be enumerated. That many people in the city of Madison contracted the disease from this individual cannot be questioned. The county institutions are well located from an industrial standpoint for the housing of these advanced cases. Many such individuals are capable of being about and doing a certain amount of light work. They can be employed in the gardens, in the chicken industry, doing light work along the line of repairs, and therefore can almost be made self-supporting. The products of their labors can be utilized in various ways in supporting the inmates of the institution. The county system establishes a scale in about the right proportion for developing the various lines of work.

Experience is showing that the smaller unit must be considered in the handling of this disease. The county institutions now in vogue in this state can be likened to the cottage system of the large institutions and are admirably adapted and located for the taking care of a large indigent class of tuberculosis individuals. Until this is done, there is going to be much suffering and many unnecessary cases and deaths from tuberculosis as a result of the mingling with society of this class of people. It will not only be a haven for the ill, but it will be an immense relief to the public.

I trust that this honorable body will be able to enter into some arrangement by which this class of people may be taken care of. The details of such arrangements can be easily worked out.

Mr. President: I will ask you, Dr. Harper, if you do not think that this association should have a committee of three to work with your board and ask the legislature to help. Do you think that would help any.

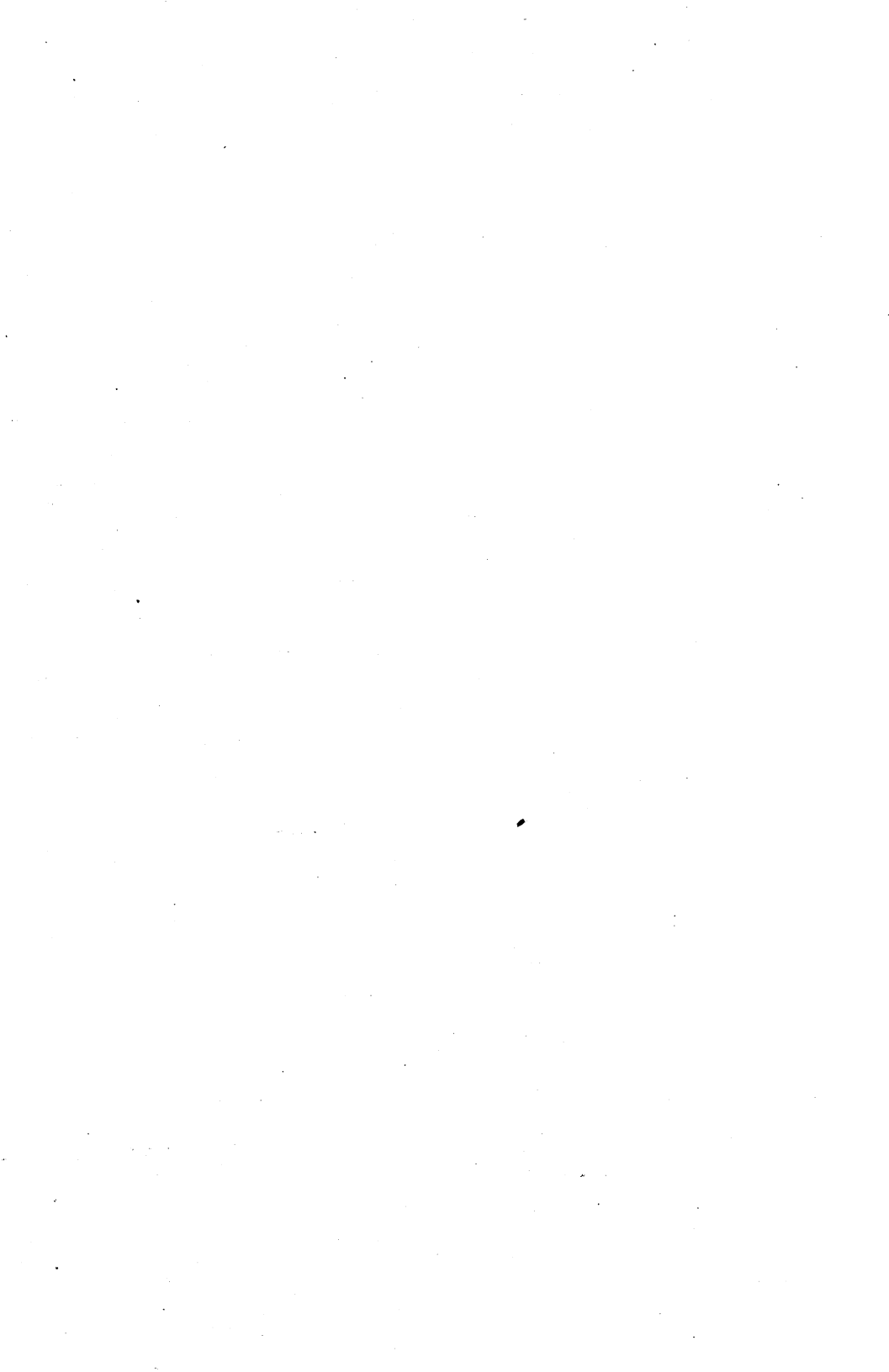
Dr. Harper: Very materially. I think all that is necessary is a call from the county officials. I will advise that this committee be continued with instructions and resolutions from your honorable body to co-operate with the State Board of Health and I know they will do all they can to take care of this proposition.

and I don't think there is any question but what it should be done.

Mr. President: I would suggest that the committee on tubercular insane consisting of L. P. Edwin, E. J. Perkins and Joseph Roehl, Jr., act with the State Board of Health and State Board of Control in this matter.

Motion prevailed to that effect.

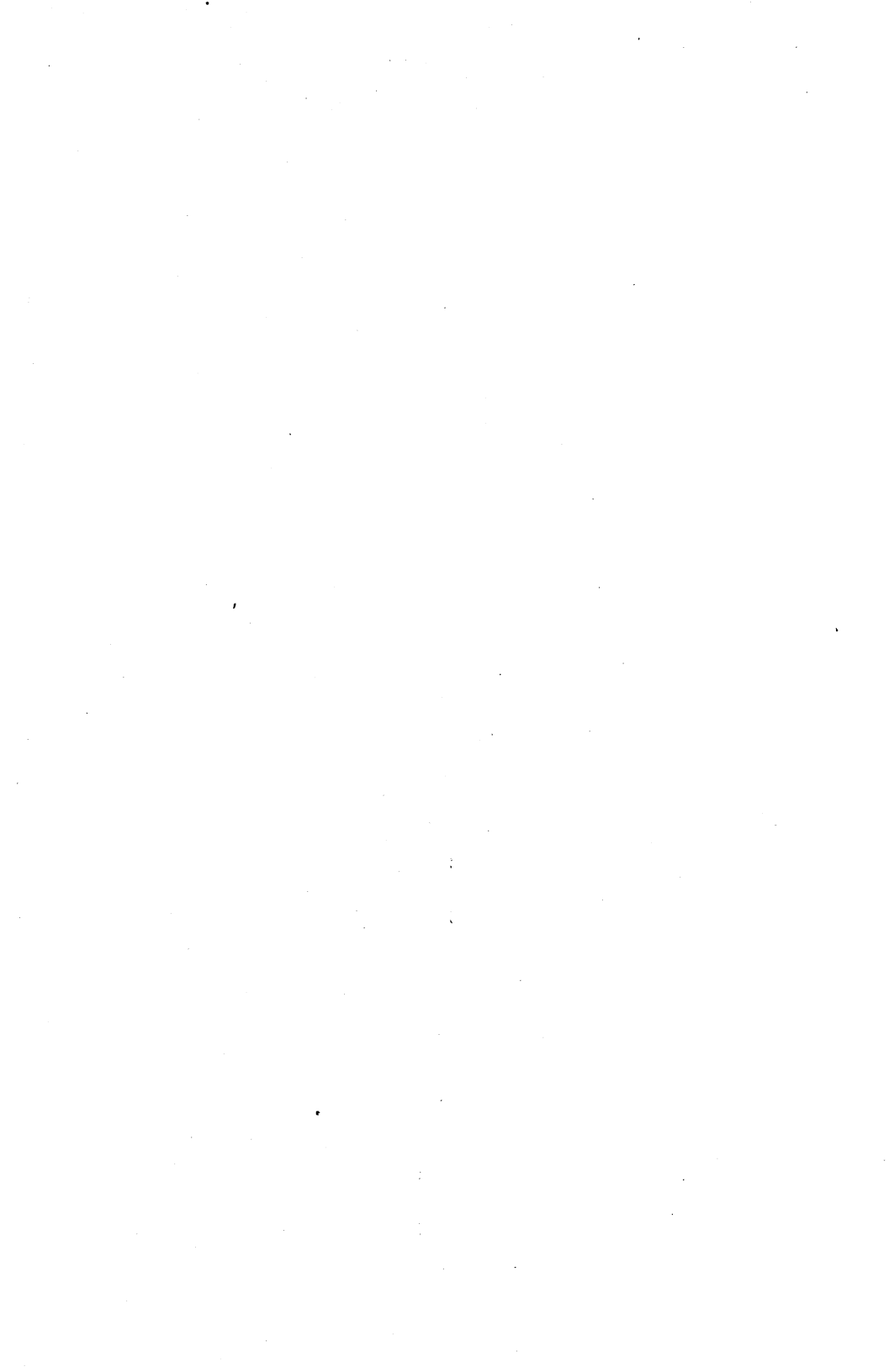
On motion the thanks of the association were extended to Dr. Harper for his valuable paper.

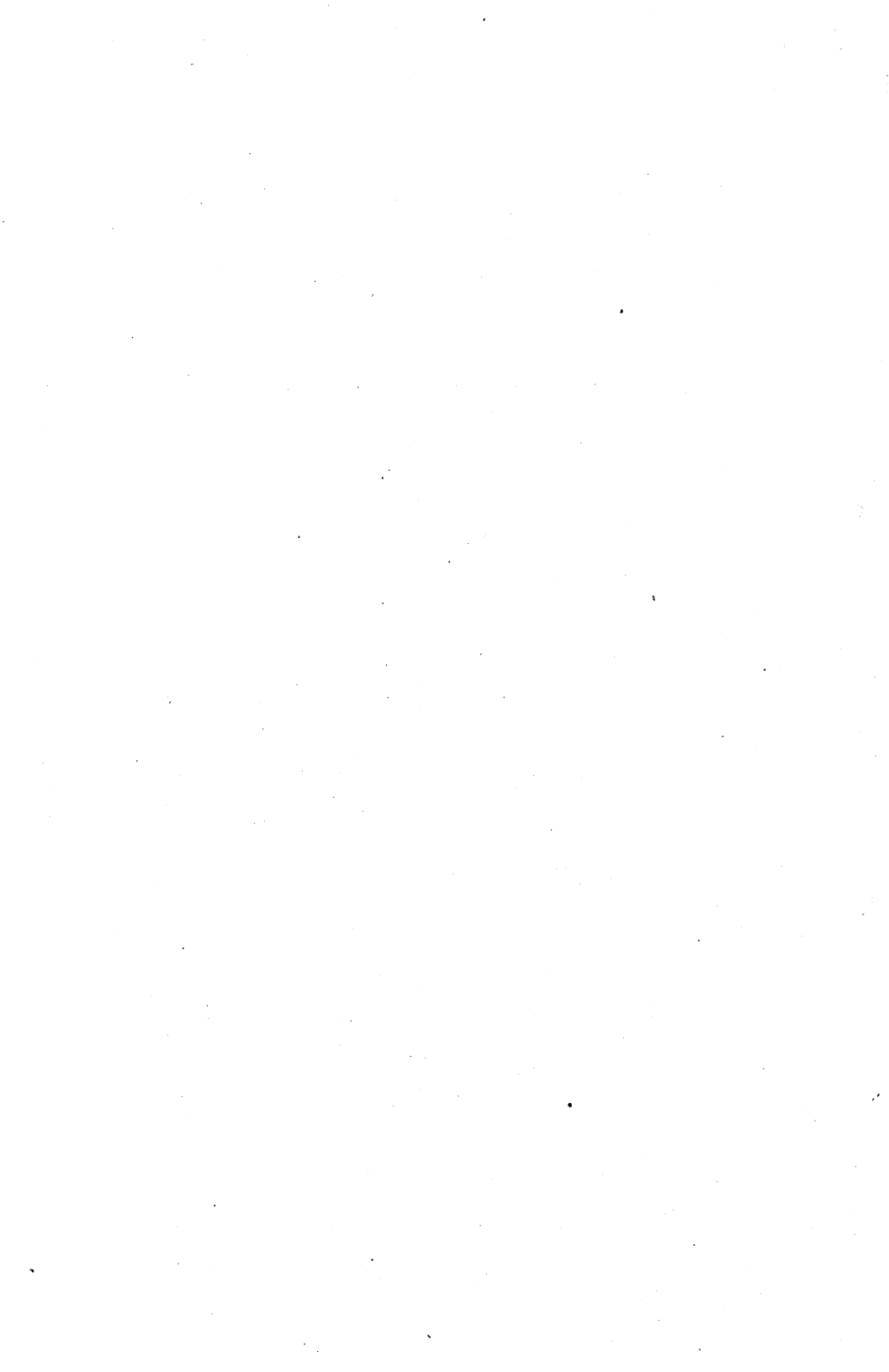


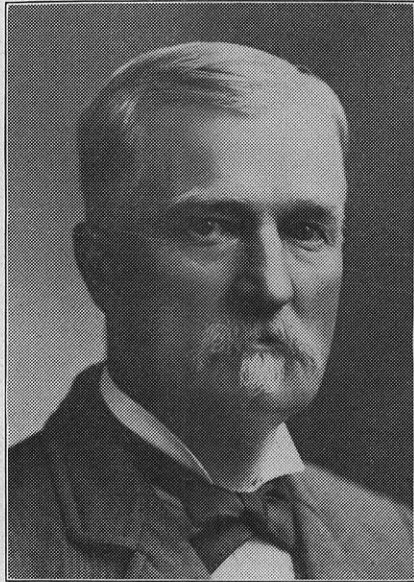












HON. CALVERT SPENSLEY

Who Devoted 24 Years to the Work of the Commission.

BIENNIAL REPORT

OF THE

Commissioners of Fisheries

OF WISCONSIN

FOR THE

Years 1909 and 1910.



MADISON, WIS.

DEMOCRAT PRINTING COMPANY, STATE PRINTER

1910

COMMISSIONERS.

THE GOVERNOR, ex-officio.

JABE ALFORD, President **Madison**

GEO. B. HUDNALL, Vice-President **Superior**

E. A. BIRGE, Secretary **Madison**

JAS. J. HOGAN **La Crosse**

WM. J. STARR **Eau Claire**

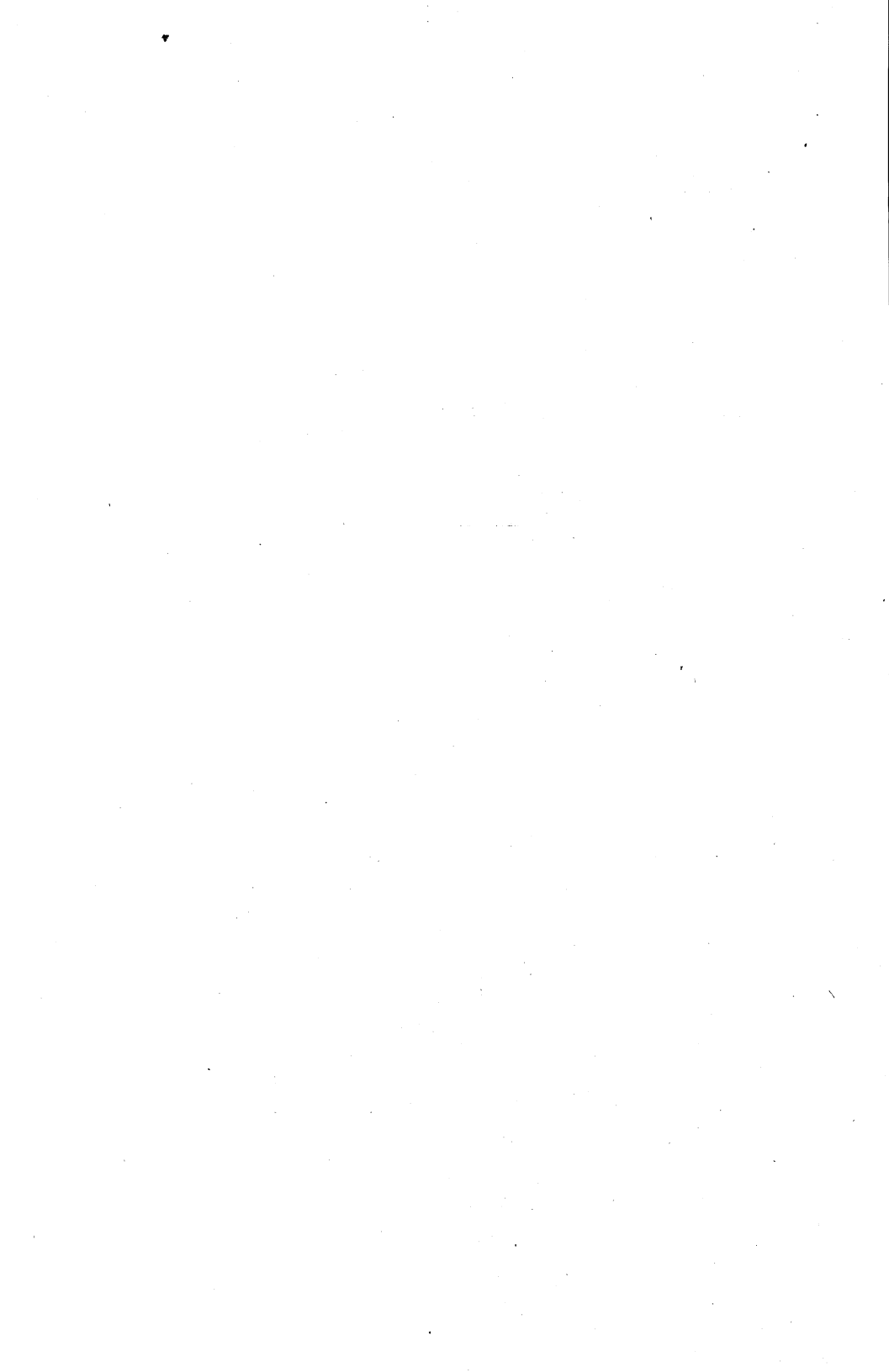
A. A. DYE **Madison**

A. L. OSBORN **Oshkosh**

JAS. NEVIN, Superintendent of Fisheries **Madison**

CONTENTS.

	PAGE
COMMISSIONERS' REPORT	1-7
FINANCIAL REPORT.....	8-11
REPORT OF THE SUPERINTENDENT.....	12-28
CONDENSED FISHING REPORT, 1909.....	29-30
DISTRIBUTION OF FISH.....	31-39
Plants of fish made by the Bureau of Fisheries of the United States in Wisconsin waters, 1907-1910.....	38
GAME WARDEN'S STATISTICS.....	39



LETTER OF TRANSMITTAL.

To the Honorable the Legislature of Wisconsin:

In compliance with law, the Commissioners of Fisheries submit herewith, a report on their transactions for the years 1909 and 1910.



COMMISSIONERS' REPORT.

The report of Superintendent Nevin submitted herewith gives the important facts regarding the work of the Commissioners of Fisheries during the past two years. It is not necessary to summarize the report here and attention will be directed only to some of its more important features.

The Commissioners have propagated and distributed from their hatcheries the usual varieties of fish. The following table gives a condensed report of the distribution for the seasons 1909 and 1910.

REPORT OF DISTRIBUTION OF FISH FOR 1909.

Brook trout	2,460,000
Rainbow trout	2,858,800
Lake trout	22,822,000
Pike (wall-eyed)	85,010,000
Black bass (fry)	646,400
Black bass (fingerlings)	520,000
Whitefish	17,720,000
Muskellunge	920,000
Pickarel	1,080,000
Bluefin	6,400,000
Miscellaneous	1,826,840
Total	142,065,040

REPORT OF DISTRIBUTION OF FISH FOR 1910.

Brook trout	3,323,800
Rainbow trout	2,616,500
Lake trout	25,850,600
Pike (wall-eyed)	70,990,000
Black bass (fry)	816,000
Black bass (fingerlings)	85,700
Whitefish	1,600,000
Muskellunge	76,000
Pickarel	600,000
Miscellaneous	1,156,000
Total	106,864,600

The total number of fry distributed in 1910 was smaller than in the preceding year. This was due in part to the fact that the U. S. Bureau of Fisheries was unable to furnish the Commissioners with the usual number of whitefish eggs and also because

Commissioners' Report.

of the exceedingly early season of 1910 reduced the number of wall-eyed pike eggs. It will be noted that the number of brook trout and rainbow trout fry distributed was nearly 5,000,000 in 1909 and nearly 6,000,000 in 1910. These numbers are much greater than those reported for many years in the past, and show a considerable increase in the work of the hatcheries in breeding these important species of game fish. The hatcheries now contain 7,000,000 eggs of brook trout alone, so that the output of brook and rainbow trout together for the present season will be much larger than for 1910. The rainbow trout does not spawn until after the time when this report is submitted. There are this fall 27,400,000 eggs of lake trout in the hatcheries, a number which has been exceeded only once in the history of the Commission.

The Commissioners desire to acknowledge with thanks the aid of the U. S. Bureau of Fisheries for furnishing to them the eggs of white-fish and lake trout.

They also desire to acknowledge with thanks the assistance to their work given by the railroads in transporting the fish car free of charge.

In 1910, Hon. Calvert Spensley resigned from the commission, thus closing a long and most useful service to the state. Mr. Spensley was appointed commissioner in 1886 and has ever since devoted much time and energy to the work of the commissioners. He was elected secretary and treasurer in 1893 and was chosen president in 1903, succeeding the late Dean Bryant. Much of the efficiency of the work of the Commissioners has been due to the services which he gave unstintedly to the state during twenty-four years.

Mr. Arthur Sykes, since 1892 clerk of the Commissioners, was obliged by ill health to resign his place in 1909. The Commissioners accepted his resignation with great regret. Mr. Sykes has been for many years one of those men in the employ of the state who have given to the public service their best thought and effort and have discharged the duties of their position with noteworthy faithfulness and ability. It has been by the aid of Mr. Sykes, and, the Commissioners are glad to say, of their numerous other employes with similar spirit, that the Commissioners





TROUT PONDS AT THE WILD ROSE STATION.

Commissioners' Report.

have been able to do so much for the propagation of fish in Wisconsin.

The report of the Superintendent shows that the various hatcheries have been maintained in good condition and that the work has been carried on successfully in all of them. The report also notes the chief improvements made during the biennial term. Of these the most important are at Delafield and Wild Rose. At Delafield there has been built a large bass pond which proved very successful in 1910 and from which there are expected even larger returns in the future. The preceding report of the Commissioners gave an account of the property which they purchased at Wild Rose, acting under the authority of the legislature of 1907. During the past two years 23 ponds for trout fry and breeders have been constructed, the hatchery building erected and furnished and two dwelling houses built. The hatchery is now fully equipped for work and its output should increase as rapidly as a stock of breeders can be secured. This necessarily takes some little time, but about 1,500,000 fry are expected from the hatchery this year.

Several matters of general importance are discussed by the Superintendent to which brief reference may be made. The adverse opinion regarding the usefulness of fish-ways in dams is worthy of very serious consideration, but so large a question is not regarded as decisively settled until more observations have been made. It is perfectly clear that the fish-way at Weyauwega did not give any useful service during the season in which observations were made, and it bears out the Superintendent's opinion as fully and clearly as a single case can do.

The recommendation that the U. S. government undertake the maintenance of fisheries in Lake Michigan is similar to that made in the Commissioners' report of 1908. The U. S. government ought both to control and maintain the fisheries of the Great Lakes since these are not a matter of local importance only, but of inter-state and international interest. There is absolutely no reason why the U. S. Bureau of Fisheries should maintain on so large and adequate a scale the fishery industries of Lake Erie and not give equal attention to those of the other lakes. There is no doubt that the maintenance of the white-fish catch in Lake

Commissioners' Report.

Erie is chiefly due to the enormous number of fry annually liberated in that lake by the U. S. Bureau of Fisheries. If the several fisheries of the other lakes are not to decrease, similarly large numbers of fish must be planted in them.

There is no doubt that the catch of fish in the Great Lakes can be greatly increased by the abundant planting of fry. The relation between the planting of fry and the catch of white-fish in the several lakes was discussed by Dr. Paul Reighard in a paper presented at the International Fishery Congress held at Washington in 1908, and which has since been published as a part of the proceedings of that meeting. After a full discussion of all the available statistics, Reighard concludes that the planting of about 30,000 fry per square mile of white-fish ground will not only maintain the supply of fish but will cause a considerable increase; that the planting of one-third of this number seems just about enough to maintain the catch unchanged; while under a smaller planting of fry or where none have been planted the amount of white-fish caught has rapidly declined. In the limited area inhabited by white-fish off Manistee, amounting to about 90 square miles, a very great increase in catch has followed intensive planting, amounting to 90,000 fry per square mile. If the white-fish area of Lake Michigan received 30,000 fry per square mile the number annually demanded would be about 80,000,000 and for the Wisconsin waters alone some 40,000,000 would be required.

These figures show the scale on which the planting of fry of all kinds must be done in order to meet conditions created by the intensive fishing of modern times. It seems plain also that the problem of securing not merely a constant but an increasing supply of food from the Great Lakes is by no means insoluble and that the cost of this adequate maintenance of the fisheries is not at all beyond what is practical. Reighard estimates that the cost for white-fish would be about 2 mills per pound of fish caught. There is no doubt that a private corporation which should own the fisheries of these lakes would think this a very moderate charge for maintenance and improvement.

These figures also indicate the type of planting needed to maintain the inland fisheries of the state. With our increasing pop-

Commissioners' Report.

ulation and the increasing leisure for vacation and sport, the number of game fish caught is so great that the various species cannot be maintained in full numbers except by a much more intensive planting than has been practised. The natural reproductive power of the fishes of a particular species in a given stream or lake is little more than sufficient to maintain their numbers against the natural chances of death. As soon as any considerable number of adult fish are taken by man, the reproduction of the species falls below that necessary to replace even natural losses. The demand for fish in a populous country either for food or for sport can no more be supplied by the natural increase of fish than the demand for fruit can be supplied by the wild natural growths. Fish under such conditions become an artificial crop which must be raised in the same general way as every other crop. They must be raised by the state, since the waters in which they grow and from which they are taken are the property of the state, and the same is true of the fish themselves. It is also as certain that abundant planting in waters wisely selected will be followed by an abundant harvest as that the same result will follow as in the case of any crop raised on land.

Fish differ in their reproductive capacity, and therefore different methods are necessary to maintain the numbers of the different species. The nature of the waters which they occupy also causes marked differences in the ability of the fish to maintain their number under intensive fishing. A small trout stream could easily be "fished out" and a large lake much less easily. A fish like the black bass, nearly all of whose eggs are fertilized and developed and which protects its young until they can protect themselves, is peculiarly able to maintain its numbers. Trout, on the other hand, fertilize only a small number of the eggs, and these are left wholly unprotected from the time they are laid. The stock of black bass in our lakes can therefore be maintained in fair numbers by the enactment and enforcement of laws protecting them during the breeding season, thus giving the natural reproductive power of the fish a full chance. Especial attention is called to the statements made in the report of the Superintendent in regard to this matter.

Commissioners' Report.

The facts which give the bass its peculiar ability to maintain itself by natural reproduction render it difficult to raise great numbers of bass fry in hatcheries. The bass demands much space in which to live and in which to make and protect its nests. It is therefore both difficult and expensive to raise the fry by the million. On the other hand, the habit of the trout and the nature of its eggs make it a relatively simple and inexpensive task to rear trout fry in large numbers. The necessity for space is little more than that demanded by the adult breeders. The trout is therefore peculiarly adapted to artificial hatching, while as much opportunity as possible should be given to the natural reproductive powers of the bass.

The Superintendent discusses the question as to whether the cost and maintenance of the supply of fish should be borne by the state at large, by the industry or sport interested, or jointly. He recommends a general license for fishing; the proceeds to be devoted to a planting of fry in the lakes and streams of the state much more extensive than is practiced at present. The extension of the work of the Commissioners and the source of the means which would make it possible are questions which the legislature must decide. The tendency of the legislature in recent times has been to share the expense of maintaining the fisheries between the state and the interests concerned. This has been shown recently by granting to the Commissioners the license fees of fishermen in the Mississippi River to be applied to the maintenance of fisheries in that stream; also by granting them a portion of the fees paid by non-resident fishermen for license to take game fish. There is no doubt that the proper maintenance of the fisheries will in the future demand the combined efforts of the state and of the interests concerned. It is certainly not unjust that the latter should bear at least a part of the cost.

The question used to be raised whether any increase of fish can be found definitely resulting from the planting of fry. This question has long ceased to be asked for the inland waters in this state, which in countless instances are now well stocked with game fish that they did not contain until planted by the Commissioners. The Superintendent's report refers to an interesting instance of results of planting fry in the Great Lakes. The fish-



BREEDING PONDS AT WILD ROSE.

Commissioners' Report.

ermen of Lake Superior are now catching in abundance the Lake Michigan form of lake trout whose fry have been planted by the Commissioners in Lake Superior waters. This form differs in the color of its flesh from the form of the lake trout native to Lake Superior, and is thus readily distinguished from it. It now constitutes a not inconsiderable part of the catch in Lake Superior.

The supply of fish both for food and for sport can be maintained and increased. The methods and conditions necessary to secure this result are known. The abundant planting of fry and laws intelligently adapted to the needs of the several varieties of fish and properly enforced will produce the desired result. The work of the Commissioners has been of great benefit both to the inland fisheries of the state and to those of the Great Lakes, but they see most plainly that only a small portion has been done of the work which would not only be possible, but of the highest profit to the state and to its people.

JABE ALFORD,
E. A. BIRGE,
JAMES A. HOGAN,
WILLIAM J. STARR,
A. A. DYE,
GEO. B. HUDNALL,
A. L. OSBORN,

Commissioners of Fisheries.

Financial Report.

FINANCIAL REPORT.

STATEMENT FOR YEAR ENDING JUNE 30, 1909.

RECEIPTS.			
1908.			
July 1...	Balance on hand.....	\$3,579 25	.....
	Annual appropriations.....	30,000 00	.....
	State Treasurer, insurance on car shed.....	300 00	.....
	Robert Ripple for whitefish sold.....	8 50	.....
			\$33,887 75.
DISBURSEMENTS.			
1909.			
June 30..	James Nevin, Supt., salary, 12 months.....	\$2,500 00	.....
	Arthur Sykes, clerk, salary, 12 months.....	1,500 00	.....
	Matt Patterson, clerk, salary 12 months.....	650 00	.....
			4,650 00.
MADISON HATCHERY.			
	Valentine Maag, foreman, salary, 12 months.....	\$900 00	.....
	Frank C. Ramsdale, salary, 11 months.....	640 00	.....
	Frank E. Meade, salary, 12 months.....	600 00	.....
	Sundry employment.....	175 91	.....
	Fish food.....	1,077 77	.....
	Supplies for barn.....	240 95	.....
	Supplies, repairs and equipment.....	234 18	.....
			3,868 81.
BAYFIELD HATCHERY.			
	Philip Zalsman, foreman, salary, 12 months.....	\$1,020 00	.....
	Bernard Holtman, salary, 12 months.....	720 00	.....
	Andrew Wahlquist, salary, 12 months.....	500 00	.....
	Hugo Dufva, salary, 10-10/31 months.....	516 13	.....
	John Hagberg, salary, 1-24/31 months.....	92 72	.....
	Fred Wahlquist, salary, 12 months.....	540 90	.....
	Sundry employment.....	58 46	.....
	Fish food.....	1,314 28	.....
	Supplies for barn.....	67 78	.....
	Supplies, repairs and equipment.....	387 26	.....
	Collecting lake trout eggs.....	241 40	.....
			5,558 03.
OSHKOSH HATCHERY			
	John Maag, foreman, salary, 10 months.....	\$900 00	.....
	Ben Durkee, salary, 6 months.....	370 00	.....
	James Foy, salary, 7 months.....	385 00	.....
	Sundry employment.....	152 75	.....
	Water rent.....	710 03	.....
	Supplies and equipment.....	268 76	.....
	Miscellaneous expenditures.....	18 16	.....
	Collecting wall-eyed pike eggs.....	640 55	.....
	Collecting pickerel eggs.....	219 22	.....
			3,664 47.

Financial Report.

STATEMENT FOR YEAR ENDING JUNE 30, 1909—Continued.

MINOCQUA HATCHERY.		
Robert Ripple, foreman, salary, 12 months.....	\$960 00	.....
Su. dry employment.....	326 75	.....
Fish food.....	53 00	.....
Supplies and equipment.....	338 78	.....
Supplies for barn.....	112 13	.....
Permanent improvements.....	49 29	.....
Collecting black bass breeders.....	299 52	.....
Collecting pike eggs.....	537 16	.....
		\$2,676 63
DELAFIELD HATCHERY.		
Albert Gallagher, foreman, salary, 11 months....	\$880 00	.....
Sundry employment.....	435 50	.....
Permanent improvements.....	506 15	.....
Supplies, repairs and equipment.....	224 46	.....
Collecting black bass breeders.....	7 00	.....
Fish food.....	67 41	.....
Collecting pike eggs.....	316 46	.....
Miscellaneous expenditures.....	50 00	.....
		2,489 00
WILD ROSE HATCHERY.		
B. O. Webster, foreman, salary, 3 months.....	\$255 00	.....
James Foy, salary 5 months.....	275 00	.....
Evan Pritchard, labor, 5 months.....	166 63	.....
Permanent improvements.....	1,812 53	.....
Supplies, repairs and equipment.....	297 75	.....
Collecting brook trout breeders and transporting stock fish.....	168 93	.....
Fish food.....	89 68	.....
Miscellaneous expenditures.....	32 00	.....
		3,097 52
Expenses, James Nevin, Supt., 12 months.....		347 32
Transportation and distribution of fish.....		5,583 07
Repairing and maintaining distribution car.....		49 24
Premium State Insurance Fund.....		117 45
Collection and distribution of black bass.....		1,091 89
Gathering pickerel eggs.....		110 59
Collecting specimens economic fish.....		249 97
Miscellaneous expenditures.....		235 76
Total expenditures, 12 months.....		\$33,887 75

Financial Report.

STATEMENT FOR YEAR ENDING JUNE 30, 1910.

		RECEIPTS.	
1909.			
July 1...	Annual appropriation	\$37,000 00	.....
	Special appropriation (Sec. 1496a laws of 1909)	10,000 00	.....
Nov. 17..	Old pipe sold	12 50	.....
1910.			
Jan. 10..	Refund	86 25	.....
June 25..	Hook and line license fund	5,926 95	.....
	Mississippi river fund	4,478 35	.....
			\$37,504 05
		DISBURSEMENTS	
1910.			
June 30..	James Nevin, Supt., salary, 12 months.....	\$2,500 00	.....
	Arthur Sykes, clerk, salary 1 month.....	125 00	.....
	B. O. Webster, Asst. Supt., salary, 8 months	800 00	.....
	R. S. Scheibel, clerk, salary, 3 months.....	300 00	.....
	Matt Patterson, clerk, salary, 12 months.....	840 00	.....
			4,565 00
	MADISON HATCHERY.		
	Valentine Maag, foreman, salary, 12 months.....	\$900 00	.....
	Frank C. Ramsdale, salary, 1 month.....	60 00	.....
	Frank E. Meade, salary, 12 months.....	605 09	.....
	Fred Hewitt, salary, 5 months.....	250 00	.....
	Sundry employment.....	404 83	.....
	Fish food.....	1,101 22	.....
	Supplies for barn.....	177 40	.....
	Supplies, repairs and equipment.....	422 85	.....
	Filling ice house	50 75	.....
			3,972 05
	BAYFIELD HATCHERY.		
	P. G. Zalzman, foreman, salary, 1 month.....	\$85 00	.....
	Robert Ripple, foreman, salary, 11 months.....	930 00	.....
	B. F. Holtman, salary, 12 months.....	720 00	.....
	Andrew Wahlquist, salary, 12 months.....	628 00	.....
	John Hagberg, salary, 12 months.....	650 00	.....
	Sundry employment.....	438 52	.....
	Fish food.....	1,466 92	.....
	Supplies for barn.....	233 14	.....
	Supplies, repairs and equipment.....	1,079 38	.....
	Collecting lake trout eggs.....	154 05	.....
	Filling ice house.....	113 75	.....
			7,063 76
	OSHKOSH HATCHERY.		
	John Maag, foreman, salary, 10 months.....	\$1,000 00	.....
	Ben. Durkee, salary, 6 months.....	368 67	.....
	James Foy, salary, 5 months.....	275 00	.....
	Sundry employment.....	63 50	.....
	Supplies, repairs and equipment.....	893 13	.....
	Collecting lake trout spawn.....	112 75	.....
	Collecting whitefish spawn.....	47 38	.....
	Collecting wall-eyed pike eggs.....	458 35	.....
	Water rent, 12 months.....	536 15	.....
			3,754 93
	MINOCQUA HATCHERY.		
	Robert Ripple, foreman, salary, 1 month.....	\$80 00	.....
	F. C. Ramsdale, foreman, salary, 7 months.....	424 00	.....
	Fred Hewitt, foreman, salary 4 months.....	260 00	.....
	Andrew Gilquist, labor, 4 months.....	208 50	.....
	Sundry employment.....	163 00	.....
	Fish food.....	31 50	.....
	Supplies, repairs and equipment.....	562 06	.....
	Supplies for barn.....	63 35	.....
	Permanent improvements.....	655 75	.....
	Collecting black bass breeders.....	183 34	.....
	Collecting wall-eyed pike eggs.....	783 70	.....
	Miscellaneous expense.....	24 35	.....
			3 439 55

Financial Report.

STATEMENT FOR YEAR ENDING JUNE 30, 1910—Continued.

DELAFIELD HATCHERY		
Albert Gallagher, foreman, salary, 12 months.....	\$1,090 00	.....
Sundry employment.....	317 50	.....
Supplies, repairs and equipment.....	1,598 20	.....
Permanent improvements.....	2,034 60	.....
Collecting black bass breeders.....	8 00	.....
Fish food.....	8 78	.....
Miscellaneous expense.....	56 00	.....
		5,113 08
WILD ROSE HATCHERY		
B. O. Webster, foreman, salary, 1 month.....	\$85 00	.....
P. G. Zalman, foreman, salary, 11 months.....	935 00	.....
F. C. Ramsdale, salary, 4 months.....	272 00	.....
James Foy, salary, 3 months.....	175 00	.....
Sundry employment.....	348 87	.....
Permanent improvements.....	2,023 87	.....
Hatchery building, dwelling and ice house.....	10,000 00	.....
Supplies, repairs and equipment.....	634 18	.....
Fish food.....	289 82	.....
Filling ice house.....	61 71	.....
		14,823 45
Expenses, James Nevin, Supt., 12 months.....		544 53
Transportation and distribution of fish.....		7,518 01
Repairing and maintaining fish car.....		662 42
Premium State Insurance Fund.....		145 03
Locating fishways.....		64 00
Mississippi river work (transferred from general fund).....		4,158 15
Mississippi river work (to be transferred from general fund).....		687 13
Collection and distribution of white bass.....		19 50
Collecting pickerel.....		36 00
Fish exhibit, State Fair.....		54 00
Collecting specimens of economic fishes.....		220 26
Miscellaneous expense.....		173 00
Total expenditures, 12 months.....		\$57,013 85
1910 July 1	Balance on hand.....	490 20
		\$57,504 05

Superintendent's Report.

SUPERINTENDENT'S REPORT.

TO THE COMMISSIONERS OF FISHERIES OF WISCONSIN:—

Gentlemen: The practical propagation of food fishes by artificial means is now conceded to be not only a success, but one of the triumphs of modern science. When I say modern I do not forget that fish culture by means of human agencies is an old science; for it dates back to so early a date in the history of China that its origin is lost in antiquity. From China it was adopted by Germany and Sweden and as early as 1830 a German monk really hatched fish eggs by artificial means.

In 1763, Stephen L. Jacobi, a Prussian soldier, devised a process of stripping the female fish of her spawn and then mixing it with the milt of the male. This simple method is still in use at all fish hatching establishments. About fifty years after Jacobi's work, Joseph Remy, a fisherman of the Vosges Mountains, made a discovery upon which the entire business of economic fish culture of to-day practically rests. This discovery was: that the impregnation of fish eggs takes place after they have left the body of the animal, and can therefore be performed as well by artificial means as in the natural way by the fish themselves. Thus for nearly 100 years since Remy's discovery there has been little progress in the science, except in minor details of appliances and equipment for handling of the business. This fact indicates that Remy found out at once, almost all there was to learn about the science.

About 40 years after Remy's discovery, the first government fish culture station was established at Huningen in Alsac, Hungary, and during the following year one was established on the River Tay in Great Britain. In 1865 Dr. Theodore Garlic, of

Superintendent's Report.

New Hampshire, imported salmon eggs from Canada and hatched them in the trout pond at Cold Spring, N. H. The interest in fish culture rapidly advanced, and in 1871 our government established a national commission. It now operates 49 hatcheries and substations located in 26 states. It also owns four railroad cars and a steamer for the transportation of fish and eggs. The Canadian government maintains about a like number of stations. This goes to show that the American people realize the great importance of the fishing industry. Our own state was but three years behind the national government, having maintained a commission since 1874.

The work has since been taken up by most of the states; and without doubt will be carried on for all time to come, as the benefits derived are so very apparent to all who take the trouble to inquire into the matter. It should not be denied, however, that in many respects the science is still in the experimental stage, as the various kinds of fish require different methods in the handling and hatching of eggs. Improvements will naturally be made as the work advances. The essential fact is positive, i. e., that artificial propagation of fish is necessary if future generations are to receive a cheap and healthy food.

During the past two years I have kept you well informed as to the progress of the work under my supervision. In this report I will confine myself to topics of interests, and to such recommendations as I deem most practical for the carrying on of the work, and to be for the best future interests of the commonwealth. Tables showing the distribution of fish, will be found in another part of this report. Since the issue of our last biennial report many changes and betterments have been made, the improvement of the service being our chief object.

MADISON HATCHERY.

The Madison hatchery which was one of the first to be established and owned by the State, has failed in its usefulness as a brook trout station. Owing to the scarcity of water, we do not carry a large number of brook trout as in former years. This station in the future, is to become a rainbow trout hatchery, as

Superintendent's Report.

most of our brook trout eggs will hereafter be taken at Wild Rose and Bayfield.

Several of the ponds are in a bad state of decay, and should be rebuilt of concrete. On account of the peculiar nature of the soil, I am in doubt as to whether we can secure a foundation solid enough to prevent a concrete wall from settling. During the past summer we built 500 feet of re-enforced concrete wall, to ascertain how it will stand through the freezing and thawing of winter and spring. If the experiment proves to be a success, I see no reason why we should not be safe in rebuilding the remainder of the ponds of the same material.

DELAFIELD HATCHERY.

At Delafield last year we built a large bass pond 750 feet long and 400 feet wide. Along the length of the pond at the lower bank and next to the creek there is an average depth of 7 feet of water. From this there is a gradual slope to the upper end of the pond, where the depth of water is about four inches. This makes it possible to draw all the water out of the pond when necessary and obviates the danger of injury to the fish. Last spring we placed 75 pair of large mouthed bass breeders in this pond. During the latter part of June over 100,000 bass fry were taken from the pond and assigned to the many applicants in the state. As an experiment, the remainder of the fry were left in the pond with the parent bass. On September 1 the pond was drawn down, and we found some 36,500 fingerlings from 3 to 5 inches long. It was the finest lot of bass I ever saw in one pond. During this time the large bass had not been fed. We noticed that the pond was covered with snail shells; and upon opening some we found them empty. From this I concluded that both the large and the small fish must have lived on the snails. The shells were so numerous that I believe we could have gathered a hundred bushels of them.

At this station we now have five large ponds for the propagation of bass. Last spring we were short of breeders, as the foreman, Mr. Gallagher, failed to secure the desired number of mature fish. This was due to an off season, in that the fish before



STATE FISH HATCHERY AT BAYFIELD.
Spawning Raceway and Rear of Hatchery Building.



Superintendent's Report.

mating did not congregate in large numbers along the shores as in former years; or another reason may be that we were late in making the attempt to catch them.

OSHKOSH HATCHERY.

By reason of our inability to secure the eggs, the production of pike fry at the Oshkosh station was not what we expected. Last season opened unusually early, and a rise of water did not occur in the Wolf River, where we procure our pike eggs for propagation purposes. Owing to the low stage of water but few pike ascended the river; and the result was that we caught only a small number of fish and consequently were short of eggs.

MINOCQUA HATCHERY.

This hatchery performed its full quota of work this season. It produced more pike fry than ever, and the per cent of the hatch was the largest in my experience. We had 50 jars that hatched fully 80% of the eggs placed therein.

For the past several years we have been catching pike in Tomahawk Lake to secure eggs for the hatcheries. When we first went to this lake, some nine years ago, all the fish were of the yellow species and of immense size. We had difficulty in catching the requisite number of males to yield milt with which to fertilize the eggs properly. On several occasions we were compelled to go to Carroll Lake to catch male fish and to transport them to Tomahawk Lake. For the past three years we have been catching an abundance of small pike, the small fish being so much in evidence that all the local employees of the commission have made mention of that fact. The catch of fish in Tomahawk Lake is now treble that of former years. Many of the people in the vicinity of Minocqua are of the impression that, because we are shipping fry from the hatchery and gathering eggs from Tomahawk Lake, the lake is being robbed of just that number of fish. If they would only stop to consider, I am sure they would understand that we have an interest in the lake greater than that of any person living in the vicinity. The fish commission is there to stay, and it is surely of the utmost importance that we in-

Superintendent's Report.

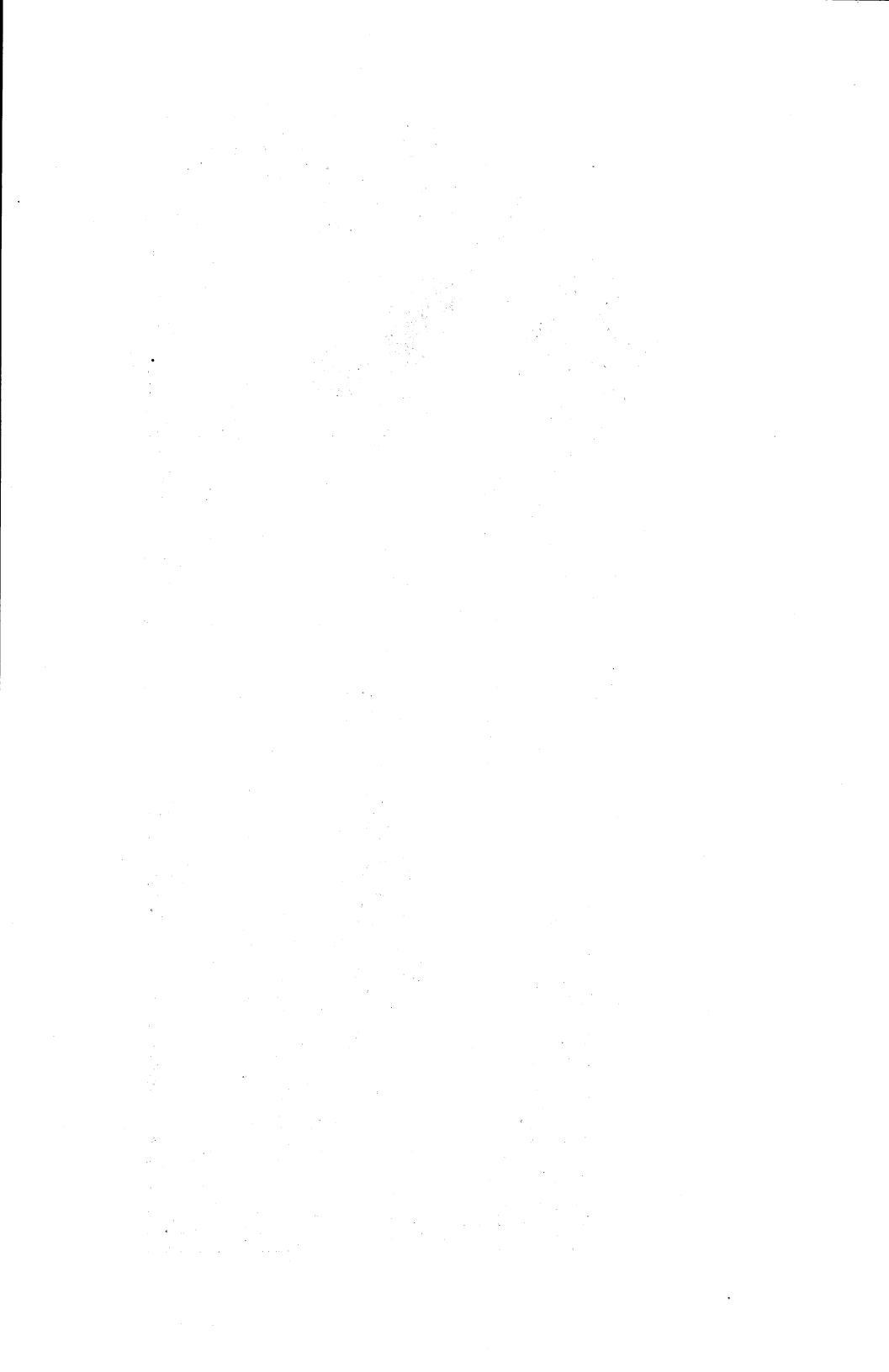
crease the fish in the lake and make it a permanent source from which to secure our supply of eggs in future years.

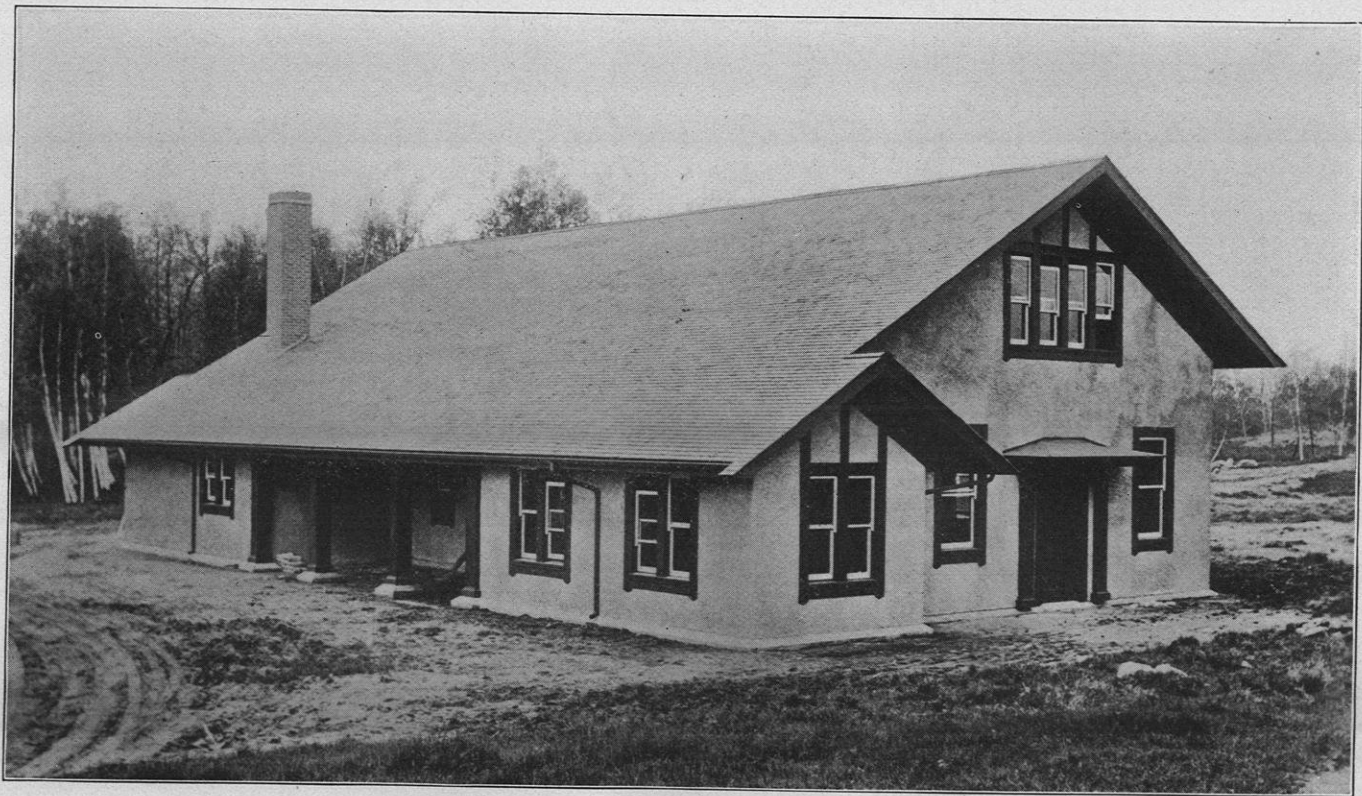
Every spring, in handling the fish, some are unavoidably injured in the process of securing the spawn or holding them in the dummy nets, and a few of them will die. Should any person residing in that vicinity see a dead fish or hear of one being found, the fact is reported, and after a few repetitions the one fish has grown to be one thousand. One man who was active in circulating a story, acknowledged to me that he prevaricated as to the number of dead fish. In the past misstatements of this kind were very annoying to me; but now, knowing them to be fictitious, I give no heed to such reports. Last spring we lost more fish than in any past season, while catching them in Tomahawk Lake. We had an unusually early spring, which necessitated holding the fish in dummies longer than we ought, waiting for the females to ripen. At one time we were compelled to liberate 1,200 fish before one of them was ready to spawn, as we were afraid to hold them longer. Our total catch was about 3,500 fish, and after they were returned to the lake, 295 died. Some years the loss is very small, from 5 to 25 fish; but the same clamor is made whether the loss be one fish or one thousand. For years I have made it a practice after completing the work, to keep a close watch for fish that may die, and the shores of the lake are examined from two to three times every week. An accurate record is kept, and I know the exact loss each year.

BAYFIELD HATCHERY.

Robert Ripple, who had charge of the Minocqua hatchery, was transferred to Bayfield in July, 1909. Philip Zalsman was, at the same time, transferred from Bayfield to Wild Rose. From the first day that Mr. Ripple assumed charge of the plant he has show vim and energy. Every detail of his work indicates that he is the right man in the right place. At none of the other hatcheries can the work be compared with what there is to do at Bayfield, and the responsibility is much greater on account of the large number of eggs handled and outside work to look after.

New concrete bulkheads have replaced the old wooden ones.





HATCHERY BUILDING AT WILD ROSE.

Superintendent's Report.

To improve the care and handling of the fish, three new concrete fry ponds and a new raceway have been built. The old supply pipe has been thoroughly repaired, and the poor sections removed and replaced with vitrified pipe. It is now in good shape, and will serve the purpose for which it was intended. The entire plant has been put in first-class condition. This season we expect to take double the number of brook trout eggs secured in any former year.

WILD ROSE HATCHERY.

This hatchery was placed in charge of P. G. Zalsman in July, 1909. As this is a new plant, we have been building ponds, having completed 23. All are built in a substantial manner with stone facing and concrete bulkheads. Once constructed, the ponds are permanent and will require very little repairing. Mr. Zalsman has exercised good judgment in his work and takes great interest in all his duties. During the past two years we built two dwelling houses on the premises for the foreman and his assistant, as it is necessary that two men should be on the grounds at all times. The hatchery building was constructed last year. It is 37 by 67 feet, and has an office, vestibule and boiler room in connection. It has been equipped with aluminum hatching boxes and concrete tanks, a steam heating plant, and electric light connections have been made with the village plant, making it one of the most complete hatching stations in the country. This plant will be for the exclusive propagation of brook trout. This year we will exceed two millions of eggs from the stock of fish we have on hand.

FISHWAYS IN DAMS.

This is a subject that has assumed serious proportions, and each year we experience an increase in the number of petitions requesting the installation of fishways. The people seem to be of the impression that all is necessary to make fish more plentiful in their particular locality is to have a fishway in the dam which blocks the stream in their immediate neighborhood.

Superintendent's Report.

That the benefit derived from a fishway is over-estimated, can be easily understood from the following facts. From April 15 to June 15, 1909, the time of the year when game fishes ascend the streams, we made a test of the fishway in the dam at Weyauwega on the Waupaca river. This is one of the best fishways of which I know. Moreover, every variety of game fish enters the Waupaca from the Wolf river; and I believe that in the spring more fish will be found in these waters than in any other ten rivers combined. More perfect and ideal conditions for the test could not be found—plenty of water, plenty of fish, and a modern fishway. To catch all the fish that ascend the chute, we built a trap at the head of the fishway, and had a man on watch continually during the 60 days. We have a sworn statement that but 7 suckers made use of this fishway—(which cost \$700)—a fact which indicates that they are of little benefit in serving the intended purpose. To persons who have made a study of the game fish—pike, bass, pickerel, and muskellunge,—it is a well known fact that these species of fish will not jump to ascend a steep run of water, as a sucker or brook trout will. I have seen a bass jump upon the apron of a waste gate, but never in all my observations have I seen a pike, bass, pickerel or muskellunge attempt to do so.

At our Minocqua hatchery we have one of the best locations in the state for a close observance of game fishes ascending streams. At that place we made a study of the stream from the Arbor Vitæ chain of lakes to Kawaquesagon Lake, and find that 80% of the fish working up stream in the spring, are suckers. The same condition exists in Pike Creek at our Bayfield hatchery. Suckers are the only fish that will go up the chute we built for the purpose of allowing the brook trout to get over the dam. We also made a test of the kinds of fish going down stream over the waste, and find that only suckers will do so. My investigations in this matter have been thorough and exhaustive; and there is no question that the general impression of the number of game fishes that go up stream in the spring is largely visionary. I have listened to a legion of stories about the number of fish that could be caught below a dam on this or that river. At times I have been impressed, and have sent men and nets expecting to

Superintendent's Report.

catch pike or muskellunge for propagation purposes, but have never succeeded in securing a hundred fish. I have fished at the headwaters of the St. Croix, Chippewa, Flambeau, Turtle, and Wisconsin rivers; in fact at the headwaters of all principal rivers of the state, but have always met with failure.

A request for the installation of a fishway usually originates with some person who has seen two or three hundred fish below a dam, and who does not know what variety they are. He immediately comes to the conclusion that a fishway should be built to enable the fish to ascend. Investigation would doubtless prove that most of the fish he saw were suckers.

To install a fishway is expensive: one properly built will necessitate an expenditure from \$700 to \$1,000. When built they are of little benefit. In my opinion fishways are not necessary as it makes little difference whether the fish are caught above or below the dam.

PROTECTION OF THE BLACK BASS.

The protection of black bass during the spawning season is a very important matter; for as has been shown, the black bass protects its nest and young, and thus hatches a much larger percentage of the eggs deposited than most other kinds of fish in the natural way. During its spawning season it is extremely pugnacious and will attack anything that comes into the neighborhood of its nest. Pirates, having none of the spirit of a true sportsman in their makeup, take advantage of this trait in the black bass and easily catch them from their spawning beds, thus destroying many nests as well as reducing the stock of mature fish. The spawning season of the black bass ranges from May 15 to July 1. Some years it is earlier than others, depending usually upon whether the spring season is warm or cold. For several years the season for black bass opened on May 25, the on June 10 and the present date is June 1. Legislation should fix the date not earlier than July 1. By the present law the spawning season of the bass is included in the open season for fishing; consequently our waters have been rapidly depleted of bass. If the bass were protected until July 1 it would save millions of fry for

Superintendent's Report.

our waters. If they could be well protected during their spawning season and the state hatcheries increase the output of bass during the next 5 or 10 years, it would effect a good combination; and in a few years the sportsmen who are fond of casting for bass, would be happy again.

FISH AND GAME CLUBS.

The number of such associations is increasing every year. There is some talk of perfecting a state organization and of forming one or two clubs in every county of the state. The purpose of rod and gun clubs is for the better protection of fish and game. The intention is to co-operate with the state departments, report infringements of the law, and assist in the planting of fry obtained from the state hatcheries. Much benefit will be derived if they but further the enforcement of the state fish and game laws.

FISHERIES OF THE GREAT LAKES.

The last legislature enacted a law allowing fishermen to catch lake trout for 15 days during the closed season, under permits of this department, from the waters of Lakes Superior and Michigan, and Green Bay. This is for the purpose of securing and fertilizing the spawn of lake trout. The conditions under which such permits are issued are as follows: That the fishermen spawn the fish, impregnate the eggs, and pay all necessary expenses in connection with the work. Such eggs as are not needed for the hatcheries they are to plant back on the reefs or spawning beds of the fish. This law was made to conform to a similar one submitted and recommended by the fishermen of the Great Lakes. The same law was enacted by the state of Michigan.

During the season of 1909, 25 millions of lake trout eggs were sent to the hatcheries, and 15 millions were planted back on the spawning beds, making a total of 40 million of eggs impregnated during the season. This season we secured approximately the same amount. I am sure that this work is of much more benefit than if we had an entire closed season, as all the eggs were thoroughly fertilized and stood a better chance of hatching than



FOREMAN'S DWELLING AT WILD ROSE HATCHERY.

Superintendent's Report.

if they had been deposited under natural conditions by the parent fish.

The fishing, as a whole, during the past summer was poor. The market prices, however, were higher than ever before and what was lost in quantity was more than covered by the increase in value. The fishermen claim that the fish were very inactive and that this was due to the hot, dry summer, with no winds to stir the water. Thousands of fish perished during this weather in the waters of Lake Winnebago and Green Bay. The condition existed during the latter part of July and up to the middle of August. Pike and perch were the fish most affected and were found floating all over the surface of Green Bay. I believe that the lack of circulation of the water was the cause of the loss of fish. On the other hand, the fishermen of Lake Michigan state that this summer they had an unusual under current, often times their nets being carried several miles from where they had been set.

Bluefin, herring, and chub comprise two-thirds of the value of fish caught in Green Bay and Lake Michigan. On account of the great number of nets placed in the waters every year, these species of fish have been rapidly decreasing, and have been commanding a better price. I think that the time is at hand when the commission should start the propagation of these fish to help perpetuate the industry. For several years a bill has been introduced in congress providing for the establishment of a government hatchery to be located on Lake Michigan in Wisconsin. For some reason the bill has never been acted upon, but the time has come when the state should do more to maintain the fishing industry of Lake Michigan. The station at Oshkosh is the only hatchery supplying lake trout fry for these waters and Green Bay. The limit of production for this plant is from 6 to 8 millions of fry, and we are working it to the utmost capacity.

In connection with our lake trout work we should have two more hatcheries, one located in the vicinity of Sturgeon Bay to stock the waters of Green Bay and the upper end of Lake Michigan. The other should be centrally located at the lower end of the lake. These hatcheries would be inexpensive; the approximate cost of maintenance I would place at \$4,000 per annum for each

Superintendent's Report.

station, building and equipment not more than \$4,000 per hatchery. The sites would necessitate only a reasonable expenditure, as we would need only land enough for the buildings. Arrangements for water supply could be made with the city.

Many fishermen appreciate the fact that using small mesh nets is harmful to their own interests and destructive of the industry, as it means that tons of small trout are caught that should remain in the water until they attain a weight of 5 or 6 pounds. Then they would be of some value to the fishermen, especially when the market price is 8 cents per pound.

Lake Erie is the only one of the Great Lakes that is holding its own as to maintaining the supply of whitefish. This is easily explained in that the large percentage of the millions of whitefish fry hatched by the United States Commission at Detroit and Put In Bay and by the Canadian government at Sandwich, Ontario, has either been planted in Lake Erie or in waters tributary thereto. For the past 30 years an average of 200 millions of whitefish fry have been planted in these waters. The only manner in which the supply of fish can be maintained is by the planting of fry in untold numbers. When we stop to consider the vast number of nets continually set in our waters, it is really wonderful that any fish are left to be caught.

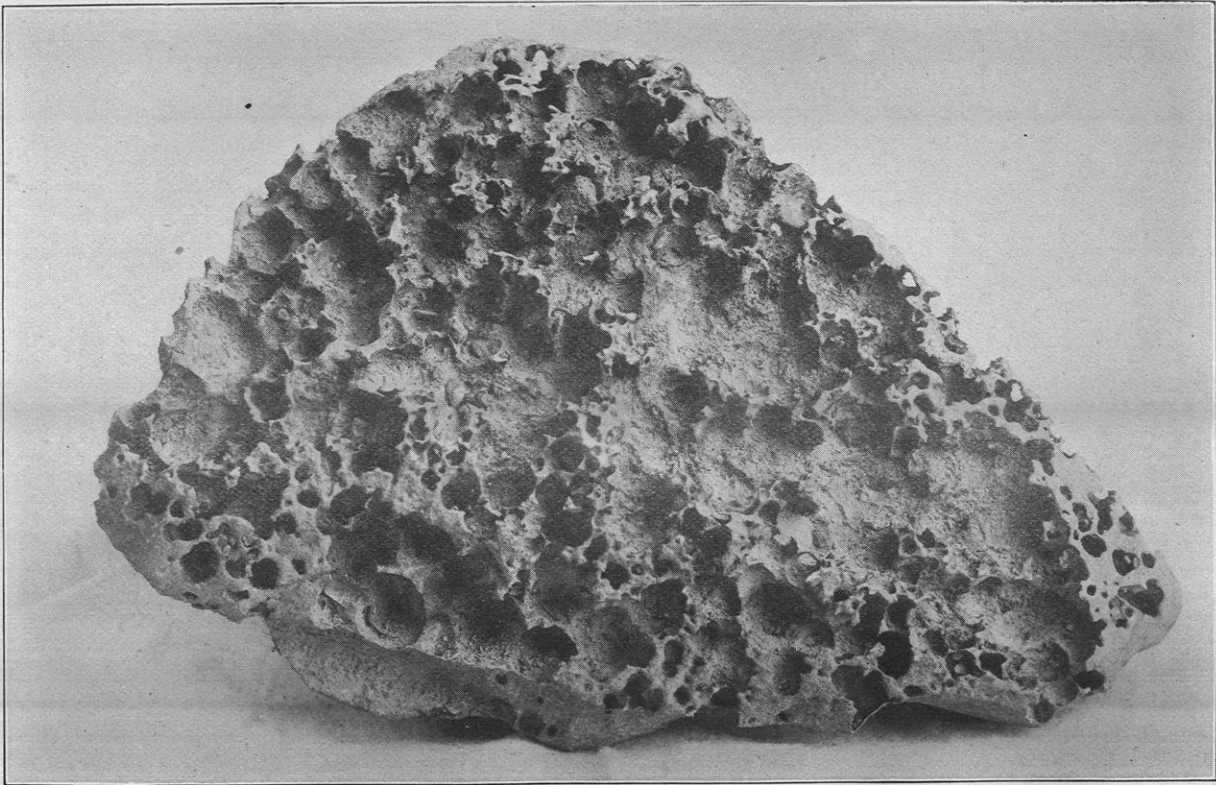
The commercial fisheries of the state show a remarkable increase during the past 18 years. Occasionally press reports call attention to a so-called scarcity of fish in the Great Lakes.

Following is a statement of all species of fish caught for commercial purposes and the market value for the years of 1890, 1905 and 1909.

	Pounds.	Value.
1890.	9,766,934	\$208,350 00
1905.	12,735,812	520,354 00
1909.	20,658,776	723,658 00

This clearly indicates a steady growth and an increase of approximately 120% in the number of pounds, and over 240% in the market value. It is convincing that a report of a dearth of fish in waters adjacent to the state of Wisconsin is purely erroneous.

In catching this immense number of fish, 2,287½ miles of nets were used in the waters of Lake Superior, Michigan, and



SHELL ROCK FROM LAKE MICHIGAN.

Superintendent's Report.

Green Bay. In 1890, 612 men were employed, and in 1909, 1,031 men were engaged in the business. The value of nets used in 1890 was \$147,710. as compared with \$301,932.86 in 1909.

The fishermen of today are not the fishermen of the past. In the old days they used sailboats in the vocation, stone for weights to submerge their nets, and strips of wood for floats to keep them spread. Today one and all have either a steam tug or gasoline launch, lead for weights, aluminum corks for floats, and steam hoists to lift their nets.

Two-thirds of the lake trout caught in Lake Superior are designated as half-breed trout by the fishermen. The half-breed trout is the result of our planting millions of Lake Michigan trout fry in the waters of Lake Superior. As the meat of the Michigan trout is much whiter than that of the native Superior trout, the distinction between the two fish is very pronounced; hence the fishermen have given it the name of half-breed.

Some 20 years ago we planted bluefin fry in Lake Superior, which proved to be a great success, as hundreds of tons were caught. The fishermen tell me, however, that during the past summer none were found in their nets, and that the waters seem to have been depleted of bluefin.

This report contains the picture of a shell rock taken from Lake Michigan. At the time the photograph was taken the rock was not in as good condition as when first taken out of the water. When exposed to the atmosphere, quite a number of the cells crumbled and fell off.

This formation of rock is the natural spawning bed of the lake trout and whitefish. The fish deposit their eggs in the cavities or cells, which afford better protection from their enemies who seek to consume the spawn. This rock is the largest piece I have ever found brought to the surface in the nets.

MISSISSIPPI RIVER WORK.

The work of rescuing fish from the overflowed lands of the Mississippi river bottoms during the fall of 1909 was very satisfactory when we take into consideration the short time we had to do it in, and during that time we had a heavy rain storm which

Superintendent's Report.

caused the water to rise to such an extent, that for ten days little or no work was performed.

We rescued 1,968,000 fish from the small ponds. Of this large number, approximately 600,000 were bass, of which 350,000 were carried to the main river and liberated, and the remaining 250,000 were transported to the inland lakes.

The total disbursement for this work was \$4,082.96, or an average of \$4.08 per thousand. We purchased a house-boat for \$125 and equipped it for the men working on the river above La Crosse. The total cost of the house-boat, including alterations and furnishing, was \$273.12. It is now located at Maiden Rock and is in the care of A. H. Herold, who will look after it until wanted for another season.

Because of the low stage of water in the Mississippi river during May and June, 1910, the bass were unable to get into the sloughs and bayous to spawn. The fund derived from licenses which should have been expended for the work this year, will now be available for another season.

Several complaints came to the office during the summer that large numbers of fish were perishing in the sloughs. I immediately sent Mr. Webster out to investigate and to ascertain what could be done. He reported, however, after making a trial, that it would be a useless expenditure of money to carry on the work this summer, as there were no fish to rescue. Both the U. S. Bureau of Fisheries and the State of Minnesota started this work, but gave it up when they found that but little could be accomplished in rescuing any great number of fish.

Next season, if the water on the Mississippi is favorable, we shall have about \$9,000 to expend in this work during the months of August and September. With this amount of money at our command, the work of rescuing the fish should be very thorough and complete so that no complaint can be made as to the fish being left in the sloughs and bayous to perish during the winter.

It is impossible to forecast the years of plenty when this work on the Mississippi river assumes great proportions. This year the loss will be very small; next summer there may be millions of fish to rescue from the river bottoms.

Superintendent's Report.

Great credit is due Senator Walter E. Owen of Maiden Rock, for the keen interest he took in this matter during the last session of the legislature, in securing the enactment of a law establishing a special fund of all moneys received from licenses of all kinds of fishing on the Mississippi river, Lake Pepin and St. Croix, to be used exclusively for this work.

The present non-resident hook and line license law was enacted during the legislative session of 1909. This law provides for a fee of one dollar to be paid by all male non-residents, over the age of 16 years, to fish with a hook and line in any of the inland waters of the state. All such moneys collected are to be paid into the state treasury, one-half to be credited to the fish commission and the remaining one-half to the hunting license fund. Last year our share of this fund was \$5,926.25, and it is expected that by June 30, 1911, we will receive some \$7,000 from the same source. There is no question in my mind that we should collect more money from this source. By the present law it is really impossible for the game warden department to collect all the fees that should be paid. This is due to the fact that a great many non-resident claim to be residents of the state, in order to evade the payment of the dollar fee, and the deputy game warden can not very well question the veracity of a man claiming to be a resident of Wisconsin.

The conservation of national resources is today one of the most important matters to be considered. To me the maintenance of the supply of food fishes is as vital as any question confronting us. Wisconsin being known as the pioneer of progressive legislation in most matters, I believe that the time is at hand for legislation bearing on the conservation of our fisheries. A law requiring all male residents of the state over 16 years of age to pay a fee of one dollar to cover both a hunting and fishing license, would practically insure the payment of all fees, as it would leave no opportunity to evade the payment of same. Such a law would result in no hardship, as two-thirds of the hunters of the state are enthusiastic fishermen, and there would be no objection on their part. The fishermen of the state should certainly be as willing to pay their share towards the maintenance of the fish hatcheries as the hunters are to contribute their

Superintendent's Report.

portion towards the maintenance of the game warden department in the enforcement of the fish laws. Neither is the state expending any money to increase the supply of game, whereas all funds credited to the fish commission are expended in maintaining and increasing our supply of fish.

My plan is to create a special fund of our share of the moneys received from licenses of this kind, to be used exclusively for the establishment and maintenance of fish hatcheries, or what may be called sub-stations. Such stations would consist of cheap buildings costing not over \$200, and to be used for about 6 weeks in the spring of the year. They should be located in such places where 3 to 6 lakes are found within a radius of 50 miles, or in places where pike, pickerel, and perch could be caught in sufficient numbers to secure eggs for propagation purposes. Only such places would be selected as would warrant us in the expenditure of the money for the station. All fry hatched would be planted back into the lakes in the immediate vicinity. Some plan or system of this kind must be put into effect in the near future, the sooner it is carried out, the better it will be for the commonwealth.

During the last 10 years the fish and game laws have been fairly well enforced throughout the state, and during that time there has been a closed season for all fish, except black bass, to give them an opportunity for natural reproduction. Under these favorable conditions I have still to hear of any one lake in the state in which the fishing is as good today as it was 10 years ago, except it has received fish from the state to help maintain the supply.

Every dollar that is expended in fish culture comes back to us a hundred-fold. The \$14,000 derived from the one dollar fee paid for non-resident hook and line licenses, represents only about one-third of the actual number of people, including women and children, who came into the state during the summer months. It would be fair to estimate that each of the 14,000 persons who paid for a fishing license, disbursed at least \$100 in the state for railroad fare, hotel bills, livery, guides, and boats. This means that \$1,400,000 was left in the state, and there is reason to believe that this amount was doubled.



METHOD OF RESCUING FISH FROM THE BACK-WATERS OF THE MISSISSIPPI RIVER.

Superintendent's Report.

PROTECTION OF FISH AND GAME.

The enforcement of the fish and game laws is most closely allied with the work of the commissioners of fisheries. As there is always an element of law violators both in and out of season, there is danger of killing the hen that lays the golden egg unless the laws are enforced by good and faithful wardens. In the appendix of this report will be found statements of the receipts and disbursements and the number of violations and prosecutions by the game warden department. It is indicative of the active prosecution of the work of that department under the supervision of Capt. Geo. W. Rickeman, and of the most excellent service rendered. The entire department has been placed on a systematic and business-like basis. Capt. Rickeman has absolutely refrained from recognizing any influence in the strict enforcement of the laws. Special attention is called to the increase of receipts as indicated by the cash on hand with the Treasury Department on January 1, 1909, and December 17, 1910.

Our state has an enviable reputation as a fisherman's paradise. The beauty of our lakes and streams is unexcelled. The thousands of dollars spent in summer homes bears testimony of this fact, and as the wealth of the country increases, the future will see a large increase in the number of people who will spend their summers in Wisconsin in pursuit of health, recreation, and the chief incentive will be to catch the fish that abound in our thousands of inland lakes and streams.

I do not believe that 100 persons can be found in the state who thoroughly understand the propagation of fish in its various phases, or who ever give the matter a serious thought. A great many people think they know all about the subject, but they never will know until they either inform themselves through the study of such matter as pertains to fish culture, or until they visit the hatcheries at the time when the eggs are taken, and observe the care given the eggs during incubation, and given the fry until ready for distribution.

In accordance with a new ruling of the state printing commission, our report has been limited in the number of pages. We

Condensed Fishing Report.

are therefore compelled to condense our tables covering the distribution of fish, and confine the statement to the total number of fry of the various species consigned to the counties of the state.

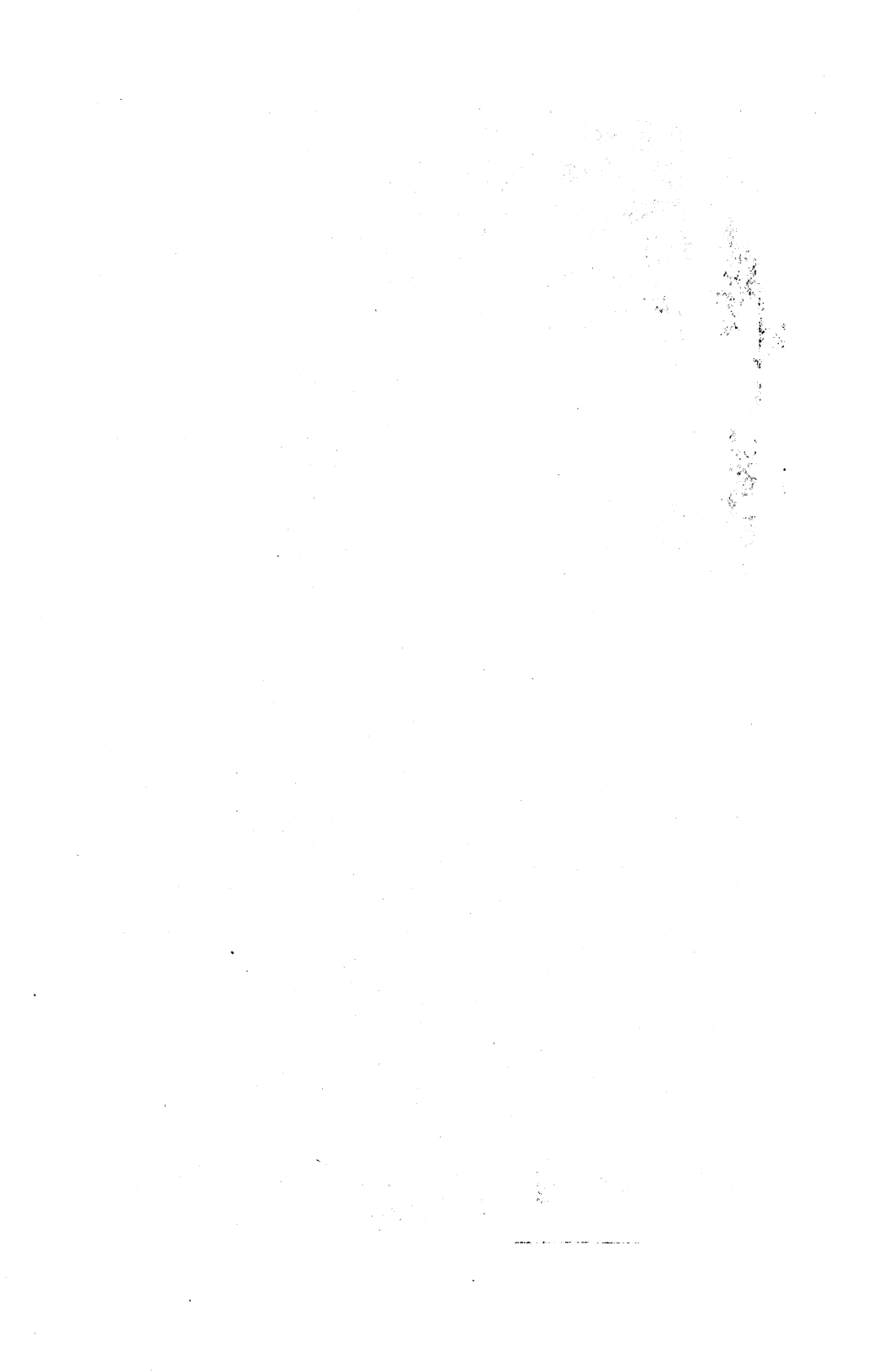
During the past biennial term we filled 5,311 applications for fish for stocking the inland lakes and streams of the state. This does not include the millions of fish that were shipped in car-load lots to the lake ports, to stock the waters of Lakes Superior, Michigan, and Green Bay. At this date we have 5090 applications on file for the season of 1911, and which will be largely increased before we commence the distribution of fish.

Respectfully submitted,

JAS. NEVIN,
Superintendent of Fisheries.



TROUT PONDS AT THE WILD ROSE HATCHERY.



*Condensed Fishing Report.***CONDENSED FISHING REPORT FOR 1909.****FISH CAUGHT IN LAKES SUPERIOR, MICHIGAN AND GREEN BAY.**

	Pounds.
Whitefish.....	168,273
Trout No. 1.....	4,012,576
Trout No. 2.....	702,918
Bluefin.....	669,874
Chub.....	3,289,545
Herring.....	7,011,577
Menominees.....	15,645
Perch.....	1,258,109
Pike.....	230,823
Pickrel.....	36,417
Sturgeon.....	8,011
Bass.....	1,285
Sucker.....	796,457
*Carp.....	*218,387
Bullhead.....	101,909
Crawfish.....	2,136,951
Total.....	20,658,776
Value of fish.....	\$723,238 32
Value of boats.....	313,124 00
Value of nets.....	301,932 86
Total.....	\$1,338,295 18
Men employed.....	1,031
Miles of nets.....	2,238

FISH CAUGHT IN LAKES ST. CROIX, PEPIN AND MISSISSIPPI RIVER.

	Pounds.
Buffalo.....	1,041,019
*Carp.....	*1,012,428
Pickrel.....	49,462
Sucker.....	104,523
Snap turtle.....	2,304
Catfish.....	79,652
Perch.....	64,906
Bullhead.....	34,789
Sheephead.....	971,141
Dogfish.....	46,415
Garfish.....	1,024
Sturgeon.....	22,067
Total.....	3,429,600
Value of fish.....	\$92,239 09
Value of boats.....	21,012 00
Value of nets.....	25,847 50
Total.....	\$139,098 59
Men employed.....	265
Miles of nets.....	643½

*The average market price of carp to the fishermen was 4½ cents.

Distribution of Fish.

FISH CAUGHT IN INLAND WATERS.

	Pounds.
Buffalo.	1,151,255
*Carp.	*397,800
Sucker.	18,825
Sheephead.	5,110
Dogfish.	16,100
Eelpout.	8,150
Garfish.	200
Total.	1,597,500
Value of fish	\$40,314 83
Value of boats	13,845 00
Value of nets.....	10,239 50
Total.	\$63,898 83
Men employed	196

RECAPITULATION.

Total value of fish.....	\$855,791 74
Total value of boats.....	347,481 00
Total value of nets.....	333,019 86
Total.	\$1,541,292 60
Total number of men employed.....	1,492
Total miles of nets.....	2,887½

*The average market price of carp to the fishermen was 4½ cents.

*Distribution of Fish.***DISTRIBUTION OF FISH.****SUMMARY OF OUTPUT OF HATCHERIES AND STATIONS. 1909.**

MADISON HATCHERY:		
Brook trout, advanced fry.....	*1,147,000	.....
Rainbow trout, advanced fry.....	*1,607,800	.....
Mature trout.....	300	.....
Gold fish and trout furnished aquariums.....	50	.....
Total output, Madison hatchery.....		2,755,150
BAYFIELD HATCHERY:		
Brook trout, advanced fry.....	*1,433,000	.....
Rainbow trout, advanced fry.....	*816,000	.....
Lake trout fry.....	11,250,000	.....
Lake trout eggs furnished Nebraska Fish Commission in exchange.....	150,000	.....
Furnished fairs, fountains, aquariums, trout of various ages.....	400	.....
Total output, Bayfield hatchery.....		13,649,400
OSHKOSH HATCHERY:		
Lake trout fry.....	9,032,000	.....
Whitefish fry.....	17,720,000	.....
Wall-eyed pike fry.....	45,750,000	.....
Blue-fin fry.....	6,400,000	.....
Total output, Oshkosh hatchery.....		78,902,000
MINOCQUA HATCHERY:		
Wall-eyed pike fry.....	18,200,000	.....
Black bass fry.....	438,000	.....
Muskellunge fry.....	920,000	.....
Pickereel fry.....	1,080,000	.....
Lake trout fry.....	2,000,000	.....
Total output, Minocqua hatchery.....		22,638,000
DELAFIELD HATCHERY:		
Wall-eyed pike fry.....	21,060,000	.....
Black bass fry.....	208,400	.....
Black bass fingerlings.....	22,000	.....
Total output, Delafield hatchery.....		21,290,400
FROM MISSISSIPPI RIVER:		
Black bass fingerlings.....	498,000	.....
Bull head fingerlings.....	22,000	.....
Other kinds, estimated.....	1,468,600	.....
Total output, from Mississippi river.....		1,988,600
FROM CATTISH RIVER:		
Pickereel, impregnated eggs.....		840,000
MISCELLANEOUS:		
Lake trout eggs impregnated and planted.....		15,000,000
White bass fingerlings from Fox River at Neenah.....		1,000
Sundry kinds.....		840
Total out from all sources.....		\$157,065,390

* Includes fry retained at hatchery.

Distribution of Fish.

SUMMARY OF OUTPUT OF HATCHERIES, 1910.

MADISON HATCHERY:		
Brook trout, advanced fry.....	*1,662,000	.....
Rainbow trout, advanced fry.....	*1,598,000	.....
Mature rainbow trout.....	2,618	.....
Rainbow trout eggs exchanged.....	475,000	.....
Total output, Madison hatchery.....		3,737,618
BAYFIELD HATCHERY:		
Brook trout, advanced fry.....	*1,980,800	.....
Rainbow trout, advanced fry.....	*1,268,500	.....
Rainbow trout fingerlings.....	7,500	.....
Lake trout fry.....	17,737,600	.....
Furnished, fairs, fountains, aquariums, trout of various ages.....	360	.....
Total output, Bayfield hatchery.....		20,995,760
OSHKOSH HATCHERY:		
Lake trout fry.....	6,473,000	.....
Whitefish fry.....	1,600,000	.....
Wall-eyed pike fry.....	28,350,000	.....
Lake trout eggs exchanged.....	100,000	.....
Total output, Oshkosh hatchery.....		36,523,000
MINOCQUA HATCHERY:		
Wall-eyed pike fry.....	42,640,000	.....
Black bass fry.....	523,500	.....
Muskellunge fry.....	76,000	.....
Pickeral fry.....	600,000	.....
Lake trout fry.....	1,200,000	.....
Total output, Minocqua hatchery.....		45,039,500
DELAFIELD HATCHERY:		
Black bass fry.....	292,500	.....
Black bass fingerlings.....	35,700	.....
Lake trout fry.....	240,000	.....
Total output, Delafield hatchery.....		568,200
Furnished for exhibit State Fair Milwaukee, various kinds.....	620	.....
Lake trout eggs impregnated and planted.....	15,000,000	.....
Total output, from all sources.....		121,864,698

* Includes fry retained at hatchery.

** Includes fry retained at hatchery and transferred.



ASSISTANT'S DWELLING AT WILD ROSE HATCHERY.

Distribution of Fish.

DISTRIBUTION OF FISH, BY COUNTIES, 1909.

County.	Brook trout advanced fry	Rainbow trout advanced fry	Wall-eyed pike fry.	Black bass fry.	Black bass fingerlings
Adams.....	7,500			2,400	
Ashland.....	66,000	140,000	1,200,000	4,800	
Barron.....	99,000	72,000	525,000	27,600	3,000
Bayfield.....	54,000	144,000		24,000	1,000
Brown.....	23,000	4,800			
Buffalo.....	21,000	2,400	100,000		
Burnett.....	16,000	8,400	300,000		
Calumet.....	8,000		300,000		
Chippewa.....	80,000	81,600	1,000,000	6,400	500
Clark.....	39,500	38,400	250,000	1,600	
Columbia.....	30,500	7,200	1,270,000		2,000
Crawford.....	31,000	14,400			
Dane.....	9,000	9,600	6,380,000	18,000	44,000
Dodge.....			2,680,000	9,000	
Douglas.....	88,000	52,000	775,000		4,000
Door.....			200,000		
Dunn.....	58,000	20,400	850,000	9,600	
Eau Claire.....	46,500	18,000	1,500,000		
Florence.....	8,000	29,600	800,000		
Fond du Lac.....	12,000	20,400	1,320,000		
Forest.....	16,000	104,400	1,200,000		
Grant.....	28,500	20,400	100,000	1,600	
Green.....		14,400		8,000	
Green Lake.....		9,600	850,000		
Iowa.....	21,000	14,400		4,800	
Iron.....	16,000	32,800	1,000,000	21,600	
Jackson.....	58,500	21,600	500,000		
Jefferson.....	4,000	3,600	1,340,000	30,400	
Juneau.....	73,500	34,800	885,000	4,800	2,000
Kewaunee.....	26,000	18,000			
LaCrosse.....	38,500	28,000			
Lafayette.....		7,200	350,000	3,200	
Langlade.....	22,000	28,800	1,700,000	9,600	
Lincoln.....	55,000	51,600	500,000	38,400	14,500
Manitowoc.....	16,000	82,000	850,000	3,000	
Marathon.....	79,000	16,800	950,000	7,200	
Marquette.....	108,000		950,000		
Marquette.....	10,500	16,800	450,000	17,600	
Monroe.....	64,500	60,000	250,000		
Oconto.....	8,000	67,000	950,000		
Oneida.....	26,000	39,600	1,700,000	146,400	34,800
Outagamie.....	8,000		500,000	3,000	
Ozaukee.....		4,800			
Pepin.....	41,500	18,000	400,000		4,000
Pierce.....	79,500	64,800	200,000		
Polk.....		96,000	450,000		
Portage.....	44,000	81,600	950,000	6,400	
Price.....	40,000	56,000	800,000		
Racine.....		2,400	1,500,000		2,000
Richland.....	22,500	19,200	300,000		
Rock.....	3,000			10,700	
Rusk.....		86,000	400,000		
St. Croix.....	69,500	69,200	400,000	1,600	10,000
Sauk.....	30,000	15,600	1,100,000		4,200
Sawyer.....	36,000	70,000	150,000	15,600	
Shawano.....	32,000	69,600	2,500,000	9,600	
Sheboygan.....		3,600	850,000	2,000	19,000
Taylor.....		40,000	1,050,000		
Trempealeau.....		39,600	750,000		
Vernon.....	69,500	48,000			
Vilas.....	23,000	62,400	2,900,000	94,000	43,000

Distribution of Fish.

DISTRIBUTION OF FISH, BY COUNTIES, 1909—Continued.

County.	Brook trout advanced fry	Rainbow trout advanced fry	Wall-eyed pike fry.	Black bass fry.	Black bass fingerlings
Walworth.....	13,500	7,200	2,310,000	8,800	12,000
Washburn.....	60,000	48,000	725,000	4,800	11,500
Washington.....	16,000	4,800	1,800,000	.....	.....
Waukesha.....	28,500	20,400	11,820,000	27,700	46,000
Waupaca.....	44,500	30,000	1,800,000	3,200	.....
Waushara.....	85,000	4,800	2,150,000	30,000	.....
Winnibago.....	.....	.....	5,600,000	.....	.....
Wood.....	13,500	44,400	550,000	26,400	5,000
Total.....	2,460,000	2,358,800	85,010,000	646,400	*262,000

* This does not include the black bass fingerlings planted in Mississippi river.

Lake trout eggs impregnated and planted.....	15,000,000
Lake trout fry planted.....	22,282,000
Whitfish fry planted.....	17,720,000
Muskellunge fry planted.....	920,000
Pickrel fry planted.....	1,080,000
Miscellaneous distribution.....	9,326,190

Total..... 66,328,190

Grand total..... 157,065,390

Distribution of Fish.

DISTRIBUTION OF FISH AND EGGS FOR WISCONSIN WATERS
 BY THE U. S. BUREAU OF FISHERIES DURING FISCAL
 YEAR ENDING JUNE 30, 1909.

	Eggs,	Fry.	Fingerlings, yearlings and adults.
Lake trout	12, 126, 000	990, 000	30, 000
Whitefish	20, 000, 000	4, 000, 000	
Catfish			108, 105
Buffalo			27, 540
Steel-head trout			15, 000
Rainbow trout			200, 550
Brook trout		50, 000	618, 735
Crappies and Strawberry bass			53, 100
Rock bass			1, 050
Small-mouth black bass			8, 600
Large-mouth black bass			45, 800
Sun fish			36, 800
Pike perch		7, 800, 000	
Yellow perch			17, 500
Fresh water drum			12, 500
Total	32, 126, 000	12, 810, 000	1, 170, 840

Distribution of Fish.

DISTRIBUTION OF FISH, BY COUNTIES, 1910.

County.	Brook trout advanced fry	Rainbow trout advanced fry	Wall-eyed pike fry.	Black bass fry.	Black bass fingerlings
Adams.....	6,000			3,000	
Ashland.....	102,000	48,000	600,000		
Barren.....	190,000	78,000	1,640,000	36,000	
Bayfield.....	199,000	302,000	1,760,500	27,000	
Brown.....	16,000		200,000		
Buffalo.....	24,800				
Burnett.....			120,000		
Calumet.....	8,000		300,000		400
Chippewa.....	72,400	118,500	1,580,000	3,000	
Clark.....	55,000	418,000	450,000		
Columbia.....	60,000	27,000	1,240,000	24,000	
Crawford.....	28,000	15,000			
Dane.....	26,200	16,500	4,200,000	22,500	4,900
Dodge.....	8,000	6,000	650,000	22,590	
Douglas.....	237,000	66,000	2,000,000	27,009	
Dunn.....	72,009	51,000	750,000		
Eau Claire.....	43,200	76,600	1,350,000		
Florence.....	43,000	34,500	1,420,000		
Fon Du Lac.....	58,000	36,000	1,250,000	13,500	
Forest.....	114,400	46,500	1,440,000	27,000	
Grant.....	420,000	10,500			
Green.....	8,000	9,000			800
Green Lake.....				6,000	
Iowa.....	58,800	70,500	100,000		
Iron.....	14,400	12,000	1,280,900	31,500	
Jackson.....	5,800	64,500	150,000		
Jefferson.....	14,000		1,530,000		
Juneau.....	48,000	48,008	990,000	15,000	
Kenosh.....			350,000		800
Kewaunee.....	10,000		60,000		
LaCrosse.....	36,600	63,000		9,000	
La Fayette.....			200,000		800
Langlade.....	27,600	19,500	840,000	24,000	
Lincoln.....	73,400	33,000	1,600,000	33,000	
Manitowoc.....	16,000	21,000	960,000		2,400
Marathon.....	56,600	21,000	1,200,000	33,000	
Marinette.....	32,000	110,000	1,450,000		
Marquette.....	26,000			9,000	
Millwaukee.....			300,000		400
Monroe.....	70,000	48,000	440,000	16,500	
Oconto.....	26,600	52,000	960,000	10,500	
Oneida.....	89,000	37,500	4,080,000	24,000	
Ozaukee.....		9,000	470,000		400
Pepin.....	21,000				
Pierce.....	72,800	118,560			
Polk.....	52,000	18,000	720,000		
Portage.....	46,800	34,500	1,120,000	9,000	
Price.....	66,600	37,500	1,050,000		
Racine.....	4,000		500,000		2,500
Richland.....	60,000	48,000	290,000		800
Rock.....	4,000	3,000	400,000		
Rusk.....	43,200	49,500	489,000		
St. Croix.....	32,300	15,000	1,320,900	6,000	
Sauk.....	14,000	10,500	1,200,000	18,000	
Sawyer.....	55,800	13,200	1,360,000	9,000	
Shawano.....	140,800	64,500	960,000	22,000	
Sheboygan.....	24,000	33,000	720,000	16,500	2,400
Taylor.....	48,600	59,500	1,300,000		
Trempealeau.....	99,000	129,000	50,000	4,500	
Vernon.....	75,200	15,600		9,000	
Vilas.....	78,800	82,500	6,280,000	112,500	

Distribution of Fish.

DISTRIBUTION OF FISH, BY COUNTIES, 1910—Continued.

County.	Brook trout advanced fry	Rainbow trout advanced fry	Wall-eyed pike fry.	Black bass fry.	Black bass fingerlings
Walworth.....	14,000	15,000	700,000	.....	5,500
Washburn.....	82,800	18,000	2,440,000	24,000	.....
Washington.....	.....	9,000	650,000	25,500	500
Waukesha.....	30,000	46,500	3,720,000	96,000	12,300
Waupaca.....	80,400	57,000	1,540,000	3,000	.....
Waushara.....	108,000	37,500	1,800,000	4,500	900
Winnebago.....	.....	.....	3,000,000	.....	.....
Wood.....	22,000	33,000	1,440,000	9,000	.....
Total.....	3,323,800	2,616,500	70,990,000	816,000	35,700

Lake trout eggs impregnated and planted.....	15,000,000
Lake trout fry planted.....	25,650,600
White fish fry planted.....	1,600,000
Muskellunge fry planted.....	76,000
Pickereel fry planted.....	600,000
Miscellaneous distribution.....	1,156,098
Grand total, 1910.....	121,864,698

SUMMARY OF FISH PLANTED BY WISCONSIN FISH COMMISSION SINCE ESTABLISHMENT.

Year	Brook trout.	Rainbow trout.	Salmon.	Carp.	White-fish.	Lake trout.	Wall-eyed pike.	Black bass.	White bass.	Muskel-lunge.	Pickereel.	Yellow perch.	Miscellaneous.	Total.
1877..	179,000		67,500		6,295,000	1,677,000								8,217,500
1878..	93,009		77,800		8,850,000	2,980,000								12,800,000
1879..			88,210		5,000,000									5,088,210
1880..	930,250				5,800,000	30600,000								10,230,259
1881..	1,988,900			¶163										1,088,163
1882..	828,590				6,000,000									6,828,500
1883..	1,339,000				16,000,000		8,000,000							25,330,000
1884..	2,605,000	95,000		¶253	17,000,000		9,700,000							38,800,000
1885..	1,510,000	600,000		¶3,765			14,500,000							16,616,765
1886..	2,275,000	630,300		¶556	33,210,000		3,450,000							39,571,556
1887..	2,900,000	1,345,000		¶17,165	31,500,000	500,000	8,800,000							45,093,165
1888..	2,285,000	1,590,000		¶25,512	18,000,000	700,000	4,450,000							27,050,512
1889..	2,190,000	2,615,000		5,230	30,000,000	5,850,000	14,050,000							54,710,230
1890..	3,320,000	3,460,000		¶35,591	27,472,500	*27,472,500	14,680,000							76,568,091
1891..	2,620,000	2,415,000		¶9,855	35,000,000	*1,536,000	6,000,000		5,200,000					52,780,855
1892..	3,245,000	3,340,000		¶8,700	14,000,000	*10,704,000	13,595,000							44,872,700
1893..	1,635,000	1,675,000		¶5,050	35,000,000	*14,249,000	5,500,000	¶29,000						58,096,050
1894..	3,785,000	2,605,000		¶8,125	33,000,000	*10,777,000	9,600,000	¶73,000	\$4,960					59,853,085
1895..	2,556,000	1,470,000		¶8,525	15,000,000	*22,100,000	23,100,000	¶116,500	\$2,345					64,275,770
1896..	3,110,000	1,611,000			27,500,000	*22,710,000	25,250,000	¶156,634	\$13,500					69,120,083
1897..	1,949,000	1,241,000			18,000,000	*10,010,000	23,300,000	¶4,400	\$9,115	1,100,000				55,613,615
1898..	1,852,500	1,180,000			3,000,000	7,362,900	53,980,000	¶112,200	\$23,420					67,760,120
1899..	2,238,000	1,095,500				16,848,000	60,190,000	¶68,665	\$15,100					80,455,755
1900..	2,393,000	1,653,000				30,797,500	69,550,000			1,000,000	7,090,000			111,793,500
1901..	1,866,580	1,068,500			34,450,000	19,980,000	78,200,000	¶44,270		472,500	*5840,000			132,921,776
1902..	2,569,000	1,299,000			66,820,000	17,877,000	37,325,000	¶10,200		80,000				126,150,200
1903..	1,512,500	1,050,000			37,500,000	16,168,000	49,170,000	¶318,000		100,000	*2080,000		200,125	105,089,625
1904..	2,090,000	2,283,750			20,375,000	20,463,000	37,825,000	*549,900		50,000			100,200	83,737,850
1905..	2,937,000	1,362,000			15,278,000	18,803,000	76,800,000	*341,300	¶1,463,000	50,000		¶723,880	252,700	118,010,980
1906..	2,442,500	1,673,000			53,780,000	16,197,500	79,140,000	*340,550	¶3,500	800,000	*5180,000	¶18,000	23,575	160,409,125
1907..	**1,980,000	1,558,500			27,025,000	19,724,000	44,900,000	*409,500	¶1,250	420,900	*2870,000		146,026	99,034,276
1908..	**2,272,000	2,098,500			12,210,000	12,345,000	112,075,000	*779,800		*452,000	5,859,000		1,255,769	149,338,009
1909..	**2,460,000	**2,358,800			17,720,009	22,282,000	85,010,000	*1166,400	¶1,000	*920,000	1,920,000		8,227,190	142,065,390
1910..	**3,323,800	**2,615,500			1,600,000	25,650,600	70,990,000	*851,700		76,000	600,000		1,156,098	106,861,698

*Impregnated eggs, †eggs and fry, ‡fry and fingerlings, §adult fish, ¶fingerlings, **advanced fry.

Note—Fish planted in fry stage unless otherwise indicated.

Distribution of Fish.

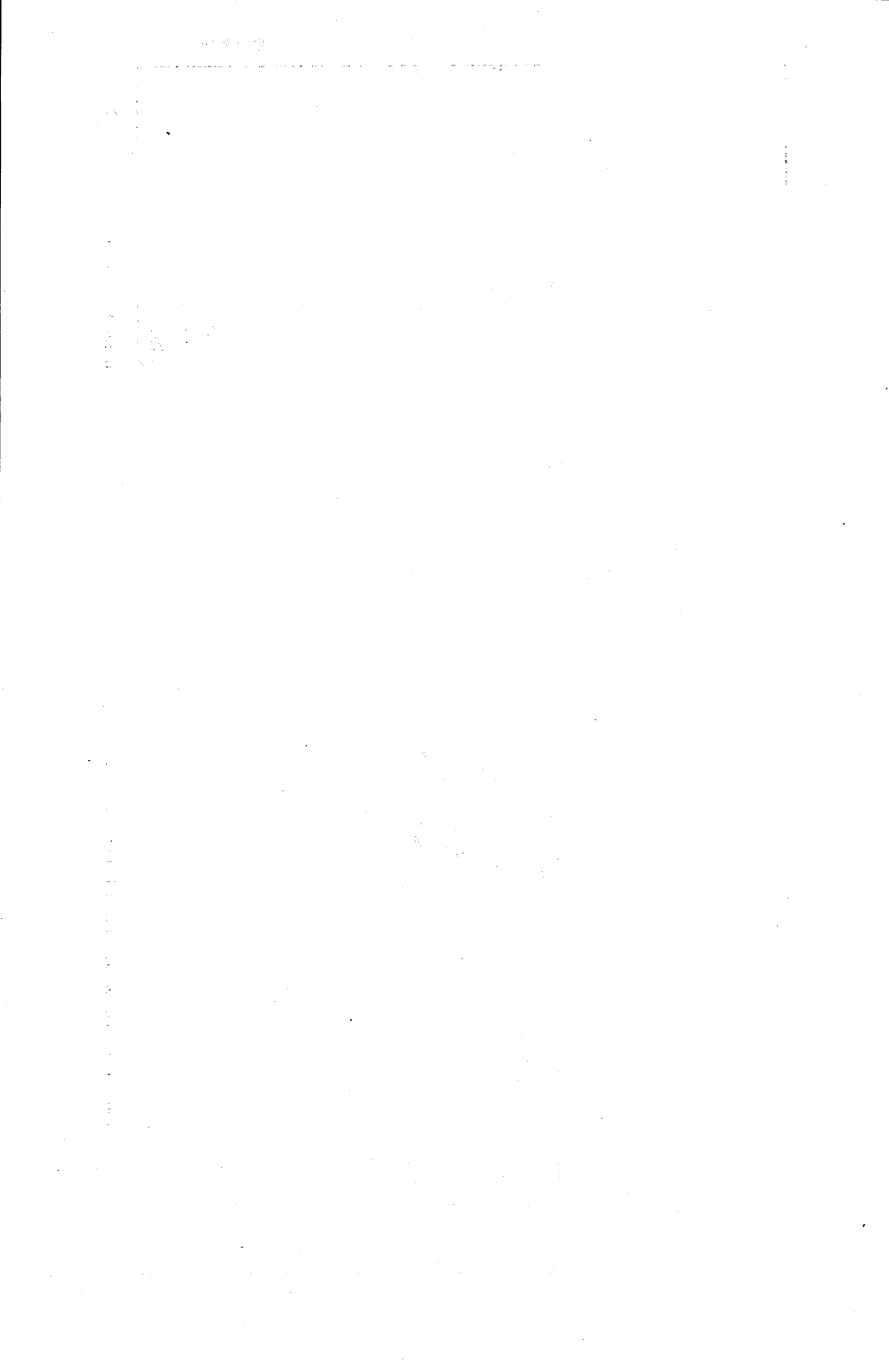
Game Warden Department.

SUMMARY OF RECEIPTS, DISBURSEMENTS, AND PROSECUTIONS OF THE GAME WARDEN DEPARTMENT.

Arrests, 910.	
Jail sentence. 33 men, 30 days.	
Jail sentence. 8 men, 60 days.	
Jail sentence. 2 men, 90 days.	
Jail sentence. 1 man, 6 months.	
Appealed, 19 cases.	
Not guilty, 73 cases.	
Four non-residents fined \$200 each for obtaining a resident license under false affidavit.	
Six convicted of dynamiting in streams. Fined \$50 each and 60 days in the county jail.	
Five convicted of dynamiting and fined \$50 each.	
Total amount of all fines credited to school fund.....	\$15,975 00
Total amount of costs in said cases.....	3,657 82
	<hr/>
Net proceeds to the state.....	\$12,317 18
Seizures to December 17, 1910.....	\$4,313 67
416 non-resident licenses for small game.....	4,160 00
268 non-resident licenses for deer.....	6,700 00
115,224 resident licenses sold to December 17, 1910.....	103,701 60
Game Warden Fees.....	782 69
For scientific permits and domestication of deer.....	64 00
For duplicate licenses and settlers' licenses.....	514 00
756 fishing licenses on Lakes Michigan, Superior, Green Bay	3,441 25
Licenses for set lines.....	1,777 65
255 licenses for fishing on Mississippi river, Lakes St. Croix and Pepin.....	*3,485 25
30 licenses for rough fish.....	3,009 51
One-half of non-resident hook and line licenses (12/17/10)	8,606 50
Cash on hand with State Treasurer January 1, 1909	94,950 93
Cash on hand with State Treasurer January 1, 1910	126,184 33
Cash on hand with State Treasurer December 17, 1910 ..	159,977 26
Increase of receipts of 1910 over 1908.....	65,026 33
Increase of receipts of 1910 over 1909.....	33,792 93
Disbursements 1910 (salaries and expenses).....	104,307 12
(the salaries of 36 wardens were increased 50c per day)	

* This entire amount is credited to the Fish Commission.







Annual Display of Grain and Forage Plants made by the Wisconsin Experiment Association at the State Fair.

SEVENTH ANNUAL REPORT

OF THE

WISCONSIN

Agricultural Experiment Association

Madison, Wis., February 11, 12, 1909.

Address of President, Secretary's Report with Papers and Addresses
given by Members of the Association and Others Interested
in Progressive Agriculture

Compiled by
R. A. MOORE, Secretary.



MADISON
DEMOCRAT PRINTING Co., STATE PRINTER
1909

“The man who seeks one thing in life, and but one,
May hope to achieve it before life be done;
But he who seeks all things, wherever he goes,
Only reaps from the hopes which around him he sows
A harvest of barren regrets.”

LETTER OF TRANSMITTAL.

WISCONSIN AGRICULTURAL EXPERIMENT ASSOCIATION.

Madison, Wis., 1909.

To His Excellency, JAMES O. DAVIDSON,

Governor of the State of Wisconsin:

SIR—I have the honor to submit for publication, as provided by law, the Seventh Annual Report of the Wisconsin Agricultural Experiment Association, showing the receipts and disbursements the past year, also outlines for experiments, and addresses and discussions given at the annual meeting at Madison, February 11—12, 1909.

Respectfully submitted,

R. A. MOORE,

Secretary.

TABLE OF CONTENTS.

	Page
Letter of Transmittal	iii
Officers and Committees of the Association.....	viii
Constitution and By-Laws	ix
List of Members (alphabetical).....	xii
List of Members (listed according to counties).....	xxii
Program for annual meeting.....	xxxiii
Address of Vice-President.....	1
Report of Secretary, R. A. Moore	3
Why Girls Should Study Domestic Science, Miss Emma Conley...	7
The Possibilities in Dairy Farming Open to the Members of the Experiment Association, A. L. Greengo.....	15
Should Wisconsin Farmers Grow Sugar Beets?—G. W. McCormick	17
Plant Breeding, Prof. K. L. Hatch.....	21
Benefits Derived by the State from the Work of the Experiment Association, W. H. Hanchett.....	26
Clover Silage, W. P. Bussey.....	28
Relation of Members of the Association with Farmers and Seeds- men of the State and the United States, Henry E. Krueger	32
Wisconsin Select Seed Grains, Henry Michels.....	34
Systematic Farming, H. P. Howell.....	36
Handling Manure with Spreader in the Winter, L. W. Briggs.....	38
Corn—Handling, Soil and Proper Rotation, C. P. Norgord.....	38
Report on Silver King Corn, Henry Michels.....	42
Three Years' Experiment with Silver King Corn, Herman Roethel	43
<i>Experiences with Silver King Corn:</i>	
Owen R. Jones	44
Geo. A. Stivarius	45
R. J. Schaefer	46
L. W. Briggs	47
A. G. Austin	48
Robert W. Brunner	49
R. W. Chatterton	50
Wm. A. Parsons	51
<i>Experiences with Early Yellow Dent Corn (Wisconsin, No. 8):</i>	
W. L. Illian	52
Albert J. Blakely	52
Chas H. Howitt	54
Hilbert Sorenson	54
O. R. Frauenheim	55

Table of Contents.

v

	Page
<i>Experiences with Golden Glow Corn (Wisconsin, No. 12):</i>	
Wm. A. Strowig	56
Fred P. Grebe	56
Chas. H. Howitt	57
A. C. Ochsner	57
Edward E. Straka	58
<i>Experiences with Clark's Yellow Dent Corn (Wisconsin, No. 1):</i>	
Chas H. Howitt	59
W. L. Davidson	59
Barley Valuation, Dr. Robt. Wahl	60
<i>Wisconsin Pedigree Barley:</i>	
Breeding and the Future Work of Dissemination, E. J. Delwiche	64
Pedigree, No. 10, W. L. Illian	66
Pedigree, No. 5, Henry E. Krueger	66
Business Meeting	67
Treasurer's Report, Jos. N. Bohl	68
Secretary's Report on State Appropriation	70
Display of Grains and Forage Plants for 1909	71
Parties Awarded Cash Premiums at the Annual Meeting, 1909	72
Presentation of Silver Trophies, H. E. Krueger	75
Special Prizes and Trophies given at the Last Annual Seed Grain Contest by Friends of the Association	77
Premium List, Awards to be made February, 1910	78
Rules and Regulations under which Premiums are given	80
<i>A Few Articles on Timely Topics, R. A. Moore:</i>	
Selection of Seeds for the Season's Crop	81
Growing Peas for Seed and Grain	83
Growing Clover for Seed	85
Curing and Storing Seed Corn	87
Breeding and Dissemination of Wisconsin Grains and Forage Plants	88
Peas in the Lake Superior Clay Belt, E. J. Delwiche	91
Field Beans as a Wisconsin Farm Crop, R. A. Gillette	92
Sorghum for Forage, A. L. Stone	94
Millet for Feed and Forage	97
<i>Division of Farm Crops, R. A. Moore:</i>	
Plan of Work for the Coming Year	100
Outline for Co-operative Experiments	102
Experiment No. 1, alfalfa	102
Experiment No. 2, seed corn	106
Experiment No. 3, Potato Scab	109
Experiment No. 4, Swedish Select Oats	110
Experiment No. 5, Oderbrucker Barley	112
Experiment No. 6, Soy Beans	113
Experiment No. 7, Field Beans	115
<i>Division of Soils, A. R. Whitson:</i>	
Experiment No. 8, Soil Fertility	116
<i>Report on Weed Work, A. L. Stone:</i>	
Experiment No. 9, Loss from Weeds	117
	120

	Page
<i>Division of Agricultural Engineering, C. A. Ocock:</i>	
A Building for Curing Seed Corn	121
Barn Construction	122
Experiment No. 10, Barn Ventilation	123
Experiment No. 11, Silos	124
Bovine Tuberculosis in Wisconsin, Conrad Hoffman	124
Report of Secretaries of County Orders of the Experiment Association	
Fond du Lac County, Henry Michels	129
Manitowoc County, O. R. Wiegand	130
<i>Wisconsin Corn Crop, R. A. Moore:</i>	
Breeding, Growing, Judging and Dissemination	131
Official Score Card	134
Explanation of Points in Corn Judging	134
Rules to be Used in Judging	135
Explanation of Points and Rules for Judging Dent Corn.....	136
<i>Corn Judging:</i>	
Lesson I. Trueness to Type or Breed Characteristics....	137
Lesson II. Shape of Ear, Cobb and Kernels	138
Lesson III. Color of Grain and Cob.....	140
Lesson IV. Market Condition	141
Lesson V. Butts and Tips.....	142
Lesson VI. Kernel Study	144
Lesson VII. Circumference and Length of Ears.....	145
Lesson VIII. Furrows Between Rows and Space Between Kernels at Cob	145
Lesson IX. Percentage of Corn on Cob.....	146
Lesson X. Selecting Corn of High Oil and Protein Content	146
Wheat—Points to be Observed.....	148
Rule for Cuts	149
Official Score Card	149
Oats—Points to be Observed.....	150
Rule for Cuts	150
Official Score Card	151
Barley—Points to be Observed.....	152
Rule for Cuts	152
Official Score Card	153
Discussion on the Judging of Small Grains, A. L. Stone.....	154
Wisconsin Seed Grain Growers.....	159
Swedish Select Oats (Wis. No. 4)	159
Oderbrucker Barley (Wis. No. 55)	163
Manshury Barley (Wis. No. 62)	172
Soy Beans—	
Ito San Variety.....	173
Early Black	175
Black	175
Medium Early Green	176
Yellow	176
Brown	176

Wisconsin Seed Grain Growers—continued.

	Page
Corn—	
Silver King (Wis. No. 7)	176
Golden Glow (Wis. No. 12)	184
Early Yellow Dent (Wis. No. 8)	187
Clark's Yellow Dent (Wis. No. 1)	188
North Star (Wis. No. 11)	189
Clover—	
Medium Red	189
Alsike	190
Mammoth	191
Buckwheat—	
Japanese	191
Silver Hull	191
Field Beans	192
Timothy Seed	193
Alfalfa Seed	193
Spring Wheat	194
Winter Rye	194
Spring Rye	194
Nordheim Sweet Corn	194

CONSTITUTION AND BY-LAWS

CONSTITUTION

Article I.—Name

This organization shall be known as the Wisconsin Agricultural Experiment Association.

Article II.—Object

The object of this association shall be to promote the agricultural interests of the state.

1st. By carrying on experiments and investigations that shall be beneficial to all parties interested in progressive farming;

2d. To form a more perfect union between the former and present students of the Wisconsin College of Agriculture, so as to enable them to act in unison for the betterment of rural pursuits in carrying on systematic experiments along the various lines of agriculture;

3d. By growing and disseminating among its constituency new varieties of farm seeds and plants.

4th. By sending literature bearing upon agricultural investigations to its membership, and

5th. By holding an annual meeting in order to report and discuss topics and experiments beneficial to the members of the association.

Article III.—Membership.

Section I. All former, present and future students and instructors of the Wisconsin College of Agriculture shall be entitled to become members of this association.

Sec. II. Honorary membership may be conferred upon any one interested in progressive agriculture by a majority vote at any annual or special meeting of the association.

Constitution.

Article IV.—Dues.

A fee of fifty cents shall be collected from each member annually.

Article V.—Officers.

The officers of this association shall consist of a president, vice-president, secretary, and treasurer, whose terms of office shall be one year or until their successor are elected.

Article VI.—Duties of Officers.

Section I. It shall be the duty of the president to preside at all meetings of the society and enforce the observance of such rules and regulations as will be for the best interest of the organization; to appoint all regular committees as he may deem expedient for the welfare of the association.

Sec. II. In the absence of the president, the vice president shall preside and perform all duties of the president.

Sec. III. It shall be the duty of the secretary to keep all records of the association; to report the results of all co-operative experiments carried on by its membership and the experiment station, plan the experimental work for the members of the association, and labor for the welfare of the society in general.

Sec. IV. The treasurer shall collect fees, keep secure all funds of the association and pay out money on the written order of the secretary signed by the president. He shall furnish bonds in the sum of two thousand dollars with two sureties, for the faithful performance of his duties.

Article VII.—Amendments.

This constitution may be amended at any annual meeting by a two-thirds vote of the members of the association present.

Amendment No. 1.—Adopted Feb. 9, 1906.

Any person residing within the state having completed a course in agriculture in any college equivalent to that given by the Wisconsin University may become a member of this association under the same regulation as students from the Wisconsin College of Agriculture.

Amendment No. 2.—Adopted Feb. 11, 1909.

Any County Agricultural School within the state may be admitted to membership of the Experiment Association upon request by the principal of such school and the payment of an annual fee of \$1.00,

BY-LAWS.

Article I. The officers of this association shall be elected by ballot at the annual meeting.

Art. II. The president and secretary shall be ex-officio members of the executive committee.

Art. III. This association shall be governed by Robert's Rules of Order.

Art. IV. All members joining at the organization of this association shall be known as charter members.

Art. V. The time and place of the annual meeting shall be determined by the executive and program committees.

Constitution adopted and organization effected Feb. 22, 1901.

MEMBERSHIP—1909.

[Arranged in alphabetical order.]

Names.	Post-Office Address.	Names.	Post-Office Address.
Aarness, O. C.....	Cashton.	Baesemann, Otto ...	Edgar.
Aavang, H. O.....	Barneveld.	Bailey, Alfred B....	Jim Falls.
Aberg, Jacob	De Soto.	Bailey, H. E.....	River Falls.
Accola, John	Madison.	Baird, J. W.....	Waukesha.
Accola, Lawrence...	Steuben.	Baird, Robert L....	Waukesha.
Achen, Wm.....	Bristol.	Baird, Will L.....	Waukesha.
Adams, A. E.....	Eden.	Bannen, R. E.....	Boscobel.
Adams, Jay	Waukesha, R. 5.	Barker, E. S.....	Janesville.
Adams, Lester B....	Lowell.	Barnes, Amy B.....	Waupun.
Adams, M. J.....	Waukesha.	Barron, R. E.....	Platteville.
Adams, Richard F..	Campbellsport.	Barstow, J. E.....	Randolph.
Aderhold, H. F.....	Athens.	Bartlett, Geo. W....	Menomonee Falls.
Adland, P. H.....	Franksville, R. 10.	Bartleson, Harvey.	Pine River, R. 1....
Ahlers, Walter	Grafton.	Bartlett, Ray	Barron.
Akins, Clyde E.....	Warren, Ill.	Bast, Paul J.....	Rockfield.
Alberts, Will	New Richmond.	Basse, Wm. H.....	West Allis, R. 5
Allen, Arthur J.....	Wales, R. 31.	Batten, Sidney	Hudson.
Allen Chas. L.....	Eau Claire.	Bauer, Adolph H....	Manitowoc, R. 2.
Allen, E. G.....	Barron.	Beach, Glenn H....	Loyal.
Almon, Perry T....	Weyauwega.	Bean, R. R.....	DeSoto.
Altpeter, Edw.....	Ft. Atkinson.	Bechtolt, A. B.....	Browntown.
Anaoker, Bernhard..	Portage.	Bechtolt, J. D.....	Browntown.
Anderson, A. W....	Portage.	Beck, J. D.....	Madison.
Anderson, Alfred ..	Denmark.	Becker, Harry J....	Ft. Atkinson.
Anderson, H. C.....	Cambridge, R. 3.	Behm, Walter	Manitowoc.
Anderson, Theo.	Waterville, Iowa.	Behrens, Berh.	Grafton.
Andrews, A. L.....	So. Wayne.	Beilke, Walter	Fairwater.
Andrews, Geo.	Livingston.	Bekken, Oscar	Bloomer.
Angvick, Lars	Cottage Grove.	Belda, Wm. F.....	DeForest.
Anthes, Henry	Jefferson.	Bendickson, I. E....	Cambridge.
Antholt, Chas.	Brussels.	Benedict, E. L.....	Beloit.
Anthony, D. C.....	Oregon.	Bennett, C. S.....	Somers, Montana.
Arms, Edward	Fountain City.	Bennett, H. G.....	Cherry Valley, Ill.
Arnold, Arthur A....	Kiel.	Bennett, Wm. L....	Stanton.
Arnott, Grace M....	Stevens Point.	Benson, Ed. E.....	Mt. Horeb, R. 5.
Aschbrenner, H. H..	Starford.	Berg, Carl	Tigerton.
Ashuum, C. S.....	Waupaca, R. 2.	Berg, Jacob	So. Germantown.
Aslakson, Alfred ..	Mt. Horeb, R. 4.	Berg, Julius	Sturgeon Bay, R. 3.
Austin, Alva G.....	Janesville.	Berge, William	Cambridge.
Austin, Alvina L....	Evansville.	Berns, Xavier	Guttenberg, Iowa.
Austin, Clifford P..	Janesville.	Bestul, Martin J....	Scandinavia.
Austin, Elmer E....	Brodhead.	Beule, E. A.....	Beaver Dam.
Austin, Geo. M.....	Janesville.	Bewick, Wm. M....	Sun Prairie.
Austin, W. B.....	Janesville.	Bewick, W. W.....	Madison.
Austin, Wilbur D....	Janesville.		824 W. Johnson St.
Axley, Walter	Cleveland, R. 1.		Brooklyn.
		Biglow, L. F.....	Mondovi.
Babeock, C. L.....	Milwaukee.	Bilderbach, Wm.	Mondovi.
	461 Colby-Abbott Bldg.	Bille, J.	Waupaca.
Babeock, J. G.....	Evansville.	Bingham, D. E.....	Sturgeon Bay.
Backhaus, F. G.....	Kewaskum.	Bingham, E. L.....	Milton.
Baer, A. C.....	West Bend.	Birkinbine, F. P....	Sun Prairie.
		Birrenkott, Mick T.	Klevenville.

MEMBERSHIP, 1909.—Continued.

Names.	Post-Office Address.	Names.	Post-Office Address.
Bixby, Phil T.....	Appleton, R. 1.	Caldwell, John	Mazomanie.
Blakely, Albert	Neenah.	Call, Henry	West Prairie.
Blackwell, Leslie C.	Waukesha.	Capener, W. R.....	Baraboo.
Blank, George A.....	Grafton.	Cardenas, F. F.....	Ser Victoria, No. 15,
Block, Albert F.....	Markesan.	..... Satil	lo, Coah., Mexico.
Blodgett, G. R.....	Neenah, R. 9.	Carey, W. H.....	Argyle.
Blonien, Peter	Elkhart.	Carlson, Axel T.....	Augusta, R. 4.
Blumer, Ezra, Jr.....	Monroe.	Carlson, Nels P.....	Hudson, R. 1.
Boeder, Otto	Wilton.	Carmody, Daniel	Mt. Ida.
Bohl, Anton	Beaver Dam.	Carmody, P. J.....	Mt. Ida.
Bohl, Jos. N.....	Snohomish, Wash.,	Carncross, J. E.....	Okeo.
	R. 3.	Carrow, Herman	Stanton.
Boller, J. F.....	Nashotah.	Cassidy, Wm. S.....	Whitewater.
Bollig, F. A.....	Black Earth.	Cate, Geo.	Stevens Point.
Bonsack, H. M.....	La Crosse.	Chamberlain, Geo.....	Windsor.
Bonsack, Theo.....	West Salem.	Chappel, Steve J.....	Dodgeville.
Bonzelet, J. P.....	Eden.	Charles, Edw. S.....	Madison,
Booth, Lester G.....	Cuba City.		432 Francis St.
Borc, Sam	No. Freedom.	Charles, Fred	Woodstock, Ill.
Boss, S. J., Jr.....	Oshkosh.	Chase, A.	Knapp.
Boss, U. C.....	Oshkosh.	Chase, Albert L.....	Milton.
Boston, W. J.....	Stevens Point.	Chase, J. P.....	Sun Prairie.
Boucsein, Gust L.....	Detroit Harbor.	Chatterton, Ray W.	Basco.
Boudnik, John	Kewaunee, R. 7.	Chervey, Wenzel ..	Kewaunee, R. 2.
Bowman, Wallace.....	Detroit Harbor.	Chetlain, Louis A.,	Galena, Ill.
Boyce, Charlotte	Dane.	Chipman, W. R.....	Morrisonville.
Boyd, James T.....	Waukesha, R. 7.	Chrislaw, A. M.....	Rice Lake.
Bradley, J. Frank.....	Somers.	Chrislaw, Geo. O.....	Menomonie, R. 7.
Brandt, Chas., Jr.....	West Salem.	Chrisler, Harley	Lodi.
Brehm, Ed. A.....	Colby.	Christ, Albert	Cambridge.
Bremer, Paul H.....	Cedarburg, R. 1.	Christensen, C. A. M.	Walsh.
Brickson, Abram	McFarland.	Christensen, Johan ..	West Prairie.
Brickson, Andrew	Cottage Grove.	Christensen, John L.	Hartland.
Brigham, Chas. I.....	Blue Mounds.	Christensen, P. W.....	Marshfield.
Briggs, E. T.....	Fond du Lac, R. 7.	Christianson, And.....	Deerfield.
Briggs, Lynn W.....	Peebles.	Christianson, Irvin.	Deerfield.
Briggs, J. W.....	Peebles.	Christianson, W. O.	Chippewa Falls,
Bristol, Wm. A.....	Oakfield.		R. 6.
Britzke, Paul	London.	Christoph, Theo. F.....	Chilton.
Brod, Clarence D.....	Bridgeport.	Chrysler, Harvey ..	Osseo.
Bromley, Fred G.....	Whitewater, R. 4.	Churchill, Arthur ..	Janesville, R. 7.
Brook, J. W.....	Salem.	Chynoweth, H. W.....	Madison.
Brooks, Ed. J.....	Watertown.	Clark, Chas. F.....	Babcock.
Brooks, Homer H.....	Hopkinton, Ia.	Clark, W. E.....	Stevens Pt., R. 1.
Brown, Abbott	Waterloo.	Clausing, Adolph ..	Thiensville.
Brown, E. D.....	West Salem.	Clavadatscher, T.....	Sauk City.
Brown, William	Spring Valley.	Clayton, A. W.....	Madison.
Brue, N. H.....	DeForest.	Clusen, Reinhold ..	Manitowoc, R. 6.
Brueckner, H. C.....	Ft. Atkinson.	Coates, Clinton J.....	Elkhorn.
Brueckner, Justus.....	Ft. Atkinson.	Cobb, Homer A.....	Sun Prairie.
Bruhn, John F.....	Two Rivers, R. 1.	Cobleigh, Kollo S.....	Delton.
Brunner, R. W.....	Hudson.	Coburn, Ora	Whitewater.
Bryant, Clinton A.....	Hazel Green.	Coffin, Russell H.....	Rockford, Ill.
Bryant, R. J.....	Hazel Green.	Coleman, Chas. H.....	Perry Center, N. Y.
Bryson, Donald	Elizabeth, Ill.	Collentine, Arthur.....	Monroe.
Buehler, J. G.....	Richland Center.	Collins, D. W.....	Luxemburg.
Bullamore, R. G.....	Kenosha.	Colloday, W. E.....	Stoughton.
Bullamore, Roy	Kenosha.	Conant, W. A.....	Temple, New. H.
Burce, Ruth	Eau Claire.	Cook, Geo. L.....	Burlington.
Burgess, A. J.....	Milwaukee,	Cook, Irving O.....	Nashotah.
	1102 Grand Ave.	Coon, Leslie	Osseo.
Burris, F. E.....	Kendall, R. 5.	Cooper, Maurice W.	Edgerton.
Buschman, Hugo	Forestville.	Cornelius, E. C.....	Monroe.
Bussey, W. P.....	Omro.	Costello Dan	Fond du Lac, R. 5.
Bussewitz, Orla J.....	Juneau.	Craig, Geo. D.....	Oconomowoc.
Bussewitz, Raymond	Reeseville.	Cross, A. J.....	Allenville.
		Cubela, Jos. M.....	Muscooda.
Cade, Jos. M.....	Viroqua.	Curran, W. F.....	Taylor.
Caig, Ernest M.....	Milton Junction.	Curtis, J. C.....	New Lisbon.
Cairns, J. H.....	Montello.	Curtis, Ray	Poynette.
Caldo, Leslie	Janesville.		

MEMBERSHIP, 1909.—Continued.

Names.	Post-Office Address.	Names.	Post-Office Address.
Curtiss, Mark	Trevor.	Einfeldt, Albert	Greenwood.
Curtiss, W. R.	Trevor.	Eisenman, Ben	Mishicot.
Cusack, M. E.	Darien.	Eleveljem, O. J.	McFarland.
Dach, C. B.	Viroqua.	Eley, T. B.	Madison, R. F. D.
Daellenbach, Chris..	Abbotsford.	Ellickson, A. C.	Arlington.
Daley, E. S.	DeForest.	Ellis, E. J.	Evansville.
Daley, Julius	DeForest.	Ellsworth, Raymond	Tavera.
Daley, O. S.	DeForest.	Elver, E. C.	McFarland.
Daley, S. S.	DeForest.	Emery, George	Logansville.
Dalton, Ernest	Pardeeville, R. 1.	Emery, Sydney	Edgerton.
Dalton, Roy	Pardeeville, R. 1.	Emmert, H. L.	Johnsons Creek.
Daly, Richard C.	Washburn.	Engebretson, Albert	West Salem.
Dance, George	Brookfield.	Engebretson, E. S. .	West Salem.
Dance, James	Brookfield.	Engel, Geo. H.	Fountain City.
Danielson, K. O.	Mt. Horeb.	Engleman, John	Hixton.
Davidson, W. L.	Verona.	Erdall, M. N.	Deerfield.
Davies, Elias	Markesan.	Erickson, Clarence..	South Wayne.
Davis, J. C.	Oshkosh.	Erickson, Louis E. .	Kewaunee.
Davis, J. L.	De Soto.	Ernst, Claude	Thompson, Ohio.
Davis, Llewellyn ..	Mineral Point.	Ernst, John A.	Milwaukee.
Davidson, R. W.	Sun Prairie.		921 Island Ave.
Dean, C. E.	Madison.	Eskil, Odin	Iron Mountain,
	593 West Doty.		Michigan.
DeForest, Theo. R. .	Ann Arbor, Mich.	Evans, W. D.	Pickett.
Defnet, Jule J.	Casco, R. 2.	Evenson, Fred.	DeSoto, R. 2.
Delcorps, Louis	Sturgeon Bay.	Faast, Ben F.	Eau Claire.
Delwiche, E. J.	Ashland.	Falarsh, Frank	Peshigo, R. 2.
Dennerlein, A. J.	Plymouth.	Farwell, Roy R.	Ridgeway.
Dennison, Nicholas.	No. Milwaukee,	Fay, Albert	New Richmond.
	R. 10.	Felland, Geo.	Madison, R. 1.
Dettinger, Wm. F. .	Hixton, R. 1.	Fellows, Samuel W.	Rockford, Ill.
Dettwiler, John	Monroe.	Fernald, Paul E.	West Oldtown, Me.
Dexter, Walter S. .	Kenosha.	Fetting, Edwin	Alma.
Dhein, Henry	Rockfield.	Finegan, Louis	Sparta.
Dibble, Roy A.	Menomonee Falls.	Finsnes, A. I.	Chippewa Falls.
Dierrich, N. A.	No. Milwaukee,	Fish, Esli	Janesville, R. 7.
	R. 10.	Fisher, Will J.	Fond du Lac.
Dieter, Bert	Livingston.	Fitzsimmons, Ira A.	Mineral Point.
Dieter, Wm. A.	Montfort.	Fleishauer, C. K. .	Arkansaw.
Dietrich, John J.	Black River Falls.	Florin, Emil J.	Cochrane.
Dietz, Ed.	Greenville.	Florin, Henry	Cochrane.
Dineen, C. F.	Pewaukee.	Follstad, Anton	Elcho.
Dineen, Michael	Blue Mounds.	Ford, J. F.	Mazomanie.
Dirks, Arthur	Waupun.	Foth, F. D.	Norwalk.
DiVall, W. F.	Montfort.	Frauenheim, O. R. .	Random Lake.
Doerfer, Wm.	Madison, R. 6.	Frederickson, Fred.	Spring Green.
Doerschuk, John J.	Shanesville, Ohio.	Freeman, G. A.	Sparta.
Dolplin, Clarence ..	Cobb.	Frey, E. J.	Mt. Hope.
Donahue, Michael J.	Madison, R. F. D.	Fuiten, B. H.	New Richmond.
Donaldson, H. A. .	Eau Claire, R. 6.	Fuller, Horace	North Lake.
Donovan, Frank	Van Dyne.	Fuller, Leroy	Lake Geneva.
Dopp, Paul B.	Oconomowoc.	Fuller, S. L.	Milwaukee.
Dougan, W. J.	Beloit, R. 30.		126 26th St.
Dowig, Neli	Soldiers Grove.	Gade, Adolph	Reedsburg.
Draves, Henry F.	Montfort.	Gaffney, Ellery	Oxford.
Dreger, Emil L.	Madison, R. 7.	Gallagher, J. F.	Reedsburg.
Dunbar, Geo. W.	River Falls.	Gamerdinger, John.	Kendall.
Dunbar, G. W., Sr.	River Falls.	Gapen, C. E.	Monroe.
Dunbar, Harold	River Falls.	Garey, James	Grimms.
Dunbar, Harry D.	Elkhorn.	Garside, Harry R. .	Cedar Grove.
Durand, Mrs. S. S. .	Lake Bluff, Ill.	Gasser, Geo. W.	Spring Green.
Durnford, G. A.	Rockbridge.	Gay, John	Madison.
		Gehrand, Arthur A.	Rochester.
Eagan, J. J.	Wautoma, R. 6.	Geller, H. W.	Woodbine, N. J.
Eastman, J. S.	Madison.	Gensmann, Edw. D.	Schleisingerville.
Ebert, Francis E.	Tomah.	George, W. R.	Sterling, Ill.
Edmundson,		Geraldson, Mervin..	Manitowoc, R. 4.
Mrs. Ethel	Madison.	Gerking, F. W.	Elk Mound.
Eggler, Victor H.	La Crosse.	Germanson, Herbert	Luck.
Egre, John S.	Cambridge.	Ghastin, Floyd	Twin Bluffs.
		Ghastin, Wm. J.	Twin Bluffs.

MEMBERSHIP, 1909.—Continued.

Names.	Post-Office Address.	Names.	Post-Office Address.
Gibbard, Peter J.....	Ripon.	Hanson, N. P.....	Amherst Jct., R. 2.
Giebel, Karl.....	Fond du Lac.	Hardy, John.....	Wauwatosa.
Gigstad, Benneth ...	Valders.	Harrington, C. B.....	Verona, R. 1.
Gnette, Rufus A.....	Verona.	Harrington, Myron.	Waupaca.
Gillies, J. H.....	Stoughton.	Harris, A. M.....	Plainfield.
Glindinning, H. L....	Shullsburg, R. 2.	Harris, Ben F.....	Delavan.
Gloeckler, Theo.....	Portage.	Harris, Ruthven E..	Warrens.
Godfrey, Burt K.....	Janesville, R. 1.	Harrison, Geo.....	Chippewa Falls,
Goechs, Wm.....	Madison, R. 1.		Care State Farm.
Gostsch, A. A.....	Juneau.	Hart, C. B.....	Brookfield.
*Goldsmith, Wm. B.	Waupaca.	Hart, William C.....	Brookfield, R. 2.
Gorges, H. F.....	New London.	Hargrave, Robt.....	Ripon.
Goula, G.....	Peshtigo.	Harvey, C. B.....	Wonevoc.
Goula, M. M.....	Peshtigo.	Haskins, Leon O.....	Monello, R. 3.
Grabber, Edward ...	Mineral Point.	Hass, Meinold.....	La Crosse, R. 1.
Grabber, L. F.....	Mineral Point.	Hasz, Theodor.....	Logansville.
Grady, Geo.....	Oregon.	Hatka, L. M.....	Big Bay, Mich.
Granam, F. S.....	Fennimore.	Hauck, Nathan.....	Aton, Calif.
Grand, Geo. W.....	Independence.	Haus, Enoch.....	Stoughton.
Grandine, Morton D	North Crandon.	Hausch, Albert.....	Baraboo.
Graser, Adam H.....	Waukesha.	Hawkins, A. B.....	Harley, Iowa.
Grass, Frank.....	Burlington.	Hayes, Edwin.....	Bunato, N. I.,
Grassman, Irwin ...	Kendall.		533 W. Perry St.
Graul, Edward J....	Independence.	Hayes, Thomas, Jr..	Richfield.
Graves, D. W.....	Baraboo.	Haylett, Henry O...	Waukesha.
Grebe, Fred F.....	Fox Lake.	Heasty, Ralph.....	Sparta.
Greene, J. L.....	Clinton.	Hecker, Paul.....	New Richmond.
Greeno, A. L.....	Menomonee Falls.	Heketsweiler, O. J.	Alma Center.
Grenzow, Jesse H....	Juda.	Hedlund, Adolph...	Chayton.
Gruley, Ben.....	Wauwatosa.	Heneck, W. E.....	Madison,
Grimta, Jas.....	Spencer.		243 W. Gilman.
Grimta, James.....	Kidgeway.	Heinke, Alvin E....	Stratford.
Grimshed, J. A.....	Coon Valley.	Henze, Louis.....	Truscott.
Grimde, L. S.....	Morrisonville.	Hegge, Julius.....	Galesville.
Griswold, H. W.....	West Salem.	Heinrich, Otto W...	New London.
Gron, C. A.....	Cedarburg.	Hening, Paul.....	Menomonee Falls.
Grove, Christian ...	Columbus, R. 6.	Hemingway, Geo. L.	Lawover.
Grover, Albert.....	Columbus, R. 6.	Hemker, Eric H....	West Salem.
Grub, C. H.....	Baraboo.	Hendricks, J. H....	Campbellsport.
Grunder, Nelson W	So. Milwaukee.	Henke, Louis.....	Lowell.
Grunford, W. S.....	Twin Falls, Idaho.	Hemming, Walter ...	Mazomanie.
Gunickson, Gustave	Nelsonville.	Henrichs, Ernest...	Reedsburg.
Gunickson, Thos. O.	Nelsonville.	Herrlich, S. F.....	Aden.
Gunderson, Clifford	Manitowoc, R. 4.	Hermann, F. F.....	Osseo.
Gupull, L. K.....	New Auburn.	Herold, Rudolpha, Jr.	Stoddard.
Gustafson, Theo.....	Stockholm, K. 1.	Herrbold, J. W.....	Sturgeon Bay.
Gustafson, Chas...	Manitowoc.	Herwig, Richard...	Devon.
Guttenberg, F., Jr.	Jefferson.	Herwig, Theo.....	Devon, R. 1.
		Hicken, Alfred D....	Pewaukee.
		Hickcox, J. Gilbert.	Waukesha Bay.
		Hicks, S. E.....	Almond.
		Hidemann, Alex. E.	Deeraine.
		Hill, C. C.....	Tomah.
		Hill, Chas. F.....	Brookfield.
		Hill, Otto C.....	St. Horeb.
		Hill, J. Thos.....	Brookfield.
		Hilmer, H. B.....	Brownsdale, Minn.
		Hiltz, Geo. E.....	Oakfield, R. 2.
		Hiltz, Wm. F.....	Oakfield, R. 2.
		Hirsch, D.....	Wausau, R. 1.
		Hitchcock, Clarence	Sparta.
		Hitchcock, H. R....	Pecatonica, Ill.
		Hjelle, Ole K.....	Soldiers Grove.
		Hoard, L. R.....	Caracac.
		*Hobeln, F. W.....	Barrington, Ill.
		Hocks, Walter.....	Sturgeon Bay.
		Hoefner, Herbert ..	Manitowoc.
		Hoert, Chas. A.....	Oskoski.
			Linwood Farm.
		Hoffman, Conrad ..	Phillips.
		Hoffman, Jacob	Algoma.

* Deceased.

MEMBERSHIP, 1909.—Continued.

Names.	Post-Office Address.	Names.	Post-Office Address.
Holcomb, W. R.....	Excelsior, Minn.	Jones, S. R.....	Leon.
Holloway, Ed. M....	Union Grove, R. 8.	Jones, Seneca T....	Watertown, R. 1.
Holloway, John W..	Union Grove.	Jones, Tommy O....	Rewey.
Holmen, O.	Belleville.	Joos, Frank B.....	Fountain City.
Holmes, U. C.	Evansville.	Jorenby, Carl.....	Blanchardville.
Holscher, A. C.....	Cottage Grove.	Judd, Jasper.....	Endeavor.
Holterman, R. K....	Fond du Lac, R. 5.	Judd, Jesse L.....	Endeavor.
Holzhtuter, Walter.	Marshall.	Jung, A. E.....	Randolph.
Hood, D. L.	Spring Green.	Jungbluth, Wm. J..	West Allis, R. 5.
Hopkins, Andrew ..	Madison.		
Hopkins, B. F.....	Morrisonville.	Kaiser, W.	Louisburg.
Hoppert, Martin J..	Sheboygan, R. 4.	Kalouner, Edward..	Antigo, R. 5.
Hougan, Halvor O..	Stoughton.	Kaltenberg, A.....	Wauwaukee.
Hougen, S. O.	Junction City.	Kammlade, S. G....	Bangor.
Houghton, F. T....	Reedsburg.	Kastein, Herman ..	Waupun.
Houslet, Neal.....	Packwaukee.	Katel, W. C.....	Kewaunee.
Hoxsey, Edward....	Serena, Ill.	Katerndahl, Carl ..	Stevens Point.
Hoxsey, Frank.....	Serena, Ill.		126 Dixon St.
Howe, John.....	Comstock.		
Howe, T. R.	Sun Prairie.	Kaul, E. H.....	Waukesha, R. 7.
Howell, H. P.	Sparta.	Kaupunger, G. F....	Stoughton.
Howitt, Chas. H....	Randolph.	Keenan, W. M., Jr..	McFarland.
Howland, H. H....	Waupun.	Kendell, Geo. W....	Sun Prairie.
Huckstead, A. A....	Neillsville.	Kent, H. W.....	Rusk.
Hughes, Jas.	Neillsville, R. 1.	Kent, J. S.....	Rusk.
Huhn, William.....	Cleveland.	Keogh, Luke F....	Rozellville.
Hunter, Hobart R..	Fond du Lac,	Keuler, Aaron F....	Helenville.
	232 E. 2nd St.	Keuler, Harry.....	Helenville.
		Kieffer, Mike.....	Predonia.
Hustad, K. E.....	Rice Lake.	Kielsmeier, R. C... Timothy.	
Hustad, Milon.....	Rice Lake.	Kimble, N. G.....	Milton Junction.
		King, William.....	Jim Falls.
Ihrig, J. J.....	Oshkosh.	Kinstler, C. L....	Washburn.
Illian, W. L.....	Adell.	Kircher, H. W....	Chilton, R. 3.
Imholt, B. A.....	Houlton.	Kirst, Ernest J....	Tomah.
Iverson, C. M.....	Browntown.	Kitchen, Jos. H....	Eldorado.
Ives, L. W.....	Granton.	Kittlerm, Knut ...	Mt. Horeb.
		Klann, Adolph.....	Hayton, R. 1.
Jackson, H. H.....	Oshkosh,	Klassy, H. C., Jr..	Monticello, R. 3.
	304 Main St.	Klatt, Ernest.....	Beaver Dam.
Jacobs, A. F.....	Coloma, R. 1.	Klein, W. C.....	Orfordville.
Jacobs, S. M.....	Janesville.	Klement, Otto C..	Ft. Atkinson.
Jahnke, J. F.....	Peplin.	Klemm, Louis J....	Welcome.
James, Geo. A.....	Richland Center.	Klovdahl, J. J....	Wittenberg.
Jamison, Clarence ..	Appleton, R. 2.	Klumb, Albert.....	Rockfield.
Jamison, Robert ..	Appleton, R. 2.	Klumb, Hugo G....	Kewaskum.
Jamison, W. G.....	Appleton.	Klumb, Oscar.....	Rockfield.
Janecek, Cyril.....	Bloom City.	Klussendorf, F. E..	Phillips, R. 1.
Jaquish, J. E.....	Twin Bluffs.	Knapton, W. E....	Downing.
Jeffery, H. B.....	Menomonee Falls.	Kneeland, Peter ..	Windsor.
Jelinek, Benjamin..	Milwaukee,	Kneipp, William ..	Weyauwega.
	935 Feutonia Ave.	Knoke, Hugo.....	Readfield.
Jens, Otto A.....	Waukesha.	Knospe, Chas. G....	Alma.
Jensen, Peter.....	Argyle.	Knudsen, Henry....	Mt. Horen.
Jerde, Alfred O....	Deer Park.	Knutsen, Ed. A....	Manitowoc.
Jerde, Perry S....	Deronda.	Knuteson, E. L....	Wautoma.
Jochman, Peter....	Greenville.	Koemich, Ed.....	Kewaunee, R. 2.
Johannes, Albert ..	Two Rivers, R. 2.	Koenecke, Ed. H..	Reedsburg.
Johnson, Billie ..	Strongs Prairie.	Koenigs, Phillip ..	Fond du Lac.
Johnson, E. T.....	Soldiers Grove.	Koib, Ed.....	Cleveland, R. 2.
Johnson, C. G.....	Welcome.	Koll, C. A.....	Eau Claire.
Johnson, J. E.....	Ferryville.	Koltes, Jos. F....	Dane.
Johnson, L. M....	Ashland.	Konz, John, Sr....	Fairchild.
Johnson, Sam.....	Westfield.	Koss, Otto W.....	Medina.
Johnson, Frank R..	Appleton, R. 6.	Kramer, Henry F....	Bloomer.
Johnston, Oney.....	Appleton.	Kressin, Gustav R..	Cedarburg.
Joice, George.....	Waterloo.	Kroeger, B. C.....	Milwaukee.
Jones, Albert.....	Dousman.		403 1st Ave.
Jones, C. A.....	Iron River.	Krofta, Rudolph ..	Kewaunee, R. 2.
Jones, E. F.....	Sun Prairie.	Krueger, Alexander.	Watertown, R. 2.
Jones, John G....	Beaver Dam.	Krueger, H. E.....	Beaver Dam.
Jones, O. R.....	Beaver Dam.	Kruschke, Geo. H..	New Richmond.
Jones, R. G.....	Columbus.	Kruse, William.....	Whitewater, R. 4.

Membership List, 1909.

xvii

MEMBERSHIP, 1909.—Continued.

Names.	Post-Office Address.	Names.	Post-Office Address.
Kuehn, Chas. A.....	Brandon.	McConnell, Oren ...	McFarland.
Kuhlman, Arthur H	Lowell.	McCormick, Fred ..	Fond du Lac.
Kuhiz, Harvey A...	Waukesha.	McCoy, Geo. L.....	Evansville.
Kundert, Wm.....	Monroe.	McDermid, J. A.....	Eau Claire.
Kunkel, Arthur	Manawa.	McDonald, James P.	Sparta.
Kurtze, Otto C.....	West Allis.	McDowell, David P.	Packwaukeee.
Lachmund, Robert..	Sauk City.	McElroy, W. H.....	Pardeeville.
Landgraaf, Henry ..	Endeavor.	McGeachie, E. P....	Winnebago, Ill.
Larsen, A. C.....	Madison.	McGinnis, Chas.	Baraboo.
Larson, Albert	330 W. Wash. Ave.	McIntyre, Ivan	Ft. Atkinson.
Larson, Chas. L.....	Madison, R. 1.	McLean, Donald ...	Denver, Colo.,
Larson, Eli	Brown City, Mich.	McLeod, H. S.....	704 Equitable Bk.
Larson, J. M.....	Sawyer.	McMillan, H. N.....	Sturgeon Bay.
Larson, Lewis	Wautoma.	McMillen, Carl	Medford.
Larson, LeRoy	Madison, R. 1.	McMillen, R. A.....	Endeavor, R. 1.
Lathers, Chas. F.....	Iola.	McNown, J. H.....	Maunston.
Latta, F. L.....	Beloit.	Mack, Warren	Whitewater.
Lawrence, F. W.....	Clinton Jct.	Maeder, J. W.....	Oregon.
Lawrence, W. J.....	Bangor.	Mahoney, David	Juneau.
Lawson, W. A.....	DeSoto.	Mahr, Henry	Caledonia.
Lawton, A. R.....	Rosendale.	Mandt, Lawrence	Sun Prairie.
Lebeis, F. J.....	Viola.	Marken, Otis A.....	Valders.
Ledger, David	Bloomer, R. 5.	Marken, Richard L.	Valders.
Lee, E. W.....	Lake Geneva.	Markey, W. E.....	Madison.
Lee, L.....	Granton.	Markham, F. C.....	Independence.
Lee, N. A.....	Leon.	Marshall, A. C.....	Omo.
Lee, Oliver	Deerfield.	Marshall, W. S.....	Delton.
Lee, P. A. G.....	Klevenville.	Marston, Albert	Beloit, R. 30.
Lee, Royal D.....	Deerfield.	Marston, Roy C.....	Beloit.
Lee, Severt A.....	Arkdale.	Martin, Arthur W.	River Falls.
Lehmann, Theo.	Deerfield.	Martiny, L. P.....	Chippewa Falls.
Leinke, Albert	Watertown.	Marty, Matthias	Monticello.
Leonard, M. J.....	Clintonsville.	Mathews, Lee G.....	Brandon.
Leonard, Wm. R.....	Plymouth.	Mathews, Milton D.	Helenville, R. 1.
Letts, E. F.....	Jefferson.	Mathis, Adolph	Lansing, Ia., R. 1.
Leverich, J. W.....	Appleton.	Matthys, Walter	Barron.
Lewis, E. H.....	Sparta.	Mattison, Thomas..	Blair.
Lewis, Lester M.....	Whitewater.	Mau, H. G.....	Brodhead.
Lewis, Lloyd	Monticello R. 1.	Maug, Arthur J.....	Ripon.
Lewison, Thomas ..	Stevens Point.	Mayo, John H., Jr.	Eau Claire.
Ley, John P.....	Viroqua.	Meacham, C.....	Downing.
Ley, Nicholas	Doñaeville.	Mead, R. E.....	New Lisbon.
Liebe, John H.....	Doñaeville.	Meekin, H. W.....	Fond du Lac.
Lindas, Theo. A.....	Grand Rapids, R. 7.	Meier, E. F.....	Eden, R. 33.
Lindberg, Clint H.	Marshall.	Melby, Dytinus ...	Spooner.
Lindemer, Geo. H.	Dresser Jct.	Merkel, Henry	Appleton, R. 3.
Linse, Chas.....	Juneau, R. 2.	Merrill, W. M.....	Taylor.
Linton, Gilbert A...	La Crosse.	Messerschmidt, Sam	Flat Rock, Ohio.
Livingston, E. C.....	Ft. Atkinson.	Messner, Edwin F..	Oakfield.
Lloyd, Evan B.....	Randolph.	Meurer, Paul	Genoa Jct.
Loewe, Arthur P.....	Cambria.	Meyer, Alfred J.....	Oakwood, R. 13.
Logan, Ralph G.....	Milwaukee, R. 8.	Meyer, A. H.....	Grafton.
Longley, H. N.....	New Palestine, Ind	Meyer, A. J.....	Howell, Mich., R. 7.
Lord, Karl W.....	Dousman.	Meyer, Wm.....	Ellsworth, Minn.
Lowell, Lloyd S.....	Richland Center.	Michels, Henry	Malone.
Luebke, H. W.....	Sharon.	Michels, Math.....	Peebles..
Luntscher, Irvin ..	Watertown, R. 1.	Mickelson, Thomas.	Deerfield.
Lunde, Gunder.....	Plain.	Mielke, F. L.....	Windsor.
Lunde, K. I.....	Stoughton.	Mielke, J. E.....	Basco.
Lythjohan, Carl ...	Edgerton.	Mihills, D. R.....	Fond du Lac.
MacLean, George ...	Cottage Grove.	Mihills, G. N.....	Fond du Lac.
MacVannel, A. P.....	Madison, R. 6.	Milkee, George E...	Newbury.
McAdam, C.....	St. Marys Ont.,	Miller, A. H.....	Waupun.
McCarthy, Geo.....	Canada.	Miller, A. J.....	Milltown.
McCauley, Rex	Wausau.	Miller, Geo. C.....	Milwaukee,
McClurg, Walter	Fredonia.	Miller, H. C.....	232 Grove St.
McConnell, F. J.....	Osseo.	Miller, Louis A.....	Allenville.
	Viroqua.	Mills, Roscoe C.....	Sparta.
	Darlington.	Miritz, O. F.....	Appleton, R. 2.
		Mistelet, Wm.....	Fond du Lac.
			Kendall.

MEMBERSHIP, 1909.—Continued.

Names.	Post-Office Address.	Names.	Post-Office Address.
Mitchell, Dean	Brookfield.	Ohman, Alfred	Deerfield.
Mitchell, Edw. H....	Delavan.	Ohman, S. S.	Deerfield.
Mitchell, Geo.	Cottage Grove.	Ohnstad, K. O.	Stoughton.
Mitchell, J. T.	Cottage Grove.	Oleson, James P.	Ripon.
Mitwede, Henry	Waukesha.	Oliver, C. S.	Bau Claire.
Moen, Gilbert T.	Eleva.	Olsen, Clarence	Westby.
Moen, Herman	Cambridge.	Olson, Gilbert C.	Westby.
Montague, C. R.	No. Prairie.	Olson, Nels E.	Iola.
Moore, Harry G.	McFarland.	Oltery, Henry	Fond du Lac.
Moore, Henry G.	Mauston.	Oosterhuis, A. C.	Sheboygan Falls.
Moore, R. A.	Madison.	Osterday, E. G.	Stockton, Ill.
Morgan, Chas.	Albany.	Otis, Frank D.	Madison.
Morgan, Mrs. H. H.	Madison.		814 W. Johnson St.
	60 Langdon St.	Orth, A. F.	Muscoda.
Morris, Geo. C.	Madison.	Orvis, L. C.	Salem.
	722 W. Johnson.	Otterroit, Henry ...	Chetek, R. 1.
Morris, Leslie D.	Waukesha.	Owen, Thos. M.	Portage.
Morrissey, J. H.	Arena.	Owens, H. C.	Fox Lake, R. 2.
Morse, W. A.	Camden, N. Y.		
Moseley, A. G.	Cataract.	Pabst, Fred	Oconomowoc.
Moseley, H. B.	Berott.	Paddock, Alvin D.	Salem.
Mower, H. Payson.	Wauwatosa.	Padge, G. F.	Berlin.
Muehleisen, G.	Tell.	Palrey, John	Omro.
Mueller, Edw. O.	Appleton.	Palmer, Levi	Verona.
Mueller, Math. J.	Urbana, Ill.	Parsen, Gustav A.	Wausau.
	Care Exp. Sta.	Parrott, Alfred	Endeavor.
Mueller, Walter E.	La Crosse.	Patrick, Wm.	Waupun.
	625 Cass St.	Patterson, Harley ..	Cottage Grove.
Mulder, B. W.	Midway.	Patterson, J. L.	Glen Haven.
Myrick, M. O.	Bristol.	Paulson, H. E.	Hollandale.
		Paulson, J. E.	Manitowoc.
Nace, Franklin	Iola.	Paulson, P. A.	Hudson.
Nace, Jacob	Itley.	Pearson, Clarence ..	LaValle, R. 4.
Nagle, Lee	Bridgeport.	Peck, Edward	Egerton.
Napier, J. M.	Madison.	Pederson, Cornelius ..	Cato.
Napier, Paul K.	Kendall.	Pederson, Peter	Eleva, R. 3.
Nau, Kay H.	Franksville.	Peebles, E. C.	Peebles.
Nedgwood, R. E.	Sauwano.	Peebles, John	Oconomowoc, R. 23.
Neuen, Jac.	De Forest.	Peebles, S. S.	Peebles.
Nelson, Carl	Greenwood.	Peik, Arthur	Chilton.
Nelson, Emil	River Falls.	Peik, Edmund	Egerton, Care
Nelson, Martin	Milton.		Emery Farm.
Nelson, Nels J.	River Falls.	Perry, Will H.	Gratiot.
Nelson, Osah	La Crosse.	Persen, Alfred	Bryant.
Nelson, Wm.	Milltown.	Peters, Ezra	Sharon.
Neproud, Nels O.	Coon Valley.	Peterson, August ..	Stanton.
Neuberger, Wm. F.	Reeseville.	Peterson, Conrad T. ..	Grantsburg.
Neystrom, Arne	Maiden Rock.	Peterson, Enl.	Amery, R. 4.
Nicolaus, Chas. A.	Waukesha.	Peterson, Henry N.	New Holstein.
Nicolaus, D. C.	East Troy.	Peterson, James ...	Pine River.
Nicolas, Harry	Stoughton.	Peterson, John H.	Cashton.
Niemann, Walter	Hamburg, R. 1.	Peterson Perry O.	Amherst, R. 2.
Nies, Peter	Greenleaf.	Peterson, Peter	Walworth.
Nordlie, C. K.	Rockdale.	Peterson, William ..	Curtiss, R. 2.
Norgord, C. P.	Madison.	Peters, John	Madison, R. 7.
Norman, Frank	Helenville.	Petrie, Merton E.	Elkhorn.
Norrbohm, C. G.	Eland, R. 1.	Phillips, Jesse	Elizabeth, Ill.
Norsman, Jerome O.	Morrisonville.	Pierce, Henry	Milton Junction.
Nortrup, H. R.	Chicago, Ill.	Pierner, Fred	No. Milwaukee.
	687 Winthrop Ave.	Pierner, John W.	Thiensville.
Northrup, Jesse	Waupun.	Pierstorff, Henry M.	Madison.
Northway, Morris J.	Kenosha.	Pinkerton, Altai J.	Wauapa.
Nourse, Glen	Sextonville.	Piper, Harry	Sharon.
Nuttleman, Alfred.	West Salem.	Pirner, Fred	Sugar Bush, R. 23.
Nuttleman, Fred.	West Salem.	Pluntz, Guy	Alma.
		Pope, Roy W.	Sun Prairie.
Ochsner, A. C.	Plain.	Popp, Arthur	Jefferson, R. 2.
O'Connell, Jas.	Hartford.	Porter, J. K. P.	Evansville.
O'Connor, Edw. F.	Lodi, R. 1.	Porter, L. W.	Evansville.
Oestreich, L. J.	Kewaunee.	Porter, W. L.	Fond du Lac.
Ogle, James L.	Waldo.	Post, H. L.	Sextonville.

MEMBERSHIP, 1909.—Continued.

Names.	Post-Office Address.	Names.	Post-Office Address.
Poston, R. H.	Duluth, Minn. Care Duluth Stock Farm.	Rosholt, Jacob A.	Scandinavia.
Poulter, C. J.	Cumberland.	Royston, Thomas	Mazomanie.
Poulter, Charley ...	Cumberland.	Ruhrmann, B. J.	Cross Plains.
Precourt, L. A.	Plover, R. 1.	Runde, Aloysius ...	Cuba City.
Preston, Wm. N.	Juda.	Runde, Aug.	Sinsinawa.
Price, Fred	Bristol, R. 31.	Runde, Martin C.	Cuba City.
Pritzl, John A.	Cato.	Rundell, Dale E.	Livingston.
Puls, John	Hartford, R. 4.	Rusch, E. W.	Reedsburg.
Purinton, C. G.	Monticello.	Rusink, H. G.	Waupun.
Raum, Peter	Ferryville, R. 2.	Ruskell, L. E.	Belmont.
Radermacher, John.	Middleton.	Rust, Shirley H.	Mukwonago.
Rafferty, Agnes	Windsor.	Ruste, C. O.	Blue Mounds.
Raichle, Carl	Galesville.	Ryan, Gerald	Sun Prairie.
Raisler, Theo.	Welcome.	Ryan, George	Brookfield, R. 12.
Raltzman, A. L.	Reedsburg.	Ryan, Malachi	So. Kaukauna.
Randall, S. M.	Waupun.	Sackett, Clyde	Cumberland.
Rasey, Edwin L.	Beloit, R. 27.	Salzman, Ed.	Kiel.
Rasmussen, Fred ...	Neenah, R. 11.	Sandman, W. D.	Holmen.
Rather, Armand P. .	Peebles, R. 37.	Sargent, Roy E.	Warren, Ill.
Rauchenstein, John.	Rice Lake.	Savage, A. F.	Quincy, Florida.
Ray, W. F.	Kewaunee, R. 1.	Schaefer, Erwin S. .	Black Hawk.
Rector, Carroll V. .	Grand Rapids.	Schaefer, Henry G. .	Glenbeulah.
Rehbein, A. E.	St. Croix Falls, R. 1.	Schaefer, R. J.	Appleton.
Rein, Robert	Cleveland, R. 1.	Schaefer, Chas. H. .	Waukesha, R. 7.
Reindahl, A. K.	Madison.	Schiller, Claude E. .	Beaver Dam.
Reinen, Andrew	Sun Prairie.	Schley, E. G.	Waukesha.
Reinhardt, W. H. .	Wausau.	Schmit, Albert	Appleton.
Renak, Edward	Racine, R. 2.	Schmit, A. W.	Appleton.
Renk, Wm. F.	Sun Prairie.	Schmit, Geo.	Greenville.
Rex, Edgar	Burnett.	Schmit, Wm. F.	Appleton.
Rheingans, Ernest C	Baraboo, 401 8th St.	Schmitz, Edw. H. .	Lone Rock.
Rhiner, Albert	Riley.	Schmitz, Hubert ...	Lone Rock.
Rhiner, Caspar	Riley.	Schottler, C. J.	So. Germantown.
Rich, O. S.	Baraboo.	Schneider, G. P.	Walsh.
Rich, W. V.	Baraboo.	Schroeder, Chris ...	Racine.
Richardson, G. J. .	Spring Grove, Ill.	Schroeder, F. C.	Hartland, box 148.
Riederer, Blasius ...	Cato.	Schroeder, H. F.	Jim Falls.
Riek, Anthony	Plain.	Schroeder, Robert ...	Morrisonville.
Klemon, Elmer	Ripon.	Schuette, H. W.	Reedsburg.
Roberts, Wm. J.	Burlington.	Schulte, Peter J.	Cleveland.
Roberts, A. C.	Pardeeville.	Schultz, Nelson F. .	West Bend, R. 3.
Roberts, F. W.	Woodworth.	Schultz, Walter W. .	Neillsville.
Roberts, Jack	Waukesha.	Schumann, Hugo ...	Beaver Dam.
Roberts, Wm. E.	Randolph.	Schwandt, Wm.	Stanton.
Robinson, A. S.	Lake Geneva.	Schwantes, E. F.	Coalburg, Ohio.
Robinson, Earl P. .	Markesan.	Schwartz, J. A.	Troy Center.
Robson, Melvin	Spring Green.	Sehion, Cornelius .	Westby.
Rockhill, Wm. E. .	Waupun.	Sehion, Tennis	Westby.
Rodewald, W. C.	Baraboo.	Semb, T. A.	Madison, R. 6.
Roderick, Lee M.	Juda.	Sette, O. E.	Juneau.
Rodger, Almon	Endeavor.	Shannon, W. J.	Oconomowoc.
Rodger, Ray	Endeavor.	Sharpee, Carl	Columbus.
Roethel, Herman ...	Kiel.	Sharpee, Endre A. .	Rio.
Roffers, John H.	Green Bay.	Sharpee, J. A.	Rio.
Rolfson, Clarence E.	Waterford, R. 25.	Sharpee, P. A.	Morrisonville.
Rood, Henry	South Wayne.	Sheen, Clarence J. .	Trevor.
Rood, Minnick	South Wayne.	Sheen, W. J.	Trevor.
Root, Alvin	Fond du Lac.	Sheldon, Ben. F.	Brandon.
Rorer, Wm. A.	Mt. Gretna, Pa.	Shepard, R. A.	Columbus.
Rorge, A. J.	Stoughton.	Showers, M. W.	Mazomanie.
Rorge, A. O.	Stoughton.	Sias, Benj.	Sparta.
Rosenow, Arthur ...	Alma.	Siegert, A.	Junction City.
Rosenow, Arthur ...	Oconomowoc.	Siepert, F. W.	Chippewa Falls.
Rosenow, H. E.	Oconomowoc.	Siggelkow, M. E.	Baraboo.
Rosenow, H. G.	Waumandee.	Silver, C. R.	Belleville.
Rosenow, L. J.	Waumandee.	Simonson, S. K.	Deerfield.
Rosenow, Wm. F.	Waumandee.	Sims, O. F.	Melrose.
		Simmons, Will	Cuba.
		Skare, Albert	McFarland.
		Skewes, Edwin B. .	Union Grove.

MEMBERSHIP, 1909.—Continued.

Names.	Post-Office Address.	Names.	Post-Office Address.
Sleep, S. S.	Hartland, R. 21.	TeSelle, Clarence J..	Sheboygan Falls.
Smedsrud, M. C.	Hollandale.	Thacher, Ed. F.	Zenda.
Smiley, Jas. B.	Albany.	Thacher, Louis E.	Zenda.
Smith, C. A.	Amherst.	Thieleke, Ed. A.	Kiel, R. 2.
Smith, Elmer J.	Brandon.	Thielke, Emil	Madison, R. 6.
Smith, Fred	River Falls.	Thiers, L. M.	Kenosha.
Smith, Harvey G.	Brandon.	Thom, J. A.	Madison, R. 30.
Smith, Jesse	Loyal.	Thoma, Ernest	Sugar Bush.
Smith, J. G.	Farmington, Minn.	Thomas, Roy E.	Dodgeville.
Smith, L. E.	Beloit, R. 3.	Thompson, Adolph.	Black River Falls.
Smith, R. M.	Elroy.	Thompson, A. L.	Blair.
Smith, Russell	Crystal Lake, Ill.	Thompson, Alfred ..	Delavan.
Smith, Samuel A.	Oakfield.	Thompson, G. G.	Blanchardville.
Smith, Seymour	Oshkosh.	Thompson, Melvin.	Mt. Horeb.
Smithback, Marvin.	Cambridge.	Thompson, R. K.	Bottinaw, N. D.
Smithwick, M. W.	Kewaunee.	Thompson, Theo.	Curtiss.
Snell, Earl D.	Downing.	Thompson, T., Jr.	Wadena, Iowa.
Snyder, Clyde L.	Footville.	Thorp, Eugene	Monroe.
Snyder, Elmer G.	Clinron.	Thorpe, J. R.	Tavera.
Snyder, R. B.	Clinton.	Thorstad, Harlan ..	Deerfield.
Solem, Edward	Wonewooc.	Thorstad, N. H.	Deerfield.
Solberg, Louis	Viroqua.	Tice, Ray W.	Redgranite.
Sorein, Erick	West Prairie.	Tice, Roy	Redgranite.
Sorenson, Camille ..	Sturgeon Bay.	Tjugum, E. E.	Sun Prairie.
Sorensen, Hilbert ..	Marinette.	Tochterman, C., Jr.	Monroe.
Spartz, N. A.	Union Grove.	Toepfer, Otto R.	Madison, R. 7.
Spencer, Earl H.	Waupaca, R. 3.	Tomkins, O. Scott.	Barab Lake.
Spencer, Hardy	Baraboo.	Toole, W. A.	Baraboo.
Staley, John N.	Hillsboro.	Treleven, Guy T.	Omaro.
Stauchfield, S. C.	Fond du Lac.	Trewartha, Edw. J.	Hazel Green.
Stauffacher, A. J.	Monroe, R. 6.	Trumpy, Fred.	Clarno.
Steenland, August.	Hollandale.	Tschudy, Benj. O.	Monroe, R. 5.
Stegne, Chris.	Viroqua.	Tubbs, Herbert	Seymour.
Steidtman, Edwin.	Merrimac.	Turgasen, J. H.	Richland Center.
Steiner, W. H.	Brownsville.	Tyler, James G.	Valders.
Steinhoff, W. J.	Platteville.	Uhlin, Albin	Clayton, R. 1.
Steusby, Anton	Cottage Grove.	Uhlin, Frank E.	Clayton, R. 1.
Steusby, Edw. P.	Cottage Grove.	Uhrenoldt, Jens	Leonard.
Stevens, Ernest	Eau Galle.	Ulrich, Erwin C.	Horicon.
Stevenson, Carl	Soldiers Grove.	Umlauf, Rudolph.	Dorchester.
Stevenson, J. W.	Winnebago, Minn.	Unger, Edw.	No. Milwaukee, R. 9.
Stewart, Blaine G.	Antigo.	Upton, Harold F.	Jim Falls.
Stewart, Geo. L.	Lodi.	Usher, Earl	South Wayne.
Stewart, J. H.	Wales.	Usher, J. M.	South Wayne.
Stienstra, S. J.	Svedeborg, Mo.	Utgaard, Peter W.	Cylon.
Stivarius, Geo. A.	Fennimore.	Van Buskirk, G. W.	Plover.
Stone, A. L.	Madison.	Van Loon, John	La Crosse.
Stone, Riley	Reedsburg.	Veium, Tollef	Stoughton, R. 3.
Straka, E. E.	Kellnersville.	Vine, Callice H.	Marquette.
Straug, Frank	Lone Rock.	Voigt, Alvin	Oconomowoc, R. 26.
Strommen, Anton A.	Blanchardville.	Vonder Ohe, Wm.	Reedsburg.
Strommen, Geo. K.	Cambridge.	Von Lanyi, Oscar.	St. Louis, Mo., 3420 Pine St.
Stromstad, P. L.	Coon Valley.	Wachtl, John	Monroe.
Stroup, Fred P.	Fond du Lac.	Wagner, Arthur L.	Haven.
Strowig, Wm. A.	Cleveland.	Wagner, Raymond.	Stevens Point.
Stubber, John H.	Cochrane.	Wahler, Adolph	Woodford.
Stuesser, Eugene	Richfield.	Wait, S. R.	Oshkosh.
Suhr, Adolph A.	Cochrane.	Walker, Ray C.	Plainville.
Suhr, Otto A.	Cochrane.	Wall, Floyd	Weyauwega.
Sullivan, Jas. A.	Grimms.	Ward, Chas. E.	Ft. Atkinson.
Swan, Earling	Milwaukee, Station B, R. 6.	Ward, Harold L.	Ft. Atkinson.
Swan, L. W.	Mukwonago.	Ward, Harold	Brodhead.
Swartz, Peter C.	Waukesha.	Ward, Robert W.	Ft. Atkinson, R. 1.
Swenson, O. S.	Nelsonville.	Warmington, Prent.	Honey Creek.
Swerig, Carl	Stoughton.	Warzynakoski, A.	Oakwood R. 18.
Taege, John	Appleton, R. 4.	Wayne, Joseph	Boscobel.
Tanner, A. V.	Omaro, R. 24.	Wehrwein, Walter.	Manitowoc, R. 2.
Tauscher Bros.	Monroe.		
Tempero, Roy J.	Menomonee Falls.		
Tenney, Horatio	Livingston.		

MEMBERSHIP, 1909.—Continued.

Names.	Post-Office Address.	Names.	Post-Office Address.
Weir, W. W.....	Mukwonago, R. 39.	Winge, Wm.	Wild Rose.
Weirich, Martin J..	Baraboo.	Winnebago County	Winneconne.
Weish, S. L.....	Tavera.	Agr. School	Reedsburg.
Wernick, Wm. H....	DeForest.	Wischhoff, Edwin ..	Middleton.
West, H. P.....	Ripon.	Wittenberg, E. F....	Jackson.
West, W. B.....	Neillsville.	Woldt, Hugo	Oshkosh, R. 4.
Wetzel, Alvin	Brookfield, R. 12.	Wood, Calvin D.....	Madison, R. 6.
Wetzel, Henry	Brookfield.	Wrabetz, Frank	Eau Claire.
Whelan, John V.....	Mondovi.	Wright, Geo. T.....	Whitewater.
White, Arthur	Rockford, Ill., 503 Church St.	Wright, John	Amherst Jct.
White, F. G.....	Oregon.	Wroldstad, Alfred M.	Grafton.
Whitehead, H. W....	Leon.	Wulff, Fred	Grafton.
Whittaker, H. E....	Fond du Lac.	Wulff, William	Haven.
Wichern, L. M.....	Baraboo.	Wunsch, Hugo E.....	Seymour.
Wied, Edward	Waupaca.	Wussow, Chas.	Eau Claire.
Wiegand, Otto R....	Cleveland.	Wyman, A. E.....	Hortonville.
Wigen, Andrew	Quarry.	Zahrt, F. H.....	Madison.
Wilkinson, Edw. ...	Wilton.	Zerbel, L. R.....	Jackson.
Wilkowske, Hugo ..	Mishicot.	Ziemer, Joseph	Jackson.
Williams, Arthur R.	Waukesha.	Ziemer, Paul	Brookfield.
Willmarth, E. E.....	Sun Prairie.	Zillmer, Wm. C.....	

HONORARY MEMBERS.

Ames, W. L.....	Oregon	McKerrow, Supt. Geo.....	Pewaukee
Babcock, Dr. S. M.....	Madison	Newman, Geo. N.....	Ladysmith
Cary, Prof. C. P.....	Madison	Philips, A. J.....	West Salem
Emery, Prof. J. Q.....	Madison	Renk, Katharine.....	Sun Prairie
Hays, W. M., Ass't Secretary Agr.....	Washington, D. C.	Russell, Dr. H. L.....	Madison
Henry, Dr. W. A.....	Madison	Schauer, Hon. A. G....	Kewaunee
Karel, Hon. A. L.....	Kewaunee	Toole, William	Baraboo
Lehmann, Mrs. Eva.....	Woodland	True, Hon. John M.....	Madison
McCormick, G. W.....	Menominee, Mich.	Utsunomiya, S. T.	Sapporo, Hokkaido, Japan

MEMBERSHIP—1909.

[Arranged by counties.]

ADAMS COUNTY.

Johnson, Billie.....Strongs Prairie
 Lee, Royal D.....Arkdale
 Rodger, Almon.....Endeavor
 Rodger, Ray.....Endeavor
 Walker, Ray C.....Plainville

ASHLAND COUNTY.

Delwiche, E. J.....Ashland
 Johnson, L. M.....Ashland

BARRON COUNTY.

Allen, E. G.....Barron
 Bartlett, Ray.....Barron
 Chrislaw, A. M.....Rice Lake
 Howe, John.....Comstock
 Hustad, K. E.....Rice Lake
 Hustad, Milton.....Rice Lake
 Matthys, Walter.....Barron
 Otterholt, Henry.....Chetek, R. 1
 Poulter, C. J.....Cumberland
 Poulter, Charley.....Cumberland
 Rauchenstein, John.....Rice Lake
 Sackett, Clyde.....Cumberland

BAYFIELD COUNTY.

Daly, Richard C.....Washburn
 Hirsch, B.....Washburn, R. 1
 Jones, C. A.....Iron River
 Kinstler, Clarence L.....Washburn

BROWN COUNTY.

Anderson, Alfred.....Denmark
 Nies, Peter.....Greenleaf
 Roffers, John H.....Green Bay

BUFFALO COUNTY.

Arms, Edward.....Fountain City
 Bilderbach, Wm.....Mondovi
 Engel, Geo. H.....Fountain City
 Fetting, Edwin.....Alma
 Florin, Emil J.....Cochrane
 Florin, Henry.....Cochrane
 Joos, Frank B.....Fountain City
 Knospe, Chas. G.....Alma
 Muehleisen, Gottlieb.....Tell

Pluntz, Guy.....Alma
 Rosenow, Arthur.....Alma
 Rosenow, H. G.....Waumandee
 Rosenow, L. J.....Waumandee
 Rosenow, Wm. F.....Waumandee
 Suhr, Adolph A.....Cochrane
 Suhr, Otto A.....Cochrane
 Stuber, John H.....Cochrane
 Whelan, John V.....Mondovi

BURNETT COUNTY.

Peterson, Conrad T.....Grantsburg

CALUMET COUNTY.

Christoph, Theo. F.....Chilton
 Kircher, H. W.....Chilton, R. 3
 Peik, Arthur.....Chilton
 Peterson, Henry N.....New Holstein

CHIPPEWA COUNTY.

Bailey, Alfred B.....Jim Falls
 Bekken, Oscar.....Bloomer
 Christiansen, W. O.....Chippewa Falls, R. 6
 Finsnes, A. I.....Chippewa Falls
 Guptill, L. R.....New Auburn
 Harrison, Geo.....Chippewa Falls, in care
 of State Farm
 King, William.....Jim Falls
 Kramer, Henry F.....Bloomer
 Lebeis, F. J.....Bloomer, R. 5
 Martiny, L. P.....Chippewa Falls
 Schroeder, Herman F.....Jim Falls
 Siepert, F. W.....Chippewa Falls
 Upton, Harold F.....Jim Falls

CLARK COUNTY.

Beach, Glenn H.....Loyal
 Daellenbach, Chris.....Abbotsford
 Einfeldt, Albert.....Greenwood
 Huckstead, A. A.....Neillsville
 Hughes, Jas.....Neillsville, R. 1
 Ives, L. W.....Granton
 Lee, E. W.....Granton
 Nelson, Carl.....Greenwood
 Peterson, William.....Curtiss
 Schultz, Walter W.....Neillsville
 Smith, Jesse.....Loyal
 Thompson, Theo.....Curtiss
 Umlauf, Rudolph.....Dorchester
 West, W. B.....Neillsville

MEMBERSHIP, 1909.—Continued.

COLUMBIA COUNTY.

Anaoker, Bernhard.....Portage
 Anderson, Adolph W.....Portage
 Carnross, J. E.....Okee
 Chipman, W. R.....Morrisonville
 Chrisler, Harley.....Lodi
 Curtis, Ray.....Poynette
 Dalton, Ernest.....Pardeeville, R. 1
 Dalton, Roy.....Pardeeville, R. 1
 Ellickson, A. C.....Arlington
 Gloeckler, Theo.....Portage
 Grover, Albert.....Columbus, R. 6
 Grove, Christian.....Columbus, R. 6
 Jones, R. G.....Columbus
 Livingston, E. C.....Randolph
 Lloyd, Evan B.....Cambria
 McElroy, W. H.....Pardeeville
 O'Connor, Edw. F.....Lodi, R. 1
 Owen, Thos. M.....Portage
 Roberts, A. C.....Pardeeville
 Sharpee, Carl.....Columbus
 Sharpee, Andre A.....Rio
 Sharpee, J. A.....Rio
 Shepard, R. A.....Columbus
 Stewart, Geo. L.....Lodi

CRAWFORD COUNTY.

Bannen, R. E.....Boscobel
 Brodt, Clarence D.....Bridgeport
 Dowig, Nell.....Soldiers Grove
 Hjelle, Ole K.....Soldiers Grove
 Johnson, E. T.....Soldiers Grove
 Johnson, J. E.....Ferryville
 Lawrence, W. J.....DeSoto
 Nagle, Lee.....Bridgeport
 Raam, Peter.....Ferryville, R. 2
 Stevenson, Carl.....Soldiers Grove

DANE COUNTY.

Accola, John.....Madison
 Anderson, H. C.....Cambridge
 Angvik, Lars.....Cottage Grove
 Anthony, D. C.....Oregon
 Aslaksen, Alfred.....Mt. Horeb, R. 4
 Beck, J. D.....Madison, 2202 W. Lawn St
 Belda, Wm. F.....De Forest
 Bendickson, I. E.....Cambridge
 Benson, Ed E.....Mt. Horeb, R. 5
 Berge, William.....Cambridge
 Bewick, Wm. M.....Sun Prairie
 Bewick, W. W.....Madison, 824 W
 Johnson St.
 Birkinbine, Frank P.....Sun Prairie
 Birrenkott, Mick T.....Klevenville
 Bollig, F. A.....Black Earth
 Boyce, Charlotte.....Dane
 Brickson, Abram.....McFarland
 Brickson, Andrew.....Cottage Grove
 Brigham, Chas. I.....Blue Mounds
 Britzke, Paul.....London
 Brue, N. H.....De Forest
 Chamberlain, Geo.....Windsor
 Charles, Edw. S.....Madison, 432 Francis St.
 Chase, J. P.....Sun Prairie
 Chatterton, Ray W.....Basco
 Christianson, Andrew.....Deerfield
 Christianson, Irvin.....Deerfield
 Chynoweth, H. W.....Madison
 Clayton, A. W.....Madison

Cobb, Homer A.....Sun Prairie
 Colloday, W. E.....Stoughton
 Daley, E. S.....De Forest
 Daley, Julius.....De Forest
 Daley, O. S.....De Forest
 Daley, S. S.....De Forest
 Danielson, K. O.....Mt. Horeb
 Davidson, W. L.....Verona
 Davison, R. W.....Sun Prairie
 Dean, C. E.....Madison, 503 W. Doty
 Dineen, Michael.....Blue Mounds
 Doerfer, Wm.....Madison, R. 6
 Donahue, Michael J.....Madison, R. F. D.
 Dreger, Emil L.....Madison, R. 7
 Eastman, J. S.....Madison
 Edmundson, Mrs. Ethel F.....Madison
 Egge, John S.....Cambridge
 Eleveliem, O. J.....McFarland
 Eley, T. B.....Madison, R. F. D.
 Elver, E. C.....McFarland
 Erdall, M. N.....Deerfield
 Felland, Geo.....Madison, R. 1
 Ford, J. P.....Mazomanie
 Gay, John.....Madison
 Gillette, Rufus A.....Verona
 Gillies, J. H.....Stoughton
 Goechs, Wm.....Madison, R. 1
 Grady, Geo.....Oregon
 Grande, L. S.....Morrisonville
 Hanna, O. O.....Mt. Horeb
 Harrington, C. E.....Verona, P. 1
 Heineck, W. E.....Madison, 243 W.
 Gilman St.
 Henning, Walter.....Mazomanie
 Hill, Otto C.....Mt. Horeb
 Holmen, O.....Belleville
 Holscher, A. C.....Cottage Grove
 Holzbuter, Walter.....Marshall
 Hopkins, Andrew W.....Madison
 Hopkins, B. F.....Morrisonville
 Hougan, Halvor O.....Stoughton
 Hougan, S. O.....Stoughton
 Howe, T. R.....Sun Prairie
 Jones, E. F.....Sun Prairie
 Kaltenberg, Anthony.....Waukegan
 Kauninger, Gilman F.....Stoughton
 Keenan, Wm. M., Jr.....McFarland
 Kendall, Geo. W.....Sun Prairie
 Kittlerm, Knut.....Mt. Horeb
 Kneeland, Peter.....Windsor
 Knudsen, Henry.....Mt. Horeb
 Koltes, Jos. F.....Dane
 Larsen, A. C.....Madison, 330 W.
 Wash. Ave.
 Larson, Albert.....Madison, P. 1
 Larson, Lewis.....Madison, R. 1
 Lee, N. A.....Deerfield
 Lee, Oliver.....Klevenville
 Lee, P. A. G.....Deerfield
 Lee, Severt A.....Deerfield
 Lindas, Theo. A.....Marshall
 Lunde, Gunder.....Stoughton
 Lunde, K. I.....Edgerton
 Lythiohan, Carl.....Cottage Grove
 MacLean, George.....Madison, R. 6
 Maeder, J. W.....Oregon
 Mandt, Lawrence.....Sun Prairie
 Markey, W. E.....Madison
 McConnell, Oren.....McFarland
 Michelson, Thomas.....Deerfield
 Mielke, F. L.....Windsor
 Mielke, J. E.....Basco
 Mitchell, Geo.....Cottage Grove
 Mitchell, J. T.....Cottage Grove
 Moen, Herman.....Cambridge
 Moore, Harry G.....McFarland

MEMBERSHIP, 1909.—Continued.

Moore, R. A. Madison
 Morgan, Mrs. H. H. Madison, 10
 Langdon St.
 Morris, Geo. C. Madison, 722 W.
 Johnson St.
 Naef, Jacob Riley
 Napier, J. M. Madison
 Nellen, Jac. De Forest
 Nichols, Harry Stoughton
 Nordlie, C. K. Rockdale
 Norgord, C. P. Madison
 Norsman, Jerome O. Morrisonville
 Ohman, Alfred Deerfield
 Ohman, S. S. Deerfield
 Ohnstad, K. O. Stoughton
 Otis, Frank D. Madison, 814 W. Johnson
 Palmer, Levi Verona
 Patterson, Harley Cottage Grove
 Peters, John Madison
 Pieperstoff, Henry H. Madison
 Pope, Roy W. Sun Prairie
 Radermacher, John Middleton
 Raftery, Agnes Windsor
 Reindahl, A. K. Madison
 Reinen, Andrew Sun Prairie
 Renk, William F. Sun Prairie
 Rhiner, Albert Riley
 Rhiner, Caspar Riley
 Rorge, A. J. Stoughton
 Rorge, A. O. Stoughton
 Royston, Thomas Mazomanie
 Ruhrmann, B. J. Cross Plains
 Ruste, C. O. Blue Mounds
 Ryan, Gerald Sun Prairie
 Schroeder, Robert Morrisonville
 Semb, T. A. Madison, R. 6
 Sharpee, P. A. Morrisonville
 Showers, M. W. Mazomanie
 Silver, C. R. Belleville
 Simonson, S. K. Deerfield
 Skare, Albert McFarland
 Smithback, Marvin Cambridge
 Steusby, Anton Cottage Grove
 Steusby, Edward P. Cottage Grove
 Stone, A. L. Madison
 Strommen, Geo. K. Cambridge
 Swerig, Carl Stoughton
 Thielke, Emil Madison, R. 6
 Thompson, Melvin Mt. Horeb
 Thorstad, Harlan Deerfield
 Thorstad, N. H. Deerfield
 Tjugum, E. E. Sun Prairie
 Toepfer, Otto R. Madison, R. 7
 Veium, Tollef Stoughton, R. 3
 Wernick, Wm. H. De Forest
 White, F. G. Oregon
 Willmarth, E. E. Sun Prairie
 Wittenburg, E. F. Middleton
 Wrabetz, Frank Madison, R. 6
 Zerbel, L. R. Madison

DODGE COUNTY.

Adams, Lester B. Lowell
 Barnes, Amy B. Waupun
 Barstow, J. E. Randolph
 Beule, E. A. Beaver Dam
 Bohl, Anton Beaver Dam
 Brooks, Ed. J. Watertown
 Brown, Abbott Waterloo
 Bussewitz, Orla J. Juneau
 Bussewitz, Raymond Reeseville
 Craig, Geo. D. Oconomowoc
 Dinks, Arthur Waupun
 Goetsch, A. A. Juneau

Grebe, Fred P. Fox Lake
 Henke, Louis Lowell
 Howitt, Chas. H. Randolph
 Howland, Howard H. Waupun
 Joice, George Waterloo
 Jones, John G. Beaver Dam
 Jones, O. R. Beaver Dam
 Jung, A. E. Randolph
 Klatt, Ernest Beaver Dam
 Krueger, H. E. Beaver Dam
 Kuhlman, Arthur H. Lowell
 Lehmann, Theo. Watertown
 Lindemer, Geo. H. Juneau, R. 2
 Luebke, H. W. Watertown, R. 1
 Mahoney, David Juneau
 Neuberger, Wm. F. Reeseville
 Owens, H. C. Fox Lake, R. 2
 Randall, S. M. Waupun
 Rex, Edgar Burnett
 Roberts, Wm. E. Randolph
 Rockhill, Wm. E. Waupun
 Rusink, H. G. Waupun
 Schiller, Claude E. Beaver Dam
 Schumann, Hugo Beaver Dam
 Sette, O. E. Juneau
 Steiner, W. H. Brownsville
 Ulrich, Erwin C. Horicon

DOOR COUNTY.

Antholt, Chas. Brussels
 Berg, Julius Sturgeon Bay, R. 3
 Bingham, D. E. Sturgeon Bay
 Boucsein, Gust L. Detroit Harbor
 Bowman, Wallace Detroit Harbor
 Buschman, Hugo Forestville
 Delcorps, Louis Sturgeon Bay
 Herrbold, J. W. Sturgeon Bay
 Hoeks, Walter Sturgeon Bay
 Larson, Eli Sawyer
 McLeod, H. S. Sturgeon Bay
 Sorenson, Camille Sturgeon Bay

DUNN COUNTY.

Chase, A. Knapp
 Chrislaw, Geo. O. Menomonie, R. 7
 Gerking, F. J. Elk Mound
 Hanson, Carl H. Elk Mound
 Kent, H. W. Rusk
 Kent, J. S. Rusk
 Knapton, W. E. Downing
 Meacham, C. Downing
 Snell, Earl D. Downing
 Stevens, Ernest Eau Galle

EAU CLAIRE COUNTY.

Allen, Chas. L. Eau Claire
 Burce, Ruth Eau Claire
 Carlson, Axel T. Augusta, R. 4
 Donaldson, H. A. Eau Claire, R. 6
 Faast, Ben F. Eau Claire
 Koll, C. A. Eau Claire
 Konz, John, Sr. Fairchild
 Mayo, John H., Jr. Eau Claire
 McDermid, J. A. Eau Claire
 Oliver, C. S. Eau Claire
 Wright, Geo. T. Eau Claire
 Wyman, A. E. Eau Claire

MEMBERSHIP, 1909.—Continued.

FOND DU LAC COUNTY.

Adams, A. E. Eden
 Adams, Richard F. Campbellsport
 Beilke, Walter Fairwater
 Bonzelet, J. P. Eden
 Briggs, E. T. Fond du Lac, R. 7
 Briggs, Lynn W. Pebbles
 Briggs, J. W. Pebbles
 Bristol, Wm. A. Oakfield
 Costello, Dan. Fond du Lac, R. 5
 Donovan, Frank. Van Dyne
 Fisher, Will J. Fond du Lac
 Gibbard, Peter J. Ripon
 Giebel, Karl. Fond du Lac
 Hargrave, Robt. Ripon
 Hendricks, J. H. Campbellsport
 Hintz, Geo. E. Oakfield, R. 23
 Hintz, Wm. F. Oakfield, R. 23
 Holterman, R. K. Fond du Lac, R. 5
 Hunter, Hobart R. Fond du Lac, 232
 E. 2nd St.
 Kastein, Herman Waupun
 Kitchen, Jos. H. Eldorado
 Koenigs, Phillip. Fond du Lac
 Kuehn, Chas. A. Brandon
 Lawson, W. A. Rosendale
 McCormick, Fred. Fond du Lac
 Mathews, Lee G. Brandon
 Maug, Arthur J. Ripon
 Meekin, H. W. Fond du Lac
 Meier, E. F. Eden, R. 33
 Messner, Edwin F. Oakfield
 Michels, Henry Malone
 Michels, Math. Pebbles
 Mihills, D. R. Fond du Lac
 Mihills, G. N. Fond du Lac
 Miller, A. H. Waupun
 Miritz, O. F. Fond du Lac
 Northrup, Jesse. Waupun
 Oleson, James P. Ripon
 Oltrey, Henry Fond du Lac
 Patric, Wm. Waupun
 Peebles, E. C. Pebbles
 Peebles, S. S. Pebbles
 Porter, W. L. Fond du Lac
 Rafter, Armand P. Pebbles, R. 37
 Riemon, Elmer Ripon
 Root, Alvin Fond du Lac
 Sheldon, Ben F. Brandon
 Smith, Elmer J. Brandon
 Smith, Harvey G. Brandon
 Smith, Samuel A. Oakfield
 Stauchfield, S. C. Fond du Lac
 Stroup, Fred P. Fond du Lac
 West, H. P. Ripon
 Whittaker, H. E. Fond du Lac

FOREST COUNTY.

Grandine, Morton D. No. Crandon

GRANT COUNTY.

Accola, Lawrence. Steuben
 Andrew, Geo. Livingston
 Barron, R. E. Platteville
 Booth, Lester G. Cuba City
 Bryant, Clinton A. Hazel Green
 Bryant, R. J. Hazel Green
 Carmody, Daniel. Mt. Ida
 Carmody, P. J. Mt. Ida
 Cubela, Jos. M. Muscoda

Draves, Henry F. Montfort
 Dieter, Bert. Livingston
 Dieter, Wm. A. Montfort
 Divail, W. F. Montfort
 Frey, E. J. Mt. Hope
 Graham, P. S. Fennimore
 Kaiser, W. Louisburg
 Orth, A. F. Muscoda
 Patterson, J. L. Glen Haven
 Runde, Aloysius. Cuba City
 Runde, Aug. Sinsinawa
 Runde, Martin C. Cuba City
 Rundell, Dale E. Livingston
 Simmons, Will. Cuba
 Steinhoff, W. J. Platteville
 Stivarius, Geo. A. Fennimore
 Tenney, Horatio Livingston
 Trewartha, Edw. J. Hazel Green
 Wayne, Joseph. Boscobel

GREEN COUNTY.

Austin, Elmer E. Brodhead
 Bechtolt, A. B. Browntown
 Bechtolt, J. D. Browntown
 Biglow, L. P. Brooklyn
 Blumer, Ezra, Jr. Monroe
 Collentine, Arthur Monroe
 Cornelius, E. C. Monroe
 Dettwiler, John. Monroe
 Egan, C. E. Monroe
 Grenzow, Jesse H. Juda
 Iverson, C. M. Browntown
 Klassy, Henry C., Jr. Monticello, R. 3
 Kundert, Wm. Monroe
 Lewis, Lester M. Monticello, R. 1
 Marty, Matthias. Monticello
 Mau, H. G. Brodhead
 Morgan, Chas. Albany
 Preston, Wm. N. Juda
 Purinton, C. G. Monticello
 Roderick, Lee M. Juda
 Smiley, Jas. B. Albany
 Stauffacher, A. J. Monroe, R. 6
 Strommen, Anton A. Blanchardville
 Tauscher Bros. Monroe
 Thompson, Gilbert G. Blanchardville
 Thorp, Eugene. Monroe
 Tochterman, C., Jr. Monroe
 Trumpy, Fred. Clarno
 Tschudy, Benj. O. Monroe, R. 5
 Wachti John. Monroe
 Ward, Harold. Brodhead

GREEN LAKE COUNTY.

Block, Albert F. Markesan
 Davies, Elias. Markesan
 Page, G. F. Berlin
 Robinson, Earl P. Markesan
 Vine, Callice H. Marquette

IOWA COUNTY.

Aavang, H. O. Barneveld
 Caldwell, John. Mazomanie
 Chappel, Steve J. Dodgeville
 Davis, Lewellyn. Mineral Point
 Dolplin, Clarence. Cobb
 Farwell, Roy R. Ridgeway
 Fitzsimmons, Ira A. Mineral Point
 Graber, Edward. Mineral Point

MEMBERSHIP, 1909.—Continued.

Graber, Laurence F.....Mineral Point
 Griffith, James.....Ridgeway
 Hanson, Carl O.....Hollandale
 Jones, Tommy O.....Rewey
 Ley, John P.....Dodgeville
 Ley, Nicholas.....Dodgeville
 Morrissey, J. H.....Arena
 Paulson, H. E.....Hollandale
 Smedsrud, Melvin C.....Hollandale
 Steansland, August.....Hollandale
 Thomas, Roy E.....Dodgeville

JACKSON COUNTY.

Curran, W. F.....Taylor
 Dettfing, Wm. F.....Hixton, R. 1
 Dietrich, John J.....Black River Falls
 Engleman, John.....Hixton
 Hecketsweiler, O. J.....Alma Center
 Merrill, W. M.....Taylor
 Sims, O. F.....Melrose
 Thompson, Adolph.....Black River Falls

JEFFERSON COUNTY.

Altpeter, Edw.....Ft. Atkinson
 Anthes, Henry.....Jefferson
 Becker, Harry J.....Ft. Atkinson
 Brueckner, H. C.....Ft. Atkinson
 Brueckner, Justus.....Ft. Atkinson
 Christ, Albert.....Cambridge
 Emmert, H. L.....Johnson Creek
 Gутtenberg, Frank, Jr.....Jefferson
 Jones, Seneca T.....Watertown, R. 1
 Krueger, Alexander.....Watertown, R. 2
 Keuler, Aaron F.....Helenville
 Keuler, Harry.....Helenville
 Klement, Otto C.....Ft. Atkinson
 Leonard, Wm. R.....Jefferson
 Linton, Gilbert A.....Ft. Atkinson
 Mathews, Milton D.....Helenville, R. 1
 McIntyre, Ivan.....Ft. Atkinson
 Norman, Frank.....Helenville
 Popp, Arthur.....Jefferson, R. 2
 Ward, Chas. E.....Ft. Atkinson
 Ward, Harold L.....Ft. Atkinson
 Ward, Robert W.....Ft. Atkinson, R. 1

JUNEAU COUNTY.

Curtis, J. C.....New Lisbon
 Hall, W. H.....Wonewoc
 Hansen, Harry.....Camp Douglas
 Harvey, Caleb B.....Wonewoc
 Mead, R. E.....New Lisbon
 McNow, J. H.....Mauston
 Moore, Henry G.....Mauston
 Smith, R. M.....Elroy
 Solem, Edward.....Wonewoc

KENOSHA COUNTY.

Achen, Wm.....Bristol
 Bradley, J. Frank.....Somers
 Brook, J. W.....Salem
 Bullamore, R. G.....Kenosha
 Bullamore, Roy.....Kenosha
 Curtiss, Mark.....Trevor
 Curtiss, W. R.....Trevor
 Dexter, Walter S.....Kenosha
 Holloway, John W.....Union Grove
 Myrick, M. O.....Bristol

Northway, Morris J.....Kenosha
 Orvis, L. C.....Salem
 Paddock, Alvin D.....Salem
 Price, Fred.....Bristol, R. 31
 Roberts, F. W.....Woodworth
 Sheen, Clarence J.....Trevor
 Sheen, W. J.....Trevor
 Thiers, L. M.....Kenosha
 Thom, J. A.....Bristol, R. 30

KEWAUNEE COUNTY.

Boudnik, John.....Kewaunee, R. 7
 Cherveney, Wenzel.....Kewaunee, R. 2
 Collins, D. W.....Luxemburg
 Defnet, Jule J.....Casco, R. 2
 Erickson, Louis E.....Kewaunee
 Haevers, Martin.....Luxemburg, R. 4
 Hoffman, Jacob.....Algoma
 Katel, W. C.....Kewaunee
 Koemich, Ed.....Kewaunee, R. 2
 Krofta, Rudolph.....Kewaunee, R. 2
 Oestreich, L. J.....Kewaunee
 Ray, W. F.....Kewaunee, R. 1
 Smithwick, M. W.....Kewaunee

LA CROSSE COUNTY.

Bonsack, H. M.....La Crosse
 Bonsack, Theo.....West Salem
 Brandt, Chas., Jr.....West Salem
 Brown, E. D.....West Salem
 Eggler, Victor H.....La Crosse
 Engebretson, Albert.....West Salem
 Engebretson, Edw. S.....West Salem
 Griswold, H. W.....West Salem
 Haas, Reinhold.....La Crosse, R. D. 1
 Hemker, Fritz H.....West Salem
 Kammlade, Stephen G.....Bangor
 Lawrence, F. W.....Bangor
 Linse, Chas.....La Crosse
 Mueller, Walter E.....La Crosse,
 626 Cass St.
 Mulder, B. W.....Midway
 Nelson, Osan.....La Crosse
 Nuttleman, Alfred.....West Salem
 Nuttleman, Fred.....West Salem
 Sandman, W. D.....Holmen
 Van Loon, John.....La Crosse

LA FAYETTE COUNTY.

Andrews, A. L.....South Wayne
 Carey, W. H.....Argyle
 Erickson, Clarence.....South Wayne
 Gllindinning, H. L.....Shullsburg, R. 2
 Jensen, Peter.....Argyle
 Jorenby, Carl.....Blanchardville
 McConnell, F. J.....Darlington
 Perry, Will H.....Gratiot
 Rood, Henry.....South Wayne
 Rood, Minnick.....South Wayne
 Ruskell, L. E.....Belmont
 Usher, Earl.....South Wayne
 Usher, J. M.....South Wayne
 Wahler, Adolph.....Woodford

LANGLADE COUNTY.

Follstad, Anton.....Elcho
 Kalouner, Edward.....Antigo, R. 5
 Persen, Alfred.....Bryant
 Stewart, Blaine G.....Antigo
 Tomkins, O. Scott.....Bass Lake

MEMBERSHIP, 1909.—Continued.

MANITOWOC COUNTY.

Arnold, Arthur A.....Kiel
 Axley, Walter.....Cleveland, R. 1
 Bauer, Adolph H.....Manitowoc, R. 2
 Behm, Walter.....Manitowoc
 Bruhn, John F.....Two Rivers, R. 1
 Clusen, Reinhold.....Manitowoc, R. 6
 Eisenman Ben.....Mishicot
 Garey, James.....Grimms
 Geraldson, Mervin.....Manitowoc, R. 4
 Gigstad, Benneth.....Valders
 Gunderson, Clifford.....Manitowoc, R. 4
 Gustavson, Chas.....Manitowoc
 Halverson, Almer.....Cato, R. 1
 Hansen, Warner.....Manitowoc
 Hoefner, Herbert.....Manitowoc
 Huhn, William.....Cleveland
 Johannes, Albert.....Two Rivers, R. 2
 Kielsmeier, Rudolph C.....Timothy
 Klann, Adolph.....Hayton, R. 1
 Knutson, Ed A.....Manitowoc
 Kolb, Ed.....Cleveland, R. 2
 Marken, Otis A.....Valders
 Marken, Richard L.....Valders
 Paulson, J. E.....Manitowoc
 Pederson, Cornelius.....Cato
 Pritzl, John A.....Cato
 Rein, Robert.....Cleveland, R. 1
 Riederer, Blasius.....Cato
 Roethel, Herman.....Kiel
 Salzman, Ed.....Kiel
 Schulte, Peter J.....Cleveland
 Straka, E. E.....Kellnersville
 Strowig, Wm. A.....Cleveland
 Sullivan, Jas. A.....Grimms
 Thieleke, Ed. A.....Kiel, R. 2
 Tyler, James G.....Valders
 Wehrwein, Walter.....Manitowoc, R. 2
 Wiegand, Otto R.....Cleveland
 Wigen, Andrew.....Quarry
 Wilkowske, Hugo.....Mishicot

MARATHON COUNTY.

Aderhold, H. F.....Athens
 Aschbrenner, H. H.....Stratford
 Baesemann, Otto.....Edgar
 Brehm, Ed. A.....Colby
 Griffith, Jas.....Spencer
 Heinke, Alvin E.....Stratford
 Keogh, Luke F.....Rozellville
 McAdam, C.....Wausau
 Nieman, Walter.....Hamburg, R. 1
 Parsch, Gustav A.....Wausau
 Reinhardt, Walter H.....Wausau

MARINETTE COUNTY.

Christensen, C. A. M.....Walsh
 Falarsh, Frank.....Peshtigo, R. 2
 Gould, G.....Peshtigo
 Gould, M. M.....Peshtigo
 Schneider, Gottlieb P.....Walsh
 Sorensen, Hilbert.....Marinette

MARQUETTE COUNTY.

Cairns, J. H.....Montello
 Gaffney, Ellery.....Oxford
 Hamilton, T. S.....Westfield
 Haskins, Leon O.....Montello, R. 3

Houslet, Neal.....Packwaukee
 Johnson, Sam.....Westfield
 Judd, Jasper.....Endeavor
 Judd, Jesse L.....Endeavor
 Landgraff, Henry.....Endeavor
 McDowell, David P.....Packwaukee
 McMillen, Carl.....Endeavor, R. 1
 McMillen, R. A.....Endeavor
 Parrott, Alfred.....Endeavor

MILWAUKEE COUNTY.

Babcock, C. L.....Milwaukee,
 404 Colby-Abbott Bldg.
 Basse, Wm. H.....West Allis, R. 5
 Burgess, A. J.....Milwaukee, 1102
 Grand Ave.
 Dennison, Nicholas.No. Milwaukee, R. 10
 Diderrich, N. A.....No. Milwaukee, R. 10
 Ernst, John A.....Milwaukee,
 921 Island Ave.
 Fuller, S. L.....Milwaukee, 126 26th St.
 Gridley, Ben.....Wauwatosa
 Guenther, Nelson W.....So. Milwaukee
 Hardy, John.....Wauwatosa
 Hickcox, J. Gilbert.....Whitefish Bay
 Jelinek, Benjamin.....Milwaukee,
 935 Feutonia Ave.
 Jungbluth, Wm. J.....West Allis, R. 5
 Kroeger, Bernard C.....Milwaukee, 403
 1st Ave.
 Kurtze, Otto C.....West Allis
 Loewe, Arthur P.....Milwaukee, R. 8
 Mahr, Henry.....Caledonia
 Meyer, Alfred J.....Oakwood, R. 18
 Miller, Geo. C.....Milwaukee, 232 Grove St.
 Mower, H. Payson.....Wauwatosa
 Pierner, Fred.....No. Milwaukee
 Pierner, John W.....Thiensville
 Swan, Earling.....Milwaukee, Station B,
 R. 6
 Unger, Edw.....No. Milwaukee, R. 9
 Warzynakoski, Arthur.....Oakwood, R. 18

MONROE COUNTY.

Aarness, O. C.....Cashton
 Boeder, Otto.....Wilton
 Ebert, Francis E.....Tomah
 Finegan, Louis.....Sparta
 Foth, F. D.....Norwalk
 Freeman, G. A.....Sparta
 Gamerdinger, John.....Kendall
 Grassman, Irwin.....Kendall
 Hanchett, W. H.....Sparta
 Hansen, Carl F.....Sparta
 Harris, Ruthven E.....Warrens
 Heasty, Ralph.....Sparta
 Hill, C. C.....Tomah
 Hitchcock, Clarence.....Sparta
 Hoard, L. R.....Catact
 Howell, H. P.....Sparta
 Jones, S. R.....Leon
 Kirst, Ernest J.....Tomah
 Lee, L.....Leon
 Leverich, J. W.....Sparta
 McDonald, James P.....Sparta
 Miller, Louis A.....Sparta
 Misteley, Wm.....Kendall
 Moseley, A. G.....Catact
 Nathen, Paul R.....Kendall
 Peterson, John H.....Cashton
 Sias, Benjamin.....Sparta
 Whitehead, H. W.....Leon
 Wilkinson, Edw.....Wilton

MEMBERSHIP, 1909.—Continued.

OCONTO COUNTY.

Halsted, N. W.....Lena

OUTAGAMIE COUNTY.

Bixby, Phil T.....Appleton, R. 1
 Dietz, Ed.....Greenville
 Jamison, Clarence.....Appleton, R. 2
 Jamison, Robert.....Appleton, R. 2
 Jamison, W. G.....Appleton
 Jochman, Peter.....Greenville
 Johnson, C. G.....Welcome
 Johnston, Frank R.....Appleton, R. 6
 Johnston, Oney.....Appleton
 Koss, Otto W.....Medina
 Letts, E. F.....Appleton
 Merkel, Henry.....Appleton, R. 3
 Mills, Roscoe C.....Appleton, R. 2
 Mueller, Edw. O.....Appleton
 Pirner, Fred.....Sugar Bush, R. 26
 Ryan, Malachi.....So. Kaukauna
 Schaefer, R. J.....Appleton
 Schmit, Albert.....Appleton
 Schmit, A. W.....Appleton
 Schmit, Geo.....Greenville
 Schmit, Wm. F.....Appleton
 Tage, John.....Appleton, R. 4
 Thoma, Ernest.....Sugar Bush
 Tubbs, Herbert.....Seymour
 Wussow, Chas.....Seymour
 Zahrt, F. H.....Hortonville

OZAUKEE COUNTY.

Ablers, Walter.....Grafton
 Behrens, Bernhard.....Grafton
 Blank, George A.....Grafton
 Bremer, Paul H.....Cederburg, R. 1
 Clausing, Adolph.....Thiensville
 Kieffer, Mike.....Fredonia
 McCarthy, Geo.....Fredonia
 Meyer, A. H.....Grafton
 Wulff, Fred.....Grafton
 Wulff, William.....Grafton

PEPIN COUNTY.

Fleishauer, C. K.....Arkansas
 Gustafson, Theodore.....Stockholm, R. 1
 Jahnke, J. F.....Pepin

PIERCE COUNTY.

Bailey, H. E.....River Falls
 Brown, William.....Spring Valley
 Dunbar, Geo. W.....River Falls
 Dunbar, Geo. W., Sr.....River Falls
 Dunbar, Harold.....River Falls
 Hanson, Henry O.....Spring Valley
 Heinze, Louis.....Prescott
 Martin, Arthur W.....River Falls
 Nelson, Emil.....River Falls
 Nelson, Nels J.....River Falls
 Neystrom, Archie.....Maiden Rock
 Smith, Fred.....River Falls

POLK COUNTY.

Germanson, Herbert.....Luck
 Hedlund, Adolph.....Clayton
 Jerdee, Perry S.....Deronda

Lindberg, Clinton.....Dresser Jet.
 Miller, A. J.....Milltown
 Nelson, Wm.....Milltown
 Peterson, Eni.....Amery, R. 4
 Rehbein, A. E.....St. Croix Falls, R. 1
 Uhlin, Albin.....Clayton, R. 1
 Uhlin, Frank E.....Clayton, R. 1

PORTAGE COUNTY.

Arnott, Grace M.....Stevens Point
 Boston, W. J.....Stevens Point
 Cate, Geo.....Stevens Point
 Clark, W. E.....Stevens Point, R. 1
 Gullickson, Gustave.....Nelsonville
 Gullickson, Thos. O.....Nelsonville
 Hansen, J. K.....Stevens Point, R. 5
 Hanson, N. P.....Amherst Jet., R. 2
 Haus, Enoch.....Junction City
 Hicks, S. E.....Almond
 Katerndahl, Carl.....Stevens Point, 123
 Dixon St.
 Lewis, Lloyd.....Stevens Point
 Peterson, Perry O.....Amherst, R. 2
 Precourt, L. A.....Plover, R. 1
 Siegert, A.....Junction City
 Smith, C. A.....Amherst
 Swenson, O. S.....Nelsonville
 Van Buskirk, G. W.....Plover
 Wagner, Raymond.....Stevens Point
 Wroistad, Alfred M.....Amherst Jet.

PRICE COUNTY.

Halvorson, Theo.....Kennan
 Hoffman, Conrad.....Phillips
 Klussendorf, Fred E.....Phillips, R. 1

RACINE COUNTY.

Adland, P. H.....Franksville, R. 10
 Cook, Geo. L.....Burlington
 Gehrand, Arthur A.....Rochester
 Grass, Frank.....Burlington
 Holloway, Ed. M.....Union Grove, R. 8
 Nau, Ray H.....Franksville
 Renak, Edward.....Racine, R. 2
 Roberts, Wm. J.....Burlington
 Rolfson, Clarence E.....Waterford, R. 25
 Schroeder, Chris.....Racine
 Skewes, Edwin B.....Union Grove
 Spartz, N. A.....Union Grove

RICHLAND COUNTY.

Buehler, J. G.....Richland Center
 Durnford, G. A.....Rockbridge
 Ellsworth, Raymond.....Tavera
 Ghastin, Floyd.....Twin Bluffs
 Ghastin, Wm. J.....Twin Bluffs
 James, Geo. A.....Richland Center
 Janecek, Cyril.....Bloom City
 Jaquish, J. E.....Twin Bluffs
 Lawton, A. R.....Viola
 Lord, Karl W.....Richland Center
 Nourse, Glen.....Sextonville
 Post, H. L.....Sextonville
 Schmitz, Edw. H.....Lone Rock
 Schmitz, Hubert.....Lone Rock
 Straug, Frank.....Lone Rock
 Thorpe, J. R.....Tavera
 Turgasen, J. H.....Richland Center
 Welsh, S. L.....Tavera

MEMBERSHIP, 1909.—Continued.

ROCK COUNTY.

Austin, Alva G. Janesville
 Austin, Alvina L. Evansville
 Austin, Clifford P. Janesville
 Austin, Geo. M. Janesville
 Austin, W. B. Janesville
 Austin, Wilbur D. Janesville
 Babcock, J. G. Evansville
 Barker, E. S. Janesville
 Benedict, E. L. Beloit
 Bingham, E. L. Milton
 Caig, Ernest M. Milton Jet.
 Caldo, Leslie. Janesville
 Chase, Albert L. Milton
 Churchill, Arthur. Janesville, R. 7
 Cooper, Maurice W. Edgerton
 Dougan, W. J. Beloit, R. 30
 Ellis, E. J. Evansville
 Emery, Svdney. Edgerton
 Fish, Esli. Janesville, R. 7
 Godfrey, Burt K. Janesville, R. 1
 Green, J. I. Clinton
 Hemingway, Geo. L. Hanover
 Holmes, U. C. Evansville
 Jacobs, S. M. Janesville
 Kimble, N. G. Milton Jet.
 Klein, W. C. Orfordville
 Lathers, Chas. F. Beloit
 Latta, F. L. Clinton Jet.
 McCoy, Geo. L. Evansville
 Marston, Albert. Beloit, R. 3
 Marston, Roy C. Beloit
 Moseley, H. B. Beloit
 Nelson, Martin. Milton
 Peck, Edward. Edgerton
 Peik, Edmund. Edgerton, care of
 Emery Farm
 Pierce, Henry. Milton Jet.
 Porter, J. K. P. Evansville
 Porter, L. W. Evansville
 Rasey, Edwin L. Beloit, R. 27
 Smith, L. E. Beloit, R. 3
 Snyder, Clyde J. Footville
 Snyder, Elmer G. Clinton
 Snyder, R. B. Clinton

ST. CROIX COUNTY.

Alberts, Will. New Richmond
 Batten, Sidney. Hudson
 Bennett, Wm. L. Stanton
 Brunner, R. W. Hudson
 Carlson, Nels P. Hudson, R. 1
 Carrow, Herman. Stanton
 Fav, Albert. New Richmond
 Fuiten, B. H. New Richmond
 Hecker, Paul. New Richmond
 Imholt, B. A. Houltton
 Jerdec, Alfred O. Deer Park
 Kruschke, Geo. H. New Richmond
 Paulson, P. A. Hudson
 Peterson, August. Stanton
 Schwandt, Wm. Stanton
 Utgaard, Peter W. Cylon

SAUK COUNTY.

Borck, Sam. North Freedom
 Capener, W. R. Baraboo
 Clavadatscher, T. Sauk City
 Cobleigh, Rollo S. Delton

Emery, George. Logansville
 Frederickson, Fred. Spring Green
 Gade Adolf. Reedsburg
 Gallagher, J. F. Reedsburg
 Gasser, Geo. W. Spring Green
 Graves, D. W. Baraboo
 Grub, C. H. Baraboo
 Hamburg, J. F. Baraboo
 Hasz, Theodor. Logansville
 Hauseh, Albert. Baraboo
 Henrichs, Ernest. Reedsburg
 Herwig, Richard. Delton
 Herwig, Theo. Delton, R. 1
 Hood, D. L. Spring Green
 Houghton, F. T. Reedsburg
 Koenecke, Edward H. Reedsburg
 Laebmund, Robert. Sauk City
 Luetscher, Irvin. Plain
 Marshall, W. S. Delton
 McGinnis, Chas. Baraboo
 Ochsner, A. G. Plain
 Pearson, Clarence. La Valle, R. 4
 Baltzman, A. L. Reedsburg
 Rheingans, Ernest C. Baraboo, 401 8th St.
 Rich, O. S. Baraboo
 Rich, W. V. Baraboo
 Riek, Anthony. Plain
 Robson, Melvin. Spring Green
 Rodewald, Walter C. Baraboo
 Rusch, E. W. Reedsburg
 Schaefer, Erwin S. Black Hawk
 Schuette, Edward W. Reedsburg
 Siggelkow, M. E. Baraboo
 Soeener, Hardy. Baraboo
 Steidtmann, Edwin. Merrimac
 Stone, Riley. Reedsburg
 Toole, W. A. Baraboo
 Vonder Ohe, Wm. Reedsburg
 Weirich, Martin J. Baraboo
 Wiehern, L. M. Baraboo
 Wischhoff, Edwin. Reedsburg

SAWYER COUNTY.

Uhrenholdt, Jens. Leonard

SHAWANO COUNTY.

Berg, Carl. Tigerton
 Nedgwood, R. E. Shawano
 Norrbom, C. G. Eland, R. 1
 Hildemann, Alex E. Belle Plaine
 Klodvahl, J. J. Wittenberg

SHEBOYGAN COUNTY.

Blonien, Peter. Elkhart
 Dennerlein, Arthur J. Plymouth
 Frauenheim, O. R. Random Lake
 Garside, Harry R. Cedar Grove
 Herdrich, S. F. Adell
 Hoppert, Martin J. Sheboygan, R. 4
 Illian, W. L. Adell
 Leonard, M. J. Plymouth
 Ogle, James L. Waldo
 Oosterhuis, Alvin C. Sheboygan Falls
 Schaefer, Henry G. Glenbeulah
 TeSelle, Clarence J. Sheboygan Falls
 Wagner, Arthur L. Haven
 Wunsch, Hugo E. Haven

MEMBERSHIP, 1909.—Continued.

TALYOR COUNTY.

McMillan, H. N.....Medford

TREMPEALEAU COUNTY.

Chrysler, Harvey.....Osseo
 Coon, Leslie.....Osseo
 Grand, Geo. W.....Independence
 Graul, Edward J.....Independence
 Hagestad, A. C.....Ettrick
 Hegge, Julius.....Galesville
 Hermann, F. F.....Osseo
 McCauley, Rex.....Osseo
 Markham, F. C.....Independence
 Mattison, Thomas.....Blair
 Moen, Gilbert T.....Eleva
 Pederson, Peter.....Eleva, R. 3
 Raichle, Carl.....Galesville
 Thompson, A. L.....Blair

VERNON COUNTY.

Aberg, Jacob.....De Soto
 Bean, R. R.....De Soto
 Burriss, F. E.....Kendall, R. 5
 Cade, Jos. M.....Viroqua
 Call, Henry.....West Prairie
 Christensen, Johan.....West Prairie
 Dach, C. B.....Viroqua
 Davis, J. L.....De Soto
 Evenson, Fred.....De Soto, R. 2
 Grimsned, J. A.....Coon Valley
 Herold, Rudolph, Jr.....Stoddard
 Lewison, Thomas.....Viroqua
 McClurg, Walter.....Viroqua
 Nathan, Paul R.....Kendall
 Neprud, Nels O.....Coon Valley
 Olsen, Clarence.....Westby
 Olson, Gilbert C.....Westby
 Seblion, Cornelius.....Westby
 Seblion, Tennis.....Westby
 Solberg, Louis.....Viroqua
 Sorcin, Erick.....West Prairie, R. 1
 Staley, John N.....Hillsboro
 Stegne, Chris.....Viroqua
 Stromstad, P. L.....Coon Valley

WALWORTH COUNTY.

Bromley, Fred G.....Whitewater, R. 4
 Cassidy, Wm. S.....Whitewater
 Coates, Clinton J.....Elkhorn
 Coburn, Ora.....Whitewater
 Cusack, M. E.....Darien
 Dunbar, Harry D.....Elkhorn
 Fuller, Leroy.....Lake Geneva
 Harris, Ben F.....Delevan
 Kruse, William.....Whitewater, R. 4
 Ledger, David.....Lake Geneva
 Lewis, E. H.....Whitewater
 Lowell, Lloyd S.....Sharon
 Mack, Warren.....Whitewater
 Meurer, Paul.....Genoa Jet
 Mitchell, Edward H.....Delevan
 Nicolaus, D. C.....East Troy
 Peters, Ezra.....Sharon
 Peterson, Peter.....Walworth
 Petrie, Merton E.....Elkhorn
 Piper, Harry.....Sharon
 Robinson, A. S.....Lake Geneva
 Schwartz, J. A.....Troy Center
 Thacher, Ed F.....Zenda
 Thacher, Louis E.....Zenda

Thompson, Alfred.....Delevan
 Warmington, Prentice.....Honey Creek
 Wright, John.....Whitewater

WASHBURN COUNTY.

Melby, Dytinus.....Spooner

WASHINGTON COUNTY.

Backhaus, F. G.....Kewaskum
 Baer, A. C.....West Bend
 Bast, Paul J.....Rockfield
 Berg, Jacob.....South Germantown
 Dhein, Henry.....Rockfield
 Gensmann, Edward D.....Schleisingsville
 Groth, C. A.....Cedarburg
 Hayes, Thomas, Jr.....Richfield
 Klumb, Albert.....Rockfield
 Klumb, Hugo G.....Kewaskum
 Klumb, Oscar.....Rockfield
 Kressin, Gustav R.....Cedarburg
 Milkee, George E.....Newbury
 O'Connell, Jas.....Hartford
 Puls, John.....Hartford, R. 4
 Schottler, C. J.....South Germantown
 Schultz, Nelson F.....West Bend, R. 3
 Stuesser, Eugene.....Richfield
 Woldt, Hugo.....Jackson
 Ziemer, Joseph.....Jackson
 Ziemer, Paul.....Jackson

WAUKESHA COUNTY.

Adams, Jay.....Waukesha, R. 5
 Adams, M. J.....Waukesha
 Allen, Arthur J.....Wales, R. 31
 Baird, J. W.....Waukesha
 Baird, Robert L.....Waukesha
 Baird, Will L.....Waukesha
 Bartlett, Geo. W.....Menomonee Falls
 Blackwell, Leslie C.....Waukesha
 Boller, J. F.....Nashotah
 Royd, James T.....Waukesha, R. 7
 Christensen, John L.....Hartland
 Cook, Irving O.....Nashotah
 Dance, George.....Brookfield
 Dance, James.....Brookfield
 Dibble, Roy A.....Menomonee Falls
 Dineen, C. F.....Pewaukee
 Dopp, Paul B.....Oconomowoc
 Fuller, Horace.....North Lake
 Graser, Adam H.....Waukesha
 Greengo, A. L.....Menomonee Falls
 Hall, Frank.....Hartland, R. 21
 Hart, C. B.....Brookfield
 Hart, William C.....Brookfield, R. 2
 Haylett, Henry O.....Waukesha
 Helling, Paul.....Menomonee Falls
 Hicken, Alfred B.....Pewaukee
 Hill, Chas. T.....Brookfield
 Hill, J. Thos.....Brookfield
 Jeffery, H. B.....Menomonee Falls
 Jens, Otto A.....Waukesha
 Jones, Albert.....Dousman
 Kaul, E. H.....Waukesha, R. 7
 Kultz, Harvey A.....Waukesha
 Longlev, H. N.....Dousman
 Mitchell, Dean.....Brookfield
 Mitwede, Henry.....Waukesha
 Montague, C. R.....North Prairie
 Morris, Leslie D.....Waukesha
 Nicolaus, Chas. A.....Waukesha
 Pabst, Fred.....Oconomowoc
 Peebles, John.....Oconomowoc, R. 28

MEMBERSHIP, 1909.—Continued.

Roberts, Jack.....Waukesha
 Rosenow, Arthur.....Oconomowoc
 Rosenow, H. E.....Oconomowoc
 Rust, Shirley H.....Mukwonago
 Ryan, George.....Brookfield, R. 12
 Schafer, Chas. H.....Waukesha, R. 7
 Schley, E. G.....Waukesha
 Schroeder, F. C.....Hartland, Box 146
 Shannon, W. J.....Oconomowoc
 Sleep, S. S.....Hartland, R. 21
 Stewart, J. H.....Wales
 Swan, L. W.....Mukwonago
 Swartz, Peter C.....Waukesha
 Tempero, Roy J.....Menomonee Falls
 Voigt, Alvin.....Oconomowoc, R. 26
 Weir, W. W.....Mukwonago, R. 37
 Wetzel, Alvin.....Brookfield, R. 12
 Wetzel, Henry.....Brookfield
 Williams, Arthur R.....Waukesha
 Zillmer, Wm. C.....Brookfield

WAUPACA COUNTY.

Almon, Perry T.....Weyauwega
 Ashuum, C. S.....Waupaca, R. 2
 Bestul, Martin J.....Scandinavia
 Bille, J.....Waupaca
 *Goldsmith, Wm. E.....Waupaca
 Gorges, H. F.....New London
 Hanson, Elmer.....Waupaca, R. 2
 Harrington, Myron.....Waupaca
 Heinrich, Otto W.....New London
 Klemm, Louis J.....Welcome
 Kneipp, William.....Weyauwega
 Knoke, Hugo.....Readfield
 Kunkel, Arthur.....Manawa
 Larson, LeRoy.....Iola
 Lemke, Albert.....Clintonville
 Nace, Franklin.....Iola
 Olson, Nels E.....Iola
 Pinkerton, Alta J.....Waupaca
 Raisler, Theo.....Welcome
 Rosholt, Jacob A.....Scandinavia
 Spencer, Earl H.....Waupaca, R. 3
 Wall, Floyd.....Weyauwega
 Wied, Edward.....Waupaca

WAUSHARA COUNTY.

Bartleson, Harvey.....Pine River, R. 1
 Eagan, J. J.....Wautoma, R. 6
 Harris, A. M.....Plainfield
 Jacobs, A. F.....Coloma, R. 1
 Knuteson, Ernest L.....Wautoma
 Larson, J. M.....Wautoma
 Peterson, James.....Pine River
 Tice, Ray W.....Redgranite
 Tice, Roy.....Redgranite
 Winge, Wm.....Wild Rose

WINNEBAGO COUNTY.

Blakely, Albert.....Neenah
 Blodgett, Gordon R.....Neenah, R. 9
 Boss, S. J., Jr.....Oshkosh
 Boss, U. C.....Oshkosh
 Bussey, W. P.....Omro
 Cross, A. J.....Allenville
 Davis, J. C.....Oshkosh
 Evans, W. D.....Pickett
 Hoeft, Chas. A.....Oshkosh, Lenwood Farm
 Ihrig, J. J.....Oshkosh
 Jackson, H. H.....Oshkosh, 104 Main St.
 Marshall, A. C.....Omro

Miller, H. C.....Allenville
 Palfrey, John.....Omro
 Rasmussen, Fred.....Neenah, R. 11
 Smith, Seymour.....Oshkosh
 Tanner, A. V.....Omro, R. 24
 Treleven, Guy T.....Omro
 Wait, S. R.....Oshkosh
 Winnebago County Agricultural School.
Winneconne
 Wood, Calvin D.....Oshkosh, R. 4

WOOD COUNTY.

Christensen, Peter W.....Marshfield
 Clark, Chas. F.....Babcock
 Hanifin, Leo.....Grand Rapids
 Liebe, John H.....Grand Rapids, R. 7
 Rector, Carroll V.....Grand Rapids

* Deceased.

t.

NON-RESIDENT MEMBERS.

CALIFORNIA.

Hauck, Nathan.....Alton

CANADA.

MacVannel, A. P.....St. Marys, Ontario

COLORADO.

McLean, Donald.....Denver, 704
 Equitable Bldg.

CONNECTICUT.

Haas, Geo. H.....Meriden

FLORIDA.

Savage, A. F.....Quincy

IDAHO.

Guilford, W. S.....Twin Falls

ILLINOIS.

Akins, Clyde E.....Warren
 Bennett, H. J.....Cherry Valley
 Bryson, Donald.....Eltzabeth
 Charles, Fred.....Woodstock
 Chetlain, Louis A.....Galena
 Coffin, Russell H.....Rockford
 Durand, Mrs. S. S.....Lake Bluff

MEMBERSHIP, 1909.—Continued.

Fellows, Samuel M.....Rockford
 George, W. R.....Sterling
 Halley, Guy R.....Rockford, R. 2
 Hitchcock, H. R.....Pecatonica
 *Hobein, F. W.....Barrington
 Hoxsey, Edward.....Serena
 Hoxsey, Frank.....Serena
 McGeachie, E. P.....Winnebago
 Mueller, Math. J...Urbana, care of Exp.
 Station
 Northrup, H. R.....Chicago, 667
 Winthrop Ave.
 Osterday, E. G.....Stockton
 Phillips, Jesse.....Elizabeth
 Richardson, G. J.....Spring Grove
 Sargent, Roy E.....Warren
 Smith, Russell.....Crystal Lake
 White, Arthur..Rockford, 593 Church St.

INDIANA.

Logan, Ralph G.....New Palestine

IOWA.

Anderson, Theo.....Waterville
 Berns, Xavier.....Guttenberg
 Brooks, Homer H.....Hopkinton
 Hawkins, A. B.....Farley
 Mathis, Adolph.....Lansing, R. 1
 Thompson, T., Jr.....Wadena

MAINE.

Fernald, Paul E.....West Oldtown

MEXICO.

Cardenas, F. F.....3er Victoria, No. 15,
 Saltillo, Coah.

MICHIGAN.

De Forest, Theo. R.....Ann Arbor
 Eskil, Odin.....Iron Mountain
 Hatch, L. M.....Big Bay
 Larsen, Chas. L.....Brown City
 Meyer, A. J.....Howell, R. 7

MINNESOTA.

Hillier, H. B.....Brownsdale
 Holcomb, W. R.....Excelsior, R. D.
 Meyer, William.....Ellsworth
 Poston, R. H.....Duluth, Duluth Stock
 Farm
 Smith, J. G.....Farmington
 Stevenson, J. W.....Winnebago

MISSOURI.

Stienstra, S. J.....Swedeberg
 Von Lanyi, Oscar..St. Louis, 3420 Pine St.

MONTANA.

Bennett, C. S.....Somers

NEW HAMPSHIRE.

Conant, W. A.....Temple

NEW JERSEY.

Geller, H. W.....Woodbine

NEW YORK.

Coleman, Chas. H.....Perry Center
 Hayes, Edwin..Buffalo, 593 W. Ferry St
 Morse, W. A.....Camd

NORTH DAKOTA.

Thompson, R. K.....Bottineau

OHIO.

Doerschuk, John J.....Shanesville
 Ernst, Claude.....Thompson
 Messerschmidt, Samuel H.....Flat Rock
 Schwantes, Edw. F.....Coalburg

PENNSYLVANIA.

Rorer, Wm. A.....Mt. Greener

WASHINGTON.

Bohl, J. N.....Snohomish, R. 3, Box

*Deceased.

EIGHTH ANNUAL MEETING

OF THE

Wisconsin Agricultural Experiment Association.

The officers and members of the Association extend a cordial invitation to all interested in progressive farming to attend its meetings and take part in the discussions.

PROGRAM

THURSDAY, 9 A. M.—Assembly Hall (near Law Building)

- Annual Address, of Vice-President.....H. A. Main, Ft. Atkinson
Secretary's Report.....R. A. Moore, Madison
Benefits Derived by the State From the Work of the Experiment
Association.....W. H. Hanchett, Sparta
Relation of Members of the Association With Farmers and Seeds-
men of the State and the United States.....
H. E. Krueger, Beaver Dam
Wisconsin Select Seed Grains.....Henry Michels, Malone
Why Members of the Association Should Take an Interest in the
National Corn Exposition.....H. W. Meekin, Fond du Lac
County Schools of Agriculture.....
C. P. Cary, State Superintendent of Schools, Madison.
Presentation of Silver Trophies given by the Milwaukee Chamber
of Commerce and Wisconsin Brewers' Association for the
Encouragement of the Growing and Dissemination of Pure
Bred Grains.....H. E. Krueger, Beaver Dam

THURSDAY, 2 P. M.—Assembly Hall (near Law Building)

Election of Officers, Reports of Committees, etc.

Plan of Work for the Coming Year:

- Division of Farm Crops.....R. A. Moore
Division of Soils.....A. R. Whitson

Division of Horticulture.....	E. P. Sandsten
Division of Farm Mechanics	C. A. Ocock
Report on the Work Done by Members of the Experiment Association With the Tuberculin Test.....	Conrad Hoffman
Report on Farm Weeds.....	A. L. Stone
Report of Secretary of the Fond du Lac County Order of the Wisconsin Experiment Association.....	Henry Michels
Report of the Secretary of the Dodge County Order of the Wisconsin Experiment Association.....	Jos. N. Bohl
Report of the Secretary of the Manitowoc County Order of the Wisconsin Experiment Association.....	O. R. Wiegand
Field Beans as a Wisconsin Farm Crop.....	R. A. Gillette
Adjournment at 4 P. M., for the purpose of allowing members of the Short Course Alumni to attend Annual Meeting of their organization.	
4:15 P. M., Alumni Meeting, Lecture Room, Agronomy Building.	
Alumni Banquet, Baptist Church Parlors, 7 P. M.	

FRIDAY, 8:30 A. M.

Assembly Hall (near Law Building)

Corn Session:

Improvement and Dissemination.....	R. A. Moore
Testing Seed Corn.....	E. P. Smith
Handling the Soil and Proper Rotation.....	C. P. Norgord
Corn Improvement.....	Frank B. Joos
Some Corn Problems.....	E. D. Funk, President National Corn Association

Curing and Marketing.....H. W. Meekin
 General Tests with Pure Bred Varieties. *Silver King (Wisconsin No. 7):*

R. J. Schaeffer, Herman Roethel, H. W. Griswold, R. W. Brunner,
 R. W. Chatterton, Wm. A. Parsons, Geo. A. Stivarius, Owen R.
 Jones, Jos. N. Bohl, Lynn W. Briggs, A. G. Austin, Henry Michels.

Golden Glow (Wisconsin No. 12):

Fred P. Grebe, Wm. A. Strowig, Chas. H. Howitt, A. W. Schmidt,
 A. C. Ochsner, E. E. Straka.

Early Yellow Dent (Wisconsin No. 8):

C. H. Howitt, O. R. Frauenheim, A. J. Blakely, William L. Illian,
 Hilbert Sorensen.

Clark's Yellow Dent (Wisconsin No. 1):

W. L. Davidson, Gordon Blodgett, Chas. H. Howitt, H. L. Post,
 H. D. Dunbar.

Wisconsin Pedigree Barley:

Breeding and the Future Work of Dissemination.....	E. J. Delwiche
Trial Tests:	
Pedigree No. 11.....	J. P. Bonzelet
Pedigree No. 10.....	W. L. Illian
Pedigree No. 5.....	H. E. Krueger

FRIDAY, 2 P. M.

Assembly Hall (near Law Building)

How Members of the Experiment Association can be Helpful in Farmers' Institutes.....	Geo. C. McKerrow, Pewaukee
Systematic Farming.....	H. P. Howell
Why Members of the Association and General Farmers Should Grow Sugar Beets.....	Geo. W. McCormick, Menominee, Mich.
Members of the Association and our Rural Schools, Plant Breeding.....	Prof. L. W. Wood, Neillsville Prof. K. L. Hatch, Winneconne

FRIDAY, 7:30 P. M.

Auditorium, Agricultural Hall

Joint Session of the Experiment Association, Short Course Alumni, and Short Course Literary Society. Long Course and Farmers' Course Students invited to attend.

Instrumental Music.....	Short Course Orchestra
Remarks.....	Dean H. L. Russel
Vocal Music.....	Short Course Quartette
Domestic Economy.....	Miss Emma Conley, Wausau
Instrumental Duet, "Rhapsodie Hongroise, No. 2, by Liszt," Mesdames G. C. Humphrey, F. W. Woll	
Address, Agricultural Extension.....	Prof. G. I. Christie, Lafayette, Ind.

SEVENTH ANNUAL REPORT

OF THE

Wisconsin Agricultural Experiment Association

ADDRESS OF VICE PRESIDENT.

H. A. MAIN, FT. ATKINSON, JEFFERSON COUNTY.

Members of the Wisconsin Agricultural Experiment Association and friends: A few days ago I received notice that our beloved president, Mr. Stone, was still unable to act as president at this our 8th annual meeting and that it would be necessary for me to prepare the usual President's address. Other duties have kept me from giving this as much thought as it should have, but I wish to call a few things to your attention this morning which are of great importance to our state and our Association.

The first thing and one of the most important is in regard to the Bill No. 54, S., introduced in the Senate by Senator Thomas which provides for carrying on demonstration experiments and conducting traveling schools by the College of Agriculture and making an appropriation therefor. The value of such work is unquestioned and has already proven valuable to the agricultural interests. The demonstrations of tuberculosis at our State and County Fairs and the corn contests for boys and girls at our County Fairs are along this line. It is proposed with money appropriated to hold short terms of practical work in grain growing and judging, in animal husbandry, in horticulture, dairy work, soils, etc., at many places in the state. In other words take a short course in agriculture to the farmer. It is also proposed to carry on experiments to ascertain the best and cheapest methods of converting our cut-over lands of northern Wisconsin to tillable fields. This experiment alone is worth to the state more than the appropriation of

\$30,000 called for in the bill and then we have all the other good things thrown in for "good measure," so good that it is "running over."

Another bill before the legislature is to compel seed dealers to mark all seeds with the kind of seeds and foreign matter which they contain. As it now stands, he is required to give the percentage of purity and percentage of foreign matter, but is not compelled to tell *what* the foreign matter consists of. For instance, clover seed 80% pure and 20% foreign matter only means that 80% is pure and 20% impure. That 20% may be timothy or it may be something the farmer does not want and would not have if he knew what it was.

Your committee on resolutions have prepared resolutions on both these bills and I hope they will receive your hearty support.

This leads to the thought of how much this association, through its members could effect in legislation favorable to our interests if we only keep posted on matters at our Capitol and let our representatives there know what we would like.

Every member of this association should stand firm by every plan to improve our highways. It is on the highway that we, as farmers, do most of our traveling and why then should they not be as good as possible especially in a rich state like Wisconsin.

And, when we speak of good roads let us not forget to have good roadsides—clean roadsides free from weeds, brush and if we must have road fences let them be well kept and indicative of a well kept farm lying over the fence. Let us clean our roads of that "louse of the country"—gypsies or horse traders—as they usually call themselves. Two years ago a resolution was adopted in our association convention supporting a bill in the legislature in regard to camping on the roadsides. I am informed that the bill now provides that the owner of a farm or a road overseer can compel these traveling camps to move on and that by verbal order only, and to move immediately. Formerly they had to be given a written notice to move and could stay twelve hours after receiving such notice. If the farmers of the state will do what the law allows we can make life so hard for these "movers" by "moving them so often and keep them moving "that they will get tired of moving and decide that it is easier to settle down and earn a living than to pick it up on the road by begging and using the roads for pastures and the fences for places to hitch.

President Stone in his address last year urged the members to be careful that they send out only high-class seeds. If we

do not, we will begin to decay and our usefulness as a pure bred seed state will diminish. Any member of this association who makes a practice of sending out seed that is not what it is represented to be, should be denied the privilege of membership in our association.

I often wonder if it would not mean a great deal to our state if premiums were offered at our State Fair for the best kept and best managed farms in our state. The honor of having the best kept and best managed farm in the state of Wisconsin means a thousand times more than to have the best ten ears of corn in the state. I just throw this out for your consideration because I think at some future time more definite steps should be taken along this line.

There is still another way that our members can be useful to our state and that is by trying to help build up our County Fairs. We should try to improve the exhibits at our respective fairs and, do our best even if that is little, to clean them of sideshows and other things that detract from the real object of our fairs. The present condition of some of our fairs is a blur on our counties.

In closing let me urge you as fellow members of such a great organization to be always for progress and never stand still, for when we cease to make progress we are likely to retrograde.

REPORT OF SECRETARY—1909.

R. A. MOORE, MADISON, DANE CO.

The past year has brought its many rewards to the members of the Wisconsin Experiment Association. Our paid-up membership has advanced from 900 in 1907 to 1,100 in 1908, and we have every reason to feel grateful for the advancement made along all lines.

Our total membership is considerable above the figures given as we have many who let their fees get in arrears and are not counted or listed in the report as members until all fees are paid.

The marked influence upon the general farm conditions of having so large a membership carry on tests with pure bred seed grains and general experiments where the average farmer

can see them is bringing good results throughout our State. Many of our farmers will not read, but they are close observers and will readily banish scrub grains, scrub stock and scrub methods of farming if shown it is wise to do so.

EXHIBITION OF GRAINS GROWN BY THE ASSOCIATION.

The display of seed grains at our Annual Meeting is attended with great success. Never in the history of our state was there an exhibition of grains that equaled in purity and quality that shown the winter of 1908. We trust this year's display will surpass it.

Our display of grains and forage plants at the State Fair attracted wide spread attention of the enormous work the members of the Association were carrying on. The State Fair display has become an annual event and each member of the Association should strive to make it more instructive and better as years go by.

Through an invitation on the part of the National Corn Exposition it was decided that the Experiment Association and College of Agriculture make a joint display at Omaha. This was made possible on account of the willingness on the part of the Exposition to bear the greater part of the financial burden. The Wisconsin display attracted wide spread attention and thousands of farmers and others learned for the first time the true character of the work of the Wisconsin Experiment Association.

Our work is spreading rapidly to other states and like organizations are being launched for the good of agriculture. Scrub grains are to meet their death blow and are being supplemented all over the United States by pure bred barley, corn, oats, wheat, etc.

Approximately two hundred thousand dollars worth of select seed grains were sold by members of the Wisconsin Experiment Association the past year and a great deal of these grains were secured by farmers from other states, who are keen to note the wide spread difference in favor of pure bred seed grains.

It is very gratifying to see the work expand and go beyond the border lines of our state. This leads us to believe that our mission is a wide one and that the call for seed grains will become greater year after year.

Honesty, uprightness, and strict integrity in growing and selling pure bred seed grains will "gain the day" for Wisconsin and our Experiment Association.

From reports received I am able to give the following data regarding tests carried out by individual members of the Association.

CORN

SILVER KING (WISCONSIN NO. 7).

Number members reporting.....	183
Number counties in the state.....	71
Number of counties from which reports were received	40
Average per cent germination of the seed.....	96.6%
Number reporting corn as well matured.....	146
Number reporting failure to mature.....	32
Maximum yield (bushels shelled corn per acre).....	110
Minimum yield (bushels of shelled corn per acre) (poor land)	14
Average yield per acre (bushels of shelled corn).....	56
Average yield per acre any other variety.....	44
Difference in yield in favor of No. 7 corn.....	12
Average yield per acre on fall plowed land.....	58.63
Average yield per acre on spring plowed land.....	54.76
Number parties planting on fall plowed land.....	51
Number parties planting on spring plowed land.....	121

EARLY YELLOW DENT (WISCONSIN NO. 8).

Number members reporting.....	26
Number counties in the state.....	71
Number of counties from which reports were received	17
Average per cent of germination of the seed.....	93.6
Number reporting corn maturing well.....	24
Number reporting failure to mature	2
Maximum yield per acre (bushels shelled corn)	75
Minimum yield per acre (bushels shelled corn)	20
Average yield per acre (bushels shelled corn)	48.8
Average yield per acre any other variety	46.7

GOLDEN GLOW (WISCONSIN NO. 12).

Number members reporting	12
Number counties from which reports were received ..	6
Average per cent germination of the seed	98
Number reporting corn as well matured	10
Number reporting failure to mature	2

Maximum yield (bushels shelled corn per acre)	70
Minimum yield (bushels shelled corn per acre)	25
Average yield per acre (bushels of shelled corn)	49.1
Average yield per acre any other variety	57.7
Average yield per acre on fall plowed land	50
Average yield per acre on spring plowed land	48.6
Number parties planting on fall plowed land	2
Number parties planting on spring plowed land	10

BARLEY

ODERBRUCKER (WISCONSIN NO. 55).

Number of parties reporting to date	288
Number counties from which reports have been received	59
Number sowing on fall plowed land	190
Number sowing on spring plowed land	98
Number sowing with drill	127
Number sowing with broadcast seeder	157
Number sowing by hand	4
Number reporting that barley remained erect	259
Number reporting that barley lodged	29
Number reporting that barley rusted badly	0
Number reporting that barley rusted slightly	78
Number reporting that barley did not rust	206
Number reporting that barley developed smut	160
Number reporting that barley was not smutted	112
Average yield of Oderbrucker barley (bushels)	37.2
Average yield of any other variety	31.6
Difference in yield in favor of Oderbrucker barley	5.6

SOY BEANS

Number of members experimenting	20
Number of counties in the state from which reports were received	13
Number members reporting beans as ripening evenly..	11
Number members reporting beans as ripening unevenly	7
Number members planting beans on fall plowed land..	10
Number members planting beans on spring plowed land	10
Number members using bacteria-laden soil	9
Number members reporting nodules on roots of bean plants where soil was inoculated	9
Average yield per acre (bushels)	18.7

WHY GIRLS SHOULD STUDY DOMESTIC SCIENCE.

MISS EMMA CONLEY, WAUSAU, MARATHON CO.

“The history of civilization has been a history of almost unbroken progress. Nearly all progress has come to us through the silent forces of evolution, but whenever evolution has not moved fast enough for enlightened thinkers, seers and prophets they have forced progress through revolution. The progress of the civilized world during the past five hundred years was not rapid enough for the forerunners of advanced thought and so modern history has been a series of revolutions and the revolution of our country is the social. Each revolution has made the other possible by broadening men’s minds and making them ready for further progress.

All revolution that has changed the civilized world has been brought about through man. No woman’s hand or brain has changed the character of a single age or movement; all revolutions in household affairs have been brought about through men and in those household industries now left in woman’s hands no progress has been made—rearing of children and the feeding of the human race. No one dare deny it when I say that the child of today is weaker than the child of yesterday, weak eyed, poor teeth, feeble digestive powers, prone to disease, has no power of endurance. No one dare deny that the cooking of the past produced healthier men and women than does the cooking of today.

“This is not an arraignment of women nor an encomium of men. It is a simple statement of the fact that so long as any industry is learned by intuition and practiced by untrained, unskilled laborers no progress is made; when it becomes a trade, a profession, when skilled labor takes hold of it, it becomes progressive.

“The primitive woman wove bark and grasses and made rude garments, today the countless mills and factories turning out cloth and garments show what man’s skilled brain can accomplish. The primitive woman made the crude dishes, the pottery, and decorated it in her own peculiar way; she made the baskets, the rugs; she erected the crude shelters for her family; she planted the first seeds and tilled the soil, she tamed the first domestic animals; she did everything but hunt and carry on war. This was primitive, uncivilized woman, and with the ad-

vance of civilization these industries have passed to man's hands and have become vast businesses.

"Let no one think that the passing of these arts from woman to man is noted with any sign of regret. It is like the passing of the stage coach, the old scythe, or the tallow candle, it is a part of the march of civilization, but the question is, what is left for woman? If anything is left, to progress along that line we must have the light of scientific skilled brain that will lead us to advancement and not to atrophy. All our boasted progress has been brought about by man, and unless woman can arise to her duties, the progress must continue to come through men.

"We women talk about reforming society when we are society, and the most needed reform is in the home. We talk about the liquor habit when science has fully proved that insufficient and ill chosen food villainously cooked is one great cause of man's need for stimulants. We talk about public sanitation, garbage disposal, waste paper boxes, etc., when the sanitation in our own homes is vile because we do not even know what sanitation means, and scarlet fever, diphtheria and tuberculosis are dreaded but expected guests, and cellars are damp and dirty, and sewer gas is always welcome, and the same air is loved because it has remained in the same rooms for so long.

"As I said before, the revolution of our century is the social, and the spirit of our age is social reform. A new science sociology evolved from the old political economy studies society as it has been, as it is, and by its knowledge of past and present marks out the line for future progress.

When we realize that all over the country, from Maine to California, in all grades and classes of schools, from the primary, intermediate, high school and country school of our public school system to the leading universities, as Cornell, Columbia, Leland-Stanford, Chicago, Illinois, Minnesota and Wisconsin, new courses have been added to complement and supplement the old system of education, we know that thinking men and women have come to the realization that something has been lacking in our educational system—a something more important, more vital, more essential to our social and economic welfare than Euclid, Ovid, or Horace, and that something relates to the most sacred institution of civilization.—The Home.

It was found that the root of many social evils was in the home, that something was lacking in many homes, not because of poverty, drunkenness or vice, but because the woman of the home was utterly ignorant of her duties as a homemaker and her daughters were growing up with no more knowledge, and society as a whole was suffering because of this. Something

was lacking in the ideals and education of girls when they no longer cared whether they could make good bread, could look after the household when mother was sick or away on a visit, could help with the darning or mending. Something was wrong when the girls play the piano, draw, paint and do fancy work while mother works in the kitchen.

“There is a class of people who believe that anything American, customs, manners, laws, political and business methods, is as near perfection as anything can be. There is a class of people who believe that all they know is all that is to be known about a subject, that their opinion is the final word. They move in small circles, they do not come into contact with the world of progress, change and growth, and Chinese-like they worship ancestral light. They mistake their ignorance for knowledge and their prejudice for conviction.

The whole progress of evolution in education, religion, industry, society—in all life, in fact—is an unknown quantity to them because in their ignorance they look at the changes that are sweeping all barriers before them with impatience, distrust, and contempt, a new idea is a positive pain. This condition of affairs is found among women oftener than among men, because men come into contact with all the forces of evolution in the business world, and when they do not get into step with it they are swept away. It is just this condition of affairs that makes it impossible for some people to understand what we mean by domestic science. They can not or will not see the forces at work around them. They understand domestic science to mean something for the poor, the ignorant, the outcasts of society, or their misguided neighbors, but never for themselves.

“Whenever a woman is sure that no epidemic, invidious disease, as fever, diphtheria, or tuberculosis, can touch her, that impure water, impure air, defective lighting, poor plumbing have no effect on her; that drunkenness, crime and misery do not concern her; that her own physical condition cannot be improved on in any way; that her child has the the strong, healthy body nature intended him to have; that her home is so restful that she does not have to go away to escape the ‘comforts of home’ when she is worn out; whenever the family income is judiciously spent; whenever she is sure that her household runs as smoothly as any well managed business, then she has mastered domestic science and her work is to join the little group of reformers who are struggling to improve the human race physically, mentally and morally. If she has not learned any or all of these things then domestic science is for her.

“We meet people who pretend to think that domestic science is all very well for the poor, the ignorant, the servant class, the submerged tenth, but for the parvenu there is that uneasy feeling that any interest in the matter might lead some one to discover that the subtle force of atavism was leading her to take an interest in ancestral pursuits. We meet people who think that a domestic science school is ‘just a cookin’ school,’ a dress making establishment, a place for servants, anything, everything, but what it really is. So at the risk of telling you what you already know, I am going to tell you what domestic science is not.

A domestic science class is not a training school for servants. It is safe to say that not one per cent. of all the girls who take up the work of domestic science in the school will ever become servants. We seem to miss the whole force of the servant question. The work, hours, wages and social position of a servant rank with the unskilled laborer. If she is skilled in any particular line she no longer remains a servant. In our American system of education the daughter of the manufacturer sits beside the day laborer’s daughter in the public school, receives the same instruction and has instilled in her mind the same ideas of American independence and equality. She receives the same education and often has the quicker intellect. Educate the girl and you make her free, she will no longer dream of serving, of doing unskilled work. If she is too stupid to feel her heritage, she remains a “hewer of wood,” and she becomes a servant.

Remembering that in America the social ladder is easily mounted, that it is only a question of a generation or two when all Americans started from the same bottom round, that no one is too poor, too ignorant, too lacking in ambition to desire to reach the dizzy heights, we may realize that while we can get servants they will come more and more from the hopelessly ignorant class. When they lose their ignorance they rise above the servants’ class and only by keeping them ignorant can we keep them servants in the present sense of the word. Increasing wages will not solve the servant problem. Wages have increased and servants are more and more incompetent. Domestic science will not solve the servant problem, because an educated girl is a skilled laborer and you will never get a skilled laborer to do unskilled work. This is an economic question.

“A domestic science class is not a cooking school. A cooking school is a place where they teach fancy cooking and fancy cooking, highly seasoned foods and indigestible concoctions have filled more sanitariums than has any other evil. Did you ever

stop to think that of all diseases the great majority come through the digestive tract and are wholly due to improper foods?

“A little knowledge of foods would put a quietus on the business of health resorts and water cure sanitariums. But then what would women talk about, if they had no ills? Mrs. Gilman says about the conversation of women: ‘They have nothing to bring to each other but personalities, some slight variation in recipes for sponge cake, cures for measles, the endless servant question, or stitches for fancy work. Poor lives, when fancy has no work but in stitches, and no play at all.’ It is considered genteel to be sick, and when our friends and neighbors’ shortcomings have lost their charm—if they ever do—we have always real or imaginary ills to talk about. It is much easier to take medicine than a course in proper feeding.

“Domestic science classes are not classes for teaching hem-stitching, embroidery or Battenburg work. Too many women, now and always, spend their lives taking little stitches in handkerchiefs, ruining nerves and eyesight, while outdoors the sun is shining, the birds are singing, the world is bedecked with hundreds of shades of green, and there is beauty everywhere, while the only beauty they know or see or dream of is in a piece of muslin nine inches square. No wonder women have narrow, circumscribed lives. What broadness of vision can one get by taking stitches so small that they are invisible. ‘The hand of the dyer is subdued to what he works in,’ and if a woman’s work is taking little stitches, can she be expected to rise above little things? Domestic science does not teach fancy stitches. Since civilization began woman has had too much of it. We make things, make them for use, simple, strong, durable, and their beauty is in this. There is no economy in spending weeks in making a basket when we can purchase one much more beautiful for five cents, and the fingers can become just as skillful by using them to lighten mother’s burden or by closing the hole in some stockings.

“I shall try to prove to you that every girl and woman should have a course in scientific home making. I do not mean that a girl should have work in domestic science to the exclusion of all other subjects, because she could not. To understand domestic science we must have at least a good general knowledge of the sciences, but I would not stop there. It has often been said that American women are over-educated. On the contrary, American women are under-educated. A man is willing to send his son to college, but in many cases he thinks such education is useless for girls. No one can have too much education. The educated woman can read something more than the fashion

or theater page of a newspaper or a modern novel. The educated woman is in touch with all the questions of the day and is a part of the life of the world, not a butterfly nor a drudge. The educated woman can find pleasure in works of science, philosophy, literature, while the uneducated reads fiction or talks about people. Tennyson says of educated women: 'Knowledge is to them no more a fountain sealed. Drink deep, until the habits of the slave, the sins of emptiness, gossip, spite and slander, die.' So I do not want you to understand that by domestic science I mean a course in a cooking school. I mean as good an education as a woman can get, but with that general education should go work to fit her for her life work. First fit her for her life work, then add the music and the art.

"We can prove that domestic science is needed by all classes of women—the girl who is ambitious for money-making, fame, or to live her own life, who believes in single blessedness, or who prefers to endure present ills than fly to those she knows not of; and the girl who intends to marry. I shall touch on the first class only indirectly today; my purpose is to deal with the girl who intends to marry.

"Nowadays most girls work at something because they do not care to be idle. The girl who intends to marry makes what preparation? Does she study about foods and cooking, about feeding and bringing up children, about prevention of diseases, about spending the family income judiciously, about general household management, about care of herself, and the hundred and one things a housewife and mother should know? No; this girl who intends to marry decides to earn a little money in the meantime, so she spends six months learning to be an indifferent dressmaker—for it takes several years to become skilled—six months learning to be a stenographer, from two to four years after finishing high school to become a teacher, four years for law or medicine. Her life work, by her own choice, needs no preparation; she learns that by 'instinct;' but work she intends to follow for a few years is done in the business world, on business principles, and hence needs from one to four years of preparation and study. Unless she has this, no business man will employ her.

"What kind of business do you think any manufacturer would now have if he knew nothing at all about it? If he just folded his hands and thought: 'I should like to own and manage a large factory. I'll wait, and in the meantime I'll work at the shoe trade. I'll spend four years in the shoe business and then, when the time comes, I'll know all about lumber and the manufactured products. I can go out into the country and be able

to pick up enough ignorant farm hands to do all the work.' Or take the man who decides to be a lawyer eventually, but while waiting learns the blacksmith trade. When he gets ready to practice law he hires a teamster to look after his business and he takes the fees. No human being would expect success under such circumstances. Even a woman can see how ridiculous this is, but all women do just exactly this thing.

"What does the girl of 20 years know about spending the family income—expensive foods, overloaded tables, foods bought out of season, pounds and pounds wasted by poor cooking on 'unlucky' days, no knowledge of food principles so that she may know when the body is properly nourished, adulterated foods and no knowledge of how to detect adulteration. Do you marvel at the results? If a husband cannot manage his business, he fails. If a woman cannot run her business, she blames the 'ignorant servant.' What man would dare to blame the office boy when his business fails. If the woman who bores her friends, acquaintances, and even strangers, with the shortcomings of her servants, could only know that while we listen we are taking her measure, she would not wax so eloquent on the subject. You know there are women who brighten up and start conversation only when the servant question comes up.

"Some of us can conjugate a Latin verb and make a fancy sofa pillow cover, but if the furnace fire burns low do we know enough to open the draft? If the water pipe freezes at the trap, do we know where the trap is? If we leave our house for the summer, do we know how to attend to the pipes so as to prevent ingress of sewer gas? Or can we tighten a screw in a loose lock. All infinitely easier than Battenburg, Euclid or Chopin. There will always be those mysterious visitations of Divine Providence called croup, typhoid fever and diphtheria as long as woman spends no time learning to 'keep house' and four years learning to teach school when she really intends to keep house.

"How many women live their own lives, wear the clothes they would like to and do as they please? The whole life of many women is a struggle to imitate those above them in the social scale, in seeming to be what they are not. Else why this striving to keep up appearances, when the only one deceived by the appearance is the face in one's own mirror. Why this desire for sumptuous apartments, luxury that one cannot afford, and a scale of life that wears one, mind and body, to maintain? Artificial friends, superficial learning, shallow lives, due to their never knowing the shadow from the substance.

LUXURY A FOE TO CULTURE.

“The greatest foe to culture, to refinement, is luxury. It takes more culture to know what we can let go, eliminate, than it does to take things on. Money buys nearly everything, even immortal souls, but it cannot buy health, refinement and culture. These come through elimination, education, training. William Morris says: ‘I had thought that civilization meant the attainment of peace and order and freedom, of goodness between man and man, of the love of truth and hatred of injustice, and, by consequence, the attainment of the good life that these things breed, a life free from craven fear—that is what I thought it meant—not more stuffed chairs and more cushions and more carpets and more dainty meat and drink.’

AIR AND SUNSHINE FOES OF DISEASE.

“Why are our bodies weak. Absolute confinement to the house would have exactly the same effect on a man as it has on a woman. Sometimes Nature, in her infinite wisdom, gives a girl her inheritance from her father, a strong, healthy body, and sometimes she bestows on the son the weak constitution of his mother, making him ‘mother’s own boy.’ By constant outdoor life the boy overcomes this. By continuous indoor life, fear of rain or exercise, or of soiling ruffled dresses, the girl loses her inheritance and becomes like her mother. Shut a man in the house for a day and you can do nothing with him. Send a woman out of doors for a day and she comes back tired out. ‘Too much for her system.’ Yes, muscles long unused become atrophied. If a musician stops practicing for a week his friends notice the difference in his playing. A singer neglects her voice and it loses its flexibility. A woman neglects to exercise and her muscles become useless. Nature never intended us to be weak; we have made ourselves so. If a woman would live out of doors in the air and sunshine, she would not need medicated baths for run-down nerves. By proper food, exercise, pure air, care of the body, there is no need for sickness and disease. The only excusable sickness would be accidents or the wearing out due to advancing years. The time is coming when it will be considered as great an ignorance or carelessness to be sick as it is now to be unable to read. And domestic science and scientific education for women will bring this about.”

THE POSSIBILITIES IN DAIRY FARMING OPEN TO THE MEMBERS OF THE EXPERIMENT ASSOCIATION.

A. L. GREENGO, MENOMONEE FALLS, WAUKESHA COUNTY.

A possibility is something which may happen and is usually spoken of as being highly probable or barely possible.

Much, I might say all depends upon the graduate, his qualifications and his knowledge of the source of possibilities. Possibilities like happiness emanate from within. The brain is the controlling factor, external conditions only modify. Bacon said that "A wise man will make more opportunities than he finds."

We can increase our direct physical powers only to a limited extent but the brain has invented mechanical devices by which this power or possibilities are increased many times.

Our brain, then, being the controlling factor of our possibilities, we limit those possibilities if we fail to provide food for the nourishment of those brain cells already in existence as well as preventing other cells from forming. This food provided and assimilated, no man can foresee the limitations of our possibilities.

Great possibilities are but aggregations of smaller ones, the smaller paving the way for the greater. They may be likened to a great river system; a comparatively small beginning but each tributary increasing or intensifying the volume of the main.

No great river has ever yet been discovered whose greatness was created of itself. Its greatness lies in its tributaries and in all probabilities none of our graduates ever became great through the seizing of one opportunity. That one may have been the crowning effort but that one was but an aggregation of many others.

I believe that nearly all, if not quite all, the opportunities in the dairy profession radiate from one central point if I may call it so, and that point is *scientific feeding*.

Scientific feeding of the dairy animal is the feeding of that animal so as to enable it to produce to the safe limit of its capacity at the least cost consistent with its present health and future wellbeing.

The best feeder, in my opinion, is the one who gets the most feed suitable for his use for the dollar and then in turn gets the most out of that dollar's worth of feed. In order to get the

most out of that feed he must have stock that will use it with the greatest economy. The ordinary dairy animal is unable to do this work because she is the product of a dwarfed mind and possibilities emanate only from growing minds.

We must breed animals fitted for the work they are expected to do, and each succeeding generation should accomplish better and better work. Thus we see that to follow after opportunities we must become breeders. It is not optional, its imperative, absolutely necessary.

There are times when we may disregard economical production. Mr. Anteen would no doubt have paid a fabulous price for any feed or system of feeding whereby the total amount of butter fat, in the case of his noted Jersey cow Jacob Irene, could have been increased from fifty to seventy lbs. thereby securing for her the world championship.

But we, however, can lay no claim to being good feeders when we, ordinarily, receive but a dollar in return for each dollar spent in feed.

During the month of December, 1908, a herd of nine cows returned for each dollar's worth of food eaten, three dollars and ninety three cents. This was on the sale of the cream and a part of the skim milk, sold to a dealer at ordinary prices.

During January this year, these same cows with one additional cow returned four dollars and two cents for each dollar's worth of feed.

It is a time honored custom to feed the skim milk to pigs and in very many cases it is just as wrong as it is old and time honored. We all know that with whole milk at one dollar and five cents net per can nothing can be made in feeding it to six or seven cent hogs. With skim milk worth one dollar and twelve cents per can it would also be unprofitable to feed hogs.

The West Virginia Experiment Station has found that each added quart of skim milk fed to poultry produces an extra egg. We received for each egg sold during December and January three and one half cents, making the skim milk equal \$1.12 per can. Last year our hens after paying for their feed returned two dollars and twenty cents each clear profit.

During January, 1909, one dollar's worth of feed produced over three dollars' worth of eggs. And on February 6 at the rate of over five and one half dollars worth of eggs for one of feed.



THE BENEDICT FARM

The Home of A. L. Greengo, Menomonee Falls, Waukesha County.

No member of the Short Course or Experiment Association has done more for the agricultural progress of Wisconsin. Mr. Greengo through perseverance, thrift, and good judgment has built this beautiful home and farm buildings. Pure bred Jersey cattle, Barred and Buff Plymouth Rock chickens and select seed grains are his specialties.

SHOULD WISCONSIN FARMERS GROW SUGAR BEETS?

G. W. MC. CORMICK, MENOMINEE, MICH.

Mr. Chairman, Ladies and Gentlemen of the Wisconsin Agricultural Experiment Association: I am convinced that your worthy secretary is a firm believer in crop rotation, as he manages to get sugar beets planted on your program every third year. It was in 1906 that I had the pleasure of addressing the members of your Association on much the same subject which has been assigned me for today. No one appreciates more keenly than I the honor you do me in inviting me to address this association of agricultural energy and brains; and no one knows so well as I how incapable I am to do justice to the important subject which I am to discuss.

The subject is rather a comprehensive one as it involves not only the growing of sugar beets, but practically every crop and occupation on the farm, because we must consider the relative results in growing the several crops and the labor expended to produce them.

Before introducing a new crop on his place an intelligent farmer naturally wishes to know if it is one that will successfully grow in this climate and on the character of soil he possesses; if it is a crop that is subject to attack by disease or insects; how much labor does it require to grow it; what quantity can be produced per acre; is there a ready market to receive it and about what price can be obtained for it. Another and very important question is, is it an exhaustive crop on the soil, and what, if any, beneficial results would be derived from growing it aside from the actual cash received from the sale of the crop?

You see, therefore, if we hope to successfully introduce the growing of the sugar beet in Wisconsin we must be able to answer these questions satisfactorily and submit reasonable proof.

The growing of sugar beets in this state is a very new industry and it is yet struggling with the infantile troubles and difficulties that attend the introduction of every new industry, the greatest difficulty being the lack of experience on the part of the farmers. However, new as is this crop with us, and as inexperienced as the average farmer is in the cultivation of it, we believe we have had enough demonstrations and experience to pass a fair judgment on its merits as a farm crop.

As to whether the climate and the soils of Wisconsin are adapted to the growing of sugar beets, we find these two conditions identical with those of the greatest beet growing country in the world—Germany. It has been demonstrated that sugar beets can be successfully grown on any Wisconsin soil that will produce a good crop of clover, alfalfa, barley, potatoes or corn.

After being grown more or less throughout all parts of the state for the past ten years there has been no evidence of any disease of any consequence attending this crop, and it has been attacked by no insects worthy of mention and has sustained no serious injury from frost; in fact about the only natural enemy the plant has is the lazy farmer and the oracle who occupies a front seat on a barrel-head at the country grocery store.

The question of labor necessary is important, but it differs little in amount from that expended on kindred crops, being slightly more than on potatoes, and less than on cabbage or cucumbers. The labor can all be measured in dollars and cents, it will vary from \$25 to \$35 per acre if you allow going wages for all work done. Any farmer who has help enough to do the other work on his farm can safely care for from two to five acres of sugar beets, and in case he desires to plant more the Sugar Company will gladly provide families who will contract to do all the hand labor on a very reasonable basis. The latter plan is being very generally adopted on the larger farms, especially by dairy farmers.

Like all crops the yield of sugar beets depends largely upon the state of fertility and cultivation of the field, but it is fair to say that on land in a good state of fertility, properly cultivated, a yield of from twelve to eighteen tons per acre can be produced. Hundreds of Wisconsin farmers do even better than this, and there is always an open market ready to receive every ton raised, the farmer is never obliged to peddle it. There need be no uncertainty as to there being an over supply and glutting the market as the Sugar Company will contract to take all the beets at a liberal guaranteed price, the average being about \$5.00 per ton net to the grower. This gives him from \$60 to \$90 per acre, and when the cost of producing is deducted a net, clean profit of from \$25 to \$65 is the result.

Some people say it is an exhaustive crop or hard on the land. The experience of the best beet growers in Wisconsin has been that they grow a heavier crop of wheat, barley or oats following the beets than on the other fields on the farm. In Germany where they have been growing sugar beets for a hundred years, where they have had ample time to observe the

effects on the soil, their experience is that they are growing from 25 to 40% more grain per acre on their farms than before they introduced beet growing. Your own Experiment Station here at Madison thoroughly investigated this matter of exhaustion, and in Bulletin 123, on page 48, they show the value per acre in dollars and cents of the fertility removed by an average crop of wheat, corn, cabbage, potatoes, tobacco and sugar beets. And what is their finding? With the exception of potatoes, sugar beets removes less fertility from the farm than any of these crops, the leaves and tops being left on the field or fed to the stock. And this same report goes farther and states if the tops and beet pulp is utilized on the farm, "The loss of fertility is very small, and much less than any other crop grown in our state." This is as good proof as I can submit as to the exhaustiveness of the crop. It not only does exhaust the soil unduly, but, as every good farmer knows, the thorough mixing, hoeing and deep stirring of the soil in the preparation and cultivation of a field of beets, aerates the soil, sets free the plant food and destroys the foul weeds leaving the field in a well cultivated, clean, prime condition for any other crop to follow.

The development and growing of this crop in your state means something of still greater importance, and something which is deplorably lacking, and that is the deeper cultivation of the soil. It is a fact that in the fourteen counties of Wisconsin in which we operate the average depth to which the land is stirred and plowed is but six inches. In talking with an expert agriculturist and farmer of Germany, who visited this country twice in the past four years, he stated that the weakest point he observed in the American method of farming was the shallow plowing. On asking him how deeply they plowed he stated from twelve to fifteen inches, and this method of plowing had been brought about by beet growing in that country. "Why," he said, "you can never hope to grow as long a beet nor as many tons to the acre as we do when you prepare only six inches of soil for them to grow in; and this applies to every crop you raise; you want storage for your moisture to tide you over dry spells; you want more room for the development of the root system of your various crops, and you should make use of that additional plant food stored below upon which you are paying taxes and making no use of. You can increase your beet yield a third to a half; you can increase your yield of grains 25 to 40% and the quality of your soil will be better."

This deeper cultivation of the soil will require time to accomplish, as it would not be safe to plow more than one inch

deeper each year, and then only in the fall, but once it is practiced the yield of all crops, as well as beets, will be materially increased and periods of drought will not so seriously interfere with our crops.

James Wilson, United States Secretary of Agriculture, whom we all know and honor for what he has done for the farmers of this country, publicly advises the farmers of this country to "Grow more sugar beets and milk more cows." Now this advice applies particularly to the state of Wisconsin, which makes the proud boast of being the greatest dairy state in the Union. With your splendid soil and your large dairy herds, to which you feed so much of the good things that are raised on the farm, you are enabled to manure your fields well and keep them in an excellent state of fertility and produce a large crop of sugar beets. This is a crop you can afford to sell from the farm as you received a good price for it and then you can have the beet pulp returned to you free by paying the freight charge and feed it to your dairy cows and hogs. It is an exceptionally good food for dairy cows, very largely taking the place of or supplementing your supply of ensilage. Your dairy cows will show a decided increase in milk while they are getting this succulent fodder and it enables them to digest more readily and get the value from the other feed you give them. Hundreds of beet-growing farmers in the northern part of the state are getting this product back on their farms and unhesitatingly state that they get an increase of from a quarter to a third in the flow of milk from their cows in feeding a part ration of pulp as against a whole dry ration. They frankly say they can fatten their hogs in three quarters of the time by adding pulp to the ration. They are thus raising a crop which they can produce at a good profit, leaving their soil in an excellent condition for a succeeding crop, and by taking back the pulp they are securing an added value in their dairy pails and on the backs of their hogs and through their animals returning to their fields what they sold from them, thus maintaining the humus and fertility and productiveness of their farms.

When the dairy farmers of this great state realize and understand the many advantages of growing this crop which has made Germany famous as an agricultural country, it will require twenty sugar factories instead of four to take care of the beets they will raise. This state will boast of being a much greater dairy state than it is today, then Wisconsin will come into its own and be a parallel to the Caanan of Bible times, veritably a land flowing with milk and sugar.

PLANT BREEDING.

PROF. K. L. HATCH, WINNECONNE, WINNEBAGO COUNTY.

Every member of the Wisconsin Experiment Association ought to be a plant breeder. Even more, if he is doing the work of the association as it should be done he is a plant breeder. These may seem to be strong statements but a little careful thought will convince us of their truth. In the first place what is a plant breeder?

Breeding, whether it be of plant or animal, is the improvement of those characters which have a peculiar value to man. Animal breeding consists in improving the mutton, beef, wool, energy or milk producing powers of animals and like qualities which have a definite commercial value to man. Plant breeding too, consists in improving the yield, quality, disease, resistance, beauty, or like equally valuable plant characteristics. For the most part the members of this association are interested in the producing power of plants. Any man, then, who secures a type of plants of greater yielding powers, greater resistance to insects or disease, more symmetrical form or any like characteristic, is a plant breeder and has produced a new variety.

What is a variety? In modern thought there is no such thing. Being long accustomed to the theory of immutability of species we used to believe that nature had drawn hard and fast lines between the classes and that species, originally created in almost endless profusion, continued to exist, without change, down through all succeeding time. But then came Lamarck, Huxley, Darwin, Mendel, Hays, Bailey, DeVries, Nillson and Burbank each throwing a new light from his own point of view upon the "Origin of Species" until we now consider a variety as nothing more or less than a convenient, man-made classification of plants more or less alike but each essentially different in minor characteristics. No two ears of corn, no two blades of grass, no two buds or flowers or fruits are exactly alike but many of them are so much alike as to be conveniently put in the same class and this class constitutes what we now are pleased to call a variety for want of a better term and because we have long been accustomed to its use.

But it is this unlikeness, this eternal variation, that constitutes the hope of the plant breeder as well as the one who is interested in the improvement of animals. For years we have recognized this law of variation in animal life and upon it the

best breeds of the present day have been built up, even though the law was not an accepted scientific principle. Yes, more than that: even in the face of the fact that the world at large and scientific men, loudly proclaimed the doctrine of immutability of species."

It is the first business of the plant breeder to recognize that plants are not arbitrarily arranged by nature into definite, fixed and unchangeable groups but that whatever such arrangement may exist has been brought about by man's necessity for classification in his methods of study and by that higher law which we best know as the doctrine of heredity.

During the past few years great changes have taken place in our methods of study. Today we neglect the *group* which we call the variety and focus our attention on the *individual*, for we now know that it is the individual and not the group wherein our greatest hope for the future lies. We now know that there are certain individual plants as well as animals possessing characteristics far and away ahead of the group to which they belong and capable, through the law of heredity, of transmitting those characteristics to their offspring. It is this fact that the modern plant breeder has turned to his account, and through his unremitting toil has been able to produce strong strains better adapted to the needs of man. These strong strains we call new varieties for want of a better term, not necessarily because we believe that they will persist forever.

It is the business of the specialist to produce these strong strains and our own Professor Moore has done much for us in this direction, but it remains for us to keep these strains pure. A strong strain, once produced, will continue to persist for some little length of time but it will not go on forever. It then becomes your business and mine as members of this association to inform ourselves on the methods by which we can make these strong strains, on which so much work has been done before they are placed in our hands, persist in their increased usefulness to man. To understand them fully let us review the methods by which these strains are usually produced and the attendant difficulties.

First of all there is hybridization. This consists of crossing two plants more or less unlike, with the hope of combining in their offspring the desirable qualities of both parents for it must be remembered that plants are as distinctly sexual in their methods of reproduction as are animals. We should then look well to the parent stock of our future plant. But, since each parent plant has many essential characteristics, some of which are undesirable, and since the chances are that these

undesirables may themselves be as easily transmitted as the desirable ones it necessarily follows that our chances of securing the proper combination to meet our needs are very small if only a few plants be crossed. Again, should the desired cross be obtained, it may easily be lost the second generation through reversion to either one of its grandparents or worse still the hybrid may be sterile and future propagation be impossible as is often the case. Then too, the nature of most plants is such that it is neither easy to select the male and female parents, or to obtain the cross so that hybridization as a means of plant improvement is beyond the reach of the average farmer and most members of this association.

Then there is crossing which differs from hybridization only in that the breeding is between plants more nearly alike. Since the methods used for crossing are for the most part the same as those used in hybridization it necessarily follows that crossing is also impractical for us to use in any extensive manner. But crossing, as a general rule results in greater fertility, i. e. a greater yield, and in some plants chief of which is corn it should be employed. Now, corn is about the only farm crop in which it is easy for us to select the male and female parent. The tassel, as you know, is the male part of the plant, the silk on the female organ. Then by removing the tassels as soon as they appear we force certain desirable plants to become mother plants, and by carefully removing from the undetasseled rows those plants which we do not want to reproduce their kind we can force crossing. The seed is then selected from the desirable plants in the detasseled rows. In this way we do exactly what every good animal breeder does, select both male and female parents of our future stock, our crop of corn. Since crossing usually results in greater fertility, we increase our yield by the same method.

But the ultimate success of the plant breeder lies in careful selection and selection is the one method that we can all practice. If we get a desirable hybrid, we must exercise the utmost care in selecting our seed from this hybrid stock or all our work will be lost through reversion, the tendency of the law of heredity to assert itself. Our hybrid will revert in both directions toward the parent stock and unless we exercise the utmost care in selecting our seed for several years and "fix the type" our new variety becomes so mixed with the old and with the infinite combination of resulting crosses that we have no type at all.

So it is with crosses, but to a less degree because we have less difference between the parents and consequently less dif-

ference between the resulting crosses. It necessarily follows that the more nearly alike the parent plants, the more alike the progeny. This is the strong argument for line breeding and its ultimate extreme, in-and-in breeding. There is a common belief that in-and-in breeding, like hybridization, results in infertility, that at one end of the line, crosses between very unlike individuals are sterile and that at the other end the progeny of very closely related individuals too are sterile. The greatest fertility results from crosses and the greatest efficiency results from crosses between individuals very much alike. Hence the necessity for a fixed type and careful selection so that *that* type will continue to persist.

But, as has already been said, there are certain especially desirable individuals in every so-called variety which are far and away ahead of the other members of the group to which they belong. It is the business of the plant breeder to find these individuals by some well defined and established method and to propagate them. In the same way there are in every so-called variety, no matter how well established, certain inferior individuals whose reproduction should be prevented with equal care. This is selection and unless selection is practiced our strong strain will soon disappear. In nature, these undesirable strains are sooner or later eradicated by that means which Darwin calls "natural selection," but in domestic plants, man interposes a barrier to this good work of nature.

The plant breeder should have a type in mind and with a determination as fixed in purpose as "the laws of the Medes and Persians" adhere to this ideal in his selection.

To illustrate this point I wish to cite the experience of Prof. Bailey with his *Ignotum* tomato. In 1887 he found a single tomato growing in his garden which had several points of superiority over any other variety which he was then growing. In 1888 he sowed the seeds for about 500 plants. A few reverted. A few of the best were selected and the seeds saved. These were sown in 1889. None reverted. In 1890 the seeds were sold to a seedman. He says: "The very next year, 1891, I obtained the seeds from fifteen dealers and grew the plants side by side. Of the fifteen lots, eight bore small and poor fruits which were not worth growing and which could not be recognized as the *Ignotum*! Grown from our own seed, it still held its characters well. Here, then, only a year after its introduction half the seedsmen were selling a spurious stock. I have secured no evidence of unfair dealing, but I am convinced that much of this variation was a legitimate result of the various conditions under which the crops of 1890 had been grown, and

the varying ideals of those who saved the seed. I am positive that the Ignotum tomato as I first knew it and bred it has been lost to cultivation, although the name is still used for the legitimate descendants from my original stock."

The work which Professor Moore has done for us, for Wisconsin and for the world at large can not be overestimated, but the time is at hand for him to do more or else, as surely as the world stands, the excellent varieties that he has produced will go the way of the Ignotum tomato. I do not care to assume the role of a prophet, but I venture to predict that unless Professor Moore succeeds in fixing the ideal that he has in mind in the selection of his several varieties of grains, that in twenty years from the day of his death, No. 7 corn as Professor Moore knows it, and he is the only one who really knows it, will have passed with its creator.

I, for one, as a member of this association, favor an appropriation which will enable Professor Moore to place in the hands of every member of this association a detailed description of each and every variety of corn and grain upon which he is working that will enable us to follow his ideal in the selection of seed. If such a publication can be issued as a station bulletin, well and good. If not, then this association should take it up and Professor Moore owes it to us, even though it take some of the precious hours, of a very busy life, from other important work. I was more than ever impressed with this fact a few weeks ago when viewing a number of samples of No. 7 corn, shown here at the university within 100 feet of the office desk where Professor Moore does his daily work. These samples showed almost as many types as there were samples, showing clearly the varying ideals of the men who made the selection. At least half of these were nothing like the ideal that the originator of the variety has in mind yet they all go by the name of No. 7. If this be true even while the breeder yet lives under his very eyes, what is to become of these types when he shall have passed from the stage of action. Yes, every member of the Wisconsin Experiment Association should be a plant breeder, and he should have a definite ideal of the type which he is breeding.

Harwood has written a very attractive book, full of food for thought which he has chosen to entitle "A New Earth." In this book he shows how certain men, students of agriculture and all related sciences have really created for us a new earth, a more desirable place in which to live. This new era begins with the present century and is filled with the marvelous work accomplished by plant and animal breeders during the past few

years. With him, "Old things have passed away, all things have become new." Be that as it may this old earth is rapidly becoming clothed with a new vegetation and inhabited by a new animal life. New plants, new animals, new men, new ideals! The history of the old earth is filled with the achievements of war. May the history of the new earth recount the victories of peace. Emblazoned on the pages of the old earth's history are the names of men whose lives, abound with selfishness and who have shamefully and wantonly spilled the blood of their fellow men. Napoleon, Wellington, Nelson, Cromwell, these are the men whose deeds the history of the old world recounts. But when the history of the new shall be written what names shall stand out in greater brilliancy than those of Bailey, Hays, DeVries, Nilson, Burbank, Davenport, Holden and our own beloved Moore! For we agree with Dean Swift "That whoever makes two ears of corn or two blades of grass to grow where only one grew before, would deserve better of his generation and do more essential service to posterity, than the whole race of politicians put together."

BENEFITS DERIVED BY THE STATE FROM THE WORK OF THE EXPERIMENT ASSOCIATION.

W. H. HANCHETT, SPARTA, MONROE COUNTY.

As members of an organization receiving an appropriation from the state this subject is one which should receive our thoughtful consideration as good citizens of our great commonwealth.

Government is ever subject to the designing schemes of the grafter and the taxpayer is ever having to pay the bill until he is carefully scrutinizing each appropriation made by the state legislature, so it behooves us to take anxious thought regarding the benefits derived by the state in exchange for the appropriation given us lest we too be classed as grafters.

In considering this subject my thoughts have gone back some years to boyhood days on the farm. I remember that in those days in my boyhood home the closest economy was necessary to keep the wolf of hunger from the door. I also remember that there used to be publications known as Experimental Re-



BADGER STATE FRUIT FARM.
(Farm Home in the Distance)

Geo. Hanchett & Son, Proprietors, Sparta, Monroe County.

The junior member of the above firm is our W. H. Hanchett who completed the Short Course in 1898, and has been a member of our Experiment Association since its organization. No one member of our Association has done more for the advancement of the organization than Mr. Hanchett. He has always taken an active part in our meetings and the management of the association has been materially helped by his counsel.

Mr. Hanchett makes a specialty of small fruits, dairying and pure bred seed grains.



ports visit our home and that mother in the practice of the necessary rigid economy used to slit the leaves of these reports into long strips and keep them where they were handy to use in lieu of matches when a lamp was to be lighted by igniting them at the kitchen stove. They came free of charge and they were large enough to save a good many matches. The younger members of this organization will be amused, of course, at such a use of knowledge that had been tabulated to enlighten the farmer, but many of the older members will be able to look back in their own experience and realize that in their case the reports were not the source of as much light as in mine, and I think I may claim without danger of contradiction that before the advent of the Short Course in Agriculture and the Farmers' Institute that very little of the knowledge dug out by our experimenters at the Station ever found its way to practical use and benefit on the Wisconsin farm. Bulletins and reports could be spread broadcast among the farmers without results simply because they were in most cases not read and if read were looked upon as "book farming" and ridiculed by the tillers of the soil, with results that were just as wasteful by comparison as it would be to prepare a great power plant, equip it with massive engines and then get up the steam to a "hundred and enough" and throw the throttle wide open and expect it to operate a great factory without providing a means of transmitting the power to the machines that were to do the work. The source of power might be perfect and the machines that were to do the work might be perfect but the whole was worthless without a means of transmitting the power to the machines, and I think all will agree that the bulletin and report alone were entirely inadequate to transmit the knowledge attained at the Station to practical use on the farm, and that a more responsive medium was sadly needed.

The Farmers' Institute has been of great value in this respect but still it has been in many respects like a slipping belt or a gear that jumps cogs in as much as it visits a community once in several years, creates some enthusiasm toward better farm practice and then lets the motion slacken up by sliding along till next time.

What seemed to be needed was a living medium that was constantly in touch with both the source of investigation and the practical operations on the farm, something that would be quick to take the knowledge attained through experimentation at the Station and put into use upon the farms in the several communities of the State as a practical object lesson for farmers generally to profit by, for the farmer (to use a slang phrase)

is "from Missouri" and must be shown not told. He is quick to imitate anything which he sees that looks good but slow to follow advice.

This is the office that the Experiment Association is performing. Composed as it is of graduates from the Agricultural College and leading farmers who have taken the Farmers' Course it is closely in touch with both the Station and the farm and is well calculated for this work and has proven very effectual in the performance of it.

I will not attempt to estimate in dollars and cents the results to our state for any attempt in that direction would be mere guess work. The increase in yields of grain through the introduction of pure bred seeds is a well established fact and the results have already mounted into the hundreds of thousands annually, but while an increased food supply from a given acreage is a very important matter mere dollars are only filthy lucre unless used to make better homes and better lives, so we should not consider this subject in a boastful way, for while it is proper to take careful note of the results of our work, the state in placing the results of years of costly experimentation in our hands has a right to expect us to use it unselfishly for the benefit of all. So let us as individual members of this organization humbly ask ourselves whether or not we are letting our light so shine among men that others will be drawn to the light, of better farming, better homes and better lives.

CLOVER SILAGE.

W. P. BUSSEY, OMRO, WINNEBAGO CO.

Mr. President and Members of the Wisconsin Agricultural Experiment Association: When your Secretary wrote me some weeks ago, that he would place me on the program for this meeting, to give you my experience on clover silage as a summer feed, I was inclined to object en account of my inability to present to you this subject in a satisfactory way. However, I will try to give you some of the most essential points as I consider them.

Having attended the meetings of this association for the past two or three years, and having grown some of the pedigree



FARM HOME OF W. P. BUSSEY.

Omro, Winnebago, County.

Mr. Bussey is an ardent worker in the Experiment Association and is noted for being one of the most public spirited men in Winnebago county. For many years he has been one of the leaders in the Winnebago local horticultural society and through his active efforts has been instrumental in doing much good for his community.

His leading specialties are pure bred seed grains, small fruits and dairying. Mr. Bussey's farm is up-to-date in every respect and his seed grains rank among the best grown in the county.

grains furnished to its members, and by watching the growth and development of them, I have been interested in some of the conditions that confront us as farmers, especially if we are looking to the dairy cow for the larger part of our cash receipts.

The subject of Silage for winter feeding for the milch cow has been presented to us for years by our best practicable dairy-men and the results obtained by them have been the means of others following their lead. And today it is admitted by all, that the silo is the most economical way of taking care of the larger part of our corn crop.

While attending the meeting here last winter I spent part of the time inquiring of some of your members and faculty the more important features of Silos and Silage. Soon after returning home I contracted for two small stave silos, which were placed inside our barn, using part of the space that had formerly been used for a hay mow.

The part of our farm used for a pasture is rather low, and in ordinary seasons gives us good feed, but such seasons as we have had for the past three or four years, it has been too wet during the earlier part of the season. This had a good deal to do with our trying the experiment of clover silage for summer feed.

The past season gave us an enormous growth of clover, and as this was all new to us, and not knowing at just what stage to cut the clover to get the best results, we cut it when the first heads began to change from full blossom. We began cutting June 22, in the morning while the dew was on, beginning at once to load it onto wagons, three or four men pitching it on with large barley forks. It was not necessary for a person to be on the load, for it unloaded much better when it was not tramped down. This was drawn to the silage cutter and cut one inch long. It was well spread and tramped in the silo.

During the forenoon we put eleven loads into the silo. This was about half the amount that had been mowed. At noon we had a heavy rain which lasted about an hour. As soon as the rain was over we commenced drawing the wet clover. Of course a considerable part of the water dripped out during the pitching onto the load and from the load to the cutter, but for all that the clover which was put in in the afternoon was more wet than that put in in the forenoon. I am satisfied that this extra amount of water in the clover was one of the reasons that helped to make this trial so satisfactory. The last load run through the cutter was cut one-fourth inch long. This being wet and by being thoroughly tramped left the surface very hard

and firm. The following day I scattered some barley over the surface, and for several days sprinkled it with water. In a few days we had a growth that seemed to exclude the air. On the 27th of July we took off about a load from the top. This took off the green barley, the root growth, and a thin layer underneath, which seemed to smell rather strong. At this time our pastures were getting dry and the feed short. We had been feeding new clover hay for two or three weeks at milking time.

We were so busy haying, harvesting and cultivating corn, that it did not seem as if we could stop to uncover the silo.

And right here I want to say, that from the appearance of the top and the smell that came from it, and hearing the comments of people who had heard about the trial, I was not quite as anxious to open it as you might suppose. There seemed to be a feeling of pity as well as curiosity, concerning the results. Several "kindly" offered to help pitch it out and draw it out on the land, for they thought if it did not burn itself and set fire to the barn, it might make a good fertilizer. The first two or three feedings that were given the cows seemed to justify my friends' opinions. We put some bran on the feed after putting it in the manger. The cows ate the bran readily and the clover sparingly. My hired man said "they acted like a fellow getting used to a new brand of chewing tobacco." At the end of the third day all of the cows were eating with a relish all that we gave them. We fed a heaping bushel basket full to each cow twice a day. Some would eat more and it was given them. No bran was fed after the second day.

Our cows soon began to increase their flow of milk and lost that dissatisfied look that they had had when they were brought up at milking time. As the pastures became poorer and the flies more numerous, the young heifers and some of the cows which were soon to freshen, got into the habit of going into the stable at milking time and they were given feed regularly.

Now as to results. The flow of milk was soon increased considerably, the cows were contented and very soon their appearance had changed so that several asked me, "How much, and what kind of grain are you feeding your cows?" And when told that all they were getting was the clover silage, seemed hardly to believe me.

The twenty-one loads of clover put into the silo were taken from three acres of land. We fed twelve cows all of the time and eighteen most of the time for eight weeks. At the time of filling silos with corn we had not fed out all of the clover. There must be two or three tons in the bottom now.

During the time of feeding the clover silage some of our cows freshened. They were in fine condition and commenced milking in good shape, and I think that since we have been feeding the corn silage better results have been obtained, on account of the animals being in such good condition. I am satisfied that we made two mistakes. One was in not putting in more clover and the other was in not beginning to feed sooner. For if we had begun feeding the silage two or three weeks sooner, instead of dry clover hay, we could have increased the flow of milk instead of the decrease which was noticeable at that time. Some of the farmers here thought that the clover silage fed to cows while they were running in the pasture would physic them and be injurious. But such was not the case as not one of the cows was so affected.

Our bull, which was kept in the barn all of the time and received two feedings of silage a day with what dry hay he would eat at noon, was kept in fine condition and at no time did he show a too laxative condition.

There are one or two conditions present in clover that are not so noticeable in corn for silage purposes. First: The stalk or stem of clover being hollow, more tramping seems necessary to exclude the air. Second: The average temperature at the time of putting in clover silage being about 30 degrees higher than at the time of putting in corn, a considerable amount of moisture should be provided at the time of filling, so as to avoid a burning or scalding during the process of cooking or fermentation, that all silage goes through.

As to the silos, each one of our stave silos is placed on top of a five foot wall. The wall is laid up with cement mortar, the bottoms are concrete, and both bottoms and sides are plastered with two coats of cement.

There is no noticeable difference in the appearance of the silage either clover or corn against the staves or against the cement. I cannot give you the relative proportions or the feeding value in comparison between clover or corn silage, but from the results obtained last summer I consider clover silage one of the best and cheapest feeds for summer use.

RELATION OF MEMBERS OF THE ASSOCIATION WITH
FARMERS AND SEEDSMEN OF THE STATE AND THE
UNITED STATES.

HENRY E. KRUEGER, BEAVER DAM, DODGE CO.

Mr. President, Ladies and Gentlemen: There are many strong factors in connection with our association in relation to farmers and seedsmen of the state and United States that are not found in other organizations.

We are composed of young men who have deliberately and enthusiastically selected agriculture as a business. We are all students of one school and have had similar training and that adapted to the conditions under which we live.

We are scattered over the state and many outside of the state living on farms and working under varied conditions of soil, moisture and climate.

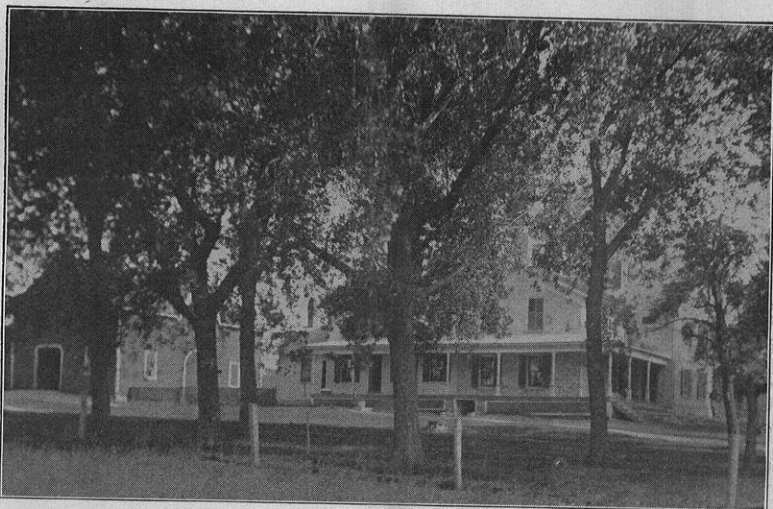
Some of you are experimenting in the production of grains; others growing alfalfa, while others are stockmen, dairymen, horticulturists, etc., and are setting examples of untold value to farmers in your respective communities.

We cover many branches of agriculture and the work we are doing is of great importance to the farmers everywhere and to the state at large.

The education we have received from the College of Agriculture has been practical and it has broadened us intellectually. It enables us to think more clearly, to reason and sift out the useful from the useless.

Last summer I had the pleasure to visit the farms of some forty of our members in various parts of the state; and I found that they were growing pure bred varieties of grain, corn, stock, etc., and were leaders in their localities. Some members got their neighbors interested, and whole communities were growing one select variety of small grain or corn, that the members had found to be best adapted to that particular section. Thus their influences benefited the neighboring farmers.

But there are still many who have to be shown. We, who live in those communities, know all too well the mistrust with which a large proportion of the rural population view the acts and professions of student farmers. They are from Missouri on many points and we have to show them by actual demonstrations that our pure bred barley, oats and corn are better yielders

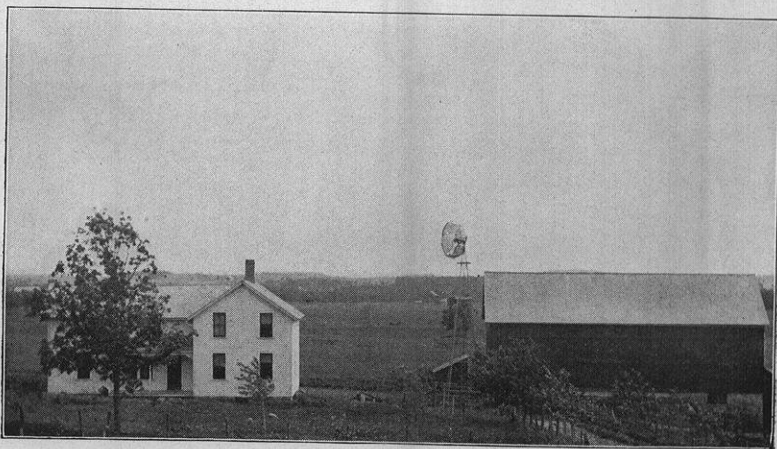


FARM HOME RESIDENCE HORACE E. WHITTAKER, FOND DU LAC,
FOND DU LAC COUNTY.

The above cut shows the beautiful farm home of Horace E. Whittaker. Mr. Whittaker completed the Short Course in 1906, and has been an ardent worker of the Experiment Association for many years.

His specialties are Wisconsin No. 7 corn, Oderbrucker barley, Swedish Select oats, Ito San soy beans, Aberdeen Angus cattle and Duroc Jersey swine.

Like other members of the Association he is actively engaged in displacing scrub grains by pure bred varieties.



SUNNY SLOPE FARM.

J. P. Bonzelet, Proprietor, Eden, Fond du Lac County.

The Sunny Slope Farm consists of 215 acres of some of the finest land in Wisconsin, and is devoted to the raising of pure bred seed grains and seed potatoes. Dairying also receives due attention. Mr. Bonzelet is a former student of the Short Course and is now president of the Fond du Lac County Order of the Experiment Association, the largest county order in the State. He has always been an active member of the Experiment Association, and his pure bred seed grains rank among the best. Swedish Select oats, Oderbrucker and Pedigree barley, White Victor and Rural New York seed potatoes are his specialties. The Wisconsin No. 8 and Golden Glow seed corn also receive special attention. Mr. Bonzelet is fully equipped with good seed houses and power grain graders, so as to send to his customers only the finest grades of seed.

than the old mongrel varieties. "And we are showing them." The agricultural world is full of Missourians. They are the very men we want to reach; and if we can pound our gospel or examples into them without their knowing it, we shall be able to pile up results still faster.

It is one thing to grow and offer for sale choice varieties of seed; it is quite a different problem to make people buy. We can do it however by instituting a campaign of education by setting examples that shall reach every farmer in the state who can see and think. Many of the farmers with the scrub grains see the advantage of the improved varieties and are buying our seeds.

There is a market for them in Wisconsin for ten times the quantity of pure seed grains that is being sold here at present. But it requires development. I believe the time is ripe for our organization to open up that market, by each one of us doing a little toward educating the grain and grass growers to a thorough realization of the necessity for improved varieties and adapting better cultural methods; and give old Wisconsin a boost by leading every farmer to clamor for better seeds and pull ourselves up a notch or two.

Largely through the efforts of the members of our society, we have shown the farmers that alfalfa can be grown with profit in forty-five counties of this state. Members have taught the farmers how, when and where to sow it. They have determined the best time and methods of cutting and a few have succeeded in maturing seed. So not only are the members increasing the productivity of their own farms, but their neighbors as well. They are missionaries scattering the gospel of pure bred seeds and increased yield all over the state and United States.

The members of the association are the seed producers of the state. Wisconsin seeds are more and more in demand. They are wanted in other states. Illinois and Iowa farmers are finding out that it pays them to buy Wisconsin seed oats; they out yield their home seed every time. The same is true of barley, clover seed and soy beans.

Now as to our relation to the seedsmen of the state and United States. The leading, or I think all of Wisconsin seedsmen are buying their seed from our members as far as we can supply them. While we can supply their demand at present on Swedish select oats, Oderbrucker barley and clover seed, they still are short of good, kiln-dried seed corn, soy beans and wheat each year. Now there is a great field open here for our hustling members to help supply this demand. While we have not done

much with wheat, there is a place for it on some of our Wisconsin farms at present prices.

These seedsmen are helping us to introduce our stock throughout the United States, through their catalogues; and I notice many seed catalogues from outside of the state are also quoting prices on Swedish Select oats, Oderbrucker barley and other seeds that were grown by members of the Wisconsin Agricultural Experiment Association. So not alone are we supplying Wisconsin seedsmen, but our seed is recognized all over the United States, by leading seedsmen. I know of some forty car load lots that left the state this season for seed purposes, some to New York and Pennsylvania in the east, Michigan, Ohio, Illinois, and most all of Iowa, in the Central West. Besides many thousands bushels in lots from one to one hundred bushels, were shipped out; some of which reached every state in the Union. And if the reports are as satisfactory this year as last, we will have farmers and seedsmen all over the county looking to us for their seeds in the future, as long as we supply *good, pure and reliable* seed.

Our members have pushed the corn, that only a few years ago was thought to be fit for southern Wisconsin, well up into the center of the state; but it had to be Wisconsin grown seed, bred and selected especially for that purpose, so it would mature; and not Kansas or Nebraska grown seed, as some seedsmen heretofore were pushing and selling in Wisconsin.

You older members, and you five hundred new ones who are just joining our ranks to help carry on this good work, you are more than ordinary farmers, you are public benefactors.

As you return to your homes experimenting and setting examples for your neighbor farmers, the best wishes of the Experiment Association go with you.

WISCONSIN SELECT SEED GRAINS.

HENRY MICHELS, MALONE, FOND DU LAC CO.

Wisconsin Select Seed Grains? What does the term imply? Does it mean that the word Wisconsin placed before the name of a grain designates any particular variety of that grain. Do we hear of Wisconsin barley or Wisconsin corn as we hear of Montana alfalfa or of California grapes? Perhaps matters have

not come to that stage yet. Nevertheless, we can take pride in the fact that our state is fully as aggressive in the development and dissemination of select seed grains, as Montana is in the production of the alfalfa seed which is known the country over; or as California is in the culture of her vineyards whose products are considered such a luxury.

Wisconsin may truly be considered a pioneer in the field of good seeds. To her Agricultural College the world owes a debt of gratitude for the work she has done, not so much in breeding ordinary grains to a higher state of excellence; that part of her achievements marks only the beginning of the great work which has proven such a benefit to the country. Many other Colleges have worked along similar lines in perfecting common varieties of grains, but once they had effected the improvement sought for, they considered their work ended. Not so with our College. Of what use are extensive breeding operations, when the products of such labor are scattered broadcast over the land to anyone who is willing to pay the price, and are then forgotten? Right on the farm, under farm conditions the real test must be applied. And even then one trial is not sufficient to determine the value of any new variety. Tests must be made in different sections, in different climates, and on different soils in order to prove whether or not the variety is the one best suited to the area of land for which it was intended. Thus reasoned the men in our College, and therefore they carried their work a step farther than the experimenters in other institutions of the kind.

Had Oderbrucker barley been left to shift for itself after it had been imported and improved, the state would have received little benefit. A few farmers would have bought a bushel or two each, to give it a trial, upon recommendation of the University. At harvest time perhaps, it would have been mixed with the scrub grain grown beside it; or it might have been contaminated with foul material which would render it useless for seed; or the grower might have saved as much as he wanted for seed and sold the rest to the brewers. Whatever was done with it the Station would have had no means of knowing to what extent its experiment had benefited the state in general.

Instead of pursuing such a course, our College through the Experiment Association, distributed its select seeds among men, who, by reason of their special training were able to grow them intelligently and then disseminate them among their neighbors in such manner as would be productive of best results. Herein lies the secret of the success of the Wisconsin seed grower; he co-operated with the state in growing his seeds and in disposing

of them, and by so doing rapidly increased the area of select grains grown within the state each year.

Outside of our boundaries, people come to realize the value and the importance of this movement. The reputation of Wisconsin methods and of Wisconsin seeds has spread far and wide. Everywhere, even in foreign countries, the buyer of seeds recognizes our grain; as being the cleanest, the purest and the best obtainable. To him, the term "Oderbrucker barley" is synonymous with "Wisconsin barley;" "Silver King Corn" with "Wisconsin Corn;" "Swedish Select Oats" with "Wisconsin Oats." To him, the word Wisconsin prefixed to a grain is a better guarantee of its excellence than any variety name. It signifies that it was grown in a district which makes a specialty of growing the best.

In the space of a few short years Wisconsin has risen by rapid strides until now she is second to none in the acreage of select seeds grown. She is naturally entitled to such a position being favored with a splendid climate and a fertile soil. The credit for the rapidity of her rise, however, belongs to the Agronomy department of her Agricultural College, which through its systematic work covering the entire state, has done more to improve the type of grains commonly grown, than all other factors combined.

SYSTEMATIC FARMING.

H. P. HOWELL, SPARTA, MONROE COUNTY.

There is only one way of carrying on a business successfully and that is systematically. I need not say anything in the way of urging you to cultivate your desire to get the largest possible profits from your business. I know that you want to have maximum crops, to improve your soil and to bring as much happiness to yourselves and those dependent on you as possible.

In order to do this a farmer must be continually answering these questions for himself. What crops shall I grow and what area to each? What care shall I give these crops and the soil upon which they grow? What disposition shall be made of the produce of the fields? If the crops are to be sold, then when and where? If they are to be fed, then to what class of stock and to what number? What manure and fertilizer shall be ap-



HOWELL STOCK AND GRAIN FARM.

H. P. Howell, Proprietor, Sparta, Monroe County.

This high grade farm is owned and operated by our worthy member, H. P. Howell, and consists of 120 acres of land conveniently located near Sparta. Mr. Howell completed the Short Course in Agriculture in 1907, and immediately engaged in farming. No member of the Experiment Association has put forth more active efforts in banishing scrub stock and scrub grains from our State, than Mr. Howell. Pure bred Guernsey cattle and pure bred seed grains are his specialties. High grade seed potatoes, Poland China hogs and White Leghorn chickens receive attention.

plied to the soil, to what crops, in what season, in what quantity? What provision shall be made for the protection of growing crops from insect and fungus diseases, for storing crops and the care of live stock? When and where shall livestock and their products be marketed?

The repeated answering of these and similar questions constitutes farm management and the farmer who wishes to be successful must work out a system that will profitably solve these problems under his conditions.

"I have supper almost ready," I heard my wife say one afternoon when I knew she had not left the sitting room, and I looked up in surprise. "Yes," she repeated, "Supper is almost ready, I know what I am going to have."

Knowing what one is "going to have" is a long step toward having it. Planning ahead is an essential for economy of time and money in any business. Systematic farming means that problems are thought out before steps are taken to work them out, and when the time comes to do the work it has been so well planned out as to cut out all false movements, so every step counts. The reason many farmers fail is because of too much ill-applied hand labor and too little brain work combined with bad business management in buying and selling.

System is as essential on the farm as in a large mercantile establishment. System enables one to keep ahead of his work and to do things well because they are not left to the last minute when lack of time and present need encourage slighting. System sets the wheels going round smoothly and makes farming pleasant and profitable on either a small or large scale.

Take the matter of breeding livestock. Systematic breeding along special lines is the only method of establishing a uniform herd, which will produce meat or milk with any degree of certainty. The careful breeder knows what to expect from his matings, he knows that there will be a certain percentage of culls and that there will be a certain percentage of average animals, but he also knows that a certain percentage will be stronger along lines he is trying to build up than either parent. He works with positive assurance of getting something good from his work because he mates his animals with system.

This example will apply to breeding better grains, improving the soil and every other branch of a farmer's work. In order to be successful, we must apply it.

System is absolutely essential to success in farming.

HANDLING MANURE WITH SPREADER IN THE WINTER.

L. W. BRIGGS, PEBBLES, FOND DU LAC COUNTY.

It is somewhat troublesome work to spread manure properly on the land in the winter and for this reason I desire to say a few words relating to the method in use on our farm. All admit that it is preferable to get the manure to the land direct from the stable before it has suffered a loss through leaching, and fermentation. This is particularly true when the farm is not supplied with a manure shed.

During the fall months the manure can be conveniently handled with a manure spreader but after several inches of snow has fallen it becomes a more serious task. I have been experimenting a little of late with my spreader, and I find by removing the front wheels and attaching a pair of bobs to the front of the spreader that we are able to operate the machine much more conveniently and do more efficient work. In order to raise the front end of the spreader to its position when on the trucks we found it necessary to put a block which was about six inches thick on the bolster of the sleigh, otherwise there were no changes necessary. I think this will be a hint to the progressive farmer, who believes in getting the stable manure onto the fields before it has lost a large per cent of its value.

CORN: HANDLING, SOIL, AND PROPER ROTATION.

C. P. NORGORD, MADISON, DANE COUNTY.

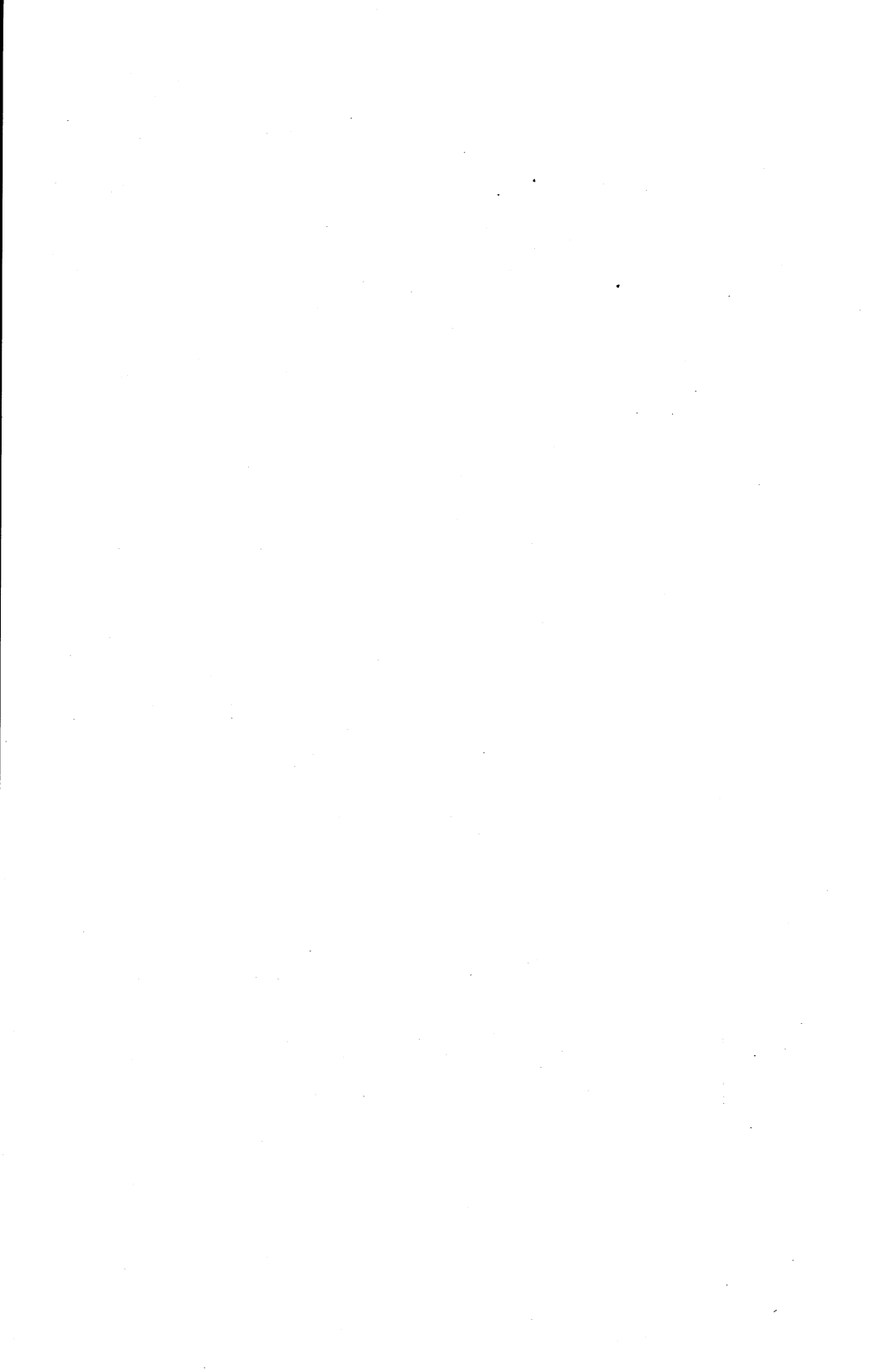
The soil best adapted for corn may be characterized as a medium loam well supplied with vegetable matter overlying a subsoil of good texture. Few farms are composed entirely of such soil, hence, we find the majority of farmers raising corn on only a few choice pieces of land, thus destroying the sequence of crops in their rotation. While we would not advocate that corn be grown on land so hilly as to entail a large loss of fertility from washing, nevertheless, owing to the large amount of fertility set free by the cultivation and exposure of the soil



Farm Home of L. W. Briggs & Son, Peebles, Fond du Lac Co.



Handling Manure with Spreader in the Winter.



to fallowing incident to corn culture and because of its place in the rotation of crops, corn should be grown on all the fields of the farm so far as possible. We hear of the importance of farming so as to conserve the fertility of the soil, aside from keeping stock and feeding crops at home, the main method of conserving fertility is by adopting a proper rotation of crops. The importance of crop rotation is moreover seen in the improved conditions for each succeeding crop formed by the preceding one of another kind requiring different food elements and different methods of handling the soil, this may be quickly noticed by the vigorous growth of the grain crop following corn.

No best rotation for corn or any other grain can be cited. The local requirements in each individual case determine the rotation most suitable. However, the following three rotations are practiced extensively.

	1st year.	2nd year.	3rd year.	4th year.	5th year.
No. 1.....	Corn ...	Grain...	Hay and manure		
No. 2.....	Corn ...	Oats...	Barley.....	Hay.....	Hay or pasture manure.
No. 3.....	Corn ...	Barley.	Oats.....	Hay.....	Hay or pasture manure.
No. 4.....	Corn ...	Grain...	Hay.....	Hay or pasture manure.	

Rotation No. 1 is practiced by many good farmers. Its many good points lie in the fact that it does not permit the formation of old sod. Farmers who have lost crops or found difficulties in getting perfect stands of corn because of insects will appreciate the fact that beetles, grubs, cutworms, corn root worms, and other insects attacking the roots of corn cannot find time to develop in the one year of hay nor can they thrive in the absence of a stiff sod. Land in a fair state of cultivation and fertility can usually be kept so and in a good mellow tilth under this rotation. However, it must be emphasized that this is not the rotation proper for building up poor land. It should also be noted that this rotation permits of only one-third of the farm in hay. This does not usually meet the needs of our dairymen. Hence, for the larger part of Wisconsin this rotation cannot be recommended. Rotation Nos. 2 and 3 are very similar. Both provide a large amount of grain and more hay than No. 1. No. 2 is particularly favorable to grass seeding as it provides for barley as a nurse crop. With this rotation, there is however, danger of the lodging of the oats, as this crop follows corn, the most favorable place for a vigorous growth of straw. Because of this danger, rotation No. 2 can

be recommended only for land of medium fertility. Rotation No. 3 follows corn with barley, a stiffer strawed crop than oats, and the oat crop is placed in the third year where the fertility has been reduced by the two previous grain crops. This will counteract the danger of lodging and make it possible to use oats as a nurse crop for grass seeding. This rotation is therefore to be preferred above No. 2 for lands in a high state of fertility. No. 4 is very similar to 2 and 3 but provides for only one year of grain with one-half of the farm into hay. This is a rotation practiced on the Station Farm, the best soil building rotation, especially adapted to dairy farming. Seldom indeed do we find soil too rich for corn. This rotation adds fertility to the soil by the large amount of leguminous crops and the practice of applying manure every four years immediately preceding corn.

In practicing this rotation, the manure may be applied to the hay land during the winter and spring of the second hay year, in which case an abundant crop of hay will result in the year when the hay is often poor. The roots of this crop will also hold the fertility and prevent it from leaching down out of the reach of crops or washing away. Moreover this will permit of hauling the manure from the barn direct to the field during the winter and still allow fall plowing for corn.

If this plan cannot be followed the manure should be applied during the early fall and winter preceding the corn crop. The sod may then be plowed early in the spring just before planting or late during the preceding fall. Corn on spring plowing is usually less weedy than on fall plowing. It is easy to see that a sod cover keeps the soil from washing during the winter and by the growth the legumes present in the fall and early spring may add some nitrogen to the soil. Since plants by their transpiration rapidly remove moisture from the soil a heavy growth of grass before plowing may deplete the soil moisture to such an extent as to seriously affect the following corn crop if the season be dry. Another serious drawback to spring plowing lies in the fact that the grass crop covered with a coating of manure and plowed under so close to planting time will lie for a long time as an unrotted mass under the corn thus destroying capillarity and drying out the soil. When manure is applied to the preceding hay crop or at least early in the fall preceding the corn it is possible to plow for corn early in the fall. Whenever this is done sufficient time is given for the vegetable matter plowed under to rot thoroughly before the corn is planted. The furrow slice can then settle down against the bottom of the furrow so as to permit perfect capil-

lary action and insure against loss of moisture from below. Moreover land plowed in the fall is ready to work in the spring earlier than that which is to be plowed in the spring. This means much in Wisconsin where the danger of too short a season is always great.

In considering the handling of the soil, it must be remembered that the sole purpose of working the soil is to aerate and warm the soil and increase the moisture, but *particularly* to set free plant food so that it will be soluble in the soil water and thus be in condition to enter the plant with the water.

A stone picked up in a fine loamy corn soil may show by analysis as much plant food as the soil in which it was found and would furnish as much actual food per unit if it were finely pulverized. Soils are found in various stages between the rock and the fine soils. It should be our purpose in preparing land for corn, as well as other crops, to reduce all the soil to the condition of the fine soil. In this work nature, is our potent aid. Where land is plowed in the fall the freezing and expansion of water in the soil burst asunder millions of little particles of soil which enclose minute quantities of water. The wind and the sun are also powerful factors working in conjunction with men. We must not forget however, that the farmer of today has at his service tools, that, for fineness of work, are surpassed only by their *capacity* to do work. These; the disc, the harrow, and the roller should be used freely as each application of these tools goes far, for the present crop at least to make up for the lack of direct application of fertilizers. The depth at which to plow, depends of course, upon the condition of the soil and sub-soil. In general it should be said the plowing should be as deep as possible, within reasonable limits, without plowing up too much poor subsoil at one time, for the deeper the furrow the larger and deeper is the feeding area of the roots for the plants. Fall plowing is also to be recommended for its affect on the moisture content of the soil. Professor King and others have demonstrated the fact that fall plowing contains more moisture and holds moisture better than spring plowing. Moreover, as the furrow acts as storage for water, the deeper the furrow the larger the supply of water available to any crop and the greater the proportion of any rain will the soil take in before it becomes filled and begins to overflow and wash.

The loss of moisture takes place rapidly immediately after plowing when the fresh moist soil is opened up excessively permitting the air to penetrate and carry the moisture. To prevent their loss harrowing to smooth down the more prominent

irregularities should take place soon after plowing preferably the same half day.

Shortly after planting, if the soil be coarse and lumpy, the seed is apt to lie in pockets between coarse grains of soil in such a manner that there is little contact between the sides of the kernels and the soil. Under such conditions, the moisture cannot well come in contact with the kernel. To remedy this condition, the roller should be applied immediately after planting. By the crushing of the clods and coarser grains of soil and the pressing of the soil against the kernels, connection is made for the water to come from below up around the seed to moisten it and produce rapid germination and growth. For sometime after plowing, especially if the land plowed be sod, there is often an opening between the furrow and furrow slice. The main supply of water for the growing plant comes usually from below upward as oil passes from the bowl of the lamp to a burner. The opening between furrow and furrow slice acts upon the transmission of the soil water to the plant as cutting in two the wick of a lamp. The weight of a roller passing over the furrow slice packs the latter against the bottom of the furrow thus securing perfect connecting for the passage of water from below to the seed and surface of the soil. It will be readily seen however, that permitting the water by this process to reach the surface provides favorable condition for the lack of moisture by evaporation. To prevent this the roller should always be followed by a light harrow thus destroying the connection to the surface and by the soil mulch from holding the water directly to the region of the seed.

Let us therefore plan our work, according to the best light of the present day and work our plans to their complete realization for satisfactory results come only to him who thinks as well as works.

REPORT ON SILVER KING CORN.

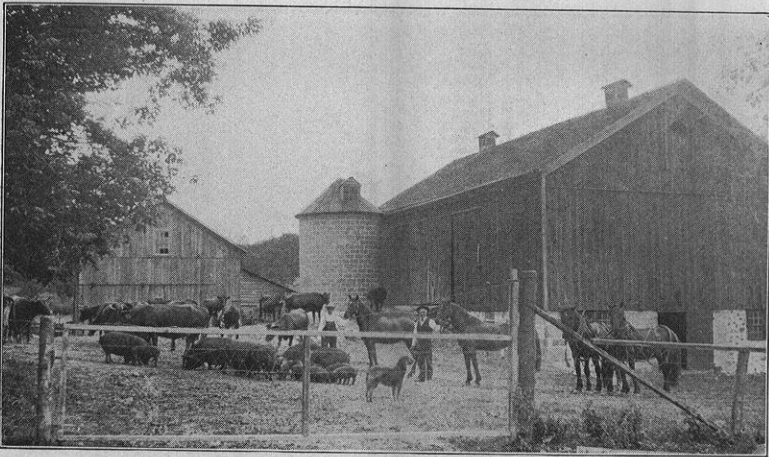
HENRY MICHELS, MALONE, FOND DU LAC COUNTY.

While I do not wish to say anything against the suitability of Silver King corn for southern half of Wisconsin, I feel that I cannot recommend it for more northern localities. After growing it for two years, I have come to the conclusion that it is not adapted to places in our latitude, which is that of Fond





FARM HOME RESIDENCE OF CHAS. ROETHEL AND SON.



THE MEEME STOCK AND GRAIN FARM,

Chas. Roethel & Son, Prop's. Kiel, Manitowoc County.

This beautiful farm home is located on one of the finest farms in Manitowoc county and is managed and operated by our worthy member, Herman Roethel. The farm consists of 170 acres, of which 30 acres are fine wood land, the remainder is under a high state of cultivation.

Mr. Roethel took the Short Course in 1903, and is now president of the Manitowoc County Order of Wisconsin Experiment Association.

Pure bred seed grains, Jersey cattle, White Plymouth Rock poultry and Berkshire swine are his specialties. Mr. Roethel's work in the Experiment Association has been of a high grade and his select seed grains have always been regarded as the best.

du Lac. This opinion is held by all others in that section who have grown it, with the possible exception of those residing on the shore of Lake Winnebago. There is a strip of land along the lake, about a mile wide, which has a black soil, and, being protected from early frosts, is fairly well adapted to this corn. But outside of the territory mentioned, the seasons are a little too short to permit its successful cultivation.

During the summer, the corn makes a fine growth and starts large ears, but in the average season, frosts come about a week before the kernels have hardened. The result is that we have to crib a lot of soft corn which neither keeps nor feeds well. Because of its very thick ears which do not dry out easily, No. 7 must be even riper than other varieties or it will mold in the crib. Furthermore, the stalks grow so rank that they are hard to handle and on account of their immaturity are low in feeding value.

As to yield, it surpasses all other varieties grown in Fond du Lac County as far as I know. Last season our field of six acres averaged 52 bushels of shelled corn per acre on land which was not exceptionally rich having received no manure previously.

It is suited to one purpose, however, which makes it valuable even in our northern latitude, and that is as a silage crop. Its growthy stalks, numerous wide leaves, and large ears, all go together to produce a succulent feed which, for cheapness and quality is hard to excel.

THREE YEARS EXPERIMENT WITH SILVER KING CORN.

HERMAN ROETHEL, KIEL, MANITOWOC COUNTY.

Fellow Members: In the spring of 1906 I had the opportunity of giving this variety of corn a fair test. At the close of the Short Course, I took home with me twenty-five ears of Silver King corn to carry on an experiment. I took great care in preparing the seed before planting. Fifteen ears were selected that were as near to type as I could get them. I then discarded the butt and tip kernels to get rid of the ill-shaped kernels. I prepared just one acre of clover sod land, well manured, and plowed in the spring as soon as the frost was out of the ground. A roller was used to compact the soil and

this followed with fine tooth harrow to conserve the moisture for future aid to the corn crop. Shortly before planting I went on with a disc harrow and worked the ground up in a nice mellow condition. The corn was then planted May 18 with a hand planter in check rows three feet eight inches apart each way. After planting I harrowed it again and in eight days the corn was about one inch above the ground when I started a one horse cultivator. I then followed with a two horse cultivator, this cultivation was kept up once a week for about five or six weeks and my corn then looked strong and vigorous. It kept on growing and by the end of September it was fairly well matured. It was then cut by hand and shocked and the week following was husked and yielded eighty bushels of shelled corn per acre. This method of seed preparation and care in cultivation was kept up every year since and I always have a fine well matured crop of Silver King corn each year. I do not think we can get a better variety at present for the silo as it makes an exceedingly fine grade of silage on account of the abundance of leaves and large ears and soft stalks. It seems to me that my corn is ripening about a week earlier each year under the same care and cultivation. I feel that it is getting used to the climate. This year I found that some ears and kernels were verging away from the standard and before I prepared my seed this year I wrote to Prof. Moore to send me some kernels that were just the right type, which he did. I then went to work and picked out kernels of my seed that were just the same type. I planted one-half acre which was planted a sufficient distance from my other corn to prevent crossing. From this plot I selected my seed corn for the next year and I am sure now that I have the right type again. It seems better to select the proper type from your own seed than to attempt to get new corn as it takes at least three years for a corn to become thoroughly acclimated.

SILVER KING CORN.

OWEN R. JONES, BEAVER DAM, DODGE COUNTY.

Mr. President, Fellow Members of the Experiment Association: Three years ago while here attending the Short Course together with several other classmates I decided to join this large army of cooperative seed grain growers. By so doing

we were entitled to some variety of grain or forage plant of which I chose the Silver King corn. It was planted in a heavy clay and sandy loam soil on the 26th day of May. Five days later the corn that was planted in the sandy loam soil made its appearance above ground. Seven days from the date of planting that in the heavy clay soil the corn made its appearance. A few days later the cultivator was put to work as soon as the corn was at a sufficient height to see the rows well and it was then cultivated at intervals of about ten days until it had grown too large for cultivation. The corn was cut Sept. 28 and put in moderate sized shocks where it stood for about two weeks, then it was husked and the best ears taken out and kiln dried for seed. The yield was 65 bushels shelled corn per acre. The next season we planted two acres, the experiment being carried on much the same way. It was planted on the 20 day of May in a clay loam soil and was all up above ground in four days. It was then cultivated and later harrowed with a fine tooth harrow. A week later it was cultivated the second time, after that it was cultivated at intervals of ten days, and hoed once until it had grown too large for further cultivation. It was cut on the 26th day of September, and was husked three weeks later and the best ears taken out again and kiln dried for seed. The average yield was 78 bushels shelled corn per acre which was an increase of eighteen bushels per acre over the 1907 crop.

SILVER KING CORN.

G. A. STIVARIUS, FENNIMORE, GRANT COUNTY.

Mr. Chairman, Ladies and Gentlemen: My first experience with Silver King corn was in the year 1907 when I received some ears from the Wisconsin Experiment Association and at the same time I bought some of a member. On May 20th I planted 2½ acres on a clay soil which was spring plowed and well prepared. The corn was planted with a two horse check row planter. This field was harrowed a few times after planting and then cultivated five times with a two horse six shovel cultivator and two horse 8 shovel spring tooth cultivator at different times until the corn was too tall. The last week in September, we had a killing frost. The corn did not ripen as well as my other corn. In the middle of October I picked my

seed and found more seed ears in this field than in any other corn field I had. The ears were more true to type and better filled at butt and tip. This corn was well dried and the year following or last season I planted Silver King corn in three different fields. Field No. 1 contained one acre. This field had been planted to sugar beets the previous year, plowed the same fall and in the spring we top dressed with barn-yard manure at the rate of nine loads per acre, then disced, harrowed and planted with check row planter May 16th.

Field No. 2 was spring plowed, well prepared and planted with check rower on May 22.

Field No. 3 was a two year old timothy and clover sod manured at the rate of six loads per acre, then plowed and prepared the last week in May. These fields were cultivated nearly all in the same manner, first using the harrow, then weeder and then we cultivated four or five times with two horse six shoveled cultivator. This corn all ripened well and was an excellent grade of seed corn. I think the Silver King is the corn for southern Wisconsin, in fact, I shall plant nothing else but this and the Golden Glow.

SILVER KING CORN.

R. J. SCHAEFER, APPLETON, OUTAGAMIE COUNTY.

Mr. President, Fellow Members, Ladies and Gentlemen: There is no doubt in my mind, but what some of the members have had more experience and better results with the Silver King corn than what I have had. I am located on the northern boundary of Winnebago County, and I consider it might be worth while giving my experience in that locality as requested.

Three years ago I procured one bushel of Silver King seed corn and planted five and one-half acres in drills on the 18th of May. It sprouted well and grew rapidly and was ready to harvest Sept. 23. It was husked by hand as I desired to select the good seed ears. I paid for the husking of 800 baskets and selected 90 baskets of good seed corn. I also had the best crop of fodder I ever raised.

In 1906 I put in 18 acres planting it May 7 so as to give it a long season, but after having planted we had a long stretch of wet and cold weather and it seemed as though the seed lacked

vitality. I had tried to cure too much without experience so had not done the curing properly, I was obliged to plant over half of the field, which I did the first of June. I used the Wisconsin No. 8 for replanting and got a good crop for silo, but having it mixed I did not try to select seed from it, but procured enough seed again in 1907 to plant twenty acres. In 1908 the corn was planted on the 19th of May on fall plowed, well manured clover sod. The ground being in fine shape the corn grew fast, but ripened too fast to get a big yield. I cut it September 10, filling my silo which is 30 feet deep and 16 feet in diameter with fourteen acres and husked the remainder of it. On six acres I got 600 bushels, and selected twenty bushels of seed corn which I know is good, and expect to put in 18 acres the coming season. The number of silos is increasing rapidly and the excellence of this corn for silage purposes has caused a great demand for seed wherever its merits are known.

SILVER KING CORN.

L. W. BRIGGS, PEBBLES, FOND DU LAC COUNTY.

Members of the Wisconsin Agricultural Experiment Association: My experiment with the Wis. No. 7 corn, like those of many others was a success.

The ground on which it was planted was an alfalfa sod. The soil was a rich loam having a gravel subsoil. It was plowed early in the spring and later replowed in an opposite direction in order to cut off the roots of the alfalfa plants which had not been previously destroyed. The disc harrow was then applied. This was followed by a spike-toothed harrow. The ground was then rolled and marked. After planting it was harrowed again. I used a hand planter on this field dropping three or four kernels in each hill.

As soon as the rows were visible a two horse cultivator was started, the shovels being set deep but later in the season as the roots developed I cultivated more shallow so as not to check the growth of the plants by cutting off their roots.

The corn grew rapidly. It made a very attractive appearance on account of its dark green leaves of which there were more in proportion to the amount of stalk than of any other variety with which I am acquainted.

In the fall when it had ripened I went through the field and selected my seed. One of the factors which I gave particular attention to in my selection was to take those ears which had matured the earliest.

In conclusion I will say that I believe that the Silver King corn will become a permanent variety in my home county which is Fond du Lac. To my knowledge it is the largest yielder and the best corn for the silo that we can grow.

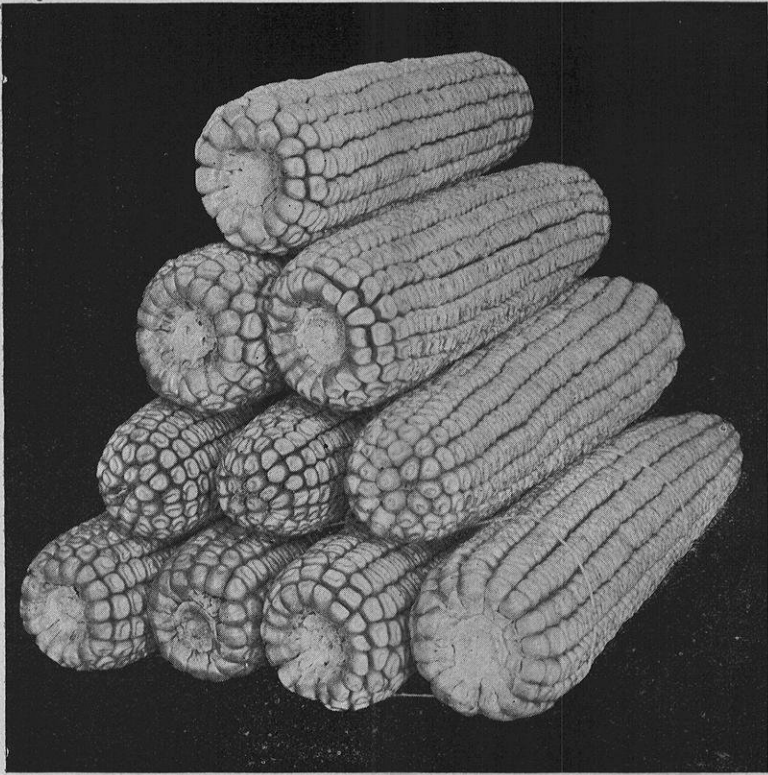
SILVER KING CORN.

A. G. AUSTIN, JANESVILLE, ROCK COUNTY.

There were two reasons why we did not grow our first Silver King corn until the season of 1908.

In the first place we had had experience with an old type of white corn having flat shallow kernels and large cob; and in addition we believed yellow corn to contain a larger percentage of oil and protein. We learned, however, that chemical analysis shows practically no difference between the yellow and white varieties and so determined to try some of the Silver King corn given out by the Experiment Association. We selected two pieces of ground; one of two acres which we will call Plot 1, and the other of one acre which we will call plot 2. Plot 1 was selected as the best seed plot on the farm. The soil was a rich black silt loam from which one year's cutting of clover had been made the previous year. It was heavily manured during the winter and plowed early in the spring. Owing to rainy weather, the corn was not planted till May 30. In about nine days it was up so that the rows could be seen. Except for a period of cold rainy weather in early June the corn made very rapid growth and excited much favorable comment among the neighbors. We estimated the yield upon this piece to be close to seventy bushels of shelled corn to the acre in spite of the fact that a drove of ill-favored Gypsy's horses spent a night in the field when the corn was about ready to harvest. The No. 7 corn gave a better yield of corn than our Clark's Yellow Dent or the home variety of yellow dent. It might be said for the Clark's Yellow Dent that the seed used was a little inferior and the field conditions not the best.

On Plot 2 the results of the experiment were not quite so good. This was the last acre we plowed for corn and it did



SILVER KING CORN (WIS. NO. 7)

Yield 93 bushels shelled corn per acre, Experiment Station Farm, 1908.

not get a covering of manure as the other fields did. The ground was rather high and was only cultivated three times whereas Plot 1 was cultivated four times. After picking some seed corn off from Plot 2 the remainder of the crop was put into the silo so I cannot make an estimate of the yield, but will say it was much smaller than Plot 1. Our year's experience with Silver King Corn has pretty well convinced us of the superior qualities of this variety, both as a grain producer and a yielder of large quantities of the best storer. The stalks are medium sized and leafy bearing a single well developed ear. This is preferable to having a larger number of small ears with more cob and a smaller percentage of corn. Reports from other parts of Rock County indicate that others have had equal success with the Silver King Corn and no doubt it will soon become one of our leading varieties.

SILVER KING CORN.

ROBT. W. BRUNNER, HUDSON, ST. CROIX COUNTY.

Mr. President and Fellow Members: Our experience with Silver King corn began two years ago. Previous to that time we raised nothing else but yellow dent corn and after much hesitation determined to try this new variety. On application we received from Prof. R. A. Moore sufficient corn to give it a fair trial. This was planted as soon as the ground was warm enough.

This corn grew very tall with heavy stalks and a dense foliage and very heavy ears. But sorry to say it was badly frozen as was all the corn in our section that season. Notwithstanding the frost it yielded 85 bushels of shelled corn per acre, of which one half was saved for seed and stored in a dry well ventilated place, and when shelled and tested, showed almost a perfect germination.

This corn was planted May the 18 in drills with a horse planter on 7 acres of sandy loam soil with a clay subsoil.

The corn sprouted and was over ground in a very short time considering the fact that we had a very wet, cold spring which later retarded the growth of the corn until July, after which it did not receive any beneficial rain until one week before it was cut.

September the 12th this corn was safe from the injury of frost and had attained a goodly height with heavy foliage.

It was cut with a corn binder, shocked, and later husked in the field but the yield was not very good on account of being thin in the row caused by large kernels clogging the planter plates.

From this field considerable good seed corn was picked and this season we intend to double the acreage of Silver King. If this corn continues to do in the future what it has done in the past we will have a wonderful variety of corn from the feeders' standpoint.

SILVER KING CORN.

R. W. CHATTERTON, BASCO, DANE COUNTY.

Mr. President, Ladies and Gentlemen: In this great world of ours we have many peculiar phrases. One of these which has come to my notice many times, seems to be used as descriptive of quality.

It is heard when a person bargains for some merchandise, when he asks whether a piece of goods will "wear well." The same words are used in inquiring about many other things.

However, my subject is "Silver King Corn" and I want to say that this corn has demonstrated that it will "wear well." My first experience with this corn was in the summer of 1905 and it was practically a failure, but no fault of the corn. Many persons had the pleasure of a laugh at my expense, also a few jokes.

The next year the crop was much better, but still not a decided success. The above critics passed this crop by with little comment.

The third season this corn made good, and was right in the front row. And those who laughed the hardest at the first trial were among the first to recognize that this crop was one of the best that season.

Last year the general average of the crop was better than the year before and nearly everyone conceded that it was the best in the neighborhood. In other words, "Silver King Corn" demonstrated for itself that it would "wear well."

SILVER KING CORN.

WM. A. PARSONS, FT. ATKINSON, JEFFERSON COUNTY.

Fellow Members of the Wisconsin Experiment Association: I was asked by Prof. Moore to tell my experience with Silver King corn, and in reply will say that I am very grateful to Prof. Moore for the small sample of corn which he gave me four years ago. My experience with the corn has been so satisfactory that Silver King is now the only variety of corn which I plant. I was the first party in this section to grow this variety of corn, but this coming season I expect one third to one half of the farmers will plant some of this variety.

The main objection which many of the farmers seem to have to Silver King is the fact that it is white. Say they, "There is not the oil in the white corn that there is in the yellow" and "It won't put fat on a hog like the yellow."

I have heard the above remarks so often that I fear I should have believed that there was a grain of truth to what they said, had it not been my fortune to run across a bulletin from Pennsylvania. In the report, thirty one varieties of yellow corn against twenty nine varieties of white corn were tested for their oil content. While the contents were much alike for both colors yet the white stood slightly ahead.

Last year I planted about thirty five acres to Silver King. Most of the corn was planted the latter part of May, with a check rower in a well prepared seed bed of clay loam. About ten acres of corn planted on spring plowed sod was badly injured with cut worms. The corn was cultivated five times. The fifth time was with a one-horse cultivator, which was after the riding cultivators had to be abandoned. My land is no richer than my neighbors', but few of my neighbors harvested the number of bushels to the acre that was harvested on my farm. My yield was not as large as it has been in years past, but considering the season, it was very satisfactory. It probably went about forty bushels of shelled corn to the acre.

My satisfactory yield in an unfavorable season was due in my opinion to three causes; first, I had good Silver King corn for seed; second, good, thorough cultivation with a surface cultivator; third, going through the corn with one horse, after the corn was too high for a riding cultivator.

Last fall at husking time, I went into the field and selected out about one third of the best ears, which were hauled to a specially prepared drier and thoroughly fire dried before cold

weather set in. We have now on hand something like 200 bushels of select ear corn, and about 200 bushels of shelled corn. The shelled corn was all tipped before shelling.

In my opinion I consider that Wisconsin No. 7 or Silver King is the best variety of corn that can be planted in the southern portion of Wisconsin. It matures in good season, is a good producer of fodder and can not be excelled when it comes to yield in bushels per acre.

EARLY YELLOW DENT CORN (WIS. NO. 8).

W. L. ILLIAN, ADELL, SHEBOYGAN COUNTY.

Fellow Members of the Association: We have now grown the Wisconsin No. 8 corn for several seasons with good results, and are satisfied that it is the earliest dent corn that we have been able to get. I experimented with four other early varieties, but they did not mature as early, nor did they yield as heavy as the Wis. No. 8.

This corn grows to a height of seven and eight feet, and the stalks are well covered with leaves. This makes it a very good corn for fodder and silage. The earliness of this corn makes it a very desirable variety for the lake counties. In order to avoid crossing with some other variety, the entire corn crop should be planted to this one variety. I believe in planting a variety of corn for the silo, and for husking which is sure to mature in a backward season, and this variety seems to fill the bill in Sheboygan county and northern Wisconsin. If conditions are right, it should yield from 55 to 80 bushels of shelled corn per acre.

We practice a three and four year rotation and corn is always planted on clover sod, and by using good seed and proper cultivation a good crop is sure to follow.

WISCONSIN NO. 8 CORN.

ALBERT J. BLAKELY, NEENAH, WINNEBAGO COUNTY.

I began growing this corn in the season of 1907. I bought a bushel of seed on the ear from one of our members, and after discarding the butts and tips, planted the remainder on between four and five acres. I threw out the butts and tips to

have more uniform planting. I used the hand planter, in check row 44 inches each way. The season was backward, and rain followed rain until the last of May. I was impatient to get the job done, so planted May 31 with the land packed hard and sticky, clay land at that. This was a mistake I shall never repeat if I have to wait until July for planting. At one end of the same field which was more gravelly and hence warmer soil, I planted No. 7. The latter came up so thinly that I had to harrow the whole thing up and drill for fodder June 20. The No. 8 had about half a stand, so I hoed the vacant hills and replanted without harrowing. So much for the ability of this corn to stand cold and wet.

In spite of so poor a start, the No. 8 came along well and was ripe October 1, without frost. I saved a lot of very nice ears for seed and planted them, together with some 25 ears of the same variety which I obtained from the Association last winter, on May 21, 22, and 23, 1908. This time I had the conditions about right. The land was spring-plowed timothy sod, very rich sandy loam, with a gravelly crest of about two acres in the whole field of some 8 or 9 acres. It had been copiously manured for years back. I harrowed it until it was almost like an ash-heap, then roled firm and smooth. The weather could not have been better. You could see the rows by May 30th and it made a remarkably rapid growth. I cultivated with a sulky spring tooth cultivator twelve times in the summer. My only drawbacks were cut worms and quack-grass. I had to plant some over after the worms but at time of harvest the second planting was as good as the first, apparently. The quack-grass had to succumb to such persistent cultivation, and some hoeing too. Dry weather in August stunted that on the gravelly ridge somewhat, but the remainder was certainly grand. It was all ready to cut by Sept. 15. I cannot give the exact yield, because I don't know the exact acreage, and had to cut some green to feed in the dry weather. Most of my seed corn I cut by hand, leaving ears on the stalk and shocking up by itself to cure, before starting the binder. In this way I got the earliest ears, and secured them before rain or frost could touch them.

When I bought my seed two years ago, I counted 123 ears in the 70 lbs. It was raised in Washington county. Now I find it takes only 116 to 120 ears fire dried corn to weigh 70 lbs. So it has certainly not lost size by being raised farther north. It matured, as you will notice, in a shorter season last year than in 1907. I am well satisfied with the No. 8 and prefer it to No. 7 for my locality.

WISCONSIN NO. 8 CORN.

CHAS. H. HOWITT, RANDOLPH, DODGE COUNTY.

Mr. President, Fellow Members of the Experiment Association: I have been growing Wisconsin No. 8 corn for the past two years. The yield has been satisfactory with me both years. In 1907 which was considered a poor corn year, I secured a yield of fifty bushels of well matured corn per acre. The stalks are leafy, and furnish a large amount of fodder. With me the corn has lodged badly both years; whether this is a fault in general with this variety I do not know. The Golden Glow which was planted on the same kind of soil, stood up much better. The corn has not matured quite as early with me as some others have reported. I consider the variety valuable for planting in the central and southern parts of the state, as well as the northern, especially when one is not able to get all of his corn planted early.

WISCONSIN NO. 8 CORN.

HILBERT SORENSON, MARINETTE, MARINETTE COUNTY.

Fellow Members of the Experiment Association: My experience with Wisconsin No. 8 corn covers but one season, although it has been grown on the farm that I am now working for a number of years, each year it has been better than the year preceding; and this year in spite of the dry season it has proven better than ever.

The soil where it was grown is sandy loam and slopes enough to afford perfect drainage. It was manured and plowed in the spring. The seed which had been kiln-dried and tested by the single ear method, was planted by the check row system, three feet seven inches apart, on May 28 and 29. The corn came up in a few days and was cultivated at intervals till it was too large to allow a horse to pass between the rows conveniently, then all the weeds that were left were removed by hand. The corn was all ripe by September 20, and was cut and husked by hand and gave a yield of 59 bushels to the acre.

I think this corn can, with a few years breeding and selection, be grown successfully in any portion of Northern Wisconsin.

WISCONSIN NO. 8 CORN.

O. R. FRAUENHEIM, RANDOM LAKE, SHEBOYGAN COUNTY.

After completing the Short Course, my eyes were opened to a great many practical things. The methods then employed in the growing of corn on our farm were such as are found on a great many farms today. We were growing dent corn of no particular type, a variety of which it was hard work to find two ears that were alike in the entire crib.

I experimented with a small plot of the Wisconsin No. 8 corn four years ago and since then I have grown it with results that have far exceeded my expectations.

The average yield for four years of this corn grown on our farms was a little over sixty bushels shelled corn per acre, while the average yield per acre of the corn grown on our farm heretofore was less than forty bushels per acre. All credit is not given to the corn, however. Better methods were adopted in the selection, care and testing of the seed and a better plan adopted in the preparation and subsequent care of the field.

It is a very early maturing variety, ripening almost as early as the flint varieties grown in my neighborhood. It grows to a height of about eight feet, with plenty of leaves, a fact that should not be overlooked in corn in the sections of the state where this corn is established as farmers want a variety that furnishes plenty of stover after the corn is husked.

The ears, while not as large as the No. 7 corn, give a larger percentage of shelled corn, the kernels have a good depth and the ears are well filled at the tips. The chief fault is poorly filled butts. The members must pay careful attention to breeding this corn for it has a tendency to turn to the flinty type. The first indications of "running out" are shallow kernels and poorly filled butts. All ears having these indications should be strictly avoided in our seed corn for future planting. Only ears having the true type should be planted in our breeding plots.

Not only has this corn given us entire satisfaction, but it has shown my neighbors that it is the only dent corn for a sure crop in our section of the state and I am glad to say that a great many of them are growing it on their farms.

GOLDEN GLOW CORN (Wis. No. 12.)

WILLIAM A. STROWIG, CLEVELAND, MANITOWOC CO.

Mr. President, Ladies and Gentlemen: Last year I secured from the Experiment Association 27 ears of the Golden Glow corn. It was planted the 5th of June, and it appeared above ground on the 15th.

It was planted on an acre plot some distance from the home corn. The soil on which the corn was planted was a sandy loam, which had been fall plowed. Fodder corn had been grown on it the previous year. The corn was cultivated several times and the stalks grew to a good height. It matured by October 1st. and yielded 120 bushels of ear corn per acre.

The Golden Glow corn is, in my opinion, a very good corn to grow in the lake shore counties where there commonly is a late spring and an early fall.

GOLDEN GLOW CORN.

FRED P. GREBE, FOX LAKE, DODGE CO.

Mr. President, Fellow Members and Friends: Last winter while attending the Experiment Association meeting, I procured a sample of Golden Glow corn (Wisconsin No. 12) to carry on an experiment. This new variety is a cross between the North Star and the Wisconsin No. 8, and I feel at the present time that this variety will come to the front with our standard varieties.

But one year's experience is not enough to form any definite opinion of what the corn really will do, but will give you the results which I have obtained this past year. I planted this corn May 26th, on good soil, following a potato crop. I cultivated this field five times and hoed it once. This kept the ground free from weeds and in good shape for the growing crop. The corn was harvested between the 15th and 20th of September and yielded sixty-seven bushels per acre.

I am very much interested in this corn and expect to plant seven acres of this variety next spring on clover sod.



"THE PINES."

Farm Home of John Van Loon, La Crosse, Wisconsin, R. No. 1.

Mr. Van Loon is an ardent worker of the Wisconsin Experiment Association and has done a great work for the state in growing and disseminating high grade seed corn. The home farm consists of merely forty acres but by the thorough manner in which the farm has been run, annually produces per acre double that of the average farms of the state. With select seed corn as a leader closely followed by small fruit and alfalfa Mr. Van Loon is setting an example in high grade farming that can be safely followed.



A. C. HAGESTAD AND FAMILY.

Dairy Barn in Background. Ettrick, Trempealeau County.

Our worthy member, A. C. Hagestad, finished the Short Course in Agriculture in 1897 and on its completion like 95 per cent of all young men who attend the College of Agriculture, embarked in the greatest of all occupations, farming. He now ranks as one of the most progressive dairymen and pure bred seed growers in the state. By his untiring energy and enterprize he has rapidly come to the front. All young men who take the Short Course in Agriculture have practically the same opportunities afforded them.

GOLDEN GLOW CORN.

CHAS. H. HOWITT, RANDOLPH, DODGE CO.

Mr. President and Fellow Members of the Experiment Association: One year's experience with a variety of corn is hardly sufficient to form any definite ideas in regard to its merits; but if the results are as good every year as I obtained last year, I think that Golden Glow will prove to be a valuable variety for the central part of the state.

The seed which I secured from the Association was planted the 21st of May, on spring plowed land. It was given thorough cultivation through the growing season, and harvested the third week in September. I secured a yield of sixty-two bushels of shelled corn per acre. I planted some Wisconsin No. 8 on the same date that I planted the Golden Glow. Both varieties matured at the same time, the Golden Glow yielding about ten bushels more per acre. The stalk development of the Golden Glow is greatly superior to that of the No. 8.

GOLDEN GLOW CORN. (Wis. No. 12.)

A. C. OCHSNER, PLAIN, SAUK CO.

Mr. President and Members of the Association: Last spring I received some Wisconsin Golden Glow seed corn from our Association for experimental purposes. This corn I planted on fall plowed land following barley. I selected a field with as much variety of soil as possible. One end was sandy soil, while the middle was clay, and the other end black soil with clay subsoil. This was disced and worked up good before planting. The corn was planted on the 5th of May at a uniform depth, using a corn gauge. The night following it rained heavily, washing out about one-fifth of the seed. It was impossible to work the ground any more for the heavy rains prevented. In the sand it appeared above ground in about five days. This was dragged and cultivated several times. The corn did very well, it matured first on the sand, the leaves being dry September 12 to 15. The corn on the middle of the field matured some later. The entire field was perfectly ripe September 20, but

frost would not have done any harm September 15. I think if the corn had been planted a week later under those conditions, it would have been a better crop. The estimated yield of this corn was about 50 bushels per acre, but as one-fifth was washed out, the crop would have been 75 bushels, which is a good crop for early corn.

Anybody wishing an Early Yellow Dent as a good yielder and an early ripener, will make no mistake in securing the Golden Glow. I am certain if a perfect stand can be obtained, it will yield from 90 to 100 bushels of shelled corn per acre.

GOLDEN GLOW CORN. (Wis. No. 12.)

EDWARD E. STRAKA, KELLNERSVILLE, MANITOWOC CO.

My experience with the Golden Glow corn covers only last season, yet I am well satisfied with the results obtained.

In the spring of 1908 I secured from the Experiment Association a limited quantity of seed corn, which when tested gave a germination of 98 per cent.

The soil varied from clay loam to black loam. This field had been used for a pasture previously. It was manured in the spring and plowed about six inches deep early in May.

After preparing the soil, the corn was planted about May 18 in hills thirty-four inches apart, cultivated twice cross-ways, with a fine tooth-harrow cultivator. The corn grew well and matured about September 20. It was harvested and husked by hand. The estimated yield was sixty bushels in the ear per acre. The two previous seasons I raised Wis. No. 8 corn, and in comparing these two varieties I think the Golden Glow corn gave a better yield on account of the ears being somewhat bigger than that of the Wis. No. 8. The stalk is larger and more leafy than the No. 8 which makes it an excellent corn for fodder. It is a good yielder both of grain and fodder, and with its early maturing qualities makes it an ideal corn for the lake shore counties and northern Wisconsin.

CLARK'S YELLOW DENT CORN.

CHAS. H. HOWITT, RANDOLPH, DODGE CO.

Mr. President and Fellow Members of the Experiment Association: I have been growing Clark's Yellow Dent for the past four years with exceedingly good results. It is a heavy yielding variety, yielding seventy-five bushels of shelled corn per acre under fair conditions. It is a little late in maturing and is probably the best adapted to the central and southern parts of the state. Clark's Yellow Dent has always matured with me, with the exception of the year of 1907. That year it did not mature thoroughly. It grows quite large stalks and yields a large amount of fodder. It stands up well and is easy to husk. I do not think there is much difference between Clark's Yellow Dent and Wisconsin No. 7 in regard to yield and time of maturing. One's choice between the two is probably a fancy of color more than anything else.

CLARK'S YELLOW DENT CORN.

W. L. DAVIDSON, VERONA, DANE CO.

Mr. President, Fellow Members of the Experiment Association: I am asked to give my experience with Clark's Yellow Dent corn. Will say it is limited to one season and that being a wet one, I cannot base an opinion on the corn.

Last spring I secured enough seed to plant six acres. It was planted May 28, and all came up evenly. In seven or eight days I manured the soil, (which was a rich dark loam) quite heavily. I harrowed it well after planting and then waited a day or two and put the cultivator in, working it shallow. I had cultivated once each way, when wet weather set in, and the land being low, of course the corn got a severe setback; consequently did not mature as it would have done had the season been more favorable. But I still have faith in this corn, and shall try it again this year.

BARLEY VALUATION

DR. R. WAHL, PRESIDENT, WAHL-HENIUS INSTITUTE OF FERMENTOLOGY, CHICAGO, ILL.

GENTLEMEN: In 1907 the question of barley valuation was taken up on the occasion of the International Agricultural Congress at Vienna and it was determined to submit it to a special international commission to meet in Berlin in October of 1908. This commission agreed upon a general system of barley valuation which, however, according to a unanimously carried motion of the American delegate, should have no direct application to four or six-rowed barleys.

The principles underlying the new international valuation system are:

1. To establish a general system of valuation not considering varieties.
2. To create three grades of value, a highest, a medium and a lowest.
3. To adopt eleven points for valuation classified as follows:

Highest Class:

1. Albumen content (penalties for excessive albumen being omitted).
2. Bad odor:

Second Class:

3. Uniformity (as to size).
4. Weight (1000 kernels).
5. Fineness of husk.
6. Damaged grains.

Lowest Class:

7. Color.
8. Purity of sample (foreign seed).
9. Purity of sample (foreign seed).
9. Sprouters.
10. Purity as to variety.
11. Shape of berry.

The following points were omitted from the system:

1. The mellowness of corn, either of the original barley, or after steeping.
2. Hectoliter weight.
3. Impression as a whole.
4. Water content of the barley.

The germinating energy was recognized as a valuable point

for judging barley, and it was recommended to use it at competitive exhibits, but it was considered impracticable for ordinary expositions.

This system of barley valuation as well as the Berlin and Vienna systems, which are superseded by it, were established for the purpose of serving as guides to jurors of award in judging exhibit barleys, and consequently under circumstances necessitating the judging of large numbers of specimens or samples with dispatch. While in the main the same test points should naturally form the basic features for valuing barley for commercial purposes also, such important points as germinating capacity, the examination for which requires much time, cannot well be undertaken for exhibit barleys; besides, exhibits have usually taken place soon after harvesting, when germinating capacity does not compare favorably with results after proper storage of barley, the higher moisture content alone influencing the property of germinating capacity detrimentally to a decided degree. For this consideration and because at the usual exhibit periods moisture content is considerably higher than after storage, it was not included in these systems of valuation. In a commercial system of valuation, however, germinating capacity and moisture content become main points for consideration of value. In the present tentative system germinating capacity forms the basic factor of valuation, the importance of all other points or properties being made relative to that of germinating capacity.

A TENTATIVE SYSTEM FOR THE VALUATION OF AMERICAN BREWING BARLEY

THE AMERICAN BARLEYS

The American barleys are to be classified in at least four groups: One comprising the Eastern six-rowed Manchuria barley, (cultivated particularly east of the Rockies); a second—the Western six-rowed barley, the Bay Brewing and Blue barley; a third the six-rowed Utah Winter barley; and a fourth the two-rowed barleys, the Chevalier, Hanna, Goldthorpe, etc. The Western barleys, two-and-six-rowed, from west of the Rocky Mountains or from the Rocky Mountain territory conform more nearly to the European standard than the Eastern.

For each of these four groups of American barleys mentioned above a model barley valued at 100 points is used for compari-

son and more or less points deducted according to the results of each test. A deduction of more than 6 points in any test or division would place a barley below standard.

STANDARD BARLEY

Standard barley ranges from 94 to 100 points. A barley is below standard when it receives less than 94 points in any one of the examinations of properties given on attached form.

For commercial valuation divisions 1 to 8 should be included. For exhibit purposes all tests should be included that are feasible, omitting moisture and germinating capacity for reasons given above.

The total average of points is determined by dividing the sum of the points of each test or division by the number of divisions determined. In this way, not necessarily all divisions need be included in the test, for instance, moisture, albumen and husk may be omitted by those not having the facility for analysis; and the relative value of the barley nevertheless stands for the remainder of the tests or divisions.

CALCULATING THE PERCENTAGE

The value for each division as stated in points is established by the relative importance of a defection from 100 points, indicating thereby the percentage of inferiority to the assumed model barley. A barley, for instance, of which 3% does not grow, is rated as 97 for that test or division, a deduction of 1 point being made for each dead berry or germ. The berry is, however, of greater value than such grains of wheat and oats that are too large and heavy to be removed by screening, blowing or steeping. As they may cause albumen turbidity not more than 2 per cent of such grains should be permissible in a standard barley and 3 points should be deducted for every per cent of unremovable foreign matter. For all offal that is removed by screening, blowing and steeping, only one point is deducted for every per cent because it is not directly harmful and still of commercial value. This offal, together with the unremovable foreign matter and the sprouters should not exceed 6 per cent in a standard barley. This means that a standard barley, after cleaning and skimming and after deduction has been made for unremovable foreign matter, should yield at least 94 per cent malting barley.

At the valuation from the standpoint of the malster the deductions for offal should not be included in the final average, which should refer to the cleaned barley. Only for exhibition purposes should the deductions for offal be included in the final average. A barley containing as much as 15 per cent of screenings and skimmings, etc., would only yield 85 per cent of malting barley and could not be considered a standard barley. Those 85 per cent of malting barley may, however, be of good or even excellent quality, although probably of low 1000 berry weight. Its quality is to be determined by the maltsters' test (divisions 1 to 12) offal, being omitted from the final average. The number of points deducted in one division should be of equal value or importance as indicating inferiority of quality, as those in another division. Thus a Manchuria barley with 9 per cent of albumen would lose, on account of its 2 per cent of albumen below normal, 6 points, and its rate of inferiority would be considered equivalent to that of a barley with 6 per cent of berries not germinated, or with 3 per cent of moisture above normal, or 6 per cent offal, or 2 per cent of unremovable foreign seeds, and with a barley having a 1000 kernel weight of 3 grams below or above the normal. Likewise would a barley with 14 per cent albumen, or 2 per cent above normal, be rated as to inferiority 2x3 points.

This system is equally applicable to all four groups of American barley, but the normal conditions and the requirements to be met by the model barley are somewhat different for each group.

* TESTS: OR EXAMINATIONS † REQUIRED TO RATE OR VALUE BARLEY.

- I. For commercial valuation: (a) Merchants' or Graders' tests, 1 to 8; (b) Malterers' tests, 1 to 12; and Seed Barley tests, 2 to 14.
- II. For exhibit valuation: tests 2 to 14, excepting 11 and 12.

By subjective examination:

1. Variety and Admixtures: (Manchuria, Bay Brewing, White Club, Chevalier, etc.): Deductions 1 to 6 points.
2. Color and Brightness: Deductions 1 to 6 points.
3. Odor: Deductions 1 to 6 points.
4. Thickness of Husk: Deductions 1 to 6 points.
5. General Impression: uniformity of form and size of berries (plump or elongated): Threshing: (too close or insufficient): maturity: Deductions 1 to 6 points.

* (If barley is infested by weevils or other insects, stained or discolored by fungus growths such as smut, mold, etc., it is absolutely condemned.)

† (Detailed methods of examination are contained in "American Barleys, Their Classification, Valuation and Cultivation," by Dr. R. Wahl.)

By objective examination:

6. Offal:

By Screen: Upper screen: (gravel, peas, corn, etc.) lower screen: (barley, oats, rye, rape, mustard, etc.) Deduct one point for every percent.

By water: skimmings, excluding sprouters. Deduct one point for every percent.

By Blowers: Straw, barley, oats, etc. Deduct one point for every percent.

By cockle-machine: brcken kernels, cockle, etc. Deduct one point for every percent.

7. Sprouters: Deduct 6 points for every percent.

8. Remaining foreign matter (wheat, oats, etc.) Deduct 3 points for every percent.

9. 1000 Berryweight: Deduct 2 points for every gram above or below optimum.

10. Uniformity as to Size: 100 to 80 % deduct 0 points.

(The sum of screens 80 to 74% deduct 1 point.

2.8 mm.+2.5 mm., or 74 to 69% deduct 2 points.

2.5 mm.+2.2 mm., or 69 to 65% deduct 3 points.

2.2 mm.+2.0 mm. 65 to 62% deduct 4 points.

giving the highest figure: 62 to 60% deduct 5 points; 60 to 58% deduct 6 points.

11. Germinating Capacity: Deduct 1 point for every % below 100.

12. Moisture: Deduct 2 points for every % above 11%.

13. Albumen: (N. x 6.25) Deduct 3 points for every % above or below optimum.

14. Uniformity as to Variety: (By botanical examination) Deduct 2 points for every % of foreign barley or different groups (mixtures of two, four, or six-rowed barleys).

15. Husk: (not determined unless considered below standard in subjective examination) Deduct 3 points for very % above optimum.

Bushelweight and Mealiness are not considered.

WISCONSIN PEDIGREE BARLEY.

BREEDING AND THE FUTURE WORK OF DISSEMINATION.

E. J. DELWICHE, SUPT. NORTHERN SUB-STATION FARMS, ASHLAND, ASHLAND CO.

The importance of knowing something of the pedigree or ancestral history of the different kinds of live stock has long been recognized by breeders of animals. With plants, however, it has only been in comparatively recent years that the value of such a record has been appreciated. In Illinois the Funk Brothers have put the idea into practice in breeding seed corn

with marked success. Prof. Hays produced several varieties of pedigree wheat which have been shown to yield several bushels more per acre than the standard kind grown in Minnesota. Several valuable pedigreed barleys have been originated in Sweden at the Experiment Station at Svalöf under the direction of Professor Nillsen. The Vilmorins of Paris have applied the idea to the sugar beet. Many other examples both in this country and abroad could be cited to show that the idea of pedigreed grains and plants is very rapidly spreading.

In order to supply the need of pure bred grains adapted to Wisconsin conditions, Professor Moore began work with several kinds of cereals in 1899. Ten standard varieties of barley were used in the foundation work for that grain. After three years of comparative trials only the four best promising varieties were retained from which to establish pedigreed strains. These were Manshury, Oderbrucker, Silver King and Golden Queen. These were grown in small plots for several seasons, the best plants being selected for seed each year. In 1902 motherbeds of 2,500 plants were planted for each of the above named varieties. From each motherbed the 20 best plants were selected and placed in envelopes. In 1903 the ten best plants for each variety were taken and the best seed of each used to establish centgener plots. These centgener plots each containing a hundred seeds were tested for three successive years to determine yield and other desirable characteristics. The best heads were selected from each centgener plot the first year of the test and the succeeding years a close comparison was made and the number of strains of each variety reduced from ten to four. Thus 16 pedigreed varieties of barley have thus far been developed from the original stock of four varieties. These pedigreed varieties of barley have been grown for four years in the increase plots and will this year be grown on a large scale by the Experiment Station for dissemination.

The seed will be controlled by the Experiment Association and will be distributed to members who apply to the secretary on or about January 1, 1910. It is the aim of the Association to have each member who engages in growing seed barley to be supplied with sufficient pedigreed seed to sow at least one acre and establish what is known as a seed barley center in his community.

WISCONSIN PEDIGREED BARLEY NO. 10.

W. L. ILLIAN, ADELL, SHEBOYGAN CO.

Fellow Members of the Association: I received from the Experiment Association last spring one sack (2 bu.) of this Wisconsin No. 10 barley. The seed looked rather light, a common grain bag filled contained 100 lbs. My crop goes 125 lbs. to the sack, but it is not as plump yet as I would like to see it.

Barley was sown on a light clay loam soil, the two bushels covering about seven-eighths of an acre. It was sown on the side of a field, with a two foot space between this and the Oderbrucker barley. This field was fall plowed and had grown corn and potatoes the previous season.

Weather conditions were favorable and I secured a good stand, although it was a little slow in coming up, caused by the light and shrunken seed. It resembles the Oderbrucker barley in a great many respects. With us it seemed to stool more, and the heads were longer than the Oderbrucker barley; but the kernel is not as plump, although it is improving, as my seed I grew this season is much better in this respect.

In yield it compares favorably with the Oderbrucker, at least with us. The latter part of the season was very dry and hot for barley but still it went close to 40 bushels per acre. It grows a strong straw of good length.

I am well pleased with it, considering the conditions of seed and weather, and intend to give it a further test.

WISCONSIN PEDIGREE BARLEY NO. 5.

HENRY E. KRUEGER, BEAVER DAM, DODGE COUNTY.

Mr. President, Fellow Members, Ladies and Gentlemen: Last spring I received from Professor Moore two bushels of barley known as Wisconsin Pedigreed No. 5. I sowed it on April 21, broadcast and covered as nearly as possible one acre of ground.

It appeared above ground in a few days and there was a marked difference in the appearance of the young plant from that of other barley.

It was strong, vigorous and looked more like corn than barley when it reached the height of eighteen inches, and when the leaves appeared, they were broad and long, and as it headed out it was but a short time until the heads had a downward turn on account of the large head and plumpness of berry, but the straw was very stiff and strong and supported the head well. It stood up well at harvest time and matured in 93 days.

It certainly was a pleasure to harvest barley of this kind, for as the binder real tipped it over on the platform, the heads dropped with a whack. No smut whatever was noticeable.

The straw was bright and clean and without rust. It was taken care of in the usual way, shocked and capped, stacked as soon as dry.

Now as to yield. I had to waste some at threshing time so as to keep it absolutely pure. I had thirty-six bushels clean seed, but this could not be called the yield per acre as one third of the field was a little low, and on account of the unusual amount of rain drowned out, so the yield per acre was at the rate of 54 bushels.

To compare it with other varieties it excelled anything in the barley line I ever grew.

BUSINESS MEETING.

Business meeting of the Wisconsin Agricultural Experiment Association, Thursday, February 6, 1909, 2 P. M., Assembly Hall.

Called to order by the Vice-President, H. A. Main. The minutes of the last meeting were read and adopted, after which the following officers were elected:

- President C. P. Norgord, Madison.
- Vice-President A. G. Austin, Janesville.
- Secretary R. A. Moore, Madison.
- Treasurer H. N. Longley, Dousman.

On motion of the secretary, Mr. G. W. McCormick of Menominee, Mich., was made an honorary member of the Experiment Association.

On motion, R. A. Moore was unanimously awarded \$150.00 and thanks for his past eight years services as Secretary and Manager of the Association.

RESOLUTIONS.

The following resolutions were reported by the committee and unanimously adopted:

WHEREAS, The Wisconsin College of Agriculture wishes to extend its good work in behalf of seed and weed control, and

WHEREAS, Appreciating such action and the great good that can be accomplished thereby,

Therefore, Be it Resolved, That we, the members of the Experiment Association in annual convention assembled, favor the passage of a bill giving the college the right to exercise just control over farm seeds with a view of preventing adulterated and contaminated seeds being sold indiscriminately throughout the State.

Be it Further Resolved, That we urge the passage of this bill and instruct our secretary to notify the members of the legislature of this action by sending each a copy of these resolutions.

We, the members of the Wisconsin Agricultural Experiment Association, now in annual convention assembled, fully realizing the great benefits brought to the State in past years by the work of the College of Agriculture and further appreciating the value of a widespread dissemination of agricultural work throughout our State do hereby,

Resolve, That the members of this Association are in hearty accord with the plans of the College of Agriculture for a further extension of agricultural work as represented in bill No. 54, S., and that through our officers and membership we labor strenuously for the enactment of this law.

Be it Resolved, That the secretary of this Association shall send a copy of these resolutions to each member of the legislature and state officers, and use all just measures in the interest of said bill.

HORACE P. HOWELL,
H. A. MAIN,
Committee on Resolutions.

TREASURER'S REPORT.

Jos. N. Bohl, treasurer of the Association, made the following report, which was duly accepted.

Report as rendered by treasurer, February 12, 1909.

		<i>Receipts.</i>
Feb. 7	From clerk as membership fees.....	\$323 00
Mar. 2	H. W. Meekin as balance in treasury.....	102 97
Mar. 27	Clerk for stamps received as fees and left in general office.....	14 50
Mar. 31	Clerk as membership fees.....	14 00
May 29	Clerk as membership fees.....	47 00
Sept. 10	Members as fees.....	2 50
Jan. 11	Clerk for stamps received as fees and left in general office.....	20 00
Total receipts.....		\$523 97

Disbursements.

Feb. 7	To W. Rodell Ward, premiums	\$4 00
Feb. 7	J. W. Briggs, premiums.....	1 00
Feb. 7	Harvey Longley, premiums.....	4 00
Feb. 7	W. L. Illian, premiums.....	1 50
Feb. 7	F. P. Grebe, premiums.....	19 00
Feb. 7	P. A. Paulson, premiums.....	1 00
Feb. 7	H. W. Meekin, premiums.....	8 50
Feb. 7	Levi Palmer, premiums.....	50
Feb. 7	R. N. West, premiums	40 00
Feb. 7	John Puls, premiums.....	1 00
Feb. 7	Prentice Warmington, premiums.....	3 00
Feb. 7	Jos. N. Bohl, premiums.....	9 00
Feb. 7	Eugene Hetts, premiums	6 00
Feb. 7	O. R. Frauenheim, premiums.....	7 00
Feb. 7	G. Q. Emery, premiums.....	3 00
Feb. 7	Clyde Akins, premiums.....	13 00
Feb. 7	W. A. Toole, premiums.....	4 00
Feb. 7	Earl Usher, premiums	8 00
Feb. 7	A. C. Ochsner, premiums	3 50
Feb. 7	C. H. Howitt, premiums.....	41 00
Feb. 7	M. O. Myrick, premiums.....	3 00
Feb. 7	H. E. Krueger, premiums.....	46 50
Feb. 7	H. F. Kramer, premiums.....	4 00
Feb. 7	Andrew Finsnes, premiums.....	4 00
Feb. 7	G. R. Blodgett, premiums	2 00
Feb. 7	Donald Bryson, premiums.....	3 00
Feb. 7	E. L. Dreger, premiums.....	2 00
Feb. 7	W. L. Schulte, premiums.....	1 00
Feb. 7	L. C. Spaulding, premiums.....	5 00
Feb. 7	J. P. Bonzelet, premiums.....	6 00
Feb. 8	Horace Whittaker, services during meeting	6 50
Feb. 8	A. C. Ochsner, premium for 1907.....	50
Feb. 8	Harry Garside, premiums.....	3 00
Feb. 18	H. W. Meekin, expenses attending annual meeting....	8 36
Feb. 25	A. J. Philips, expenses attending annual meeting....	2 00
Mar. 27	Idalyn Bibbs, clerical and office expenses.....	30 00
Mar. 27	Idalyn Bibbs, stamps received as fees.....	14 50
Apr. 27	Idalyn Bibbs, general office expenses.....	25 00
June 20	Idalyn Bibbs, general office expenses.....	25 00
June 30	Idalyn Bibbs, general office expenses.....	25 00
Aug. 8	Idalyn Bibbs, general office expenses and clerical ser- vices.....	30 00
Aug. 18	M. C. Lilley & Co., State Fair badges.....	15 00
Sept. 29	Geo. C. Carpenter & Co, 2 flags.....	12 00
Oct. 8	Idalyn Bibbs, general office expenses	30 00
Nov. 27	Idalyn Bibbs, general office expenses	20 00
Jan. 11	Idalyn Bibbs for stamps received as fees.....	20 00
	Total disbursements.....	\$521 36
	Receipts.....	\$523 97
	Disbursements.....	521 36
	Balance.....	\$2 61

Respectfully submitted,

JOS. N. BOHL,

Treasurer.

SECRETARY'S REPORT OF STATE APPROPRIATION.

R. A. Moore, Secretary of the Association, made the following financial report, which was duly adopted:

Receipts.

Money in the state treasury, February 5, 1908, date of making last report.....	\$804 22
State appropriation for 1908.....	2000 00
Total.....	<u>\$2804 22</u>

Disbursements.

1908.		
Feb. 8.	Prof. P. G. Holden, services attending annual meeting	\$25 00
Feb. 8.	Parsons Prtg. Co., index cards, note books, receipt books, etc.....	10 65
Feb. 8.	Democrat Prtg. Co., 2,000 programs, 14 pp.....	23 00
Feb. 17.	H. W. Meekin, 10 bu. No. 8 corn for experimental purposes.....	17 50
Feb. 24.	H. A. Main, expenses attending annual meeting.....	5 72
Feb. 25.	L. L. Olds, Clinton, Wis., expenses and judging grain exhibit at annual meeting.....	9 75
Feb. 25.	Miss Bibbs, clerical services.....	15 00
Mar. 19.	R. A. Moore, expenses.....	5 51
Mar. 25.	E. C. Nielson, prints of display, etc.....	6 40
Mar. 27.	R. A. Moore, expenses incurred in attendance at meeting of National Corn Assn.....	18 10
Mar. 27.	Miss Bibbs, clerical services.....	15 00
Apr. 10.	J. P. Bonzelet, 11 bu Wis. No. 4 oats.....	8 25
Apr. 16.	E. W. Keyes, 5,000 1 ¢ stamps, 7,000 2 ¢ stamps, 1,000 post cards.....	200 00
Apr. 23.	E. W. Keyes, 1,000 post cards.....	10 00
Apr. 23.	Miss Bibbs, clerical services.....	15 00
Apr. 27.	Louis H. Fischer, 18 bu. Oderbrucker barley.....	27 00
May 8.	R. A. Moore, traveling expenses.....	10 66
May 25.	Miss Bibbs, clerical services.....	15 00
May 27.	Democrat Prtg. Co., 5,000 letterheads.....	12 50
June 22.	Miss Bibbs, clerical services.....	15 00
June 25.	E. W. Keyes, 900 10 ¢ stamps.....	90 00
July 15.	International Harvester Co., 16 ft. binder.....	90 00
July 21.	Miss Bibbs, clerical services.....	15 00
Aug. 11.	R. A. Moore, traveling expenses, inspection of crops.....	23 49
Aug. 11.	E. W. Keyes, 1,500 8 ¢ and 1,500 1 ¢ stamps.....	135 00
Aug. 22.	Menges Pharmacies, films.....	3 60
Aug. 22.	Miss Bibbs, clerical services.....	15 00
Aug. 31.	R. A. Moore, trav. expenses, inspection of crops.....	27 89
Sept. 16.	Miss Bibbs, clerical services.....	15 00
Sept. 18.	A. L. Stone, expenses incurred at State Fair.....	30 07
Sept. 18.	J. N. Bohl, " " " " " ".....	12 91
Sept. 18.	L. R. Zerbel, " " " " " ".....	23 14
Sept. 18.	H. E. Krueger, " " " " " ".....	23 06
Sept. 21.	Henry Michels, " " " " " ".....	12 66
Oct. 23.	Miss Bibbs, clerical services.....	15 00
Oct. 23.	Fred P. Grebe, expenses incurred at State Fair.....	14 35
Oct. 23.	H. W. Meekin, 2½ bu. alfalfa seed Wis. grown.....	22 75
Nov. 23.	E. W. Keyes, 1,500 1 ¢ stamps.....	15 00
Nov. 24.	Parsons Prtg. Co., 2,000 No. 9 envelopes.....	3 20

Nov. 24.	Democrat Prtg. Co., 5,000 No. 10 envelopes.....	15 00
Nov. 27.	Miss Bibbs, clerical services.....	15 00
Nov. 30.	Wis. Exp. Station, 100 bu. 60 Day oats..... \$50	
	300 " Oderbrucker barley....\$210	
	200 " Wis. No. 7. Corn.....\$300	560 00
Nov. 30.	R. A. Moore, traveling expenses, lecture four.....	9 41
Dec. 1.	Miss Fehlandt, mimeograph work.....	11 60
Dec. 15.	Miss Bibbs, clerical services.....	15 00
1909.		
Jan. 11.	Democrat Prtg. Co., 300 tags, 5,000 envelopes, 5,000 seed grower's list, 5,000 No. 10 envelopes, 2,000 receipt books.....	100 25
Jan. 12.	Miss Fehlandt, 22 hrs. clerical services.....	3 30
Jad. 21.	C. H. Howitt, 12 bu. Golden Glow Corn.....	27 00
Jan. 21.	H. P. West, 1632 lbs. Golden Glow corn.....	46 63
Jan. 21.	Miss Bibbs, clerical services.....	15 00
Jan. 21.	R. A. Gillette, 40 bu. field beans at \$2.50.....	100 00
Jan. 23.	E. W. Keyes, 5,000 1 ¢ stamps.....	50 00
Jan. 29.	Milwaukee Bag Co., seed bags.....	59 98
Jan. 29.	E. C. Nielson, prints, negatives, etc.....	7 70
Feb. 8.	Parsons Prtg. Co., cards, guides, folders, case.....	4 35
Feb. 8.	Jonas Bros., ribbon for premium awards.....	5 44
Feb. 8.	Waukesha Canning Co., 6 bu. seed peas.....	18 00
	Total.....	\$2,115 82
1909.		
Feb. 10.	Total receipts in State Treasury.....	\$2,804 22
Feb. 10.	Total disbursements from State Treasury.....	\$2,115 82
	Balance in State Treasury.....	\$688 40

We, the undersigned committee, appointed to examine the treasurer's and secretary's reports on receipts and disbursements of funds for the past year, beg leave to report that we found them correct.

Signed: R. J. SCHAEFER,
HENRY MICHELS,
H. N. LONGLEY.

Eighth Annual Meeting, Feb. 11-12, 1909.

DISPLAY OF GRAINS AND FORAGE PLANTS FOR 1909.

Perhaps one of the most attractive features of the last annual meeting of the Experiment Association was the display of grains and forage plants. Approximately to the value of six hundred dollars in cash and special prizes had been set aside for premiums to be paid for the best exhibits of pure-bred seed grains. The quality of the grain displayed was of a high standard and the interest taken in the exhibit was such that the Association deems it advisable to continue this line of effort on a

much larger scale. Cash and special prizes to the approximate value of eight hundred dollars will be given to the growers of best seeds at the next annual meeting. A list of special prize offerings will be sent to members of the Association later in the year.

All members of the Association should exhibit seed grains at the State Fair in Milwaukee and the International Corn Show at Omaha, as well as the Experiment Association Contest. We desire to let farmers and seedsmen far and near know what we are able to produce.

We feel that much can be done in the way of encouraging the dissemination of good seeds free from obnoxious weeds that have been grown in our own state.

As soon as the Experiment Association demonstrates to the seedsmen and farmers of Wisconsin that good seed can be grown within our borders which is acclimated to our home conditions, it will not be necessary for them to place their orders with growers from other states. The seedsmen of our state and of adjoining states will be only too pleased to assist in the dissemination of home grown seeds if they can be shown that the quality is equally as good or better than they can get elsewhere. Realizing the great improvement that can be made in the growing of farm crops we trust that every member of the Association will do all in his power to assist in every possible manner in the production of choice grains and forage plants for our next display.

PARTIES AWARDED CASH PREMIUMS AT THE WISCONSIN AGRICULTURAL EXPERIMENT ASSOCIATION MEETING, FEBRUARY 11-12, 1909.

Class 1a—Best $\frac{1}{2}$ peck Swedish Select Oats (Wis. No. 4).		
First premium—	E. T. Briggs, Fond du Lac.....	\$4 00
Second “	—Anton Bohl, Beaver Dam.....	3 00
Third “	—C. H. Howitt, Randolph.....	2 00
Fourth “	—H. W. Meekin, Fond du Lac.....	1 00
Fifth “	—H. E. Krueger, Beaver Dam.....	5)
Class 1b—Best $\frac{1}{2}$ peck any other variety.		
First premium—	H. E. Krueger, Beaver Dam.....	\$4 00
Second “	—Anton Bohl, Beaver Dam.....	3 00
Third “	—C. H. Howitt, Randolph.....	2 00
Fourth “	—F. P. Grebe, Fox Lake.....	1 00
Fifth “	—J. F. Ford, Mazomanie.....	50
Class 2a—Best $\frac{1}{2}$ bundle Swedish Select Oats.		
First premium—	C. H. Howitt, Randolph.....	\$4 00
Second “	—Anton Bohl, Beaver Dam.....	3 00
Third “	—H. E. Krueger, Beaver Dam.....	2 00
Fourth “	—F. P. Grebe, Fox Lake.....	1 00
Fifth “	—Jos. N. Bohl, Beaver Dam.....	5)
Class 2b—Best bundle any variety Oats.		
First premium—	Jos. N. Bohl, Beaver Dam.....	\$4 00
Second “	—C. H. Howitt, Randolph.....	3 00
Third “	—Anton Bohl, Beaver Dam.....	2 00
Fourth “	—C. H. Howitt, Randolph.....	1 00
Fifth “	—F. P. Grebe, Fox Lake.....	50



Competitive Display of Grains and Forage Plants made by The Wisconsin Experiment Association at its Annual Meeting, February 11-12, 1909.

Class 3a—Best ½ peck Manshury Barley.		
First premium—	H. E. Krueger, Beaver Dam.....	\$1 00
Second “	—Anton Bohl, Beaver Dam.....	3 00
Third “	—H. P. West, Ripon.....	2 00
Fourth “	—A. C. Ochsner, Plain.....	1 00
Fifth “	—Evan B. Lloyd, Cambria.....	50
Class 3b—Best ¼ peck Oderbrucker Barley.		
First premium—	H. E. Krueger, Beaver Dam.....	\$4 00
Second “	—Henry Michels, Malone.....	3 00
Third “	—F. P. Grebe, Fox Lake.....	2 00
Fourth “	—John Puls, Hartford.....	1 00
Fifth “	—A. C. Ellickson, Arlington.....	50
Class 3c—Best ½ peck any variety of Barley.		
First premium—	Anton Bohl, Beaver Dam.....	\$4 00
Second “	—C. H. Howitt, Randolph.....	3 00
Third “	—H. E. Krueger, Beaver Dam.....	2 00
Fourth “	—H. P. West, Ripon.....	1 00
Fifth “	—Alvin Voigt, Oconomowoc.....	50
Class 4a—Best bundle Manshury Barley.		
First premium—	J. P. Bonzelet, Eden.....	\$1 00
Second “	—H. E. Krueger, Beaver Dam.....	3 00
Third “	—C. H. Howitt, Randolph.....	2 00
Fourth “	—Anton Bohl, Beaver Dam.....	1 00
Fifth “	—Jos. N. Bohl, Beaver Dam.....	50
Class 4b—Best bundle Oderbrucker Barley.		
First premium—	C. H. Howitt, Randolph.....	\$4 00
Second “	—A. C. Ellickson, Arlington.....	3 00
Third “	—Anton Bohl, Beaver Dam.....	2 00
Fourth “	—F. P. Grebe, Fox Lake.....	1 00
Fifth “	—J. P. Bonzelet, Eden.....	50
Class 4c—Best bundle any other variety of Barley.		
First premium—	F. P. Grebe, Fox Lake.....	\$4 00
Second “	—C. H. Howitt, Randolph.....	3 00
Third “	—Anton Bohl, Beaver Dam.....	2 00
Fourth “	—Jos. N. Bohl, Beaver Dam.....	1 00
Fifth “	—H. E. Krueger, Beaver Dam.....	50
Class 5a—Best ten ears Clark's Yellow Dent (Wis. No. 1) Corn.		
First premium—	C. H. Howitt, Randolph.....	\$4 00
Second “	—Anton Bohl, Beaver Dam.....	3 00
Third “	—James Barston, Randolph.....	2 00
Class 5b—Best ten ears Silver King (Wis. No. 7) Corn.		
First premium—	F. P. Grebe, Fox Lake.....	\$4 00
Second “	—H. N. Longley, Dousman.....	3 00
Third “	—Jos. N. Bohl, Beaver Dam.....	2 00
Fourth “	—Anton Bohl, Beaver Dam.....	1 00
Fifth “	—F. B. Joos, Fountain City.....	50
Class 5c—Best ten ears Wisconsin No. 8 Corn.		
First premium—	C. H. Howitt, Randolph.....	\$4 00
Second “	—H. W. Meekin, Fond du Lac.....	3 00
Third “	—F. P. Grebe, Fox Lake.....	2 00
Fourth “	—Hilbert Sorenson, Marinette.....	1 00
Fifth “	—Anton Bohl, Beaver Dam.....	50
Class 5d—Best ten ears Golden Glow (Wisconsin No. 12) Corn.		
First premium—	F. P. Grebe, Fox Lake.....	\$4 00
Second “	—C. H. Howitt, Randolph.....	3 00
Third “	—Anton Bohl, Beaver Dam.....	2 00
Fourth “	—Oscar Klumb, Rockfield.....	1 00
Fifth “	—A. C. Ochsner, Plain.....	50
Class 5e—Best ten ears North Star Yellow Dent (Wisconsin No. 11).		
First premium—	Anton Bohl, Beaver Dam.....	\$4 00
Second “	—W. A. Toole, Baraboo.....	3 00
Third “	—C. H. Howitt, Randolph.....	2 00
Class 5f—Best ten ears Yellow Flint Corn.		
First premium—	C. H. Howitt, Randolph.....	\$4 00
Second “	—Clyde Akins, Warren, Ill.....	3 00
Third “	—A. L. Greengo, Menomonee Falls.....	2 00
Fourth “	—Earl Usher, South Wayne.....	1 00
Fifth “	—Anton Bohl, Beaver Dam.....	50

Class 5g—Best ten ears White Flint Corn.

First premium—Clyde Akins, Warren, Ill.....	\$4 00
Second “ —Earl Usher, South Wayne.....	3 01
Third “ —Anton Bohl, Beaver Dam.....	2 00
Fourth “ —H. E. Krueger, Beaver Dam.....	1 00

Class 5h—Best ten ears, any other variety of Corn.

First premium—J. Brueckner, Ft. Atkinson.....	\$4 00
Second “ —Clyde Akins, Warren, Ill.....	3 00
Third “ —E. L. Dreger, Madison.....	2 00
Fourth “ —Anton Bohl, Beaver Dam.....	1 00
Fifth “ —F. P. Grebe, Fox Lake.....	50

Class 5i—Best single ear of Corn, any variety.

First premium—F. B. Joos, Fountain City.....	\$4 00
Second “ —H. E. Krueger, Beaver Dam.....	3 00
Third “ —Anton Bohl, Beaver Dam.....	2 00
Fourth “ —W. A. Toole, Baraboo.....	1 00
Fifth “ —Clyde Akins, Warren, Ill.....	50

Class 5½a—Best fifty ears of Silver King (Wisconsin No. 7) Corn.

First premium—Anton Bohl, Beaver Dam.....	\$10 00
Second “ —F. P. Grebe, Fox Lake.....	6 01
Third “ —W. E. Colloday, Stoughton.....	3 01
Fourth “ —Thos. Royston, Mazomanie.....	2 00
Fifth “ —Clyde Akins, Warren, Ill.....	1 00

Class 5½b—Best fifty ears of Wisconsin Standard Yellow Dent Corn.

First premium—C. H. Howitt, Randolph.....	\$10 00
Second “ —W. A. Toole, Baraboo.....	6 00
Third “ —O. R. Frauenheim, Random Lake.....	3 00
Fourth “ —Anton Bohl, Beaver Dam.....	2 00
Fifth “ —Hilbert Sorenson, Marinette.....	1 00

Class 6a—Best ¼ peck of Medium Red Clover Seed.

First premium—C. H. Howitt, Randolph.....	\$4 00
Second “ —H. N. Longley, Dousman.....	3 00
Third “ —Clyde Akins, Warren, Ill.....	2 01
Fourth “ —Geo. Joyce, Waterloo.....	1 00
Fifth “ —Wm. Leonard, Ft. Atkinson.....	50

Class 6b—Best ½ peck Mammoth Clover Seed.

First premium—O. R. Frauenheim, Random Lake.....	4 01
Second “ —H. E. Krueger, Beaver Dam.....	3 01
Third “ —Adolph Klann, Hayton.....	2 01
Fourth “ —H. N. Longley, Dousman.....	1 00

Class 6c—Best ¼ peck of Alsike Clover Seed.

First premium—S. F. Herdrich, Adell.....	\$4 01
Second “ —James Barston, Randolph.....	3 01
Third “ —Anton Bohl, Beaver Dam.....	2 01
Fourth “ —H. E. Krueger, Beaver Dam.....	1 00

Class 7a—Best ½ peck Black Soy Beans.

First premium—F. P. Grebe, Fox Lake.....	\$3 01
Second “ —Anton Bohl, Beaver Dam.....	2 00
Third “ —H. E. Krueger, Beaver Dam.....	1 01
Fourth “ —C. H. Howitt, Randolph.....	50

Class 7b—Best ½ peck Green Soy Beans.

First premium—F. G. Swoboda, Dousman.....	\$3 00
Second “ —W. L. Illian, Adell.....	2 00
Third “ —Earl Usher, South Wayne.....	1 00
Fourth “ —Clyde Akins, Warren, Ill.....	50

Class 7c—Best ½ peck Yellow Soy Beans.

First premium—Anton Bohl, Beaver Dam.....	\$3 00
Second “ —H. E. Krueger, Beaver Dam.....	2 01
Third “ —C. H. Howitt, Randolph.....	1 00
Fourth “ —Chas. Kuehn, Brandon.....	50

Class 7d—Best ½ peck Brown Soy Beans.

First premium—F. P. Grebe, Fox Lake.....	\$3 00
Second “ —Anton Bohl, Beaver Dam.....	2 00
Third “ —H. W. Meekin, Fond du Lac.....	1 00
Fourth “ —H. E. Krueger, Beaver Dam.....	50

Class 8a—Best bundle of Soy Beans.

First premium—Anton Bohl, Beaver Dam.....	\$3 00
Second “ —H. E. Krueger, Beaver Dam.....	2 00
Third “ —Jos. N. Bohl, Beaver Dam.....	1 01
Fourth “ —C. H. Howitt, Randolph.....	50

Class 9a—Best ½ peck of Alfalfa Seed.		
First premium—	None.	
Second “	—H. E. Krueger, Beaver Dam.....	\$3 00
Class 10a—Best Alfalfa Hay.		
First premium—	W. L. Illian, Adell.....	\$4 00
Second “	—Robert Lachmund, Sauk City.....	3 00
Third “	—F. P. Grebe, Fox Lake.....	2 00
Fourth “	—C. H. Howitt, Randolph.....	1 00
Fifth “	—Anton Bohl, Beaver Dam.....	50
Class 11a—Best ½ peck Winter Rye.		
First premium—	Jos. N. Bohl, Beaver Dam.....	\$3 00
Second “	—H. E. Krueger, Beaver Dam.....	2 00
Third “	—Anton Bohl, Beaver Dam.....	1 00
Fourth “	—A. L. Wagner, Haven.....	50
Class 11b—Best ½ peck Spring Rye.		
First premium—	Anton Bohl, Beaver Dam.....	\$3 00
Second “	—C. H. Howitt, Randolph.....	2 00
Third “	—Jos. N. Bohl, Beaver Dam.....	1 00
Fourth “	—H. E. Krueger, Beaver Dam.....	50
Class 12a—Best ½ peck Timothy Seed.		
First premium—	A. C. Ochsner, Plain.....	\$3 00
Second “	—H. E. Krueger, Beaver Dam.....	2 00
Third “	—Anton Bohl, Beaver Dam.....	1 00
Fourth “	—C. H. Howitt, Randolph.....	50
Class 13a—Best ½ peck Silver Hull Buckwheat.		
First premium—	R. W. Chatterton, Basco.....	\$3 00
Second “	—C. H. Howitt, Randolph.....	2 00
Third “	—H. E. Krueger, Beaver Dam.....	1 00
Fourth “	—L. J. Lee, Iola.....	50
Class 13b—Best ½ peck Japanese Buckwheat.		
First premium—	Harry G. Moore, Mauston.....	\$3 00
Second “	—Anton Bohl, Beaver Dam.....	2 00
Third “	—H. E. Krueger, Beaver Dam.....	1 00

PRESENTATION OF SILVER TROPHIES.

H. E. KRUEGER, BEAVER DAM, DODGE COUNTY.

Mr. President and Members of the Wisconsin Experiment Association: The duty which has been imposed upon me for this occasion, will be best made plain by reading two letters which have been addressed to me, one from the president of the Milwaukee Chamber of Commerce, the other from the Wisconsin Brewers' Association:

MILWAUKEE, Feb. 8th, 1909.

MR. H. E. KRUEGER,

Of the Executive Committee of
The Wisconsin Experiment Association,
Beaver Dam, Wis.

Dear Sir:—In response to your suggestion, the Milwaukee Chamber of Commerce has provided five silver cups, suitably inscribed, to be known as the Milwaukee Chamber of Commerce trophies, which are offered as trophies for the best specimens of grain, raised by members of your Association, as follows:

1. For best ten ears Silver King Corn (Wisconsin No. 7), one sterling silver trophy.

2. For best sample Swedish Select Oats (Wisconsin No. 4), one sterling silver trophy.

3. For best sample spring wheat, one sterling silver trophy.

4. For best sample winter rye, one sterling silver trophy.

5. For best bundle Oderbrucker Barley, one sterling silver trophy.

The Chamber of Commerce suggests that in order to have the trophy become the permanent property of a member of your Association contesting therefor, it shall be won by such member in contests in two different years; and that any member who is successful in winning the cup in any one year shall have his name appropriately inscribed thereon, together with the date of the year of such award.

As it was through you that the Chamber of Commerce had its attention directed to this important matter, we place these trophies in your hands, with the request that you present them to the Wisconsin Experiment Association, with the assurance that they represent our great appreciation of the value of the service of your Association to the State, and of our desire to co-operate with you for the uplifting of Wisconsin grain culture.

In behalf of the Milwaukee Chamber of Commerce, I am

Yours with great respect,

E. C. WALL,
President.

MILWAUKEE, Wis., February 10th, 1909.

Mr. H. E. KRUEGER,
c/o Wisconsin Agricultural Hall,
Madison, Wis.

Dear Sir:—On behalf of the Wisconsin Brewers' Association may we ask you to present to the Wisconsin Agricultural Experiment Association the silver trophy which the Association has had made to your order to be given to the member of your association who raises the best sample of Barley in this State? This trophy to become the property of the member of your association who wins it three times. We are deeply interested in the barley improvement in this State. It is acknowledged at the present time to be the best in the market for malting, pearling and feeding purposes, and we are anxious that it shall ever maintain its supremacy. This trophy is offered solely for the purpose of inducing the Wisconsin barley growers to maintain the high standard of Wisconsin barley.

Yours truly,

THEO. KNAPSTEIN,
President.

L. L. CAUFY, Sec'y.

A suggestion that an effort be made to secure some special prizes from people interested in encouraging the growing of grains in Wisconsin, was made at our last annual meeting. Acting upon the suggestion, I visited Milwaukee with a modest purpose of trying to get a few small special premiums added to our list. My success, as demonstrated in the six trophies, which I now formally present to you, was beyond all expectations. These rich and permanent trophies represent much more than a desire on the part of the donors to encourage this Association in its good work. They are also a substantial recognition of the excellent work already done in improving the grade of Wisconsin grains. I know this from those who present them. They represent a cordiality and good will toward our work, that I had not before realized, and which I have no doubt, will be deeply appreciated by you, as it was by me. It illustrates that there are times when the prophet is not without honor in his own country. I hope these trophies may serve, as they are expected to do, as an encouragement to us all to pursue the work of improving the quality and yield of Wisconsin grains with renewed vigor and enthusiasm.

SPECIAL PRIZES AND TROPHIES GIVEN AT THE LAST ANNUAL SEED GRAIN CONTENT BY FRIENDS OF THE ASSOCIATION.

Through the kindness of friends of the Wisconsin Experiment Association, we were able to offer at the last annual display of grains and forage plants, the following special prizes and trophies:

- A complete fanning mill with all attachments, for best peck of Medium Red Clover, valued at \$45.00, given by the Johnson & Field Mfg. Co., Racine; won by C. H. Howitt, Randolph, Wis.
- A New Superior Fanning Mill, for best half bushel of Swedish Select oats, valued at \$45.00, given by J. L. Owens Co., Minneapolis, Minn.; won by H. P. West, Ripon, Wis.
- A corn sheller, for best sample of Silver King corn, valued at \$5.00; given by J. A. Wilkinson, Hiawatha, Kansas, won by F. P. Grebe, Fox Lake, Wis.
- A Berkshire pig, to person taking the greatest number of cash prizes on pure bred corn, valued at \$25.00, given by H. P. West, Ripon, Wis., won by Anton Bohl, Beaver Dam, Wis.
- A sterling silver trophy, for best ten ears Silver King corn, valued at \$40.00; given by Chamber of Commerce, Milwaukee, Wis., won by Fred P. Grebe, Fox Lake, Wis.

- A sterling silver trophy, for best sample Swedish Select oats, valued at \$40.00, given by Chamber of Commerce, Milwaukee, Wis., won by E. T. Briggs, Fond du Lac, Wis.
- A sterling silver trophy, for best sample spring wheat, valued at \$40.00, given by Chamber of Commerce, Milwaukee, Wis., won by H. P. West, Ripon, Wis.
- A sterling silver trophy, for best sample of Winter rye, valued at \$40.00, given by Chamber of Commerce, Milwaukee, Wis., won by Jos. N. Bohl, Beaver Dam, Wis.
- A sterling silver trophy, for best bundle Oderbrucker barley, valued at \$40.00, given by Chamber of Commerce, Milwaukee, Wis., won by C. H. Howitt, Randolph, Wis.
- A sterling silver trophy, for best sample of Oderbrucker barley, valued at \$125.00, given by Wisconsin Brewers' Association, won by H. E. Krueger, Beaver Dam, Wis.
- A sterling silver trophy, for best ten ears of Golden Glow corn, valued at \$60.00, given by Wisconsin Agriculturist, Racine, Wis., won by Fred P. Grebe, Fox Lake, Wis.

PREMIUM LIST, 1909.

(Awards to be made February, 1910.)

DEPARTMENT OF FARM CROPS.

Class 1. Oats.

- Best $\frac{1}{2}$ peck Swedish Select oats (Wis. No. 4), \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best $\frac{1}{2}$ peck any other variety, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.

Class 2. Oats in Sheaf.

- Best bundle Swedish Select oats, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best bundle any other variety, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.

Class 3. Barley.

- Best $\frac{1}{2}$ peck Manshury barley, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best $\frac{1}{2}$ peck Oderbrucker Barley, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best $\frac{1}{2}$ peck any other variety, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.

Class 4. Barley in Sheaf.

- Best bundle of Manshury barley, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best bundle of Oderbrucker Barley, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best bundle of any other variety, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.

Class 5. Corn.

- Best ten ears, Clark's Yellow Dent (Wisconsin No. 1), \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
Best ten ears, Silver King, (Wisconsin No. 7), \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
Best ten ears, (Wisconsin No. 8), \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
Best ten ears, Golden Glow, (Wisconsin No. 12), \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
Best ten ears, North Star Yellow Dent, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
Best ten ears, Yellow Flint, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
Best ten ears, White Flint, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
Best ten ears, any other variety, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
Best single ear of corn, any variety, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cent.

Class 5½. Special.

- Best fifty ears of Silver King (Wisconsin No. 7) corn, \$10.00; 2nd, \$6.00; 3rd, \$3.00; 4th, \$2.00; 5th, \$1.00.
Best fifty ears of any Wisconsin Standard Yellow Dent corn (Wisconsin No. 8, Clark's Yellow Dent, Golden Glow, North Star), \$10.00; 2nd, \$6.00; 3rd, \$3.00; 4th, \$2.00; 5th, \$1.00.

Class 6. Clover Seed.

- Best $\frac{1}{2}$ peck of medium red clover seed, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
Best $\frac{1}{2}$ peck of mammoth red clover seed, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
Best $\frac{1}{2}$ peck of alsike clover seed, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
Best $\frac{1}{2}$ peck of white clover seed, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.

Class 7. Soy Beans.

- Best $\frac{1}{2}$ peck (black) soy beans, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.
Best $\frac{1}{2}$ peck (green) soy beans, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.
Best $\frac{1}{2}$ peck (yellow) soy beans, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.
Best $\frac{1}{2}$ peck (brown) soy beans, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.

Class 8. Soy Beans in Sheaf.

- Best bundle of soy beans, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.

Class 9. Alfalfa Seed.

- Best $\frac{1}{2}$ peck of alfalfa seed, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.

Class 10. Alfalfa Hay.

- Best sample of alfalfa hay, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.

Class 11. Rye.

- Best $\frac{1}{2}$ peck winter rye, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.
Best $\frac{1}{2}$ peck spring rye, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.

Class 12. Timothy Seed.

Best $\frac{1}{2}$ peck timothy seed, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.

Class 13. Buckwheat.

Best $\frac{1}{2}$ peck Silver Hull buckwheat, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.
 Best $\frac{1}{2}$ peck Japanese Buckwheat, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.

Class 14. Wheat.

Best $\frac{1}{2}$ peck winter wheat, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.
 Best $\frac{1}{2}$ peck spring wheat, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.

Class 15. Wheat in Sheaf.

Best bundle winter wheat, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.
 Best bundle spring wheat, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.

Class 16. Navy Beans.

Best sample of Navy Beans; \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.

Class 17. Navy Beans.

Best three single stalks with pods attached; \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.

Competitive Exhibits of the County Orders of the Wisconsin Experiment Association.

Greatest and Best Display of Threshed Grains.

1st, \$10.00; 2nd, \$5.00; 3rd, \$3.00; 4th, \$2.00.

Greatest and Best Display of Sheaf Grains.

1st, \$10.00; 2nd, \$5.00; 3rd, \$3.00; 4th, \$2.00.

RULES AND REGULATIONS UNDER WHICH PREMIUMS ARE GIVEN.

1. The exhibitor must be a member of the Wisconsin Experiment Association.
2. Grain or forage plants must have been grown the season previous to exhibition by the exhibitor.
3. No fees will be charged for exhibiting in any classes.
4. The samples of grain and forage plants exhibited are to be retained as the property of the Wisconsin Experiment Association and will be sold at auction to the highest bidder after the awards are made.
5. Exhibits are to be brought in by members of the Association. If sent by express or freight all carrying charges should be pre-paid.



HOMESTEAD FARM.

W. G. Jamison & Sons, Owners, Appleton, Outagamie County.

Place of Meeting of the Fox River Valley Guernsey Breeders' Association, June 30, 1909.

This beautiful farm consists of one hundred and twenty acres of high grade soil and is operated by W. G. Jamison and his two sons, both of whom have taken the Short Course in Agriculture. The father and sons are members and ardent workers in the Experiment Association, and take an active part in its meetings.

Pure bred seed grains, Guernsey cattle and Shropshire sheep are specialties upon the farm.

The Wisconsin No. 8 and Golden Glow corn receive marked attention. Oderbrucker barley is the leader of the small cereals.

The farm is located near Greenville in Outagamie county and has upon it a beautiful grove in which the meeting of the Guernsey Breeders was held.

6. Varieties of grain or forage plants not specifically named in the list can compete as "any other variety" in which case these different varieties compete against each other and not as an individual class.
7. Exhibitors cannot compete for two cash premiums on the same variety of grain or forage plant.
8. A proper entry of all grains, seeds, etc., must be made in the entry book at the Secretary's office before they are placed on exhibition tables.
9. Expert judges will be secured to place the awards.
10. Where doubt exists in regard to grains being entered according to rules and regulations the exhibitor may be required to verify by oath or affidavit to the correctness of the entries.
11. The meeting of the Association will be held at Madison in the Agronomy Building and rooms have been secured in that building for the exhibits.

ADDITIONAL RULES GOVERNING TROPHY AWARDS.

1. The Chamber of Commerce trophies must be won twice by one member before it becomes his permanent possession.
2. The Wisconsin Brewers' Association trophy must be won three times by one member before it becomes his permanent possession.
3. The Andrew Simonson trophy must be won three times by one member before it becomes his permanent possession.
4. The trophies must stay on exhibition in the Agronomy building, Madison, Wis., until they are permanently awarded. The name of each winner will be engraved on the trophy each year.

A FEW ARTICLES ON TIMELY TOPICS.

R. A. MOORE.

SELECTION OF SEEDS FOR THE SEASON'S CROP.

NO ONE THING ON THE FARM NEEDS SO CAREFUL ATTENTION.

From actual experience farmers have found that to make progress in breeding animals only the best foundation stock should be used. Farmers no longer look for progress in their herds by using scrub sires. The question of farm seeds for the season's crop is of equal importance when we consider that the field crops of Wisconsin are valued at one hundred million dollars annually.

This valuation can be increased one-fourth by careful selection of seeds all other things equal. During the winter months before the rush of spring work, the farmer should clean and grade his seed grain, test all seeds as to their viability and vitality. Where clover or alfalfa seed is to be purchased, it is well to send early to some of the leading seed firms for samples and test before placing the order. Many times the success or failure of clover and alfalfa fields are determined by the vitality of the seed. Alfalfa and clover seed are injured by being stored in deep bins after hulling where the temperature is raised through the natural curing process to such a degree that the vitality becomes impaired. Such seed is put upon the market and unless detected by the test, reaches the farmer and is the means of crop failure. Good alfalfa and clover seed should test 90% or above; no seed except some of the variety of grasses should be sown that does not test at least 80%. Where the viability of seed is low we can rest assured that practically all the seeds are deficient in energy even though a portion germinates.

There is no seed of which a farmer should be more careful than his seed corn as there is usually a wider variation in quality and vitality in seed corn than in any other seed. No farmer can afford to take the risk of planting "any kind" of seed corn for his season's crop.

The time to select seed corn should begin at the ripening season of the crop and then a few diligent hours' work may be the means of doubling the yield of corn the following year.

The writer is firmly convinced that all seed corn for Wisconsin should be fire-dried in order to lock all the energy and vitality of the corn in the kernel until time of planting. Where the desire is to cure merely four or five bushels a place can be arranged in one of the living rooms or the attic. Where large quantities are to be fire dried, a little building with shielded stove in center conveniently arranged with corn racks is preferable. Many members of the Experiment Association of the state are now making a specialty of growing and curing seed corn in co-operation with the Experiment Station and great advancement has been made in quality of seed and yield per acre.

One safe rule a farmer should follow when purchasing seed corn is to insist that it shall be sent him in the ear. Our best seedmen and corn breeders handle seed corn in the ear and it is the only safe way to secure it.

We trust the time is at hand when the scoop shovel method of handling seed corn, which has wrought such widespread

damage in our state, will be relegated to the past. Although the farmer will have to pay a higher price for his seed corn in the ear, yet he is certain to get good seed which determines the success of the season's corn crop.

By the passage of Bill 167, A., the seed control work of the State is placed in the Department of Agronomy and complete tests of seed which include purity, germination and vitality tests will be made for seedsmen, seed growers, and farmers at a cost of twenty-five cents per sample. A. L. Stone, Madison Wisconsin, will have immediate charge of the seed control work and samples can be sent direct to him or to the Department of Agronomy, and will receive prompt attention. All farm seeds must be tested and properly labeled previous to being placed upon the market.

GROWING PEAS FOR SEED AND GRAIN.

Wisconsin ranks well as a pea growing state as far as quality is concerned she takes the lead. This is especially true of the peas grown in the lake shore counties, as the climate is there perfect for the full development of the vines and pods. Northern and eastern Wisconsin contains the pea growing centers of the state and there grow them abundantly for seed and feeding peas. Peas can be grown in southern Wisconsin but the conditions are not ideal, the climate is too dry and warm. The peas are apt to be troubled with weevil and occasionally over one-half of the entire crop will be affected.

In the lake shore counties and northern Wisconsin, farmers regard the pea crop of the utmost importance and it there forms one of the principal crops.

Farmers making a business of growing peas for seed or the general market usually plow the land in the fall so as to have it ready for the early spring.

Rotation. In rotation the pea crop is grown on clover sod or follows corn which the previous year was on sod land. Peas belong to the legume family and hence have the power through minute organisms that inhabit nodules, that grow upon its roots, to gather nitrogen from the air to build plant tissue and store a supply in the ground for the further use by plants. On account of the pea crop being a soil renovator, usually barley, oats or wheat follow that crop to good advantage.

Preparation of the seed bed. Like many other crops, peas respond readily where given the proper attention, consequently

it is well to thoroughly prepare the land by double disking and free use of roller and fine tooth harrow.

Sowing the seed. From two to three bushels of seed are used per acre, depending upon the size of the peas sown, the smaller the peas the less seed is necessary. Some of the large varieties require as high as three and one-half bushels of seed per acre in order to get the best returns.

The ground should be prepared as soon in the spring as machinery will work well on the land, and the peas sown with drill or seeder. The drill seems preferable as the seed can be put in at a greater and more uniform depth, which is very essential. When sown with drill peas should be put in at a depth of from three to four inches.

After the peas are sown use a roller or plunker so as to get a nice even seed bed for running harvesting machinery later. Use fine tooth harrow after roller or plunker so as to create a mulch and prevent too rapid evaporation of moisture.

Harvesting. The peas should be cut when the larger portion of the vines and pods have turned yellow. The most common practice of harvesting is with mower and bunching attachment. A pea harvester is now on the market which is said to do exceptionally good work.

After the peas are cut they are left to cure and dry on the field for a few days, and then drawn to the barns on ordinary hay racks and stored. When peas are stacked before threshing it is well to cover the stack with marsh hay or canvass as rain penetrates the stacks quite readily.

Threshing. Peas are threshed with the ordinary grain thresher but usually blank concaves are used or at least one blank and the other with only a few teeth left therein.

Peas thresh quite as readily as the small cereals and often a day's run exceeds one thousand bushels.

Storing. Peas are stored in granaries or are drawn direct to market where ready sale at good prices usually awaits the farmer. The straw, if peas are not too ripe when cut, makes a fine feed for sheep. Other farm animals also relish good pea straw.

The Canadian field pea of which there are some two hundred varieties, are grown generally in Michigan, Wisconsin and Minnesota.

The Scotch Green pea seems to be one of the leaders in the lake shore counties of Wisconsin and is there grown for seed and dry market peas.

GROWING CLOVER FOR SEED.

The high prices paid for clover seed during the past few years has caused many farmers of Wisconsin to consider the advisability of turning their attention to this line of effort. It seems quite conclusive from the success experienced by those who have pursued the raising of clover seed, giving the subject the thought and care due to so important a crop, that Wisconsin farmers can raise clover seed in conjunction with a hay crop at a good profit.

Some localities of the state are more especially adapted to raising clover than others, and in these favored districts the clover does not only grow better but the heads seem to fill out with seed better. This fact has led many farmers who live in what is known as the clover belt to raise clover for seed extensively and attract buyers of clover seed to that section of the state. These farmers realizing the money that can be made by growing this important legume for seed purpose; have given the plant special care and attention, in other words, have made a study of growing clover. It seems quite conclusive that this clover belt proper could be made much wider and longer, as a matter of fact, could be made to extend all over the state if farmers made a study of the proper conditions under which clover is raised for seed. It also seems quite conclusive, that it would be an important crop for the general farmer to turn his attention to, as Wisconsin seems naturally adapted for raising most legumes, and especially clover.

The Medium red, or common red clover is the clover most commonly grown by farmers of this state. The Mammoth, Alsike and white clovers are also grown but not so extensively as the medium red, consequently we will consider the common clover specifically and the other varieties generally.

The medium red clover is a biennial plant, the seed being sown one season and the harvest proper to take place the following year. If sown without a nurse crop often a cutting of hay may be produced the first season. The usual practice followed by most farmers is to sow in the spring with barley, oats or some cereal as a nurse crop, and depend on the crop for hay the year following. Whichever practice in sowing is followed to get the best seed crop it seems advisable to retain the second cutting of medium red and the first cutting of other varieties named the year following seeding. Where the first cutting of clover is retained for seed it should be pastured or clipped back by running mower over the field about June 1st. The reason for reserving

the second cutting of medium red clover for seed is from the fact that it ripens quite unevenly at first and few bees and other insects are present to aid in fertilizing the many tiny florets of the numerous blossoms, which is not the case later in the season when the white and alsike clovers are out of bloom and bees are forced to work upon the red clover. This is very essential as unless pollination is quite complete it does not pay to harvest the crop.

Where the second crop is to be retained for seed it is quite essential that the first crop be cut somewhat earlier than if the desire was not to save the second cutting for seed. When the clover is nearly in full bloom, before any of the blossoms turn brown, is about the proper time to cut to insure the best chances for a good seed crop later. After the first cutting has been removed for hay, the clover plants come on quite evenly and reach the blossoming period approximately at the same time.

When the clover heads begin to turn brown an examination of the crop should be made to determine if it will pay to retain the crop for seed. Fifty or one hundred heads should be selected from different parts of the field and each head examined and the seed taken out.

From estimates that have been carefully made by clover growers it has been found that if from the number of heads examined the number of seeds found only averaged twenty per head and the clover considered a fair stand, the yield would be about two bushels per acre; if thirty seeds to the head, three bushels per acre, etc.

Unless approximately one and one-half or two bushels could be secured per acre, it would not be advisable to wait and cut the clover for seed. It could be cut for hay or turned under as a fertilizer.

If from the test it should be found that a yield of two bushels per acre or over could be secured it is then well to wait until the heads are brown and the leaves turning dark, then cut with self-rake reaper adjusted so that sufficient clover will accumulate on the table before being raked off to make the gathering of the clover most convenient. A mower can be used to advantage with buncher attachment. The clover should remain in piles until thoroughly dry when it can be hauled directly to the machine and hulled. In parts of the state where only a limited number of farmers raise clover for seed it will be hard to get a clover huller to thresh from the field in which case it will be necessary to stack or place on the barn floor or some other convenient place where the seed can be saved to the best advantage. Clover should be hauled in a rack with a tight bottom so as to

save the seed which shells. Under no circumstances should damp clover be stored away in barns, stacks or hulled direct from the field. After threshing if a large quantity of seed is on hand place in shallow bins and shovel over from time to time. In no case leave the newly threshed clover in sacks or deep bins as there is danger of heating, thereby reducing the viability and vitality of the seed.

CURING AND STORING SEED CORN.

ONLY CORN OF HIGH VITALITY SHOULD BE USED FOR THE SEASON'S CROP.

Too much cannot be said on the importance of good seed corn. With everything else equal in connection with growing corn it is safe to say that seed of high energy and vitality means double the crop in comparison with seed of low or medium vitality.

Farmers who have investigated this matter fully realize the wide variation in yields brought about by seed that has been saved under various conditions. It is safe to say that the yield of Wisconsin corn the present year has a variation in yield of from five to one hundred bushels of shelled corn per acre. Why this great variation? It is true that the variation in soil, latitude and cultivation plays an important part in the yield, yet the greater portion of the variation has been caused by the difference in the energy and vitality of the seed. Any farmer worthy of the name, on good corn ground can by using judgment in selecting and curing and testing of his seed corn double the average state yield annually. One of the chief reasons for small yields of corn is improper stand of corn of low energy.

The remedy for this evil lies in the selection and curing of the seed so as to lock the energy within each kernel and keep it there until planting time. It will then stand adverse conditions.

For small seed plots and breeding plots we study the character of the stalk and ear development, upon the stalk before selection and only select seed corn of the highest perfection yet where the desire is to save a portion of the entire corn crop for seed which we desire to sell to individual farmers or seeds-

men we cannot use the same careful judgment we use when we merely select a small amount for special purposes.

The seedgrower selects from his general crop produced from well bred seed and the quality of the seed will largely depend upon the care given the corn after harvest. For Wisconsin and states having like conditions, kiln-dried corn is the only safe sure corn to use for the season's crop. At the time of harvest, although the corn may seem very hard and ripe, yet it will be found to contain from twenty to thirty per cent of water. Our season is too short to drive off this excessive moisture before the damp cold weather is upon us.

One of the best methods we have so far found for the saving of large quantities of seed corn for experimental purposes is about as follows:

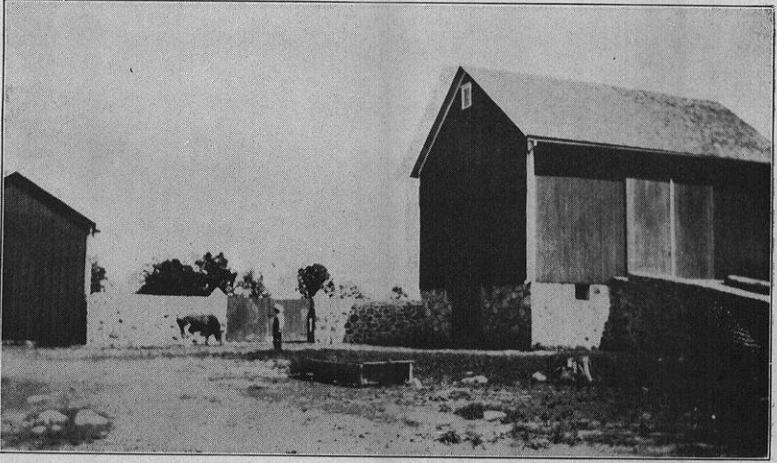
After the corn is well hardened harvest with binder and immediately shock. After the shocks have dried out well hand husk making three divisions of the corn, viz., seed corn, marketable feeding corn and nubbins. The marketable feeding corn and nubbins should be cribbed separately, the soft corn is put in the crib with the nubbins.

The seed corn demands our best attention and should be stored in our corn curing room within a few hours after husking. Lack of attention on the part of the corn grower at this time means about ruin to the subsequent corn crops produced from his seed. Corn should not lie on the cold, damp ground for any great length of time after husking, but be gathered daily.

BREEDING AND DISSEMINATION OF WISCONSIN GRAINS AND FORAGE PLANTS.

For many years Wisconsin farmers have paid considerable attention to the breeding of special strains of dairy cattle; also our State became noted for her fine herds of sheep, hogs and fat stock, but nowhere within our borders could we find pure bred races of corn, oats, barley, clover, etc. The grains and forage plant that are the very foundation of good live stock production had been neglected.

The grain breeding work in Wisconsin was started in 1898 and up to that time comparatively little work in America had been done in the way of breeding pure bred varieties of grains in any great quantities. Professor Hays of Minnesota, Dr. Hopkins of



OAK LAWN FARM.

Operated by H. N. Longley, Dousman, Waukesha County.

The Oak Lawn farm consists of one hundred and fifty acres of fine farming land and has been the home of the Longley family for many years. H. N. Longley completed the Short Course in 1906 and joined the Experiment Association as soon as he was eligible. He is the present treasurer of the Association and has been very active in the Association work since he became a member. Mr. Longley feels that scrub grains and scrub stock are a detriment to our farmers, therefore has put forth his best efforts to banish them from his county and the State. Select Oderbrucker seed barley, Silver King corn, Guernsey cattle and Chester White swine are his specialties. His seed grains have always ranked as first class.

Illinois, Professor Holden of Iowa, were our leading pioneer grain breeders and it was largely from these men that Wisconsin caught her inspiration.

In 1898 Wisconsin had ceased to be a wheat growing state and the disastrous effects of growing that single grain crop were then practically obliterated and we had no desire to revive it, consequently we turned our attention largely to barley, oats and corn.

Our farmers were entirely dependent upon our seedsmen for seed grain; and grasses and these gentlemen furnished the best seeds possible which at the best were scrub varieties. Corn was sold in accordance with the scop shovel method which did not admit of careful inspection and testing of the seed before planting. It was to better these conditions and place the farmer and seedsmen of the state in a position to secure pure bred grains instead of mixed varieties that the work was inaugurated. The work as planned involved the following:—Breeding, Testing, Dissemination.

The breeding work has been carried on by selection and cross fertilization. Two methods of breeding were employed, the first by selecting one hundred of the best heads from 100 of the best plants, while the second method, established two years later, started individual plants from single select seeds, and by a process of elimination secured the progeny of one plant of many hundred for further trial.

The breeding of pedigreed plants is a slow and tedious process but is exceedingly interesting. To illustrate we will mention the possibility with the barley crop the work of which is now well under way. The first four years of the work a person is dealing with a few kernels of grain, not more than enough to sow the area of a few square feet. The fifth year we have but sufficient to sow one square rod, the seventh, ten square rods, and the eighth, one acre. From this point forward the increase is surprising, it swoops down upon you like an avalanche. From the acre plot we jump to twenty-five acres and from twenty-five in a single year to 1250, the next year we can sow 31,000 acres, and the following 775,000, which will give a yield sufficient to sow twenty million acres and produce a crop of one billion bushels, or enough to seed the entire barley acreage of the world.

In Wisconsin, this year, no less than fifteen million bushels of one breed of barley has been grown. You will find nearly whole townships growing this one distinct breed in preference to all others. This select barley has given a yield of from three to ten bushels per acre above that of its closest competitor, as reported by several hundred members of the Wisconsin Experi-

ment Association. The Oderbrucker barley is a stiff strawed, heavy bearded, six rowed barley that is high in protein, hence making it an exceptional good feeding barley. On account of its uniformity in size and constituent of kernel it is also an exceptionally good malting and pearling barley.

METHOD OF DISSEMINATION.

Through the cooperation of the Wisconsin Experiment Association barley centers were at first established in approximately all the barley growing districts of the state. The members of the association at first grew one acre each from seed furnished by the Station and the following year sowed all seed raised and then sold the crop for seed as far as possible to neighbors. This work has been pushed to that extent that there are now approximately sixteen hundred barley centers established and the Select Oderbrucker barley is grown everywhere throughout our state.

CORN BREEDING.

Our corn breeding work was begun in 1900 and our first attempt was to secure select breeds of corn from our sister state, Illinois, thinking we could by a process of acclimatization reap the benefits of the work already put upon the corn. We found that we could not succeed with southern bred corn and would be obliged to work out the problem with corn bred in Wisconsin. We scoured the state and secured corn in various places that had been grown through a long series of years. We tested many varieties and cast out many, only retaining a few for final tests.

Our corn breeding work is carried on largely by the ear-to-the-row method. Ears are selected and tested that are uniform in character and show equal viability. Butts and tips are rejected and the remainder of the ear planted in a single row. Each ear is thus planted until fifty or one hundred are used. The hills are an equal distance apart and the same number of kernels are planted to the hill.

The outcome is very astonishing; some of the ears of corn planted have the energy, vitality, and projected efficiency to produce as much as ten times the amount of select seed corn that other sister ears are able to produce.

There are factors that make up an ear of corn that are not visible to the naked eye, and the only way we have of testing its general worth is by putting it to the growing test.

In this way we have bred corn for six successive years, until the variation, which at first was wide is now narrowed so that seldom there is a variation of more than from three to one of select corn.

The breeding and dissemination of select corn coupled with the information of growing and curing corn properly, has played an important part in raising the yield throughout the entire state.

PEAS IN THE LAKE SUPERIOR CLAY BELT.

E. J. DELWICHE, ASHLAND, ASHLAND CO.

It may be news to many readers of this article that there exists in northern Wisconsin a belt of land which, although well adapted to growing peas, is still practically untouched. This region, which is destined to become a famous pea raising section, lies on the south shore of Lake Superior, extending from Minnesota to Michigan, and is from 12 to 20 miles in width. This section has unexcelled shipping and market facilities. Several trunk lines of railroad run through this section, or have their terminals at the lake ports. The cities of Duluth and Superior, the Iron Range towns, the copper country, offer excellent markets for the product.

The climate and soil conditions in this locality are almost ideal for raising peas. These are similar in many respects to those that are obtained in the famous Green Bay and Lake Michigan region. The soil is red clay for the most part, clay loam in some places. Where well drained as is feasible in most cases, it grows very fine peas, both for canning and for seed or soup purposes. Although the pea industry here is practically undeveloped, enough has been done to demonstrate that this section is pre-eminently adapted to pea raising. Peas are raised very successfully in every garden and have been grown under field condition by a number of farmers throughout the region. But owing to a lack of understanding of up to date methods of harvesting and threshing, no great advance has been made.

During the last season the Experiment Station has had several varieties of peas on trial on the experimental farms near Superior and Ashland and yields considerably above the average were obtained. In 1908 nine varieties tested at Ashland yielded at the average rate of 22 bushels per acre. One variety gave a

yield of 38 bushels per acre. The famous Scotch variety which sold for over \$2.40 per bushel during the past season yielded 22 bushels per acre. Reports of yields of over 40 bushels of dry peas per acre have been known to the writer. When it is remembered that the average yield for the state is something like 17 or 18 bushels per acre, it can readily be seen that the future of the pea industry in this section is bright and promises good returns. Extensive tests were made at Ashland during the past season.

There exists several hundred thousand acres of "cut over" land in the region mentioned, which are especially well adapted to peas when cleared and properly fitted for the crop. This can still be bought at comparatively low prices, \$10.00 to \$15.00 per acre. Already a large northeastern Wisconsin pea canning firm has purchased several thousand acres of land a few miles south of Ashland to be used for raising peas for canning purposes.

There is no question but what some day this region will rival the noted eastern Wisconsin pea section. What is needed, is farmers who have some capital at their disposal to be used in clearing the land and who understand the requirements of pea raising. To such, the Lake Superior clay belt evidently offers exceptionally good opportunities.

FIELD BEANS AS A WISCONSIN FARM CROP.

R. A. GILLETTE, VERONA, DANE CO.

Fellow Members: I have been raising white beans for several years, starting in with a few bushels and raising more or less every year, depending on conditions of my other farm crops, using them as a catch crop if any other crop failed. Later, I began to see the possibilities of the crop in other ways. Following the system in use in most bean growing districts, the crop with its cultivation rids the land of many foul weeds.

As a cash crop in comparison with corn and wheat:

Using 40 bushels as an average crop of corn at 50 cents a bushel	\$20.00
15 bushels of wheat 90 cents a bushel	13.50
16 bushels of beans \$2.25 a bushel	36.00

Using the same authority for the cost of raising these crops, corn costs \$7.00, wheat \$6.20 and beans \$8.00.

Also the bean straw and cull beans form quite an item in figuring up the profits.

The October Crop Reporter gives Wisconsin credit for raising 29% of all the beans produced in the United States, while New York raises 28%, Michigan 36% and California 10% out of 100; so there is plenty of room at the top.

We import about 3,000,000 bushels a year mostly from Bulgaria, and pay a duty of 45 cents per bushel. The price varies from \$1.65 to \$2.40 a bushel.

Soil and cultivation: Lime stone soils, or sandy clay loam are best, but they do well on any soil that will produce good corn or oats, that is if it is in a good state of cultivation. Beans should not be planted on very rich ground. Plow the same as for corn and any time you can spend disking or dragging will help to kill the weeds before planting. Plant any time from June 10th to July 1st, depending upon variation and condition of soil. Most growers use a grain drill planting in rows 30 inches apart between rows and about 3 inches apart in the row. Beans should be about 2 inches deep. A light harrowing two days after planting will kill some weeds and break the crust. I have used a weeder to advantage going crossways when the plants were about two or three inches above ground. I use my beet cultivator with narrow teeth, and don't go too deep when roots begin to run, hilling a little. Also avoid cultivating in damp weather, or when the vines are damp, as dirt sprinkled on the foliage when damp causes them to rust. Another thing, plan your cultivations so you won't have to cultivate when blossoms are setting, as you will knock off the blossoms and decrease the yield.

Use a bean puller, pulling two rows at a time, bunching with forks in small bunches, and as soon as dry haul direct to stacks or mow; if in stacks, cover them with corn stover. They do not heat easily in the stack, but should be left three or four weeks, to sweat before threshing. They require special machinery for threshing and cleaning, and this has kept many from raising them. Now it is possible to get a small thresher that will do from fifty to one hundred bushels per day for \$60.00, while a machine for commercial work will cost the same as a common thresher.

I might add here that those of you who try them in a small way this year, should not attempt threshing them with a common thresher, as it will split a good many. A flail or good barley fork will do if you have but forty or fifty bushels.

Few diseases or insects bother beans so far as I know.

The variety that Prof. Moore is distributing this year, are some I have been raising for several years and have found favor with many in this locality on account of their good yielding qualities. This variety originally came from New York state, where they were grown quite extensively; originating from a single bean sent out by the U. S. department of agriculture to a man by the name of Hill.

As to yield, I have not made it a practice to thresh so I could estimate the yield closely; but have had small patches that went 40 bushels per acre. This year the yield was poor, owing to extreme dry weather coming on just as the pods were setting; that and the heat caused many pods to fall off and what was left to only partly fill. The yield this year will be about 14 bushels per acre of marketable beans.

Thus far, I have planted my beans 18 inches apart, planting four rows with a five foot drill and cultivating with a two row beet cultivator, pulling with a one row puller of my own make, but consider that distance too close; the air does not get enough chance.

A little work in selection might be carried on individually by thinning the beans out to say eight inches apart, leaving the strongest plants, and in pulling keep each promising plant separate by putting it in a paper bag, and bringing a few to the meeting next year. I think a prize for the best individual plant would give us a start on some good individual plants.

SORGHUM FOR FORAGE.

A. L. STONE.

One of the valuable forage crops introduced into the United States and extensively grown in the southern and western portions of the country, is sorghum. This plant is not grown as extensively in the northern states as its good qualities would indicate that it should be. The reason why it is not is due to a lack of knowledge of its good qualities and place in the rotation.

The native home of the sorghums is probably in Africa where many varieties have been found and where it still flourishes in great abundance. It has been grown in Asia for many years also and while it is essentially a tropical or semitropical plant

many varieties have been developed which mature a fine grade of seed in the countries farther north. In fact sorghum is now grown successfully in all of the states unless it may be some of the most northern of the eastern states and in the western mountainous states.

The sorghums were introduced into the United States in 1855, the seed coming from China. Two years later sixteen varieties which had been brought from Africa were grown here and since that time many other varieties have been introduced and the spread has been rapid. For the first few years after the introduction attention centered wholly upon the sugar and syrup producing qualities of the plant and although it was noted that the stalks, leaves and seeds and even the crushed cane were palatable to live stock, no attention was paid to it as a forage plant. Of late years however its qualities as a forage plant for all classes of live stock have become known and it is being rapidly incorporated into the agriculture of every live stock state in the Union.

There are two distinct groups of sorghums, the saccharine or sugar sorghums and the non-saccharine sorghums. The saccharine sorghums are valuable for both sugar, seed and forage, the non-saccharine sorghums for seed and forage only. There is one variety of the latter called the broom corn which some writers put in a group by itself. It has a very bushy head of light colored flower stems from which broom corn for the manufacture of brooms is obtained.

The saccharine group includes many distinct varieties but the most prominent are the Amber, the Orange, the Sumac, Folger's Early and Gooseneck. These different varieties are characterized by differences in appearance of head and color of seeds. The head is compact and club-shaped in the Sumac, open in Orange and Gooseneck, and spreading in the Amber canes. The seeds are red in the Sumac and reddish yellow in Orange and Amber cane.

The non-saccharine sorghums are also divided into many varieties and here we find listed the Kaffir corn, and Dhoura both of which include many distinct forms. Under Kaffir corn we find White Khaffir, Black Khaffir, Red Khaffir and Milo Maize. The Dhoura includes Jerusalem corn, Brown and Yellow Dhoura, and several other similar names derived from the color of the seed.

While there are many varieties of sorghum and the number is rapidly increasing as the sorghums cross readily, there are comparatively few which have become widely used either for sugar or forage. Generally speaking those varieties which are

highest in sugar content are best for forage other things considered. They should be quick maturing, hardy, stand up well and produce good crops of soft, non-acid seed.

Because of its heavy yields sorghum draws heavily on soil nourishment particularly on the potash and phosphoric acid and so is thought to be extremely hard on the soil. Sorghum is a deep feeder and draws to the surface, elements which other crops could not reach. Sorghum thrives best however on soils that are light or sandy but in a high state of fertility. It needs a deep well prepared seed bed. The land should be fall plowed and receive thorough preparation in the spring with special reference to weed eradication.

The young sorghum plants grow slowly especially in cool weather and weeds are apt to crowd them. It is a good plan to harrow the field once or twice. This can be done without special harm after the sorghum plants are once well established.

Sorghum may be used in various ways; for a soiling crop, where it is particularly valuable, for pasture, for hay, or for silage. The early varieties such as the Early Amber can be sown at intervals, beginning the first of June after the soil is thoroughly warmed and by this means green forage can be had all through the summer months when pastures are dry and some supplementary green feed is necessary to maintain the milk flow with dairy cows or the best physical conditions with any live stock. In Wisconsin Early Amber sorghum will produce two crops of forage the same year if cut the first time when just in bloom. If sown at intervals as recommended the first patch will have reached its second growth by the time the last of the first cutting is gone. By fencing these patches separately they can be pastured off with the same results. Care must be taken not to turn cattle or live stock of any kind into a sorghum pasture without first feeding some other feed to partially fill the stomach as bloating is apt to result. The sorghum is extremely palatable and there is danger of over-eating and consequent derangement of the digestive system. When sorghum is to be pastured, cut for soiling or for hay it should be sown with a drill, preferably a press drill, at the rate of $1\frac{1}{2}$ to 2 bushels per acre, depending upon soil conditions. When the sorghum is cut for hay it should be cut and left for four or five days exposed to the sun, being turned once in the meantime. The cane is succulent and hard to cure unless properly treated. After lying for this length of time it may be raked up and piled in big cocks. If cut just before heading it piles up nicely and sheds water almost perfectly. The writer can assert from personal experience that he never

fed any form of hay that was eaten with so great avidity as sorghum hay cured in this manner. It was fed to dairy cows and the affect on the milk flow was distinctly noticeable.

After one crop is cut off, the ground should be stirred in some manner preferably with a disc harrow to prevent weeds from starting and to establish a soil mulch for the time being. Sorghum does not make as good a quality of silage as corn. On account of the high sugar content the silage is apt to be too highly acid but if cut when the seed is in the hard dough stage sorghum makes a good quality of silage. It has the advantage of producing two crops in a season and hence a much heavier yield, amounting to twenty tons per acre.

Sorghum is a crop that may well be incorporated into the agriculture of Wisconsin. The idea that it is poisonous has reacted against it. It is no more poisonous than corn under the same circumstances. The second crop has always been considered the most dangerous and yet the writer turned a herd of forty valuable dairy cows upon a second crop of sorghum as pasture with positively no ill effects, and a greatly augmented milk-flow. The cattle were always given a light feed of some other forage to blunt the appetite before turning on to the sorghum. If care and judgment are used there should not be any ill effects from feeding sorghum in any form.

MILLETS FOR FEED AND FORAGE.

Of the forage crops which are not well understood by farmers in general is millet. Millet has no place in a regular rotation of crops but can be used as a catch crop to supplement pasture in a dry season or in case of failure of the hay crop or injury to the corn.

The millets of which there are many varieties are important both as food for men and beasts, and their successful cultivation and use should be better understood by farmers as a rule for they can be made to do good service at a time when other crops fail.

When intended for hay it should be cut when beginning to bloom as later the stems become tough. If sown for seed it should be sown in rows about three feet apart and the plants from four to six inches apart in the row.

Of the millets proper there are three distinct groups. There is the Foxtail group which includes the Common and Hun-

garian millets. Second, the barnyard group including the varieties resembling the common barnyard grass; and third, the broom corn millets. The Foxtail millets are so called from their resemblance to and probable descent, from the common green foxtail or pigeon grass, (*Chaetochloa viridis*). Any farmer who hears the name of pigeon grass will at once recognize this millet, which is one of our most common forms. The varieties known as Common millet, German millet, Golden Wonder millet, Hungarian millet, Japanese millet, all belong to this group and have much the same general appearance although the varieties differ in some minor points, like drought resistance, yield, etc.

The Barnyard millet is so called from the resemblance of the heads to the common barnyard grass (*Panicum crus-galli*), of which it is a direct descendant.

The barnyard millets like the foxtail millets are used in some portions of the world for human food. The heads are open like oats except that the seeds are much smaller and very smooth and shining, while the seeds of the Foxtail millets are corrugated crosswise of the seed. Where used for human food the seeds are ground and used as a mush or porridge.

The Broom corn millets so called from the broom straw appearance of the flower stems probably originated in Egypt or southern Asia and have no wild counterpart in this country. While they produce heavier crops of larger seed than some of the other varieties they have never become so popular in the United States as have the foxtail millets.

The different varieties in this group are distinguished most largely by the color of the mature seed which varies from white through yellow to red. The growing plant also varies from a light green to a reddish tinge to correspond with color of seed. The larger number of varieties of this group grown in the United States are white seeded.

While the different groups and varieties differ in appearance and origin as before noted the culture necessary is practically the same for all.

The millets produce heavy crops, usually producing two or more crops under proper environment, and so make a heavy draft on both soil moisture and fertility. The soil upon which millet is sown should therefor be rich and should have an abundance of moisture. It draws its nourishment largely from the surface soil and this part of the soil should be enriched by applications of well rotted manure.

The millets are very susceptible to cold and should not be sown until all danger of frosts is over, usually about the first of

June. Sown at this time it will mature by the middle of August. The broom corn millets will mature in from seventy-five to eighty-five days and the foxtail millets in from eighty-five to one hundred and ten days. The land on which it is sown should be thoroughly tilled to kill weeds before sowing the millet, otherwise the weeds are apt to get the better of the millet.

Where grain or corn is destroyed by hail or insects the ground can be cleaned, disked, sown to millet and a crop produced to supply the lack of other forage. Millet makes a good soiling crop and by sowing at successive intervals will furnish green feed throughout the season. The seed may be sown broadcast or with a drill and should be sown at the rate of from one-half to three-quarters of a bushel of foxtail or broom corn millets, and from one-fourth to one-half a bushel of barnyard millet per acre. The richer the land the less seed will be needed as stooling will be more extensive. The seed should be put in rather shallow, not over an inch deep preferably and lightly harrowed.

All millet meant for hay should be cut at the time it begins to bloom. If left longer than this the stems become woody and fibrous and the beards develop to such a degree as to spoil the palatability of the hay. Barnyard millet is a little harder to cure than either Foxtail or Broom corn millet. A good way is to allow the hay to lie in the swath until partially cured then cock up and allow the curing to finish in the cock the same as is customary with alfalfa.

Where millet is to be cut for seed it should be allowed to ripen and may then be cut with a binder the same as the cereals. The bundles may be placed two by two in long shocks and when thoroughly dried threshed from the shock. This saves the handling in stacking wherein much seed is battered from the heads.

The millets are valuable as food for dairy cattle, young stock and sheep, especially where used as a soiling crop to supplement pasture. Care must be used however in feeding the green forage as damage may be done by over feeding. It is well where stock are turned onto millet as a pasture or where the green forage is fed, to blunt the appetite by some other feed beforehand as the extreme palatability of the green forage may easily induce to over eating.

Where the corn crop fails millet may be used as a silage crop with excellent results. It is especially valuable in this connection on account of its short maturing period whereby a crop

can be obtained for silage even after the corn is destroyed by hail or insects.

The notion that the foxtail millets prove injurious to stock is probably due to the fact that in some cases the grass was left too long before cutting and became hard and indigestible. The beards also become stiff and harsh and are exceedingly hard to digest. In conjunction with other substances they may form balls in the stomach or irritate the stomach and intestines. All this may be avoided by cutting at the proper stage and feeding judiciously.

The actual feeding value of millet is about equal to that of timothy although it is perhaps not so well relished by farm animals. It should not be fed alone, but in combination with other feeds. When green it has a tendency to act as a laxative and if fed in too large quantities or continuously may prove injurious to stock.

On the contrary over ripe millet acts as a diuretic and may also prove unhealthful, but cut at the right stage and properly cured these effects are so small as to do no harm but on the contrary may assist in keeping animals in a healthy condition.

The barnyard millets are perhaps superior to the broom corn and foxtail millets as a forage as they contains more fat and crude protein and a greater digestibility. The millets therefor can be made extremely useful by the thoughtful farmer either as catch crops or as a part of a short rotation and should be more generally adopted.

DIVISION OF FARM CROPS.

PLAN OF WORK FOR THE COMING YEAR.

R. A. MOORE.

I desire the energy of the Experiment Association concentrated on the corn and barley work again the coming season. We are now at the threshold of success and any delay on our part would mean the losing of the vantage ground already obtained. The call from all over the country for seed grains grown by our Association leads me to see that the farmers are quick to perceive the importance of growing crops from select seeds instead of continuing the mongrel bred varieties. The

favor so far obtained for select seed grains can only be continued by observing strict rules of honest practice.

If for any reason our seed crop should be damaged or contaminated with noxious weed seeds we should at once notify the Secretary and refrain from selling such seed. All seeds of questionable character should be fed on the farm or sold as feed, and not listed as seed grains.

Our work in establishing standard varieties of corn for Wisconsin should be continued and pushed with the utmost vigor. No longer should we encourage the scoop-shovel method of supplying seed corn, but insist that the only true way of furnishing seed corn is in the ear and that to be kiln-dried corn. No seedsman can advance a single argument of value for not selling seed corn in the ear. Where shelled corn is supplied the farmer for seed, the danger of mixing and getting an inferior grade of seed is too great to be safely advocated. The only true way of preparing seed corn for market is to fire dry it and then store safely in a room for shipment. All seed corn should be shipped in the ear for which the grower should receive ample returns for his extra labor. By adhering strictly to the above principle, we will be able to throw new life and vigor into the corn plant and lead the world in production per acre. Ohio was the only state in America that led Wisconsin in yield of corn per acre in 1906.

Our experiments for the coming year are outlined in our last report and members of the Association who desire carrying on these experiments can be governed by these outlines and will be furnished report blanks in due time for the purpose of reporting the experiments.

We should bear in mind that whatever experiment is undertaken the Secretary should have knowledge of the same so as to be able to compile the data for publication.

In my travels throughout the state, I frequently visit members of the Association who are growing and testing seed grains, but do not think it necessary to make a report. The value and importance of the work is lost entirely to others if we neglect so important a duty. In order to be placed on the seed grower's list one must notify the Secretary of the kind and amount of seed, the price per bushel, a quart sample of the seed, and any other data that may be well for the Secretary to know.

The grower of pure bred seed grains should be a business man in the strictest sense and should have business cards and letter heads for business correspondence. These cards and letter heads should be modest, giving the name of the farm, the owner's name, the seed grains grown, and any specialties, put in practice upon the farm.

OUTLINE OF COOPERATIVE EXPERIMENTS.

EXPERIMENT 1.

Trials with Alfalfa to Determine if It Can be Grown in Wisconsin Successfully as a Forage Plant.

No forage crop has been given more attention in the United States during the past ten years than alfalfa, and while it is yet in the experimental stage in some parts of Wisconsin, where proper precautions are taken it can be grown with a reasonable degree of success on any of our older and well cultivated farms.

Wisconsin is a great dairy State and the milk products bring to our farmers annually some fifty million dollars. A considerable portion of this money is expended for high protein feeds, as oil meal, oil cake, cotton seed meal, bran, etc., with which to balance the feed ration. The cost and the time expended in carting the feeds make them expensive for the farmer and take from him a large portion of that which would otherwise be profit.

Alfalfa supplies the dairymen and stockmen with valuable forage and saves for them a large portion of the money annually expended for high protein feeds. The value of alfalfa as a feed for all farm animals including swine and poultry, is so well known that it is unnecessary to speak extensively of its merits here. No single forage plant combines the materials for a profitable ration for dairy cows, sheep, and brood sows so well as does alfalfa.

For eight years alfalfa has been grown successfully on the Station Farm near Madison, and many tests made to determine the best method of growing it under different conditions of soil and climate. When grown in comparison with red clover, timothy, and brome grass during the season of 1904, the yield per acre of hay was 5.4 tons for alfalfa, 2.5 tons for clover, 2.3 tons for timothy and 1.3 tons for brome grass. As a green forage the weight of alfalfa grown per acre was double that of clover, three times that of timothy, and five times that of brome grass. The per cent of protein found in the hay was as follows: 18.7 for alfalfa, 13.28 for clover, 4.74 for timothy, and 6.07 for brome grass. In total yield of protein per acre alfalfa produced three times that of clover, nine times that of timothy and twelve times that of brome grass.

Alfalfa or lucerne is a perennial plant and belongs to the clover family. If not killed by frost, water or some other ele-

ment, it can be cut the second year after sowing three or four times per season for hay, for several years without re-seeding.

Locating the field.—Good growths of alfalfa are often secured in favorable seasons on level land, but better results will be obtained on land that is somewhat sloping, where water will not stand during any portion of the year. On level ground during sleet storms, water is apt to collect in all the depressions, forming on freezing an ice sheet which smothers many of the alfalfa plants. "Patchy fields" are hard to renew and generally necessitate replowing and reseeded. In no case should alfalfa be sown on land that is subject to overflow or where the water level is but two or three feet below the surface.

Character of the soil.—Alfalfa will grow on a wide variation of soil ranging from a rich sandy loam to a heavy clay, but a rich clay loam over a gravelly sub-soil seems to be best. It is practically useless to try to grow alfalfa on sandy or "worn out" soils without an abundant supply of good barnyard manure. Alfalfa will not do well on new and unsubdued soil, but develops best on the well cultivated soils.

Soil inoculation.—On fields that have not before grown alfalfa usually the germ necessary for its best growth are wanting. Where such conditions obtain it is well to scatter soil, taken from an old alfalfa field or from the roadside where sweet clover grows, at the rate of one ton per acre. The ground should be scattered over the field just previous to sowing the alfalfa seed and should be immediately harrowed.

An excellent plan for supplying the soil with the proper germs is to use a mixture of one-fourth alfalfa seed and three-fourths clover seed for general seeding. The clover hay will be of a better grade where alfalfa is grown in connection therewith. The alfalfa plants that survive become bacteria producers and distributors for future crops of alfalfa.

Some seedsmen have advertised cultures of organisms for inoculating alfalfa seed previous to seeding. The data obtained from experiments indicate that much more certain results can be secured by the use of the infected soil.

Soil preparation.—Good results have been obtained on both fall and spring plowed lands, depending upon the texture of the soil and freedom from weeds. With fall plowing it is well to plow early so as to cover weeds before they produce seed. Double disc in the spring as soon as the land works well, and put in garden condition with a fine tooth harrow. The ground should be heavily spread with barnyard manure before plowing, using from ten to twenty tons per acre. If seeding is done on spring plowed land, the ground should be heavily manured dur-

ing the winter and plowed in the spring. The fine tooth harrow should be used within a few hours after the furrows are turned to prevent drying and hardening of the soil. If the soil once becomes lumpy it is hard to put in proper condition for alfalfa seeding. A planker or roller should be used immediately before and after seeding, which aids much in firming the soil to permit of rapid germination of the seed.

Nurse crop.—Where ground is exceedingly weedy, it is preferable to use a nurse crop as it assists the alfalfa to keep down the weeds until it becomes established. When alfalfa is sown with a nurse crop the seed should be put into the ground as early as it is advisable to sow oats or barley. Barley at the rate of three pecks per acre has given best results as a nurse crop, and can usually be left to ripen without apparent injury to the alfalfa. If oats are used do not exceed one bushel of seed per acre, and if the season is dry cut the oats for hay at the time of heading.

Land on which tobacco, sugar beets, or any highly cultivated crop has been grown the preceding year can be seeded to alfalfa without a nurse crop with the best chances of getting a good, thick stand. Where alfalfa is seeded without a nurse crop the ground should be cultivated with a disc and a fine tooth harrow until June 1. Weeds will then have been quite thoroughly killed and the ground will be in fine condition to sprout the alfalfa seed in the shortest possible time. Where a nurse crop is not used, a cutting of alfalfa can usually be secured by September 1 the season of sowing. An excellent method of getting a good stand of alfalfa is to manure the ground heavily in the fall and plow. As soon in the spring as the land works well disc and drag at intervals until June 1st. The discing and dragging not only put the ground in good tilth but aid in the sprouting and killing of weeds. Sow twenty pounds of good alfalfa seed per acre and drag once after sowing with fine tooth harrow. After eight years' experience with alfalfa on the station farm and elsewhere we are firmly convinced that sowing alfalfa seed about June 1, after going through a weed killing process without a nurse crop is the best method to pursue to secure a good catch of alfalfa which will last several years.

REPORT BLANK, EXPERIMENT 1.

Best Method of Getting a Stand of Alfalfa and Testing the Relative Value of Soil Inoculation and Sowing with and without a Nurse Crop.

- Name of experimenter
 P. O.; County; State
1. Date of sowing oats or barley and alfalfa.....
 2. What variety of alfalfa used?
 3. Nature of soil?
 4. How prepared?
 5. When were the alfalfa plants first noticeable?
 6. Was the grain crop left to ripen?
 7. Did you secure a good thick stand of alfalfa?.....
 8. At what rate did you sow the alfalfa seed per acre?
 9. At what rate did you sow the oats or barley per acre?.. ..
 10. At what time did you sow the alfalfa seed without a nurse crop?
 11. Which seems preferable, sowing with or without a nurse crop?
 12. Did you examine the roots of the plants on both sections of the field for bacteria-laden nodules?
 13. Were any nodules found?.....
 14. Were the nodules as plentiful on the roots of the plants growing on that portion of the field that was not inoculated as where the ground was scattered?
 15. Could you detect any difference in the growth of the alfalfa?
 16. Date of making this report?
 17. Give in a brief way your opinion on growing alfalfa in Wisconsin, and the benefit, if any, from the inoculation of the soil.

EXPERIMENT 1. A.

Alfalfa after First Year's Seeding.

Through the encouragement of the Experiment Association many of its membership sowed in past years from one to two acres of alfalfa. The Association is desirous to learn the success of those who have sown alfalfa previous to 1908 and will send blanks and return envelope to any one who will agree to send in report.

REPORT BLANK, EXPERIMENT 1. A.

Report of Alfalfa after First Year's Seeding.

To be sent to the Secretary by October 1, 1909.

- Name of experimenter
 Post Office; County State.....
1. Year and season alfalfa was sown.....

2. Was the alfalfa sown with or without nurse crop?.....
 3. Variety of alfalfa seed used
 4. Amount of seed per acre.....
 5. Was the crop cut for hay the year of sowing?.....
 6. If so, the amount obtained per acre.....
 7. Nature of the soil.....
(Clay, muck, highland, lowland, etc.)
 8. Was good stand noticeable before the fall frosts?.....
 9. What per cent, if any, winter killed?per cent.
 10. How many cuttings did you get the year after seeding?.....
 11. Weight of hay from all cuttings for the season—
(actual) (estimated)
 12. Did you experience any difficulty in curing the crop for hay?....
 13. Did you use hay caps?
 14. Did the plants develop the proper nodules on their roots?.....
.....
 15. Was the ground on which the alfalfa was sown inoculated with
alfalfa or sweet clover soil?
 16. Date of making this report
- Please give in a brief way your method of growing alfalfa and your views as to its value as a forage plant for Wisconsin.

EXPERIMENT NO. 2.

Wisconsin Seed Corn—Ten Ear Test.

Considerable has been done the past six years in Wisconsin in the way of breeding good seed corn and taking care of the season's crop.

We feel that by judicious selection of seed, and proper curing of the same, farmers of the state can increase the yield from ten to twenty-five bushels per acre. We know that members of the Experiment Association can do much good for the communities in which they reside by growing choice varieties of corn. Due care must be exercised in planting, cultivating the soil, harvesting and curing the crop as well as rigid selection of the seed. No matter how good the seed if planted on weedy or poor worn-out soil and not properly cared for we can not expect a good crop.

We expect to see great strides made in the improvement of corn within the next few years and may not the Wisconsin Experiment Association be the factor to bring this improvement about?

Twenty-five ears of corn are given to each member who desires to assist in corn improvement, only 10 ears of which will be used in the experiment proper. The corn from each ear is to be planted in a separate row.

Use the ear with the least number of kernels first. Plant in hills three and one-half feet apart in the row and the same dis-

tance between the rows. The corn left from the different ears after planting individual rows can be mixed with the corn shelled from the remaining 15 ears and planted in close proximity.

Plant at least forty rods from any other corn, a greater distance, if convenient. Avoid having a field of corn near the west or south of the plot as the prevailing wind during the pollenizing season is from that direction and the corn is liable to cross.

REPORT BLANK No. 2.

Wisconsin Seed Corn—Ten Ear Test.

- Name of experimenter
 Post Office.....; County.....; State.....
1. Variety of corn planted
 2. Where was seed secured?
 3. Germinating test per cent
 4. Date of planting
 5. Nature of soil
 6. Fall or spring plowed
 7. Following what crop?
 8. How planted?
 9. When first noticeable above ground?.....
 10. Did corn germinate evenly?
 11. Give number of times and method of cultivation?
 12. Did corn mature well?
 13. Total number of stalks in each row
 14. Number of barren stalks in each row
 15. How harvested?
 16. Yield per acre, actual; estimated.....
 17. Yield per acre, any other variety, actual
 estimated
 18. Compare yield with home variety of corn if possible.
 19. The yield should be determined on the shelled corn basis, two bushels of ears being considered one bushel of shelled corn.

REPORT BLANK.—EXPERIMENT No 2

Wisconsin No. 7 Corn.

- Name of experimenter
 Post Office.....; County.....; State.....
1. Where was seed secured?
 2. Germinating test, per centDate of planting.....
 3. Nature of soil
 4. Fall or spring plowed?
 5. Following what crop?
 6. How planted?
 7. When first noticeable above ground?
 8. Did corn germinate evenly?

9. Give number of times and method of cultivation.....
 10. Did corn mature well?
 11. Did corn smut badly? Approximate amount of smut.....
 12. What per cent of barren stalks was noticeable?.....
To find per cent of barren stalks, count the whole number of barren and fruitful stalks present in a definite number of hills and divide the number representing the barren stalks by the number representing the whole number of stalks. Counts can be made in four or five places in the field and averaged.
 13. How harvested?
 14. How many acres harvested?
 15. Yield per acre, actual; estimated
 16. Yield per acre best other variety, actual
estimated
 17. Compare yield with home variety of corn if possible. The yield should be determined on the shelled corn basis, two bushels of ears being considered one bushel of corn.
 18. How many bushels of fire-dried corn in the ear will you have to sell for seed?
- Give brief description of what you think of the No. 7 corn.

REPORT BLANK.—EXPERIMENT No. 2.

Wisconsin No. 8 Corn.

- Name of experimenter
- Post Office.....; County.....; State.....
1. Where was seed secured?
 2. Germinating test, per centDate of planting.....
 3. Nature of soil
 4. Fall or spring plowed?
 5. Following what crop?
 6. How planted?
 7. When first noticeable above ground?
 8. Did corn germinate evenly?
 9. Give number of times and method of cultivation.....
 10. Did corn mature well?
 11. Did corn smut badly? Approximate amount of smut
 12. What per cent of barren stalks was noticeable?.....
To find per cent of barren stalks, count the whole number of barren and fruitful stalks present in a definite number of hills and divide the number representing the barren stalks by number representing the whole number of stalks. Counts can be made in four or five places in the field and averaged.
 13. How harvested?
 14. How many acres harvested?
 15. Yield per acre, actual, estimated
 16. Yield per acre best other variety, actual
estimated
 17. Compare yield with home variety of corn if possible. The yield should be determined on the shelled corn basis, two bushels of ears being considered one bushel of corn.
 18. How many bushels of fire-dried corn in the ear will you have to sell for seed?
- Give brief description of what you think of the No. 8 corn.

EXPERIMENT NO. 3.

Treating Seed Oats to Prevent Smut.

Smut affecting oats is prevalent in all parts of this and adjoining states.

Method of Treating Seed Oats for the Prevention of Smut.—The method that has proved to be the most effective during the past nine years, and that now generally used by the farmers of the state, is the formaldehyde method. If the desire is to treat one hundred bushels of seed oats, purchase at least four pints of formaldehyde from your druggist, and make up the solution by pouring one pint of the formaldehyde into thirty-six gallons of water. Put the solution in barrels or in a tank and submerge the sacks of seed oats in the solution at least ten minutes. Raise the sacks of oats from the solution and let them drain for a minute or two, in order to save solution, and then empty on a threshing floor, platform, or on a canvas to dry. Do not spread out immediately, but let the oats remain in a heap for two hours after treating. If the wet sacks or a canvas is spread over the pile of oats after treating it will prevent the rapid escape of the formaldehyde gas and make the treatment more effective. After the expiration of two or three hours the oats should be spread out and shoveled over at intervals, to facilitate drying.

It is the desire of the Association to know the effectiveness of this treatment by many observers, and to publish determinations in the next annual report.

Where smut has been noticeable in the oats the previous year all seed should be treated to prevent a re-occurrence.

For the following experiment it will be necessary to treat about three bushels, sufficient to sow an acre, in accordance with plan outlined in its instructions.

Experiment.—1. Take three bushels, or the usual allowance for seeding one acre, that were threshed from a field that was worse affected with smut the past season, and treat as stated in directions.

If the experimenter has no oats, he probably can obtain some from a neighbor whose grain has been afflicted with oat smut.

2. Take the same quantity from the same lot of oats and do not treat.

3. Sow both quantities on adjoining plots of one acre each. Be sure to have a distinct separation from the plot sown with the oats treated and that on which the oats are not treated.

4. After the oats are headed take an ordinary barrel hoop and make several counts on the plot where oats were treated and on the plot where oats were not treated. This can be done by placing a hoop over the oats and counting all the heads within the circle and then note the number affected with smut thus getting data to determine the percentage.

REPORT BLANK, EXPERIMENT No. 3.

Treating Seed Oats to Prevent Smut.

- Name of experimenter
- P. O.; County; State
1. Did you treat oats according to directions?
 2. How much treated for the experiment?
 - Size of plot.....
 3. How much was sown on experiment that was not treated?
 - Size of plot
 4. Did you treat your seed that was sown for general purposes?.. ..
 1. Date of sowing seed not treated
 2. Date when smut was first noticeable
 3. When were oats cut?
 1. Date of sowing seed treated
 2. Date when smut was first noticeable
 3. When were oats cut?
 5. Did you make several counts after the oats were headed using the hoop in the manner suggested?
 6. What per cent of oats were affected with smut on plot where seeds were treated to prevent smut?
 7. What per cent of oats were affected on plot where seed was not treated?
 8. Per cent saved by treatment

The data obtained by counting the heads within the circle of a hoop that are affected and those not affected is a fairly accurate method of arriving at the percentage of oats affected with smut.

EXPERIMENT No. 4.

Tests with Swedish Select Oats.

The Swedish Select oats (Wis. No. 4) through several years' tests have proven to be satisfactory on the high well drained lands and on the poorer grades of soil in Wisconsin. On rich loose prairie soils the oats are such rank growers that they often lodge. The desire is now to have them grown as extensively

as possible by members of the Association so that the variety will be in reach of all farmers.

In order to be placed on the list of seed growers it will be necessary to comply with certain conditions:

1. All seed oats must be treated for the prevention of smut previous to sowing that were at all affected the year previous.

2. Must be sown on land that is free from Canada thistles, mustard or quack grass.

3. If possible a comparison with another variety of oats should be made.

4. All oats shipped for seed purposes must be well cleaned with fanning mill or grain grader and have the following information on tag: Name of seedsman, purity of seed, foreign matter, germination of seed and obnoxious weed seeds.

5. A report must be sent to the Secretary immediately after threshing.

REPORT BLANK, EXPERIMENT No. 4.

Swedish Select Oats.

- Name of experimenter
 P. O.; County; State
1. Date of sowing
 2. Amount of seed sown
 3. Amount of land covered (approximately)
 4. Nature of soil?
 5. Fall or spring plowed?
 6. Sown with seeder or drill?
 7. Were heads of any other grain noticeable within the plot on which the oats were sown?
 8. Were they removed?
 9. Did the oats stand up well?
 10. Did you treat the seed for the prevention of smut?
 11. Did you notice any smut?
 12. How much?
 13. Was the ground on which oats were sown free from Canada thistles, mustard and quack grass?
 14. Did oats rust?
 15. When were oats cut?
 16. Yield per acre of Swedish Select oats
 17. Yield per acre of any other variety of oats grown
 18. How many of the Swedish oats on hand do you intend to sell for seed oats?
 19. Please give a brief description of what you think of the Swedish Select oats.

EXPERIMENT No. 5.

Test with Oderbrucker Barley.

(Wis. No. 55.)

In 1898 the Wisconsin Experiment Station received from the Ontario Agricultural College five pounds of barley known as the Oderbrucker. This barley had been obtained from Germany and grown several years on the college farm at Guelph, previous to being secured by the Wisconsin Station.

For ten years this barley has been grown on experiment in comparison with fifty other varieties and improved by selection until we feel confident that it is superior to other varieties of barley. The Oderbrucker barley is a stiff-strawed, heavy yielding, six-rowed, bearded variety, and is the most satisfactory barley from all points of view grown on the Station Farm. From malting tests made by the Wahl-Henius Institute of Fermentology, Chicago, the Oderbrucker barley compares favorably with all other barleys on test for malting purposes. It is a high protein barley, containing from 12 to 14 per cent of that element which makes it a good feeding barley.

At the present time Wisconsin farmers are growing many scrub breeds and types of barley which should be discarded. The Experiment Station with the aid of our Association is desirous of getting pure bred grains of the best breeding into the hands of the general farmer at the earliest possible moment. Ten hundred bushels of this high grade barley has been given to five hundred members of the Experiment Association and acre tests will be made in every county of Wisconsin. Members carrying on the experiments are requested to report as soon as the tests are completed. Blanks for making the reports will be sent by the Secretary in due time for the report.

REPORT BLANK, EXPERIMENT No. 5.

Oderbrucker Barley.

(Wis. No. 55.)

Name of experimenter
 P. O.; County; State

1. Date of sowing
2. Amount of seed sown
3. Amount of ground covered (approximately)

(As near as possible try to cover one acre with seed obtained.)

4. Nature of soil?
5. Fall or spring plowed?
6. Sown with drill or seeder?
7. Following what crop in rotation?
8. Were heads of any other grain noticeable within the plot on which barley was sown?
9. Were they removed?
10. Did the barley stand up well?
11. Was the ground on which the barley was sown free from Canada thistles, mustard and quack grass?
12. Did the barley rust?
13. Was any smut noticeable?
14. When was barley cut?
15. Yield per acre of Oderbrucker
16. Yield per acre of any other variety of barley grown
17. May we put you on the seed growers' list?
18. Please give a brief description of what you think of the Oderbrucker barley, Wisconsin No. 55.

EXPERIMENT NO. 6.

Soy Beans.

The soy bean was probably introduced into the United States from Japan about fifty years ago and has been cultivated with success in the southern states. In Japan and China it is used extensively as a human food, but in this country it is grown for the seed, as a forage plant, and a soil renovator. As a forage its use as a soiling crop is becoming recognized by stockmen and dairymen, as it withstands the drought exceptionally well and will give a good cutting of green forage at the time when other feeds are shriveled and wilted. Soy beans of the late variety gave a cutting of 9.9 tons green forage per acre at the Wisconsin Experiment Farm in 1900 and yielded thirty-eight bushels of seed per acre in 1902, and forty bushels per acre in 1903. It makes an excellent hay, and at the Kansas Station a yield of about three tons of cured hay per acre was secured.

Like the clover, the soy bean is a nitrogen gatherer and enriches the soil on which it is grown. It is said to grow on soil quite low in fertility, but a mellow, fairly rich soil is preferable. It requires a well drained porous soil; in no case should the seed be sown on low ground that is saturated with water during most of the growing period or on a heavy clay soil that is inclined to bake.

When sown for hay or a soiling crop, a drill or broadcast seeder can be used to advantage. If sown for seed, use a corn

or bean planter and sow in drills about thirty inches apart and about three inches apart in the drill. When planted in drills as described, two or three pecks of seed per acre should be used.

Soy beans should not be planted while the ground is cold; immediately after corn planting is a favorable time.

Sow in accordance with suggestions above given, for growing soy beans for seed, one-tenth of an acre.

When desired for hay, soy beans should be cut when the pods are partly developed. Try a few square rods sown broadcast for a soiling crop and for hay. When grown for seed they should be harvested and threshed as our common variety of beans and put in a large open bin and shoveled over frequently to prevent heating.

If you have a silo try soy beans with corn. Plant in drills with the corn planter using one-third soy beans and two-thirds corn mixed. When planting with corn for the silo use the Medium Green variety as this variety is noted for its great leaf development. No difficulty will be experienced cutting the soy beans with the corn harvester at the time of harvesting corn. For pasture, hay or seed the Ito San variety will give excellent satisfaction and will usually ripen before the fall frosts.

Secure a sack of bacteria-laden soil from the Experiment Station and scatter on a portion of the field that you desire to plant to soy beans, and note the development of nodules. The roots of the soy bean plants growing on that part of the field add much fertility to the soil. When a few square rods of ground are inoculated and soy beans are grown thereon, henceforth ground can always be secured from this source of supply to scatter on other fields where the desire is to have the nodules develop.

REPORT BLANK, EXPERIMENT No 6.

Soy Beans.

- Name of experimenter
- P. O.; County; State
1. Date of planting soy beans
 2. Character of soil
 3. What crop had been grown the previous year?
 4. Was the land used, fall or spring plowed?
 5. Give your method of planting
 6. How long after planting were beans first noticeable?
 7. Give your method of cultivation
 8. Did you try a few square rods for forage?
 9. How many pounds of green forage did you cut from a square rod?
 10. How many pounds of cured hay did you get from a square rod?

11. Did the stock eat the green and cured forage readily?.....
12. What kind of stock did you feed it to?
13. Did the beans left for seed ripen evenly?
14. Date of harvesting?
15. Manner of harvesting?
16. Method of threshing
17. Yield per acre of marketable beans
18. Did you use any bacteria-laden soil for inoculation purposes?....
.....
19. Were nodules noticeable on the roots of the soy beans at any
time during the growing period where such soil was used?
20. Were they noticeable where the soil was not used?.....
21. Date of sending report
22. Give in a general way your opinion of soy beans as seed and
forage plant for Wisconsin.

EXPERIMENT No. 7.

Field Beans.

No one important crop receives so little attention in Wisconsin as field beans. Annually the U. S. imports over three million bushels from Bulgaria and Austria and we pay a duty of forty-five cents per bushel on the same. Why not raise the needed quantity of beans in Wisconsin? Our lighter soils are admirably adapted to bean raising, and if farmers would plant such soils to beans instead of trying to raise cereal crops, their net returns would be much greater.

Beans are a good money crop to put on the market as the price is generally above two dollars per bushel. With the up-to-date bean machinery and with the growing and planting of improved varieties there is no reason why Wisconsin should not lead all states in America in bean production.

The beans used for this season's test have been grown for several years and improved by a member of the Experiment Association. We trust they will be carefully grown, harvested and threshed and a report sent to the Secretary.

REPORT BLANK, EXPERIMENT No. 7.

Field Beans.

- Name of experimenter
- P. O.; County; State
1. Date of planting beans
 2. Nature of soil
 3. How prepared?

4. How were the beans planted?
5. How many times were the beans cultivated?
6. How harvested and threshed?
7. Were they in any way injured by insect enemies or fungus diseases?
8. Yield in bushels, per acre

DIVISION OF SOILS.

PLAN OF WORK FOR THE COMING YEAR.

Experiment No. 8.

A. R. WHITSON.

It is the object of this department to solve different soil fertility problems as they occur in the various sections of the state. In order to accomplish this, the party that wishes to experiment expresses his intention to this department. We then inspect the soil conditions and drainage on this farm, and if possible select a plot typical of that section of the country. If favorable conditions are found the fertilizer is shipped. If just one fertilizer is used a plot of about an acre in area is selected and divided into two equal parts, one half being treated with fertilizer and the other half run blank. If the experimenter wishes to apply both potash and phosphorus, a plot of about two acres is selected and divided into four equal parts: the first, is blank; second, potash; third, phosphorus; and fourth, potash and phosphorus. Last season corn, oats, and barley were grown on the different plots, and the experimenters were asked to make the following report:

Name of experimenter

P. O.; County State

Size of experimental plot

Kind of soil on the plot (clay loam, sand, or peat)

Is plot flat or rolling?

Drainage of plot

What fertilizer has been applied the last five years?

What crops have been harvested for the five years preceding this experiment?

What results were gotten from former crops?

Date of present seeding or planting

Date of application of fertilizer

Kind of fertilizer applied

Difficulties experienced in carrying out experiment

Did the fertilizer show any effect on the crop as to color, height and yield as compared with the blank?
Which fertilizers showed the best results?
Was this a favorable season?
If not, why not?
Yield of fertilized plot in pounds
Yield of blank in pounds
Date of making this report

REPORT ON WEED WORK.

A. L. STONE.

Weeds, both native and introduced, have been spreading rapidly over our state. Many of the plants we now call weeds were not so until the land came under cultivation. Many native plants of no agricultural importance were as well able to take advantage of the new conditions as the cultivated and useful crops and multiplied rapidly under the new environment. While many of these native plants have proved troublesome, using soil moisture and fertility which the grain crop needed, it still remains true that our most noxious weeds have been introduced either from some foreign country or from some other state.

Among the introduced weeds which have become troublesome in Wisconsin are the following: Canada thistle, Quack-grass, Wild Mustard, Dodder, Perennial Sow Thistle, Toadflax, or Snapdragon, Corn cockle, Night flowering catchfly, Buckhorn or English Plantain, Russian Thistle, Wild oats, Green and Yellow Foxtail and many others.

This list is a formidable one and when we consider that the larger number of these have been introduced in seeds purchased from outside the state, it seems that quick action of some sort should be taken. Only as farmers co-operate in this matter can much be done, and no farmer would hesitate to aid in the work if he realized the yearly loss caused by weeds.

In an attempt to secure information concerning the number and distribution of weeds in the state, report blanks were sent to 245 members of this Association, situated in 57 counties of the state.

The questions, with a summary of the replies received, and some comments on the same are given herewith. The results while somewhat incomplete, are still very interesting and draw

attention in a graphic way to the need of attention to the weed problem.

1. Have you weeds on your farm? Affirmative 213 and negative 23.

2. What are the most common and troublesome weeds?

The following table gives these answers in a summarized form:

Weed.	Counties.	Persons reporting.	Average area per farm.
Canada thistle.....	40	98	9 acres.
Quack grass.....	50	44	3 acres.
Mustard.....	25	17	32 acres.
Dock.....	22	50	.....
Sow thistle.....	10	17	.....
Ox-eye daisy.....	4	4	.....

The reports show that these weeds are well distributed throughout the state. Some areas are however, infected most with a certain kind of weed. Canada thistle and quack grass, are most thickly scattered on the eastern part of the state. Mustard seems most prevalent in the southwestern part, and in the Lake Shore counties in the eastern part.

The fact that there are 98 farms with an average of nine acres each of Canada thistles, certainly indicates that the time has arrived for something to be done to prevent their spread.

When it is realized that these reports come from a comparatively small number of the total number of farms in the state and also from some of the more progressive farmers, it seems that farmers must get together and aid one another in this work.

3. What per cent of pasture is spoiled by weeds?

The maximum answer to this question was 50%, and the average 9%. The weeds in the pasture are confined to certain classes. Many of those growing in fields are killed by grazing and tramping.

4. What methods of eradication have you used?

The answers to this question were somewhat unsatisfactory. Some of the methods reported were burning, salting, digging, smothering and pulling. Out of the 245 reporting 108 reported that they were successful in killing their weeds and 59 partially, and 29 not successful.

5. What was the cost of killing the weeds?

In summarizing the answers to this question it was found that the total cost with the 245 farmers was \$5,471.78, and the average \$33.77.

In answer to a question regarding the amount of total taxes on the 245 farms it was found that it was \$10,684.61 or \$68.05 each on an average. The cost of eradicating the weeds on these farms so far as it was possible to accomplish this end was therefore over one-half the amount of taxes paid. This cost included only the work of cutting, digging, smothering, etc., and does not take into account the cultivation necessary to keep down weeds in corn, sugar beets and other cultivated crops. Had the cost of cultivation been included the tax of weed eradication would have equalled or exceeded the property tax about which farmers are wont to complain.

The next question—What do you consider land infested with Canada thistle, quack grass, sow thistle, and wild mustard worth when clean land is worth \$100 per acre?

The average of the answers to this was \$54.88. On an average therefore, a depreciation of nearly 50%. This illustrates the need of at once taking means to prevent the further spread of these noxious weeds. No farmer can afford to thus lose one half the money value of his farm.

The last question was—Would you be willing to help enforce a strict weed and seed law?

Out of the 245 persons reporting, 218 were willing to aid, another indication that farmers are awakening to the need of fighting weeds.

At the last session of the Legislature a weed law was passed for the purpose of providing for a test of all agricultural seeds sold in the state. In accordance with this law 665 samples of seeds were last year tested by the Department of Agronomy. The law was, however, framed hastily and consequently falls short of the demands of the situation. In view of the needs of the work and the danger threatening the agricultural interests of the State from the spread of weeds, the legislature should at once provide for a more efficient law and means for carrying on that work,

FARMERS' LOSS FROM WEEDS.

Experiment No. 9.

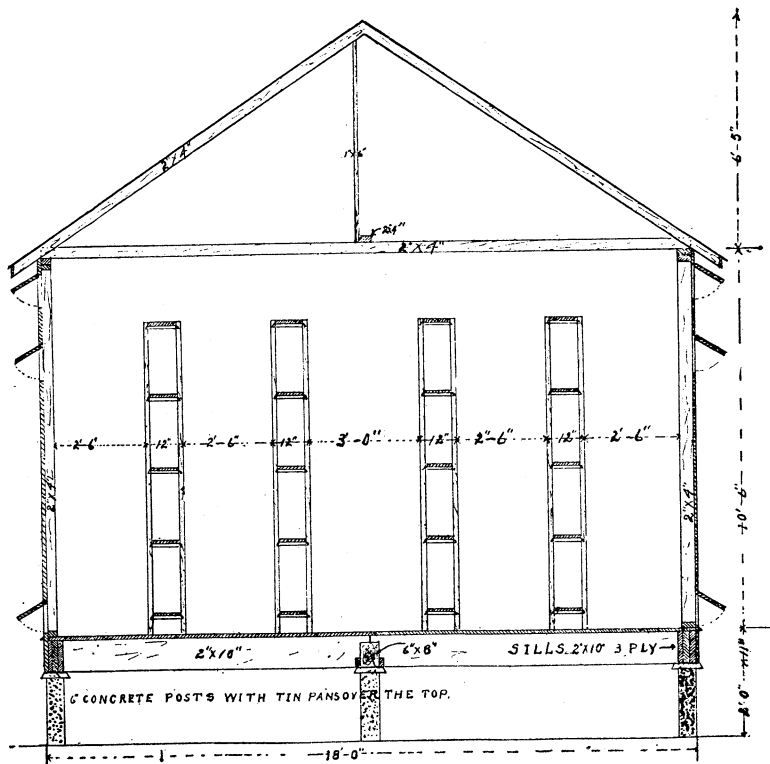
Name of experimenter
 P. O.; County; State

1. Please fill in spaces below giving actual time to kill weeds either by cultivation, cutting, digging, smothering, or any other means. Reckon the labor of men and teams at the usual rate for your locality. Cultivation to include all work put on corn, potatoes, sugar beets, etc., where cultivation is for killing weeds only and not to conserve moisture.

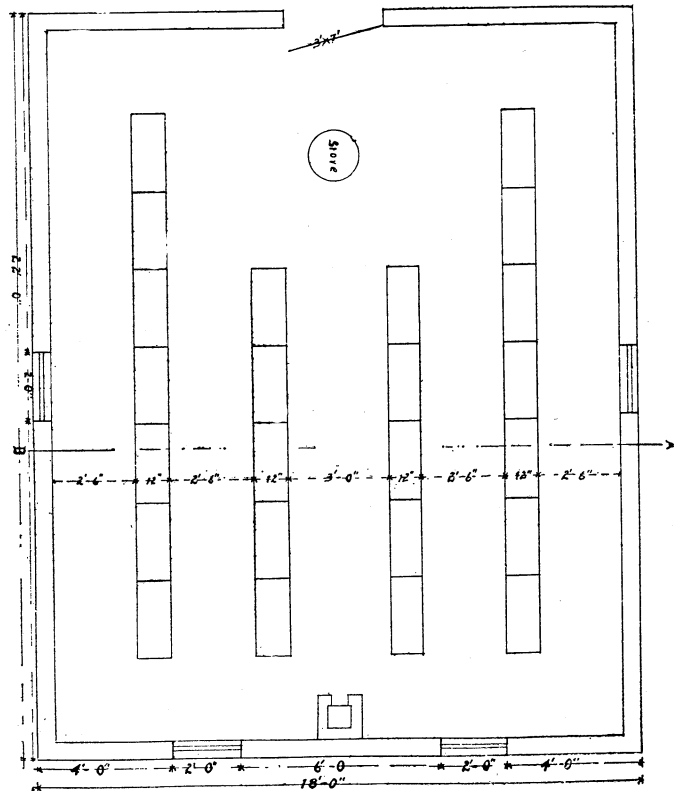
DATE.	LABOR.		COST.		Work done—cultivating, cutting etc.
	Men.	Teams.	Dollars.	cents.	
.....					
.....					
.....					
.....					
.....					
.....					
.....					

2. What was the amount of tax paid to the town treasurer on your farm last spring?
3. How many acres in the farm?
4. Do you have noxious weeds anywhere on the farm? (See note below) If so what, and how large an area?.....
5. Have you ever allowed them to go to seed?
6. What means have you taken to get rid of them?..... Were you successful?
7. What was the character of the season when you made the attempt?
8. If land free from weeds is worth one hundred dollars an acre, what do you consider land to be worth per acre which is infested with quack grass, Canada thistles, sow thistles, or wild mustard?
9. Name the most common and troublesome weeds in your locality.
10. What per cent or what part of your pasture is spoiled by weeds?
11. Would you be willing to assist in enforcing strict weed and seed laws?

Note: The list of noxious weeds named in the Wisconsin statutes is as follows: Canada thistles, quack grass, burdock, white or ox-eye daisy, snap dragon or toad flax, cockle bur, sow thistle, sour dock and yellow dock, mustard, wild parsnip, and Russian thistle.

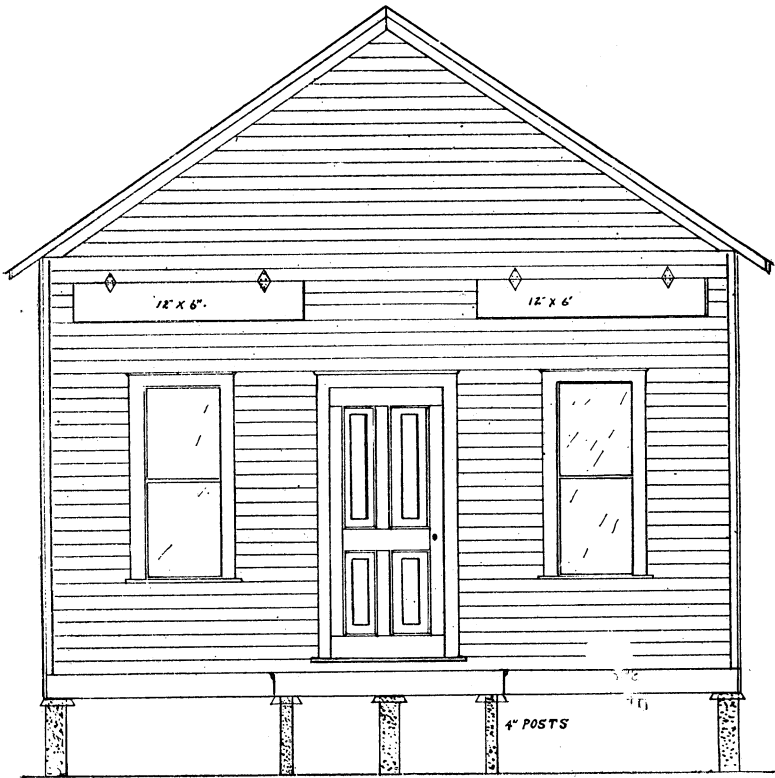


Cross section at A. B. of floor plan.

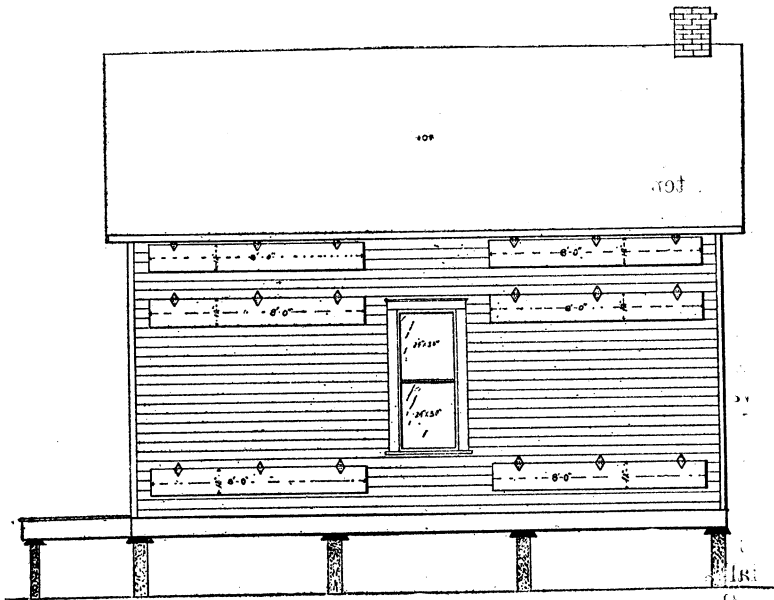


Corn-curing house—floor plan.





Corn-curing house—front elevation.



Corn-curing house—side elevation.

DIVISION OF AGRICULTURAL ENGINEERING.

C. A. COCK.

A BUILDING FOR CURING SEED CORN

ALL CORN DESIRED FOR SEED SHOULD BE FIRE-DRIED.

The illustrations which are here shown represent a modern corn-curing house, which is simple and economically built.

The structure rests upon twelve concrete posts six inches in diameter and two feet high. Over the top of each post is placed an inverted tin pan. This will prevent mice or rats from entering the building. The only means of their entering, with such a construction will be by being carried in with grain which is being stored. The construct the posts is an easy matter, for all that is necessary is a couple of galvanized iron forms slit up one side, but lapped over in such a manner as to prevent leaking while being filled. Two clamps should be provided and so placed as to hold the form securely while being filled with concrete. A good footing should also be provided for each post, and should be below the frost line to prevent heaving.

The sills of the building may be either solid timber or built up. The girder which carries the joist in the middle should be of good material and may be built up if the owner so desires. To aid in carrying the joist a piece of 1"x2" is nailed to each side of the girder. This will overcome the necessity of mortising and planing, and also adds strength to the girder.

The floor should be laid as soon as the joist and sills are ready. The studding should be erected after the floor has been laid, a piece of 2"x4" being laid upon the floor as shown in the cross section.

A good grade of drop siding is recommended for the sides and ends. The roof may be of any material desired, so long as it is water tight.

In the floor plan may be seen the arrangement of the stacks for holding the corn, while being dried, or it may be desirable also to leave the corn here for storage. The stove should be placed as shown and connected to the chimney. The chimney is built upon brackets. The brackets should be of number one material and securely fastened to the wall high enough to be out of the way of a person's head.

The ventilating doors shown in the side elevation should be built alike in both sides. Two windows and two ventilating doors should be placed in the back end, the same as shown in the front elevation. Wooden ratchets may be made and hinged to the ventilating doors to hold them open to the desired width.

BARN CONSTRUCTION.

The farmers of the state being those who make provisions for the physical life by furnishing food supplies, demand accommodations for crops and stock. It is essential that good houses and barns be erected, but this does not imply that it is necessary to be extravagant. The barn problem at the present time is a perplexing one; not alone regarding cost but with reference to arrangement and method of construction.

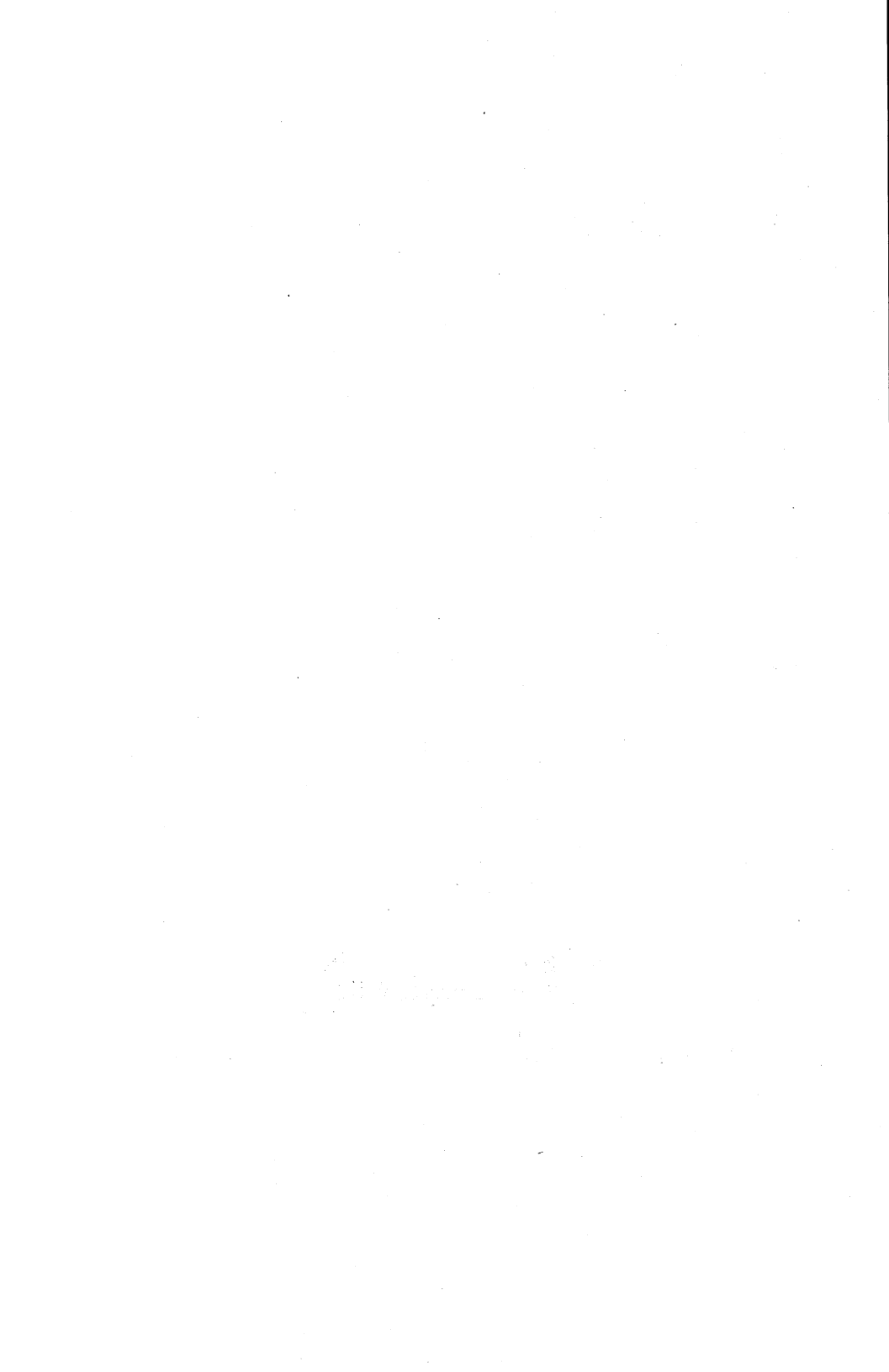
Modern barns should replace those of our ancestors when necessary. Because a barn answered the purpose of our grandfather is no reason for us to pattern after it. The times have changed with the progress of civilization and we have to build for the present and future. The past demanded moderate structures, varying in size, but in these little if any thought was given to the general utility and sanitation of the building. Dairying and stock breeding as carried on under modern conditions demands attention in both these respects. It is generally conceded that to be successful in either one of these pursuits, a barn should be so arranged that the maximum amount of work may be accomplished with the minimum amount of labor.

The arrangement of the floor plan is usually a personal matter. There are, however, the same general plans which are followed to a greater or less degree, but these do not interfere with the construction.

The construction of barns in many localities, especially where timber is scarce and with the prevailing prices of lumber, is a momentous question. The old style timber frame barn seems to be almost out of the question, while the number of plank frame barns is rapidly increasing, due to their cheaper construction.

A plank frame is constructed from lumber 2" in thickness and varying from four to twelve inches in width depending upon the stress to be placed upon the several pieces. These pieces also vary from one to six ply for the same reason.

The accompanying illustrations show a plank frame which was used for the "Hill Farm" barn on the University Farm.



The drawing at the left shows both the interior and end bents. The interior bent when completed with roof and sides forms a compound truss. It is considered to be one of the best constructions for barns at the present time. The end bent does not have the same mode of construction. It would be somewhat weaker than the interior bent were it not for trusses which extend to the purline plates. These trusses to a certain extent fill the same office as the purline posts in the interior bents. A section of an end bent with truss is shown in the drawing to the right. Constructing the end bent with these trusses is considered much better than the old method without them.

The average farmer would not care to construct a barn in the style of architecture shown here, for the cost would be somewhat higher than with simpler lines.

If it is desirable for the basement to have a wall in place of the wood, this is accomplished by constructing the bents without legs. It will, of course, be necessary to use a wall of masonry where excavations are made for barn construction.

The cost of such a barn is somewhat less than a timber frame of the same proportions, usually estimated from 15 to 20% less. These prices are sure to vary and no definite estimate can be made.

For further information, write to the Agricultural Engineering Department, University of Wisconsin in regard to barn construction.

VENTILATION OF BARNs.

REPORT BLANK—EXPERIMENT No. 10.

- Name of experimenter
- P. O.; County; State
1. Are your barns ventilated?
 2. When was system installed?
 3. System of ventilation?
 4. Size of portion ventilated?
 5. No. of animals kept in ventilated part?
 6. Kinds and No. of each?
 7. No. of fresh air intakes?
 8. How do these enter barn?
 9. No. of foul air flues?
 10. Inside dimension of fresh air intakes
 11. Inside dimension of foul air flues?
 12. Where are foul air flues carried out of barn?
 13. How high are they above ridge of barn?
 14. How high above the roof?
 15. How high above the ground?
 16. Are these flues fairly straight?
 17. Materials used?
 18. How are flues constructed?

19. Are ceilings and walls fairly air tight?
20. Is the system satisfactory?
21. If not, why?
22. Cost of system?
23. Have any of your neighbors a system of ventilation?.....
24. Is it satisfactory

SILOS.

REPORT BLANKS—EXPERIMENT 11.

- Name of experimenter
- P. O.; County; State
1. Have you a silo? How many?
 2. Has any of your neighbors?
 3. Give names of neighbors
 4. Is silo home made or manufactured?
 5. Name of silo
 6. By whom manufactured?
 7. Where manufactured?
 8. Material used?
 9. How constructed?
 10. When constructed?
 11. Dimensions of silo?
 12. Capacity of silo?
 13. Cost of silo?
 14. Does the silage freeze in winter?
 15. If so, to what extent?
 16. To what do you feed silage?
 17. When do you feed?
 18. Before or after milking?
 19. Does it affect the milk?

BOVINE TUBERCULOSIS IN WISCONSIN.

CONRAD HOFFMAN.

IMPORTANT PART PLAYED BY THE MEMBERS OF THE WISCONSIN EXPERIMENT ASSOCIATION IN ITS ERADICATION.

The close of the tuberculin-testing season for 1907-08 marked the termination of a most active and successful three years' campaign against bovine tuberculosis in Wisconsin. The active part played by the members of the Experiment Association in this campaign during the last year is particularly noteworthy

and merits proper discussion. Before proceeding, however, with the data pertaining to the same, it appears advisable to briefly explain the policy which has made it possible for our students to become so important a factor in this campaign.

Wisconsin's policy on the whole has been a most liberal one, one of education rather than compulsion. The endeavor has always been made to educate the farmer, the man most vitally concerned, to realize the true significance of bovine tuberculosis. The test was in no way made compulsory, but remained a matter of volition on the part of the farmer. The economic aspect, the side concerned with the farmer's pocket book, has been consistently emphasised throughout, the hygienic side of the problem being invariably made a secondary feature.

Probably the most important feature in crystallizing popular sentiment into a realization of the dangers connected with the presence of tuberculosis in a herd, has been the post mortem demonstration work. Beginning with demonstrations on the farms where reacting animals had been found, this phase of education has gradually been extended to the different courses in the College of Agriculture at Madison, to the State Fair, numerous county fairs, Farmers' Institute meetings and to county agricultural schools.

In this way many thousands of farmers and students have been reached, and have been most emphatically and undeniably convinced of the importance of fighting the disease of tuberculosis. They have been made acquainted with the characteristic lesions of the disease and impressed with the fact that external appearances are no criterion of the animal's condition with reference to tuberculosis. The lectures usually accompanying these demonstrations have taught the farmer how to deal with the disease, how to get rid of it, what precautionary measures to observe so as to avoid it, as well as the details regarding how to apply the test in order to detect the presence of the disease.

In pursuance of the educational side of the problem, numerous bulletins have been issued from time to time by the Experiment Station as well as under the auspices of the Farmers' Institutes. All of these deal explicitly with the practical side of the subject of bovine tuberculosis, and in all the employment of the tuberculin test has been persistently advocated. Means of protection against infection, treatment of affected herds, sources of contamination, are some of the many other problems discussed in these bulletins.

At the Agricultural College practical instruction in the manipulation of the test has been given to all students in agri-

culture. These students join the Experiment Association and by reason of said instruction have been enabled, upon their return to their respective communities, to test not only their own herds but those of their neighbors as well. Thus at each point where one of these students went a small center was formed from which information regarding the tuberculin test radiated out into the surrounding territory. The data subsequently appended will show more clearly the influence thus exerted by the short course men in this particular.

The free distribution of tuberculin to all parties making proper application therefor, did much to stimulate interest and to give impetus to the extensive testing of animals for tuberculosis.

Too much credit can not be given the Live Stock Sanitary Board for its hearty cooperation in this matter, especially in the disposal of the reacting animals. Tests made by farmers or members of the Experiment Association were accepted on practically the same basis as those made by veterinarians, thus rendering it possible for the work to be carried on on an extensive scale. Reacting animals found, were disposed of in accordance with the laws of the State relative to the same. Three options were available to the farmer who found reacting animals in his herd: First, shipment to some packing center through the agency of the State and the receipt of the net proceeds in case the animal passed federal inspection. Second, acceptance of two-thirds the appraised value of the animal, maximum appraisal not to exceed \$50.00. Third, the placing of valuable animals in quarantine so as to raise healthy offspring therefrom by the Bang system.

Up to the current year any person was permitted to make a test, provided the record of the same proved satisfactory to the proper authorities. To this procedure one can naturally raise the objection that persons entirely ignorant of the principles of the test could nevertheless make the same and furthermore that tests made by such parties would undoubtedly in many cases discredit the efficiency of the tuberculin test. This objection is worthy of consideration, and should lead to some modification of the existing conditions so that the test will be limited to such parties as have properly demonstrated their ability as tuberculin testers to some board of examiners. A change of this character will be most desirable, and would place an official stamp on all tests whether made by veterinarians or other parties.

While the objection above mentioned is a serious and pertinent one, it can not be denied that the policy on the whole has

proven most efficient in securing the extensive testing of animals throughout the State, as well as in eliminating and decreasing the number of tuberculous animals in the herds of the State.

The following data gives a detailed summary of the work actually accomplished during the last three years by the Experiment Station and State Veterinarian:

Year.	No. animals tested.	No. animals affected.	Per cent. affected.	No. herds tested.	No. herds affected.	Per cent affected.
1905-06.....	9,718	1726	17.7	483	257	52.8
1903-07.....	15,816	1291	8.1	868	314	35.1
1907-08.....	40,993	2331	5.6	2416	651	26.9
Total 1905-08..	66,527	5351	8.0	3750	1222	32.5

It is apparent from the above that there has been an ever increasing amount of testing performed during the last three years. In that time over 66,000 tests have been made. Perhaps the most encouraging feature and one that should not be ignored is the marked decrease in the percentage of reacting animals as well as affected herds. At the present time there are but one-half as many reacting animals as three years ago, and what is more important, just about one-half less the number of herds have reacting animals at the present time than three years previous. This means that there has not only been a decrease in the number of herds which were affected with tuberculosis, but also that the number of reacting animals in these herds has considerably decreased.

Now let us consider the role played by the members of the Experiment Association in this matter. Unfortunately data on this phase of the subject is available only for the season 1907-08, but the same will suffice for present needs.

Of the 27,000 tests received by the station 19,000 were made by members of the Experiment Association who were former students of the Agricultural College.

These tests represent the work of 195 members, largely short course men. Some of the latter tested only their own herds while others engaged in this work on a most extensive scale. Thus 27 men tested an aggregate of 13,900 head. Mr. G. E. Schwartz heads the list with 1,531 head to his credit, while Mr. Robt. Lachmund comes second with 1,440 head tested. Next in order come Melvin Thompson, LeRoy Larson, Henry Peck,

Samuel Boss and N. H. Brue, each of whom tested over 500 head last year.

On arranging the data by counties and comparing the percentage of student tests with the number of students in each respective county, we have the following instructive figures:

Thirty-four of the counties of the state had more than 100 head tested in their territory. Of these, 30 counties had 20 or more short course students.

Eleven counties had 500 or more tests and in 10 of these there were 40 or more short course students.

Of the 8 counties with 1,000 or more tests, 7 had 40 or more short course students. In these 8 counties, 78% of all the tests secured were made by short course students, as the following table reveals.

County.	Total tests.	Student tests.	Per cent of tests made by students.
1. La Crosse.....	4086	3803	93.0
2. Dane.....	3580	2470	69.0
3. Winnebago.....	2719	2097	77.1
4. Walworth.....	2351	1918	81.5
5. Barron.....	2100	1290	61.4
6. La Fayette.....	1223	1000	81.7
7. Waukesha.....	1044	766	73.3
8. Waupaca.....	1026	834	81.2
Total.....	18,129	14,178	78.0

It is evident from the above that in those counties in which tuberculin testing was most active three-fourths of the work was performed by former students of the agricultural college.

Furthermore, it cannot be denied that had the test been confined to the veterinary profession, consisting as it does, of a limited number of men in comparison to the number of animals tested, not near so many tests could have been made. Accordingly, by permitting properly qualified members of the Experiment Association to apply the tuberculin test, the eradication of bovine tuberculosis from Wisconsin will be greatly hurried and more quickly accomplished.

It is admitted that the past policy had faults which should be remedied, particularly in reference to who shall be permitted to apply the tuberculin test. Nevertheless the marked diminution in the number of reactors as well as of affected herds which

said policy has accomplished is sufficient argument in favor of a continuance of Wisconsin's past policy in fighting tuberculosis. A complete eradication of the disease will ultimately result if the same is promoted, and it is to be hoped that the farmers of the State will rise to the occasion and secure satisfactory legislation when this matter is taken up at the present meeting of the Assembly. With a few modifications the educational policy of the State as conducted in the past should prove the most effective way of eliminating tuberculosis from the herds of Wisconsin and place her in a unique and much to be envied position, a State without tuberculosis, where the breeders of the world would be insured of securing animals free from that dread disease.

REPORT OF THE SECRETARY OF THE FOND DU LAC
COUNTY ORDER OF THE WISCONSIN EXPERI-
MENT ASSOCIATION.

HENRY MICHELS, MALONE, FOND DU LAC COUNTY.

On March 28, 1908, there was held in the Court House, at Fond du Lac, a meeting of the County's alumni of the Agricultural College. This assemblage was organized under the name of the Fond du Lac County Order of the Wisconsin Experiment Association. The object set forth in the constitution is to promote the agricultural interests of the county.

1st. By cooperating with the Wisconsin Experiment Association in growing and marketing seed grains.

2nd. By having association exhibits at agricultural fairs.

3rd. By holding annual meetings in order to report and discuss topics beneficial to the members of the Association.

The constitution was adopted and signed by thirty-six charter members. After the business meeting, which lasted throughout the forenoon, several prominent men of the county delivered addresses on agricultural topics which concerned the new organization.

One of the objects of the association was to unite the many different seed grain centers in the county. These centers have become so numerous throughout the state, that it is impossible for the Experiment Association to pay much direct attention to them, and their connection is only nominal.

Since the members of Fond du Lac county united they work together and are a much more effective body than heretofore. It should in time, be to the county, what the Wisconsin Experiment Association is to the state. Our County Order being smaller in membership and scope than the latter, it can give more attention to local matters, for the interests of the larger body must necessarily be more general.

During its brief career, thus far, our organization has accomplished but little. A year from now we hope to be able to tell you more.

A creditable display of grains and forage plants was made by our order at the county fair last fall. The call for contributions to this exhibit was extended to members only, and if the generous response can be construed as being a token of loyalty of the members, I feel justified in hoping for great things in the future. The object of making an exhibit was to arouse the interest of the residents of the county, whose support is essential to our prosperity. The fair officials feel kindly disposed toward our organization and granted us all concessions that were in their power. The county newspapers also rendered valuable assistance in giving publicity to our work.

After the county fair, the entire exhibit was sent to Milwaukee to be displayed in the booth of the Experiment Association at the state fair. Unfortunately it arrived there too late, and only a small part of it could be shown. With this our work for the year practically ended. It had been the intention to get out a seed growers' list at the end of the season but lack of funds prevented. Next year we hope to have a much larger membership, and we will then be able to do our work in a more thorough manner.

REPORT OF THE SECRETARY OF THE MANITOWOC COUNTY ORDER.

O. R. WIEGAND, CLEVELAND, MANITOWOC COUNTY.

Mr. President and Fellow Members of the Experiment Association: On the 15th day of October, 1908, Mr. W. E. Larson, who was at the head of the schools of Manitowoc county, but now our State Rural School Inspector, called a meeting of all persons eligible to become members of the Wisconsin Agricultural Experiment Association and some of the teachers

of the county, for the purpose of organizing a County Order of the Experiment Association.

At this meeting the purpose and object of such an association was discussed in general. When sufficient interest was shown by those present, a committee was appointed whose duty it should be to draw up a constitution and further arrange for another meeting to be held in connection with the meeting of the Manitowoc County Horticultural Association. This meeting was held on the 16th day of January, 1909, when our Association was founded with a charter membership of eighteen. We will have our next meeting on the 19th and 20th days of March, when we expect to have with us Prof. R. A. Moore, and other speakers to talk along different lines of work the association contemplates to pursue.

The officers elected at the time of organization: Herman Roethel for President, J. C. Paulsen for vice-president, and O. R. Wiegand for secretary and treasurer.

The object of the Manitowoc county order of the Wisconsin Agricultural Experiment Association shall be to promote the agricultural and live stock interests of the county.

1st. By co-operating with the Wisconsin Agricultural Experiment Association in the growing and marketing of worthy varieties of farm seeds and forage plants, etc.

2nd. By having association exhibits at agricultural fairs.

3rd. By holding annual meetings in order to report on and discuss topics beneficial to its members.

4th. To promote the dairy industry of the county and the breeding of pure bred live stock.

THE WISCONSIN CORN CROP.

BREEDING, GROWING, JUDGING AND DISSEMINATION.

R. A. MOORE.

For many years Wisconsin has been handicapped in corn growing. Our southern neighbors have told us that we were out of the "Corn Belt," and unless we could come over into the corn belt, there was little use of growing anything except flint corn in Wisconsin.

A careful survey of the climate and other conditions seemed to show that Wisconsin is not out of the corn belt, but is very

much inside and underneath the belt proper. All that seems necessary is to stop purchasing air dried seed corn in accordance with the scoop-shovel method and stop trying to adapt southern grown corn for our conditions. The corn needed is Wisconsin corn belt corn, bred and acclimated especially for different localities of the state. The Wisconsin Experiment Station undertook the task of developing these varieties of corn and with the aid of the Experiment Association within seven years have established Wisconsin corn, "true Badger corn," in every county of the state.

Seven years ago Wisconsin produced 28.2 bushels of shelled corn per acre. Secretary Wilson sent forth in the U. S. crop Reporter the remarkable yield for Wisconsin of 41.2 bu per acre for the year of 1906. Wisconsin's yield per acre was only surpassed by the state of Ohio, which had a yield of 42.6 bushels per acre.

Parties who have not understood what has been going on in the state of Wisconsin in regard to corn breeding, can hardly realize what is meant by the figures I have given. What that means is this, that Wisconsin in 1906 grew twenty million bushels more corn on approximately the same acreage than she did in 1902.

The climatic conditions seriously affected the corn crop of 1907, and while the acreage of corn was increased to the extent of one million acres in the United States over that planted in 1906, the crop was five hundred million bushels less. Wisconsin suffered like other states and our general yield reduced to thirty-two bushels per acre. Members of the Wisconsin Experiment Association received an average yield of sixty-five bushels per acre and the Experiment Station on best acre field received the remarkable yield of 98.6 bushels of shelled corn per acre.

The breeding, acclimating and dissemination of select varieties of corn for various sections of the state has been an important factor in bringing about this increased yield. The Wisconsin Experiment Association has come to the rescue for better corn production. By the establishment of several thousand corn centers, the improved varieties have been grown and acclimated in all sections of the state and farmers now have within easy reach good seed corn, which they can purchase fire dried in the ear that has been grown under their own local conditions.

It is surprising what an association of 1,500 young farmers can accomplish when all proceed in a systematic way along one line of effort.

During the seven years' work with corn at the Experiment Station a few things have been learned that are of vital interest to the Wisconsin corn breeder and will be herewith given with the hope that some farmer will be benefited thereby.

For improvement of yield we should observe careful selection of seed ears when stalk study is permissible. The ears should not be taken from the stalks till well matured. Seed corn should not be dumped on a floor but hung in a well ventilated room or top of corn crib to dry. A well ventilated furnace room is an admirable place to cure corn. Small outside buildings, well ventilated, with corn racks arranged and shielded stove in center of room is preferable for drying large amounts of seed corn. After seed corn is well dried, it will stand cold weather without serious results providing it is kept in a dry place.

The ear we desire should be cylindrical and true to type; tapering ears are objectionable as they do not carry uniform kernels. Kernels should be of medium depth and of practically the same width from butt to tip with edges fitting closely from crown to cob. Ears having sixteen to twenty rows are preferable for our latitude, as by carrying that number of rows, they dry out more readily than if carrying more. A slightly roughened seed coat is desirable and the corn should come well down around the shank, which should be of medium size. The tips of the ears should be fairly well filled, but the ear should not be discarded if a few tip kernels are missing when other good characteristics are present.

Ears should be of uniform size, 8 to 10 inches in length, and 6 to 7 inches in circumference. Uniformity in size of ear usually carries with it uniformity in size of kernels.

The secret of good crops is largely in the seed. Only the best should be planted. No uniformity of stand can be secured unless seed has good germinating power. All corn of doubtful character should be tested. General test should first be made by taking at least two kernels from each of fifty ears and making test in simple plate tester. If test is from 99 to 100% strong and vigorous, and corn was cured under similar conditions, the farmer can be reasonably certain the corn is all right. Resort to the ear test, if general test is low, or if any doubt exists, as it will amply repay for time and trouble.

Before testing make general selection of ears that have kernels of about the same size. Use planter plate that will plant by check row system three or four kernels to a hill. Stay by planter until it will drop four kernels eighty out of a possible one hundred times.

Shelled corn should not be purchased for seed. Every corn grower should insist on having seed corn shipped in the ear so that he can test the same before planting and discard it if of no value. There is no good reason why any honest seed corn dealer should refuse to sell corn in the ear.

Bear in mind that in order to lock the vitality of seed corn in the kernel until time of planting the corn should be fire dried and then stored in a safe place.

As an aid to members of the Experiment Association, who will not have an opportunity to take up the systematic judging of corn, I will herewith give the score card used by the students in the college together with explanations and suggestions to emphasize corn improvement in Wisconsin.

WISCONSIN OFFICIAL CORN SCORE CARD,

	1	2	3	4	5
1 Trueness to type or Breed characteristics.....	10				
2 Shape of ear.....	10				
3 Color: a. Grain.....	5				
b. Cob.....	5				
4 Market condition.....	10				
5 Tips.....	5				
6 Butts.....	5				
7 Kernels: a. Uniformity of.....	10				
b. Shape of.....	5				
8 Length of ear.....	10				
9 Circumference of ear.....	5				
10 Space: a. Furrow between rows...	5				
b. Space between kernels at cob.....	5				
11 Percentage of corn.....	10				
Total.....	100				

EXPLANATION OF POINTS IN CORN JUDGING.

1. *Trueness to Type or Breed Characteristics:* The ten ears of the sample should possess similar or like characteristics and should be true to the variety which they represent.
2. *Shape of ear:* The shape of the ear should conform to variety type, tapering slightly from butt to tip, but approaching the cylindrical.
3. *Color: a. Grain; b. Cob.* Color of grain should be true to variety and free from mixture. White corn should have white cobs, yellow corn, red cobs.

4. *Market condition:* The ears should be sound, firm, well matured and free from mould, rot, or injuries.
5. *Tips:* The tips of the ears should not be too tapering and should be well filled with regular uniform kernels.
6. *Butts:* The rows of kernels should extend in regular order over the butt, leaving a deep impression when the shank is removed. Opened and swelled butts are objectionable.
7. *Kernels: a. Uniformity of; b. Shape of.* The kernels should be uniform in shape, size and color, and true to the variety type. The kernels should be so shaped that their edges touch from tip to crown. The tip portion of the kernel is the richest in protein and oil, and hence of the highest feeding value. For this reason the tip portion should be full and plump.
8. *Length of ears.* Northern section 8 to 9 inches, central section $8\frac{1}{4}$ to $9\frac{1}{4}$ inches, southern section, $8\frac{1}{2}$ to $9\frac{1}{2}$ inches. Long ears are objectionable because they usually have poor butts and tips, broad, shallow kernels, and hence a low percentage of corn.
9. *Circumference of ear.* Northern section 6 to $6\frac{1}{2}$ inches, central section $6\frac{1}{4}$ to $6\frac{3}{4}$ inches, southern section $6\frac{1}{2}$ to 7 inches.
10. *a. Furrow between rows; b. Space between furrows at cob.* The furrow between the rows of kernels should be small. Space between kernels near the cob is objectionable.
11. *Percentage of corn:* The percentage of corn is determined by weight; depth of kernels, size of cob and maturity all affect the percentage.

RULES TO BE USED IN JUDGING.

1. *Length of ear*—The deficiency and excess in length of all ears not conforming to the standard should be added together, and for every inch thus obtained a cut of one point be made.
2. *Circumference of ear*—The deficiency and excess in circumference of all ears not conforming to the standard should be added, and for every inch thus obtained a cut of one-half point should be made. Measure the circumference at one-third the distance from the butt to the tip of the ear.
3. *Percentage of corn.*—Per cent of corn should be from 85 to 87. In determining the percentage of corn, weigh and shell every alternate ear in the sample. Weigh the cobs and subtract from weight of ears, giving weight of corn. Divide the weight of corn by total weight of ears, which will give the per cent of corn. For each per cent short of standard, a one-point cut should be made.
4. *Color of corn and cob.*—A red cob in white corn, or a white cob in yellow corn, should be cut five points. For each mixed kernel a cut of one-tenth point should be made. Kernels missing from the ear shall be counted as mixed. Difference in shade or color, as light or dark red, white or cream color, must be scored according to variety characteristics.
5. *Scoring tips.*—Where one inch of the cob is exposed, a cut of one-half point should be made, and a proportionate cut as the cob is less exposed. Regularity of the rows near the tip and the shape and size of the kernels must also be considered in scoring tips.
6. *Scoring butts.*—If the kernels are uniform in size and extend over the butt in regular order, give full marking. Small and compressed or enlarged or open butts are objectionable, as are also those with flat, smooth, short kernels, and must be cut according to the judgment of the scorer.
7. Ten ears of corn constitute a sample for scoring.

EXPLANATION OF POINTS AND RULES FOR JUDGING DENT CORN,

Points.	Perfect score.	Things to consider.	Rule for cuts.
1 Trueness to type or breed characteristics.	10	Approximate approach to type in form of kernel, indentation, shape of ear and color of grain	Cut $\frac{1}{2}$ point for each ear badly off type and less as judgment of scorer dictates.
2 Shape of ear.	10	Ear shape should conform to standard for variety. Should not be crooked, too pointed, e c.	Cut 1 point for each poorly shaped ear.
3 Color. (a) Grain.	5	Should be free from mixed or missing kernels and true to color for the variety.	Cut 1-10 point for each mixed or missing kernel. Variations in color of grain to be cut according to judgment of scorer.
(b) Cobb.	5	Cob should be a dark cherry red for yellow corn and a glistening white for white corn.	Cut 5 points for every white cob in yellow corn or red cob in white corn.
4 Market condition.	10	Corn should be ripe, sound and free from injuries or disease. Should be bright in color.	Cut 1 point for every diseased, chaffy, injured or immature ear.
5 Tips.	5	Kernels should extend over the tip in regular rows. Should cover the tip and be uniform in size and shape.	Cut $\frac{1}{2}$ point for every badly covered tip. Cut 1 point for every inch of exposed tip.
6 Butts.	5	Kernels should extend over butts in regular rows and should be well developed, not flat. But should be well covered.	Cut 3-10 point for every butt well covered but with flat kernels. Cut $\frac{1}{2}$ point for every uncovered butt.
7 Kernels. (a) Uniformity.	10	Should be alike in shape and size.	Cut 1 point for each set of kernels lacking in uniformity.
(b) Shape.	5	Kernels should be perfect wedge shape, narrower or wider according to variety.	Cut $\frac{1}{2}$ point for each poorly shaped set of kernels.
8 Length of ear.	10	Should have standard length for the section where corn is grown.	Cut one point for every inch of excess and deficiency in length.
9 Circumference of ear.	5	Should have standard circumference for section.	Cut $\frac{1}{2}$ point for every inch of excess and deficiency in circumference.
10 Space. (a) Furrows between rows.	5	Space between kernels at crowns. Furrows should be straight.	Cut $\frac{1}{2}$ point for 1-32-1-16 inch in width. Cut $\frac{1}{2}$ point for 1-16 inch and above.
(b) Between Kernels at cobb.	5	Space between the tips of kernels at point of attachment to cob.	Cut $\frac{1}{2}$ point for each ear showing space between kernels at the cob.
11 Proportion of grain to ear.	10	Should conform to standard for the variety.	Cut 1 point for each per cent. short of standard weight for the variety.

CORN JUDGING. LESSON I.

Trueness to Type or Breed Characteristics.

The study of corn like the study of stock is now taken up from a practical and scientific standpoint, and we trust will be carried forward to a successful issue. Score cards have been adopted by colleges in different states where the subject of corn judging is taught, with slight variations. By following the suggestions accompanying the score card and the general discussions given therein on the different divisions under which corn is judged one may without an instructor become quite familiar and proficient in judging corn under the score card system.

Fairs and other associations where prizes are given for best display should provide that ten ears should be considered as a sample, as that number is now used at exhibitions in other states and should become uniform throughout Wisconsin. This number is taken as it furnishes an easy basis for calculation. The samples of corn should be arranged on tables so that the judge can have easy access to the same, pass judgment in a comfortable position and have abundant space for comparison.

The first subject to be considered in judging a sample is trueness of type or breed characteristics for which ten points are allowed if the sample is perfect. Corn like cattle belongs to a great family, this family being subdivided into species or types. We are interested in particular with the flint and dent species of corn which are grown generally. Other species we might mention are pop corn, pod corn, sweet corn and soft corn. Each of the above species are divided into numerous breeds or varieties, which is brought about by the ingenuity of man combined with variation in climate, soil, cultivation, etc. The Dent corn is the great commercial corn of the United States, and that with which so much progress has been made by breeding during the past five or six years, consequently we will consider this corn specifically and the other groups generally.

The score card is arranged for Dent corn and the rules and suggestions given in connection with the score card refer to the Dent in general.

Different breeds of corn, like different breeds of cattle, have distinctive characteristics by which they are recognized. Those breeds having a particular color are easy to distinguish between as Boone County White from Reid's Yellow Dent, or either of

these races from the Calico or Strawberry Dent. When one wishes to distinguish between breeds of the same color it is more difficult, and it is only by actual experience in handling and studying the markings that one can become proficient. The markings of pure breeds are quite distinct as the breeder working for improvement has been trying to make prominent one or more desirable characteristics. This is plainly noticeable in the Reid's Yellow Dent and the Leaming, two of the pure yellow breeds of Illinois. These varieties differ in shade of color, the Reid's being a pale yellow while the Leaming is more highly colored, approaching an orange color. In other characteristics the Reid's Yellow Dent has a cylindrical ear and furrows running from butt to tip, while the Leaming has more of a tapering ear and occasionally drops one or more furrows at the middle of the ear. Different seed coats are allowable in the Reid's Yellow Dent, which may be either rough or smooth with a variation in the indentation from a round dimple dent to a wide narrow dent. The Leaming has a roughened seed coat which is characteristic of the breed. The breeds of the white corn like the yellow have certain characteristics peculiar to each, and are readily distinguished after an acquaintance is formed.

The corn breeders of Wisconsin by becoming acquainted with the desired characteristics of seed corn will work with a common interest of producing and improving these desired qualities in the different breeds of corn that are to become standard varieties in various portions of the state. By several hundred working with the same purpose in view a breed of corn will be bred having the characteristics which will be known on account of those similar traits and the more nearly the corn conforms to this type the higher the marking can be given to it in uniformity and breed characteristics.

CORN JUDGING. LESSON II.

Shape of Ear, Cob and Kernels.

In judging a sample of ten ears of corn after considering trueness to type and breed characteristics we next examine closely the shape of the ear. Ten points are allowed if the ears are perfect in shape but it is difficult to find an ear of corn perfect in shape as it is to find cows, horses, and sheep perfect in shape.

The shape of ears of the different varieties of corn differ as widely as the shape and form of the different pure-bred breeds of cattle. Each race and variety has a characteristic shape peculiar to the variety to which it belongs. For example, the Boone County White Corn has a long cylindrical ear, large in circumference, while the Leaming has an ear considerably shorter, finer in cob and a general taper to cob and ear.

If the characteristic shape desired in the Leaming corn were found in Boone County White, or Reid's Yellow Dent, it would be scored severely as it would not be characteristic of those breeds.

The shape most desirable to be found in corn is a cylindrical ear from butt to tip, and corn breeders are trying to secure this shape in all varieties, consequently we may expect to find in the future more uniformity in shape in the different breeds of corn.

Where ears are inclined to taper it will be noticed that two or more rows, as a rule, are dropped near the middle of the ear, otherwise the kernels on the cob are irregular being deeper and larger at the butt than at the tip. This makes the kernels vary in size throughout the ear, and renders the corn almost totally unfit for seed. No planter can plant kernels of this type so as to give a uniform stand, one of the desired characteristics of field corn.

In scoring corn on shape one must take in consideration the soil and climatic conditions, under which the corn is grown.

The shape of an ear desirable for central Illinois would differ in many respects from the shape most desirable for central Wisconsin. Our shorter season demands a shallower kernel which will carry with it a different characteristic shape than that grown further south.

The characteristic wedge shape of kernel is the most desirable and this should receive consideration in judging samples or in the selection of seed for the season's crop. The wedge shape kernel carries with it a greater depth, more rows to the ear, and a greater proportion of corn to cob.

Prof. A. D. Shamel, former instructor in corn, judging at the University of Illinois, says: "It has been found that there is a correlation between the shape of the kernel and the composition. For instance, a kernel having a thin tip is low in per cent of oil and protein and high in per cent of starch. It is usually true that such pointed kernels are low in vitality or lack constitution. The most desirable shape is plump tips,

having about the same thickness as the upper portion of the kernel.

No set rule can be given as to the exact number of points to be taken from the full score on account of any particular weakness in regard to shape. The scorer after carefully noting the deficiency in shape will rely on his individual judgment in marking the score and not be dependent on any set rule.

CORN JUDGING. LESSON III.

Color of Grain and Cob.

Having already considered breed characteristics and shape of ear, the next essential to examine is color which we consider under two heads, viz., color of grain and color of cob. Five points are allowed on color of grain and five on color of cob where each is perfect.

Yellow corn should have a red cob and white corn a white cob in pure-bred varieties. Anything to the contrary would show defectiveness in purity of breeding and should be cut severely by the corn judge and rejected as seed by the corn breeder.

The color of the corn varies with the breed, the Reid's Yellow Dent has a pale yellow color, while the Leaming has a brighter shade of yellow and these shades predominate and are characteristic of the breed. Other yellow breeds vary slightly in color from a pale yellow to a deep orange, and are only known by a thorough acquaintance with the variety of corn under consideration and are then cut accordingly.

The cob in yellow corn should be a bright cherry red and as the color of cobs vary from this standard, a cut should be made by the scorer. A bright cherry red cob denotes health and vigor in corn, and a pale or dark red cob denotes lack of constitution or vitality. The white cobs should be a glistening white and not a dead pale color. The above points should be considered when scoring corn at fairs or when the corn breeder is carefully selecting seed for the season's crop.

General questions, however, are often asked as to whether it is preferable to grow white or yellow corn, and which is the richest in the food elements, and which will produce the most grain and forage per acre, etc.

From tests made by careful breeders of corn, and by Experiment Stations, it has been found that in general, color makes no difference as far as quality is concerned, and it is merely a matter of taste to the grower as to the color of corn he desires.

White or yellow corn through careful breeding of one variety and neglect of the other would soon show a marked difference in regard to yield and quality in favor of the variety to which attention had been given regardless of color.

Like the breeder of live stock, the corn grower had better select that breed of corn that suits his ideal taste best, keeping in mind that the quantity and quality of marketable corn per acre are the essential characteristics sought for.

CORN JUDGING. LESSON IV.

Market Condition.

Ten points are allowed on the score card where market condition is perfect. By market condition we mean general excellence and that degree of ripeness or maturity that is taken note of from the grower's or feeder's standpoint. Corn that shows immaturity and a tendency to be loose on the cob with wide space between the kernels should be cut severely on the score card under market condition. Where market condition is perfect or nearly so, the kernels are firm on the cob and the ear gives a rasping sound when twisted. The kernels fit closely together lengthwise upon the cob between the rows and crosswise between the kernels of each row. Corn when scored from the feeder's standpoint is not cut so severely as from the grower's or seedsman's standpoint. When we consider that a bushel of corn plants approximately six acres and the importance to be attached to uniformity of stand we will fully appreciate the value of considering the market condition from the grower's standpoint in a critical way.

No one head under which corn is judged is so important to Wisconsin farmers as market condition, and all farmers of the state should not only be able to judge corn from that standpoint but should understand how to work for the perfection of that characteristic.

Several standard varieties of corn will have to be established in the state that will ripen properly under the conditions peculiar to that section in which the different varieties are intro-

duced. This can only be done by securing seed corn having those desirable traits that would naturally adapt it to a certain section of the state, and put it through a test. If farmers were to try this plan individually it would be many years before known varieties would be established, but Wisconsin is fortunate in the fact that it has an association of fifteen hundred young men who are working on the corn problem at the present time, and definite results may be looked for in a reasonable period.

The utmost importance is attached to market condition in carrying on trial tests as a variety of corn would be of little value to a community or division of the state, if it would not properly mature. Much can be done in the way of planting and cultivating the crop to hasten maturity, and this should be resorted to.

The check-row system of planting admits more sunlight and a freer circulation of air through the corn than the drill system.

The cultivator can be worked more effectually to retain moisture, and keep down the weeds which enables the corn to gain several days in the race for maturity over corn of the same variety that has been planted in drills. Corn will gradually become accustomed to its environment and will adjust itself to varying conditions. By selecting those ears for seed that show good market conditions, even if there be but few in the entire field the earliness of the corn can be improved upon materially.

It is possible to mature the Illinois dent corns in certain portions of Wisconsin by giving them special conditions, such as location, and planting merely one kernel in a hill the ordinary width of the planter. It seems that Wisconsin with her $1\frac{1}{2}$ million acres of land annually devoted to corn should propagate in the shortest possible time, varieties best adapted for various localities, and then to hold to those established strains that annually show good market condition.

CORN JUDGING. LESSON V.

Butts and Tips.

In scoring butts and tips we allow five points for each if perfect, but cut down in accordance with imperfections. A well filled butt that is symmetrical and not bulging is desirable. The corn should come well over toward the shank so when

snapped a rounded hollow space would be plainly noticeable. The corn breeder desiring to get a large proportion of corn to cob often goes too far in breeding for a small shank and full covered butt. Where the shank is too small the ears drop off during the ripening period or readily tear off while harvesting. Where this weakness is noticeable the butt should be cut accordingly on the score card. Poorly filled butts are caused by the first silks developing too far in advance of the pollen and drying to such an extent that they do not become fertilized when the pollen ripens. All ears, where the butts are partially filled, should be rejected or this characteristic may become permanent or partially so. If an earlier variety of corn or corn more advanced should be in an adjoining field the butt kernels are liable to be mixed by being fertilized with this foreign pollen instead of the pollen from their own variety. It is largely on account of chance crossing that occurs to the butt and tip kernels that those kernels are rejected when planting. Their peculiar formation makes them non-uniform which interferes in planting evenly and they also seem weaker in germination and more tardy in growth than kernels from the middle or intermediate parts of the ear. The tip kernels are apt to be flinty and pop corn shape which is undesirable in dent corn.

A perfect tip which has a center kernel termed a cap is hard to find but occasionally a few are found where large quantities of corn are handled. In a perfect tip the rows of corn should come over the tip in regular order and meet near the apex. The kernels should be uniform in size and shape and should not be mixed or shallow. Where bare tips are noticeable to quite an extent throughout the field, we allude the same to the fact that the silks formed last, which represent the tips, were too late for the pollen, and as a result were not fertilized.

By planting ears having defective tips that undesirable characteristic would soon become permanent or nearly so. Open tips have a tendency to increase the shallowness of kernels on the tip half of the ear which makes the corn on that portion of the ear undesirable for planting on account of the lack of uniformity compared with the kernels on the butt portion of the ear.

From the standpoint of the corn judge, butts and tips that do not meet the standard should be scored quite severely, and should carefully be rejected by the corn grower where the defect is too prominent.

CORN JUDGING. LESSON VI.

Kernel Study.

The seventh division under which ear corn is judged is kernel study for which 15 points out of 100 are allowed; 10 for uniformity and 5 for shape.

The kernels should be uniform in shape, size, and color and true to the variety type. The shape should be such that the edges of the kernels touch from tip to crown. The tip portion of the kernel, that part attached to the cob and which contains the germ, is rich in protein and oil and hence of the highest feeding value. For this reason the tip should be full and plump. A plump tip also denotes vitality and constitution. Corn growers should regard with suspicion corn that has weak and shriveled tips no matter how well the outside of the ear may look. At least 85 per cent of all the oil in the kernel is in the germ which extends from within the tip upward, hence corn of high oil content is preferable for factories where the manufacture of corn oil is emphasized. The time is approaching when corn may be purchased on a basis represented by its chemical constituents instead of by the pound or bushel. Milk and cream are now purchased almost universally by their butter fat content and grains will be the next in order. Tests by the Illinois Experiment Station show that the oil content in corn may vary from $2\frac{1}{2}$ to $7\frac{1}{2}$ and protein from $6\frac{1}{2}$ to 16 per cent. Protein is valued at 5 cents per pound while starch is less than 1 cent. It does not seem fair for a farmer who has used care in selecting high protein seed corn to be obliged to take the same price per bushel for his crop as one who is raising only ordinary corn. When Wisconsin farmers market more corn we feel confident that the matter of selling by the test will be carefully investigated. At the present time nearly all the Wisconsin corn is marketed through farm animals which undoubtedly is the best possible way of marketing farm crops. By so doing we put our animals in proper condition for the market and save middle men's profits on our crops as well as retaining the fertilizing elements contained therein to keep up the fertility of the farm.

If seed corn high in protein and oil content is planted the progeny will be high in those desirable characteristics. One bushel of seed corn will plant about six acres, four kernels to the hill. Will it not then pay Wisconsin farmers to carefully select seed corn that is high in oil and protein?

CORN JUDGING. LESSON VII.

Circumference and Length of Ears.

The time will arrive in Wisconsin as it has in some of the older corn breeding states when each distinct variety of corn will have its respective measurements as to circumference and length. We have a standard measurement for corn that has been grown in northern, middle and southern Wisconsin. In general the circumference should be three-fourths the length. The length may vary from eight to nine and one-half inches within the state and the circumference from six to seven inches. The chief reason for distinct measurements is to secure uniformity and compactness in ears. We cannot accept those that are out of natural proportion but must be governed by some set uniform standard.

CORN JUDGING. LESSON VIII.

Furrows Between Rows and Space Between Kernels at Cob.

The straight rows are the most desirable as they give character and uniformity to the ear and admit of the kernels being placed in a more exact position. The kernels on ears with spiral rows are irregular as to depth, width, and shape of kernel and consequently are not wanted. From breeding experiments at several Stations it has been determined that irregularities are transmitted by the mother ear to the progeny, therefore if we desire to make the most rapid advancement in breeding to a highly developed type we should select only the most regular in all characteristics.

The furrow or groove should not descend to any great depth but merely mark the dividing line between the kernels from butt to tip. Where the furrow is deep thereby exposing a large portion of the surface of the kernel it indicates a reversion of the dent corn to that of a flint type. The space between kernels at cob determines the maturity to quite an extent, the kernel tip in immature corn is shriveled and therefore leaves a space readily detected. In well matured corn no appreciable space will be detected but tips of kernels will fit tightly together from tip to crown. Abundant space between kernels near cob is an indication of immaturity, low viability and lack of vitality.

CORN JUDGING. LESSON IX.

Percentage of Corn on Cob.

Good, well matured corn should give a percentage of from eighty-five to eighty-seven corn to cob. In other words if we were to shell one hundred pounds of ear corn we should expect approximately eighty-five pounds of kernel corn and fifteen pounds of cob. The tendency with some corn-growers is to work for a small cob, thinking that feature of corn to be the leading desirable characteristic. In many instances the small cob theory has been practiced to such an extent that the yield has been materially reduced. We desire a medium sized cob that will carry from sixteen to twenty rows of kernels of medium depth; if we reduce the size of the cob the ear simply drops its rows by pairs until we have but ten or twelve rows remaining. If on the other hand the cob is too small and the grower has been working for high percentage of corn to cob, the kernels are apt to be of too great depth to mature well in Wisconsin latitude.

When judging corn for percentage of corn to cob we weigh five ears of the sample and record total weight. The corn should then be shelled and the kernel corn weighed and recorded. Divide decimally the number representing the weight of the shelled corn by the number representing the weight of ear corn and the result will be the percentage of corn on cob.

Example: If total weight of five ears of corn is 60 oz., and the kernel corn from the five ears weighed 51 ounces, 51 divided decimally by 60 hundredths equals 85, which is the percentage of corn.

Immature and chaffy corn always gives a relative low percentage of corn to cob compared with well ripened corn.

LESSON X.*Selecting Corn of High Oil and Protein Content.*

From careful experiments carried out by the Illinois College of Agriculture extending through a series of years it has been determined definitely that the composition of the corn kernel can be materially changed. From many thousand tests at the

Chicago Glucose factories it has been found that the composition of whole corn is approximately as follows:

Starch	70.0%
Water	11.4%
Protein	10.5%
Oil	4.5%
Fiber	2.2%
Ash	1.4%

It will be noted that the starch content is extremely high compared with the other elements, hence the claim that corn is a one sided ration for farm animals.

The farmer is particularly interested in the oil and protein content of the corn, consequently the richer the corn is in these elements the more money value per bushel the corn is worth for feeding purposes. Plants, like animals do not improve if left merely to nature's laws but strive to maintain a certain standard. It has remained for man to step in and by changing environment and following certain definite principles accomplish beneficial results.

In the improvement of corn the farmer can by the proper selection of seed materially change the constituents most desired, from a lower to a higher degree thus growing a corn of higher value for feeding farm animals. The composition of different kernels of corn taken from the same ear are approximately the same, hence a single kernel from an ear is a fair index of the composition of all the remaining kernels of that particular ear. By planting corn that is high in oil and protein the crop grown from that select seed is also high in those desirable elements.

By a physical examination of one kernel from each ear the relative composition as to oil and protein can be approximately determined. No difficulty will be experienced in distinguishing between ears that are high and low, in protein and oil after a few comparisons are made.

To make these determinations all the apparatus necessary is a pocket knife. Remove at least two kernels of corn from the ear and examine closely, if that portion of the kernel next to the cob known as the tip is pointed, shriveled and has a small face mark covering the germ, discard the ear at once, as it will be found not only low in oil but low in vitality as well. The face mark under which the germ is found should be broad and extend from the tip well up toward the top or crown of the kernel. This indicates a large germ beneath. Practically 85% of all

the oil in the kernel is found in the germ which is also rich in protein, hence the desirability of a large and well developed germ. The kernel has to be cut in order to determine the protein content as that is noticeable within. The kernel should be cut from tip to crown through the narrow and broad dimensions, this will bring plainly to view the germ which is of a dark gray color; the starch is white, and a flinty composition which is of a grayish white in white corn, and a dull yellow in yellow corn. The large portion of the protein contained in the kernel is found in this flinty matter. If the flinty portion of the kernel fits closely to the germ and crowds the white starchy matter into comparatively small space, the corn upon the ear from which the kernel was selected is high in protein. After the examination of a few kernels one will make note of the relative size of the parts at a glance.

It seems that it will amply repay any farmer to select a few bushels of seed corn in this way from year to year until a high standard of corn is obtained.

WHEAT.

Points to be Observed.

1. All kernels of the sample should resemble one another in shape, color and general appearance.
2. Kernels should be the same size and shape throughout to secure uniformity.
3. Grain should all be the same color. No mixture of red and white kernels.
4. There should be no mixture of oats, barley or any other grain. Must be pure wheat.
5. The sample as a whole should be large and plump, not small or shrunken.
6. The sample should be free from any kind of dirt or weed seeds. The percentage of foul material is determined by the use of sieves and scales. Remove and weigh the foul material. Then divide weight of foul material by weight of whole sample. This will give you percentage of foul material. Should the foul material consist of noxious seeds the cut on sample should be made more severe than if it is composed of practically harmless materials.
7. The sample should be free from smutty, musty or bin-burned kernels. Take one hundred average kernels and count the number of each of smutty or otherwise injured kernels. The number found will be the percentage of poor kernels.
8. Good wheat should weigh 60 or more pounds to the measured bushel. The weight per bushel may be determined by the use of the Winchester measure.
9. Wheat should give a germination of not less than ninety-five per cent.

WISCONSIN COLLEGE OF AGRICULTURE.

MADISON.

DEPARTMENT OF AGRONOMY.

OFFICIAL WHEAT SCORE CARD.

NAME OR NUMBER OF SCORER DATE
 SAMPLE NO. TABLE

		1	2	3	4	5
1. Trueness to type or breed characteristics	10					
2. Uniformity in size and shape of kernel	10					
3. Color of grain	10					
4. Freedom from mixture with other grains	15					
5. Size of kernel	10					
6. Per cent and nature of weed seed, dirt and other foreign material	15					
7. Per cent of damaged, smutty or musty kernels	5					
8. Weight of grain	10					
9. Viability	15					
Total.....	100					

Reasons for student's score on test sample.

Numbers below refer to the various heads under which the sample of grain has been judged.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9

Rule for cuts.

1. Take 100 kernels, constituting a fair sample of the grain. Count out the kernels not true to type. For each kernel off type, cut 1-10 point.
2. Proceed as above and for each small or shrunken kernel cut 1-10 point.

3. For discoloration cut according to extent. If only slightly discolored cut $\frac{1}{4}$ point and more as judgment dictates.
4. Weigh the whole sample, separate and weigh the foreign grain. Divide weight of foreign grain by weight of whole sample. This will give percentage of other grains. For every per cent so found cut $\frac{1}{2}$ point.
5. Sample should consist of large plump kernels not small ones. Cut as judgment dictates, considering variety characteristics.
6. Cut sample one point for each per cent of foul material.
7. Cut sample one point for each per cent of smutty, bin-burned and musty kernels.
8. Cut one point for each pound below sixty pounds in weight.
9. Cut $\frac{1}{2}$ point for each per cent the germination falls below 95%.

OATS.

Points to be Observed.

1. All kernels of the sample should resemble one another in shape, color, and general appearance.
2. Kernels should be the same size and shape throughout to secure uniformity.
3. Grain should all be white in color for white oats, bright yellow for yellow oats and a glistening black for black oats.
4. There should be no mixture of wheat, barley or any other grain.
5. The sample as a whole should be large and plump, not small or shrunken.
6. The sample should be free from any kind of dirt or weed seeds. The percentage of foul material is determined by the use of sieves and scales. Should the foul material consist of noxious weed seeds the cut on sample should be made more severe than if it is composed of practically harmless materials.
7. The sample should be free from smutty, musty or bin-burned kernels as indicated by the odor, which shall be sweet. Take one hundred average kernels and count the number of each of smutty or otherwise injured kernels. Repeat this three times and find the average of the three trials. The number found will be the percentage of poor kernels.
8. Good oats should weigh 32 or more pounds to the measured bushel. The weight per bushel may be determined by the use of the Winchester measure.
9. Oats should give a germination of not less than ninety-five per cent.

Rule for Cuts.

1. Take 100 kernels, constituting a fair sample of the grain. Count out the kernels not true to type. Repeat three times and find average for the three trials. For each kernel off type, cut 1-10 point.
2. Proceed as above and for each small or shrunken kernel cut 1-10 point.
3. For discoloration cut according to extent. If only slightly discolored cut 1 point, and more as per cent of discoloration increases. Cut 1-10 point for each black, red or yellow oat in white oats.
4. Take 100 grains constituting a fair sample of the grain. Count out the foreign grain. Repeat three times and take the average of the three trials. This will give the percentage of foreign grain. For every per cent so found cut $\frac{1}{2}$ point.

5. Sample should consist of large plump kernels not small ones. Cut as judgment dictates, considering variety characteristics.
6. Cut sample one point for each per cent of foul material.
7. Cut sample one point for each per cent of smutty, bin-burned and musty kernels. If sample has musty odor cut 10 points.
8. Cut one point for each pound below 32 pounds in weight.
9. Cut 1/2 point for each per cent the germination falls below 95%.

WISCONSIN COLLEGE OF AGRICULTURE.

MADISON.

DEPARTMENT OF AGRONOMY.

OFFICIAL OAT SCORE CARD.

NAME OR NUMBER OF SCORER..... DATE.....

SAMPLE NO..... TABLE.....

		1	2	3	4	5
1. Trueness to type or breed characteristics	10	.....	.....	.....	.....	.....
2. Uniformity in size and shape of kernels.	15	.....	.....	.....	.....	.....
3. Color of grain	5	.....	.....	.....	.....	.....
4. Freedom from mixture with other grains	5	.....	.....	.....	.....	.....
5. Size of kernel	10	.....	.....	.....	.....	.....
6. Per cent and nature of weed seed, dirt and other foreign material	15	.....	.....	.....	.....	.....
7. Oder—musty, smutty, sulphur	10	.....	.....	.....	.....	.....
8. Weight per bushel	10	.....	.....	.....	.....	.....
9. Percent of meat to hull	5	.....	.....	.....	.....	.....
10. Viability	15	.....	.....	.....	.....	.....
Total.....	100	.....	.....	.....	.....	.....

Reasons for student's score on test sample.

Numbers below refer to the various heads under which the sample of grain has been judged.

- 1.....
- 2.....
- 3.....
- 4.....
- 5.....
- 6.....
- 7.....
- 8.....
- 9.....
- 10.....

BARLEY.

Points to be Observed.

1. All kernels of the sample should resemble one another in shape, color, and general appearance.
2. Kernels should be the same size and shape throughout to secure uniformity.
3. Grain should all be light in color.
4. There should be no mixture of oats, wheat or any other grain. Must be pure barley.
5. The sample as a whole should be large and plump, not small or shrunken.
6. The sample should be free from any kind of dirt or weed seeds. The percentage of foul material is determined by the use of sieves and scales. Should the foul material consist of noxious weed seeds the cut on sample should be made more severe than if it is composed of practically harmless materials.
7. The sample should be free from smutty, musty or bin-burned kernels. Take one hundred average kernels and count the number of each smutty or otherwise injured kernels. Repeat this three times and find the average of the three trials. The number found will be the percentage of poor kernels.
8. Good barley should weigh 48 or more pounds to the measured bushel. The weight per bushel may be determined by the use of the Winchester measure.
9. Barley should give a germination of not less than ninety-five per cent.

Rule for Cuts.

1. Take 100 kernels, constituting a fair sample of the grain. Count out the number not true to type. Repeat three times and find average for the three trials. For each kernel off type, cut 1-10 point.
2. Proceed as above and for each small or shrunken kernel cut 1-10 point.
3. For discoloration cut according to extent. If only slightly discolored cut 1 point, or more as per cent of discoloration increases.
4. Weigh the whole sample, separate and weigh the foreign grain. This will give percentage of other grains. For every per cent so found cut $\frac{1}{2}$ point.
5. Sample should consist of large plump kernels not small ones. Cut as judgment dictates, considering variety characteristics.
6. Cut sample one point for each per cent of foul material.
7. Cut sample one point for each per cent of smutty, bin-burned and musty kernels.
8. Cut one point for each pound below 48 pounds in weight.
9. Cut $\frac{1}{2}$ point for each per cent the germination falls below 95%.

WISCONSIN COLLEGE OF AGRICULTURE.

MADISON.

DEPARTMENT OF AGRONOMY.

OFFICIAL BARLEY SCORE CARD.

NAME OR NUMBER OF SCORER..... DATE.....

SAMPLE NO..... TABLE.....

		1	2	3	4	5
1. Trueness to type or breed characteristics	10	.....	.....	.....	.....	.....
2. Uniformity in size and shape of kernel	15	.....	.....	.....	.....	.....
3. Color of grain	15	.....	.....	.....	.....	.....
4. Freedom from mixture with other grains	15	.....	.....	.....	.....	.....
5. Size of kernel.....	5	.....	.....	.....	.....	.....
6. Per cent and nature of weed seed, dirt and other foreign material	10	.....	.....	.....	.....	.....
7. Per cent of damaged or smutty kernels	5	.....	.....	.....	.....	.....
8. Weight of grain	10	.....	.....	.....	.....	.....
9. Viability	15	.....	.....	.....	.....	.....
Total.....	100	.....	.....	.....	.....	.....

Reasons for student's score on test sample.

Numbers below refer to the various heads under which the sample of grain has been judged.

- 1.....
- 2.....
- 3.....
- 4.....
- 5.....
- 6.....
- 7.....
- 8.....
- 9.....

DISCUSSION ON THE JUDGING OF SMALL GRAINS.

Trueness to Type or Breed Characteristics.

A. L. STONE.

Trueness to type in any sample of grain consists of the characteristics which distinguish that sample from another of the same class. To be true to type all the kernels in any sample of grain should bear a close resemblance to each other. Some kernels may be smaller than the others but should have the same general appearance.

Some varieties of oats, for instance, have short plump grains, others have long, slender or pointed grains. Some with short plump grains have large kernels, others small, and the same is true of those having long, slender kernels. These same observations apply in a greater or less degree to barley, wheat and rye.

In general the points which determine type are color, size and shape of kernel, presence or absence of awns and hulls in oats; presence or absence of beards and hulls and the straightness or crookedness of the kernel furrows in barley, the color, and size and shape of kernels in wheat. Oats may be hulled or hull-less. They may be white, yellow, gray, red or black, or have different sizes and shapes of kernels depending upon the variety. There should be no mixture of one with the other.

Barley may be either hulled or hull-less, bearded or beardless, black or white. The kernels may be long and slender or short and plump.

The furrows in the kernels of barley may be straight or crooked depending upon the arrangement on the flower stem. In six rowed barley two-thirds of the grains have crooked furrows. In two rowed barley the furrows are all straight.

No admixture of these various classes is allowable.

Wheat may vary in color from white to a dark red depending upon the variety and the region where grown. The kernels may possess a wrinkled surface or be perfectly smooth, or some be long and pointed and others short and oblong, depending upon varieties. It is important that these different types be not found in the same sample if it is to be true to type.

Uniformity in Size and Shape of Kernel.

In an ideal sample of grain all the kernels should be the same size and shape. They may all be small or all be large but must be *uniform*. This is important because the grain will be sown at a more uniform rate and all plants are apt to be of equal strength and vigor.

Color of Grain.

All kernels in the sample should be of the same color. No black, red, gray or yellow oats should be found in a sample of white oats. No black barley mixed with white, or white amber or macaroni wheat mixed with red. The last rule, of course, applies equally to the grains of other colors. This point must be closely watched as it is an indication of mixture or a lack of breeding.

Freedom From Mixture With Other Grains.

Little need be said in explanation of this point as every one realizes that the value of grain for seed is greatly reduced whenever there is a mixture of other grains. Special application of this point can also be made to wheat and barley. Wheat to make the best flour should be absolutely pure and the best prices can only be obtained for it when it is pure.

In the manufacture of malt maltsters wish to use only pure barley and a mixture of other grain is undesirable. Oats in barley are especially noxious as it is extremely difficult to separate the two.

Size of Kernel.

The matter of *uniformity* of kernels has already been discussed. The *size* of the kernels is now to be considered. In any grain it is desirable to have the kernels as large as possible up to a certain limit.

Therefore all the grains of a sample should be large for the variety as this is an indication of a well matured and probably prepotent grain. In other words, while not exactly uniform in size the kernels should be large, not undersized or shrunken. A grain buyer will always pay more for a lot of grain containing large kernels.

Per Cent and Nature of Weed Seed, Dirt and Other Foreign Material.

The grain should be free from all kinds of foul material. For exhibition purposes or for sale, a sample is at once scored against if not thoroughly clean. The cut should be much more severe if among the weed seeds in the grain there are those of noxious weeds such as Canada thistle, quack grass, wild mustard, etc. Much of the material in the way of cracked and shrunken grain and weed seeds can, by grinding, be converted into a very good grade of ground feed for stock. The farmer should make this separation himself. The increased price obtained for the cleaned grain will ordinarily more than pay for the decreased weight resulting from the cleaning and the farmer still has the screenings for his own use. The grain can be cleaned on rainy days or in winter when the value of labor is low. Few farmers have yet come to a realization of the money which can be saved by the use of a good fanning mill.

Weight of Grain Per Bushel.

The weight of grain per measured bushel is generally an indication of quality and the principal point by which grain inspectors and buyers determine the grade and market value of grain.

In wheat high weight is indicative of comparatively high protein or, more specifically, gluten content, and it is the amount of gluten in wheat which determines its bread making qualities.

In barley the same thing is true. Brewers in the United States wish a high protein barley. They mix corn and rice grits with barley in the manufacture of beer. This cheapens the cost of beer production and as corn and rice are both high in starch content they furnish sufficient sugar so that the barley need have but little starch but must be high in protein. A good brewing barley for the use of the United States brewers then must be high in protein and as protein is heavier than starch a good barley is determined largely by its weight per bushel.

In oats, the higher the percentage of meats the better the feeding value of the oats. The heavier the oats weigh the higher the percentage of meats and the lower the percentage of hulls. As the hulls consist largely of crude fiber the smaller proportion of them there is the better. The average per cent of meats to hull for oats in the United States is seventy per cent but

may vary greatly depending upon the season and on the variety of oats.

The standard weights of grains in Wisconsin are as follows: Barley, 48 lbs.; Oats, 32 lbs.; Wheat, 60 lbs., and Rye, 56 lbs. per measured bushel.

Viability.

No grain should give a germination of less than ninety-five per cent for the best results. The higher the percentage of germination the better. That all the grain germinates is not sufficient, however. The germination should be strong and vigorous resulting in a strong rapidly growing young plant. As the success or failure of the crop depends upon it this is an important point.

Besides these general points which apply to all the grains there are special points which apply to each grain separately and these will be taken up in detail.

Wheat and Barley—Per Cent of Damaged, Smutty or Musty Kernels.

Wheat should contain no smutty or musty kernels. The smut darkens the flour and gives it a bitter flavor. If musty kernels exist in any quantity in the wheat the flavor can at once be detected in the flour. Both of these conditions lower the value of the wheat for any purpose and where very bad render it utterly useless for flour making.

Barley should also be free from these same defects as the quality of the beer will otherwise be affected. As the manufacture of a good beer depends upon a good malt, and a good malt depends upon uniform and as nearly complete germination of the grain as it is possible to get, there should be no cracked or broken kernels in the barley. These broken kernels will not germinate but mold or rot and they destroy the flavor of the beer. Smutty or musty barley also makes poor feed for stock.

Oats—Odor.

The odor of oats should be sweet. There should be no musty or burnt odor showing that oats are not in good keeping condition or that they have been over heated in bin or stack.

Such conditions have a tendency to destroy both the seed and feed value of the grain. Oats should also be free from smut.

Elevator men often resort to a process of bleaching to whiten oats which have been blackened or otherwise injured by exposure to the weather. Sulphur is used as the bleaching agent and oats thus treated often retain the scent of sulphur. Oats treated in this way should be avoided as they are apt to be injurious as feed and often the vitality or germinating power is also destroyed.

WISCONSIN SEED GRAIN GROWERS 1909.

Members of the Experiment Association are rapidly becoming the seed growers of the state, and by systematic selection of seed and care in culture and curing of the crop, produce a fine grade of pure-bred seed grains. These seed grains are sold by the producers either in small or large quantities, at reasonable rates.

Growers of Swedish Select Oats (Wisconsin No. 4).

Barron County	Chippewa County
Chrislaw, A. M. ....Rice Lake	Christiansen, W. O.....
Heldstab, C. O. ....Rice Lake	Chippewa Falls, R. 6
Poulter, C. J. ....Cumberland	Guptill, L. R.....New Auburn
	Kramer, H. F. ....Bloomer
Bayfield County	Lebeis, F. J. ....Bloomer
	Martiny, L. P.....Chippewa Falls
Tomkins, A. Pearce..Ashland R. 2	Clark County
Brown County	Zerbel, Paul.....Humbird
Nies, Peter .....Greenleaf, R. 3	
Roeckel, Joseph P. ....Lark	Columbia County
Buffalo County	Cannon, E. A. ....Pardeeville
Joos, Frank B. ....Fountain City	Chipman, W. R. ....Morrisonville
Muehleisen, Gottlieb Tell	Ellickson, A. C. ....Arlington
Spaulding, L. C. ....Mondovi	Lloyd, Evan B.....Cambria
Suhr, A. A. ....Cochrane	
Calumet County	Crawford County
Peterson, H. N. ....New Holstein	Accola, Lawrence .....Steuben

Dane County

Accola, John..Madison, U. W. Farm
 Benson, Ed. E.Mt. Horeb
 Chatterton, R. W.Basco
 Hopkins, B. F.Morrisonville
 Hopkins, J. W.Morrisonville
 Kaltenberg, Anthony...Waunakee
 Mikkelson, CarlDeerfield
 Mitchell, J. T.Cottage Grove
 Renk Bros.Sun Prairie
 Thorstad, N. H.Deerfield
 Toepfer, OttoMadison, R. 7
 Wernich, Wm. H.De Forest

Dodge County

Bussewitz, W. E.Juneau
 Ehrhardt, DanielKnowles
 Goetsch, Albert A.Juneau
 Grebe, F. P.Fox Lake
 Jones, John G. ..Beaver Dam, R. 4
 Howitt, Chas. H.Randolph
 Jones, Owen R., Jr., Beaver Dam
 Jung, J. W.Randolph
 Krueger, H. E.Beaver Dam
 Owens, H. C.Fox Lake
 Schiller, Claude E....Beaver Dam
 Steiner, W. H.Brownsville

Door County

Boucsein, Gust L., Detroit Harbor
 Erickson, Ole C. ..Detroit Harbor

Douglas County

Lindberg, E. J.Itasca

Dunn County

Kent, H. W.Rusk
 Millar, WillMenomonie

Eau Claire County

Donaldson, H. A., Eau Claire, R. 6
 Russel, A. C.Augusta
 Wright, W. C.Eau Claire

Fond du Lac County

Bonzelet, J. P.Eden
 Briggs, L. W.Peebles
 Briggs, J. W.Peebles
 Carpenter, L. A....Fond du Lac
 Hargrave, Robert L.....Ripon
 Hinz, A. F.....Ripon

Hintz, William F..Oakfield, R. 26
 Kuehn, Chas. A.....Brandon
 Mathews, Lee G.....Brandon
 Meekin, H. W.....Fond du Lac
 Stroup, Fred G.....Fond du Lac
 West, R. N.....Ripon
 Whittaker, Horace E., Fond du Lac

Grant County

Barron, R. E.Platteville
 Booth, Guy A.Cuba City
 Searles, Wm. L.Boscobel
 Wiseman, PaulBridgeport

Green County

Biglow, L. F.Brooklyn
 Dettwiler, JohnMonroe
 Marty, MatthiasMonticello
 Smith, H. B.Brooklyn

Iowa County

Gordon, A. L.Mineral Point
 Gordon, C. D.Mineral Point
 Gordon, J. RoyMineral Point
 Jones, Owen Lloyd.....Hillside

Jackson County

Dettinger, Wm. F.....Hixton
 Engleman, JohnHixton

Jefferson County

Anthes, HenryJefferson
 Bell, William C.....
 Oconomowoc, R. 27
 Brueckner, Justus...Ft. Atkinson
 Church, A. P.Whitewater
 Guttenberg, Frank, Jr...Jefferson
 Ward, W. Rodell.....
 Ft. Atkinson, R. 1

Juneau County

Wagner, J. M.....Union Center

Kenosha County

Achen, Wm.Bristol
 Bradley, J. FrankSomers
 Brook, J. W.Salem
 Myrick, Mead O.....Bristol
 Orvis, L. C.Salem
 Roberts, F. W.....Woodworth

Kewaunee County

Katel, W. C.Kewaunee, R 1
 Oestreich, R. C.Kewaunee
 Smithwick, Jas.Kewaunee

La Crosse County

Griswold, H. W.....West Salem
 Jones, E. E.Rockland
 Nuttleman, AlfredWest Salem
 Nuttleman, AdolphWest Salem
 Sandman, W. D.....Holmen

La Fayette County

Bridgman, C. R.....Darlington
 Stewart, J. W....Blanchardville
 Vinger, Milo J.....Argyle

Lincoln County

Lewerenz, Roy B....Tomahawk

Manitowoc County

Clusen, ReinholdManitowoc
 Garey, JamesGrimms
 Klann, AdolphHayton, R. 1
 Roethel, HermanKiel
 Strowig, Wm. A..Cleveland R. 1
 Sullivan, James A.....Grimms
 Wiegand, Otto R.....Cleveland

Marathon County

Baesemann, OttoEdgar

Marinette County

Falarsh, FrankPeshtigo
 Olson, Otto W.....Walsh

Marquette County

Houslet, NealPackwaukee

Milwaukee County

Basse, Wm. H.....
 Milwaukee, St. A. R. 4
 Butler, Ed.No. Milwaukee, R. 11
 Pierner, FredNo. Milwaukee

Monroe County

Ebert, Edmund D.....Tomah
 Ebert, Francis E.....Tomah
 Fox, C. L.Leon
 Freeman, G. A.....Sparta
 Harris, R. E.....Warrens
 Howell, H. P.....Sparta
 Leverich, J. W.....Sparta

Outagamie County

Letts, Edw. F.....Appleton, R. 4
 Merkel, HenryAppleton
 Mueller, Edw. O.....Appleton
 Wussow, Chas. A.....Seymour
 Zahrt, F. H.....Hortonville

Ozaukee County

Clausing, AdolphThiensville
 Kieffer, MikeFredonia
 Kohlwey, OttoGrafton
 Pierner, John W.....Thiensville
 Wulff, FredGrafton

Polk County

Gullickson, Chas. E.....Cushing
 Nelson, Peter C.....Milltown

Portage County

Hanson, N. P..Amherst Jct., R. 2

Racine County

Ghastin, Wm. J.....Union Grove
 Holloway, John W....Racine, R. 1
 Klofanda, ReubenBurlington

Richland County

Wilson, William C...Twin Bluffs
 Post, H. L.Sextonville
 Turgasen, J. H....Richland Center

Rock County

Austin, A. G.....Janesville, R. 6
 Devine, C. B.....Evansville
 Hoague, Chas. C..Janesville, R. 7
 Howe, Louis H.....Brodhead
 Smith, L. E.....Beloit

Rusk County

Beebe, A. G.....Bruce
 Pritchard, John T.....Flambeau

St. Croix County

Brunner, R. W.....Hudson
 Imholt, B. A.....Houlton
 Paulson, P. A.....Hudson

Sauk County

Capener, W. R.....Baraboo
 Clavadatscher, Tobias, Sauk City
 Frederickson, Fred, Spring Green
 Riek, AnthonyPlain
 Toole, W. A.....Baraboo
 Volz, RobertAbleman

Shawano County

Berg, C. J.....Tigerton
 Klodahl, John J.....Wittenberg

Sheboygan County

Dennerlein, Arthur J...Plymouth
 Eastman, F. A...Sheboygan Falls
 Illian, W. L.....Adell, R. 19
 Parrish, J. O.Plymouth
 Wagner, Arthur L.....Haven

Trempealeau County

Hegge, E. A.....Pigeon Falls
 Mattison, ThosBlair
 McCauley, RexOsseo

Vernon County

Cass, Leonard E.....Viroqua
 Seblon, CorneliusWestby

Walworth County

Anderson, Alvin M...Whitewater
 Coburn, OraWhitewater
 Dunbar, Harry D.....Elkhorn
 Meurer, PaulGenoa Jet
 Ranney, E. P. C.....Elkhorn
 Warmington, Prentice
 Honey Creek

Washington County

Gruhle, W. H.....Barton
 Puls, JohnHartford

Waukesha County

Bartlett, Geo. W.....
 Menomonee Falls
 Burton, RoyEagle, R. 35
 Rosenow Bros.....Oconomowoc
 Schafer, Chas. H..Waukesha, R. 7
 Schroeder, F. C.Hartland
 Spaulding, C. E.....Oconomowoc
 Swoboda, F. G.....Dousman
 Van Buren, E. W.....
 Waukesha, R. 2
 Williams, Arthur R...Waukesha
 Williams, D. T., Waukesha, R. 8
 Wright, H. W.....Waukesha

Waupaca County

Feathers, O. C.....Manawa
 Kneip, WilliamWeyauwega
 Larson, LeRoyIola
 Pirner, FredSugar Bush

Waushara County

Clark, J. J.....Berlin R. 1

Winnebago County

Blakely, Albert J.....Neenah
 Blodgett, Gordon R.....Neenah
 Miller, Henry C.....Allenville
 Schaefer, R. J.....Appleton

Wood County

Kieffer, J. C.....Auburndale

NON-RESIDENTS

Illinois

Hitchcock, H. R.....Pecatonica
 Phillips, JesseElizabeth

Iowa

Thompson, Thos., Jr.....Wadena

Michigan

Meyer, A. J.....Howell, R. 7

Growers of Oderbrucker Barley (Wisconsin No. 55).

Adams County	Chippewa County
Johnson, Billie....Strongs Prairie Lee, Royal D.....Arkdale Rodger, Almon .....Endeavor	Bailey, Alfred B.....Jim Falls Christianson, W. O..... Chippewa Falls, R. 6
Ashland County	Finsnes, A. I.....Chippewa Falls Guptill, L. R.....New Auburn Johnson, Albert I.....Bloomer
Johnson, L. M.....Ashland, R. 2	King, Wm. ....Jim Falls Kramer, Henry F.....Bloomer
Barron County	Lebeis, F. J.....Bloomer Martiny, L. P.....Chippewa Falls Siefert, F. W.....Chippewa Falls
Allen, Eugene S.....Cumberland Bartlett, Ray .....Barron Chrislaw, A. M.....Rice Lake Heldstab, C. O.....Rice Lake Hustad, K. E.....Rice Lake Hustad, Milon .....Rice Lake Kamrath, Wm. ....Cameron Matthys, Walter .....Barron Poulter, Chas. J.....Cumberland Rauchenstein, John....Rice Lake Sackett, Clyde .....Cumberland	Upton, Harold F.....Jim Falls
Bayfield County	Clark County
Daly, Richard E.....Washburn	Beach, Glenn H.....Loyal Huckstead, A. A. ....Neillsville Hughes, Jas.....Neillsville, R. 1 Imig, Arthur H....Neillsville, R. 1 Ives, L. W.....Granton Krause, Fred W.....Thorpe Nelson, Carl .....Greenwood Schultz, Walter W.....Neillsville Umlauft, Rudolph ....Dorchester Zerbel, Paul.. ....Humbird
Brown County	Columbia County
Nies, Peter.....Greenleaf, R. 3 Roeckel, Joseph P.....Lark	Anaaker, Bernhard .....Portage Chipman, W. R.....Morrisonville Chrisler, Harley .....Lodi Curtis, Ray .....Poynette Dalton, Ernest E.....Pardeeville Dalton, Roy E.....Pardeeville Flickson, A. C.....Arlington Gloeckler, Theo .....Portage Grove, Albert.....Columbus, R. 6 Grove, Christian .....Columbus Hoffman, Herman .....Portage Jones, R. G.....Columbus Livingston, E. C.....Randolph Lloyd, Evan B. ....Cambria McElroy, W. H.....Pardeeville Owen, Thos. M.....Portage Roberts, A. C....Pardeeville, R. 7 Sharnee, Endre A.....Rio, R. 1 Sharnee, T. A.....Rio, R. 1 Steuber, L. J.....Lodi
Buffalo County	
Arms, Edward ....Fountain City Engel, George H....Fountain City Fetting, Edwin .....Alma Florin, Emil J.....Cochrane R. 2 Florin, Henry.....Cochrane R. 2 Joos, Frank B. ....Fountain City Knospe, Chas. G. Jr..Alma, R. 1 Muehleisen, G. ....Fell Rosenow, H. G. ....Waumandee Rosenow, Wm. F.....Waumandee Rosenow, L. J. ....Waumandee Snauldin, L. C. ....Mondovi Stuber, John H.....Cochrane Suhr, Adolph A.....Cochrane Suhr, Otto A.....Cochrane	
Calumet County	Crawford County
Kircher, H. W. ....Chilton, R. 3 Peik, Arthur .....Chilton Peik, Edmund .....Chilton Peterson, Hy. N.....New Holstein	Accola, Lawrence .....Steuben Davis, Neli .....Soldiers Grove Hjelle, Ole K.....Soldiers Grove Johnson, E. T. ....Soldiers Grove

Johnson, J. E....Ferryville, R. 3
Lawrence, W. J.....DeSoto
Nagle, LeeBridgeport

Dane County

Accola, John, Madison, U. W. Farm
Angvick, Lars.....Cottage Grove
Anthony, D. C.....Oregon
Beck, J. D.....Madison
Bendickson, I. E.....Cambridge
Benson, Ed. E.....Mt. Horeb
Berge, Wm.Cambridge
Bewick, W. W.....Madison
Birkinbine, Frank....Sun Prairie
Boyce, CharlotteDane
Brickson, AbramMcFarland
Brickson, Andrew...Cottage Grove
Brigham, Chas. I....Blue Mounds
Britzke, PaulLondon
Brue, N. H.....De Forest
Charles, Ed. S.....Madison
Chase, J. P.Sun Prairie
Chatterton, R. W.....Basco
Christianson, IrvinDeerfield
Cobb, Homer A.....Sun Prairie
Coldwell, JohnMazomanie
Colladay, W. E.....Stoughton
Daley, E. S.....De Forest
Daley, JuliusDe Forest
Daley, O. S.....De Forest
Daley, S. S.....De Forest
Danielson, K. O.....Mt. Horeb
Davison, R. W.....Sun Prairie
Dineen, Michael....Blue Mounds
Doerfer, Wm.....Madison, R. 6
Dreger, E. L.....Madison
Egre, John S.....Cambridge
Eley, T. B.....Madison, R. D
Erdall, M. N.....Deerfield
Felland, George....Madison, R. 1
Gay, JohnMadison
Gillies, J. H.....Stoughton
Gillette, R. A.....Verona
Goecks, Wm.....Madison, R. 1
Graves, E. H.....Madison
Grinde, L. S.....Morrisonville
Grady, Geo.Oregon
Hanna, O. O.....Mt. Horeb
Henning, WalterMazomanie
Hill, Otto C.....Mt. Horeb
Holmen, O. H.....Belleville
Holscher, A. C....Cottage Grove
Hopkins, B. F.....Morrisonville
Hougen, Halvor O....Stoughton
Hougen, S. O.....Stoughton
Howe, T. R.....Sun Prairie
Kaltnerberg, Anthony ..Wauakee

Kaupunger, Gilman T., .Stoughton
Kendall, Geo. W.....Sun Prairie
Kittlerm, KnutMt. Horeb
Kneeland, PeterWindsor
Knudsen, HenryMt. Horeb
Koltes, Jos. F.....Dane
Larson, Albert.....Madison, R. 1
Larson A. C.Madison
Larson, LewisMadison, R. 1
Lee, OliverKlevenville
Lunde, K. I.....Edgerton
Lythjohan, CarlCottage Grove
Mac Lean, Geo.....Madison, R. 6
Mandt, Lawrence....Sun Prairie
McConnell, Oren M....McFarland
Meilke, F. D.....Windsor
Meilke, J. E.....Basco
Mikkelson, Thos.Deerfield
Mikkelson, CarlDeerfield
Mitchell, Geo.....Cottage Grove
Mitchell, J. T.....Cottage Grove
Moen, HermanCambridge
Naef, JacobRiley
Nellen, JacDeForest
Ohman, AlfredDeerfield
Ohman, S. S.....Deerfield
Ohnstad, K. O....Stoughton, R. 1
Palmer, LeviVerona
Peck, Henry M.....Marshall
Pierstorff, Henry W., Madison R. 6
Pope, Roy W.....Sun Prairie
Raftery, AgnesWindsor
Reindahl, A. K.....Madison
Reiner, Andrew.....Sun Prairie
Renk Bros.....Sun Prairie
Rhiner, AlbertRiley
Rhiner, CasparRiley
Rorge, A. O.....Stoughton
Rorge, A. J.....Stoughton
Royston, Thos.Mazomanie
Ryan, Gerald.....Sun Prairie
Showers, M. W.....Mazomanie
Silver, C. R.....Belleville
Skare, AlbertMcFarland
Smithback, Marvin....Cambridge
Stensly, AntonCottage Grove
Stensly, Ed. P....Cottage Grove
Strommen, Geo. K....Cambridge
Swerig, CarlStoughton
Thorstad, HarlonDeerfield
Thorstad, N. H.....Deerfield
Tjugum, E. E.....Sun Prairie
Toepfer, Otto.....Madison, R. 7
Veium, Tillef.....Stoughton, R. 3
Wernich, Wm. H.....De Forest
Wittenberg, E. F.....Middleton
Wrabetz & Semb....Madison, R. 6
Zabel, EdwardDeerfield, R. 1

Dodge County

Adams, Lester B.Lowell
 Barnes, Amy B.Waupun
 Barstow, J. E.Randolph
 Bohl, Anton.Beaver Dam, R. 1
 Bussewitz, W. E.Juneau
 Craig, Geo. D.Oconomowoc
 Dirks, ArthurWaupun
 Ehrhardt, DanielKnowles
 Goetsch, Albert A.Juneau
 Grebe, Fred P.Fox Lake
 Howitt, Chas. H.Randolph
 Hutchinson, Wm. D.Rubicon
 Johnston, OneyWatertown
 Jones, John G. Beaver Dam, R. 4
 Jones, Owen R., Jr. Beaver Dam
 Jones, Seneca T. Watertown, R. 1
 Jung, J. W.Randolph
 Krueger, Alexander.
 Watertown, R. 2
 Krueger, Henry E.Beaver Dam
 Lehmann, Mrs. A. W., Woodland
 Lehmann, T. A.Watertown
 Luebke, D. W.Watertown, R. 1
 Mahoney, David.Juneau
 Neuberger, WilliamReeseville
 Owens, H. C.Fox Lake
 Randall, S. M.Waupun
 Rockhill, Wm. E.Waupun
 Rex, EdgarBurnett
 Roberts, Wm. E.Randolph
 Rusink, H. G.Waupun
 Schiller, Claude E. Beaver Dam
 Schumann, Hugo.Beaver Dam
 Steiner, W. H.Brownsville
 Ulrich, Erwin C.Horicon
 Voigt, Alvin, Oconomowoc, R. 26

Door County

Antholt, Chas.Brussels
 Boucsein, Gust L. Detroit Harbor
 Bowman, Wallace. Detroit Harbor
 Buschman, HugoForestville
 Delcorps, Louis.Sturgeon Bay
 Erickson, Ole C.Detroit Harbor
 Keogh, HarryForestville
 Larson, EliSawyer
 McLeod, H. S.Sturgeon Bay
 Sorenson, Camillo. Sturgeon Bay
 Sullivan, J. J.Forestville

Douglas County

Lindberg, E. J.Itasca

Dunn County

Chase, A.Knapp
 Knapton, W. E.Downing
 Meacham, C.Downing
 Millar, WillMenomonie
 Snell, Earl D.Downing

Eau Claire County

Allen, C. L.Eau Claire
 Carlson, Axel T.Augusta, R. 4
 Donaldson, H. A. Eau Claire R. 6
 Faast, Ben F.Eau Claire
 Konz, John Sr.Fairchild
 Mayo, John H.Eau Claire
 McDermid, G. A.Eau Claire
 Russell, A. C.Augusta
 Wright, W. C. Eau Claire, R. 4

Florence County

Burgess, A. J.Florence

Fond du Lac County

Adams, A. E.Eden
 Adams, Richard F. Campbellsport
 Beilke, Walter.Fairwater
 Bonzelet, J. P.Eden
 Briggs, L. W.Peebles
 Briggs, J. W.Peebles
 Bristol, Wm. A.Oakfield
 Donovan, Frank.Van Dyne
 Giebel, Karl A. Fond du Lac, R. 7
 Hargrave, Robert O.Ripon
 Hinz, A. F.Ripon
 Hintz, William F. Oakfield, R. 26
 Howland, W. L.Waupun
 Hunter, Hobart R.Fond du Lac
 Jacky, Gilbert G.Malone, R. 39
 Jacky, H. L.Malone, R. 39
 Kastein, Herman.Waupun
 Kuehn, Chas. A.Brandon
 Lawson, W. A.Rosendale
 Mathews, Lee G.Brandon
 Maug, Arthur J.Ripon
 Meekin, H. W.Fond du Lac
 Meier, Edward F.Eden, R. 36
 Messner, Edwin F.Oakfield
 Michels, Henry.Malone
 Mihills, D. R.Fond du Lac
 Mihills, G. N.Fond du Lac
 Miller, A. H.Waupun
 Northrup, Jesse.Waupun
 Patric, William.Waupun
 Peebles, S. S.Fond du Lac R. 8
 Porter, W. L.Fond du Lac

Rieman, Elmer.....Ripon
 Sheldon, Ben F.Brandon
 Stroup, Fred G.....Fond du Lac
 West, R. N.Ripon
 Whittaker, Horace E..Fond du Lac

Forest County

Grandine, Marton D.North Crandon

Grant County

Andrew, Geo., Jr.Livingston
 Barron, R. E.Platteville
 Bennett, Ora F.Glen Haven
 Booth, Guy A.Cuba City
 Booth, Lester G.Cuba City
 Bryant, Clinton A.Hazel Green
 Bryant, R. J.Hazel Green
 Carmody, Daniel.....Mt. Ida
 Carmody, P. J.Mt. Ida
 Cabela, Jos. M.Muscoda
 Dieter, Wm. A.Montfort
 Draves, Henry F., Jr.Montfort
 Farwell, Roy R.Ridgeway
 Frey, E. J.Mt. Hope
 Graham, P. S.Fennimore
 Kaiser, Wm.Louisburg
 Orth, A. F.Muscoda
 Rodda, Matt.Hazel Green
 Runde, Aloysius.....Cuba City
 Runde, August.....Sinsinawa
 Rundell, Dale E.Livingston
 Searles, Wm. L.Boscobel
 Simmons, Will.....Cuba, R. 1
 Stivarius, Geo. A.Fennimore
 Trewartha, Edw. J.Hazel Green
 Wayne, Joseph.....Boscobel
 Wieland, Charles.....Lancaster

Green County

Austin, Elmer E.....Brodhead
 Barmore, T. J.....Monroe
 Bechtolt, A. B.....Browntown
 Bechtolt, J. D.....Browntown
 Biglow, L. F.....Brooklyn
 Blumer, Ezra, Jr.Monroe
 Collentine, ArthurMonroe
 Cornelius, E. C.....Monroe
 Dettwiler, JohnMonroe
 Gapen, C. E.....Monroe
 Grenzow, Jesse H.....Juda
 Iverson, C. M.....Browntown
 Marty, MatthiasMonticello
 Mau, H. G.....Brodhead
 Olson, William ..Browntown, R. 2
 Preston, Wm. N.....Juda

Purinton, C. G.....Monticello
 Strommen, A. A.....Blanchardville
 Taucher Bros.Monroe
 Thompson, Gilbert G.
 Blanchardville
 Thorp, Eugene B.Monroe
 Tochterman, C. Jr.....Monroe
 Tschudy, B. O.....Monroe, R. 5
 Waelti, John.....Monroe, R. 4
 Ward, HaroldBrodhead

Green Lake County

Block, Albert F.....Markesan
 Davies, EliasMarkesan
 Robinson, Earl P.....Markesan

Iowa County

Aavang, Henry O.....Barneveld
 Berryman, Chas. H.....Dodgeville
 Buss, Will G.....Mineral Point
 Chappel, Steve J.....Dodgeville
 Colplin, ClarenceCobb
 Davis, Llewellyn....Mineral Point
 Gordon, A. L.....Mineral Point
 Gordon, C. D.....Mineral Point
 Gordon, J. Roy.....Mineral Point
 Graber, EdwardMineral Point
 Graber, Laurence F..Mineral Point
 Griffith, JamesRidgeway
 Hanson, Carl O.....Hollandale
 Jones, Chas. Lloyd.....Hillside
 Jones, Orren LloydHillside
 Jones, T. O.....Rewey
 Kitchen, Jos. H.....Edmund
 Ley, NicholasDodgeville R. 4
 Paulson, H. E.....Hollandale
 Smedsrud, Melvin C....Hollandale
 Steensland, August.....Hollandale
 Theobald, John S.....Barneveld
 Thomas, Roy E.....Dodgeville

Jackson County

Curran, W. F.....Taylor
 Dettinger, W. F.....Hixton
 Engleman, JohnHixton
 Hecketsweiler, O. J....Alma Center
 Merrill, W. M.....Taylor
 Thompson, Adolph,
 Black River Falls

Jefferson County

Altpeter, Ed.....Ft. Atkinson
 Brueckner, H. C.....Ft. Atkinson
 Brueckner, Justus....Ft. Atkinson
 Christ, AlbertCambridge

Church, A. P.....Whitewater
 Guttenberg, Frank, Jr., ..Jefferson
 Joice, Geo. E.....Waterloo
 Keuler, Aaron F.....Helenville
 Keuler, HarryHelenville
 Klement, Otto C.....Ft. Atkinson
 Leonard, Wm. R.....Jefferson
 Linton, Gilbert A....Ft. Atkinson
 Main, H. A.....Ft. Atkinson
 Mathews, M. D.....Helenville
 McIntyre, Ivan.....Ft. Atkinson
 Norman, Frank.....Helenville
 Parsons, Wm. A....Ft. Atkinson
 Papp, ArthurJefferson, R. 2
 Ward, Charles E.....Ft. Atkinson
 Ward, Harold L.....Ft. Atkinson
 Ward, Robert W.....Ft. Atkinson

Juneau County

Curtis, J. C.....New Lisbon
 Hanzlik, Otto J.....Wonewoc
 Salem, EdwardWonewoc
 Smith, R. M.....Elroy, R. 1
 Wagner, J. M.....Union Center

Kenosha County

Bradley, J. Frank.....Somers
 Brook, J. W.....Salem
 Bullamore, RoyKenosha
 Bullamore, R. G.....Kenosha
 Curtis, Mark W.....Trevor
 Curtis, Wm. V.....Trevor
 Deuter, Walter S.....Kenosha
 Holloway, John W....Union Grove
 Mueller, Math J.....Bristol

% P. J. Thom.

Myrick, M. O.....Bristol
 Orvis, L. C.....Salem
 Paddock, Alvin D.....Salem
 Roberts, F. W.....Woodworth
 Sheen, Clarence J.....Trevor
 Sheen, W. J.....Trevor
 Thom, J. A.....Bristol, R. 30

Kewaunee County

Blahnik, Geo. F.....Algoma
 Boudnik, John.....Kewaunee, R. 7
 Collin, D. W.....Luxemburg
 Hoffman, JacobAlgoma
 Katel, W. C.....Kewaunee R. 1
 Krofta, Rudolph....Kewaunee, R. 2
 Oestreich, L. J.....Kewaunee
 Oestreich, R. C.....Kewaunee
 Smithwick, Jas.Kewaunee

La Crosse County

Bonsack, Theo.West Salem
 Egglar, Victor H..La Crosse, R. 1
 Engebretson, Edwin S..West Salem
 Harr, Ernest B.....Bangor
 Hass, Reinhold A..La Crosse, R. 1
 Hemker, Fritz H.....West Salem
 Jewett, HarryBangor
 Jones, E. E.....Rockland
 Lawrence, F. W.....Bangor
 Linse, CharlesLa Crosse
 Nelson, OsanLa Crosse
 Nuttleman, Alfred L..West Salem
 Nuttleman, Fred.....West Salem
 Sandman, W. D.....Holmen

La Fayette County

Akins, Clyde E.....Warren, Ill.
 Carey, W. H.....Argyle
 Erickson, Clarence, South Wayne
 Jorenby, CarlBlanchardville
 McConnell, F. J.Darlington
 Perry, Will H.....Gratiot
 Rood Bros.So. Wayne
 Sargent, Roy E.....Warren, Ill.
 Stewart, J. W.....Blanchardville
 Usher, EarlSo. Wayne
 Usher, J. M.....So. Wayne
 Vinger, Milo J.....Argyle

Langlade County

Kalouner, EdwardAntigo, R. 5
 Persen, AlfredBryant

Manitowoc County

Axley, WalterCleveland
 Ballestad, LarsManitowoc
 Bauer, Adolph H..Manitowoc, R. 2
 Bruhn, John F....Two Rivers, R. 1
 Berge, Otis I.....Valders
 Clusen, ReinholdManitowoc
 Geraldson, Mervin, Manitowoc, R. 4
 Gigstad, BennethValders
 Gunderson, Clifford, Manitowoc R. 4
 Gustaveson, Chas., Manitowoc, R. 4
 Halverson, Almer,Manitowoc, R. 1
 Heidemann, O. C.Kiel, R. 2
 Hessel, Louis....Manitowoc, R. 6
 Kielsmeier, Rudolph C. .Timothy
 Klann, AdolphHayton, R. 1
 Knutson, Ed. A....Manitowoc, R. 4
 Kolb, Ed.Cleveland, R. 2
 Marken, Otis A.....Valders
 Marken, Richard L.....Valders

Paulsen, J. E. Manitowoc, R. 4
 Rein, Robert Cleveland, R. 1
 Roethel, Herman Kiel
 Schulte, Peter J. Cleveland
 Straka, Edward E. Kellnersville
 Strowig, Wm. A. Cleveland, R. 1
 Sullivan, Jas. A. Grimms
 Tyler, J. G. Valders
 Wiegand, Otto R. Cleveland
 Wigen, Andrew Quarry
 Wilkowske, Hugo Mishicot

Marathon County

Aschbrenner, H. H. Stratford
 Baesemann, Otto Edgar
 Brehm, E. A. Colby
 Griffith, James Spencer
 Heinke, Alvin E. Stratford
 Nieman, Walter Hamburg, R. 1
 Reinhardt, Walter H. Wausau

Marinette County

Falarsh, Frank Peshtigo
 Olson, Otto W. Walsh

Marquette County

Cairns, J. H. Montello
 Gaffney, Ellery Oxford
 Houslet, Neal Packwaukee
 Johnson, Sam Westfield
 Judd, Jasper Endeavor
 Judd, Jesse L. Endeavor
 Landgraff, Henry Endeavor
 McMillen, R. A. Endeavor
 Parrott, Alfred Endeavor

Milwaukee County

Basse, Wm. H.
 Milwaukee, Sta. A., R. 4
 Guenther, Nelson W.
 So. Milwaukee, R. 17
 Hardy, John Wauwatosa
 Jelineck, Benjamin Milwaukee
 935 Feutonia Ave.
 Kurtze, Otto C. West Allis, R. 15
 Meyer, Alfred Oakwood, R. 18
 Pierner, Fred No. Milwaukee
 Pierner, John W. Thiensville
 Warzynakoski, Arthur
 Oakwood, R. 18

Monroe County

Aarness, O. C. Cashton
 Andrew, J. S. Wilton

Ebert, Edmund D. Tomah
 Ebert, Francis E. Tomah
 Finegan, Louis Sparta
 Foth, F. D. Norwalk
 Fox, C. L. Leon
 Freeman, G. A. Sparta
 Grassman, Irwin Kendall
 Hanchett, W. H. Sparta
 Hansen Carl F. Sparta
 Harris, R. E. Warrens
 Heasty, Ralph Sparta
 Hitchcock, Clarence Sparta
 Howell, H. P. Sparta
 Jones, S. R. Leon
 Kirst, Ernest J. Tomah
 McDonald, James P. Sparta
 Peterson, John H. Cashton
 Whitehead, H. W. Leon

Outagamie County

Jamison, Robert Appleton
 Letts, Edward F. Appleton, R. 4
 Merkel, Henry Appleton, R. 3
 Mueller, Edward O. Appleton
 Ryan, Malachi So. Kaukauna
 Schaefer, R. J. Appleton, R. 1
 Schmit, A. W. Appleton
 Schmit, Geo. Greenville, R. 16
 Schmit, John A. Hortonville
 Tubbs, Herbert Seymour
 Wussow, Chas. A. Seymour

Ozaukee County

Ahlers, Walter Grafton
 Blank, George A. Grafton
 Clausing, Adolph Thiensville
 Gould, Merrill Peshtigo
 Meyer, A. H. Grafton
 Pierner, John W. Thiensville
 Port, Mike Port Washington
 Wulff, Fred Grafton
 Wulff, Wm. Grafton

Pepin County

Fleishauer, Chas. K. Arkansaw
 Hicks, Earl L. Pepin, R. 1

Pierce County

Brown, Wm. Spring Valley
 Dunbar, Geo. W., Sr., River Falls
 Dunbar, Harold River Falls
 Hanson, Henry O. Spring Valley
 Heinze, Louis Prescott
 Nelson, Emil River Falls
 Neystrom, Archie Maiden Rock

Otis, FrankMaiden Rock
Scheid, Byron J.....Bay City

Polk County

Christensen, HermanMilltown
Germanson, HerbertLuck
Hedlund, AdolphClayton
Lindberg, Clinton, Dresser Jct., R. 1
Nelson, Peter C.Milltown
Peterson, EniAmery, R. 4
Uhlin, AlbinClayton, R. 1
Uhlin, FrankClayton

Portage County

Arnatt, Grace M.....Stevens Point
Cate, Geo.Stevens Point, R. 1
Gullickson, GustaveNelsonville
Gullickson, Thos O....Nelsonville
Hanson, J. K.....Stevens Point
Hanson, N. P....Amherst Jct. R. 2
Lewis, Lloyd ..Stevens Point, R. 1
Precourt, L. A.....Plover
Smith, C. A.....Amherst
Wagner, Raymond G.
Stevens Point, R. 1
Wrolstad, Alfred M..Amherst Jct.

Price County

Klussendorf, Fred E..Phillips, R. 1
Hoffman, ConradPhillips, R. 1

Racine County

Cook, Geo. L.....Burlington
Gehrand, Arthur A.....Rochester
Grass, FrankRochester
Holloway, Ed. M., Union Grove, R. 8
Klofanda, Reuben....Racine, R. 1
Nau, Ray H.....Franksville
Renak, Edw.Racine, R. 2
Robers, Wm. J., Burlington, R. 20
Rolfson, Clarence E.
Waterford, R. 25
Wilson, Wm. C.Burlington

Richland County

Ghastin, FloydTwin Bluffs
Ghastin, Wm. J.....Twin Bluffs
James, Geo. A....Richland Center
Janecek, CyrilBloom City
Jaquish, J. E.Twin Bluffs
Lord, Karl W.Richland Center
Nourse, GlenSextonville
Post, H. L.....Sextonville
Schmitz, Edw. H.Lone Rock

Schmitz, HubertLone Rock
Turgasen, J. H....Richland Center

Rock County

Austin, AlpheusJanesville
Austin, Alva G.....Janesville, R. 6
Austin, Alvina L.....Evansville
Austin, Clifford P.....Janesville
Austin, George M..Janesville, R. 6
Austin, Wilbur B.....Janesville
Austin, Wilbur D.....Janesville
Babcock, J. G.....Evansville
Barker, E. S.....Janesville
Churchill, Arthur. Janesville, R. 7
Devine, C. B.....Evansville
Dougan, W. J.....Beloit
Ellis, E. J.....Evansville
Fish, Esli.....Janesville, R. 7
Godfrey, Burt K..Janesville, R. 1
Greene, J. I.....Clinton
Hoague, Chas. C....Janesville, R. 7
Jacobs, S. M.....Janesville, R. 3
Latta, F. L.....Clinton Jct.
Marston, AlbertBeloit, R. 30
McCoy, Geo. L....Evansville, R. 20
Nelson, MartinMilton
Porter, J. K. P.....Evansville
Porter, L. W.....Evansville
Smith, L. E.Beloit, R. 30
Snyder, Clyde L.....Forestville
Snyder, Robt. B.....Clinton

Rusk County

Beebe, A. G.....Bruce
Pritchard, John T.....Flambeau

St. Croix County

Bennett, Wm. L....New Richmond
Brunner, R. W.....Hudson
Hecker, PaulNew Richmond
Imholt, B. A.....Houlton
Kruschke, Geo. H..New Richmond
Paulson, P. A.....Hudson
Utgaard, Peter W.....Cyion

Sauk County

Borck, SamNo. Freedom
Clavadatscher, T.....Sauk City
Cobleigh, Rollo S.....Delton
Capener, W. R.....Baraboo
Emery, GeorgeLogansville
Frederickson, Fred..Spring Green
Gade, AdolphReedsburg
Gallagher, J. G.....Reedsburg
Gasser, George W....Spring Green

Graves, D. W.....Baraboo
 Hansch, Albert.....Baraboo
 Hamburg, J. F.....Baraboo
 Harvey, C. B.....Wonewoc
 Hasz, Theodor.....Loganville
 Henrichs, Ernest.....Reedsburg
 Herwig, Richard.....Delton
 Herwig, Theo.....Delton, R. 1
 Hood, D. L.....Spring Green
 Marshall, W. S.....Delton
 Ochsner, Arthur C.....Plain
 Pearson, Clarence...La Valle, R. 4
 Raltzman, A. L.....Reedsburg
 Rich, O. S.....Baraboo
 Rich, W. V.....Baraboo
 Riek, Anthony.....Plain
 Robson, Melvin.....Spring Green
 Rodewald, Walter C.....Baraboo
 Rusch, E. W.....Reedsburg
 Schaefer, Erwin S...Black Hawk
 Schuette, Herman W.....
 Reedsburg, R. 3
 Siggelkow, M. E.....Baraboo
 Spencer, Hardy.....Baraboo
 Stone, Riley.....Reedsburg
 Volz, Robert.....Ableman
 Vonder Ohe, Wm. H....Reedsburg
 Weirich, Martin J.....Baraboo
 Wischoff, Edwin.....Reedsburg

Sawyer County

Thulin, Edwin.....Hayward
 Uhrenholdt, Jens.....Leonard

Shawano County

Berg, Carl.....Tigerton
 Hildemann, E. S.....Belle Plaine
 Klovdahl, John J.....Wittenberg
 Norrborn, C. G.....Eland
 Wedgwood, R. E.....Shawano

Sheboygan County

Blonien, Peter.....Elkhart
 Dennerlein, Arthur J...Plymouth
 Fisher, Louis.....Haven
 Frauenheim, O. R...Random Lake
 Garside, Harry R...Cedar Grove
 Herdrich, S. F.....Adell, R. 19
 Illian, W. L.....Adell, R. 19
 Oosterhuis, Alvin C.....
 Sheboygan Falls
 Parrish, J. O.....Plymouth
 Te Selle, Clarence J.....
 Sheboygan Falls
 Wagner, Arthur L.....Haven

Trempealeau County

Chrysler, Harvey.....Osseo
 Cooke, Carl.....Independence
 Coon, Leslie.....Osseo
 Dean, Robert.....Eleva
 Graul, Edw. J.Independence
 Graul, Geo. W.....Independence
 Hegge, Julius.....Galesville
 Markham, F. C.....Independence
 Mattison, Thos.....Blair
 McCauley, Rex.....Osseo

Vernon County

Aberg, Jacob.....De Soto
 Bean, A. P.....De Soto
 Cade, Jos. M.....Viroqua
 Christensen, Johan...West Prairie
 Kjelland, Christian.....Viroqua
 Lewison, Thomas...Viroqua, R. 5
 McClurg, Walter.....Viroqua
 Neprud, Nels O.....Coon Valley
 Olson, Clarence.....Westby
 Olson, Gilbert C.....Westby
 Sebion, Cornelius.....Westby
 Sebion, Tennis.....Westby
 Sorem, Erick...West Prairie, R. 1
 Stegene, Chris.....Viroqua, R. 5
 Stromstad, P. L.....Coon Valley

Walworth County

Anderson, Alvin M...Whitewater
 Bromley, Fred G.....
 Whitewater, R. 4
 Cassidy, Wm. S.Whitewater
 Coates, Clinton J.....Elkhorn
 Anderson, Alvin M...Whitewater
 Coburn, Ora.....Whitewater
 Downey, U. J.....Whitewater
 Dunbar, Harry D.....Elkhorn
 Harris, Jesse S.....Delavan
 Lean, R. J., & Son.....Elkhorn
 Ledger, David.....Lake Geneva
 Lewis, E. H.....Whitewater
 Mack, Warren L.....Whitewater
 Marck, Fred R.....Honey Creek
 Meurer, Paul.....Genoa Jct.
 Mitchell, Edw. H.....Delavan
 Peters, Ezra.....Sharon
 Peterson, Peter.....Walworth
 Piper, Harry.....Sharon
 Ranney, P. C.....Elkhorn
 Robinson, A. S.....Lake Geneva
 Thacher, Ed. F.....Zenda
 Thacher, Louis E.....Zenda
 Thompson, A. N.....Delavan
 Thompson, Alfred.....Delavan

Washington County

Bast, Paul J. Rockfield
 Berg, Jacob So. Germantown
 Dhein, Henry Rockfield
 Groth, C. A. Cedarburg
 Hayes, Thos., Jr. Richfield
 Klumb, Albert Rockfield
 Klumb, Hugo G. Kewaskum
 Klumb, Oscar Rockfield
 Kressin, Gustav R. Cedarburg
 Milkee, George West Bend
 Murphy, Lawrence Hartford
 O'Connell, James Hartford
 Puls, John Hartford
 Schroeder, H. F. West Bend
 Schottler, Conrad J.
 So. Germantown
 Schultz, Nelson F., West Bend R. 3
 Stuesser, Eugene Richfield
 Walddt, Hugo Jackson
 Ziemer, Joseph Jackson
 Ziemer, Paul Jackson

Waukesha County

Adams, Jay Waukesha, R. 5
 Adams, M. J. Waukesha
 Baird, Wm. J. Waukesha
 Blackwell, Leslie C. Waukesha
 Cook, Irving O. Nashotah, R. 23
 Dance, James Brookfield
 Dibble, Roy A. Menomonee Falls
 Fuller, Horace North Lake
 Graser, Adam H. Waukesha
 Greene Howard Genesee Depot
 Haylett, Henry O. Waukesha, R. 9
 Heling, Paul Menomonee Falls
 Jones, Albert Dousman
 Kaul, E. H. Waukesha, R. 7
 Kultz, Harvey A. Waukesha
 Longley, H. N. Dousman
 Montague, C. R. No. Prairie
 Nicolaus, Chas. A. Waukesha
 Roberts, Jack. Waukesha
 Rosenow Bros. Oconomowoc
 Rust, Shirley H. Mukwonago
 Schafer, Chas. H. Waukesha, R. 7
 Schroeder, F. C. Hartland
 Shannon, M. J. Oconomowoc
 Spaulding, C. F. Oconomowoc
 Stewart, Joe H. Wales
 Swan, L. W. Mukwonago
 Swoboda, F. G. Dousman
 Tempero, Roy J., Menomonee Falls
 Weir, W. W. Mukwonago
 Wetzel, Alvin Brookfield, R. 12
 Williams, Arthur R. Waukesha
 Williams, D. T. Waukesha, R. 8

Wright, H. W. Waukesha
 Zillmer, Wm. C. Brookfield

Waupaca County

Ashnum, C. S. Waupaca, R. 2
 Bestul, Martin J. Scandinavia
 Bestul, Otto O. Scandinavia
 Bigford, W. W. Manawa
 Feathers, O. C. Manawa
 Gorges, H. F. New London
 Harrington, Myron. Waupaca
 Heinrich, Otto W. New London
 Klemm, Louis J. Welcome
 Kneip, William. Weyauwega
 Larson, LeRoy. Iola
 Lemke, Albert. Clintonville
 Nace, Franklin. Iola
 Pinkerton, Altai, J. Waupaca
 Pirner, Fred. Sugar Bush
 Raisler, Theodore. Welcome
 Rosholt, Jacob A. Scandinavia R. 1
 Spencer, Earl. Waupaca, R. 3
 Wied, Edward. Waupaca

Waushara County

Anderson, Thos. E. Wild Rose
 Bartleson, Harvey. Pine River, R. 1
 Carey, Henry. Redgranite
 Clark, J. J. Berlin, R. 1
 Eagan, J. J. Wautoma, R. 6
 Harris, A. M. Plainfield
 Knuteson, Ernest L. Wautoma

Winnebago County

Blakely, Albert J. Neenah
 Blodgett, Gordon R. Neenah
 Bussey, W. P. Omro, R. 24
 Cross, A. J. Allenville
 Hoeft, Chas. A. Oshkosh,
 Linwood Farm
 Jackson, H. H. Oshkosh,
 104 Main St.
 Michels, Math. Picketts
 Miller, Henry C. Allenville
 Palfrey, John. Omro
 Rasmussen, Fred. Neenah, R. 11
 Schaefer, R. J. Appleton
 Smith, Seymour L. Oshkosh
 Tanner, A. V. Omro, R. 24
 Treleven, Guy T. Omro
 Waite, Sumner R. Oshkosh, R. 7
 Wood, Calvin D. Oshkosh, R. 4

Wood County

Christensen, Peter. Marshfield, R. 3
 Hanifin, Leo. Grand Rapids

Kieffer, J. C.Auburndale
Kronholm, V. E.Grand Rapids

NON-RESIDENTS

Hauck, Nathan.....Alton, Calif.
McLeon, Donald..Denver, Colorado
704 Equitable Bldg.
Haas, Geo. H.Meriden, Conn.
Charles, Fred.....Woodstock, Ill.
Coffin, Russell H. ..Rockford, R. 7,
Ill.
Fellows, Samuel M. ..Rockford, Ill.
George, W. R.Sterling, Ill.
Hitchcock, H. R. ...Pecatonica, Ill.
Halley, Guy R.Rockford, Ill.
Hoxsey, Edw. H.Serena, Ill.
Northrop, H. R.Chicago, Ill.
667 Winthrop Av.
Richardson, G. J. ...Spring Grove,
Ill.

Smith, Russell....Crystal Lake, Ill.
White, Arthur.....Rockford, Ill.
503 N. Church St.
Anderson, Theo. ...Waterville, Iowa
Berns, Xavier....Guttenberg, R. 1,
Iowa
Brooks, Homer H. .Hopkinton, Iowa
Hawkins, A. B.Farley, Iowa
Mathis, Adolph J. ..Lansing, Iowa
Thompson, Thor, Jr.Wadena,
Iowa
Fernald, Paul E. ...West Oldtown,
Maine
Eskil, Odin..Iron Mountain, Mich.
Meyer, A. J. ...Howell, R. 7, Mich.
Meyer, Wm.Ellsworth, Minn.
Smith, J. G. ...Farmington, Minn.
Hayes, Edwin H. ..Buffalo, N. York
593 W. Ferry St.
Doerschuk, John J. ...Shanesville,
Ohio

Growers of Manshury Barley (Wisconsin No. 62).

Buffalo County	Grant County
Muehleisen, Gottlieb .....Tell Spaulding, L. C. ....Mondovi	Wiseman, Paul.....Bridgeport
Columbia County	Green County
Lloyd, Evan B. ....Cambria	Marty, Matthias....Monticello, R. 1
Dane County	Kenosha County
Koltes, Leo. J. ....Dane Mitchell, J. T. ....Cottage Grove Palmer, Levi.....Verona	Orvis, L. C. ....Salem
Dodge County	Kewaunee County
Bohl, Anton....Beaver Dam, R. 1 Krueger, Henry E. ....Beaver Dam	Oestreich, R. C. ....Kewaunee
Eau Claire County	La Crosse County
Allen, Chas. L. ....Eau Claire Donaldson, H. A. ....Eau Claire Konz, John, Sr. ....Fairchild	Sandman, W. D. ....Holmen
Fond du Lac County	Manitowoc County
Hinz, A. F. ....Ripon West, R. N. ....Ripon	Garey, James.....Grimms
	Marinette County
	Falarsh, Frank.....Peshtigo

<p>Racine County</p> <p>Spartz, N. A. ....Union Grove</p>	<p>Rock County</p> <p>Austin, Alpheus.....Janesville Austin, W. B. ....Janesville</p>
<p>Richland County</p> <p>Ghastin, Wm. J. ....Twin Bluffs</p>	<p>Sauk County</p> <p>Capener, Walter R. ....Baraboo Ochsner, Arthur C. ....Plain</p>

Growers of Ito San Soy Beans.

<p>Adams County</p> <p>Lee, Royal D. ....Arkdale</p>	<p>Jones, John G. ....Beaver Dam Jones, Owen R. ....Beaver Dam Neuberger, Wm. T. ....Reeseville Schumann, Hugo.....Beaver Dam</p>
<p>Buffalo County</p> <p>Bilderbach, Wm. ....Mondovi Muehleisen, G. ....Tell</p>	<p>Door County</p> <p>Erickson, Ole C. ....Detroit Harbor</p>
<p>Calumet County</p> <p>Peik, Arthur.....Chilton</p>	<p>Eau Claire County</p> <p>Allen, Chas. L. ....Eau Claire</p>
<p>Chippewa County</p> <p>King, Wm. ....Jim Falls Upton, H. F. ....Jim Falls</p>	<p>Fond du Lac County</p> <p>Hendrichs, J. H. ....Campbellsport Meekin, H. W. ....Fond du Lac Whittaker, Horace E. .Fond du Lac</p>
<p>Columbia County</p> <p>Lloyd, Evan B. ....Cambria Owen, Thos. M. ....Portage</p>	<p>Grant County</p> <p>Carmody, P. J. ....Mt. Ida Runde, Aloysius ....Cuba City Runde, Martin C. ....Cuba City</p>
<p>Crawford County</p> <p>Hjelle, Ole K. ....Soldiers Grove Stevenson, Carl.....Soldiers Grove</p>	<p>Green County</p> <p>Dettwiler, John.....Monroe Tschudy, B. O. ....Monroe, R. 5 Ward, Harold.....Brodhead</p>
<p>Dane County</p> <p>Anthony, D. C. ....Oregon Bewick, Wm. M. ....Sun Prairie Birrenkott, M. J. ....Klevenville Brigham, Chas. I. ...Blue Mounds Davidson, W. L. ....Verona Mitchell, J. T. ....Cottage Grove Schroeder, Robert....Morrisonville Wernich, Wm. H. ....DeForest</p>	<p>Iowa County</p> <p>Caldwell, John.....Mazomanie Farwell, Roy R. ....Ridgeway Fitzsimmons, Ira A. .Mineral Point</p>
<p>Dodge County</p> <p>Bohl, Anton.....Beaver Dam Buzzewitz, Raymond...Reeseville Grebe, Fred P. ....Fox Lake</p>	<p>Jefferson County</p> <p>Brown, A. A. ....Waterloo</p>
	<p>Juneau County</p> <p>Hall, W. H. ....Wonewoc</p>

Kenosha County
Bradley, J. Frank.....Somers

Kewaunee County
Collin, D. W.Luxemburg

La Crosse County
Bonsack, Theo.West Salem
Van Loon, John.....La Crosse

La Fayette County
Akins, Clyde E.Warren, Ill.
Sargent, Roy E.Warren, Ill.
Usher, Earl.....So. Wayne

Langlade County
Stewart, Blaine G.Antigo

Manitowoc County
Bauer, Adolph H. ..Manitowoc, R. 2
Sullivan, Jas. A.Grimms

Marquette County
Cairns, J. H.Montello
McDowell, D. P.....Packwaukee

Milwaukee County
Guenther, Nelson W.
So. Milwaukee

Monroe County
Lee, L.Leon
Mistele, Wm.Kendall

Outagamie County
Jamison, Clarence...Appleton, R. 2
Jamison, Robert....Appleton, R. 2
Jamison, W. G.Appleton, R. 2
Koss, Otto W.Medina
Mills, Roscoe C.Appleton, R. 2
Schmit, Albert.....Appleton
Schmit, A. W.Appleton
Schmit, Geo.Greenville
Schmit, Wm. F.Appleton

Portage County
Hicks, S. E.Almond
Lewis, Lloyd...Stevens Point, R. 1
Wagner, Raymond G.
Stevens Point, R. 1

Richland County
Ghastin, Wm. J.Twin Bluffs
Nourse, Glen.....Sextonville
Post, H. L.Sextonville
Welsh, S. L.Tavera

Rock County
Hemingway, Geo. L.Hanover
Peik, Edmund.....Edgerton
Porter, J. K. P.Evansville

St. Croix County
Alberts, Will.....New Richmond
Kruschke, Geo. H. ..New Richmond

Sauk County
Clavadatscher, T.Sauk City
Gallagher, J. F.Reedsburg
Herwig, Richard.....Delton
Herwig, Theo.Delton, R. 1
Jens, Otto A.Sauk City
Ochsner, A. C.Plain
Riek, Anthony.....Plain
Rusch, E. W.Reedsburg

Sheboygan County
Dennerlein, A. J.Plymouth
Frauenheim, O. R. ..Random Lake
Illian, Wm. L.Adell, R. 19
Leonard, M. J.Plymouth
Ogle, James.....Waldo
Schaefer, Henry G.Plymouth

Vernon County
Nepруд, Nels.....Coon Valley
Staley, John N.....Hillsboro

Walworth County
Lean, R. J. & Son.....Elkhorn
Peterson, E. C.Whitewater

Waukesha County
Dibble, Roy A. ..Menomonee Falls,
R. 17
Heling, Wm. C. ..Menomonee Falls
Kaul, E. H.Waukesha, R. 7
Kuhtz, Harvey A.Waukesha
Rosenow Bros.Oconomowoc
Tempero, Roy J. ..Menomonee Falls

<p style="text-align: center;">Waupaca County</p> <p>Ashmun, C. S. Waupaca Harrington, Myron H. Waupaca Larson, LeRoy.....Iola Pinkerton, Altai J. Waupaca Spencer, E. H. Waupaca Wied, Edward..... Waupaca</p>	<p style="text-align: center;">Wausara County</p> <p>Winge, Wm. Wild Rose</p> <p style="text-align: center;">Winnebago County</p> <p>Bussey, W. P. Omro, R. 24 Cross, A. J. Allenville Michels, Math..... Pickett Miller, Henry C. Allenville Palfrey, John..... Omro</p>
---	---

Growers of Early Black Soy Beans.

<p style="text-align: center;">Dunn County</p> <p>Kent, J. S. Rusk</p> <p style="text-align: center;">Manitowoc County</p> <p>Sullivan, Jas. A. Grimms</p> <p style="text-align: center;">Outagamie County</p> <p>Schmit, John A. Hortonville Wussow, Chas. A. Seymour</p>	<p style="text-align: center;">Pepin County</p> <p>Hicks, Earl L. Pepin, R. 1</p> <p style="text-align: center;">St. Croix County</p> <p>Bennett, Wm. L. .. New Richmond</p> <p style="text-align: center;">Sheboygan County</p> <p>Frauenheim, O. R. .. Random Lake</p>
--	--

Growers of Black Soy Beans.

<p style="text-align: center;">Adams County</p> <p>Walker, Ray C. Plainville</p> <p style="text-align: center;">Columbia County</p> <p>Dalton, Ernest E. Pardeeville Dalton, Roy E. Pardeeville</p> <p style="text-align: center;">Dodge County</p> <p>Bohl, Joseph N. Beaver Dam Howitt, Chas. H. Randolph Jones, John G. ... Beaver Dam, R. 4 Jones, Owen R., Jr. .. Beaver Dam Kreuger, Henry E. Beaver Dam Schiller, Claude E. Beaver Dam</p> <p style="text-align: center;">Iowa County</p> <p>Jones, Orren Lloyd..... Hillside</p>	<p style="text-align: center;">Manitowoc County</p> <p>Heidemann, O. C. Kiel, R. 2</p> <p style="text-align: center;">Outagamie County</p> <p>Mueller, Edw. O. Appleton</p> <p style="text-align: center;">Richland County</p> <p>Ghastin, Wm. J. Twin Bluffs</p> <p style="text-align: center;">Sauk County</p> <p>Ochsner, Arthur C. Plain</p> <p style="text-align: center;">Sheboygan County</p> <p>Garside, Harry R. Cedar Grove</p> <p style="text-align: center;">Winnebago County</p> <p>Schaefer, R. J. Appleton</p>
---	---

Growers of Medium Early Green Soy Beans.

Dodge County	Outagamie County
Ehrhardt, Daniel.....Knowles	Wussow, Chas. A. ....Seymour
Grant County	Waukesha County
Runde, August.....Sinsinawa	Swoboda, F. G. ....Dousman

Growers of Yellow Soy Beans.

Dodge County	
Howitt, Chas. H. ....Randolph	
Kreuger, Henry E. ...Beaver Dam	

Growers of Brown Soy Beans.

Fond du Lac County	Walworth County
Meekin, H. W. ....Fond du Lac	Peterson, E. C. ....Whitewater
Monroe County	
Whitehead, H. W. ....Leon	

Growers of Silver King Corn (Wisconsin No. 7).

Adams County	Buffalo County
Lee, Royal D. ....Arkdale	Arms, Edward.....Fountain City
Markham, F. C. ....Independence	Bilderbach, W. T. ....Mondovi
Rodger, Ray.....Endeavor	Engel, Geo. H. ....Fountain City
Walker, Ray C. ....Plainville	Joos, Frank B. ....Fountain City
Barron County	Suhr, A. A. ....Cochrane
Bartlett, Ray.....Barron	Whelan, John.....Mondovi
Christlaw, A. M.....Rice Lake	Calumet County
Bayfield County	Kircher, H. W. ....Chilton, R. 3
Kinstler, Clarence L. ...Washburn	Peik, Arthur.....Chilton
Brown County	Peik, Edmund.....Chilton
Nies, Peter .....Greenleaf, R. 3	Peterson, Hy. N. ....New Holstein
	Chippewa County
	Bekken, Oscar.....Bloomer
	Martiny, L. P. ....Chippewa Falls

Clark County	
Beach, Glenn H.	Loyal
Columbia County	
Cannon, E. A.	Pardeeville
Chipman, W. R.	Morrisonville
Dalton, Ernest E.	Pardeeville
Dalton, Roy E.	Pardeeville
Ellickson, A. C.	Arlington
Emery, Geo. Q.	Poynette
Gloeckler, Theo.	Portage
Grove, Christian	Columbus
Grover, Albert	Columbus, R. 6
Jones, John R.	Clumbus
Lloyd, Evan B.	Cambria
Sharpee, Carl.	Columbus
Sharpee, Endre A.	Rio, R. 1
Sharpee, J. A.	Rio, R. 1
Steuber, L. J.	Lodi
Crawford County	
Accola, Lawrence.	Steuben
Bannen, R. E.	Boscobel
Hjelle, Ole K.	Soldiers Grove
Johnson, J. E.	Ferryville
Stevenson, Carl.	Soldiers Grove
Dane County	
Accola, John, Madison, U. W. Farm	
Angvick, Lars.	Cottage Grove
Anthony, David C.	Oregon
Aslakson, Alfred	Mt. Horeb, R. 4
Bendickson, I. E.	Cambridge
Bewick, Wm. W.	Madison
Birkinbine, Frank P.	Sun Prairie
Bollig, F. A.	Black Earth
Boyce, Charlotte.	Dane
Brigham, Chas. I.	Blue Mounds
Brue, N. H.	De Forest
Chamberlain, Geo. C.	Windsor
Charles, E. S.	Lake Geneva
Chase, J. P.	Sun Prairie
Chatteron, Ray W.	Basco
Christianson, Andrew.	Deerfield
Christianson, Irvin.	Deerfield
Clayton, A. W.	So. Madison
Coldwell, John.	Mazomanie
Colloday, W. E.	Stoughton
Davidson, Wm. L.	Verona
Davison, R. W.	Sun Prairie
Donahue, M. J.	Madison, R. F. D.
Dreger, Emil.	Madison, R. 6
Elvehjem, O. J.	McFarland
Elver, E. C.	McFarland
Ford, J. F.	Mazomanie
Gay, John.	Madison
Gillies, J. H.	Stoughton
Gillette, R. A.	Verona
Graves, E. H.	Madison
Heineck, W. E.	Madison
Hill, Otto C.	Mt. Horeb
Hogan, Dominic.	Waunakee
Holscher, A. C.	Cottage Grove
Holzhter, Walter.	Marshall
Hopkins, J. W.	Morrisonville
Howe, T. R.	Sun Prairie
Jones, E. F.	Sun Prairie
Kalscheur, Lawrence.	Klevenville
Kaltenberg, Anthony.	Waunakee
Keenan, W. M., Jr.	McFarland
Kendell, Geo. W.	Sun Prairie
Koltes, Leo. J.	Dane
Koltes, Jos. F.	Dane
Lee, N. A.	Deerfield
Lee, Oliver.	Klevenville
Lee, Severt A.	Deerfield
Lunde, Gunder.	Stoughton
Lyman, C. A.	Sun Prairie
Mandt, Lawrence.	Sun Prairie
Mickelson, Thos.	Deerfield
Mielke, J. O.	Basco
Mikkelson, Carl.	Deerfield
Mitchell, Geo.	Cottage Grove
Mitchell, J. T.	Cottage Grove
Moore, H. G.	McFarland
Morgan, H. H.	Madison
Morris, Geo. C.	Madison
Nordlie, Alfred.	Deerfield
Nordlie, C. K.	Rockdale
Ohman, Alfred.	Deerfield
Ohman, S. S.	Deerfield
Patterson, Harley.	Cottage Grove
Pope, Roy W.	Sun Prairie
Radermacher, John.	Middleton
Rafferty, Agnes.	Windsor
Reindahl, A. K.	Madison
Rhiner, Albert.	Riley
Royston, Thos.	Mazomanie
Ruhrmann, B. J.	Cross Plains
Ryan, Gerald.	Sun Prairie
Schroeder, Robert.	Morrisonville
Sharpee, P. A.	Morrisonville
Showers, Milton W.	Mazomanie
Simonson, S. K.	Deerfield
Skare, Albert.	McFarland
Smithback, Marvin.	Cambridge
Stensly, Anton.	Cottage Grove
Stensly, Ed. P.	Cottage Grove
Swalem, P. O.	De Forest
Thielke, Emil.	Madison, R. 6
Thorstad, Harlon.	Deerfield
Thorstad, N. H.	Deerfield
Toepfer, Otto.	Madison, R. 7
White, F. G.	Oregon

Willmarth, E. E.Sun Prairie
 Wratbetz & Semb.....Madison, R. 6
 Zabel, Edward.....Deerfield, R. 1

Dodge County

Adams, Lester B.Lowell
 Barstow, Jas. E. ...Randolph, R. 1
 Bohl, Anton, Jr. .Beaver Dam, R. 1
 Bohl, Jos. N.Beaver Dam
 Brooks, Ed. J.Watertown
 Bussewitz, Raymond....Reeseville
 Bussewitz, W. E.Juneau
 Goetsch, Albert A.Juneau
 Grebe, Fred P.Fox Lake
 Henke, Louis.....Lowell
 Joice, Georg.....Waterloo
 Johnston, Oney.....Watertown
 Jones, John G. ...Beaver Dam, R. 4
 Jones, Owen R., Jr. .Beaver Dam
 Jones, Seneca T. .Watertown, R. 1
 Klatt, ErnestBeaver Dam
 Krueger, H. E.Beaver Dam
 Kuhlman, A. H.Lowell
 Lehmann, Theo.Watertown
 Lindemer, Geo. H. ...Juneau, R. 2
 Mahoney, David.....Juneau
 Miller, A. H.Waupun, R. 24
 Neuberger, Wm. T.Reeseville
 Owens, H. C.Fox Lake
 Randall, S. M.Waupun
 Roberts, Wm. E. ...Randolph, R. 3
 Schiller, Claude E.....Beaver Dam
 Schumann, HugoBeaver Dam
 Sette O. E.Juneau
 Ulrich, Erwin C.....Horicon
 Voight, AlvinOconomowoc

Door County

Bowman, Wallace ..Detroit Harbor
 Hocks, WalterSturgeon Bay
 Mc Leod, H. S.Sturgeon Bay

Dunn County

Meacham, C.Downing

Eau Claire County

Allen, Chas. L.Eau Claire
 Carlson, Axel T. ...Augusta, R. 4
 Faast, Ben F.Eau Claire
 Konz, John, Sr.Fairchild
 Oliver, C. S.Eau Claire
 Wright, W. C.Eau Claire, R. 4
 Wyman, A. E.Eau Claire

Fond du Lac County

Adams, Richard F. .Campbellsport
 Adkins, M. V.Ripon
 Briggs, E. T.Fond du Lac
 Briggs, L. W.Peebles
 Briggs, J. W.Peebles
 Donovan, FrankVan Dyne
 Fisher, W. J.Fond du Lac, R. 7
 Hendricks, J. H.....Campbellsport
 Hintz, Geo. E.Oakfield, R. 26
 Hintz, Wm.Oakfield, R. 26
 Hinz, A. F.Ripon
 Halterman, R. K. Fond du Lac, R. 5
 Hunter, Hobert R. Fond du Lac, R. 5
 Kastein, HermanWaupun
 Kitchen, J. H.Eldorado
 Koenigs, PhillipFond du Lac
 Lawson, W. A.Rosendale
 Maug, Arthur J.Ripon
 Mc Cormick, Fred W. Fond du Lac
 Meekin, H. W.Fond du Lac
 Meier, Edward F.Eden, R. 36
 Michels, HenryMalone
 Oltery, HenryFond du Lac
 Peebles, E. C.Peebles
 Peebles, C. E.Peebles
 Rather, Armand ...Peebles, R. 37
 Rather, W. A.Peebles, R. 37
 Rieman, ElmerRipon
 Root, Alvin W.Fond du Lac
 Root, Frank W.Fond du Lac
 Smith, Samuel A.Oakfield
 Stauchfield, S. C.Fond du Lac
 Stroup, Fred G.Fond du Lac
 West, R. N.Ripon
 Whittaker, Horace E. Fond du Lac

Grant County

Barron, R. E.Platteville
 Bennett, Ora F.Glen Haven
 Booth, Guy A.Cuba City
 Bryant, Clinton A. ...Hazel Green
 Carmody, DanielMt. Ida
 Childs, S. S.Boscobel, R. 6
 Dieter, BertLivingston
 Dieter, Wm. A.Montfort
 Di Vall, W. F.Montfort
 Draves, Henry F., Jr. ...Montfort
 Farwell, Roy R.Ridgeway
 Graham, P. S.Fennimore
 Kaiser, Wm.Louisburg
 Millman, D. R.Platteville
 Rodda, MattHazel Green
 Runde, AugustSinsinawa
 Runde, Martin C.Cuba City
 Searles, Wm. L.Boscobel
 Simmons, WillCuba, R. 1

Stivarius, Geo. A.Fennimore
 Trewartha, Edw. J....Hazel Green
 Wayne, JosephBoscobel
 Wieland, CharlesLancaster
 Wiseman, PaulBridgeport

Green County

Bechtolt, A. B.Browntown
 Bechtolt, J. D.Browntown
 Collintine, ArthurMonroe
 Dettwiler, JohnMonroe
 Gopen, C. E.Monroe
 Iverson, C. M.Browntown
 Kundert, Wm.Monroe
 Marty, MathiasMonticello
 Mau, H. G.Brodhead
 Murdock, C. R.Brodhead
 Murdock, John C.Brodhead
 Olson, Wm.Browntown, R. 2
 Preston, W. N.Juda
 Roderick, Lee M.Juda
 Smiley, Jas. B.Albany
 Stauffacher, A. J.Monroe
 Strommen, A. A. ..Blanchardville
 Thompson, G. G. ..Blanchardville
 Tochtermann, C., Jr.....Monroe
 Tschudy, B. O.Monroe, R. 5
 Waelti, JohnMonroe, R. 4
 Ward, HaroldBrodhead
 Wood, JohnAlbany

Green Lake County

Block, Albert F.Markesan
 Davies, EliasMarkesan
 Page, G. F.Berlin
 Vine, Callice H.Marquette

Iowa County

Aavang, Henry O.....Barneveld
 Berryman, Chas. H....Dodgeville
 Buss, Will G.Mineral Point, R.
 Coldwell, JohnMazomanie
 Dolplin, ClarenceCobb
 Farwell, R. R.Ridgeway
 Fitzsimmons, Ira A. .Mineral Point
 Gordon, A. L.Mineral Point
 Gordon, C. D.Mineral Point
 Gordon, J. RoyMineral Point
 Graber, EdwardMineral Point
 Jones, Chas. LloydHillside
 Jones, Orren LloydHillside
 Kitchen, Jos. H.Edmund
 Ley, NicholasDodgeville, R. 4
 Paulson, H. E.....Hollandale
 Thomas, Roy E.Dodgeville

Jackson County

Curran, W. F.Taylor
 Engleman, JohnHixton
 Sims, Orley F.Melrose
 Thompson, Adolph Blk. River Falls

Jefferson County

Anthes, HenryJefferson
 Becker, Harry J.Ft. Atkinson
 Bell, Wm. E. ..Oconomowoc, R. 27
 Brueckner, Justus ...Ft. Atkinson
 Church, A. P.Whitewater
 Guttenberg, Frank, Jr. ...Jefferson
 Joice, Geo. E.Waterloo
 Klement, Otto C.Ft. Atkinson
 Lehmann, Theo. ..Watertown, R. 1
 Leonard, Wm. R.Ft. Atkinson
 Main, H. A.Ft. Atkinson
 McIntyre Bros.Ft. Atkinson
 Nouman, FrankHelenville
 Parsons, Wm. A.Ft. Atkinson
 Popp, ArthurJefferson, R. 2
 Ward, Charles E.Ft. Atkinson
 Ward, Harold L.Ft. Atkinson
 Ward, Robt. W. .Ft. Atkinson, R. 1

Juneau County

Curtis, J. C.New Lisbon
 Hall, W. H.Wonewoc
 Hansen, HarryCamp Douglas
 Mead, R. E.New Lisbon
 Moore, Henry G.Mauston
 Ritland, CarlElroy
 Salem, EdwardWonewoc
 Wagner, J. M.Union Center

Kenosha County

Bradley, J. FrankSomers
 Myrick, Mead O.Bristol
 Northway, M. J.Kenosha
 Orvis, L. C.Salem
 Paddock, AlvinSalem
 Sheen, W. J.Trevor
 Thiers, L. M.Kenosha
 Thom, J. A.Bristol

Kewaunee County

Collin, D. W.Luxemburg
 Defnet, J. J.Casco, R. 2
 Hoffman, JacobAlgoma

La Crosse County

Bonsack, F. M.La Crosse
 Bonsack, Tho.West Salem
 Eggler, Victor H. ..La Crosse R. 1

Griswold, H. W. West Salem
 Harr, Ernest B. Bangor
 Herold, Rudolph Stoddard
 Jewett, Harry Bangor
 Jones, E. E. Rockland
 Kammlade, Stephen G. Bangor
 Lawrence, F. W. Bangor
 Mueller, Walter E. La Crosse
 Mulder, B. W. Midway
 Nelson, Osan La Crosse
 Nuttleman, Adolph .. West Salem
 Nuttleman, Alfred L. .. West Salem
 Sandman, W. D. Holmen
 Van Loon, John La Crosse

La Fayette Co.

Bridgman, C. R. Darlington
 Jorenby, Carl Blanchardville
 Rood Bros. South Wayne
 Ruskell, L. E. Belmont
 Usher, J. M. South Wayne
 Vinger, Milo J. Argyle

Manitowoc County

Behm, Walter Manitowoc
 Berg, Anton Valders
 Berge, Otis I. Valders
 Garey, James Grimms
 Heidemann, O. C. Kiel, R. 2
 Kielsmeier, R. C. Timothy
 Klann, Adolph Hayton, R. 1
 Paulsen, J. E. Manitowoc, R. 4
 Pederson, Cornelius Cato
 Pritzl, John Cato
 Roethel, Herman Kiel
 Tyler, James Valders
 Wilkowske, Hugo Mishicot

Marathon County

Aschbrenner, H. H. Stratford

Marinette County

Gould, Guy Peshtigo
 Gould, Merrill Peshtigo

Marquette County

Houslet, Neal Packwaukee
 Judd, Jesse L. Endeavor
 Mc Dowell, D. P. Packwaukee
 Mc Millen, C. A. Endeavor, R. 1
 Parrott, Alfred Endeavor

Milwaukee County

Basse, Wm. H. West Allis, R. 5
 Butler, Ed. North Milwaukee R. 11
 Diderrick, N. A.
 No. Milwaukee, R. 10
 Fuller, S. L. Milwaukee, 126 26th St.
 Gridley, Ben Wauwatosa
 Guenther, Nelson W. So. Milwaukee
 Jelinek, Benj.
 Milwaukee, 935 Feutonia Ave.
 Kroeger, B. C.
 Milwaukee, 403 1st. Ave.
 Kurtze, Otto C. .. West Allis, R. 15
 Mahr, Henry Caledonia
 Meyer, A. J. Oakwood, R. 18
 Muller, Geo. C.
 Milwaukee, 232 Grove St.
 Pierner, Fred North Milwaukee
 Schlapman, Fred W. No. Milwaukee
 Swan, Earling
 Milwaukee Sta. B., R. 6
 Unger, Edw. .. No. Milwaukee, R. 9

Monroe County

Andrew, J. S. Wilton
 Babcock, H. E. Sparta
 Boeder, Otto Milton
 Ebert, Edmund D. Tomah
 Ebert, Francis E. Tomah
 Foth, F. D. Norwalk
 Fox, C. L. Leon
 Freeman, G. A. Sparta
 Gamerdinger, John Kendall
 Grassman, Irwin Kendall
 Hanchett, W. H. Sparta
 Hansen, Carl F. Sparta, R. 3
 Hitchcock, C. E. Sparta
 Hoard, L. R. Cataract
 Howell, Horace P. Sparta
 Kirst, Ernest J. Tomah
 Lee, L. Leon
 Leverich, J. W. Sparta
 Miller, Lewis A. Sparta
 Mistele, Wm. Kendall
 Moseley, A. G. Cataract
 Nathen, Paul R. Kendall
 Peterson, John H. Cashton
 Steinbach, Otto Kendall, R. 2
 Whitehead, H. W. Leon

Outagamie County

Dietz, Ed. Greenville
 Hanson, H. Edward Appleton
 Jamison, Robert Appleton
 Jochman, Peter .. Greenville, R. 16

Letts, Edward F. Appleton, R. 4
 Ryan, Malachi So. Kaukauna
 Schmit, A. W. Appleton
 Schmit, Geo. Greenville, R. 16
 Schmit, John A. Hortonville
 Schmit, Wm. F. Appleton
 Taege, John Appleton, R. 4
 Wussow, C. A Seymour

Ozaukee County

Ahlers, Walter Grafton
 McCarthy, Geo. Fredonia
 Wulff, Fred Grafton

Pepin County

Hicks, Earl L. Pepin

Pierce County

Aastrum, Chas. J.
 Spring Valley, R. 3
 Bailey, H. E. River Falls
 Nelson, Emil River Falls
 Scheid, Byron J. Bay City
 Smith, Fred River Falls, R. 6

Polk County

Christenson, Herman Milltown
 Hedlund, Adolph Clayton
 Peterson, Eni Amery, R. 4

Portage County

Arnott, Grace M. Stevens Point
 Boston, W. J. Stevens Point
 Gullickson, Gustave Nelsonville
 Gullickson, Thomas Nelsonville
 Hicks, S. E. Almond
 Katerndahl, Carl Stevens Point
 Wagner, Raymond G.
 Stevens Point, R. 18
 Wrolstad, Alfred M. . . . Amherst Jct.

Price County

Hoffmann, Conrad Phillips

Racine County

Gehrand, Arthur A. Rochester
 Holloway, Ed. M.
 Union Grove R. 8
 Klofanda, Reuben Racine R. 1
 Nau, Ray H. Franksville
 Renak, Edw. Racine, R. 2

Robers, Wm. J. Burlington
 Spartz, N. A. Union Grove
 Wilson, Wm. C. Burlington

Richland County

Durnford, G. A. Rockbridge
 Ellsworth, Raymond Tavera
 Ghastin, Wm. J. Twin Bluffs
 James, Geo. A. Richland Center
 Janecek, Cyril Bloom City
 Nourse, Glen Sextonville
 Post, H. L. Sextonville
 Schmitz, Hubert Lone Rock
 Thorpe, J. R. Tavera

Rock County

Austin, Alpheus Janesville
 Austin, A. G. Janesville, R. 6
 Austin, A. L. Evansville
 Austin, W. B. Janesville
 Bingham, E. L. Milton
 Caig, Ernest M. Milton Jct.
 Caldo, Leslie Janesville
 Chase, Albert L. Milton
 Cooper, M. W. Edgerton
 Crandall, W. T. Milton
 Devine, C. B. Evansville
 Dougan, W. J. Beloit
 Ellis, E. J. Janesville
 Emery, Sydney Edgerton
 Godfrey, Burt K. Janesville, R. 1
 Greene, J. I. Clinton
 Hemingway, Geo. L. Hanover
 Hoague, Chas. C. Janesville, R. 7
 Howe, Louis H. Brodhead
 Lathers, Chas. F. Beloit
 Latta, F. L. Clinton Jct.
 Marston, Albert Beloit, R. 30
 Marston, Roy C. Beloit
 Moseley, H. B. Beloit
 Peik, Edmund Edgerton
 Pierce, Henry Milton Jct.
 Seeger, Carl Beloit
 Smith, L. E. Beloit, R. 30
 Snyder, Clyde L. Footville
 Snyder, R. B. Clinton

St. Croix County

Batten, Sidney Hudson
 Bennett, Wm. L. New Richmond
 Brunner, R. W. Hudson
 Hecker, Paul New Richmond
 Imholt, B. A. Houlton
 Jerdee, Alfred O. Deer Park

Sauk County

Clavadatscher, T.Sauk City
 Capener, Walter A.Baraboo
 Frederickson, Fred ...Spring Green
 Gade, AdolfReedsburg
 Gallagher, J. F.Reedsburg
 Gasser, Geo. W.Spring Green
 Gasser, RoyPrairie du Sac
 Grub, C. H.Baraboo
 Harvey, C. B.Wonewoc
 Herwig, Theo.Delton
 Hood, D. L.Spring Green
 Houghton, F. T.Reedsburg
 Koenecke, Edw. H. Reedsburg, R. 5
 Lachmund, RobertSauk City
 Luetscher, IrvinPlain
 Marshall, W. S.Delton
 Palmer, H. P.Baraboo
 Pearson, Clarence. La Valle, R. 4
 Raltzman, A. L.Reedsburg
 Rich Bros.Baraboo
 Riek, AnthonyPlain
 Robson, MelvinSpring Green
 Rodewald, W. C.Baraboo
 Rusch, E. W.Reedsburg
 Schaefer, Ervin S.Black Hawk
 Schuette, Herman W.
Reedsburg, R. 3
 Steidtmann, Edwin....Merrimac
 Stone, Riley.....Reedsburg
 Wichern, L. M.Baraboo, R. 4
 Wischoff, EdwinBaraboo

Shawano County

Berg, Carl.....Tigerton
 Jahnke, H. F.Regina

Sheboygan County

Blonien, Peter.....Elkhart
 Garside, Harry R.Sheboygan
 Herdrich, S. F.Adell
 Leonard, M. J.Plymouth
 Ogle, James L.Waldo
 Oosterhuis, Alvin C.
Sheboygan Falls
 Schaefer, Henry G.Plymouth
 Wagner, Arthur L.Haven

Taylor County

McMillan, H. N.Medford

Trempealeau County

Graul, Edward J.Independence
 Hegge, Julius.....Galesville
 Hermann, F. F.Osseo

Vernon County

Aberg, Jacob.....De Soto
 Bean, R. P.De Soto
 Burris, W. E.Kendall, R. 5
 Cass, Leonard E.Viroqua
 Dach, C. B.Viroqua
 Everson, Fred.....DeSoto, R. 2
 Grimsrud, J. A.Coon Valley
 Haverley, H. L.Victory
 Staley, John N.Hillsboro

Walworth County

Anderson, Alvin M. ...Whitewater
 Coates, Clinton J.Elkhorn
 Cusack, M. E.Darien
 Downey, U. J.Whitewater
 Dunbar, Harry D.Elkhorn
 Fuller, Leroy.....Lake Geneva
 Harris, Ben F.Delavan
 Harris, Jesse S.Delavan
 Ledger, David.....Lake Geneva
 Mack, Warren.....Whitewater
 Meurer, Paul.....Genoa Jct.
 Mitchell, Edward H.Delavan
 Nichols, Vernon.....Walworth
 Peterson, E. C.Whitewater
 Peterson, Ezra.....Sharon
 Peterson, Peter.....Walworth
 Petrie, Merton.....Elkhorn
 Piper, Harry.....Sharon
 Ranney, P. C.Elkhorn
 Robinson, A. S.Lake Geneva
 Thacher, Ed. T.Zenda
 Thompson, A. N.Delavan
 Warmington, Prentice.Honey Creek

Washington County

Backhaus, Franklin G...Kewaskum
 Bast, Paul J.Rockfield
 Berg, Jacob.....So. Germantown
 Dhein, Henry.....Rockfield
 Hayes, Thomas, Jr.Richfield
 Juergens, Henry.....Hartford
 Klumb, Albert.....Rockfield
 Puls, John.....Hartford
 Schottler, Conrad J.....
So. Germantown
 Schultz, Nelson F..West Bend R. 3
 Stuesser, Eugene.....Richfield
 Ziemer, Paul.....Jackson

Waukesha County

Allen, Arthur J.Wales, R. 31
 Baird, J. W.Waukesha
 Baird, R. L.Waukesha

Bartlett, Geo. W. Menomonee Falls
 Blackwell, Leslie.....Waukesha
 Boller, J. F.Nashotah
 Burton, Roy.....Eagle, R. 35
 Christensen, John L.Hartland
 Dance, George.....Brookfield
 Dibble, Roy A.Menomonee Falls
 Dopp, Paul B.Oconomowoc
 Evans, Wm. H.Wales, R. 1
 Fuller, Horace.....North Lake
 Graser, Adam H.Waukesha
 Greengo, A. L.Menomonee Falls
 Hall, Frank.....Hartland, R. 21
 Hart, C. B.Brookfield
 Hart, Wm. C.Brookfield, R. 12
 Heling, Paul.....Menomonee Falls
 Hicken, Alfred B.Pewaukee
 Hill, Chas. T.Brookfield
 Hill, J. Thos.Brookfield
 Jeffery, H. B.Menomonee Falls
 Kaul, E. H.Waukesha, R. 7
 Kuhtz, Harvey H.Waukesha
 Longley, H. N.Dousman
 Mitchell, Dean.....Brookfield
 Mitwede, Henry.....Waukesha
 Montague, C. R.No. Prairie
 Morris, Leslie D.Waukesha, R. 8
 Peebles, John.....Oconomowoc
 Rosenow Bros.Oconomowoc
 Rowlands, R. W.Waukesha
 Ryan, Geo.....Brookfield, R. 12
 Schafer, Chas. H.Waukesha, R. 7
 Schley, E. G.Waukesha
 Schroeder, F. C.Hartland
 Shultis, A. D.Waukesha
 Sleep, S. S.Waukesha, R. 21
 Spaulding, C. F.Oconomowoc
 Stewart, J. H.Wales
 Swan, L. W.Mukwonago
 Swoboda, F. G.Dousman
 Tempero, Roy J.Menomonee Falls
 Van Buren, E. W.Waukesha, R. 2
 Weir, W. W.Mukwonago
 Wetzel, Henry.....Brookfield

Waupaca County

Ashuun, C. S.Waupaca, R. 2
 Bestul, Otto O.Scandinavia
 Bigford, W. W.Manawa
 Gorges, H. F.New London
 Harrington, Myron.....Waupaca
 Heinrich, Otto W.New London
 Klemm, Louis J.Welcome
 Kneip, William.....Weyauwega
 Larson, LeRoy.....Iola
 Olson, Nels E.Iola
 Pirner, Fred.....Sugar Bush

Rosholt, Jacob A.Scandinavia, R. 1
 Spencer, Earl H.Waupaca, R. 3

Waushara County

Anderson, Thos. E.Wild Rose
 Bartleson, Harvey..Pine River, R. 1
 Bell, L. C.Wautoma
 Clark, J. J.Berlin
 Eagan, J. J.Wautoma, R. 6
 Harris, A. M.Plainfield
 Jacklin, B. H.Redgranite
 Knuteson, Ernest L.Wautoma
 Peterson, James.....Pine River
 Selsing, Andrew.....Wautoma
 Tice, Ray.....Redgranite
 Tice, Roy.....Redgranite
 Winge, Wm.Wild Rose

Winnebago County

Bussey, W. P.Omro, R. 24
 Cross, A. J.Allenville
 Hatch, K. L.Winneconne
 Hoeft, Chas. A.Oshkosh, R. 1
 Ihrig, J. J.Oshkosh
 Jackson, H. H.Oshkosh,
 104 Main St.
 Michels, Math.Picketts
 Miller, Henry C.Allenville
 Palfrey, John.....Omro
 Rasmussen, Fred....Neenah, R. 11
 Schaefer, R. J.Appleton
 Smith, Seymour L.Oshkosh
 Tanner, A. V.Omro, R. 24
 Treleven, Guy T.Omro
 Waite, Sumner R.Oshkosh, R. 7

Wood County

Clark, Chas. F.Babecock
 Leu, O. J.Grand Rapids
 Rector, Carroll V.Grand Rapids

NON-RESIDENTS

Haas, Geo. H.Meriden, Conn.
 Bryson, Donald L.Elizabeth, Ill.
 Charles, Fred.....Woodstock, Ill.
 Coffin, Russell H.....Rockford,
 R. 7, Ill.
 Fellows, Samuel H.Rockford, Ill.
 George, W. R.Sterling, Ill.
 Hitchcock, H. R.Pecatonica, Ill.
 Hoxsey, Edw. H.Serena, Ill.
 McGeachie, E. P.Winnebago, Ill.
 Northrop, H. R.Chicago, Ill.
 667 Winthrop Ave.

Richardson, G. J. Spring Green, Ill.	Meyer, A. J. Howell, R. 7, Mich.
White, Arthur Rockford, Ill.	Meyer, Wm. Ellsworth, Minn.
503 N. Church St.	Hayes, Edwin H.
Anderson, Theo. Waterville, Iowa	. . . . . Buffalo, N. Y., 593 W. Ferry St.
Berns, Xavier Guttenberg, R. 1, Ia.	Doerschuk, John J.
Brooks, Homer H. Hopkinton, Ia.	. . . . . Shanesville, Ohio
Thompson, Thos., Jr. Wadena, Ia.	Ernst, Claude Thompson, Ohio
De Forest, Theo. R.	Messerschmidt, Samuel H.
. Ann Arbor, Mich.	. . . . . Flat Rock, Ohio

Growers of Golden Glow Corn (Wisconsin No. 12).

<p style="text-align: center;">Adams County</p> <p>Walker, Ray C. Plainville</p> <p style="text-align: center;">Barron County</p> <p>Allen, Eugene S. Cumberland Howe, John Comstock Matthys, Walter Barron Poulter, Charley Cumberland Poulter, C. J. Cumberland Rauchenstein, John Rice Lake Sackett, Clyde Cumberland</p> <p style="text-align: center;">Bayfield County</p> <p>Daly, Richard E. Washburn</p> <p style="text-align: center;">Buffalo County</p> <p>Rosenow, Arthur Alma</p> <p style="text-align: center;">Calumet County</p> <p>Christoph, Theo. F. Chilton</p> <p style="text-align: center;">Chippewa County</p> <p>Bailey, Alfred B. Jim Falls Christiansen, W. O. Chippewa Falls, R. 6 King, Wm. Jim Falls Schroeder, Herman F. Jim Falls</p> <p style="text-align: center;">Clark County</p> <p>Nelson, Carl Greenwood Smith, Jesse Loyal Zerbel, Paul Humbird</p> <p style="text-align: center;">Columbia County</p> <p>Cannon, E. A. Pardeeville</p>	<p style="text-align: center;">Crawford County</p> <p>Accola, Lawrence Steuben</p> <p style="text-align: center;">Dane County</p> <p>Accola, John, Madison, U. W. Farm Cobb, Homer A. Sun Prairie Semb, T. A. Madison, R. 6 Silver, C. R. Belleville Thorstad, N. H. Deerfield</p> <p style="text-align: center;">Dodge County</p> <p>Bohl, Anton Beaver Dam Grebe, F. P. Fox Lake Howitt, Chas. H. Randolph Krueger, H. E. Beaver Dam Lehmann, Mrs. Eva Woodland Owens, H. C. Fox Lake Randall, S. M. Waupun Steiner, W. H. Brownsville</p> <p style="text-align: center;">Door County</p> <p>Delcorps, Louis Sturgeon Bay Herrbold, J. W. Sturgeon Bay Hocks, Walter Sturgeon Bay Larson, Eli Sawyer Sorenson, Camillo Sturgeon Bay</p> <p style="text-align: center;">Dunn County</p> <p>Gerking, F. J. Elk Mound Hanson, Carl H. Elk Mound Knapton, W. E. Downing Snell, Earl D. Downing Stevens, Ernest Eau Galle</p> <p style="text-align: center;">Eau Claire County</p> <p>Konz, John, Sr. Fairchild Mayo, John H., Jr. Eau Claire McDermid, J. A. Eau Claire</p>
---	--

Fond du Lac County

Bonzelet, J. P. Eden
 Briggs, Lynn W. Peebles
 Giebel, Karl Fond du Lac
 Kitchen, J. H. Eldorado
 Maug, Arthur J. Ripon
 Meekin, H. W. Fond du Lac
 Michels, Henry Malone
 Root, Alvin, Fond du Lac
 Smith, Elmer J. Brandon
 Smith, Harvey G. Brandon
 West, R. N. Ripon

Grant County

Andrew, Geo., Jr. Livingston
 Runde, Aloysius Cuba City
 Stivarius, G. A. Fennimore

Iowa County

Graber, Laurence F. Mineral Point

Jackson County

Hecketsweiler, O. J. .. Alma Center

Jefferson County

Brown, A. Abbott Waterloo
 Linton, Gilbert A. Ft. Atkinson
 Moore, Henry G. Mauston

Kewaunee County

Kocmich, Ed. Kewaunee, R. 2

La Crosse County

Hass, Reinhold La Crosse

La Fayette County

Bridgeman, C. R. Darlington

Langlade County

Kolouner, Edward Antigo, R. 5

Manitowoc County

Arnold, Arthur A. Kiel
 Bauer, Adolph H. .Manitowoc, R. 2
 Clusen, Reinhold Manitowoc
 Eisenman, Ben Mishicot
 Geraldson, Mervin Manitowoc, R. 4
 Gigtsad, Benneth Valders

Gunderson, Clifford
 Manitowoc, R. 4
 Gustaverson, Chas. Manitowoc
 Hanson, Warner Manitowoc
 Hoefner, Herbert Manitowoc
 Klann, Adolph Hayton, R. 1
 Knutson, Ed. A. .. Manitowoc, R. 4
 Riederer, Blasius Cato
 Schulte, Peter J. Cleveland
 Straka, Edward E. Kellnersville
 Strowig, Wm. A. .. Cleveland, R. 1
 Sullivan, Jas. A. Grimms
 Wehrwein, Walter Manitowoc, R. 2
 Wigen, Andrew Quarry
 Wilkowske, Hugo Mishicot

Marathon County

Aderhold, Herman Athens
 Brehm, E. A. Colby
 McAdam, C. Scofield

Marquette County

Houslet, Neal Packwaukee
 Johnson, Sam Westfield

Milwaukee County

Mower, H. Poyson Wauwatosa

Monroe County

Harris, Ruthven E. Warrens

Outagamie County

Koss, Otto W. Medina
 Letts, E. F. Appleton
 Mills, Roscoe C. Appleton, R. 2
 Ryan, Malachi So. Kaukauna
 Schmidt, A. W. Appleton, R. 2
 Tubbs, Herbert Seymour

Ozaukee County

Blank, George A. Grafton
 Clausing, Adolph Thiensville
 Meyer, A. H. Grafton

Pierce County

Brown, Wm. Spring Valley
 Dunbar, Geo. W. River Falls
 Hanson, Henry O. .. Spring Valley
 Martin, Arthur W. River Falls
 Nelson, Nels J. River Falls
 Neystrom, Archie ... Maiden Rock
 Otis, Frank D. Maiden Rock

Polk County
 Germanson, HerbertLuck
 Jerdee, Perry S.Deronda
 Lindberg, Clinton H.
Dresser Jct. R. 1
 Miller, A. J.Milltown
 Nelson, Wm.Milltown
 Uhlin, AlbinClayton, R. 1
 Uhlin, Frank E.Clayton R. 1

Portage County
 Haus, EnochJunction City
 Siegert, A.Junction City

Price County
 Hoffmann, ConradPhillips

Richland County
 Ghastin, FloydTwin Bluffs
 Lord, Karl W.Richland Center
 Post, H. L.Sextonville
 Schmitz, Edw. H.Lone Rock
 Welsh, S. L.Tavera

Rock County
 Marston, A.Beloit, R. 30
 Smith, L. E.Beloit, R. 30

St. Croix County
 Alberts, WillNew Richmond
 Carlson, Nels P.Hudson, R. 1
 Kruschke, Geo. H. .New Richmond
 Utgaard, Peter W.....Cylon

Sauk County
 Borck, SamNo. Freedom
 Ochsner, A. C.Plain

Sawyer County
 Uhrenholdt, JensLeonard

Shawano County
 Norrborn, C. G.Eland, R. 1

Sheboygan County
 Hoppert, Martin J.
Sheboygan, R. 4
 Wunsch, Hugo E.Haven

Trempealeau County
 Chrysler, HarveyOsseo
 McCauley, RexOsseo
 Pederson, PeterEleva
 Thompson, A. L.Blair

Vernon County
 Cade, Jos. M.Viroqua
 Mc Clurg, WalterViroqua

Walworth County
 Bromley, Fred G. Whitewater, R. 4
 Kruse, Wm.Whitewater, R. 4
 Thacher, Louis E.Zenda

Washington County
 Groth, C. A.Cedarburg
 Klumb, OscarRockfield
 Kressin, Gustav R.Cedarburg
 Woldt, HugoJackson
 Ziemer, JosephJackson

Waukesha County
 Bartlett, Geo. W. Menomonee Falls
 Schley, E. G.Waukesha
 Swoboda, F. G.Dousman

Waupaca County
 Howland, Howard H.Waupaca

Winnebago County
 Boss, S. J.Oshkosh, R. 7

Wood County
 Howard, A. E.Marshfield

NON-RESIDENTS
 Smith, Russell ..Crystal Lake, Ill.
 Hawkins, A. B.Farley, Ia.
 Fernald, Paul E.
West Oldtown, Maine
 Eskil, Odin ..Iron Mountain, Mich.
 Meyer, A. J.Howell, R. 7, Mich.
 Coleman, Chas. H.
Perry Center, N. Y.

Growers of Early Yellow Dent Corn (Wisconsin No. 8).

<p>Ashland County</p> <p>Johnson, L. M. Ashland, R. 2</p> <p>Brown County</p> <p>Roeckel, Jos. P. Lark</p> <p>Buffalo County</p> <p>Spaulding, L. C. Mondovi</p> <p>Chippewa County</p> <p>Christianson, L. ... Chippewa Falls Christiansen, W. O. Chippewa Falls, R. 6 Finsnes, A. I. Chippewa Falls Kramer, Henry F. Bloomer</p> <p>Clark County</p> <p>Umfault, Rudolph Rochester</p> <p>Columbia County</p> <p>Gloeckler, Theo Portage Steuber, L. J. Lodi</p> <p>Dane County</p> <p>Peck, Henry M. Marshall</p> <p>Dodge County</p> <p>Howitt, Chas. H. Randolph Jung, J. W. Randolph Owens, H. C. Fox Lake</p> <p>Door County</p> <p>Boucein, Gust L. .. Detroit Harbor Buschman, Hugo Forestville Erickson, Ole C. ... Detroit Harbor Sullivan, J. J. Forestville</p> <p>Eau Claire County</p> <p>Allen, C. L. Eau Claire Wright, W. C. ... Eau Claire, R. 4</p> <p>Fond du Lac County</p> <p>Carpenter, L. A. Fond du Lac Hinz, A. F. Ripon Meekin, H. W. Fond du Lac Stroup, Fred G. Fond du Lac</p>	<p>Jackson County</p> <p>Curran, W. F. Taylor Dettinger, W. F. Hixton</p> <p>Kewaunee County</p> <p>Smithwick, Jas. Kewaunee</p> <p>La Fayette County</p> <p>McConnell, F. J. Darlington Rood Bros. South Wayne</p> <p>Manitowoc County</p> <p>Paulsen, J. E. Manitowoc, R. 4 Straka, Edward E. ... Kellnersville Sullivan, Jas. A. Grimms Wiegand, Otto R. Cleveland</p> <p>Marathon County</p> <p>Baesemann, Otto Edgar</p> <p>Marinette County</p> <p>Falarsh, Frank Peshtigo Olson, Otto W. Walsh Sorenson, Hilbert Marinette</p> <p>Milwaukee County</p> <p>Basse, Wm. H. ... West Allis, R. 5</p> <p>Monroe County</p> <p>Andrew, J. S. Wilton Leverich, J. W. Sparta</p> <p>Outagamie County</p> <p>Merkel, Henry Appleton, R. 3 Wussow, Chas. A. Seymour</p> <p>Ozaukee County</p> <p>Wulff, Fred Grafton</p> <p>Polk County</p> <p>Hedlund, Adolph Clayton Nelson, Peter C. Milltown</p> <p>Portage County</p> <p>Hanson, N. P. .. Amherst Jct., R. 2</p>
--	---

<p style="text-align: center;">Rock County</p> <p>Austin, Alpheus .....Janesville</p> <p style="text-align: center;">St. Croix County</p> <p>Bennett, Wm. I. ...New Richmond Imholt, B. A. ....Houlton</p> <p style="text-align: center;">Sawyer County</p> <p>Thulin, Edwin Hayward</p> <p style="text-align: center;">Shawano County</p> <p>Jahnke, H. F. ....Regina</p> <p style="text-align: center;">Sheboygan County</p> <p>Dennerlein, Arthur J. ...Plymouth Eastman, F. A. & S. A. .... .....Sheboygan Falls Frauenheim, O. R. ..Random Lake Herdrich, S. F. ....Adell Illian, W. L. ....Adell, R. 19 Parrish, J. O. ....Plymouth</p>	<p style="text-align: center;">Walworth County</p> <p>Coburn, Ora .....Whitewater Lewis, E. H. ....Whitewater Warmington, Prentice ..........Honey Creek</p> <p style="text-align: center;">Waukesha County</p> <p>Mitwede, Henry .....Waukesha Shannon, M. J. ....Oconomowoc</p> <p style="text-align: center;">Waushara County</p> <p>Anderson, Thos. E. ....Wild Rose</p> <p style="text-align: center;">Winnebago County</p> <p>Blakely, Albert J. ....Neenah</p> <p style="text-align: center;">Wood County</p> <p>Kronholm, V. E. ....Grand Rapids</p>
--	--

Growers of Clark's Yellow Dent Corn (Wisconsin No. 1).

<p style="text-align: center;">Chippewa County</p> <p>Finsnes, A. I. ....Chippewa Falls</p> <p style="text-align: center;">Columbia County</p> <p>Dalton, Ernest E. ....Pardeeville Dalton, Roy E. ....Pardeeville</p> <p style="text-align: center;">Dane County</p> <p>Davidson, Wm. L. ....Verona Kendell, Geo. W. ....Sun Prairie</p> <p style="text-align: center;">Dodge County</p> <p>Barstow, Jas. E. ...Randolph, R. 1 Howitt, Chas. H. ....Randolph</p> <p style="text-align: center;">Green County</p> <p>Biglow, L. F. ....Brooklyn</p>	<p style="text-align: center;">Iowa County</p> <p>Paulson, H. E. ....Hollandale</p> <p style="text-align: center;">Racine County</p> <p>Wilson, Wm. C. ....Burlington</p> <p style="text-align: center;">Richland County</p> <p>Post, H. L. ....Sextonville</p> <p style="text-align: center;">Rock County</p> <p>Austin, A. G. ....Janesville, R. 6</p> <p style="text-align: center;">Walworth County</p> <p>Coburn, Ora .....Whitewater Dunbar, Harry D. ....Elkhorn</p> <p style="text-align: center;">Winnebago County</p> <p>Blodgett, Gordon R. ....Neenah</p>
--	---

Growers of North Star Corn (Wisconsin No. 11).

<p>Chippewa County</p> <p>Martiny, L. P. ....Chippewa Falls</p> <p>Dane County</p> <p>Boyce, Charlotte .....Dane Palmer, Levi .....Verona Thorstad, N. H. ....Deerfield</p>	<p>Dodge County</p> <p>Randall, S. M. ....Waupun</p> <p>Rock County</p> <p>Austin, Alpheus .....Janesville</p> <p>Sauk County</p> <p>Palmer, H. P. ....Baraboo Toole, W. A. ....Baraboo</p>
---	--

Growers of Medium Red Clover.

<p>Barron County</p> <p>Chrislaw, A. M. ....Rice Lake</p> <p>Brown County</p> <p>Roeckel, Jos. P. ....Lark</p> <p>Buffalo County</p> <p>Joos, Frank B. ....Fountain City Spaulding, L. C. ....Mondovi</p> <p>Calumet County</p> <p>Peterson, H. N. ....New Holstein</p> <p>Columbia County</p> <p>Dalton, Ernest E. ....Pardeeville Dalton, Roy E. ....Pardeeville</p> <p>Dodge County</p> <p>Barston, James .....Randolph Howitt, Chas. H. ....Randolph Joyce, Geo. ....Waterloo Krueger, H. E. ....Beaver Dam Miller, A. H. ....Waupun</p> <p>Eau Claire County</p> <p>Wright, W. C. ....Eau Claire, R. 4</p> <p>Fond du Lac County</p> <p>Adams, A. E. ....Eden Briggs, L. W. ....Peebles</p>	<p>Briggs, J. W. ....Peebles Jacky, Gilbert G. ...Malone, R. 39 Jacky, H. L. ....Malone, R. 39 Meekin, H. W. ....Fond du Lac</p> <p>Jackson County</p> <p>Dettinger, Wm. F. ....Hixton</p> <p>Jefferson County</p> <p>Church, A. P. ....Whitewater Leonard, Wm. R. ....Ft. Atkinson Ward, W. Rodell ....Ft. Atkinson</p> <p>Kewaunee County</p> <p>Blahnik, Geo. F. ....Algoma</p> <p>La Crosse County</p> <p>Harr, Ernest B. ....Bangor</p> <p>La Fayette County</p> <p>Akins, Clyde E. ....Warren, Ill. Bridgman, C. R. ....Darlington Usher, J. M. ....South Wayne</p> <p>Manitowoc County</p> <p>Berge, Otis I. ....Valders Clusen, Reinhold ....Manitowoc Garey, James .....Grimms Heidemann, O. C. ....Kiel, R. 2 Straka, Edward E. ...Kellnersville Sullivan, Jas. A. ....Grimms</p>
--	---

<p style="text-align: center;">Marinette County</p> <p>Falarsh, Frank .....Peshtigo</p> <p style="text-align: center;">Milwaukee County</p> <p>Pierner, Fred .....No. Milwaukee</p> <p style="text-align: center;">Monroe County</p> <p>Freeman, G. A. ....Sparta</p> <p style="text-align: center;">Ozaukee County</p> <p>Kieffer, Mike .....Fredonia Pierner, John W. ....Thiensville</p> <p style="text-align: center;">Shawano County</p> <p>Hildemann, E. S. ....Belle Plaine</p> <p style="text-align: center;">Sheboygan County</p> <p>Dennerlein, Arthur J. ...Plymouth Frauenheim, O. R. ..Random Lake Illian, Wm. L. ....Adell, R. 19 Wagner, Arthur L. ....Haven</p> <p style="text-align: center;">Walworth County</p> <p>Harris, Jesse S. ....Delavan Meurer, Paul G. ....Genoa Jct.</p>	<p style="text-align: center;">Washington County</p> <p>Bast, Paul J. ....Rockfield Puls, John .....Hartford Schottler, Conrad J. .... .....So. Germantown</p> <p style="text-align: center;">Waukesha County</p> <p>Bartlett, Geo. W. .... .....Menomonee Falls Longley, H. N. ....Dousman Swan, L. W. ....Mukwonago</p> <p style="text-align: center;">Waupaca County</p> <p>Kneip, Wm. ....Weyauwega Rosholt, J. A. ....Scandinavia</p> <p style="text-align: center;">Wausara County</p> <p>Clark, J. J. ....Berlin, R. 1</p> <p style="text-align: center;">Winnebago County</p> <p>Miller, Henry C. ....Allenville</p> <p style="text-align: center;">NON-RESIDENTS</p> <p>Thompson, Thos. Jr. ..Wadena, Ia.</p>
--	--

Growers of Alsike Clover.

<p style="text-align: center;">Dodge County</p> <p>Barston, Jas. ....Randolph, R. 1 Bohl, Anton .....Beaver Dam Krueger, H. E. ....Beaver Dam</p> <p style="text-align: center;">Eau Claire County</p> <p>Konz, John, Sr. ....Fairchild, R. 2</p> <p style="text-align: center;">Fond du Lac County</p> <p>Briggs, L. W. ....Peebles Briggs, J. W. ....Peebles Giebel, Karl A. .Fond du Lac, R. 7 Jacky, Gilbert G. ...Malone, R. 39 Jacky, H. L. ....Malone, R. 39 Meekin, H. W. ....Fond du Lac</p>	<p style="text-align: center;">Jackson County</p> <p>Curran, Wm. F. ....Taylor Hecketsweiler, O. J. ..Alma Center</p> <p style="text-align: center;">Jefferson County</p> <p>Anthes, Henry .....Jefferson</p> <p style="text-align: center;">La Crosse County</p> <p>Harr, Ernest B. ....Bangor</p> <p style="text-align: center;">Manitowoc County</p> <p>Klann, Adolph .....Hayton, R. 1</p>
--	--

<p style="text-align: center;">Ozaukee County</p> <p>Keiffer, Mike .....Fredonia Pierner, John W. ....Thiensville</p> <p style="text-align: center;">Sauk County</p> <p>Ochsner, A. C. ....Plain</p>	<p style="text-align: center;">Shawano County</p> <p>Hildemann, E. S. ....Belle Plaine</p> <p style="text-align: center;">Sheboygan County</p> <p>Frauenheim, O. R. ..Random Lake Herdrich, S. F. ....Adell, R. 19</p>
--	--

Growers of Mammoth Clover.

<p style="text-align: center;">Calumet County</p> <p>Klann, Adolph .....Hayton</p> <p style="text-align: center;">Dodge County</p> <p>Krueger, H. E. ....Beaver Dam</p> <p style="text-align: center;">Eau Claire County</p> <p>Konz, John, Sr. ....Fairchild, R. 2</p>	<p style="text-align: center;">Sheboygan County</p> <p>Frauenheim, O. R. ..Random Lake</p> <p style="text-align: center;">Walworth County</p> <p>Harris, Jesse S. ....Delavan</p> <p style="text-align: center;">Waukesha County</p> <p>Longley, H. N. ....Dousman</p>
--	---

Growers of Japanese Buckwheat.

<p style="text-align: center;">Ashland County.</p> <p>Tomkins, A. Pearce .Ashland, R. 2</p> <p style="text-align: center;">Dodge County</p> <p>Bohl, Anton .....Beaver Dam Krueger, H. E. ....Beaver Dam</p>	<p style="text-align: center;">Juneau County</p> <p>Moore, Harry G. ....Mauston</p> <p style="text-align: center;">Walworth County</p> <p>Dunbar, Harry D .....Elkhorn</p> <p style="text-align: center;">Waushara County</p> <p>Carey, Henry .....Redgranite</p>
--	--

Growers of Silver Hull Buckwheat.

<p style="text-align: center;">Dane County</p> <p>Chatterton, R. W. ....Basco Palmer, Levi.....Verona</p> <p style="text-align: center;">Dodge County</p> <p>Bohl, Anton, Jr. ....Beaver Dam Ehrhardt, Daniel.....Knowles Howitt, C. H. ....Randolph Krueger, H. E. ....Beaver Dam</p> <p style="text-align: center;">Fond du Lac County</p> <p>Meekin, H. W. ....Fond du Lac</p>	<p style="text-align: center;">Outagamie County</p> <p>Schmit, Geo. ....Greenville, R. 16</p> <p style="text-align: center;">Racine County</p> <p>Robers, Wm. J. ....Burlington</p> <p style="text-align: center;">Richland County</p> <p>Post, H. L. ....Sextonville</p> <p style="text-align: center;">Sauk County</p> <p>Lachmund, Robert.....Sauk City</p> <p style="text-align: center;">Waukesha County</p> <p>Bartlett, Geo. W..Menomonee Falls</p>
--	---

Growers of Field Beans.

Calumet County		La Crosse County	
Peik, Arthur.....	Chilton	Hass, R. A.	La Crosse
Chippewa County		La Fayette County	
Martiny, L. P.	Chippewa Falls	Sargent, Roy E.	Warren, Ill.
Upton, H. F.	Jim Falls	Usher, J. M.	So. Wayne
Columbia County		Manitowoc County	
Lloyd, Evan B.	Cambria	Arnold, Arthur A.	Kiel
Crawford County		Kielsmeier, R. C.	Timothy
Bannen, R. E.	Boscobel	Wiegand, O. R.	Cleveland
Dane County		Marinette County	
Beck, J. D.	Madison	Falarsh, Frank.....	Peshtigo, R. 2
Bewick, W. W.	Madison	Schneider, Gottlieb	Walsh
Gillette, R. A.	Verona	Milwaukee County	
Ohman, S. S.	Deerfield	Guenther, Nelson W.	So. Milwaukee
Semb, T. A.	Madison, R. 6	Miller, Geo. C.	Milwaukee, 232 Grove St.
Stensly, E. P.	Cottage Grove	Monroe County	
Thieleke, Emil.....	Madison, R. 6	Gamerdinger, John.....	Kendall
Dunn County		Pierce County	
Meacham, C.	Downing	Nelson, Emil.....	River Falls
Eau Claire County		Neystrom, Archie....	Maiden Rock
Wyman, A. E.	Eau Claire	Polk County	
Fond du Lac County		Germanson, Herbert.....	Luck
Costello, Dan A..	Fond du Lac, R. 5	Jerdee, Perry S.	Deronda
Jefferson County		Lindberg, Clinton H.	Dresser Jct., R. 1
Guttenberg, Frank, Jr. ..	Jefferson	Miller, A. J.	Milltown
Leonard, Wm. R.	Jefferson	Nelson, Willie.....	Milltown
Juneau County		Racine County	
Smith, R. M.	Elroy	Holloway, Ed. M.	Union Grove
Kenosha County		Klein, W. C.	Racine, R. F. D.
Mueller, Math J.	Bristol care of P. J. Thom	Richland County	
Myrick, M. O.	Bristol	Ghastin, Floyd.....	Twin Bluffs
Thom, J. A.	Bristol	Lawton, A. R.	Viola

Lord, Karl W. ...Richland Center
Post, H. L.Sextonville

Rock County

Austin, Alv. J. ...Janesville, R. 6

St. Croix County

Jerdee, Alfred O.Deer Park
Paulson, P. A.Hudson

Sauk County

Rodewald, Walter C.Baraboo

Waukesha County

Hicken, A. B.Waukesha, R. 7
Swoboda, F. G.Dousman
Zillmer, Wm. C.Brookfield

NON-RESIDENTS

Michigan

DeForest, Theo. R.Ann Arbor

Growers of Timothy Seed.

Columbia County

Chipman, W. R.Morrisonville

Dodge County

Bohl, AntonBeaver Dam
Howitt, C. H.Randolph
Krueger, H. E.Beaver Dam

Fond du Lac County

West, H. P.Ripon

Grant County

Graham, P. S.Fennimore

Racine County

Wilson, Wm. C.Burlington

Rock County

Austin, W. B.Janesville

Sauk County

Ochsner, A. C.Plain

Shawano County

Hildemann, E. S.Belle Plaine

Growers of Alfalfa Seed.

Dodge County

Krueger, H. E.Beaver Dam

Douglas County

Lindberg, E. J.Itasca

Fond du Lac County

Meekin, H. W.Fond du Lac

Waukesha County

Shannon, M. J.Oconomowoc

Growers of Spring Wheat.

Columbia County	Fond du Lac County
Lloyd, Evan B. ....Cambria	West, H. P. ....Ripon
Dane County	Manitowoc County
Kaltenberg, Anthony....Waunakee	Klann, Adolph.....Hayton
Dodge County	
Krueger, H. E. ....Beaver Dam	
Schiller, Claude E. ..Beaver Dam	

Growers of Winter Rye.

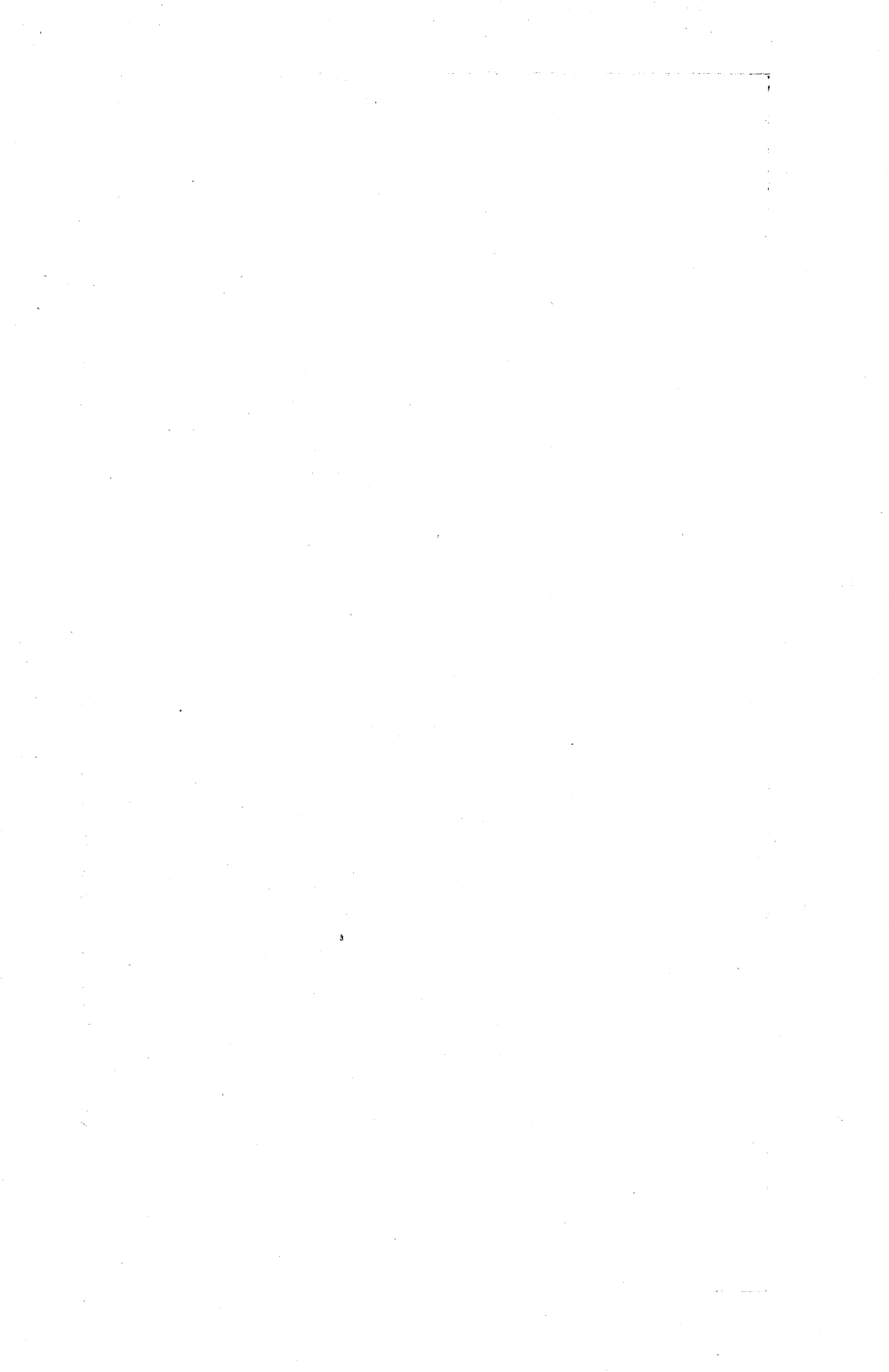
Clark County.	Fond du Lac County
Zerbel, Paul .....Humbird	West, H. P. ....Ripon
Dodge County	Jefferson County
Bohl, Anton.....Beaver Dam	Leonard, Wm. ....Ft. Atkinson
Krueger, H. E. ....Beaver Dam	
Volgt, Alvin H. ....Oconomowoc	
Door County	Sheboygan County
Sullivan, J. J. ....Forestville	Frauenheim, O. R. ..Random Lake
	Wagner, A. L. ....Haven

Growers of Spring Rye.

Dodge County
Bohl, Anton .....Beaver Dam
Howitt, C. H. ....Randolph
Krueger, H. E. ....Beaver Dam

Growers of Nordheim Sweet Corn.

Ihrig, J. J. ....Oshkosh





Ninth Annual Meeting of the Wisconsin Experiment Association, Agricultural Hall, Madison, February, 1910.

EIGHTH ANNUAL REPORT

OF THE

WISCONSIN

Agricultural Experiment Association

Madison, Wis., February 4, 5, 1910.

ADDRESS OF PRESIDENT, SECRETARY'S REPORT WITH PAPERS AND
ADDRESSES GIVEN BY MEMBERS OF THE ASSOCIATION AND
OTHERS INTERESTED IN PROGRESSIVE AGRICULTURE

Compiled by

R. A. MOORE, Secretary.



MADISON

DEMOCRAT PRINTING COMPANY, STATE PRINTER

1910



LETTER OF TRANSMITTAL.

WISCONSIN AGRICULTURAL EXPERIMENT ASSOCIATION.

Madison, Wis., 1910.

To His Excellency, JAMES O. DAVIDSON,

Governor of the State of Wisconsin:

SIR—I have the honor to submit for publication, as provided by law, the Eighth Annual Report of the Wisconsin Agricultural Experiment Association, showing the receipts and disbursements the past year, also outlines for experiments, and addresses and discussions given at the annual meeting at Madison, February 4-5, 1910.

Respectfully submitted,

R. A. MOORE,

Secretary.

TABLE OF CONTENTS.

	Page.
Letter of transmittal.....	iv
Officers and Committees of the Association.....	vi
Constitution and By-laws.....	vii
List of Members (alphabetical).....	xi
List of Members (listed according to counties)	xvii
Program for Annual Meeting.....	xxii
Address of President.....	1
Report of Secretary R. A. Moore.....	5
Seed Inspection as it Applies to Members of the Experiment As- sociation; A. L. Stone, Seed Inspector.....	11
State Affairs, J. A. Frear, Secretary of State.....	12
Methods of Farm Advertising, J. Clyde Marquis, Agr. Editor.....	14
The Future of Agriculture, Oliver E. Baker.....	20
Southern Agriculture, J. J. Tschudy.....	26
Co-operation of Members of the Experiment Association with State Board of Agriculture, J. M. True, Secretary.....	29
Farm Management, R. H. Poston.....	30
County Orders of the Experiment Association.....	34
Constitution and By-Laws of the Fond du Lac County Order... ..	35
Report of the Fond du Lac County Order, Henry Michels, Malone, Secretary	36
Report of the Dodge County Order, Henry E. Krueger, Beaver Dam, Secretary.....	39
Report of the Manitowoc County Order, O. R. Wiegand, Cleve- land, Secretary	40
Report of the Monroe County Order, L. A. Miller, Sparta, Sec- retary.....	41
Report of the St. Croix County Order, Wm. Schwandt, Stan- ton, Secretary	42
Report of the Sheboygan County Order, O. R. Frauenheim, Random Lake, Secretary.....	43
Annual Meetings of the County Orders of the Association.....	45
Sheboygan.....	45
Fond du Lac.....	46
Manitowoc.....	46
Business Meeting.....	47
Treasurer's Report, H. N. Longley, Treasurer	48
Secretary's Report on State Appropriation.....	49

Table of Contents.

v

	Page
Exhibition of Grains and Forage Plants for 1910.....	50
Parties Awarded cash and special premiums at the Annual Meeting, Feb. 4-5, 1910.....	51
Special Prizes and Trophies Given at the Annual Meeting.....	55
Premium list—1910, awards to be made January, 1911.....	56
Reports of Farm Inspectors.....	59
Fond du Lac County—Henry Michels.....	59
Dodge County—Henry E. Krueger.....	61
Manitowoc County—O. R. Wiegand.....	62
Monroe County—Geo. A. Freeman.....	68
<i>Division of Farm Crops—R. A. Moore.</i>	
Plan of Work for the Coming Year.....	71
Outline of Co-operative Experiments.....	72
Experiment No. 1, Alfalfa.....	72
Experiment No. 2, Seed Corn.....	77
Experiment No. 3, Treating Seed Oats to Prevent Smut.....	80
Experiment No. 4, Tests With Swedish Select Oats.....	82
Breeding of Wisconsin Pedigree Varieties of Barley.....	83
Experiment No. 5, Tests With Wisconsin Pedigree Barley.....	84
Experiment No. 6, Soy Beans.....	86
Experiment No. 7, Field Beans.....	88
<i>Division of Agricultural Extension—K. L. Hatch.</i>	
What Members of the Association May Do to Aid Agricultural Extension.....	89
Division of Agricultural Engineering, C. A. Ocock.....	91
Division of Agricultural Chemistry, E. B. Hart.....	93
Corn Curing House, Henry Michels.....	94
<i>Wisconsin Seed Grain Growers.....</i>	96
Swedish Select Oats (Wis. No. 4).....	96
<i>Barley—</i>	
Wisconsin Pedigree Barley.....	100
Oderbrucker Barley (Wis. No. 55).....	110
Manshury Barley (Wis. No. 62).....	120
<i>Soy Beans—</i>	
Ito San Variety.....	121
Early Black.....	123
Black.....	123
Medium Early Green.....	124
Yellow.....	124
Brown.....	124
<i>Corn—</i>	
Silver King (Wis. No. 7).....	125
Golden Glow (Wis. No. 12).....	132
Early Yellow Dent (Wis. No. 8).....	135
North Star (Wis. No. 11).....	137
Smut Nose Flint (Wis. No. 15).....	137

	Page
<i>Clover—</i>	
Medium Red.....	138
Alsike.....	139
Mammoth.....	139
<i>Buckwheat—</i>	
Japanese.....	140
Silver Hull.....	140
Field Beans.....	140
Timothy.....	142
Alfalfa.....	142
Spring wheat.....	142
Winter Rye.....	143
Spring Rye.....	143
Nordheim Sweet Corn.....	143

OFFICERS, 1910.

President—C. P. Norgord.....Madison
Vice President—A. G. Austin.....Janesville
Secretary—R. A. Moore.....Madison
Treasurer—H. N. Longley.....Dousman
Clerk and Stenographer—Idalyn Bibbs.....Madison

COMMITTEES.

Program: Officers of the association.

Executive: Presidents and Secretaries of the County orders
of the Wisconsin Experiment Association.

Resolutions: H. P. Howell.....Sparta
A. J. Meyer.....Howell, Mich.
H. A. Main.....Ft. Atkinson
Wm. F. Renk.....Sun Prairie

Co-operative Farm Crops.....R. A. Moore

Experiments: Soils.....A. R. Whitson
Farm Engineering.....C. A. Ocock
Agricultural Chemistry.....E. B. Hart
Agricultural Extension.....K. L. Hatch

CONSTITUTION AND BY-LAWS.

CONSTITUTION

Article I.—Name

This organization shall be known as the Wisconsin Agricultural Experiment Association.

Article II.—Object

The object of this association shall be to promote the agricultural interests of the state:

1st. By carrying on experiments and investigations that shall be beneficial to all parties interested in progressive farming;

2d. To form a more perfect union between the former and present students of the Wisconsin College of Agriculture so as to enable them to act in unison for the betterment of rural pursuits in carrying on systematic experiments along the various lines of agriculture;

3d. By growing and disseminating among its constituency new varieties of farm seeds and plants;

4th. By sending literature bearing upon agricultural investigations to its membership, and

5th. By holding an annual meeting in order to report and discuss topics and experiments beneficial to the members of the association.

Article III.—Membership.

Section I. All former, present and future students and instructors of the Wisconsin College of Agriculture shall be entitled to become members of this association.

Sec. II. Honorary membership may be conferred upon any one interested in progressive agriculture by a majority vote at any annual or special meeting of the association.

Article IV.—Dues.

A fee of fifty cents shall be collected from each member annually.

Article V.—Officers.

The officers of this association shall consist of a president, vice-president, secretary, and treasurer, whose terms of office shall be one year or until their successors are elected.

Article VI.—Duties of Officers.

Section I. It shall be the duty of the president to preside at all meetings of the society and enforce the observance of such rules and regulations as will be for the best interest of the organization; to appoint all regular committees as he may deem expedient for the welfare of the association.

Sec. II. In the absence of the president, the vice president shall preside and perform all duties of the president.

Sec. III. It shall be the duty of the secretary to keep all records of the association; to report the results of all co-operative experiments carried on by its membership and the experiment station, plan the experimental work for the members of the association, and labor for the welfare of the society in general.

Sec. IV. The treasurer shall collect fees, keep secure all funds of the association and pay out money on the written order of the secretary signed by the president. He shall furnish bonds in the sum of two thousand dollars with two sureties, for the faithful performance of his duties.

Article VII.—Amendments.

This constitution may be amended at any annual meeting by a two-thirds vote of the members of the association present.

Amendment No. 1.—Adopted Feb. 9, 1906.

Any person residing within the state having completed a course in agriculture in any college equivalent to that given by the Wisconsin University may become a member of this association under the same regulation as students from the Wisconsin College of Agriculture.

Amendment No. 2.—Adopted Feb. 11, 1909.

Any County Agricultural School within the state may be admitted to membership of the Experiment Association upon request by the principal of such school and the payment of an annual fee of \$1.00.

By-Laws.

BY-LAWS.

Article I. The officers of this association shall be elected by ballot at the annual meeting.

Art. II. The president and secretary shall be ex-officio members of the executive committee.

Art. III. This association shall be governed by Robert's Rules of Order.

Art. IV. All members joining at the organization of this association shall be known as charter members.

Art. V. The time and place of the annual meeting shall be determined by the executive and program committees.

Constitution adopted and organization effected Feb. 22, 1901.

MEMBERSHIP, 1910

(Arranged in alphabetical order.)

Names.	Post-Office Address.	Names.	Post-Office Address.
Aarness, O. C.	Cashton.	Austin, Henry L. ..	Evansville.
Aavang, H. O.	Barneveld, R. 1.	Austin, W. B.	Janesville.
Aberg, Jacob	DeSoto.	Austin, Wilbur D. .	Janesville.
Accola, John F.	Prairie du Sac.	Austin, Willard O. .	Milton.
Accola, Lawrence ..	Steuben.	Axley, Walter	Cleveland.
Adams, A. E.	Eden.		
Adams, Lester B.	Lowell.		
Adams, Richard F. .	Campbellsport.	Babcock, Chas. L. ..	Milwaukee 405 Colby-Abbott Bldg.
Aderhold, H. F.	Athens.		
Adland, P. H.	North Cape.	Backus, F. G.	Kewaskum.
Ahlers, Walter	Grafton.	Baer, A. C.	West Bend.
Akins, Clyde E.	Warren, Illinois.	Baertlein, V. J.	So. Germantown.
Alberts, Will	New Richmond.	Baertlein, Wm. A. .	So. Germantown.
Alcalay, S. J.	Columbus, Ohio, 1621 Neil Ave.	Baesemann, Otto ...	Edgar.
	Eau Claire.	Bailey, H. E.	Hudson.
Allen, C. L.	Claremont, Va.	Baird, Jas. W.	Waukesha, R. 2.
Allen, E. S.	Claremont, Va.	Baird, Robert L. ...	Waukesha.
Almon, Perry T.	Weyauwega.	Baird, W. L.	Waukesha.
Amoldt, Marcus	Viroqua.	Baker, O. E.	Madison.
Anaoker, B.	Portage.	Bancroft, Benj. T. .	Rio.
Anderley, Louis	Kendall.	Bannen, R. E.	Boscobel.
Anderson, A. W.	Portage.	Barker, E. S.	Janesville.
Anderson, Alfred ...	Denmark.	Barker, W. H.	Brodhead.
Anderson, A. T.	Monroe.	Barron, R. E.	Platteville.
Anderson, H. C.	Cambridge.	Barstow, Jas. E. ...	Randolph.
Anderson, Lewis	Morrisonville.	Bartleson, H. C. ...	Pine River.
Anderson, L. H.	Highland.	Barton, C. R.	Mt. Horeb.
Anderson, Martin ...	River Falls.	Basse, Wm. H.	West Allis, R. 5.
Anderson, Theo.	Waterville, Iowa.	Batho, Lester	Plum City.
Anderson, T. E.	Chetek, R. 1.	Batten, S. E.	Hudson.
Anderson, Ubbe	Melrose.	Bauer, A. H.	Manitowoc, R. 2.
Andrews, A. L.	South Wayne.	Bayles, Rollo	Dane.
Angvick, Lars	Cottage Grove.	Bean, R. P.	DeSoto.
Annear, Rolland	Richland Center.	Bechtolt, A. B.	Browntown.
Anthes, Henry	Jefferson.	Bechtolt, J. D.	Browntown.
Anthony, David C. ...	Oregon.	Beck, J. D.	Madison.
Arms, Edward	Fountain City.	Becker, Harry J. ...	Pt. Atkinson.
Arnold, Arthur A. ...	Kiel.	Behm, Walter F. ...	Manitowoc.
Arnold, Phillip	Edgar.	Behrens, Bernh.	Grafton.
Arnold, Walter C. ...	Lake Geneva.	Beilke, Walter	Fairwater.
Arnott, Grace M.	Stevens Point.	Beimer, Geo.	Salem.
Arnquist, J. F.	New Richmond.	Beitel, Perry A.	Rochelle, Ill., R. 3.
Ashfon, Lester	Belmont.	Bekken, Oscar	Bloomer.
Atwood, P. W.	Waupun.	Belda, Wm. F.	DeForest.
Austin, A.	Janesville.	Bell, George S.	Madison, 1711 Jefferson St.
Austin, Alva G.	Janesville, R. 6.	Bender, Fred, J. Jr. .	Cleveland.
Austin, Alvina L. ...	Evansville.	Benedict, E. L.	Beloit, R. 30.
Austin, Clifford P. .	Janesville.	Bendickson, I. E. ...	Cambridge.
Austin, Elmer E.	Brodhead.	Bennett, C. S.	Somers, Montana.
Austin, George M. ...	Janesville, R. 6.		
Austin, George M. ...	Janesville.		

MEMBERSHIP LIST—continued.

Names.	Post-Office Address.	Names.	Names.
Bennett, H. J.	Cherry Valley, Ill.	Brod, Clarence D.	Bridgeport.
Bennett, Wm. L. ...	Stanton.	Bromley, Fred G..	Whitewater, R. 4.
Benson, Ed., E.	Mt. Horeb, R. 5.	Brooks, Homer H..	Hopkinton, Iowa.
Berg, Carl J.	Tigerton.	Brotherton, Alvin	Colby.
Berge, Anton O.	Valders.	Brown, A. A.	Waterloo.
Berge, Oscar A.	Valders.	Brown, E. D.	West Salem
Berge, Otis I.	Valders.	Brown, Monro	Bay City
Bergum, Albert B. ...	DeForest.	Brown, R. P.	Hartland, R. 21
Bergum, Andrew ...	DeForest.	Brown, Wm.	Spring Valley.
Bergum, P. B.	DeForest.	Brue, N. H.	De Forest.
Berns, F. H.	Guttenberg, Ia.,	Brueckner, H. C. ...	Ft. Atkinson.
Bestul, Martin	Scandinavia.	Brueckner, Justus.	Jefferson.
Beule, Elmore A. ...	Beaver Dam.	Bruhn, John F. ...	Two Rivers, R. 1.
Bewick, W. M.	Sun Prairie.	Brunner, Ed. Z.	Monroe, R. 43
Bewick, Wm. W. ...	Madison, 824	Brunner, Fred F. ...	Hudson.
	W. Johnson St.	Brunner, R. W.	Hudson.
Beyer, George	Sturgeon Bay	Bruning, Jacob	Shermerville,
Beyreis, C. E. M. ...	Dorchester		Illinois.
Biglow, L. E.	Brooklyn	Bryson, Donald L.	Elizabeth, Ill.
Bilderbach, W. T. ...	Mondovi	Buckley, Lawrence	Kilburn.
Bilkey, J. W.	Madison, Mo-	Buddenhagen, E. E.	Neillsville.
	nona Farm.	Bullock, James P. ...	North Bend.
		Burce, Ruth E.	Eau Claire.
Bille, J.	Waupaca.	Burt, Charley	Brodhead.
Bingham, E. L.	Milton.	Busch, Andrew F. ...	Spooner.
Bingham, H. L.	Milton.	Bussewitz, Orla J. ...	Juneau.
Birkenkott, M. J. ...	Klevenville.	Bussewitz, R. H. ...	Reeseville.
Bixby, Phil T.	Appleton.	Bussewitz, W. E. ...	Juneau.
Blackwell, Leslie C.	Waukesha.	Bussey, W. P.	Omro.
Blakely, Albert J. ...	Neenah.	Butler, G. C.	Merton.
Blank, Geo. A.	Grafton.	Buzzell, Roy C.	Randolph.
Blankensee, Clar-	Madison, 513		
ence	State St.	Cade, Joseph M.	Viroqua.
Bliss, George M. ...	Warrensburg,	Caldo, Leslie	Janesville, R. 1.
	Missouri.	Capener, Howard H.	Portage.
Block, A. F.	Brandon.	Cardenas, F. F.	Satillo Coah,
Blumer, Ezra Jr. ...	Monroe, R. 4.		Mexico.
Boardman, Benj. ...	New Richmond.	Carey, Jas.	Fruitland, Utah.
Bohl, Anton, Jr.	Beaver Dam.	Carlson, A. T.	Augusta.
Bohoney, John	Prairie du Chien	Carlson, Nels P.	Hudson.
Bollig, F. A.	Black Earth.	Carmody, Daniel ...	Mt. Ida.
Bonzelet, J. P.	Eden.	Carmody, P. J.	Mt. Ida.
Booth, Guy A.	Cuba City.	Carncross, J. E.	Okeo.
Booth, Lester G. ...	Cuba City.	Chambers, O.	Union Grove.
Borck, Sam	No. Freedom.	Chase, A.	Knapp.
Boss, Sam J., Jr. ...	Oshkosh, R. 7.	Chase, J. P.	Sun Prairie.
Boss, Ulrich	Oshkosh, R. 7.	Chatterton, R. W. ...	Basco.
Bosshard, Eugene ...	Bangor.	Cherveney, Wenzel	Kewaunee, R. 2.
Boston, W. J.	Stevens Point.	Chetlain, Louis A. ...	Galena, Ill.
Boucesin, Gust L. ...	Detroit Harbor.	Chipman, W. R.	Morrisonville.
Boudnik, John	Kewaunee, R. 7.	Chrisler, Alvin A. ...	Lodi, R. 1.
Boyce, Charlotte ...	Dane.	Chrisler, Elmer A. ...	Lodi, R. 4
Boyd, Jas. T.	Waukesha, R. 7.	Chrisler, Harley E. ...	Lodi.
Bradley, H. C.	Hudson.	Christenson, Emili ...	Hartland, Ill.
Bradley, J. Frank ...	Somers.	Christiansen, W. O. ...	Chippewa Falls.
Bradley, Roy	Randolph.	Christoff, Theo. F. ...	Chilton.
Brandt, Elmer H. ...	Clayton, Iowa.	Church, W. H.	Lodi.
Brekke, Anton B. ...	Rosholt.	Chynoweth, H. E. ...	Madison.
Brehm, B. A.	Colby.	Clark, Chas. F.	Babcock.
Bremer, Felix E. ...	Hustisford.	Clark, J. J.	Berlin.
Bremer, Paul	Saukville, R. 1.	Clark, W. E.	Stevens Point.
Brentner, George F.	Lake Geneva.	Clausing, Adolph ...	Thiensville.
Breton, Hugh H. ...	Lodi.	Clavadatscher, T. ...	Sauk City.
Breton, Lawton. ...	Dane.	Clusen, Reinhold. ...	Manitowoc, R. 6.
Breton, Thos. D. ...	Lodi.	Coates, Clinton J. ...	Elkhorn, R. 6.
Brickson, A. C.	McFarland.	Cobleigh, Rollo S. ...	Delton.
Brickson, Andrew ...	Cottage Grove.	Coffin, Russell H. ...	Rockford, Ill., R. 7.
Briggs, E. T.	Fond du Lac.	Coit, H. W.	Darien.
Briggs, Lynn W. ...	Peebles.	Coldwell, John	Mazomanie.
Briggs, J. W.	Peebles.	Colladay, C. M.	Madison.
Brigham, Chas. I. ...	Blue Mounds.	Colladay, W. E.	McFarland.
Britzke, Paul	London.	Collin, D. W.	Luxemburg.

MEMBERSHIP LIST—continued.

Names.	Post-Office Address.	Names.	Names.
Collins, Edmund ..	Tavera.	DiVall, W. F.	Montfort, Bx 27.
Collins, Robert	Tavera.	Donaldson, H. A. ..	Eau Claire.
Conant, W. A.	Temple, New Hampshire.	Donovan, Frank	Van Dyne.
Connell, Clarence J	Colgate, R. 1.	Dopp, Paul B.	Waukesha.
Convey, Thos.	Ridgeway.	Dougan, W. J.	Beloit, R. 30.
Cook, Geo. L.	Burlington.	Douglas, Robert J. .	Juda.
Cook, Joe C.	Burlington.	Dow, Everett J.	Whitewater.
Cook, Oscar M.	Apple River, Ill.	Doyle, W. A.	Brodhead.
Cook, Winifred	Deer Park, R. 1.	Dreger, E. L.	Madison, R. 6.
Coon, Elam P.	Milton Jct.	Dresser, J. G.	Beloit.
Cooper, Joe	Pewaukee.	Dreutzer, C. B.	Sturgeon Bay.
Cornelius, E. C.	Monroe.	Dukleth, J. O.	Waterford.
Corley, Fay H.	Tower Hill, Ill.	Dunbar, Harry D. .	Elkhorn.
Costello, Dan A.	Fond du Lac, R. 5.	Durand, Mrs. G. G. .	Lake Bluff, Ill.
Coulter, Dean	Ohio, Ill.	Dworak, Henry A. .	Kewaunee.
Coulter, Harry S. .	Randolph.		
Craig, George D.	Oconomowoc, R. 26.	Eagan, J. J.	Wautoma.
Cramer, Joe	Menomonee.	Eastman, J. S.	Madison, 511 State St.
Cross, A. J.	Allenville.		
Cubela, Jos. M.	Muscoda.	Eggert, Gust.	Two Rivers, R. 1.
Cull, James, Jr.	Mt. Hope.	Eggler, V.	La Crosse, R. 1.
Curran, W. F.	Taylor.	Einfeldt, Albert	Greenwood.
Curtis, J. C.	New Lisbon.	Eisenmann, H.	Mishicot.
Curtiss, Mark W.	Salem, R. 29.	Elkins, Arthur O. .	Amery.
Curtiss, W. R.	Trevor.	Ellickson, A. C. .	Arlington.
		Ellis, E. J.	Evansville, R. 19.
Daellenbach, Chris.	Abbotsford.	Ells, R. H.	Darien.
Dahl, A. J.	Viroqua.	Ellsworth, R. W. .	Tavera.
Daley, Julius	DeForest.	Elver, E. C.	McFarland.
Daley, O. S.	DeForest.	Emmert, H. L.	Johnson Creek.
Daley, Thos.	McFarland.	Emmert, Oris J. .	Johnson Creek.
Daly, R. E.	Washburn.	Emery, Sydney L. .	Edgerton, R. 2.
Damler, Walter F. .	Sun Prairie.	Emerson, O. R.	Chippewa Falls.
Dance, George	Brookfield, R. 12.	Enge, Eugene	Prairie du Sac.
Dance, James	Brookfield.	Engel, George H. .	Fountain City.
Davidson, W. L.	Verona.	Engleman, John .	Hixton.
Davies, Elias	Markesha.	Erdall, M. N.	Deerfield.
Davies, Evan	Waukesha, R. 8.	Erickson, A. L.	Reedsville.
Davies, Llewellyn. .	Mineral Point.	Erickson, Clarence .	South Wayne, R. 1.
Davis, J. C.	Oshkosh.	Evans, Edgar	Wild Rose.
Davis, J. L.	DeSoto.		
Davis, L. H.	Bangor.	Faast, Ben. F.	Eau Claire.
Davison, R. W.	Sun Prairie.	Falarsh, Frank	Peshtigo.
Defnet, Jule J.	Casco, R. 21.	Farwell, R. R.	Ridgeway.
De Forest, Theo. K.	Ann Arbor, Mich.	Fav, Albert W.	New Richmond.
Delcorps, Louis	Sturgeon Bay.	Felland, L. O.	Stoughton.
Delwiche, E. J.	Ashand.	Ferris, Sherman .	St. Croix Falls.
Dennerlein, Arthur J.	Plymouth.	Fetting, Elmer	Cochrane.
Dennison, Nicholas.	No. Milwaukee, R. 10.	Fetting, Romeo	Cochrane.
Derke, Adolph	Madison, R. 26.	Finder, Fred C.	Van Dyne.
Derr, Gilbert	Columbus.	Finsnes, A. I.	Chippewa Falls.
Dettinger, Wm. F. .	Hixton.	Fisher, Leslie	Viroqua.
Dettwiler, John .	Monroe.	Fisher, Perl	Viroqua.
Dewire, M. E.	Hamilton, Ind.	Fisher, Wm. G.	Middleton.
Dexter, Walter S. .	Kenosha, R. 34.	Fleishauer, C. K. .	Arkansaw.
Dibble, R. A.	Menomonee Falls.	Flynn, John W.	Hartford.
Diderich, Nich. A. .	No. Milwaukee.	Foerster, M. F.	Whitewater, R. 2.
Dieckhoff, John. .	Randolph.	Foll, Walter	Deerfield.
Dienst, Arthur H. .	Hinckley, Ill.	Follstad, Anton .	Elcho.
Dieter, Bert	Montfort.	Ford, J. F.	Mazomanie.
Dieter, Wm. A.	Montfort.	Forehand, W. C. .	Platteville.
Dietch, John J. .	Black River Falls.	Foth, F. D.	Norwalk.
Dillon, Austin	DePere.	Fox, Phil, Jr.	Durand.
Dillon, James	DePere.	Frauenheim, O. R. .	Random Lake.
Dimond, Nicholas .	Montello.	Frederickson, Fred.	Spring Green.
Dineen, C. F.	Pewaukee.	Freeman, Geo. A. .	Sparta.
Dineen, Michael ..	Blue Mounds.	Fuller, Albert	North Lake.
		Fuller, Horace	North Lake.
		Fuller, Robert	Mishawaka, Ind.

MEMBERSHIP LIST—continued.

Names.	Post-Office Address.	Names	Post-Office Address.
Fuller, Roland	North Lake.	Gunderson, F. D. ..	Oconomowoc.
Funican, Wm.	Kendall.	Gustafson, Theo. ..	Stockholm.
		Gustafson, Chas. ..	Manitowoc.
Gade, Adolph	Reedsburg, R. 2.	Gutschenritter, F. J.	West Bend.
Gapen, Frank W.	Monroe.	Guttenberg, F., Jr..	Jefferson, R. 1.
Gamerdinger, John ..	Kendall.	Gwynne, Sam	Brodhead.
Gangstad, J. O.	Deerfield.		Care B. E. Austin.
Gardner, Harry G. ...	Monroe, R. 8, In care of E. C. Cor- nelius.	Haag, Frank	Melrose.
		Haag, Henry	Melrose.
Garey, James	Grimms.	Haegers, Martin ..	Luxemburg, R. 4.
Garside, Harry R. ...	Cedar Grove.	Hagestad, A. C.	Ettrick.
Gasser, Geo. W.	Spring Green.	Hageseth, Frank	Menomonie.
Gaston, L. E.	Barrington, Ill.	Haigh, Gerhard	Cream.
Gehrand, Arthur A. ..	Rochester.	Hall, Frank	Hartland, R. 21.
Geigel, John	Monroe.	Hall, John M.	Hartland, R. 21.
Geller, Henry Wm. ...	Woodbine, N. J.	Hall, W. H.	Wonewoc.
George, Russell	Scranton, Iowa.	Halvorson, A. E.	Manitowoc.
George, W. R.	Corliss, Edola Frm.	Halvorson, Theo.	Kennan.
Geraldson, Mervin ...	Manitowoc.	Hamilton, T. S.	Westfield, R. 1.
Gerking, F. J.	Elk Mound.	Hanchett, W. H.	Sparta.
Germanson, Herbert ..	Luck.	Hanna, Oliver O.	Mt. Horeb.
Gest, Chas.	Windsor.	Hans, Joe T.	Jefferson.
Getschmann, Willie ..	No. Freedom.	Hansen, Henry T. ...	Sparta.
Ghastin, Floyd L.	Twin Bluffs.	Hanson, Carl H.	Elk Mound.
Ghastin, Wm. J.	Twin Bluffs.	Hanson, Carl O.	Hollandale.
Gibbard, P. J.	Ripon.	Hanson, Harry	Camp Douglas.
Gierke, Erwin A.	Waukesha.	Hanson, Henry O.	Spring Valley, R. 4.
Gizstad, Benneth	Manitowoc.	Hanson, N. P.	Amherst Jct., R. 2.
Gilbertson, C. P.	Arcadia.	Hansen, Warner	Manitowoc.
Gille, Fred.	Sharon.	Hanson, Will	Catawac.
Gillette, Rufus	Verona.	Hardy, John	Waukesha.
Gillies, J. H.	Stoughton.	Hargrave, Robert ...	Ripon.
Gilmore, Everett H. ..	Randolph.	Harker, Irving	Dodgeville.
Glindinning, H. L. ...	Shullsburg.	Harker, John J.	Linden.
Gloeckler, L. P.	Portage.	Harr, Ernest B.	Bangor, R. 3.
Gloeckler, Theo.	Portage.	Harrington, Forest ..	Waupaca.
Goetsch, A. A.	Juneau.	Harrington, Myron..	Waupaca.
Gould, Guy	Peshigo.	Harris, A. M.	Plainfield.
Gould, Merrill M. ...	Peshigo.	Harris, R. E.	Warrens.
Graber, Edw.	Mineral Point.	Harrison, Geo.	Chippewa Falls.
Graber, L. F.	Mineral Point.	Hart, Wm. C.	Brookfield.
Grady, Geo.	Oregon.	Hartsough, A. L. ...	Gratiot.
Graham, P. S.	Fennimore.	Harvey, Caleb B. ...	Wonewoc.
Grandine, Lester D. ..	No. Crandon.	Haskins, Leon O. ...	Montello.
Grandine, M. D.	No. Crandon.	Hass, R. A.	La Crosse.
Graper, Arthur	Helenville.	Hatch, L. M.	Big Bay, Mich.
Graper, Edwin J.	Helenville.	Hatz, Jacob H.	Prairie du Sac.
Graser, Adam H.	Waukesha, R. 4.	Hayden, Thos. H. ...	Grimms.
Grass, C. F.	Prairie du Sac.	Hayes, Edwin H.* ..	Buffalo, New York.
Grassman, Alfred ...	Kendall.		593 W. Ferry St.
Graul, Edw. J.	Independence.	Heberlein, C. F.	Kilbourn.
Graves, D. W.	Baraboo, R. 3.	Hecketsweiler, O. J. ..	Alma Center.
Grebe, F. P.	Fox Lake.	Hegge, Julius	Galesville.
Greene, Jay I.	Clinton.	Heinke, Alvin E.	Stratford.
Greenso, A. L.	Menomonee Falls.	Heinze, Louis	Prescott.
Griffith, James	Spencer.	Heling, Paul	Menomonee Falls,
Griswold, H. W.	West Salem.		R. 18.
Groom, Harvey L. ...	Cassville, R. 1.	Hemker, Fritz H. ...	West Salem, R. 2.
Groth, C. A.	Cedarburg.	Henderson, Knud ...	Cambridge.
Groth, Louis	Cedarburg.	Hendrichs, John	Campbellsport.
Grove, Albert	Columbus, R. 6.	Hendry, Robert D. ...	Chippewa Falls.
Grove, Christian	Columbus, R. 6.	Henke, Louis	Lowell.
Grove, Christian	Columbus.	Henry, Ernest E.	Viroqua.
Guenther, N. W.	So. Milwaukee, R. 17.	Herold, Rudolph, Jr.	Stoddard.
		Herr, John G.	Matoon.
Guitzkow, Arthur ...	Madison, R. D.	Herwig, R. B.	Delfton.
Gullickson, Gust ...	Nelsonville.	Herwig, Theo. E.	Delton.
Gunderson, Clifford ..	Manitowoc, R. 4.	Hickcox, J. Gilbert..	Whitefish Bay.
		Hicken, A. B.	Waukesha,

* Deceased.

Membership List, 1910.

XV

MEMBERSHIP LIST—continued.

Names.	Post-Office Address.	Names.	Post-Office Address.
Hildemann, Alex. E.	Belle Plaine.	Jeffery, H. B.	Menomonee Falls.
Hill, Charles T.	Brookfield.	Jenkins, Floyd	Bangor.
Hill, Charley	Brookfield.	Jerde, Perry S.	Deronda.
Hill, J. L.	Prairie du Sac.	Jewett, Donald C.	Sparta.
Hill, J. T.	Brookfield.	Jirtle, Geo. B.	Algoma.
Hill, Otto C.	Mt. Horeb.	Johannes, Albert	Two Rivers.
Hillier, H. B.	Brownsdale, Minn.	Johnson, Billie	Strongs Prairie.
Hinrichs, Ernest	Reedsburg, R. 4.	Johnson, Chas. G.	Welcome.
Hintz, George E.	Oakfield, R. 26.	Johnson, E. T.	Soldiers Grove.
Hintz, Wm. F.	Edgerton.	Johnson, Frank L.	Osseo.
	Emery Farm.	Johnson, Glenn	Baraboo, R. 2.
Hinz, A. F.	Ripon.	Johnson Hanford	Iola.
Hirsch, B.	Washburn, R. 1.	Johnson, J. E.	Ferryville.
Hitchcock, C. E.	Sparta.	Johnson, L. M.	Ashland.
Hitchcock, H. R.	Pecatonica, Ill.	Johnson, Sam. A.	Westfield.
Hitchcock, Wm. P.	Sparta.	Johnston, Frank R.	Appleton, R. 6.
Hjelle, Ole K.	Soldiers Grove.	Johnston, Oney	Appleton.
Hoard, Harry H.	Waupun.	Joice, George	Waterloo.
Hoard, L. R.	Cataract.	Jones, Albert	Dousman.
Hodan, A. B.	Friendship.	Jones, Arthur	Randolph.
Hoefner, Herbert	Manitowoc.	Jones, E. E.	Rockland.
Hoffmann, Conrad	Phillips.	Jones, E. F.	Sun Prairie.
Hofmann, Carlie	Mendota.	Jones, Ira P.	Hinckley, Ill.
Hogan, E. J.	New Richmond.	Jones, John G.	Beaver Dam.
Hollien, David	Westby.	Jones, Owen R.	Beaver Dam.
Holcomb, W. R.	Excelsior, Minn.	Joos, F. B.	Fountain City.
Holloway, Ed. M.	Union Grove.	Jorenby, Carl O.	Blanchardville.
Holmen, O.	Belleville.	Jorstad, Ed.	Cameron.
Holscher, A. C.	Cottage Grove.	Judd, Jesse L.	Endeavor.
Holt, Lester H.	Oconomowoc.	Jung, A. E.	Randolph.
Hood, D. L.	Spring Green.	Jung, J. W.	Randolph.
Hoover, Kenneth M.	New Lisbon.	Jungbluth, Wm. J.	West Allis, R. 5.
Hopkins, A. W.	Madison.		
Hopkins, B. F.	Morrisonville.	Kaiser, Wm. G.	Cuba City.
Hopkins, J. W.	Morrisonville.	Kalouner, Edward.	Antigo, R. 5.
Hoppert, Martin	Sheboygan, R. 4.	Kaltenberg, A.	Waunakee.
Horswill, W. K.	Black River Falls.	Kaltenberg, Jacob	Waunakee.
Horton, James E.	Waukegan, Ill.	Kaltenberg, Jos.	Waunakee.
Hougan, O. O.	Stoughton.	Kaltenberg, P.	Waunakee.
Houghton, F. T.	Reedsburg, R. 3.	Kaste, Alfred H.	Cream.
Houslet, Neal	Packwaukee.	Kaste, Chas.	Cream.
Howe, John O.	Comstock.	Katel, W. C.	Kewaunee, R. 1.
Howell, Horace P.	Sparta.	Kaul, E. H.	Waukesha.
Hoxsey, E. R.	Serena, Ill.	Keating, P. H.	Mt. Hope.
Huckstead, A. A.	Neillsville.	Keenan, Wm. M., Jr.	McFarland.
Huhn, Wm.	Cleveland, R. 1.	Kelley, A. N.	Mineral Point.
Hutchinson, Wm. D.	Rubicon.	Kendall, Myron	Iola, R. 3.
		Kendell, Geo. W.	Sun Prairie.
Ihrig, J. J.	Oshkosh, R. 4.	Kennedy, Bernard	Nelson.
Illian, Wm. L.	Adell.	Kennedy, Laury	Nelson.
Imrie, David	Roberts.	Kent, H. W.	Rusk.
Indermuehle, F. A.	Beaver Dam.	Kent, J. S.	Rusk.
Ingwell, Albert	Blanchardville.	Kersten, Leo M.	DePere.
Iverson, C. M.	Browntown.	Kieffer, Mike	Fredonia.
		Kielsmeier, Hugo C.	Cleveland, R. 3.
Jacobs, A. F.	Coloma.	Kimble, N. G.	Milton Junction.
Jacobs, E. C.	Menomonte.	Kindschi, Edwin	Prairie du Sac.
Jacobs, S. M.	Janesville.	King, Wm. T.	Jim Falls.
Jacobson, C. H.	Waterford, R. 25.	Kings, Benjamin J.	Reedsville.
Jahn, Chas.	Cream.	Kinney, Clinton	Wauwatosa.
Jahnke, Albert	Black Creek.	Kinstler, C. L.	Washburn.
Jahnke, J. F.	Pepin.	Kirby, James J.	Grimms.
Janecek, C. M.	Bloom City.	Kirst, Ernest J.	Tomah.
Jaquish, J. E.	Twin Bluffs.	Kitchen, Jos. H.	El Dorado.
Jamison, Clarence	Appleton.	Kitley, Leonard W.	Sharon, R. 2
Jamison, Harvey	Appleton.	Kittleson, Knutt	Mt. Horeb.
Jamison, Robert	Appleton.	Kittleson, K. T.	Mt. Horeb.
Jamison, Stanley	Appleton.	Kittleson, Wm.	Mt. Horeb.
Jamison, W. G.	Appleton.	Klann, Adolph	Reedsville.
		Klassy, Henry	Monroe.

MEMBERSHIP LIST—continued.

Names.	Post-Office Address.	Names.	Post-Office Address.
Klassy, Henry C.....	Monticello.	Lee, Lewis Johnson.	DeForest.
Klassy, Wm. E.....	Monticello.	Lee, L.	Leon.
Klaus, C. S.....	Colesburg, Iowa.	Lee, Oliver	Amery, R. 2.
Klemm, Lewis J.....	Welcome.	Lee, Oliver	Klevenville.
Klessig, Edwin O.....	Cleveland.	Lee, Peter A. G.....	Deerfield.
Klessig, Otto	Cleveland.	Lee, Royal D.....	Arkdale.
Klofanda, Reuben	Racine, R. 1.	Lefebber, Wilbur F.....	Evansville.
Klofanda, Royal	Racine, R. 1.	Legler, L. G.....	Juda.
Klovdahl, J. J.....	Wittenberg.	Legrid, Henry E.....	Deer Park.
Klumb, Albert J.....	Rockfield.	Lehman, Edwin	Ripon.
Klumb, Hugo G.....	Kewaskum.	Lehmann, Theo.	Watertown.
Klumb, Oscar	Rockfield.	Leith, B. D.	Madison.
Klussendorf, F. E.....	Waukesha, R. 6.	Leith, Ray H.....	Van Dyne, R. 9.
Knapton, W. E.....	Downing.	LeJeune, Ernest	Rice Lake, R. 2.
Kneeland, Peter	Windsor, R. 2.	Lemke, Albert	Welcome.
Knoep, Wm.	Weyauwega.	Leonard, Wm. R.....	Jefferson.
Knoke, Hugo	Readfield.	Letts, Edw. F.....	Appleton, R. 4.
Knowelton, A. R.....	Waukesha.	Leverich, J. W.....	Sparta.
Knutson, Ed. A.....	Manitowoc, R. 4.	Lewis, E. H.....	Whitewater.
Knutson, Ernest L.....	Wautoma.	Lewis, Lester M.....	Monticello, R. 1.
Kocmich, Ed.	Kewaunee.	Lewis, Owen H.....	Genesee Depot.
Koehler, John P.....	Hayton.	Ley, Nicholas	Dodgeville.
Koellmer, Gustav	Cleveland.	Ley, Peter	Dodgeville.
Koenecke, A. E.....	Reedsburg.	Leykom, J. Wallace	Antigo.
Koenecke, Edw. H.....	Reedsburg, R. 5.	Lindas, Theo. A.....	Marshall.
Koenigs, Philip	Fond du Lac.	Lindberg, C. H.....	Dresser Jct., R. 1.
Kolb, Ed.	Cleveland, R. 2.	Lindenman, J. H.....	Mishawaka, Ind.
Koll, C. A.....	Eau Claire.	Lindevig, Oscar O.....	Viola, R. 1.
Koller, Wm.	Kewaunee.	Linse, Chas.	La Crosse.
Koltcs, Jos. F.....	Dane.	Lintner, Sam.	Arlington.
Konz, John, Sr.....	Fairchild, R. 2.	Linton, Gilbert A.....	Ft. Atkinson.
Korth, Leo R.....	Neillsville.	Lintz, Willis	Gays Mills.
Koss, Otto W.....	Medina.	Livingston, E. C.....	Randolph.
Kraetsch, Alvin C.....	Menomonee Falls.	Lloyd, Evan B.....	Cambria, R. 2.
Kramer, Henry F.....	Bloomer.	Loesel, Wm.	Cream.
Krampeter, F. H. A.....	Mondovi, R. 3.	Loewe, Arthur P.....	Milwaukee, R. 8.
Krause, Wm. H.....	Thorpe.	Logan, R. G.....	New Palestine, Ind.
Kreul, August R.....	Fennimore.	Longley, A. E.....	Dousman.
Krofta, Rudolph	Kewaunee, R. 2.	Longley, H. N.....	Dousman.
Kronholm, Edw.	Grand Rapids.	Lothor, O. A.....	Waupun.
Kreuger, Alexander	Watertown, R. 2.	Lowe, James G.....	River Falls.
Krueger, H. E.....	Beaver Dam.	Lowell, Lloyd S.....	Sharon.
Kruschke, Alvin C.....	New Richmond.	Lubbers, William	Cedar Grove.
Kruschke, Geo. H.....	New Richmond.	Luebke, H. W.....	Watertown, R. 7.
Kuehn, Chas. A.....	Brandon.	Lukken, Amil	Cambridge.
Kuehne, Edm. H.....	Lake Beulah.	Lunde, Geo.	Stoughton.
Kuhlman, A. H.....	Lowell.	Lunde, Gunder	Stoughton, R. 1.
Kuhlman, Fred	Lowell.	Lutz, Geo.	Cleveland.
Kuhtz, Harvey A.....	Waukesha.		
Kunkel, Arthur M.....	Manawa.	McAdam, Cecil	Schofield.
Kurtze, Otto C.....	West Allis, R. 15.	McCarthy, Edw.....	Walworth.
Kutchin, Victor	Green Lake.	McClanahan, G. P.....	Madison.
			430 N. Bruen St.
Lachmund, Robt.	Sauk City.	McClurg, Walter F.....	Viroqua.
Lanson, Robert J.....	Blissfield, Mich.	McConnell, F. J.....	Darlington.
Lane, Orie J.....	Hixton.	McConnell, Oren S.....	McFarland.
Larsen, A. C.....	Madison.	McCoy, George L.....	Evansville.
Larsen, Chas.	Brown City, Mich.	McDermid, G. A.....	Eau Claire.
Larsen, Eli	Sawyer.	McDowell, D. P.....	Packwaukee.
Larsen, J. M.....	Wautoma.	McFarlane, A. J.....	Morrisonville.
Larsen, Joseph S.....	Woodford.	McGachie, Edw. P.....	Rockford, Ill., R. 8.
Larsen, LeRoy	Iola.	McGinnis, Chas.	Baraboo.
Lathers, Chas. F.....	Beloit.	McIntyre, Ivan	Ft. Atkinson.
Latta, F. L.....	Clinton Jct.	McKernan, R.	Sturgeon Bay.
Lawrence, F. W.....	Bangor.	McLean, Donald	La Garita, Colo.
Lawrence, W. J.....	DeSoto.	McLeod, Stanley	Lake Geneva.
Lawson, W. A.....	Rosendale.	McNab, A. J.....	Black River Falls.
Lawton, A. R.....	Viola.	McNown, J. H.....	Mauston.
Lebeis, F. J.....	Bloomer.	MacLean, George	Madison, R. 6.

MEMBERSHIP LIST—continued.

Names.	Post-Office Address.	Names.	Post-Office Address.
Machimura, K.	West Allis.	Mueller, Edward O. . .	Appleton.
Madoche, Leo J.	% Rust Bros.	Mueller, M. J.	Edgerton.
Maeder, J. W.	Sawyer.	Mueller, Rudolph ...	Forestville.
Magee, Ellis	Oregon.	Mulloy, John B.	Wayside.
Mahoney, David	Coleman.	Myrick, M. O.	Bristol.
Marken, Otis A.	Juneau.		
Marken, Richard	Valders.		
Markham, F. C.	Valders.		
Marshall, A. C.	Independence.	Nace, Franklin	Iola.
Marshall, W. S.	Omro.	Nagle, Lee	Bridgeport.
Marston, Albert E. . .	Delton.	Napier, J. M.	Madison.
Marston, Roy C.	Beloit.	Nate, George B.	Grimms.
Martin, Walter I.	Beloit.	Nathen, Paul R.	Kendall.
	Chicago, Ill.	Nellen, P. J.	De Forest.
	5212 S. Park Ave.	Nelson, Carl A.	Greenwood.
Martiny, L. P.	Chippewa Falls.	Nelson, Fred	River Falls.
Marty, Mathias	Monticello, R. 1.	Nelson, John A.	Port Wing.
Mathews, Lee G.	Brandon.	Nelson, Willie	Milltown, R. 1.
Mathews, Milton D. .	Helenville, R. 1.	Nemetz, Frank J.	Kewaunee.
Mattison, Thos.	Blair.	Neprud, Nels O.	Coon Valley.
Mau, H. G.	Brodhead.	Neuberger, Wm. T. . .	Reeseville.
Maug, Arthur J.	Ripon.	Neystrom, Archie ..	Malden Rock.
Mayer, Sidney	Kalispell, Mont.	Nicholls, Harry G. . .	Stoughton.
Mayo, John H., Jr. . .	Eau Claire, R. 5.	Nicolaus, Chas. A. . .	Cudahy.
Mead, R. E.	New Lisbon.	Nicolaus, D. C.	Mukwonago.
Meekin, H. W.	Fond du Lac.	Nieman, Walter G. . .	Hamburg.
Meier, Edward F.	Eden, R. 36.	Nierner, Frank	Cassville, R. 1.
Melby, Dan.	Spooner, R. 2.	Niere, Stuart P.	Watertown.
Merkel, Henry	Appleton, R. 3.	Nies, Peter	Greenleaf, R. 3.
Merrill, W. M.	Taylor.	Niffenegger, J. T. . .	Monroe.
Messerschmidt, S. H.	Flat Rock, Ohio.	Niles, Milo E.	Mauston.
Meurer, Paul	Genoa Jct.	Nolan, J. H.	Eldorado.
Meyer, A. H.	Grafton.	Noll, Louis	Alma.
Meyer, A. J.	Howell, Mich.,	Nordlie, Alfred	Deerfield.
	R. 7.	Nordlie, C. K.	Rockdale.
Meyer, Alfred J.	Oakwood, R. 18.	Nordman, E.	Polar.
Michels, Henry	Malone.	Norgord, C. P.	Madison.
Michels, Math.	Peebles.	Norrbon, C. G.	Eland.
Mielke, F. L.	Windsor.	Norsman, Jerome O. .	Madison, R. D.
Mielke, J. E.	Baseo.	Northrup, H. R.	East Hampton.
Mihills, D. R.	Fond du Lac.		Long Island, N. Y.
Mihills, G. N.	Fond du Lac.	Northrup, J.	Waupun.
Mikkelson, W. J.	Arkdale.	Nuttleman, Adolph. .	West Salem.
Milkee, Geo.	Ft. Atkinson.	Nuttleman, Alfred. . .	West Salem.
Miller, A. H.	Waupun.	Nuttleman, Fred	West Salem.
Miller, Arthur	Waupun.		
Miller, A. J.	Milltown.		
Miller, Henry C.	Allenville.		
Miller, L. A.	Sparta.	O'Connell, James ...	Hartford.
Mills, Roscoe C.	Appleton, R. 2.	O'Connor, Edw. F. . .	Lodi, R. 1.
Mills, Stanley	Walden, N. Y.	O'Dell, Wm.	Lake Beulah.
Miritz, O. F.	Fond du Lac.	Oestreich, L. J.	Snooner, R. 2.
Mistele, Wm. O.	Kendall.	Ogle, James	Waldo.
Mitchell, Dean	Brookfield.	O'Hearn, Dennis	Eldorado.
Mitchell, Geo.	Cottage Grove.	Oleson, James P.	Ripon, R. 13.
Mitchell, J. T.	Cottage Grove.	Oliver, C. S.	Eau Claire.
Mitwede, Henry	Waukesha.	Olson, G. C.	Westby.
Moely, Conrad	Prairie du Sac.	Olson, Harry O.	Larsen.
Moen, Gilbert T.	Eleva.	Olson, Nalvin A.	Chetek.
Moldenhauer, W. C. .	Manitowoc, R. 1.	Olp, Frank J.	Delton.
Moore, Fred W.	Beloit.	Oman, Carl	Tavera.
Moore, Henry G.	Mauston.	Omann, C. H.	Nashotah.
Moore, R. A.	Madison.	Orr, Lea B.	Bagley.
Morgan, Chas.	Albany.	Orth, Alfred	Muscoda, R. 2.
Morrissey, J. H.	Arena.	Orvis, L. C.	Salem.
Morse, Albert	Kilbourn.	Osterday, E. G.	Stockton, Ill.
Moseley, A. G.	Cataract.	Otterholt, Henry	Chetek.
Moseley, H. B.	Beloit.	Owen, Roger A.	Portage, R. 2.
Mower, J. P.	Wauwatosa.	Owens, Edwin	Wild Rose.
Muehleisen, G.	Tell.	Owens, H. C.	Fox Lake.

MEMBERSHIP LIST—continued.

Names.	Names.	Names.	Post-Office Address.
Pabst, Fred	Oconomowoc.	Pritzl, John A.....	Cato, R. 1.
Paddock, A. D.....	Salem.	Puls, John	Hartford.
Paddock, Alva	Salem.	Purinton, C. G.....	Monticello, R. 2.
Page, G. F.....	Berlin.		
Palfrey, John R.....	Omro.		
Palmer, Earl	Lake Geneva.	Quale, John H.....	Mondovi.
Palmer, Levi	Verona.	Quast, Arthur E.....	Saukville.
Parrish, J. O.....	Plymouth.		
Parrott, Alfred	Endeavor.		
Parsch, Gustav A.....	Wausau.	Radermacher, John..	Middleton.
Parsons, Wm. A.....	Ft. Atkinson.	Rafferty, Agnes	Windsor.
Patrick, Ed. H.....	Waupun.	Ralph, Will H.....	Cuba City.
Patrick, Robert	Waupun.	Randall, S. M.....	Waupun.
Patrick, Will	Waupun.	Rasmussen, Fred.....	Neenah.
Pattee, Drew J.....	Waupun.	Rather, Armand P....	Peebles, R. 37.
Pattee, John R.....	Waupun.	Rauchenstein, Emil..	Rice Lake.
Patten, W. H.....	Roscobel.	Rauchenstein, John..	Rice Lake, R. 5.
Patterson, Harvey ..	Melrose.	Ray, Victor	Madison, R. 5.
Patterson, Harley J.	Cottage Grove.	Ray, W. F.....	Kewaunee, R. 1.
Patterson, J. D.....	Melrose.	Rehbein, A. E.....	St. Croix Falls, R. 1
Patterson, J. L.....	Glen Haven.	Reindahl, A. K.....	Madison.
Pattison, H. A.....	Durand, R. 2.	Reineking, Rudolf ..	Sheboygan Falls.
Paulson, H. E.....	Hollandale.	Reinhardt, Chas. F..	Nelson.
Paulson, J. E.....	Manitowoc.	Reinhardt, R. F.....	Nelson.
Paulson, P. A.....	Hudson, R. 2.	Reinhardt, W. H.....	Wausau, R. 2.
Peace, Jas. W.....	Duluth, Minn., R. 3.	Renak, Edw.....	Racine, R. 2.
Pearson, Clarence ..	LaValle.	Renk, Wm. F.....	Sun Prairie.
Pederson, Peter	Eleva, R. 3.	Restow, Harry	Onalaska.
Peebles, John	Oconomowoc.	Rex, Edgar H.....	Beaver Dam.
Peebles, Percy A.....	Oconomowoc, R. 26.	Reyer, Walter R.....	Templeton, R. 20.
Peik, Arthur	Chilton.	Richards, M. M.....	Lodi.
Pelisek, Frank W....	Kewaunee.	Richardson, Geo. J..	Spring Grove, Ill.
Perry, J. H.....	Ft. Atkinson.	Riederer, Blas.....	Cato.
Perry, Will H.....	Grattot.	Riek, Anthony	Plain.
Persen, Alfred	Bryant.	Rieman, Elmer W....	Ripon.
Persons, M. B.....	Plum City.	Rieser, Alfred E.....	Spring Green.
Peters, Ezra	Sharon.	Ristau, Emil O.....	Osseo.
Peters, Hubert	Calvary.	Ritschard, Emil	Monticello, R. 3.
Peters, John	Lake Beulah.	Ritschard, Fred	Monroe.
Peters, J. Y.....	West Bend.	Robers, Wm. J.....	Burlington.
Peterson, August ..	Stanton.	Roberts, F. W.....	Woodworth.
Peterson, Conrad T.	Grantsburg.	Roberts, Wm. E.....	Randolph.
Peterson, Einar A....	Milladore.	Robinson, A. S.....	Lake Geneva.
Peterson, Erri M.....	Amery, R. 4.	Robson, Melvin	Spring Green, R. 1.
Peterson, Hy. N.....	New Holstein.	Roethel, Herman	Kiel.
Peterson, Perry O....	Amherst.	Roffers, John H.....	Green Bay.
Peterson, Peter	Walworth, R. 1.	Rolfson, C. E.....	Racine.
Phillips, Jesse	Elizabeth, Ill.	Rood, Henry	South Wayne.
Pierce, W. O.....	River Falls.	Rood, Minick C.....	South Wayne.
Pierner, Fred.....	No. Milwaukee.	Root, Alvin	Fond du Lac, R. 5.
Pierner, John W.....	Thiensville.	Rorer, Wm. A.....	M. Gretna, Pa.
Pierstorff, H. H.....	Madison, R. 7.	Rorge, A. J.....	Stoughton.
Pinkerton, A. J.....	Waupaca.	Rosholt, Jacob A....	Scandinavia.
Pinkerton, Fred	Waupaca.	Rosenow, Arthur	Oconomowoc.
Piper, Harry B.....	Sharon.	Rosenow, H. E.....	Oconomowoc.
Pirner, Fred	Sugar Bush, R. 26.	Rosenow, H. G.....	Waumandee.
Plenty, Robert	Rice Lake.	Rued, Axel	Curtiss.
Pokfuss, Edw. H.....	Waukesha.	Ruesink, H. G.....	Waupun.
Pope, R. W.....	Sun Prairie.	Ruhrmann, B. J.....	Cross Plains.
Popp, Arthur	Jefferson.	Runde, Albert	Hazel Green.
Port, Mike	Grafton.	Runde, August	Sinsinawa.
Porter, L. W.....	Evansville.	Runde, Aloysius	Cuba City.
Porter, W. B.....	Evansville.	Rupp, Herman	Malone.
Porter, W. L.....	Madison, S. D., R. 2	Rusch, E. W.....	Reedsburg.
Porter, W. N.....	Evansville.	Russell, A. C.....	Augusta.
Portz, Herman	Chili.	Rust, S. H.....	Mukwonago.
Post, H. L.....	Sextonville.	Ruste, C. O.....	Blue Mounds.
Praff, Vernon	Catawact, R. 2.	Ryan, Gerald	Sun Prairie.
Preston, Geo. M.....	Montfort.	Ryan, Malachi	So. Kaukauna.
Price, W. Howard...	Waukesha, R. 9.	Rylander, Ed.	Shell Lake.

MEMBERSHIP LIST—continued.

Names.	Post-Office Address.	Names.	Post-Office Address.
Sackett, Clyde M....	Cumberland.	Smith, Ray K.....	El Paso, Texas.
Sager, Milo	Deerfield.	Smith, Sam A.....	Oakfield.
Sampson, August ...	Menomonie.	Smith, Seymour L...	Oshkosh, R. 5.
Salzman, Ed.	Kiel, R. 2.	Smithwick, M. W....	Chicago, Ill..
Sandman, W. D.....	Holmen.		115 Adams St.
Sargent, Lester	Warren, Ill.	Snyder, Elmer G....	Clinton Jct.
Sattler, James H....	Rosendale.	Snyder, R. B.....	Clinton.
Schaefer, Henry G..	Plymouth.	Soholt, Gustav L...	Madge.
Schaefer, R. J.....	Appleton.	Solem, Edward	Wonewoc.
Schermerbom, G. B.	Hartland.	Someville, John	Black River Falls.
Schild, John	Fall Creek.	Sorem, Erick	West Prairie.
Schiller, Claude E..	Beaver Dam.	Sorenson, Hilbert ..	Franksville.
Schilling, Harry W.	Onalaska.	Spalding, Earl	Windsor.
Schmit, A. W.....	Appleton.	Spalding, Frank	Windsor.
Schmit, Albert	Appleton.	Spartz, N. A.....	Union Grove.
Schmit, Alois E.....	Hortonville.	Spink, L. O.....	Platteville, R. 10.
Schmit, Geo.	Greenville.	Staley Bros.	Hillsboro.
Schmit, Wm. F.....	Appleton, R. 2.	Stangel, Richard	Kewaunee, R. 1.
Schmitz, Edw.	Lone Rock.	Stauffacher, A. J....	Monroe.
Schmitz, Hubert	Lone Rock.	Stegne, Chris.	Viroqua.
Schneider, G. P.....	Walsh.	Steidtman, Edwin..	Merrimac.
Schnell, Gustav	Dane.	Steinbach, Otto	Kendall.
Schottler, Conrad J.	So. Germantown	Steiner, W. H.....	Brownsville.
Schroeder, F. C....	Hartland.	Steinhoff, W. J.....	Platteville.
Schroeder, H. F....	Jim Falls.	Steuerwald, Walter	Loyal.
Schuette Herman W.	Reedsburg.	Stevens, Ernest A..	Eau Galle.
Schulte, Peter J....	Cleveland.	Stevenson, Carl	Soldiers Grove, R. 5
Schultz, Rudolph ..	Lake Mills.	Stevenson, J. W....	Winnebago, Minn.
Schumacher, Jno. F.	Waukesha.	Stewart, Geo. L....	Lodi.
Schumann, Hugo ..	Beaver Dam.	Stewart, Joe H.....	Wales.
Schumann, Hugo W.	Beaver Dam.	Stienstra, Samuel J.	Keams Canon, Ariz.
Schwartz, John A...	Troy Center.		
Schwandt, Wm.	Stanton.	Stivarius, Geo. A....	Fennimore, R. 4.
Schwartz, Peter C..	Waukesha.	Stone, A. L.....	Madison.
Sebion, Cornelius ..	Westby.	Stone, J. R.	Reedsburg.
Sebion, Stanley	Westby.	Straka, Edw. E.....	Maribel, R. 2.
Sebion, T.	Westby.	Straug, Frank	Lone Rock.
Seitz, Adam	Waukesha.	Strommen, Anton A.	Blanchardville.
Semb, Allen T.....	Schuyler, Neb., R. 1	Strommen, Geo. K..	Cambridge.
Sette, Everett A....	Juneau.	Strowig, Wm. A....	Cleveland, R. 1.
Sette, O. E.....	Juneau.	Stuesser, Eugene ..	Richfield.
Sevenich, Tony	Hilbert.	Sugden, W. R.....	Randolph.
Sharpee, Alfred A...	Rio.	Suhr, A. A.....	Cochrane.
Sharpee, Carl	Columbus.	Suhr, Otto A.....	Cochrane.
Sharpee, Ehdre A...	Rio, R. 1.	Sullivan, Jas. A....	Grimms.
Sharpee, Johannes A.	Rio.	Surggum, Oscar	Viroqua.
Sharpee, P. A.....	Morrisonville.	Svacina, Jacob, Jr.	Rice Lake.
Sheen, C. J.....	Trevor.	Swan, Earling	Milwaukee,
Sheen, Wray J.....	Trevor.		Sta. B, R. 6.
Sheldon, Ben F....	Brandon.	Swan, Robert G....	Milwaukee.
Sherry, Selmer	Viroqua.		Sta. B, R. 6.
Sherwood, Chas. B.	Spring Green.	Swanton, John	Oconomowoc.
Shuman, Chas. F....	Koshkonong.	Swenson, Earl E....	Kenosha.
Siepert, F. W.....	Chippewa Falls.		660 Pleasant St.
Silver, C. R.....	Belleville.	Swiggum, Neil	Viroqua.
Sim, J. O.....	Stoughton.	Swoboda, F. G.....	Dousman.
Simon, Mike	Malone.		
Simmons, Geo. W....	Monroe.	Tagge, Herman	New Holstein.
Simmons, Will	Cuba City.	Tanner, A. V.....	Omo.
Simpson, Lloyd L...	Edgerton.	Tenjum, A. A.....	DeForest.
Skare, Albert	McFarland, B. 114.	Tempero, Roy J....	Menomonce Falls.
Skewes, Edwain B...	Union Grove, R. 6.	Thacher, Ed. F.....	Zenda.
Skolas, Herman	Deerfield.	Thacher, Louis E...	Zenda.
Sleep, S. S.....	Hartland, R. 21.	Thibodeau, E. F....	Kewaunee.
Smedsrud, M. C....	Hollandale.	Thieleke, Ed. A....	Kiel, R. 2.
Smith, Alva J.....	Gratiot.	Thieleke, Emil	Madison.
Smith, Carroll H....	Delavan, R. 3.	Thiers, Louis M....	Kenosha.
Smith, Elmer J.....	Brandon.	Thom, J. A.....	Bristol.
Smith, Fred	River Falls.	Thoma, Ernest	Sugar Bush, R. 26.
Smith, Harvey G....	Brandon.	Thomas, Edw. J....	Ridgeway, R. 2.
Smith, John F.....	Darlington.		
Smith, Lewis E.....	Beloit.		

MEMBERSHIP LIST—continued.

Names.	Post-Office Address.	Names.	Post-Office Address.
Thompson, A. L.....	Blair.	Ward, Harold L.....	Ft. Atkinson.
Thompson, Adolph.....	Black River Falls.	Ward, Robert W.....	Ft. Atkinson.
Thompson, A. N.....	DeLavan.	Ward, Theo. S.....	Ft. Atkinson.
Thompson, Geo. H.....	Quarry.	Warmington, P.....	Honey Creek.
Thompson, G. G.....	Blanchardville.	Warzynakoski, A. F.....	Oakwood, R. 18.
Thompson, Melvin.....	Mt. Horeb.	Watrud, Hjalmar ..	Blanchardville.
Thompson, Paul.....	Blair.	Wayne, Joseph ..	Boscobel.
Thompson, T., Jr.....	Wadena, Iowa.	Webbe, Wm. E.....	Barrington, Ill.
Thorp, Eugene B.....	Monroe.	Wedgwood, R. E.....	Shawano.
Thorpe, J. R.....	Tavera.	Wehrwein, Walter ..	Manitowoc.
Thorstad, Clarence.....	Wautoma, R. 6.	Weirich, Martin J.....	Baraboo.
Tift, J. Ringland.....	Wauwatosa.	Weish, S. L.....	Tavera.
Tjugum, E. E.....	Sun Prairie.	Wendt, Reinhold ..	Cream.
Tochterman, C. Jr.....	Monroe.	Wernich, Wm. H.....	DeForest.
Toepfer, Otto F.....	Madison.	West, H. P.....	Ripon.
Toole, W. A.....	Baraboo.	West, Mark ..	Eikhorn.
Treleven, Guy T.....	Omro.	West, Ray N.....	Ripon.
Trewartha, Edw. J.....	Hazel Green.	Whelan, John V.....	Mondovi.
Trumpy, Fred.....	Clarno.	Whitehead, H. W.....	Leon.
Tubbs, J. Herbert.....	Seymour.	Whitney, R. A.....	Eldorado.
Turgasen, J. H.....	Richland Center.	Whittaker, H. E.....	Fond du Lac.
Tverberg, Alf.....	Stoughton.	Wichern, Carl W.....	Baraboo.
Tyler, James G.....	Valders.	Wichern, Louis M.....	Baraboo.
		Wied, Edw.....	Waupaca.
		Wiegand, Otto R. . .	Cleveland.
Uhlin, Albin S.....	Clayton.	Wier, W. W.....	Madison.
Uhlin, F. E.....	Clayton.	Wigen, Andrew ..	Quarry.
Uhrenholdt, Jens ..	Leonard.	Wigen, Walter E.....	Manitowoc.
Uhrenholdt, S. J.....	Leonard.	Wiker, N. H.....	Mabel, Minn.
Umlauf, Rudolph ..	Dorchester, R. 1.	Wilcox, H. L.....	Roscoe, Ill.
Unger, Edward F.....	N. Milwaukee, R. 9.	Wilkinson, Edw.....	Wilton.
Unger, E. F., Jr.....	N. Milwaukee, R. 9.	Wilkowski, Hugo ..	Mishicot.
Usher, Earl.....	South Wayne.	Williams Orson P.....	Waukesha, R. 8.
Utgaard, Peter W.....	Cylon.	Williamson, Boyd ..	Amherst Jct.
Utter, Delwin H.....	Lake Beulah.	Willis, A. W.....	Brodhead.
		Willmarth, E. E.....	Sun Prairie.
		Wischhoff, E. H.....	Reedsburg.
		Wiseman, Paul ..	Bridgeport.
VanLoon, John ..	La Crosse.	Wisner, L. R.....	Merrill.
Veium, Even ..	Stoughton.	Woldt, Hugo ..	Jackson.
Veldboom, John ..	Cedar Grove.	Wollin, Albert ..	Johnson Creek, R. 2
Verbeck, C. W.....	Lodi, R. 1.	Wood, Calvin D.....	Oshkosh.
Vetter, Chas.....	Madison, R. D.	Woodward, John L.....	Madison, R. 1.
Vetter, John ..	Madison, R. 3.	Wrabetz, Frank ..	Schuyler, Neb., R. 1
Vine, Callice H.....	Markesan, R. 3.	Wright, John ..	Whitewater.
Vollrath, August ..	St. Bonifacius,	Wrolstad, Alfred M.....	Amherst Jct.
	Minn.	Wulft, Fred B.....	Gustine, Cal.
Vonder Ohe, Aug. H.....	Reedsburg.	Wunsch, Alf. J. C.....	Haven.
Vonder Ohe, W. H.....	Reedsburg.	Wunsch, Hugo E.....	Haven.
Von Haden, Edtte.....	Kendall.	Wussow, Chas. A.....	Seymour.
Vroman, H. E.....	Verona.	Wyatt, E. E.....	Tomah.
Vullmahn, Ernest F.....	Edgebrook, Ill.		
		Yates, Willard W.....	Burnett.
Waelti, John ..	Monroe.	Young, Rudolph T.....	Beaver Dam.
Wagner, Arthur L.....	Haven, R. 6.		
Wagner, J. M.....	Union Center, R. 1.	Zahrt, F. H.....	Hortonville.
Waite, S. R.....	Oshkosh.	Zerbel, L. R.....	Madison.
Walker, Geo. B.....	Madison.	Zerbel, Paul ..	Humbird.
Walker, Ray C.....	Plainville.	Ziemann, Ernest T.....	Beaver Dam.
Wall, Floyd ..	Weyauwega.	Ziemer, Paul ..	Jackson, R. 2.
Wallen, Sigur B.....	Taylor.		
Ward, Charles ..	Ft. Atkinson.		
Ward, H. D.....	Brodhead.		

HONORARY MEMBERS.

Ames, W. L.....	Oregon	McKerrow, Supt. Geo.	Pewaukee
Babcock, Dr. S. M.	Madison	Newman, Geo. N.	Ladysmith
Cary, Prof. C. P.	Madison	Phillips, A. J.	West Salem
Cheesman, Jas. B.	Racine	Renk, Katharine ..	Boise City, Idaho
Emery, Prof. J. Q.	Madison	Russell, Dr. H. L.	Madison
Hays, W. M., Ass't Secretary Agr.	Washington, D. C.	Schaer, Hon. A. G.	Kewaunee
		Toole, William ..	Baraboo
Henry, Dr. W. A.	Madison	True, Hon. John M.	Madison
Karel, Hon. A. L.	Kewaunee	Utsunomiya, S. T. Sapporo, Hokkaido, Japan	
Lehmann, Mrs. Eva ..	Woodland		
McCormick, G. W.	Menominee, Mich.	Utter, Delbert ..	Lake Beulah

MEMBERSHIP, 1910

(Arranged by Counties.)

ADAMS COUNTY.

Buckley, Lawrence Kilbourn
 Heberlein, C. F. Kilbourn
 Hodan, A. B. Friendship
 Johnson, Billie Strongs Prairie
 Lee, Royal D. Arkdale
 Mikkelson, Wilhelm J. Arkdale
 Walker, Ray C. Plainville

ASHLAND COUNTY

Delwiche, E. J. Ashland
 Johnson, L. M. Ashland

BARRON COUNTY.

Anderson, Thos. E. Chetek, R 1
 Howe, John O. Comstock
 Jorstad, Ed. Cameron
 LeJeune, Ernest Rice Lake, R. 2
 Olson, Nalvin A. Chetek
 Otterholt, Henry Chetek
 Plenty, Robert Rice Lake
 Rauchenstein, Emil Rice Lake
 Rauchenstein, John Rice Lake, R 5
 Sackett, Clyde M. Cumberland
 Svacina, Jacob, Jr. Rice Lake

BAYFIELD COUNTY.

Daly, R. E. Washburn
 Hirsch, B. Washburn, R. 1
 Kinstler, C. L. Washburn
 Nelson, John A. Port Wing

BROWN COUNTY.

Anderson, Alfred Denmark
 Dillon, Austin DePere
 Dillon, James DePere
 Kersten, Leo. M. DePere
 Mulloy, John B. Wayside
 Nies, Peter Greenleaf, R. 3
 Roffers, John H. Green Bay

BUFFALO COUNTY.

Arms, Edward Fountain City
 Bilderbach, W. T. Mondovi
 Engel, George H. Fountain City
 Fetting, Elmer Cochrane
 Fetting, Romeo Cochrane

Haigh, Gerhard Cream
 Jahn, Chas. Cream
 Joos, F. B. Fountain City
 Kaste, Alfred H. Cream
 Kaste, Chas. Cream
 Kennedy, Bernard Nelson
 Kennedy, Laury Nelson
 Krampeter, Frank H. A. Mondovi, R. 3
 Loesel, Wm. Cream
 Muehleisen, Gottlieb Tell
 Noll, Louis Alma
 Quale, John H. Mondovi
 Reinhardt, Chas. F. Nelson
 Reinhardt, R. F. Nelson
 Rosenow, H. G. Waumandee
 Suhr, A. A. Cochrane
 Suhr, Otto A. Cochrane
 Wendt, Reinhold Cream
 Whelan, John V. Mondovi

BURNETT COUNTY.

Rylander, Ed. Shell Lake
 Peterson, Conrad T. Grantsburg

CALUMET COUNTY.

Christoff, Theo. F. Chilton
 Koehler, John P. Hayton
 Peik, Arthur Chilton
 Peterson, Hy. N. New Holstein
 Sevenich, Tony Hilbert
 Tagge, Herman New Holstein

CLARK COUNTY.

Beyreis, C. E. M. Dorchester
 Buddenhagen, Elmer E. Neillsville
 Daellenbach, Chris Abbotsford
 Einfeldt, Albert Greenwood
 Huckstead, A. A. Neillsville
 Korth, Leo R. Neillsville
 Krause, Wm. H. Thorpe
 Nelson, Carl A. Greenwood
 Portz, Herman Chili
 Rued, Axel Curtiss
 Steuerwald, Walter Loyal
 Umlauf, Rudolph Dorchester, R. 1
 Zerbel, Paul Humbird

CHIPPEWA COUNTY.

Bekken, Oscar Bloomer
 Christiansen, W. O. Chippewa Falls
 Emerson, O. R. Chippewa Falls

MEMBERSHIP LIST—continued.

Finsnes, A. I. Chippewa Falls
 Harrison, Geo. Chippewa Falls
 Hendry, Robert D. Chippewa Falls
 King, Wm. T. Jim Falls
 Kramer, Henry F. Bloomer
 Lebeis, F. J. Bloomer
 Martiny, L. P. Chippewa Falls
 Schroeder, Herman F. Jim Falls
 Siepert, F. W. Chippewa Falls

COLUMBIA COUNTY.

Anaoker, B. Portage
 Anderson, Adolph W. Portage
 Bancroft, Benj. T. Rio
 Bradley, Roy Randolph
 Brereton, Hugh H. Lodi
 Brereton, Thos. D. Lodi
 Capener, Howard H. Portage
 Carncross, J. E. Okee
 Chrisler, Alvin A. Lodi, R. 1
 Chrisler, Elmer A. Lodi, R. 4
 Chrisler, Harley E. Lodi
 Church, W. H. Lodi
 Derr, Gilbert Columbus
 Elickson, A. C. Arlington
 Gloeckler, Louis P. Portage
 Gloeckler, Theo. Portage
 Grove, Christian Columbus, R. 6
 Grove, Christian Columbus, R. 6
 Grove, Albert Columbus, R. 6
 Lintner, Sam Arlington
 Lloyd, Evan B. Cambria, R. 2
 Morse, Albert Kilbourn
 O'Connor, Edw. F. Lodi, R. 1
 Owen, Roger A. Portage, R. 2
 Richards, M. M. Lodi
 Sharpee, Alfred A. Rio
 Sharpee, Carl Columbus
 Sharpee, Endre A. Rio, R. 1
 Sharpee, Johannes A. Rio
 Stewart, Geo. L. Lodi
 Sugden, W. R. Randolph
 Verbeck, C. W. Lodi, R. 1

CRAWFORD COUNTY.

Accola, Lawrence Steuben
 Bohonek, John Prairie du Chien
 Brodt, Clarence D. Bridgeport
 Hjelle, Ole K. Soldiers Grove
 Johnson, B. T. Soldiers Grove
 Johnson, J. E. Ferryville
 Lintz, Willis Gays Mills
 Nagle, Lee Bridgeport
 Stevenson, Carl Soldiers Grove, R. 5

DANE COUNTY.

Anderson, H. C. Cambridge
 Anderson, Lewis Morrisonville
 Angvick, Lars Cottage Grove
 Anthony, David C. Oregon
 Baker, O. E. Madison
 Barton, C. R. Mt. Horeb
 Bayles, Rollo Dane
 Beck, J. D. Madison
 Belda, Wm. F. De Forest
 Bell, George S. Madison,
 1711 Jefferson St.
 Bendickson, I. E. Cambridge
 Benson, Ed. E. Mt. Horeb R. 5
 Bergum, Albert B. DeForest
 Bergum, Andrew DeForest

Bergum, P. B. DeForest
 Bewick, Wm. M. Sun Prairie
 Bewick, Wm. W. Madison,
 824 W. Johnson St.
 Bilkey, J. W. .. Madison, Monona Farm
 Birrenkott, M. J. Klevenville
 Blankensee, Clarence Madison,
 513 State St.
 Boyce, Charlotte Dane
 Bollig, F. A. Black Earth
 Brereton, Lawton Dane
 Brickson, A. C. McFarland
 Brickson, Andrew Cottage Grove
 Brigham, Chas I. Blue Mounds
 Britzke, Paul London
 Brue, N. H. DeForest
 Chase, J. P. Sun Prairie
 Chatterton, R. W. Basco
 Chipman, W. R. Morrisonville
 Chynoweth, H. E. Madison
 Colladay, C. M. Madison
 Colladay, W. E. McFarland
 Coldwell, John Mazomanie
 Damler, Walter F. Sun Prairie
 Daley, Julius DeForest
 Daley, O. S. DeForest
 Daley, Thos. McFarland
 Davidson, W. L. Verona
 Davison, R. W. Sun Prairie
 Derke, Adolph Madison, R. 2
 Dineen, Michael Blue Mounds
 Dreger, E. L. Madison, R. 6
 Eastman, J. S. Madison, 511 State St.
 Elver, E. C. McFarland
 Emery, Sydney L. Edgerton, R. 2
 Erdall, M. N. Deerfield
 Felland, L. O. Stoughton
 Fisher, Wm. G. Middleton
 Foll, Walter Deerfield
 Ford, J. F. Mazomanie
 Gangstad, J. O. Deerfield
 Gest, Chas. Windsor
 Gillies, J. H. Stoughton
 Gillette, Rufus Verona
 Grady, Geo. Oregon
 Guitzkow, Arthur Madison R. D.
 Hanna, Oliver O. Mt. Horeb
 Henderson, Knud Cambridge
 Hill, Otto C. Mt. Horeb
 Hofmann, Carrie Mendota
 Holmen, O. Belleville
 Holscher, A. C. Cottage Grove
 Hopkins, A. W. Madison
 Hopkins, B. F. Morrisonville
 Hopkins, J. W. Morrisonville
 Hougan, O. O. Stoughton
 Jones, E. F. Sun Prairie
 Kaltenberg, Anthony Waunakee
 Kaltenberg, Jacob Waunakee
 Kaltenberg, Joseph Waunakee
 Kaltenberg, P. Waunakee
 Keenan, Wm. M., Jr. McFarland
 Kendall, Geo. W. Sun Prairie
 Kittleson, K. T. Mt. Horeb
 Kittleson, Knutt Mt. Horeb
 Kittleson, Wm. Mt. Horeb
 Kneeland, Peter Windsor, R. 2
 Koltes, Jos. F. Dane
 Larsen, A. C. Madison
 Lee, Lewis Johnson DeForest
 Lee, Oliver Klevenville
 Lee, Peter, A. G. Deerfield
 Leith, B. D. Madison
 Lindas, Theo. A. Marshall
 Lukken, Amil Cambridge

MEMBERSHIP LIST—continued.

Lunde, Geo. Stoughton
 Lunde, Gunder Stoughton, R. 1
 McClanahan, Geo. P. Madison,
 430 N. Bruen St.
 McConnell, Oren S. McFarland
 McFarlane, A. J. Morrisonville
 MacLean, George Madison, R. 6
 Maeder, J. W. Oregon
 Wields, F. L. Windsor
 Mielke, J. E. Basco
 Mitchell, Geo. Cottage Grove
 Mitchell, J. T. Cottage Grove
 Moore, R. A. Madison
 Napier, John M. Madison
 Nellen, F. J. DeForest
 Nicholis, Harry G. Stoughton
 Nordlie, Alfred Deerfield
 Nordlie, C. K. Rockdale
 Norgord, C. P. Madison
 Norsman, Jerome O. Madison, R. D.
 Palmer, Levi Verona
 Patterson, Harley J. Cottage Grove
 Pierstorff, H. H. Madison, R. 7
 Pope, R. W. Sun Prairie
 Radermacher, John Middleton
 Raftery, Agnes Windsor
 Ray, Victor Madison, R. 5
 Reindahl, A. K. Madison
 Renk, Wm. F. Sun Prairie
 Rorge, A. J. Stoughton
 Ruhrmann, B. J. Cross Plains
 Ruste, C. O. Blue Mounds
 Ryan, Gerald Sun Prairie
 Sager, Milo Deerfield
 Schnell, Gustav Dane
 Sharpee, P. A. Morrisonville
 Sim, J. O. Stoughton
 Skare, Albert McFarland, R. 114
 Skolas, Herman Deerfield
 Spalding, Earl Windsor
 Spalding, Frank Windsor
 Stone, A. L. Madison
 Strommen, Geo. K. Cambridge
 Tenjum, A. A. DeForest
 Thieleke, Emil Madison
 Thompson, Melvin Mt. Horeb
 Tjugum, E. E. Sun Prairie
 Toeffler, Otto F. Madison
 Tverberg, Alf Stoughton
 Veum, Even Stoughton
 Vetter, Chas. Madison, R. D.
 Vetter, John Madison, R. 3
 Vroman, H. E. Verona
 Walker, Geo. B. Madison
 Wernich, Wm. H. DeForest
 Wier, W. W. Madison
 Willmarth, E. E. Sun Prairie
 Woodward, John L. Madison, R. 1
 Zerbel, L. R. Madison

DODGE COUNTY.

Adams, Lester B. Lowell
 Barstow, Jas. E. Randolph
 Beule, Elmore A. Beaver Dam
 Bohl, Anton, Jr. Beaver Dam
 Bremer, Felix E. Hustisford
 Buzzell, Roy C. Randolph
 Bussewitz, Orla J. Juneau
 Bussewitz, Raymond H. Reeseville
 Bussewitz, W. E. Juneau
 Coulter, Harry S. Randolph
 Dieckhoff, John Randolph
 Gilmore, Everett H. Randolph

Goetsch, A. A. Juneau
 Grebe, F. P. Fox Lake
 Henke, Louis Lowell
 Hutchinson, Wm. D. Rubicon
 Indermuehle, Felix A. Beaver Dam
 Jones, Arthur Randolph
 Jones, John G. Beaver Dam
 Jones, Owen R. Beaver Dam
 Jung, A. E. Randolph
 Jung, J. W. Randolph
 Krueger, H. E. Beaver Dam
 Kuhlman, Arthur H. Lowell
 Kuhlman, Fred Lowell
 Livingston, E. C. Randolph
 Mahoney, David Juneau
 Neuberger, Wm. T. Reeseville
 Owens, H. C. Fox Lake
 Rex, Edgar H. Beaver Dam
 Roberts, Wm. E. Randolph
 Schiller, Claude E. Beaver Dam
 Schumann, Hugo Beaver Dam
 Schumann, Hugo W. Beaver Dam
 Sette, Everett A. Juneau
 Sette, O. E. Juneau
 Steiner, W. H. Brownsville
 Yates, Willard W. Burnett
 Young, Rudolph T. Beaver Dam
 Ziemann, Ernest T. Beaver Dam

DOOR COUNTY.

Beyer, George Sturgeon Bay
 Boucsein, Gust L. Detroit Harbor
 Delcorps, Louis Sturgeon Bay
 Dreytzer, C. B. Sturgeon Bay
 Larson, Eli Sawyer
 McKernan, R. Sturgeon Bay
 Madoche, Leo. J. Sawyer
 Mueller, Rudolph Forestvil e

DUNN COUNTY.

Chase, A. Knapp
 Cramer, Joe Menomonie
 Gerking, F. J. Elk Mound
 Hageseth, Frank Menomonie
 Hanson, Carl H. Elk Mound
 Jacobs, E. C. Menomonie
 Kent, H. W. Rusk
 Kent, J. S. Rusk
 Knapton, W. E. Downing
 Sampson, August Menomonie
 Stevens, Ernest A. Eau Galle

EAU CLAIRE COUNTY.

Allen, C. L. Eau Claire
 Burce, Ruth E. Eau Claire
 Carlson, A. T. Augusta
 Donaldson, H. A. Eau Claire
 Faast, Ben. F. Eau Claire
 Koll, C. A. Eau Claire
 Konz, John, Sr. Fairchild, R. 2
 McDermid, G. A. Eau Claire
 Mayo, John H., Jr. Eau Claire, R. 3
 Oliver, C. S. Eau Claire
 Russell, A. C. Augusta
 Schield, John Fall Creek

FOND DU LAC COUNTY.

Adams, A. E. Eden
 Adams, Richard F. Campbellsport

MEMBERSHIP LIST—continued.

Atwood, P. W.	Waupun
Beilke, Walter	Fairwater
Block, A. F.	Brandon
Bonzelet, J. P.	Eden
Briggs, E. T.	Fond du Lac
Briggs, J. W.	Peebles
Briggs, Lynn W.	Peebles
Costello, Dan A.	Fond du Lac, R. 6
Donovan, Frank	Van Dyne
Finder, Fred C.	Van Dyne
Gibbard, P. J.	Ripon
Hargrave, Robert	Ripon
Hendrichs, John	Campbellsport
Hintz, George E.	Oakfield, R. 23
Hinz, A. F.	Ripon
Hoard, Harry H.	Waupun
Kitchen, Jos. H.	Eldorado
Koenigs, Philip	Fond du Lac
Kuehn, Chas. A.	Brandon
Lothar, O. A.	Waupun
Lawson, W. A.	Rosendale
Lehman, Edwin	Ripon
Leith, Ray H.	Van Dyne, R. 9
Maug, Arthur J.	Ripon
Mathews, Lee G.	Brandon
Meekin, H. W.	Fond du Lac
Meier, Edward F.	Eden, R. 33
Michels, Henry	Malone
Michels, Math.	Peebles
Mihills, D. R.	Fond du Lac
Mihills, G. N.	Fond du Lac
Miller, A. H.	Waupun
Miller, Arthur	Waupun
Miritz, O. F.	Fond du Lac
Nolan, J. H.	Eldorado
Northrup, J.	Waupun
O'Hearn, Dennis	Eldorado
Oleson, James P.	Ripon, R. 13
Patrick, Ed. H.	Waupun
Patrick, Robert	Waupun
Patrick, Will	Waupun
Pattee, Drew J.	Waupun
Pattee, John R.	Waupun
Peters, Hubert	Calvary
Randall, S. M.	Waupun
Rather, Armand P.	Peebles, R. 37
Rieman, Elmer W.	Ripon
Root, Alvin	Fond du Lac, R. 5
Ruesink, H. G.	Waupun
Rupp, Herman	Malone
Sattler, James H.	Rosendale
Sheldon, Ben F.	Brandon
Simon, Mike	Malone
Smith, Elmer J.	Brandon
Smith, Harvey G.	Brandon
Smith, Sam A.	Oakfield
West, H. P.	Ripon
West, Ray N.	Ripon
Whittaker, Horace E.	Fond du Lac
Whitney, R. A.	Eldorado

FOREST COUNTY.

Grandine, Lester D.	No. Crandon
Grandine, Morton D.	No. Crandon

GRANT COUNTY.

Bannen, R. E.	Boscobel
Barron, R. E.	Platteville
Booth, Guy A.	Cuba City
Booth, Lester G.	Cuba City
Carmody, Daniel	Mt. Ida

Carmody, P. J.	Mt. Ida
Cubela, Jos. M.	Muscoda
Cull, James, Jr.	Mt. Hope
Dieter, Bert	Montfort
Dieter, Wm. A.	Montfort
DiVall, W. F.	Montfort, Box 27
Forehand, W. C.	Platteville
Gilmore, Everett H.	Randolph
Graham, P. S.	Fennimore
Groom, Harvey L.	Cassville, R. 1
Jones, Arthur	Randolph
Kaiser, Wm. G.	Cuba City
Keating, P. H.	Mt. Hope
Kreul, August R.	Fennimore
Niemer, Frank	Cassville, R. 1
Orr, Lea B.	Bagley
Orth, Alfred	Muscoda, R. 2
Patten, W. H.	Boscobel
Patterson, J. L.	Glen Haven
Preston, Geo. M.	Montfort
Ralph, Will H.	Cuba City
Runde, Albert	Hazel Green
Runde, Aloysius	Cuba City
Runde, August	Sinsinawa
Simmons, Will	Cuba City
Spink, L. O.	Platteville, R. 10
Steinhoff, W. J.	Platteville
Stivarius, Geo. A.	Fennimore, R. 4
Trewartha, Edw.	Hazel Green
Wayne, Joseph	Boscobel
Wiseman, Paul	Bridgeport

GREEN COUNTY.

Anderson, A. T.	Monroe
Austin, Elmer E.	Brodhead
Barker, W. H.	Brodhead
Bechtolt, A. B.	Browntown
Bechtolt, J. D.	Browntown
Biglow, L. F.	Brooklyn
Blumer, Ezra, Jr.	Monroe, R. 4
Brunner, Ed. Z.	Monroe, R. 4
Burt, Charley	Brodhead
Cornelius, E. C.	Monroe
Dettwiler, John	Monroe
Douglas, Robert J.	Juda
Doyle, W. A.	Brodhead
Gapen, Frank W.	Monroe
Gardner, Harry G.	Monroe, R. 8
	In care of E. C. Cornelius
Geigel, John	Monroe
Gwynne, Sam	Brodhead
	Care B. E. Austin
Iverson, C. M.	Browntown
Klassy, Henry C.	Monticello
Klassy, Henry	Monroe
Klassy, Wm. E.	Monticello
Legler, L. G.	Juda
Lewis, Lester M.	Monticello, R. 1
Marty, Mathias	Monticello, R. 1
Mau, H. G.	Brodhead
Morgan, Chas.	Albany
Niffenegger, J. Talmage	Monroe
Purinton, C. G.	Monticello, R. 2
Ritschard, Emil	Monticello, R. 3
Ritschard, Fred	Monroe
Simmons, Geo. W.	Monroe
Silver, C. R.	Belleville
Stauffer, A. J.	Monroe
Thorp, Eugene B.	Monroe
Tochterman, C., Jr.	Monroe
Trumpy, Fred	Clarno
Waelti, John	Monroe

MEMBERSHIP LIST—continued.

Ward, H. D. Brodhead
 Willis, A. W. Brodhead

GREEN LAKE COUNTY.

Clark, J. J. Berlin
 Davies, Elias Markesan
 Kutchin, Victor Green Lake
 Page, G. F. Berlin
 Vine, Callice H. Markesan, R. 3

IOWA COUNTY.

Aavang, H. O. Barneveld, R. 1
 Anderson, Louis H. Highland
 Convey, Thos. Ridgeway
 Davies, Llewellyn Mineral Point
 Farvell, R. R. Ridgeway
 Graber, Edw. Mineral Point
 Graber, L. F. Mineral Point
 Hanson, Carl O. Hollandale
 Harker, John J. Linden
 Harker, Irving Dodgeville
 Kelley, A. N. Mineral Point
 Ley, Nicholas Dodgeville
 Ley, Peter Dodgeville
 Morrissey, J. H. Arena
 Paulson, H. E. Hollandale
 Smedsrud, Melvin C. Hollandale
 Thomas, Edw. J. Ridgeway, R. 2

JACKSON COUNTY.

Anderson, Ubbe Melrose
 Bullock, James P. North Bend
 Curran, W. F. Taylor
 Dettinger, Wm. F. Hixton
 Dietrich, John J. Black River Falls
 Engleman, John Hixton
 Haag, Frank Melrose
 Haag, Henry Melrose
 Hecketsweiler, O. J. Alma Center
 Horswill, W. K. Black River Falls
 Lane, Orie J. Hixton
 McNab, A. J. Black River Falls
 Merrill, W. M. Taylor
 Patterson, Harvey Melrose
 Patterson, J. D. Melrose
 Someville, John Black River Falls
 Thompson, Adolph Black River Falls
 Wallen, Sigur B. Taylor

JEFFERSON COUNTY.

Anthes, Henry Jefferson
 Becker, Harry J. Ft. Atkinson
 Brown, A. A. Waterloo
 Brueckner, H. C. Ft. Atkinson
 Brueckner, Justus Jefferson
 Emmert, H. L. Johnson Creek
 Emmert, Oris J. Johnson Creek
 Graper, Arthur Helenville
 Graper, Edwin J. Helenville
 Guttenberg, Frank, Jr. Jefferson, R. 1
 Hans, Joe, T. Jefferson
 Joice, George Waterloo
 Krueger, Alexander Watertown, R. 2
 Lehmann, Theo. Watertown
 Leonard, Wm. R. Jefferson
 Linton, Gilbert A. Ft. Atkinson
 Luebke, H. W. Watertown, R. 7
 McIntyre, Ivan Ft. Atkinson

Mathews, Milton D. Helenville, R. 1
 Milkee, Geo. Ft. Atkinson
 Niere, Stuart P. Watertown
 Parsons, Wm. A. Ft. Atkinson
 Perry, J. H. Ft. Atkinson
 Popp, Arthur Jefferson
 Schultz, Rudolph Lake Mills
 Ward, Charles Ft. Atkinson
 Ward, Harold L. Ft. Atkinson
 Ward, Robert W. Ft. Atkinson
 Ward, Theo. S. Ft. Atkinson
 Wollin, Albert Johnson Creek, R. 2

JUNEAU COUNTY.

Curtis, J. C. New Lisbon
 Hall, W. H. Wonewoc
 Hansen, Harry Camp Douglas
 Harvey, Caleb B. Wonewoc
 Hoover, Kenneth M. New Lisbon
 McNow, J. H. Mauston
 Mead, R. E. New Lisbon
 Moore, Henry G. Mauston
 Niles, Milo E. Mauston
 Solem, Edward Wonewoc
 Wagner, J. M. Union Center, R. 1

KENOSHA COUNTY.

Beimer, Geo. Salem
 Bradley, J. Frank Somers
 Chambers, O. Union Grove
 Curtiss, Mark W. Salem, R. 29
 Curtiss, W. R. Trevor
 Dexter, Walter S. Kenosha, R. 34
 Orvis, L. C. Salem
 Myrick, M. O. Bristol
 Paddock, A. D. Salem
 Paddock, Alva Salem
 Roberts, F. W. Woodworth
 Sheen, Wray J. Trevor
 Swenson, Earl E. Kenosha,
 660 Pleasant St.
 Thiers, Louis M. Kenosha
 Thom, J. A. Bristol

KEWAUNEE COUNTY.

Boudnik, John Kewaunee, R. 7
 Chervený, Wenzel Kewaunee, R. 2
 Collin, D. W. Luxemburg
 Defnet, Jule J. Casco, R. 2
 Dworak, Henry A. Kewaunee
 Haevers, Martin Luxemburg, R. 4
 Jirtle, Geo. B. Algoma
 Katel, W. C. Kewaunee, R. 1
 Kocmich, Ed. Kewaunee
 Koller, Wm. Kewaunee
 Krofta, Rudolph Kewaunee, R. 2
 Nemetz, Frank J. Kewaunee
 Pelisek, Frank W. Kewaunee
 Ray, W. F. Kewaunee, R. 1
 Stangel, Richard Kewaunee, R. 1
 Thibodeau, Elmer F. Kewaunee

LA CROSSE COUNTY.

Bosshard, Eugene Bangor
 Brown, E. D. West Salem
 Davis, L. H. Bangor
 Eggler, V. La Crosse, R. 1

MEMBERSHIP LIST—continued.

Griswold, H. W. West Salem
 Harr, Ernest B. Bangor, R. 3
 Hass, R. A. La Crosse
 Hemker, Fritz H. West Salem, R. 2
 Jenkins, Floyd Bangor
 Jones, E. E. Rockland
 Lawrence, F. W. Bangor
 Linse, Chas. La Crosse
 Nuttleman, Adolph West Salem
 Nuttleman, Alfred West Salem
 Nuttleman, Fred West Salem
 Restow, Harry Onalaska
 Schilling, Harry W. Onalaska
 Sandman, W. D. Holmen
 VanLoon, John La Crosse

LA FAYETTE COUNTY.

Andrews, A. L. South Wayne
 Ashton, Lester Belmont
 Erickson, Clarence .. South Wayne, R. 1
 Glindinning, H. L. Shullsburg
 Hartsough, A. L. Gratiot
 Ingwell, Albert Blanchardville
 Joraby, Carl O. Blanchardville
 Larson, Joseph S. Woodford
 McConnell, F. J. Darlington
 Perry, Will H. Gratiot
 Rood, Henry South Wayne
 Rood, Minnick C. South Wayne
 Smith, Alva J. Gratiot
 Smith, John F. Darlington
 Strommen, Anton A. Blanchardville
 Thompson, Gilbert G. ... Blanchardville
 Usher, Earl South Wayne
 Watrud, Hjalmar Blanchardville

LANGLADE COUNTY.

Follstad, Anton Elcho
 Kalouner, Edward Antigo, R. 5
 Leykom, J. Wallace Antigo
 Nordman, E. Polar
 Persen, Alfred Bryant

LINCOLN COUNTY.

Wisner, L. R. Merrill

MANITOWOC COUNTY.

Arnold, Arthur A. Kiel
 Axley, Walter Cleveland
 Bauer, A. H. Manitowoc, R. 2
 Behn, Walter F. Manitowoc
 Bender, Fred., Jr. Cleveland
 Berge, Anton O. Valders
 Berge, Oscar A. Valders
 Berge, Otis I. Valders
 Bruhn, John F. Two Rivers, R. 1
 Clusen, Reinhold Manitowoc, R. 2
 Eggert, Gust. Two Rivers, R. 1
 Bisenmann, Harvey Mishicot
 Erickson, Albert L. Reedsville
 Garey, James Grimms
 Geraldson, Mervin Manitowoc
 Gigstad, Benneth Manitowoc
 Gunderson, Clifford Manitowoc, R. 4
 Gustavson, Chas. Manitowoc
 Halvorson, Arthur E. Manitowoc
 Hansen, Warner Manitowoc
 Hayden, Thos. H. Grimms
 Hoefner, Herbert Manitowoc

Huhn, Wm. Cleveland, R. 1
 Johannes, Albert Two Rivers
 Kielsmeier, Hugo C. Cleveland, R. 3
 Kings, Benjamin J. Reedsville
 Kirby, James J. Grimms
 Klann, Adolph Reedsville
 Klessig, Edwin O. Cleveland
 Klessig, Otto Cleveland
 Knutson, Ed. A. Manitowoc, R. 4
 Koellmer, Gustav Cleveland
 Kolb, Ed. Cleveland, R. 2
 Lutz, Geo. Cleveland
 Marken, Otis A. Valders
 Marken, Richard Valders
 Moldenhauer, W. C. ... Manitowoc, R. 1
 Nate, George B. Grimms
 Paulson, J. E. Manitowoc
 Pritzl, John A. Cato, R. 1
 Riederer, Blas. Cato
 Roethel, Herman Kiel
 Salzman, Ed. Kiel, R. 2
 Schulte, Peter J. Cleveland
 Straka, Edw. E. Maribel, R. 2
 Strowig, Wm. A. Cleveland, R. 1
 Sullivan, Jas. A. Grimms
 Thieleke, Ed. A. Kiel, R. 2
 Thompson, Geo. H. Quarry
 Tyler, James G. Valders
 Wehrwein, Walter Manitowoc
 Wiegand, Otto R. Cleveland
 Wigen, Andrew Quarry
 Wigen, Walter E. Manitowoc
 Wilkowski, Hugo Mishicot

MARATHON COUNTY.

Aderhold, H. F. Athens
 Arnold, Philip Edgar
 Baesemann, Otto Edgar
 Brehn, E. A. Colby
 Brotherton, Alvin Colby
 Griffith, James Spencer
 Heinke, Alvin E. Stratford
 McAdam, Cecil Schofield
 Nieman, Walter G. Hamburg
 Parsch, Gustav A. Wausau
 Reinhardt, W. H. Wausau, R. 2

MARINETTE COUNTY.

Falarsh, Frank Peshtigo
 Gould, Guy Peshtigo
 Gould, Merrill M. Peshtigo
 Magee, Ellis Coleman
 Schneider, Gottlieb P. Walsh

MARQUETTE COUNTY.

Dimond, Nicholas Montello
 Hamilton, T. S. Westfield, R. 1
 Haskins, Leon O. Montello
 Houslet, Neal Packwaukee
 Johnson, Sam. A. Westfield
 Judd, Jesse L. Endeavor
 McDowell, D. P. Packwaukee
 Parrott, Alfred Endeavor

MILWAUKEE COUNTY.

Babcock, Chas. L. Milwaukee
 405 Colby-Abbott Bldg.
 Basse, Wm. H. West Allis, R. 5
 Dennison, Nicholas No. Milwaukee, R. 10

MEMBERSHIP LIST—continued.

Diderich, Nicholas A. No. Milwaukee
 Guenther, Nelson W. So. Milwaukee, R. 17
 Hickcox, J. Gilbert Whitefish Bay
 Jungbluth, Wm. J. West Allis, R. 5
 Kinney, Clinton Wauwatosa
 Kurtze, Otto C. West Allis, R. 15
 Loewe, Arthur P. Milwaukee, R. 8
 Machimura, K. West Allis,
 In care of Rust Bros.
 Meyer, Alfred J. Oakwood, R. 18
 Mower, J. P. Wauwatosa
 Nicolaus, Chas. A. Cudahy
 Pierner, Fred No. Milwaukee
 Swan, Earling Milwaukee,
 Sta. B., R. 6
 Swan, Robert G. Milwaukee
 Sta. B., R. 6
 Tift, J. Ringland Wauwatosa
 Unger, Edward F. No. Milwaukee, R. 9
 Unger, Ernest F., Jr. .. No. Milwaukee,
 R. 9
 Warzynakoski, Arthur F. Oakwood,
 R. 18

MONROE COUNTY.

Aarness, O. C. Cashton
 Anderley, Louis Kendall
 Foth, F. D. Norwalk
 Freeman, Geo. A. Sparta
 Funican, Wm. Kendall
 Gamerding, John Kendall
 Grassman, Alfred Kendall
 Hansen, Henry T. Sparta
 Hanson, Will Cataract
 Hanchett, W. H. Sparta
 Harris, R. E. Warrens
 Hitchcock, Clarence E. Sparta
 Hitchcock, Wm. P. Sparta
 Hoard, L. R. Cataract
 Howell, Horace P. Sparta
 Jewett, Donald C. Sparta
 Kirst, Ernest J. Tomah
 Lee, L. Leon
 Leverich, J. W. Sparta
 Miller, L. A. Sparta
 Mistele, Wm. O. Kendall
 Moseley, A. G. Cataract
 Pratt, Vernon Cataract, R. 2
 Nathan, Paul R. Kendall
 Steinbach, Otto Kendall
 Von Haden, Eddie Kendall
 Whitehead, H. W. Leon
 Wilkinson, Edw. Wilton
 Wyatt, E. E. Tomah

OUTAGAMIE COUNTY.

Bixby, Phil T. Appleton
 Jahnke, Albert Black Creek
 Jamison, Clarence Appleton
 Jamison, Harvey Appleton
 Jamison, Robert Appleton
 Jamison, Stanley Appleton
 Jamison, W. G. Appleton
 Johnston, Chas. G. Welcome
 Johnston, Frank R. Appleton, R. 6
 Johnston, Oney Appleton
 Klemm, Lewis J. Welcome
 Koss, Otto W. Medina
 Lemke, Albert Welcome
 Letts, Edw. F. Appleton, R. 4

Merkel, Henry Appleton, R.
 Mills, Roscoe C. Appleton, R.
 Mueller, Edward O. Appleton
 Pirner, Fred Sugar Bush, R. 26
 Ryan, Malachi So. Kaukauna
 Schaefer, R. J. Appleton
 Schmit, Albert Appleton
 Schmit, Alois E. Hortonville
 Schmit, A. W. Appleton
 Schmit, Geo. Greenville
 Schmit, Wm. F. Appleton, R. 2
 Thoma, Ernest Sugar Bush, R. 26
 Tubbs, J. Herbert Seymour
 Wussow, Chas. A. Seymour
 Zahrt, F. H. Hortonville

OZAUKEE COUNTY.

Ahlers, Walter Grafton
 Behrens, Bernh. Grafton
 Blank, Geo. A. Grafton
 Bremer, Paul Saukville, R. 1
 Clausing, Adolph Thiensville
 Groth, C. A. Cedarburg
 Groth, Louis Cedarburg
 Kieffer, Mike Fredonia
 Meyer, A. H. Grafton
 Pierner, John W. Thiensville
 Port, Mike Grafton
 Quast, Arthur E. Saukville

PEPIN COUNTY.

Fleishauer, C. K. Arkansaw
 Fox, Phil., Jr. Durand
 Gustafson, Theo. Stockholm
 Jahnke, J. F. Pepin
 Pattison, H. A. Durand, R. 2

PIERCE COUNTY.

Anderson, Martin River Falls
 Batho, Lester Plum City
 Brown, Monro Bay City
 Brown, Wm. Spring Valley
 Hanson, Henry O. .. Spring Valley, R. 4
 Heinze, Louis Prescott
 Lowe, James G. River Falls
 Nelson, Fred River Falls
 Neystrom, Archie Maiden Rock
 Persons, M. B. Plum City
 Pierce, W. O. River Falls
 Smith, Fred River Falls

POLK COUNTY.

Cook, Winifred Deer Park, R. 1
 Elkins, Arthur O. Amery
 Ferris, Sherman St. Croix Falls
 Germanson, Herbert Luck
 Lee, Oliver Amery, R. 2
 Legreid, Henry E. Deer Park
 Lindberg, Clinton H. . Dresser Jct., R. 1
 Jerdee, Perry S. Deronda
 Miller, A. J. Milltown
 Nelson, Willie Milltown, R. 1
 Petersen, Erri M. Amery, R. 4
 Rehbein, A. E. St. Croix Falls, R. 1
 Uhlin, Albin S. Clayton
 Uhlin, F. E. Clayton

MEMBERSHIP LIST—continued.

PORTAGE COUNTY.

Arnott, Grace M. Stevens Point
 Boston, W. J. Stevens Point
 Brekke, Anton B. Rosholt
 Clark, W. E. Stevens Point
 Gullickson, Gust Nelsonville
 Hanson, N. P. Amherst Jct., R. 2
 Peterson, Perry O. Amherst
 Williamson, Boyd Amherst Jct.
 Wroistad, Alfred M. Amherst Jct.

PRICE COUNTY.

Halvorson, Theo. Kennan
 Hoffmann, Conrad Phillips

RACINE COUNTY.

Adland, P. H. North Cape
 Chambers, O. Union Grove
 Cook, Geo. L. Burlington
 Cook, Joe C. Burlington
 Dukleth, J. O. Waterford
 Gehrand, Arthur A. Rochester
 George, W. R. Corliss, Edola Farm
 Holloway, Ed. M. Union Grove
 Kiofanda, Reuben Racine, R. 1
 Kiofanda, Royal Racine, R. 1
 Jacobson, C. H. Waterford, R. 25
 Renak, Edw. Racine, R. 2
 Robers, Wm. J. Burlington
 Rolfson, C. E. Racine
 Skewes, Edwin B. Union Grove, R. 6
 Sorenson, Hilbert Franksville
 Spartz, N. A. Union Grove

RICHLAND COUNTY.

Annear, Rolland Richland Center
 Collins, Edmund Tavera
 Collins, Robert Tavera
 Ellsworth, R. W. Tavera
 Ghastin, Floyd L. Twin Bluffs
 Ghastin, Wm. J. Twin Bluffs
 Janceck, C. M. Bloom City
 Jaquish, J. E. Twin Bluffs
 Lawton, A. R. Viola
 Oman, Carl Tavera
 Post, H. L. Sextonville
 Schmitz, Edw. Lone Rock
 Schmitz, Hubert Lone Rock
 Straug, Frank Lone Rock
 Thorpe, J. R. Tavera
 Turgasen, J. H. Richland Center
 Welsh, S. L. Tavera

ROCK COUNTY.

Austin, A. Janesville
 Austin, Alva G. Janesville, R. 6
 Austin, Alvina L. Evansville
 Austin, Clifford P. Janesville
 Austin, Geo. M. Janesville
 Austin, George M. Janesville, R. 6
 Austin, Henry L. Evansville
 Austin, W. B. Janesville
 Austin, Wilbur D. Janesville
 Austin, Willard O. Milton
 Barker, E. S. Janesville
 Benedict, E. L. Beloit, R. 30

Bingham, E. L. Milton
 Bingham, Howard L. Milton
 Caldo, Leslie Janesville, R. 1
 Coon, Elam P. Milton Jct.
 Dougan, W. J. Beloit, R. 30
 Dresser, J. G. Beloit
 Ellis, E. J. Evansville, R. 19
 Greene, Jay I. Clinton
 Hintz, Wm. F. Edgerton, Emery Farm
 Jacobs, S. M. Janesville
 Lathers, Chas. F. Beloit
 Latta, F. L. Clinton Jct.
 Lefeber, Wilbur F. Evansville
 Kimble, N. G. Milton Jct.
 McCoy, George L. Evansville
 Marston, Roy C. Beloit
 Marston, Albert E. Beloit
 Moore, Fred W. Beloit
 Moseley, H. B. Beloit
 Mueller, M. J. Edgerton
 Porter, L. W. Evansville
 Porter, W. N. Evansville
 Porter, W. B. Evansville
 Shuman, Chas. F. Koshkonong
 Simpson, Lloyd L. Edgerton
 Smith, Lewis E. Beloit
 Snyder, Elmer G. Clinton Jct.
 Snyder, R. B. Clinton

RUSK COUNTY.

Sheen, C. J. Trevor

ST. CROIX COUNTY.

Alberts, Will New Richmond
 Arnquist, J. F. New Richmond
 Bailey, H. E. Hudson
 Batten, S. E. Hudson
 Bennett, Wm. L. Stanton
 Boardman, Benj. New Richmond
 Bradley, H. C. Hudson
 Brunner, Fred F. Hudson
 Brunner, R. W. Hudson
 Carlson, Nels P. Hudson
 Fay, Albert W. New Richmond
 Ferris, Sherman St. Croix Falls
 Hogan, E. J. New Richmond
 Imrie, David Roberts
 Kruschke, Alvin C. New Richmond
 Kruschke, Geo. H. New Richmond
 Paulson, P. A. Hudson, R. 2
 Peterson, August Stanton
 Schwandt, Wm. Stanton
 Utgaard, Peter W. Cylon

SAUK COUNTY.

Accola, John F. Prairie du Sac
 Borck, Sam. No. Freedom
 Clavadatscher, T. Sauk City
 Cobleigh, Rollo S. Delton
 Enge, Eugene Prairie du Sac
 Frederickson, Fred Spring Green
 Gade, Adolf Reedsburg, R. 2
 Gasser, Geo. W. Spring Green
 Getschmann, Willie No. Freedom
 Graves, D. W. Baraboo, R. 3
 Grass, C. F. Prairie du Sac
 Hatz, Jacob H. Prairie du Sac
 Hill, J. L. Prairie du Sac
 Herwig, R. B. Delton
 Herwig, Theo. E. Delton

MEMBERSHIP LIST—continued.

Hinrichs, Ernest Reedsburg, R. 4
 Hood, D. L. Spring Green
 Houghton, F. T. Reedsburg, R. 3
 Johnson, Glenn Baraboo, R. 2
 Kindschi, Edwin Prairie du Sac
 Koenecke, A. E. Reedsburg
 Koenecke, Edw. H. Reedsburg, R. 5
 Lachmund, Robert Sauk City
 McGinnis, Chas. Baraboo
 Marshall, W. S. Delton
 Moely, Conrad Prairie du Sac
 Old, Frank J. Delton
 Pearson, Clarence LaValle
 Riek, Anthony Plain
 Rieser, Alfred E. Spring Green
 Ruson, Melvin Spring Green, R. 1
 Rusch, E. W. Reedsburg
 Schuette, Herman W. Reedsburg
 Sherwood, Chas. B. Spring Green
 Steidtmann, Edwin Merrimac
 Stone, J. R. Reedsburg
 Toole, W. A. Baraboo
 Vonder Ohe, August H. Reedsburg
 Vonder Ohe, Wm. H. Reedsburg
 Weirich, Martin J. Baraboo
 Wichern, Carl W. Baraboo
 Wichern, Louis M. Baraboo
 Wischhoff, E. H. Reedsburg

SAWYER COUNTY.

Uhrenholdt, Jens Leonard
 Uhrenholdt, S. J. Leonard

SHAWANO COUNTY.

Berg, Carl J. Tigerton
 Herr, John G. Matton
 Hildemann, Alex. E. Belle Plaine
 Klowdahl, J. J. Wittenberg
 Norrbom, C. G. Eland
 Wedgwood, R. E. Shawano

SHEBOYGAN COUNTY.

Berge, Oscar A. Valders
 Dennerlein, Arthur J. Plymouth
 Frauenheim, O. R. Random Lake
 Garside, Harry R. Cedar Grove
 Hoppert, Martin Sheboygan, R. 4
 Illian, Wm. L. Adell
 Lubbers, William Cedar Grove
 Ogle, James Waldo
 Parrish, J. O. Plymouth
 Reineking, Rudolf H. Sheboygan Falls
 Schaefer, Henry G. Plymouth
 Veldboom, John Cedar Grove
 Wagner, Arthur L. Haven, R. 6
 Wunsch, Alfred J. C. Haven
 Wunsch, Hugo E. Haven

TREMPEALEAU COUNTY.

Gilbertson, C. P. Arcadia
 Graul, Edw. J. Independence
 Hagestad, A. C. Etrick
 Hegge, Julius Galesville
 Johnson, Frank L. Osseo

Markham, F. C. Independence
 Mattison, Thos. Blair
 Moen, Gilbert T. Eleva
 Pederson, Peter Eleva, R. 3
 Ristau, Emil O. Osseo
 Thompson, A. L. Blair
 Thompson, Paul Blair

VERNON COUNTY.

Aberg, Jacob DeSoto
 Amott, Marcus Viroqua
 Bean, R. P. DeSoto
 Cade, Joseph M. Viroqua
 Dahl, A. J. Viroqua
 Davis, J. L. DeSoto
 Fisher, Leslie Viroqua
 Fisher, Perl Viroqua
 Henry, Ernest E. Viroqua
 Herold, Rudolph, Jr. Stoddard
 Hoilien, David Westby
 Lawrence, W. J. DeSoto
 Lindevig, Oscar O. Viola, R. 1
 McClurg, Walter F. Viroqua
 Neprud, Nels O. Coon Valley
 Olson, G. C. Westby
 Sebion, Cornelius Westby
 Sebion, Stanley Westby
 Sebion, T. Westby
 Sherry, Selmer Viroqua
 Sorem, Erick West Prairie
 Staley Bros. Hillsboro
 Stegne, Chris. Viroqua
 Surggum, Oscar Viroqua
 Swiggum, Neil Viroqua

WALWORTH COUNTY.

Arnold, Walter C. Lake Geneva
 Brentner, George F. Lake Geneva
 Bromley, Fred G. Whitewater, R. 4
 Coates, Clinton J. Elkhorn, R. 6
 Coit, H. W. Darien
 Dow, Everett J. Whitewater
 Dunbar, Harry D. Elkhorn
 Ellis, R. H. Darien
 Foerster, M. F. Whitewater, R. 2
 Gile, Fred Sharon
 Kiteley, Leonrad W. Sharon, R. 2
 Kuehne, Edm. H. Lake Beulah
 Lewis, E. H. Whitewater
 Lowell, Lloyd S. Sharon
 McCarthy, Edw. Walworth
 McLeod, Stanley Lake Geneva
 Meurer, Paul Genoa Jct.
 O'Dell, Wm. Lake Beulah
 Palmer, Earl Lake Geneva
 Peterson, Peter Walworth, R. 1
 Peters, Ezra Sharon
 Peters, John Lake Beulah
 Piper, Harry B. Sharon
 Robinson, A. S. Lake Geneva
 Schwartz, John A. Troy Center
 Smith, Carroll H. Delavan, R. 3
 Thacher, Ed. F. Zenda
 Thacher, Louis E. Zenda
 Thompson, Alfred N. Delavan
 Utter, Delwin H. Lake Beulah
 Warmington, Prentice Honey Creek
 West, Mark Elkhorn
 Wright, John Whitewater

MEMBERSHIP LIST—continued.

WASHBURN COUNTY.

Busch, Andrew F. Spooner
 Melby, Dan. Spooner, R. 2
 Oestreich, L. J. Spooner, R. 2
 Scholt, Gustav L. Madge

WASHINGTON COUNTY.

Backus, Franklin G. Kewaskum
 Baer, A. C. West Bend
 Baertlein, V. J. So. Germantown
 Baertlein, Wm. A. So. Germantown
 Connell, Clarence J. Colgate, R. 1
 Flynn, John W. Hartford
 Gutschenritter, F. J. West Bend
 Klumb, Albert J. Rockfield
 Klumb, Hugo G. Kewaskum
 Klumb, Oscar Rockfield
 O'Connell, James Hartford
 Peters, J. Y. West Bend
 Puls, John Hartford
 Schermerbom, G. B. Hartland
 Schottler, Conrad J. So. Germantown
 Stuesser, Eugene Richfield
 Woltdt, Hugo Jackson
 Ziemer, Paul Jackson, R. 2

WAUKESHA COUNTY.

Baird, Jas. W. Waukesha, R. 2
 Baird, Robert L. Waukesha
 Baird, W. L. Waukesha
 Blackwell, Leslie C. Waukesha
 Boyd, Jas. T. Waukesha, R. 7
 Brown, R. P. Hartland, R. 21
 Butler, G. C. Merton
 Cooper, Joe Pewaukee
 Craig, George D. Oconomowoc, R. 26
 Dance, George Brookfield, R. 12
 Dance, James Brookfield
 Davies, Evan Waukesha, R. 8
 Dibble, R. A. Menomonee Falls
 Dineen, C. F. Pewaukee
 Dopp, Paul B. Waukesha
 Fuller, Albert North Lake
 Fuller, Horace North Lake
 Fuller, Roland North Lake
 Gierke, Erwin A. Waukesha
 Graser, Adam H. Waukesha, R. 4
 Greengo, A. L. Menomonee Falls
 Gunderson, Forrest D. Oconomowoc
 Hall, Frank Hartland, R. 21
 Hall, John M. Hartland, R. 21
 Hardy, John Waukesha
 Hart, Wm. C. Brookfield
 Heling, Paul ... Menomonee Falls, R. 18
 Hicken, A. B. Waukesha
 Hill, Charles Brookfield
 Hill, Charles T. Brookfield
 Hill, J. T. Brookfield
 Holt, Lester H. Oconomowoc
 Jeffery, H. B. Menomonee Falls
 Jones, Albert Dousman
 Kaul, E. H. Waukesha
 Klussendorf, Fred E. Waukesha, R. 6
 Knowlton, A. R. Waukesha
 Kraetsch, Alvin C. Menomonee Falls
 Kruetz, Harvey A. Waukesha
 Lewis, Owen H. Genesee Depot
 Longley, A. E. Dousman

Longley, H. N. Dousman
 Mitchell, Dean Brookfield
 Mitwede, Henry Waukesha
 Nicolaus, D. C. Mukwonago
 Omann, C. H. Nashotah
 Pabst, Fred Oconomowoc
 Peebles, John Oconomowoc
 Peebles, Percy A. ... Oconomowoc, R. 26
 Pokfus, Edw. H. Waukesha
 Price, W. Howard Waukesha, R. 9
 Reyer, Walter R. Templeton, R. 20
 Rosenow, Arthur Oconomowoc
 Rosenow, H. E. Oconomowoc
 Rust, S. H. Mukwonago
 Schermerbom, G. B. Hartland
 Schroeder, F. C. Hartland
 Schumacher, John F. Waukesha
 Schwartz, Peter C. Waukesha
 Seitz, Adam Waukesha
 Sleep, S. S. Hartland, R. 21
 Stewart, Joe. H. Wales
 Swanton, John Oconomowoc
 Swoboda, F. G. Dousman
 Tempero, Roy J. Menomonee Falls
 Williams, Orson P. Waukesha, R. 8

WAUPACA COUNTY.

Almon, Perry T. Weyauwega
 Bestul, Martin Scandinavia
 Bille, J. Waupaca
 Harrington, Forest Waupaca
 Harrington, Myron Waupaca
 Johnson, Hanford Iola
 Kendall, Myron Iola, R. 3
 Kneip, Wm. Weyauwega
 Knoke, Hugo Readfield
 Kunkel, Arthur M. Manawa
 Larson, LeRoy Iola
 Nace, Franklin Iola
 Pinkerton, A. J. Waupaca
 Pinkerton, Fred Waupaca
 Rosholt, Jacob A. Scandinavia
 Wall, Floyd Weyauwega
 Wied, Edw. Waupaca

WAUSHARA COUNTY.

Bartleson, H. C. Pine River
 Eagan, J. J. Wautoma
 Evans, Edgar Wild Rose
 Harris, A. M. Plainfield
 Jacobs, A. F. Coloma
 Knuteson, Ernest L. Wautoma
 Larson, J. M. Wautoma
 Owens, Edwin Wild Rose
 Thorstad, Clarence Wautoma, R. 6

WINNEBAGO COUNTY.

Blakely, Albert J. Neenah
 Boss, Sam J., Jr. Oshkosh, R. 7
 Boss, Ulrich Oshkosh, R. 7
 Bussey, W. P. Omro
 Cross, A. J. Allenville
 Davis, J. C. Oshkosh
 Ihrig, J. J. Oshkosh, R. 4
 Marshall, A. C. Omro
 Miller, Henry C. Allenville
 Olson, Harry O. Larsen

MEMBERSHIP LIST—continued.

Palfrey, John R. Omro
 Rasmussen, Fred Neenah
 Smith, Seymour L. Oshkosh, R. 5
 Tanner, A. V. Omro
 Treleven, Guy T. Omro
 Waite, S. R. Oshkosh
 Wood, Calvin D. Oshkosh

WOOD COUNTY.

Clark, Chas. F. Babcock
 Kronholm, Edw. Grand Rapids
 Peterson, Einar A. Milladore

NON-RESIDENTS.

ARIZONA.

Stienstra, S. J. Keams Canon

CALIFORNIA.

Wulff, Fred B. Gustine

COLORADO.

McLean, Donald La Garita

ILLINOIS.

Akins, Clyde, E. Warren
 Beitel, Perry A. Rochelle, R. 3
 Bennett, H. J. Cherry Valley
 Bruning, Jacob Shermerville
 Bryson, Donald L. Elizabeth
 Cheftain, Louis A. Galena
 Christenson, Emil Hartland
 Coffin, Russell H. Rockford, R. 7
 Cook, Oscar M. Apple River
 Corley, Fay H. Tower Hill
 Coulter, Dean Ohio
 Dienst, Arthur H. Hinckley
 Durand, Mrs. Grace G. Lake Bluff
 Gaston, L. E. Barrington
 Hitchcock, H. R. Pecatonica
 Horton, James E. Waukegan
 Hoxsey, E. R. Serena
 Jones, Ira P. Hinckley
 McGeachie, Edw. P. Rockford, R. 8
 Martin, Walter I. Chicago,
 5212 So. Park Ave.
 Osterday, E. C. Stockton
 Phillips, Jesse Elizabeth
 Richardson, Geo. J. Spring Grove
 Sargent, Lester Warren
 Smithwick, M. W. Chicago,
 115 Adams St.
 Vullmahn, Ernest F. Edgebrook
 Webbe, Wm. E. Barrington
 Wilcox, H. L. Roscoe

INDIANA.

Dewire, M. E. Hamilton
 Fuller, Robert Mishawaka
 Lindenman, J. H. Mishawaka
 Logan, R. G. New Palestine

IOWA.

Anderson, Theo. Waterville
 Berns, F. H. Guttenberg, R. 1
 Brandt, Elmer H. Clayton
 Brooks, Homer H. Hopkinton
 George, Russell Scranton
 Klaus, C. S. Colesburg
 Thompson, T. Jr. Wadena

MEXICO.

Cardenas, F. F. Saltillo, Coah.

MICHIGAN.

DeForest, Theo. K. Ann Arbor
 Hatch, L. M. Big Bay
 Lamson, Robert J. Blissfield
 Larsen, Chas. Brown City
 Meyer, A. J. Howell, R. 7

MINNESOTA.

Hillier, H. B. Brownsdale
 Holcomb, W. R. Excelstor
 Peace, Jas. W. Duluth, R. 8
 Stevenson, J. W. Winnebago
 Vollrath, August St. Bonifacious
 Wiker, N. H. Mabel

MISSOURI.

Bliss, George M. Warrensburg

MONTANA.

Bennett, C.S. Somers
 Mayer, Sidney Kalispell

NEBRASKA.

Semb, Allen T. Schyler, R. 1
 Wrabetz, Frank Schyler, R. 1

NEW HAMPSHIRE.

Conant, W. A. Temple

NEW JERSEY.

Geller, Henry Wm. Woodbine

NEW YORK.

*Hayes, Edwin H. Buffalo,
 503 W. Ferry St.
 Mills, Stanley Walden
 Northrup, H. R. .. East Hampton, Long
 Island

* Deceased.

MEMBERSHIP LIST—continued.

OHIO.	TEXAS.
Alcalay, S. J. Columbus, 1621 Neil. Ave.	Smith, Ray K. El Paso
Messerschmidt, S. H. Flat Rock	
PENNSYLVANIA.	UTAH.
Rorer, Wm. A. Mt. Gretna	Carey, Jas. Fruitland
SOUTH DAKOTA.	VIRGINIA.
Porter, W. L. Madison, R. 2	Allen, E. S. Claremont

NINTH ANNUAL MEETING

OF THE

Wisconsin Agricultural Experiment Association

AGRICULTURAL HALL

MADISON, WISCONSIN

The officers and members of the Association extend a cordial invitation to all interested in progressive farming to attend its meetings and take part in the discussions.

PROGRAM

FRIDAY, 9 A. M.

Annual Address of the President.....C. P. Norgord, Madison
Secretary's Report.....R. A. Moore, Madison
The Future of Agriculture.....Oliver E. Baker, Madison
Seed Inspection as It Applies to Members of the Wisconsin Ex-
periment Association.....A. L. Stone, Madison
Farm Management.....R. H. Poston, Knapp
Southern Farming.....J. J. Tschudy, Paso del Rio, Colima, Mexico

FRIDAY, 2 P. M.

Election of Officers, Reports of Committees, etc.

Plan of Work for the Coming Year:

Division of Farm Crops.....R. A. Moore
Division of Horse Breeding.....A. S. Alexander
Division of Soils.....A. R. Whitson
Division of Chemistry.....E. B. Hart
Division of Farm Mechanics.....C. A. Ocock
Division of Agricultural Extension.....K. L. Hatch

Report of Secretary of the Fond du Lac County Order of the
Wisconsin Experiment Association.....Henry Michels
Report of Secretary of the Dodge County Order.....H. E. Krueger
Report of the Secretary of the Manitowoc Conuty Order, O. R. Wiegand
Report of the Secretary of the Monroe County Order.....L. A. Miller
Report of the Secretary of the St. Croix County Order..Wm. Schwandt
Report of the Secretary of the Sheboygan County Order
.....O. R. Frauenheim
Report of the Secretary of the Vernon County Order.....Jos. Cade

FRIDAY, 7:30 P. M.

Joint sessions of the Experiment Association, Short Course Alumni,
and Short and Long Course Literary Societies.

Instrumental Music.....Short Course Orchestra
Opening Remarks.....Dean H. L. Russell
Vocal Music.....Short Course Glee Club
State Affairs.....J. A. Frear, Sec. of State
Instrumental Duet.....Mesdames G. C. Humphrey, F. W. Woll
AddressProf. P. G. Holden, Ames, Iowa

SATURDAY, 8:30 A. M.

Reports of Farm Inspectors:

Fond du Lac County.....Henry Michels
Dodge County.....H. E. Krueger
Monroe County.....Geo. Freeman
Manitowoc County.....O. R. Wiegand
Methods of Farm Advertising.....J. C. Marquis, Agricultural Editor
Cooperation of Members of the Experiment Association with
State Board of Agriculture.....J. M. True, Secretary

SATURDAY, 2 P. M.

Inspection of prize winning seed grains.

EIGHTH ANNUAL REPORT

OF THE

Wisconsin Agricultural Experiment Association

ADDRESS OF PRESIDENT.

C. P. NORGORD, MADISON, DANE CO.

It is with great pleasure that I greet you at this the opening meeting of the ninth annual session of the Wisconsin Experiment Association. I trust that the addresses made and the deliberations entered into may result in increased knowledge and inspiration to each person present.

The past year has been a year of inspiration, and has seen the fruition of early plans and labors. There has been established this year five new suborders of the association making in all seven thrifty suborders. We welcome each of them to our midst, and hope that each may prosper and prove a tower of strength to its local community and to the parent organization. Much legislation favorable to our cause has been passed. The sale of seed grains has been immense. The reputation of Wisconsin as a seed grain state is rapidly becoming known in all parts of the land. More notable perhaps than any other achievement has been the outcome of Wisconsin grain in competition at the Omaha Exposition. At this exposition our grains were measured up against grains from all parts of the land. The result determined by unbiased, capable judges, tested by ambitious, resourceful opponents, clearly placed Wisconsin cereals of all classes in the lead.

This is the twenty-seventh year of the existence of the Wisconsin Experiment Station and College of Agriculture. During

this time many great discoveries and achievements of inestimable value to this state and to the world have been brought forth by it and many young men have passed under the influence of the College and have gone out to occupy useful and prominent positions in all parts of the world.

The Station was established primarily for the benefit of the farmer of this state. It is therefore important that there be, at all times, a vital relationship and an open channel of intercourse between the Station and the people of the State. I know of no means of securing this so effective and important as through this Experiment Association. Each member has at some time been a student of the College. We are all familiar with its work, we have imbibed the spirit. We look with pride upon our College, with its world wide and growing fame. We are glad to be among its products and to share in the benefits of its reputation.

Our members are scattered widely throughout the State, each being a leader, in close and vital touch with his own community. When the College speaks through this Association the message is borne to every city, hamlet and farming community to the very limits of the State.

The Experiment Station has delegated to the Department of Agronomy the work of breeding farm crops and improving their culture. This work involves great responsibility and the possibility of millions of dollars of improvement to the State. In performing this work, this Department has invited the cooperation of former students of the College and formed this Association. You are aware of what has been accomplished and brought to the farmers of the State through this organization as a distributing channel.

Methods of growing and handling Alfalfa have been worked out and introduced. Improved Oderbrucker barley, Swedish select oats, Wisconsin No. 7 and No. 12 corn and other seed grains have been sent out. The present year witnesses the dissemination of the Pedigree Barley, the sweepstakes barley of the world, the result of ten years careful and persistent breeding.

In receiving these grains from the Station, first the members of this Association are enjoying the benefits of the work of the Station before all others and are thus given the possibility of profits from the sale of seed grains.

The Station has also in recent years turned the extension work of other departments into this Association. It has thus greatly increased the possible lines of work by which members of this Association may profit.

Because of this interdependence of the Station and this Association and their combined relation to the people of the State at large it is greatly to the interest of both that the close relationship of past years be continued and carefully guarded and strengthened in the future. This can be done by an intelligent, liberal policy pursued by the Station and the loyal support of each member of this Association generously given to the support of the Station and its policies.

This Association has been and should rightfully be a mighty force for good legislation in the State. In order to accomplish the greatest good along this line, we should all strive to keep to the forefront of advancement, know what has been done, and strive to study further needs with a view to finding and suggesting remedies.

In the exercise of this function there is danger of falling into great error. We must guard with greatest care against any attempt to make this organization a political machine. The resolutions passed by this Association and the legislation which has come forth speak well for our work along this line.

We have in times past recommended such measures as:

Legislation for the improvement of roads.

Securing appropriations for agricultural extension.

The establishment of a system of seed inspection throughout the State by the University.

Today these measures have become laws promising great good to our State. The appropriation for agricultural extension has made it possible for the College of Agriculture to bring to the individual farmer as never before the practical and profitable things it has to offer. This it does through a large number of farmers' courses, traveling schools, substations and demonstration farms and individual workers among the farmers. This work should be greatly extended in the future and should receive larger support. Members of this Association should see to it that the next legislature gives this work more liberal support.

We have at times heard complaints from purchasers of seed that a few members of this Association are selling seeds of in-

ferior quality, uncleaned, and in some cases entire misrepresentations. This organization was founded primarily for the dissemination of pure bred seeds of the Wisconsin Experiment Station. The Station in placing these seeds in the hands of members of this Association for distribution is, together with this Association, vouching for their quality and purity. Any member of this Association selling inferior seeds is not injuring himself alone, but is endangering the reputation of this Association and every seed grower within it. He is destroying the market for our seed grains and tampering with the reputation and good name of the University of Wisconsin. He is a living parasite upon his fellow members.

This Association must today take a more firm and open stand than ever before against all members who sell grains not up to the high quality set as its standard. This stand must be nothing short of immediate expulsion and repudiation.

From now on all seeds sold in the State must be tested by the Seed Inspection division of the Department of Agronomy. We have also this year arranged for a farm inspector in each county order whose duty it shall be to inspect the farm of each member selling seed grains, and report on the quality of grains for sale, the methods of growing and caring for the seeds, and the condition of the farm as to freedom from weeds, and general thrift and management.

These two new measures will go far toward checking misrepresentation and dishonesty. But we must not forget that the enforcement of law depends largely upon public sentiment. It will therefore be to the interest of every member of this Association to help create this sentiment by speech and action, and this Association should stand unanimously behind the officers enforcing these regulations in order that these measures may be properly carried out, and that the high quality of our seed grains and good name of our organization may be secure for future time.

REPORT OF THE SECRETARY, 1910.

R. A. MOORE, MADISON, DANE CO.

For the ninth time I have the privilege of submitting to you the Annual Report of the work done by the Experiment Association. No time in the history of our Association has its membership made the importance of their work manifest to so great an extent as they have the past year.

MEMBERSHIP.

Our membership has steadily increased. January 1, 1910, we had a paid up membership of 1,225. This number is an increase of 125 over that of the previous year.

EXPANSION OF THE WORK OF THE EXPERIMENT ASSOCIATION.

It is very gratifying to note the expansion of the work of our Association and the good now being performed along other lines of agricultural effort as well as farm crops. The co-operative work in connection with the Department of Bacteriology, by which thousands of diseased animals were detected, was highly commendable. Following co-operative work planned by the Department of Farm Machinery, numerous corn curing buildings have been erected in which all seed corn used on the farm or sold to others has been properly cured. Several hundred members are co-operating with the Soils Department in the use of fertilizers and farm drainage which will be the means of disseminating this great work widely throughout the State.

COUNTY FAIR WORK.

In addition to the experimental work carried on, the members have taken an active part in their respective county fairs. This is work along the proper line and too much cannot be said to emphasize this line of effort. Our county fairs should become great educational centers where people both young and old annually congregate and see the best products the county is able to produce. The county fair should be a place where our children can safely go and learn from exhibits on hand the importance of the great occupation their parents are following. The

best agricultural thought of the country should center once a year at the county fair and give the stimulus to further effort. By co-operating with the management of the fair I feel confident we can convince the officers that the time has come when premiums paid on scrub grains and scrub live stock should be relegated to the past, and the encouragement should be offered upon products that years of patient work have been expended upon. It is the grains that are capable of producing 3 to 10 bushels more per acre that should be brought to the public notice and not the scrub varieties that are gradually deteriorating. Prominent members of the Association should call upon the county fair secretary and if possible, aid in the revision of the premium list. The fair management is more than willing to receive assistance from any one having the welfare of the fair and the agricultural uplift of the county at heart.

All members of the Association should be active exhibitors at their respective fairs, and aid in the dissemination of good agricultural thought.

The same activity should be displayed at the State and District fairs so that the good work will be as far-reaching as possible.

COUNTY ORDERS OF THE ASSOCIATION.

Our membership had increased to that extent in 1908 that the forming of county orders for the purpose of better supervision of the work was thought advisable. These orders were to be formed in those counties having a goodly number of regular members of the Association. The orders were to be officered similar to that of the State organization. The plan has been a decided success and at the present time the following counties have organized and are actively at work: Fond du Lac, Dodge, Monroe, Sheboygan, St. Croix, Vernon and Manitowoc. Several more counties will be organized this winter so that we expect to be able to report double the number next year. The county fair work can be made doubly effective where a good strong organization exists.

COOPERATIVE WORK WITH THE NAT'L CORN & GRAIN ASSOCIATION.

The members of the Experiment Association have taken an active interest in the great National Grain Exposition. Wis-



Agronomic Exhibit of the College of Agriculture and Experiment Association at National Corn and Grain Exposition, Omaha, Nebraska, 1909.

consin received at the last Exposition approximately \$2,200 in prizes on grains and forage plants nearly all of which went to Association exhibitors. The pedigreed grains scored heavily and captured practically all prizes in classes where they came in competition with other grains. Since the great victory at Omaha, I think we can safely say without fear of challenge: "Wisconsin is the great seed grain state of America." The beauty of that quotation is the fact that the members who have been instrumental in placing her in the front rank expect to keep her there.

I am not able to give you exact figures as to the amount of seed grains sold by members of the Association, but it is approximately \$250,000 for the year 1909. With the improved corn and the dissemination of pedigree grains we look forward to a material increase in sales in the near future. The members are just now getting in a position to handle large quantities of seed grains to the best possible advantage.

SEED GRAIN INSPECTORS.

In order to more closely supervise the work of our seed growers we have established a system of farm inspection by which each member growing seed grains will be visited at least once a year. This is done for the purpose of emphasizing the importance of sending out as seed grains only that which is of the very best, and discouraging in every possible way the putting on the market of any seeds that are not thoroughly reliable. The farm inspector will be in a position to offer suggestions in regard to growing, storing and marketing seed grains that will be of the utmost importance to the members of the Association visited. This inspection work is confined this year to those counties in which Orders of the Association are in operation. The growing and dissemination of seed grains by the members of the Wisconsin Experiment Association is being watched and commented on by people throughout the world and the reputation so far gained should be carefully guarded. The dishonesty of a single member of the Association will reflect upon the work of all members. If we are now to maintain the high position we have reached and the standard set, we will do so by practicing honesty, uprightness and strict integrity in growing and selling pure bred grains.

From reports received I am able to give the following data regarding tests on grains and forage plants made by members of the association.

Corn.**Silver King (Wis. No. 7).**

Number members reporting.....	182
Number counties in the state.....	71
Number of counties from which reports were received.....	45
Average per cent germination of the seed.....	96.7
Number reporting corn as well matured.....	124
Number reporting failure to mature.....	53
Maximum yield (bushels shelled corn per acre).....	115
Minimum yield (bushels shelled corn per acre) poor land.....	5
Average yield per acre (bushels of shelled corn).....	59.03
Average yield per acre any other variety.....	46.8
Difference in yield in favor of No. 7 corn.....	12.23
Number parties planting on fall plowed land.....	43
Number parties planting on spring plowed land.....	113

Early Yellow Dent (Wis. No. 8).

Number members reporting.....	17
Number counties in the state.....	71
Number counties from which reports were received.....	11
Average per cent of germination of the seed.....	96.7
Number reporting corn maturing well.....	12
Number reporting failure to mature.....	2
Maximum yield per acre (bushels shelled corn).....	100
Minimum yield per acre (bushels shelled corn).....	20
Average yield per acre (bushels shelled corn).....	47.9
Average yield per acre any other variety.....	54.3

Golden Glow (Wis. No. 12).

Number members reporting.....	69
No. counties from which reports were received.....	30
Average per cent germination of the seed.....	96.4
Number reporting corn as well matured.....	42
Number reporting failure to mature.....	25
Maximum yield (bushels shelled corn per acre).....	98
Minimum yield (bushels shelled corn per acre).....	10
Average yield per acre (bushels of shelled corn).....	53.7
Average yield per acre any other variety.....	49.6
Number parties planting on fall plowed land.....	36
Number parties planting on spring plowed land.....	31

Oderbrucker Barley (Wis. No. 55).

Number parties reporting to date.....	280
No. counties from which reports have been received.....	55
Number sowing on fall plowed land.....	179
Number sowing on spring plowed land.....	82
Number sowing with drill.....	124

Number sowing with broadcast seeder.....	156
Number sowing by hand.....	6
Number reporting that barley remained erect.....	237
Number reporting that barley lodged.....	38
Number reporting that barley rusted badly.....	8
Number reporting that barley rusted slightly.....	40
Number reporting that barley did not rust.....	229
Number reporting that barley developed smut.....	128
Number reporting that barley was not smutted.....	148
Average yield of Oderbrucker barley (bushels).....	32.3
Average yield of any other variety.....	29.6
Difference in yield in favor of Oderbrucker barley.....	2.7

Swedish Select Oats (Wis. No. 4)

Number of members reporting.....	96
No. counties in the state.....	71
No counties from which reports have been received.....	39
No. sowing on fall plowed land.....	75
No. sowing on spring plowed land.....	21
No. sowing with drill.....	40
No. sowing with seeder.....	53
No. cases where oats stood up well.....	87
No. treating for prevention of smut.....	12
No. cases where oats were smutted.....	25
No. cases where oats were rusted badly.....	11
Average yield per acre of No. 4 oats (bushels).....	45.8
Average yield per acre of any other variety (bushels).....	45.4

Soy Beans.

Number of members experimenting.....	34
Number counties in the state from which reports were received.....	18
Number of members reporting beans as ripening evenly.....	21
Number members reporting beans as ripening unevenly.....	10
Number members planting beans on fall plowed land.....	16
Number members planting beans on spring plowed land.....	20
Number members using bacteria-laden soil.....	3
Number members reporting nodules on roots of bean plants where soil was inoculated.....	3
Average yield per acre (bushels).....	18.46

Field Beans.

Number members experimenting.....	20
Average date of planting.....	May 25
Average yield (in bushels) per acre.....	13.8
Number reporting beans injured by insect enemies or fungus diseases.....	2

SUMMARY OF CORN AND BARLEY TESTS.

Corn Tests. Five years tests made by members of the Wisconsin Experiment Association with the Silver King Corn (Wisconsin No. 7).

Year.	No. reports.	Average yield No. 7.	Average yield, other varieties.	Increase in favor of No. 7.
1905.....	120	59.2	49.2	10.0 bu.
1906.....	72	67.2	54.8	12.4
1907.....	75	54.5	46.8	7.7
1908.....	154	56.0	44.0	12.0
1909.....	182	59.03	46.8	12.23

Reports from 603 members of the Experiment Association carrying on tests in different parts of the State show an average yield of No. 7 corn for five years of 59.1 bushels per acre; 10.08 bushels of shelled corn above that of the best variety compared with it.

The average yield of the State for five years is 36.5 bu.

The average yield of the U. S. for five years is 27.3 bu.

Barley Tests. Four years tests made by members of the Wisconsin Experiment Association with the Oderbrucker barley (Wis. No. 55).

Year.	No. reports.	Average yield, Oderbrucker.	Average yield, other varieties.	Increase in favor of the Oderbrucker.
1906.....	127	39.1	33.6	5.5 bu.
1907.....	227	30	24.9	5.1
1908.....	288	37.2	31.6	5.6
1909.....	280	32.3	29.6	2.7

Reports from 922 members of the Experiment Association carrying on tests with Oderbrucker barley in different parts of the State show an average yield for four years of 32.8 bushels per acre; 4.7 bushels of Oderbrucker barley above that of the best varieties compared with it.

The average yield of the State for four years is 27.9.

The average yield of the U. S. for four years is 25.9.

SEED INSPECTION AS IT APPLIES TO MEMBERS OF
THE WISCONSIN EXPERIMENT ASSOCIATION.

A. L. STONE, MADISON, DANE CO.

The production of high grade seeds by the members of this Association must soon be curtailed in a large measure, unless the spread of noxious weeds is prevented.

There are several ways in which these weeds are being introduced and multiplied on our farms, but by far the most prolific is by sowing agricultural seeds in which these weed seeds are present in greater or less numbers. As seed producers, Association members should be particularly interested in the enforcement of the Seed Inspection Law enacted by the last Legislature. A copy of this law has been placed in the hands of each member present and its provisions should be carefully noted.

Association members are subject to the law excepting only for the provisions made in Section 1494X—8. Members of the Association are subject to prosecution exactly the same as a seed dealer when they expose for sale on the open market seeds which are not labeled with a statement as required by Section 1495x—1 of the law. Members cannot offer for sale even to seed dealers, seeds which contain the seeds of the noxious weeds named in Section 1494—3 in greater number than one to one thousand of the seed offered for sale. They can, however, sell uncleaned seed to dealers who will clean it before exposing it for sale upon the market providing it contains none of the noxious weed seeds. Members may also sell cereals to their neighbors without labeling the same according to law but may not so sell clover and grass seeds.

Where members do not have satisfactory cleaning and germinating apparatus at hand it would be best in all cases to send samples of their seeds for testing to the Seed Inspector, Wisconsin Experiment Station. When sent to the Seed Inspector a fee of twenty-five cents should accompany each sample as required by Section 14948—16 of the law.

It would also be wise to send a sample in any case where unfamiliar weed seeds are present in the sample. The larger number of our noxious weeds are introduced weeds and their seeds are not well known by our farmers. No seed should be

offered for sale or sown upon the farm which contains the seeds of weeds which may prove to be noxious. It will be to the interest of every member of the Association to keep his farm free from weeds and to assist in keeping new weeds from getting established upon the farm. It is therefore necessary that members comply with the law and assist in its enforcement. This can best be done by seeing that all seed sold is tested and properly labeled.

If any unfamiliar weeds are found growing on the farm or unfamiliar seeds are present in grain, grass or clover seeds, specimens should at once be sent to the State Experiment Station for identification. Weeds are spreading very rapidly over the State and members of the Association should exert every effort to prevent their further introduction and dissemination.

STATE AFFAIRS.

J. A. FREAR, SECRETARY OF STATE.

At the present time a great awakening is occurring throughout the country over the conservation of resources. Those undeveloped resources that lie in the soil are destined to play an important part in the welfare of our people. Laws have been passed by the legislatures in aid of agriculture, to give more general information on the subject, to educate farmers to become better farmers and to increase the productiveness of the soil. Such laws are justified because they affect the welfare of the people as a whole.

Today the soil which was supposed to have been worn out on many Wisconsin farms has been quickened by modern methods until it equals in productiveness the virgin soil of fifty years ago. Tobacco, sugar beets, fruit and all the grains here reach a maximum of production. Our fathers did not realize the possibilities of proper soil culture, nor the importance of pure bred grains and stock, in securing better returns. The standing of Wisconsin in the production of butter and cheese, in high grade stock, in bountiful crops no longer depends upon accident or weather. It is a result of careful intelligent farm-

ing and in this respect no state equals ours. The average man is becoming better educated in farming and the varied problems he now has to solve on the farm makes it necessary for him to become a student and business man in the broadest sense.

You have learned to farm better than your fathers and you are expected to run better farms. You have learned to conserve and promote fertility through years of experiment.

You ought to be able and you are able to grow two blades where your fathers grew but one and that is a result worth all the years of careful study given by these instructors, and all the appropriations made by the state for that purpose.

The man who is the most independent citizen of this country is the farmer, for he is capitalist, employer and laborer combined. He fears no business competition, no financial crash, for just so long as a demand exists for food, his products will find a ready market.

We look with interest and pride upon the man who in the wide scope of governmental possibilities performs a service for his fellowmen, but men like Burbank, Babcock, Moore and Holden are doing a service for us that is excelled by no other agency. They are teaching us how to conserve the productivity of soil and the possibilities of intelligent farming.

They and their fellow investigators are raising the standard of farm life. Today the farmer gets near to nature, lives happier, has higher ideals and a better knowledge of general affairs than the majority of those who are huddled together in the city.

Some day the clerks, floor walkers, factory employees and others of circumscribed surroundings will discover that they are an insignificant part of the great city in which they live and there will be a movement back to the farm. This situation is impressing itself upon the people of today. The unrest, discomfort, noise, and distractions of city life are driving men to a realization of better possibilities to be found out upon the broad acres of our state.

The money Wisconsin is investing in your education is well spent and will be returned many fold by the better methods of farming which will be put into practice in the community where you live. It all aids you to a better understanding of the economic propositions which effect state affairs, of the affairs

that affect you and all other classes of people and you will best serve the state by performing your part in the solution of problems and careful selection of agencies that have to directly deal with state problems.

As a last thought I desire to say that through the efforts of the Wisconsin College of Agriculture and the young men who have gone forth from the College, great things have been accomplished within our state and I know I voice your sentiment and that of our people generally when I say no state in the Union has accomplished so much for agriculture as our own Wisconsin.

METHODS OF FARM ADVERTISING.

J. CLYDE MARQUIS, AGRICULTURAL EDITOR, COLLEGE OF AGRICULTURE AND EXPERIMENT STATION.

Advertising is now recognized as an essential in the management of a successful farm. In the days of the self-sufficing agriculture there was little need of organized publicity since commercial methods were not followed by farmers. With the growing competition in the production of farm crops, live stock, etc., a well planned method of disseminating information relative to what a certain farm has for sale must be adopted by every successful farm manager.

Advertising consists in (1) spreading news and informing the prospective buyer of what is for sale and, (2) creating a demand where no demand has previously existed. Advertising is a creative force and not merely the redirecting of the trade already existing. The total volume of business in this country is actually multiplied and the consumption of many products actually increased by advertising. The farmer may adopt the methods used by other business men and create a demand for his product in the same fashion.

ADVERTISING CREATES DEMAND.

For instance, the farmers of a community may be satisfied with the quality of seed corn they are using and not be disposed to purchase expensive seed from a distance. If, however,

a good variety of corn for that section is thoroughly advertised and its merits, including higher quality, larger yields, early maturity, etc., are fully pointed out, these farmers will soon begin to want the new seed. The result is that there is soon a live demand for the new corn in this community where no demand for seed corn previously existed. Similar illustrations can be drawn for many lines of farm advertising.

An important need for advertising by the young farmer is in establishing a reputation and gaining a patronage. He must, of course, first have the article to sell and the means for distributing it before he can expect to conduct a successful advertising campaign. Many fail to get results from advertising because they do not take into consideration that the advertisement simply attracts attention and calls the inquiry from the prospective buyer and that making the sale is a subsequent process for which the advertisement is seldom responsible. Of course, there are advertisements which are designed to make sales and not merely attract inquiries but their usefulness is limited and confined to a short period.

When the various methods of advertising which the farmer may practice are classified they fall roughly into (1) Local advertising, (2) Correspondence advertising, (3) Periodical advertising, and (4) Show and Sale Advertising.

LOCAL ADVERTISING.

Local advertising may well begin with the roadside billboard. An attractive board fitted with a sash to protect the notices from the weather furnishes a cheap and effective method of gaining the attention of those who pass the farm. Its usefulness is limited, however, since only those who pass the place are reached and usually these same people may be reached by neighborhood news which is quite as effective. The farmer who lives upon an important highway in the vicinity of a large city will find such a bill-board, costing only \$5 to \$10, an excellent publicity servant provided he keeps up-to-date notices upon it of the crops, seed, stock, etc., for sale.

CORRESPONDENCE ADVERTISING.

In the class called correspondence advertisements I place printed letter heads, envelopes, post cards, catalogs and the

like. The post card has only recently come to be appreciated as an advertising medium. A nicely printed statement of goods for sale on a post card costs but a few dollars and if mailed to a selected list of names of farmers is sure to bring results.

A member of the Experiment Association recently issued a post card at a cost of \$6.50 for 500 cards (See figure 1). Most of these were mailed to a selected list of farmers in the county with the result that within less than six weeks he had sold over \$800 worth of live stock and seeds.

In another instance a similar card sold over \$300 worth of produce besides giving him a great deal of publicity which adds to his reputation and will result in sales in future years. The cards from this man are now expected by his customers and his standing in the community has been improved to a remarkable extent.

An attractive advertisement upon an envelope or letter head is a matter of great importance and should not be overlooked by any farmer, since it costs so little. A good illustration that actually illustrates, showing a view of the farm or of a selected specimen of live stock or grain, is valuable. A poor illustration is worse than none and should be carefully avoided.

A letter-head should be exclusive, showing stock which reflects a high standard in farming. Do not use too much printers' ink and confine your statements to facts which will be of interest to your purchaser. The matter of letter heads is a subject worthy of an entire article and I must not here dwell upon it other than to urge high standards, since the letter head is your personal representative which goes to the customer. He will size you up by your letter head the same as he will measure you by your personal appearance, should you meet him face to face.

What has been said of letter heads may be applied to catalogs. The main thing is quality and accuracy, incorporating only such facts as are of interest to the deal leaving out superlative adjectives which always arouse doubt in the mind of the prospective customer.

PERIODICAL ADVERTISING.

The field of periodical advertisement is so extensive and as yet has been so little studied that fundamental principles of adver-

SEASON OF 1910

Oak Lodge Stock Farm

—OFFERS—

5 Registered Holstein-Friesian Bulls, born March 16, 23, Oct. 1, 3 and Nov. 6, 1909; also their senior service bull Major Spofford Corona.

5 Registered Heifers, calves and yearlings.

Special—1 Registered Cow five years old, due February 27, price \$125.00.

1 Twelve-year-old Mare, in foal, weight about 1350, also her sucking mare colt.

2 Mare Colts coming two years old.

1 Mare coming four years old, weight 950, thoroughly broken single or double.

30 Cockerels, 50 Pullets, and 50 Hens, S. C. Buff Leghorns.

1 Cock, 1 Cockerel, Buff Plymouth Rocks.

20 bu. fire dried Silver King (Wis. No. 7) Seed Corn at \$3.00 per bu.

200 bu. Oderbrucker Barley at 80c per bu.

500 bu. New Kherson Oats at 75c per bu.

(We threshed 520 bu. from ten acres in 1908; ripe before barley; try these and be the first to thresh in your neighborhood.)

ALL GRAIN THOROUGHLY RECLEANED
SACKS FREE

Compare our prices with seed houses and let us save you 10 to 25 per cent.

Five per cent discount on all grain orders received before March 1st.

HARRY D. DUNBAR,

Route No. 2.
Phone 452-2.

Elkhorn, Wis.

FIGURE 1.

Copy of post card sent out by Harry D. Dunbar which was instrumental in helping him sell over \$800.00 worth of pure bred seeds and live-stock within six weeks.

tising in periodicals are by no means established. The advantage of periodical advertising is that you place yourself before an immense audience. If you had a quantity of a new and improved seed for sale imagine what an opportunity it would give you to have assembled in one room 10,000 farmers who in one way or another are interested in such seed. If you could stand upon a platform and tell those men in two or three sentences what you had for sale, you would doubtless consider it a great opportunity and worth considerable cost. This is just what you do when you place an advertisement in an agricultural paper, which has a circulation which may aggregate 50,000 readers. Not all of these readers are interested in your produce but if it is a matter of general importance, such as improved seed corn, one-tenth or possibly one-twelfth of this list may be interested in what you have to sell.

The merits of large versus small space for advertisements have been pretty thoroughly studied by successful advertisers and the greater value of the large space is generally recognized. For the beginner in advertising, however, who has but a limited amount of capital the small advertisement, frequently inserted, has decided advantages over a large advertisement run for only a few issues. The comparative value of the small so-called "classified advertisement" as contrasted with the ordinary "display" advertisement is also subject to some controversy. Classified advertisements are closely read by prospective purchasers, however, and in most cases such an advertisement will repay the beginner more quickly than a display advertisement, in proportion to the cost.

A small advertisement offers publicity at a minimum rate and such classified advertisements are being closely studied by the readers of our agricultural papers. Of course the farmer or breeder who is in a well established business should use larger space but the beginner should move slowly, using tried methods and encouraging himself with the results which are sure to come from proper advertising.

In selecting a journal in which to advertise one should be particular to see, first, that the publication is read by the class of people you desire to reach, second, that it is read by a sufficient number of them to justify the cost of the advertisement and, third, that the readers, who are your prospective pur-

chasers have the means and are in circumstances which will permit them to purchase your product. They should be located as near to you as possible to reduce transportation charges and to assure sectional adaptability of your product, particularly if it be seed or plants. On the whole the quality of the readers of the publication are of more importance than the quantity.

SALE AND SHOW ADVERTISING.

Advertising by exhibits at fairs and shows is of special importance to the breeder of live stock. Whatever may be said to the contrary a first prize ribbon is worth many times the cash prize that goes with it in the publicity which it gets for the breeder. His appearance at a show or fair commands the attention of other breeders and the public in general. He is also likely to get favorable mention in the press. Many breeders study the premium list and his name is noted there.

The advertising value of exhibiting at shows and competing for prizes even when none of the best prizes are won has not been sufficiently emphasized. Very often the fourth or fifth prize animal will find a ready purchaser while the first prize animal may be held at such a price as to prohibit its sale. There are many buyers who are looking for animals and products which have quality, yet are not in the blue ribbon class. There are many instances, which might be cited, to show where those who have competed for prizes in the big shows and won no place at all have yet received greater returns in advertising than the entire cost of entering the show. It is worth something to be in first class company even though you are not distinguished by a prize ribbon.

ADVERTISING VALUE OF APPEARANCES.

This discussion would be incomplete without reference to the advertising value of appearances. People are attracted by those things that look desirable. They pass by those things that are commonplace and ordinary and are always interested in something which is a little better than the average or appears so at least. It has long been recognized that an animal in finished show shape stands a better chance in the ring than one which may possibly have more real merit, but is un-

kempt, rough and shaggy. It takes just the finishing touch to give an indication of superiority.

Improvement of appearances may well begin at home upon the farm. Well kept buildings, trimmed trees, mowed lawns, painted fences and a hundred other little things will make your place look ship shape. By selecting exhibits carefully, putting in only a few of the best, leaving out the mediocre, you may greatly improve the appearance of your display at a show. It is far better to exhibit but a few selected animals rather than a large number of lower average. The farmer is now beginning to appreciate and to search for quality.

METHODS OF ADVERTISING FOR BEGINNERS.

The following plan might well be followed for a campaign of advertising which any young farmer, a member of this Experiment Association, may conduct in order to establish himself in business.

1. *Begin at home by improving appearances.* Establish standards in your own line, work them out on paper, and live up to them in your farm practice to secure a product with quality. A considerable quantity of saleable products should be available before a campaign is begun. Study the means of distribution and be prepared to make prompt shipments in neat, safe packages.

2. *Be prepared to spend some time in correspondence* and in interviewing prospective customers. You may some times be obliged to force a sale but usually it is well to give the requested information accurately and completely, and then await results, following up a little later with other information.

3. *Beginning with your local billboard,* your letter heads and business cards, a campaign of local advertising will help. In some cases local standards are not such as will give you profitable returns and you must first secure patronage at a distance before your neighbors will recognize the excellence of your products. Begin with a small advertisement in your leading agricultural paper, changing the copy frequently, offering specific things for sale and emphasize the quality so far as you have it.

4. *Be prepared to follow up your advertising* in various ways with carefully prepared replies to all inquiries. The adver-

tisements in the periodicals simply attract your customer. You must make the sale through your correspondence or by visitation. Take time to do these things *right* as it is as much a part of your business as tilling your fields or caring for your stock.

5. "*Keep everlastingly at it,*" is the trite phrase which is now so often used by advertisers. Plan your campaign conservatively so that you may keep yourself continually before the people. Arrange your farm production so that you have a sufficient quantity of saleable products to attract continuous sales. I have yet to see a well conducted advertising campaign fail, since farmers are the most susceptible to good advertising of any class of people. It may well be said that there are three rules, which the advertiser must keep constantly in mind—first *quality*, second, QUALITY, and third, QUALITY.

THE FUTURE OF AGRICULTURE.

OLIVER E. BAKER, MADISON, WIS.

The greatest problem in the world today is that of food supply. The increase in the population of the White or Caucasian race has been greater during the past century than in all the centuries since Adam first cultivated the garden eastward in Eden. Adam was a horticulturist, Abel was a shepherd. Cain was an agriculturist, while Cincinnatus left his plow to become the dictator of Rome. Up till within the last one hundred years fully 90 per cent of the people of the world were farmers.

Then came the development of science, then came the invention of machinery, then followed the tremendous industrial revolution, which according to Gladstone doubled the wealth of the world within the first half of the Nineteenth Century, and doubled it again in the next twenty-five years from 1850 to 1875, and the rate has been kept up since. The factories caused the formation of cities, and the cities grew at such a rate that whereas only 3 per cent of the three million people lived in cities when our first census was taken in 1790, nearly

50 per cent of our 90,000,000 population live in cities today, and in some of the eastern states the proportion is much greater three-quarters of the people of the great state of New York, for instance, live in cities, and nine-tenths of the people of Rhode Island.

Yet we witness today a boycott of "beef barons," a tremendous agitation among the people of the nation, especially the city dwellers, about high prices of food products, and a blind effort to find the cause which no one seems to see. Some accuse the meat packers, some the commission merchants, some the middlemen, or retailers, and some the farmers, or producers. But none of these parties are to blame for high prices, except in occasional instances. It is simply the working of the law of supply and demand. The cities have grown far faster than the country districts, there are more mouths to feed and less men to feed them, in other words, the demand exceeds the supply.

This nation of ours is now passing through what is probably the most momentous change in its history. Most of the men in this audience have, I trust, studied some history, especially the history of the United States. You have read, doubtless, in your histories that the Puritan fathers who founded this nation came over to escape from religious persecution. Instead, they came not so much to escape religious persecution as to secure free land, and the independence and comforts of life which accompany it. The Enclosure Acts in England had taken away their land from them and given it to the nobility, and they cherished that freedom which comes only from the ownership of land.

You are told that the American colonies revolted from England, because of the Stamp Tax, or because their rights under the Magna Charta were violated, or because of some other reason. The real reason was because George III issued a proclamation that the "hinterland" to the west of the Allegheny mountains should be closed to further settlement. The colonists had fought for this land and conquered it from the French and the Indians, and they did not propose to give it up to the English King.

You have been told that the Civil War was caused by negro slavery, or else by the states rights doctrine; but Von Holst

was right when he said the chief cause was the growth of the west under the Homestead laws overpowering the political ascendancy of the South. Free land has been the keynote to every political movement in America. It was not the Declaration of Independence but free land that was the basis of our democracy. If a young man was ambitious he could go west and secure a farm from the government. As the phrase went, "Uncle Sam has enough land to give us each a farm." Hence, the west has always been more democratic, independent and free than the east. Men crushed by competition or discontented, went west. The west, in other words, was the escape valve for the nation.

Now, young men, the West is no more; the free land is about gone; and as a result we have this tremendous social and political discontent of the past five years. The tide of migration has turned back upon itself and into the cities, and the energy which formerly went into conquering the land is now spent in forming a labor union or a trust.

This unfortunate but inevitable exhaustion of free government land is not, however, without its bright side. What was cheaply got was lightly cherished. When more land was to be had for nothing men did not pay much attention to keeping up the fertility of the land they had. So our system of farming in this country in the past was not agriculture, but robbery of the virgin fertility of the soil. However, now, when nearly all the land is taken, the system of farming must change, is changing, and is becoming both conservative and intensive. And so I say that the most profound change in the history of this nation is in progress at present.

But what is the practical meaning of all this? Simply this—that the man who buys land now for \$100 an acre will within 20 years find it to be worth \$300 an acre. I recall many farms now selling for \$100 to \$150 an acre that could have been bought 10 years ago for \$50. During President Roosevelt's administration the farm lands of the United States increased in value 32 per cent. The cities will continue to grow—they must be fed, they must be clothed, and all the raw materials for their enormous factories to make into finished goods must come from the land. Why has the cost of living doubled in the past 10 years? Simply because there have not been enough people in

the country to feed and clothe the people in the city, and in addition because through this system of soil robbery we have been progressively decreasing the fertility of our lands. But the crisis is past and the trend is upward in soil management at present.

However, the price of food products has not reached the top notch yet. J. J. Hill, who probably knows as much about it as any other man, declares that within 10 years the United States will no longer export wheat, but instead import it. And when that time comes "Dollar Wheat" will not seem dear, but cheap. The price of farm products will undoubtedly continue to go up rather than down.

A marked decrease in exportations of practically all food stuffs occurred the present year, according to the Bureau of Statistics of the Department of Agriculture. The value of all food stuffs, including food animals, exported during the fiscal years of 1909, was \$438,000,000, against \$621,000,000 the preceding year. The value of corn exports in 1909 was \$25,000,000 against \$34,000,000 the preceding year; of wheat \$68,000,000 against \$100,000,000; flour \$51,000,000 against \$64,000,000; cattle, \$18,000,000 against \$29,000,000. The figures show that exports of wheat and corn crops were materially less since 1903 than at any time during the twenty years preceding.

Now, there are five reasons why I advise any young man who has inclinations at all in that direction to become a farmer. Not only is land bound to double and treble in price in this country within a few years, and not only is the price of farm products certain to be maintained and probably increased, but land is also a safe investment. It cannot be stolen, except from the government; it cannot be burned up; it is always salable; and has a real substantial value since people must always eat, and wear clothes. Too much of our wealth today consists of watered industrial stocks.

I have now given three economic reasons for becoming a farmer—let me mention a fourth, political. The farmer has in the immediate past been largely unorganized and unrepresented in our legislative chambers. But today he is beginning to organize in a portentous manner. In the past he has been engaged and his attention fully occupied in a contest with nature, in conquering the land from forest, and in subduing the

soil. He has been engaged in settling the land; he is now engaged in settling down on the land, in making a home, in securing the benefits and comforts of civilization, and in asserting his political rights and his economic independence. The pioneer age is past, the political age is present.

Remember that land is fundamental; it lies at the foundation of every occupation, of every industry, of every trade. In other words, the farmer has the "grip hand," and when he awakens to the value of organization his power will be colossal.

The farmer is the future aristocrat of the nation. He has been such in Europe for centuries,—all titles of nobility in Europe are based on land. He will soon be such in America, owing to the exhaustion of the free public land. God grant, though, that instead of having a titled aristocracy of land owners above with a peasant class beneath, the American farmer may develop that true aristocracy of character and equality which characterizes the highest type of Democracy.

And, finally, as a fifth argument for you to consider, I would call your attention to the healthfulness of farming as a profession. Now I know that the death rate in rural districts is about as large as in the cities, and that anemia, nervousness, insanity, and such infectious diseases as typhoid are particularly prevalent. But I have been in many farmer's houses, where owing to the fear of the "poisonous night air" the windows were kept closed all the time. And I have seen water wells lined with loose stones, with manure piles and often cess-pools immediately adjoining. The wonder is not that the people were ever ill, but that they lived at all.

Not only is agriculture today a call to opportunity, but it is a call to duty. The farmers of our country, who constitute one-half of its population, need instruction, not alone in improved methods of crop production and soil management, but they need even more guidance and aid in the formation of cooperative organizations for buying and selling to put them on a level with the organized interests with which they do business. They need, too, a new kind of school, one which fits their children for country life rather than for city life. They need better means of communication, good roads, telephones, a parcel post, etc. And finally they need above all a more sanitary, wholesome, and social life.

Our wonderful ex-president, the far-sighted Roosevelt, has said, "I warn my countrymen that the recent great progress made in our city life is not a full measure of our civilization; for our civilization rests at bottom on the wholesomeness, the attractiveness, and the completeness, as well as the prosperity, of life in the country. The men and women on the farms stand for what is fundamentally best and most needed in our American life. Upon the development of country life rests ultimately our ability, by methods of farming requiring the highest intelligence, to continue to feed and clothe the hungry nations; to supply the city with fresh blood, clean bodies, and clear brains that can endure the terrific strain of modern life." I remember hearing the great preacher, Rev. Dr. Hillis, of Brooklyn, make the statement once that a census of the prominent business, professional, and railroad men of New York City disclosed the fact that, as I recall, 84 per cent of them had come to the city from western farms.

I wish I had time today to take up with you the question of the nervous instability caused by our modern city life in its influence upon the future of the race. Suffice it to say now, that some eminent medical authorities believe that if our present noisy, nerve-racking, rushing city life continues we will become a nation of lunatics within three generations.

Over 100 years ago the "Father of our Country," George Washington, declared that "Agriculture is the most noble, the most healthful, and the most useful of all occupations." A little later the great Napoleon said, "Agriculture is the basis of the strength and prosperity of the nation."

Not until many people in the cities get back to this fundamental business of tilling the soil will the prices of food products be lower, while land will never be cheaper, except in cases where it has been abused. Not until then will our democracy be secure, our country freed from the tyranny of trusts, and our people be healthy and happy and strong. For as James J. Hill has well said,—“Land without population is a wilderness, and population without land is a mob.”

SOUTHERN AGRICULTURE.

J. J. TSCHUDY, PASO DEL RIO, COLIMA, MEXICO.

This subject is a broad one, especially as this is the tropics and being located as it is gives this subject a different aspect than it would if located in the temperate zone.

First as to our climate, a frost is unknown, being only 100 feet above sea level. In six years the thermometer has never registered below 55° F. and from there to 100° F. The range is therefore not great, but for eight months of the year the thermometer generally ranges from 80° to 100°, and mostly 90° to 100°, many nights at a time not registering below 86°.

Second, the rainy season generally begins about July 1st and continues until about the middle of October and in that time about twenty-four inches of rain fall and invariably during this time there is a drought of about thirty days just about the time corn is in the silk, thereby causing a great shortage in the wet season crop.

From this brief description it will be seen that with such conditions prevailing, weeds will grow to perfection, and *that* they surely do. No place do weeds flourish more than in the tropics, which makes agriculture one of the hardest propositions ever tackled.

Third, the variety of crops, fruits, vegetables, etc., is so varied that it is difficult to get the best out of the land here at the present time because ranches are so exceedingly large that it is difficult to get help that is really interested in what they are doing.

The crops that flourish here are corn, rice, sugar cane, the sorghums, Kafir corn, Milo maize, beans, cotton, pamphins, water melons, pine apples, oranges, lemons, citron, cocoanuts, coquitoes, vanilla, zapote melon, coffee, chicle rubber. All the vegetables that grow and para grass, Johnson grass, genea or guinea grass and a multitude of others which are all made use of.

On this account and the warm climate help is hard to get and what one does get is incompetent and lazy. On account of there being such a variety of crops the only thing considered in this paper will be the growing of corn both as a crop for wet seasons and for the dry, which will take more time

than it should. In enumerating crops will say that cattle, horses, mules, hogs and goats thrive and should have been mentioned.

The growing of corn will first need the ground prepared, which here means an enormous amount of work, the main reason being that where corn was planted last year it will first have to be cleared of all sprouts that have grown on the stumps of newly cleared land and if left for pasture even stumped land in two years time will have sprouts from six to twelve feet high that cannot be handled any other way than by first cutting and burning. Think of having to do anything of that kind on cleared land in Wisconsin before getting ready to plant corn! After that is once done, the ground is ready to be plowed if it is old ground, which is practically always done with open and old wooden plows with an iron point. The oxen are hitched to the plow with long raw hide straps tied by their horns to the yoke, just as was done in Egypt 2000 years ago.

The ground is plowed and cross plowed and then furrowed with the same plow in rows about three feet six inches apart with boys or men following, planting five or six grains to the hill about two feet to two feet six inches apart making as a rule a great deal of fodder and a small ear.

On such land the corn is generally plowed once with the same plow and after it is twelve to sixteen inches high is hilled by fastening a short piece of wood to the same plow which shoves the soil to both sides and if very weedy will then either have the weeds cut with a machette or with a tarequa, the former being something like our straight corn knife, the latter a flat hoe with a long handle, which is shoved ahead of the operator.

If the land has just been newly cleared and the first crop is to be put in, burning is delayed until just before the rains begin. Then after a good rain or two planting is started by making a small hole with the tarequa and planted as we in the States would do with a hoe. Some of this first crop of corn on new land never has a hoe put into it the first season because, as a rule, the land is free of weeds; but should it be weedy one hoeing and one cutting of the weeds with the machettes is all the attention it receives.

Many corn growers will, after corn is cleaned, plant cotton between the rows and clean it once more, thereby being able to harvest a crop of cotton about two months after corn picking in the dry season when the weather conditions are ideal for this kind of work. The weevil, however, is so bad that this practice is discouraging.

The dry season or irrigation crop is handled in the same manner, so far as preparing the land and planting is concerned, with the difference of first wetting the land well before plowing, by flooding.

In this crop, is planted between the rows a row of beans, and some planters prefer to plant a little wider apart and put between two rows of beans. This practice without a doubt helps to keep the soil supplied with nitrogen and is a factor which accounts for the good yields on some lands that are continually cropped. It is nothing unusual to see new land grow two crops of corn or corn and beans for two to four years in succession and if there is not some stipulation in contracts made, the native will invariably take two crops. One can readily see what that will do for the soil. Fertilizing is not thought of in most parts as yet.

In place of cleaning an irrigation crop with oxen and plows, it is all done with the taraqua on account of the beans not permitting it. In order to irrigate, the land is laid off in small plots by ridging off in squares with about a six inch border of earth. These squares are made of different sizes according to the lay of the land.

One cleaning is all that irrigation corn gets, but it being all done by hand is naturally slow work. It is irrigated from three to six times as a rule, according to the nature of the soil. A loose sandy or gravelly soil taking considerable more water than those of a clayey or gumbo nature.

The weeds do not grow nearly as fast during the dry season as in the wet season on account of the lower temperatures. Planting usually begins about January 15 and continues until March 1st, when our climate compares favorably with June weather in Wisconsin, that is, warm June weather. But the ground is always warm here, it never having a chance to cool off. Then in April and May weather begins to get hot and corn begins to mature and generally in the latter part of

May and June the corn is harvested. The beans as a rule are harvested in April.

Wet seasons corn, if good, yields generally twenty-five to thirty bushels per acre, while irrigation corn taken care of by a man who understands his business will go 50 bushels or better.

The method of harvesting would make all of our Wisconsin farmers smile and say "none of that for mine!" A large basket that will hold about $1\frac{1}{2}$ bushels is strapped to a man's back and he goes between two rows throwing his picked corn over his shoulder into the basket and carries it when full to the end of the row where it is put in sacks and packed by mule, horse or burrow to the store house.

Shelling is even more peculiar and is a back breaker. A lot of bamboo poles, about 8 feet long and $\frac{3}{4}$ inch in diameter, are tied together until there is enough to make a mat 3 feet square which is put on a scaffold, say 6 feet high with about 2 feet of border around it, this is filled with corn and then two or four men take clubs with a big knot on the end of it and begin to pound for all they are worth, the corn falling in a pile below. It is then put into sacks which hold about 156 lbs. ready for the market.

CO-OPERATION OF MEMBERS OF THE EXPERIMENT ASSOCIATION WITH STATE BOARD OF AGRICULTURE.

J. M. TRUE, SECRETARY, MADISON, WIS.

The success of any great enterprise depends largely upon the co-operation, in effort, of those interested.

The advancement of agricultural interests, both political and financial, have been hindered by a failure of farmers to recognize, and, as a body, support certain principles and measures that would have resulted to their advantage.

This spirit of distrust and jealousy that in the past has stood in the way of cooperation of agricultural interests, is rapidly

giving way through the influence of education and intelligence among farmers.

The Wisconsin Agricultural Experiment Association, in the ninth year of its existence, has come to be one of the strongest influences for good among the agricultural forces of the State. Intelligent and practical in its work, it not only profits its membership, but is constantly disseminating advanced ideas among all those with whom its members come in contact.

That the membership of the Association is being constantly added to from our brightest and best young farmers, gives us an idea of what its strength and influence is to be in the future of our agriculture.

The Wisconsin State Board of Agriculture is in hearty sympathy with you and your work. It is working, largely along different lines from yours, for the building up of the same interests you foster, and will gladly cooperate with you in the general advancement of Wisconsin's agricultural success.

Especially in the State Fair work will it be pleased to act in cooperation with this Association. It will be pleased to receive suggestions relative to premiums to be offered and exhibits to be encouraged, and hopes to secure from your membership, in return, an extensive and active interest as exhibitors.

Let the Experiment Association and the Board of Agriculture be the best of friends.

FARM MANAGEMENT.

R. H. POSTON, SUPT. JEAN-DULUTH STOCK FARM, DULUTH, MINN.

Just how to best manage a farm with all its perplexities has been a great puzzle to man in all the walks of life. The lawyer, the doctor, the merchant, and even the politician has tried to till mother earth. In fact, men of all nationalities and pursuits in life, have had a hand at the soil. While we so often hear the remark from a certain class of people, O he is only a hay seed or an old buckwheater! Yet we find this is true, that there are few people in this world, when you get to

the bottom of their hearts, but what have a liking for agriculture in some form or another. And we are glad to know this, and they ought to, for the farm is at the bottom of every industry. Every living thing upon the earth must get its living from Mother earth, either directly or indirectly, and we believe the world feels the need of the soil tiller today more than ever before. We are told that only 7 per cent of the business men in the commercial world make a success, and we believe that less than 7 per cent make a success as farmers. We are not going to give all the men credit for making a success who have simply lived and died on a farm with no regard to the condition of the soil when he leaves it. The man who buys a farm or takes one from Uncle Sam and spends his life on it, raises his family and gives them only a common school education and passes beyond, leaving a depleted soil for the next generation to either build up or move away, leaving it barren and fruitless, has not by any means made a success. Such work is a failure and should not exist on a large per cent of our farms as it does at the present time. In spite of all the good work our agricultural colleges are doing, and the great interest that is manifested in farming, we are told that farming as an industry is still losing ground. What I mean by this, is, that there is less raised per acre on the farms of this country today than there was ten years ago. This is why Secretary Wilson said that farming in the United States was on the decline. No wonder that the great prophet, J. J. Hill, said that the production of the farm was not keeping up with the increase in population, and that our country, the United States, was soon to face an agricultural panic in the way of food supply. The great cry of our country is today, *more and better* farmers. Our nation today is a people of land grabbers and soil robbers, trying to farm too much land and just half doing it. There should be more intense farming and there *will* be in the near future, as conditions will force men to the small farm. And it is going to take more brains to farm from now on than ever before. But I think you will all agree with me when I say, that a small farm is much more easily managed and more profitable than a large one. On a large farm there are many more leaks than on a small one. If you have a rainy day, and your men are hired by the month, you are not able to find

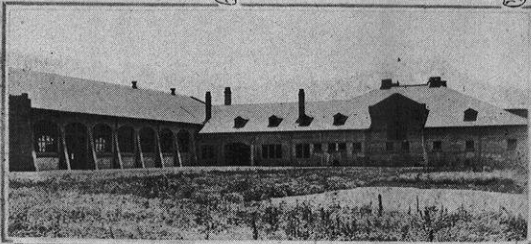
work in the dry for a dozen or fifteen men, where you could on a small farm for two or three. When you have so many men employed your chances are, that you have more poor workers, men that will shirk when your back is turned, while on the small farm you are able to get a few good earnest workers, or at least, you have them more closely watched. You can plan your work to much better advantage for a small crew than for a large one. I don't think there is a place where men are employed that it is as hard to get a good day's work out of a man, if he chooses to shirk, as on the farm. It is so much different from a factory or a mill, where they are put behind a machine and there is just so much to do, and do it or quit, and you can easily tell just how much is being done. If a man is driving a team around a saw mill, he is on the ground with his team ready when the whistle blows at 7 o'clock to go to work. But on the farm he is doing pretty well if he leaves the barns at 7 o'clock, no matter if he has a mile or more to go to reach the plow or binder. And the farm has to stand this. If it rains a little, he pulls into the barn; if at the mill, he puts on a rain coat and forgets that it is raining. All these things the farm manager has to contend with.

It is in the early development of the farm where the management should begin and then is the time when you can shape the destinies of a model farm. Plan to have your buildings as near the center of your work as possible. This will reduce the cost of hauling your crops to the barn, also save time going to work, which will make a big showing in the course of a year. These are very important matters in the saving of labor, and they are the very things that most farmers never think of. When once you make a mistake in this, it forever after remains the same while the buildings last. Then in drawing out the manure, you can reduce the cost very much, depending on where your barn is located; also such work as filling your silo. If a man is going to move anything by rail he begins to figure on the distance. Why? Because he knows that it means dollars and cents to him. So it does on the farm, depending on the distance you move your crops.

Now, as to the time and way that you should put in your crops. There is no iron clad rule which you can be guided by, as there is so much difference in the soil and climatic conditions.



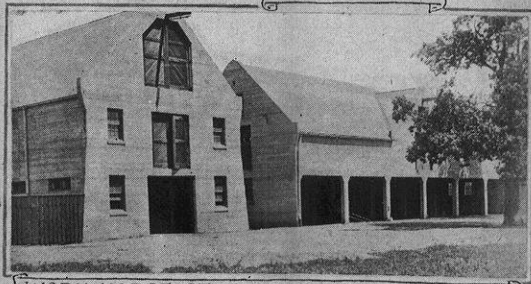
PRIVATE RESIDENCE



TRAINING STABLE AND EXERCISING Paddock



DAIRY BARN



WORK HORSE STABLE AND WAGON SHED

PABST STOCK FARM.

Owned and operated by Fred Pabst, Oconomowoc, Waukesha County.

Registered Holstein cattle, Percheron and Hackney horses and Berkshire hogs are the farm specialties.

This beautiful farm is pleasantly located $3\frac{1}{2}$ miles southeast of the city of Oconomowoc on Oconomowoc Lake and comprises over one thousand acres of fine farming land. Live stock is the specialty upon the farm but pure bred seed grains will receive attention in the future. Mr. Pabst is a former student of the College of Agriculture and a member of the Experiment Association in which he takes a deep interest.

All buildings, large and small, are of cement construction and are fire proof throughout.

I will only say this, make a thorough study of your soil and weather conditions, and then use your best judgment. Also study the different crops that are best adapted to your own farm. With this one thing always in view, keep your soil built up. Every man who operates a farm should feel and know that at the end of each year his land is richer and in better condition than it was the preceding year. To accomplish all of this, it requires a great deal of thought and study on the part of the manager. But it can be done and is being done every year. The barn yard manure should be preserved with great care, just as much so as the crop that you grow. A great many farmers are particular about saving every spear of grain and hay but seldom ever give the manure pile a thought, until time to haul it on the land, then, perhaps, a large part of its value has leached away. Millions of dollars worth of fertility washes away every year. This is a practice that should by all means be stopped. The farmers all say that it costs too much to cover the barn yard,—can't afford it.

I will give you a little plan of a barn which provides a safe place for the manure with but very little extra expense and is convenient and little work to handle the droppings. This plan might help those out most who are contemplating on building a new barn in the near future. Build a basement with a good high ceiling so you can drive in with your manure spreader or wagon. Now don't think of putting your horses or cows in there. Let your young stock and hogs occupy the basement. Put your cows and horses on the upper floor, arrange your gutter so that the droppings can be put down through the floor, and if it is where you can haul the manure out on the land in winter time, let it drop into the spreader and you have it ready loaded and where it will not freeze. If you can't apply it directly to the land, let it stay there till spring or fall and it will retain nearly all its value. Use the horse droppings in the cows' gutter if possible so as to soak up the liquid. This saves you the expense of a litter carrier and the barn can be cleaned with half the work that it takes in the ordinary way. Beside you have your stock in a high and dry place, one that is easily ventilated. This plan secures a covered barn yard and reduces the labor of operating it. The farmer must study out ways of accomplishing more with less labor. In operating a large or small

farm, it is best to have your work organized; if a large one where lots of stock is kept, you must organize in order to accomplish much. Every man must know just about how much he is expected to do, and have a certain time to do it in. Everything should move as clock work. If you have men in your cow barn, each man should know how and when to perform his work. You should then insist that he does it, and if it is not done you know whose fault it is. This is the way that all business enterprises are carried on, and it is the only right way. If all men would use the same business methods about their farm management, that they would running any other business, farming would be more pleasant and more profitable. You would get along with your help, and the young men who work on the farm would learn to love the farm more. Make a study of each division of your stock and crops and keep a strict account of the expense and income. After you have given any division of the farm a good trial and it doesn't pay, cut it out or take up something instead that will pay you a profit.

May Progress be your watchword ever leading on to a higher and better life on the farm.

COUNTY ORDERS OF THE EXPERIMENT ASSOCIATION.

For the purpose of closer cooperation between individual members of the Experiment Association it was deemed desirable to organize local county orders. Fond du Lac county was the first to organize and we give herewith the Constitution as it may be helpful and suggestive to members in other counties where no organization as yet exists. The desire is to have the county organizations under similar constitutions.

CONSTITUTION AND BY-LAWS

OF THE

FOND DU LAC COUNTY ORDER OF THE WISCONSIN AGRICULTURAL EXPERIMENT ASSOCIATION.

Article I.—Name. This organization shall be known as the Fond du Lac County Order of the Wisconsin Agricultural Experiment Association.

Article II.—Object. The object of this organization shall be to promote the agricultural interests of the county.

1st. By co-operating with the Wisconsin Agricultural Experiment Association in growing and marketing seed grains.

2nd. By having Association's exhibits at agricultural fairs.

3d. By holding annual meetings in order to report and discuss topics beneficial to the members of the Association.

Article III.—Membership. 1. Any person may become a member of this Association who is eligible to membership in the Wisconsin Agricultural Experiment Association.

2. Honorary membership may be conferred upon any one interested in progressive agriculture by a majority vote at any annual or special meeting.

Article IV.—Dues. A fee of fifty cents shall be collected from each member annually.

Article V.—Officers. The officers of this Association shall consist of a President, Vice-President and Secretary-Treasurer, whose terms of office shall be for one year, or until their successors are elected.

Article VI.—Duties of Officers. 1. It shall be the duty of the President to preside at all meetings of the Association and to enforce the observance of such rules and regulations as will be for the best interest of the organization; to appoint all regular committees as he may deem expedient for the welfare of the Association.

2. In the absence of the President, the Vice-President shall preside and perform the duties of the President.

3. The Secretary-Treasurer shall keep the records of all meetings and proceedings of the Association, also the names of all members and their addresses. He shall also keep the funds

of the Association, collect all fees, pay all debts, and shall submit a written statement of all moneys received and paid out by him and shall balance his books not later than one month before the annual meeting.

Article VII.—Disbursements. The funds of the Association shall be used to defray its expenses or by vote of the Association for such purposes as will advance the agricultural interests of the Association and shall be paid out only upon an order signed by the President and countersigned by the Secretary.

Article VIII.—Amendments. This Constitution may be amended at any meeting by a two-thirds vote of the members of the Association present.

BY-LAWS.

Article I. The officers of this Association shall be elected by ballot at the annual meeting.

Article II. This Association shall be governed by Robert's Rules of Order.

Article III. All members joining at the organization of this Association shall be known as Charter Members.

Article IV. The time and place of holding the annual meeting shall be determined by the officers.

Adopted March 28, 1908.

SECRETARY'S REPORT OF THE FOND DU LAC
COUNTY ORDER OF THE WISCONSIN EX-
PERIMENT ASSOCIATION.

HENRY MICHELS, MALONE.

In making this report of the second year of the existence of the Fond du Lac County Order, I feel that we are just entering upon a career of usefulness, not only to ourselves, but to our fellows in general.

In the cycle of life, the infant first of all must learn to handle and control himself before he can exert any influence tending toward the betterment of mankind. In the infancy

of our order we looked for and received attention and support from our parent organization, the Wisconsin Experiment Association. During our first year, we picked up strength and a few ideas but outside of that we accomplished little, except to point the way for other counties who followed our example and organized subsequently.

At this time (the end of our second year) we are just beginning to walk alone, and, while we have accomplished a few things, our main effort has been to plan for work to be done when we have grown stronger. During our third year, with the new life which we hope to receive when spring returns and, with it, our annual meeting, we shall engage in several lines of work, the accomplishment of which should serve to demonstrate that we serve a purpose.

However, instead of talking much of the future, let us look back into the past year and see what has been done:

1st. By raising the annual membership fee from fifty cents to one dollar, we succeeded in wiping out the deficit which faced us on our first birthday. But this was not the only object in view when the increase was voted. It was thought at the time, and, I believe, results have proven it, that by raising the fee, the membership would come to include only such persons as are in sympathy with the work, and are willing to co-operate in its execution. There are at present 28 paid up members in our order.

2nd. At our meeting in the Court House at Fond du Lac on March 20th a very interesting and instructive program was rendered. Most of the speakers were recognized authorities on the subjects they treated, our own Prof. Moore favoring us with a talk on Agricultural Education and the Benefits of Co-operation.

3rd. In the spring of the year we began an investigation to determine the varieties of corn best suited to our various soils and climates. As far as corn is concerned there are considerable differences in the climatic conditions of various parts of the county, due mainly to the influences of Lake Winnebago which runs half way across the county. In this investigation blanks were sent to the members who filled them out during the season and then returned them to the secretary. I should like, if you please, to read the questions asked on the blanks

in order to give an idea as to the method employed to gain the information sought for.

No attempt will be made to draw any conclusions from the reports secured during the past year, but instead, we will continue the work for several seasons before we have sufficient data to enable us to name the varieties that are best to plant.

Our fourth achievement was to make the regular annual display of grains and forage plants at the County Fair.

5th. We have succeeded in starting a school children's corn growing contest in the county. I will briefly give you as many of the details of this contest as have been definitely decided upon: The County Fair Board has appropriated \$100 to be given as premiums to the winners in the contest. This will be divided as follows:—three prizes will be awarded for the three best ten-ear samples from each township in the county; a sweepstakes prize; a class for single ears, and, one for corn on the stalk.

The county superintendent of schools and the rural school teachers will co-operate in carrying out the contest but the county order in co-operation with the County Superintendent of Schools will furnish the literature and have complete charge of all the details. The College of Agriculture will furnish seed that is acclimated to our county. Our order proposes to prepare literature upon the various phases of corn culture and send it out to contestants at appropriate times during the season. Instructions will be given how, when, and why to test corn, cultivate it, etc.

The 6th and last line of work to be taken up was carried out under the supervision of the Experiment Association. I refer to the farm inspection which will be more fully discussed in a separate paper.

In conclusion, allow me to predict that there is a great future before the County Orders. Suggestions for new lines of work will be presenting themselves rapidly as the membership becomes larger and the orders more firmly established. They can cope with many problems which because of their local nature cannot be effectively dealt with by the Experiment Association. Our corn investigation will serve as an example of such work.

At present we are, perhaps, too loosely organized to make most effective progress and have not yet settled down in our proper

channel of work. Each order has been working too much, independently of the others. What we need is a more uniform system of organization so that when necessary, the energies of all can be combined to attack problems of common interest as a unit.

SECRETARY'S REPORT OF THE DODGE COUNTY
ORDER OF THE WISCONSIN EXPERIMENT
ASSOCIATION.

HENRY E. KRUEGER, BEAVER DAM.

On October 1, 1908, pursuant to a call sent out by Jos. N. Bohl, there was held at the office of the Secretary of the Dodge County Fair Association (being County Fair week) a meeting of members of the Wisconsin Experiment Association.

At that time an organization was perfected known as the Dodge County Order of the Wisconsin Experiment Association. A constitution was adopted and signed by 18 charter members, and the following officers were elected: H. E. Krueger, Beaver Dam, President; Chas. H. Howitt, Randolph, Vice-President, and Jos. N. Bohl, Beaver Dam, Secretary-Treasurer. We added two more members to the list during the year.

It was decided at our first meeting that the Association put up the Dodge County Competitive exhibit at the State Fair in 1909, which was done with much credit to the Association and the county as a whole. It was also considered advisable to put up a non-competitive exhibit at our County Fair. After consulting with our fair officials they were pleased with the idea and gave us as much space as we desired. The same exhibit was returned from the State Fair and put up at our county fair. This was also a credit to our organization. It attracted much attention, and the farmers from our home county had an opportunity to learn more about us and our work throughout the county. They learned that good seed could be purchased right at home at a reasonable price and more reliable than elsewhere.

Our annual meeting was held during the week of the County Fair on September 30, 1909. It was well attended, and the fol-

lowing officers were elected for the ensuing year: Anton Bohl, Jr., Beaver Dam, President; Chas. H. Howitt, Randolph, Vice-President; and Henry E. Krueger, Beaver Dam, Secretary-Treasurer.

Our membership at present only numbers 20, but they are all active hustlers and willing to help one another in every possible way.

At our first meeting a committee was appointed to consult with the secretary of the County Fair and see if we could get the premium list revised so as to have all of our standard varieties of pure bred corn and small grain placed thereon. This was done and he was only too glad to comply with our request. By all members taking an active part, we put up the largest competitive display of corn and small grain seeds ever witnessed in Dodge County.

SECRETARY'S REPORT OF THE MANITOWOC COUNTY ORDER OF THE WISCONSIN EXPERIMENT ASSOCIATION.

O. R. WIEGAND. CLEVELAND.

Mr. President, Fellow Members of the Wisconsin Experiment Association: Little more than one year ago, the 16th day of January, 1909, the Manitowoc County Order of the Wisconsin Experiment Association was organized, with a charter membership of 18. We cannot boast of great things accomplished during our brief existence, but our success lies not in doing great things at once, but in working along steadily, and I feel confident that we can do better from year to year, as we increase in numbers.

In March, 1909, we arranged a meeting in our court house at Manitowoc. We extended invitations to all Short Course and Farmers' Course graduates over the county, to come and bring their neighbors. We had arranged a program with able speakers to discuss topics of interest. The meeting was a success. We increased our membership to 50. At the same time we began to plan arrangements for an exhibit at our County Fair. The

Fair officials were kindly disposed toward our exhibit, but as the fair was held at such a very early date we could not get out such a full exhibit as we had expected, on account of some of the crops not having matured. The members of the order loyally gave their support toward the exhibit and we can hope for greater things in the future.

We are planning arrangements and program for another meeting to be held again in March for which we have the promise of some prominent speakers to be present and discuss topics of interest. At this meeting we expect to discuss the advisability of holding several one day meetings at different dates during the year, and plan a line of work for the coming year.

SECRETARY'S REPORT OF THE MONROE COUNTY
ORDER OF THE WISCONSIN AGRICULTURAL
EXPERIMENT ASSOCIATION.

L. A. MILLER, SPARTA.

April 17, 1909, a meeting of those eligible to membership in the Wisconsin Agricultural Experiment Association was held in the Sparta Fruit Growers Association Bldg., for the purpose of organizing a County Order.

The organization is known as the Monroe County Order of the Wisconsin Experiment Association. The object of this organization is to promote the agricultural interests of the county, (1): By co-operating with the Wisconsin Agricultural Experiment Association in growing and marketing seed grains, (2): By making Association exhibits at the agricultural fairs, (3): By holding annual meetings in order to report and discuss topics beneficial to its members. The constitution was adopted and signed by eight charter members.

Regardless of the fact that we organized late in the spring and our membership being small, we made a very creditable display at our county fair. The exhibit was packed and sent to Milwaukee where it was placed on exhibition at the State Fair and received a place for the premiums awarded.

Our membership has increased to fifteen and in another year

we hope to report a much larger membership roll and to also make a better showing at the agricultural fairs. The Monroe County Order bids fair to be a very important factor in the betterment of agriculture for this community.

SECRETARY'S REPORT OF THE ST. CROIX COUNTY
ORDER OF THE WISCONSIN EXPERIMENT
ASSOCIATION.

WILLIAM SCHWANDT, STANTON.

Mr. President and Fellow Members of the Experiment Association:

On March 13, 1909, at the New Richmond Corn show a meeting was called of all persons eligible to become members of the Wisconsin Agricultural Experiment Association. The purpose of this meeting was to try and organize St. Croix County. Prof. R. A. Moore, our worthy Secretary of the State Association, presided at this meeting, and we organized as the St. Croix County Order of the Wisconsin Agricultural Experiment Association with seventeen charter members, and elected the following officers:

R. W. Brunner, Hudson, President.

Aug. Peterson Stanton, Vice-President.

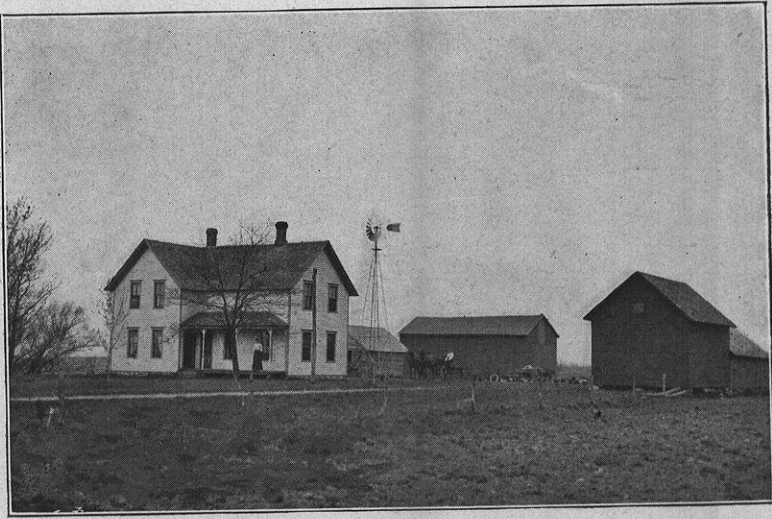
William Schwandt, Stanton, Secretary.

W. L. Bennett, Stanton, Treasurer.

Our Constitution and By-Laws are similar to that of the Fond du Lac County Order with the exception of the dues. We collect both State and County dues.

An effort was made to make a display of pure bred grains at our County Fair with the result that we carried away nearly all the pure bred grain prizes. I have no doubt that we were looked up as a bunch of "grafters." I believe, however, that this feeling will disappear just as soon as the farmers understand what the pure bred grains will do for them.

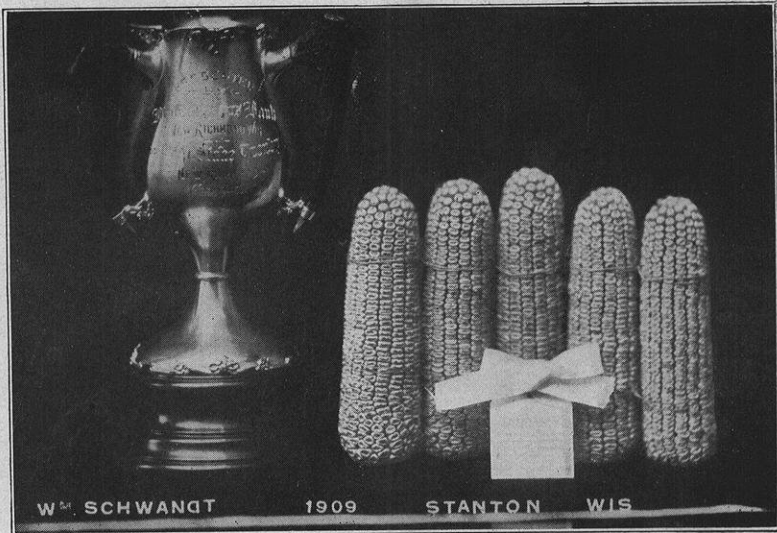
The fair officials feel kindly disposed toward our organization and granted us every privilege that was in their power. Considering the fact that the newspapers of this county did not



PLEASANT VIEW FARM.

William Schwandt, Proprietor, Stanton, St. Croix County.

This farm consists of 160 acres of exceedingly fine land and is owned and operated by our worthy member of the Experiment Association, William Schwandt has been one of our most active members and has been instrumental in the dissemination of pure bred seed grains throughout St. Croix county. Mr. Schwandt is making a specialty of Swedish Select oats, Oderbrucker and Wisconsin Pedigree barleys and the Golden Glow, Silver King and Wisconsin No. 8 seed corn. His seed grains are of the best and command a good price. Mr. Schwandt is secretary of the St. Croix order of the Experiment Association and through his able management it is rapidly coming to the front and wielding a beneficial influence throughout the country.



Silver Trophy and sample of Silver King corn which captured it at the New Richmond corn show, December, 1909.



CEDAR LAWN STOCK AND GRAIN FARM.

Frank Brunner and Sons, Proprietors.

This beautiful farm consists of 360 acres of fine farming land and is run as a stock and pure bred seed farm.

The sons, R. W. and Fred F. Brunner have both taken the Short Course in Agriculture at the Wisconsin college and are active members of the Experiment Association. Through their efforts largely the St. Croix county order of the Experiment Association was formed and R. W. Brunner is now the president. It is the object of the St. Croix order so far as possible, to banish scrub grains from the county and put in their place pure bred grains of the very best quality. Wisconsin Pedigree barley, Oderbrucker barley, Swedish Select and Kherson oats and No. 8, 7 and 12 seed corn are the special seed grains sold. Dairying and the breeding of Duroc Jersey hogs are specialties carried on in connection with the growing of pure bred seed grains.

assist us as much as they should, we have made great progress.

We made some exhibits at the National Corn Exposition at Omaha and were fortunate in securing at least one prize.

At the New Richmond Corn Show we carried away the highest honors by winning the Silver Trophy offered by the Manufacturers' Bank of that city for the best five ears of corn.

Through the efforts of Prof. Moore we were furnished with two sacks of Pedigreed barley. This barley was grown with great success and will be distributed to the members of this county this year.

On January 20, 1910, we held our annual meeting in the Court House at Hudson. It was well attended. A program was arranged and each member gave a talk on an agricultural topic upon which he had had considerable experience.

I find there are quite a number of young men in our County that have attended the Agricultural School at Menomonie. I would suggest that they be allowed to join our order. It would be a benefit to them and also would increase our membership.

SECRETARY'S REPORT OF THE SHEBOYGAN COUNTY ORDER OF THE WISCONSIN EXPERIMENT ASSOCIATION.

O. R. FRAUENHEIM, RANDOM LAKE.

On April 2, 1910, a number of former Short Course boys met at Plymouth and organized the Sheboygan County Order of the Wisconsin Experiment Association. Some of the boys that were to advertise the meeting in the county press, failed to do so, consequently we were handicapped somewhat.

P. V. Becker, Plymouth, was elected president; S. F. Herdrich, Adell, Vice-President, and O. R. Frauenheim, Random Lake, Secretary-Treasurer. Our constitution as adopted, is uniform with those of the other County Orders. The object of our organization, shall be to promote the seed grain, livestock and general agricultural interests of the county.

Owing to the time of the season, when we organized we deemed it best to leave the work of pushing the order in the hands of the officers.

At the County Fair we put up a good display that attracted attention. The County Fair society gladly gave us available space, while their secretary has rendered us valuable aid in many ways. The display at the County Fair has proven a valuable advertisement for us to the farmers of the county.

A number of circular letters were sent out during the year, to those that are eligible as members, but we found this was not a very good way of increasing our membership. A good many do not realize the benefits derived from this co-operation, consequently have to be shown, and it is a rather hard thing to do through circular letters.

At the present time we have twelve members, but feel certain that it will be more than doubled at our first annual meeting which will be held at Plymouth, Feb. 24. We have been able to secure some able speakers for our coming meeting, so feel sure that more will join us in our good work. The following circular was recently sent to all members, in order to put the secretary in touch with those having choice seeds for sale.

REPORT OF MEMBERS TO SECRETARY OF THE SHEBOYGAN COUNTY ORDER.

Write the different varieties of grain, corn, etc., you have for sale in spaces to the right.					
Number of acres grown past season.....					
Average yield per acre.....					
Number of bushels for sale.....					
Price per bushel, bags included.....					
Price per bushel in large lots.....					
Is corn fire dried?.....					
Is corn for sale in the ear?.....					
Was grain tested?.....					
If so, what is the test?.....					

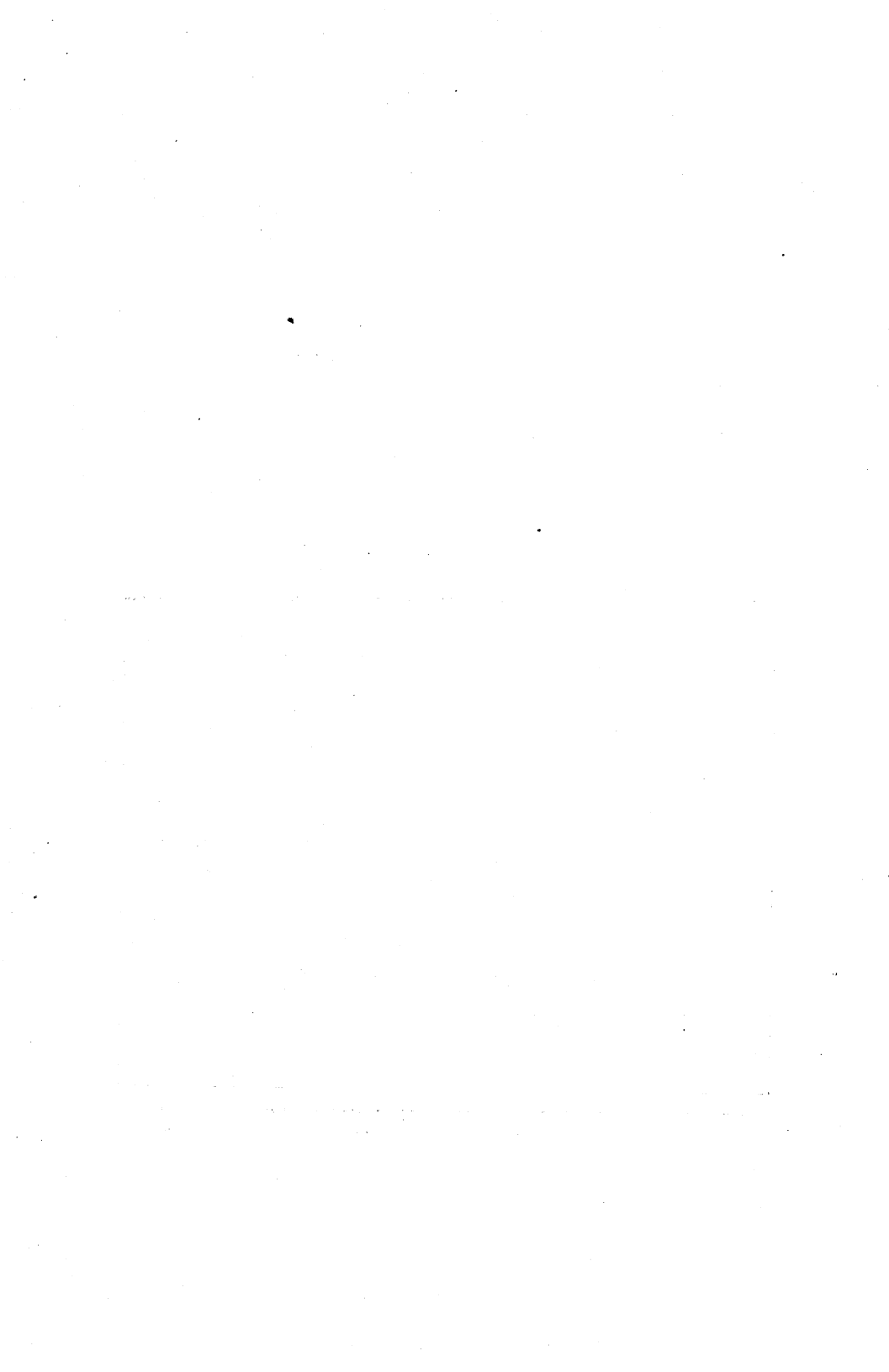
Write remarks below.

Inquiries are sent to me right through Prof. Moore, therefore I desire to have all members fill out above blank as carefully as possible, so that I will be able to fill all orders and have the members receive all benefits possible from our County Order.

O. R. Frauenheim, Sec.-Treas.

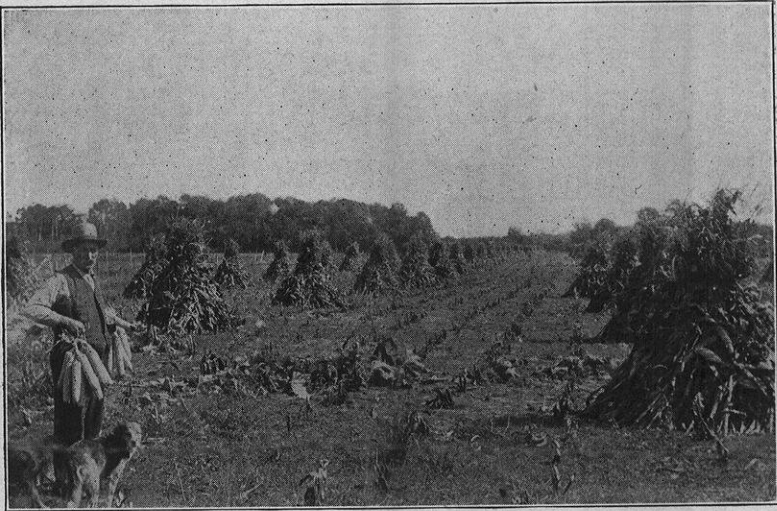
Name and address.....

I think it a good idea to have all members of the County Order join together and prepare a circular, describing their farms, livestock and seeds they grow and also devote some of the





First Annual Exhibit of Grains and Forage plants, Sheboygan county Order of the Experiment Association, Plymouth, Sheboygan county.



STOCK AND SEED GRAIN FARM OF H. C. CAREY, RED GRANITE, WAUSHARA COUNTY.

No. 7 Seed Corn Shocked and Ready for the Huskers.

This beautiful farm is owned and operated by H. C. Carey, a member of the Wisconsin Experiment Association. Mr. Carey is making a specialty of Wis. No. 7 seed corn and has been instrumental in introducing this valuable variety of seed corn in his home county.

pages, describing the pure-bred seeds grown in the county. This circular could be gotten out at a small expense to each individual and should be an excellent way of advertising.

I also think that all members having pure-bred seeds for sale should advertise as a body and have all inquiries sent to the secretary who can fill all orders. In this manner much unnecessary correspondence and expense could be avoided.

The best means of advertising, is by having exhibits at our fairs and grain shows. Our County Order will extend its efforts toward putting up displays at a number of fairs the coming year.

ANNUAL MEETINGS OF THE COUNTY ORDERS OF THE EXPERIMENT ASSOCIATION.

Several of the County Orders held annual meetings at which interesting programs were rendered. Herewith will be given the programs as carried out by three different orders.

County Orders organized in the future will find these programs of a helpful nature.

Program First Annual Meeting of the Sheboygan County Order of the Wisconsin Experiment Association.

Meeting held in the City Hall of Plymouth, February 24, 1910.

Thursday, Feb. 24, 9:30 A. M.

President's Annual Address.....P. V. Becker, Plymouth
Report of Secretary.....O. R. Frauenheim, Random Lake

Election of officers and plan of work for coming year.

"Earley".....Hy. Schaefer, Glenbeulah
"Co-operation of the County Order with the County Fair".....
.....Secretary of Fair, Otto Gaffron

Afternoon Session 1:30 P. M.

"Importance of Sowing Good Seeds".....J. O. Parrish, Plymouth
"The County and the Experiment Association".....
.....Prof. R. A. Moore, Madison
"Corn for the County".....O. R. Frauenheim, Random Lake
"Alfalfa".....W. L. Illian, Adell

Third Annual Meeting of the Fond du Lac County Order of the Wisconsin Agricultural Experiment Association.

Court House, Fond du Lac, Wis., Saturday, March 28, 1910.

President's Annual Address.....J. P. Bonzelet, Eden
 Secretary and Treasurer's Report.....Henry Michels, Malone
 Report of Farm Inspector.....Henry Michels, Malone
 Election of officers
 Plans of Work for the Coming Year
 Other Business
 Recess

Afternoon Session 2:00 P. M.

Outline for the Rural School Children's Corn Growing Contest....
Henry Michels, Malone
 The Wisconsin Experiment Association and its Branches.....
Prof. R. A. Moore, Madison
 Corn Improvement.....Albert F. Block, Brandon
 Pedigree Barleys, Their Development and Uses.....
Lynn W. Briggs, Peebles
 County Agricultural Schools.....Prof. J. B. Borden, Madison
 After Consolidation, What?.....Prof. W. C. Hewitt, Oshkosh

Program of the Second Annual Meeting of the Manitowoc County Order of the Wisconsin Experiment Association.

Held at the Court House in Manitowoc, Friday, March 25-26, 1910.

10 A. M.

Introductory Remarks.....Herman Roethel, Chairman
 The Cow of Manitowoc County.....Wm. H. Spencer
 Feeding the Dairy Cow..Roland Kolb, Manager of Insane Asylum Farm
 Address....Prof. R. A. Moore, Secretary State Experiment Association

Afternoon Session 1:30 P. M.

Business Meeting:

President's Address.....Herman Roethel
 Election of Officers.
 Plan of Work for Coming Year, Reports, etc.
 Tuberculosis Test.....Andrew Salverson
 Corn Culture:
 Preparation and Cultivation of the Soil.....Reinhold Clusen
 Cutting and Cribbing.....Arthur L. Wagner
 Silo Construction, Harvesting and Filling.....Herman Roethel
 Discussion led by Prof. R. A. Moore.
 Hogs—Care and Feeding.....Otto R. Wiegand
 Discussion led by Herman Roethel.

Evening Session at the South Side High School.

8 P. M.

Music—Violin Duet.....Ervin Welk, Edgar Meister
 Address.....W. E. Larson, Rural School Inspector
 Horses—Stereoptican Demonstration.....
Dr. A. S. Alexander, Veterinarian, College of Agriculture

Saturday, 9 A. M.

What Our County Agricultural Schools are Doing.....
Prof. J. F. Wojta, Menominee Agricultural School
 Soils and Their Fertility.....F. H. Scribner, Rosendale
 Alfalfa.....A. H. Bauer
 Discussion led by Prof. J. F. Wojta.
 Reports from local alfalfa growers.
 The Products of the Dairy Cow.....F. H. Scribner, Rosendale

BUSINESS MEETING.

Business meeting of the Wisconsin Agricultural Experiment Association, Friday, February 4, 1910, 2 P. M., Auditorium.

Called to order by the President, C. P. Norgord. The minutes of the last meeting were read and adopted, after which the following officers were elected:

- PresidentC. P. Norgord, Madison.
- Vice-PresidentA. G. Austin, Janesville.
- Secretary R. A. Moore, Madison.
- TreasurerH. N. Longley, Dousman.

On motion of the Secretary, Messrs. Jas. B. Cheesman, Racine, and Delbert Utter, Lake Beulah, were made honorary members of the Experiment Association.

On motion, the Secretary was unanimously given \$150.00 and thanks for his past year's services.

A few complaints having reached the management during the year regarding the exhibition of grains and awarding of premiums, it was deemed advisable by the Association to have a committee appointed to handle such cases.

On motion the chair appointed A. L. Stone, C. I. Brigham and W. H. Hanchett to act as a committee on appeals.

The selection of a representative to attend to matters relating to the National Corn Association was taken up and on vote, R. A. Moore was unanimously elected.

TREASURER'S REPORT.

H. N. Longley, Treasurer of the Association, made the following report, which was duly adopted.

Report as rendered by Treasurer, February 4, 1910.

Receipts.

1909.		
Feb. 11	Balance in treasury.....	\$2 51
Feb. 26	Membership fees	292 00
Mar. 25	Membership fees	52 00
Apr. 22	Membership fees	68 61
Apr. 22	Membership fees in stamps, retained at general office	25 00
Apr. 22	Membership fees	21 59
June 6	Membership fees	40 00
July 7	Money taken in at auction sale.....	206 25
Dec. 30	Membership fees in stamps retained at office.....	9 50
1910		
Jan. 6	Membership fee (J. Boudnik).....	50
Jan. 19	Membership fees	105 00
Jan. 19	Membership fees	50 00
Jan. 23	Membership fees	120 00
Jan. 25	Membership fees (J. Bille).....	1 00
Total receipts		\$994 06

Disbursements.

1909		
Mar. 1	St. Louis Button Co., for badges.....	\$52 00
Mar. 1	C. P. Norgord for labor as auctioneer at annual meeting	10 00
Mar. 1	R. A. Moore, for past services for the association....	150 00
Mar. 21	H. L. Emmert, 10 bu. No. 7 seed corn.....	30 00
Apr. 22	Idalyn Bibbs, for office expenses.....	25 00
Apr. 22	John Puls, 60 bu. Oderbrucker barley.....	57 00
Apr. 22	Swift & Co., for fertilizers for experiment purposes..	43 83
Apr. 17	J. P. Bonzelet for oats.....	3 50
Apr. 17	H. L. Owens, for No. 8 seed corn.....	7 50
Mar. 11	K. L. Hatch for expenses of attending annual meeting	7 20
Apr. 8	Office expenses to date.....	68 61
Apr. 7	Stamps retained at office.....	25 00
Apr. 23	V. V. Moore for seed corn.....	30 00
May 11	L. L. Olds for No. 8 seed corn.....	17 25
Aug. 18	Idalyn Bibbs, office expenses.....	25 00
Aug. 30	J. A. Buckmaster, silver trophy.....	32 00
Oct. 29	R. A. Moore, traveling expenses.....	10 69
Nov. 6	To clerk for Omaha expenses.....	15 00
Dec. 8	To clerk for office expenses.....	15 00
Dec. 30	Stamps retained at office.....	9 50
1910		
Jan. 19	M. C. Lilley & Co., for badges.....	50 00
Total disbursements		\$684 08

Receipts	\$994 06
Disbursements	684 08
	<hr/>
Balance	\$309 98

Respectfully submitted.

H. N. LONGLEY,

Treasurer.

SECRETARY'S REPORT ON STATE APPROPRIATION.

R. A. Moore, Secretary of the Association, makes the following report:

Receipts.

Money in the state treasury, February 10, 1909, date of making last report.....	\$688 40
State appropriation for 1909.....	2,000 00
Credit from Milwaukee Bag Co.....	14 33
	<hr/>
	\$2,702 73

Disbursements.

1909	
Feb. 17	W. P. Bussey, Omro, expenses at annual meeting... \$12 47
Feb. 19	Cantwell Printing Co., 2000 programs..... 29 75
Feb. 19	University Co-op Co., 2 books..... 3 75
Feb. 26	Prof. G. I. Christie, Lafayette, Indiana, exp. and services at the 8th annual meeting..... 37 40
Feb. 26	Miss Emma Conley, Wausau, exp. at meeting..... 11 68
Feb. 27	Miss Bibbs, clerical services, February..... 15 00
Mar. 2	A. L. Wagner, 6½ bu. Golden Glow corn..... 13 00
Mar. 9	G. A. Freeman, Sparta, exp. for labor..... 5 02
Mar. 9	Democrat Printing Co., 1200 tags, perforated..... 2 25
Mar. 9	H. N. Longley, Dousman, exp. attending meeting.... 6 66
Mar. 9	Cantwell Printing Co., premium badges..... 6 75
Mar. 10	Milwaukee Bag Co., 300 jute bags..... 23 33
Mar. 23	Miss Bibbs, services, March..... 15 00
Mar. 26	R. A. Moore, trav. exp., county orders..... 12 93
Mar. 26	E. D. Funk, Shirley, Ill., exp. attending meeting.... 21 66
Mar. 29	C. H. Howitt, Randolph, 5 bus. No. 8 corn..... 11 25
Mar. 29	V. V. Moore, Baraboo, 15 bus. No. 7 corn..... 37 50
Apr. 7	Hilbert Sorenson, Marinette, 5 bus. No. 8 corn..... 15 00
Apr. 8	Milwaukee Bag Co., Milwaukee, 300 seed bags..... 14 33
May 25	Miss Bibbs, services, April..... 15 00
Sept. 9	New York Store, cambric..... 15 06
Mar. 10	Premiums awarded at the 7th annual meeting..... 356 00
July 1	Miss Bibbs, services, May and June..... 30 00
July 19	H. W. Meekin, 55 lbs. alfalfa seed..... 9 15
July 21	Cantwell Printing Co., cards, and letterheads..... 25 50

July 24	Miss Bibbs, services, July.....	20 00
Aug. 4	Parsons Printing Co., orders, envelopes, ink, etc....	20 70
Aug. 24	Miss Bibbs, clerical services, August.....	20 00
Aug. 24	H. A. Main, Ft. Atkinson, traveling exp. Milwaukee fair	5 25
Sept. 27	J. M. Napier, trav. exp. exhibit at State Fair.....	10 60
Sept. 27	A. L. Stone, caring for exhibit at State Fair.....	20 39
Sept. 27	Geo. E. Moore, caring for exhibit at State Fair.....	17 35
Sept. 27	L. R. Zerbel, caring for exhibit at State Fair.....	22 24
Sept. 27	Miss Bibbs, clerical services, September.....	20 00
Sept. 10	Postmaster Printing Co., 500 tags.....	2 00
Sept. 13	Postmaster Keyes, 1,300 10c stamps.....	130 00
Sept. 28	Wis. Exp. Station, 1200 bu. pedigree barley.....	780 00
Oct. 2	R. A. Moore, exp. State Fair exhibit.....	8 00
Oct. 13	Postmaster Keyes, stamps.....	82 00
Oct. 27	Miss Bibbs, clerical services, October.....	20 00
Oct. 27	Jas. E. Moseley, camera, tripod, films.....	25 75
Oct. 28	Henry Michels, exp. at State Fair.....	9 30
Nov. 2	Postmaster Keyes, stamps.....	39 00
Nov. 23	Miss Bibbs, services, November.....	20 00
Dec. 13	Parsons Printing Co., 5M envelopes.....	10 00
Dec. 13	Postmaster Keyes, stamps.....	30 00
Dec. 23	Miss Bibbs, clerical services, December.....	20 00
Jan. 5	Milwaukee Bag Co., 2300 seed bags.....	130 00
Jan. 28	Miss Bibbs, clerical services, January.....	20 00
Jan. 31	Postmaster Keyes, postcards and stamps.....	30 00
Sept. 3	A. L. Stone, traveling expenses.....	8 87
	Total receipts in state treasury.....	\$2,702 73
	Total disbursements from treasury.....	2,266 89
	Balance in state treasury.....	\$435 84

We, the undersigned committee, appointed to examine the Treasurer's and Secretary's reports on receipts and disbursements of funds for the past year, beg leave to report that we found them correct.

Signed H. E. KRUEGER,
J. P. BONZELET,
H. E. WHITTAKER.

Ninth Annual Meeting, Feb. 4-5, 1910.

EXHIBITION OF GRAINS AND FORAGE PLANTS FOR 1910.

Perhaps one of the most attractive features of the last annual meeting of the Experiment Association was the display of grains and forage plants. Approximately six hundred dollars in cash and special prizes had been set aside for premiums to be



Competitive display of grains and forage plants at the Ninth Annual Exhibition of the Wisconsin Experiment Association, Agronomy Building, Madison, February, 1910.

paid for the best exhibits of pure-bred seed grains and forage plants. The quality of the grain displayed was of high standard and the interest taken in the exhibit was such that the Association deems it advisable to continue this line of effort on a much larger scale. Cash and special prizes to the approximate value of eight hundred dollars will be given to the growers of best seeds at the next annual meeting. A list of special prize offerings will be sent to members of the Association later in the year.

All members of the Association should exhibit seed grains at the State Fair in Milwaukee and the National Corn Show at Columbus, O., as well as at the Experiment Association Contest. We desire to let farmers and seedmen far and near know what we are able to produce.

We feel that much good can be done in the way of encouraging the growing and dissemination of good grains free from obnoxious weed seeds.

The Experiment Association should demonstrate to the seedsmen and farmers of Wisconsin that good seed can be grown within our borders which is acclimated to our home conditions. The seedsmen of our state and of adjoining states will be only too pleased to assist in the dissemination of home grown seeds if they can be shown that the quality is equally as good or better than they can get elsewhere. Realizing the great improvement that can be made in the growing of farm crops we trust that every member of the Association will do all in his power to assist in every possible manner in the production of choice grains and forage plants for our next display.

PARTIES AWARDED CASH AND SPECIAL PREMIUMS AT THE WISCONSIN AGRICULTURAL EXPERIMENT ASSOCIATION MEETING, FEBRUARY 4-5, 1910.

Class 1a—Best ½ peck Swedish Select oats (Wis. No. 4).	
First—Gustave Parsch, Wausau (J. L. Owens mill)	
Second—E. T. Briggs, Fond du Lac	\$3 00
Third—H. E. Krueger, Beaver Dam	2 00
Fourth—Anton Bohl, Beaver Dam	1 00
Fifth—John Accola, Madison	50
Class 1b—Best ½ peck of any other variety of oats.	
First—F. P. Grebe, Fox Lake	\$4 00
Second—H. P. West, Ripon	3 00
Third—Alvin Voigt, Oconomowoc	2 00
Fourth—J. F. Ford, Mazomanie	1 00
Fifth—H. D. Dunbar, Elkhorn	50
Class 2a—Best bundle Swedish Select oats (Wis. No. 4).	
First—C. H. Howitt, Randolph	\$4 00
Second—Robert W. Ward, Ft. Atkinson	3 00
Third—Henry E. Krueger, Beaver Dam	2 00
Fourth—H. P. West, Ripon	1 00
Fifth—Wm. R. Leonard, Jefferson	50

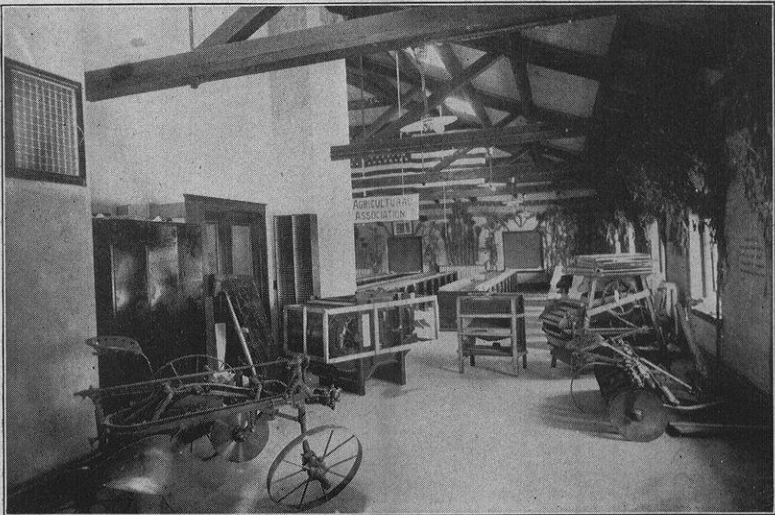
Class 2b—Best bundle any other variety.	
First—F. P. Grebe, Fox Lake.....	\$4 00
Second—H. P. West, Ripon.....	3 00
Third—C. H. Howitt, Randolph.....	2 00
Fourth—H. E. Krueger, Beaver Dam.....	1 00
Fifth—Anton Bohl, Beaver Dam.....	50
Class 3a—Best ½ peck Manshury barley.	
First—E. T. Briggs, Fond du Lac.....	\$4 00
Second—H. E. Krueger, Beaver Dam.....	3 00
Third—H. P. West, Ripon.....	2 00
Fourth—Anton Bohl, Beaver Dam.....	1 00
Fifth—C. H. Howitt, Randolph.....	50
Class 3b—Best ½ peck Oderbrucker barley.	
First—H. E. Krueger, Beaver Dam.....	F. & J. sulky plow
Second—John Accola, Madison.....	\$3 00
Third—E. L. Dreger, Madison.....	2 00
Fourth—H. L. Ward, Ft. Atkinson.....	1 00
Fifth—Gustave Parsch, Wausau.....	50
Class 3c—Best ½ peck any other variety of barley.	
First—H. E. Krueger, Beaver Dam.....	\$4 00
Second—J. H. Hendricks, Campbellsport.....	3 00
Third—H. P. West, Ripon.....	2 00
Fourth—C. H. Howitt, Randolph.....	1 00
Fifth—J. P. Bonzelet, Eden.....	50
Class 4a—Best bundle of Manshury barley.	
First—H. E. Krueger, Beaver Dam.....	\$4 00
Second—Anton Bohl, Beaver Dam.....	3 00
Third—C. H. Howitt, Randolph.....	2 00
Fourth—No entry	
Fifth—No entry	
Class 4b—Best bundle Oderbrucker barley.	
First—J. P. Bonzelet, Eden.....	\$4 00
Second—H. E. Krueger, Beaver Dam.....	3 00
Third—C. H. Howitt, Randolph.....	2 00
Fourth—Wm. R. Leonard, Jefferson.....	1 00
Fifth—R. J. Schaefer, Appleton.....	50
Class 4c—Best bundle any variety of barley.	
First—Anton Bohl, Beaver Dam.....	\$4 00
Second—H. E. Krueger, Beaver Dam.....	3 00
Third—C. H. Howitt, Randolph.....	2 00
Fourth—J. P. Bonzelet, Eden.....	1 00
Fifth—Robert W. Ward, Ft. Atkinson.....	50
Class 5a—Best ten ears Clark's Yellow Dent (Wis. No. 1).	
First—C. H. Howitt, Randolph.....	\$4 00
Second—H. E. Krueger, Beaver Dam.....	3 00
Third—C. E. Akins, Warren, Ill.....	2 00
Fourth—H. P. West, Ripon.....	1 00
Fifth—Anton Bohl, Beaver Dam.....	50
Class 5b—Best ten ears Silver King corn (Wis. No. 7).	
First—F. P. Grebe, Fox Lake.....	\$4 00
Second—Anton Bohl, Beaver Dam.....	3 00
Third—H. N. Longley, Dousman.....	2 00
Fourth—G. A. Booth, Cuba City.....	1 00
Fifth—H. E. Krueger, Beaver Dam.....	50
Class 5c—Best ten ears Early Yellow Dent corn (Wis. No. 8).	
First—C. H. Howitt, Randolph.....	\$4 00
Second—Anton Bohl, Beaver Dam.....	3 00
Third—H. E. Krueger, Beaver Dam.....	2 00
Fourth—Hilbert Sorenson, Marinette.....	1 00
Fifth—H. P. West, Ripon.....	50
Class 5d—Best ten ears Golden Glow corn (Wis. No. 12).	
First—C. H. Howitt, Randolph.....	\$4 00
Second—H. E. Krueger, Beaver Dam.....	3 00
Third—J. R. Thorpe, Tavera.....	2 00
Fourth—F. P. Grebe, Fox Lake.....	1 00
Fifth—J. P. Bonzelet, Eden.....	50

Class 5e—Best ten ears North Star Yellow Dent (Wis. No. 11).	
First—C. H. Howitt, Randolph.....	\$4 00
Second—W. A. Toole, Baraboo.....	3 00
Third—H. E. Krueger, Beaver Dam.....	2 00
Fourth—C. E. Akins, Warren, Ill.....	1 00
Fifth—Anton Bohl, Beaver Dam.....	50
Class 5f—Best ten ears Yellow Flint corn.	
First—O. R. Frauenheim, Random Lake.....	\$4 00
Second—Anton Bohl, Beaver Dam.....	3 00
Third—H. E. Krueger, Beaver Dam.....	2 00
Fourth—C. Akins, Warren, Ill.....	1 00
Fifth—C. H. Howitt, Randolph.....	50
Class 5g—Best ten ears White Flint.	
First—Wm. R. Leonard, Ft. Atkinson.....	\$4 00
Second—H. E. Krueger, Beaver Dam.....	3 00
Third—C. H. Howitt, Randolph.....	2 00
Fourth—C. E. Akins, Warren, Ill.....	1 00
Fifth—Anton Bohl, Beaver Dam.....	50
Class 5h—Best ten ears, any variety of corn.	
First—H. C. Brueckner, Ft. Atkinson.....	\$4 00
Second—H. E. Krueger, Beaver Dam.....	3 00
Third—John Van Loon, La Crosse.....	2 00
Fourth—C. E. Akins, Warren, Ill.....	1 00
Fifth—Donald L. Bryson, Elizabeth, Ill.....	50
Class 5i—Best single ear of corn.	
First—Anton Bohl, Beaver Dam.....	\$4 00
Second—H. C. Brueckner, Ft. Atkinson.....	3 00
Third—Robert W. Ward, Ft. Atkinson.....	2 00
Fourth—W. W. Weir, Mukwonago.....	1 00
Fifth—C. H. Howitt, Randolph.....	50
Class 5½ Special. Best 50 ears Silver King corn (Wis. No. 7).	
First—Anton Bohl, Beaver Dam.....	Galloway cream separator
Second—F. P. Grebe, Fox Lake.....	\$6 00
Third—H. E. Krueger, Beaver Dam.....	3 00
Fourth—G. A. Booth, Cuba City.....	2 00
Fifth—H. L. Ward, Ft. Atkinson.....	1 00
Class 5½ Special. Best 50 ears any Wisconsin Standard Yellow Dent.	
First—C. H. Howitt, Randolph.....	International disc harrow
Second—Anton Bohl, Beaver Dam.....	\$3 00
Third—F. P. Grebe, Fox Lake.....	3 00
Fourth—Hilbert Sorenson, Marinette.....	2 00
Fifth—J. P. Bonzelet, Eden.....	1 00
Class 6a—Best ½ peck Medium Red Clover seed.	
First—Martin Haegers, Luxemburg.....	Johnson & F. fanning mill
Second—H. P. West, Ripon.....	\$3 00
Third—C. E. Akins, Warren, Ill.....	2 00
Fourth—Albert W. Fay, New Richmond.....	1 00
Fifth—H. W. Meekin, Fond du Lac.....	50
Class 6b—Best ½ peck of Mammoth Red Clover seed.	
First—A. F. Carlson, Augusta.....	\$4 00
Second—H. E. Krueger, Beaver Dam.....	3 00
Third—H. P. West, Ripon.....	2 00
Fourth—F. J. Gerking, Elk Mound.....	1 00
Class 6c—Best ½ peck Alsike clover.	
First—H. P. West, Ripon.....	\$4 00
Second—C. E. Akins—Warren, Ill.....	3 00
Third—F. J. Gerking, Elk Mound.....	2 00
Fourth—H. W. Meekin, Fond du Lac.....	1 00
Fifth—H. E. Krueger, Beaver Dam.....	50
Class 6d—Best ½ peck White Clover seed.	
First—Ray N. West, Ripon.....	\$4 00
Second—H. P. West, Ripon.....	3 00
Third—H. E. Krueger, Beaver Dam.....	2 00
Fourth—Anton Bohl, Beaver Dam.....	1 00
Class 7a—Best ½ peck Black Soy beans.	
First—C. H. Howitt, Randolph.....	\$3 00
Second—H. P. West, Ripon.....	2 00
Third—F. P. Grebe, Fox Lake.....	1 00
Fourth—C. E. Akins, Warren Ill.....	50

Class 7b—Best $\frac{1}{2}$ peck Green Soy beans.	
First—C. H. Howitt, Randolph.....	\$3 00
Second—F. P. Grebe, Fox Lake.....	2 00
Third—F. G. Swoboda, Dousman.....	1 00
Fourth—H. E. Krueger, Beaver Dam.....	50
Class 7c—Best $\frac{1}{2}$ peck Yellow Soy beans.	
First—W. R. Leonard, Jefferson.....	\$3 00
Second—C. E. Akins, Warren, Ill.....	2 00
Third—H. E. Krueger, Beaver Dam.....	1 00
Fourth—Chas. A. Wussow, Seymour.....	50
Class 7d—Best $\frac{1}{2}$ peck Brown Soy beans.	
First—H. E. Krueger, Beaver Dam.....	\$3 00
Second—C. H. Howitt, Randolph.....	2 00
Third—F. P. Grebe, Fox Lake.....	1 00
Fourth—Frank Bradley, Somers.....	50
Class 8a—Best bundle of Soy beans.	
First—C. H. Howitt, Randolph.....	\$3 00
Second—F. P. Grebe, Fox Lake.....	2 00
Third—Anton Bohl, Beaver Dam.....	1 00
Fourth—H. E. Krueger, Beaver Dam.....	50
Class 9a—Best $\frac{1}{2}$ peck Alfalfa seed.	
First—H. P. West, Ripon.....	\$4 00
Class 10a—Best sample Alfalfa hay.	
First—John J. Dettwiler, Monroe.....	\$4 00
Second—H. E. Krueger, Beaver Dam.....	3 00
Third—Anton Bohl, Beaver Dam.....	2 00
Fourth—John G. Jones, Beaver Dam.....	1 00
Fifth—F. P. Grebe, Fox Lake.....	50
Class 11a—Best $\frac{1}{2}$ peck Winter rye.	
First—H. E. Krueger, Beaver Dam.....	\$3 00
Second—Anton Bohl, Beaver Dam.....	2 00
Third—H. P. West, Ripon.....	1 00
Fourth—P. A. Paulson, Hudson.....	50
Class 11b—Best $\frac{1}{2}$ peck Spring rye.	
First—Anton Bohl, Beaver Dam.....	\$3 00
Second—C. H. Howitt, Randolph.....	2 00
Third—H. E. Krueger, Beaver Dam.....	1 00
Fourth—H. P. West, Ripon.....	50
Class 12a—Best $\frac{1}{2}$ peck Timothy seed.	
First—H. P. West, Ripon.....	\$3 00
Second—H. W. Meekin, Fond du Lac.....	2 00
Third—C. H. Howitt, Randolph.....	1 00
Fourth—H. E. Krueger, Beaver Dam.....	50
Class 13a—Best $\frac{1}{2}$ peck Silver Hull buckwheat.	
First—F. P. Grebe, Fox Lake.....	\$3 00
Second—H. E. Krueger, Beaver Dam.....	2 00
Third—C. H. Howitt, Randolph.....	1 00
Fourth—R. N. West, Ripon.....	50
Class 13b—Best $\frac{1}{2}$ peck Japanese buckwheat.	
First—H. P. West, Ripon.....	\$3 00
Second—C. H. Howitt, Randolph.....	2 00
Third—H. E. Krueger, Beaver Dam.....	1 00
Fourth—Anton Bohl, Beaver Dam.....	50
Class 14a—Best $\frac{1}{2}$ peck Winter wheat.	
First—H. E. Krueger, Beaver Dam.....	\$3 00
Second—Frank Backhaus, Kewaskum.....	2 00
Third—H. Schumann, Beaver Dam.....	1 00
Fourth—Alvin Voigt, Oconomowoc.....	50
Class 14b—Best $\frac{1}{2}$ peck Spring wheat.	
First—H. E. Krueger, Beaver Dam.....	\$3 00
Second—R. N. West, Ripon.....	2 00
Third—Anton Bohl, Beaver Dam.....	1 00
Fourth—A. Chase, Knapp.....	50
Class 15a—Best bundle Winter wheat.	
First—R. J. Schaefer, Appleton.....	\$3 00
Second—H. E. Krueger, Beaver Dam.....	2 00
Third—F. B. Joos, Fountain City.....	1 00
Fourth—Anton Bohl, Beaver Dam.....	50



Exhibit of grains and forage plants made by the Dodge County Order at the Ninth Annual Meeting of the Experiment Association.



Some of the prizes donated by friends for the best seed grains exhibited at the Ninth Annual Meeting of the Experiment Association.

Class 15b—Best bundle Spring wheat.	
First—C. H. Howitt, Randolph.....	\$3 00
Second—H. E. Krueger, Beaver Dam.....	2 00
Third—P. A. Paulson, Hudson.....	1 00
Fourth—Anton Bohl, Beaver Dam.....	50
Class 16a—Best sample of Navy beans.	
First—F. P. Grebe, Fox Lake.....	\$3 00
Second—H. P. West, Ripon.....	2 00
Third—Anton Bohl, Beaver Dam.....	1 00
Fourth—H. E. Krueger, Beaver Dam.....	50
Class 17a—Best three single stalks with pods attached.	
First—H. E. Krueger, Beaver Dam.....	\$3 00
Second—Anton Bohl, Beaver Dam.....	2 00
Third—Rufus Gillette, Verona.....	1 00
Greatest and best display of threshed grains was awarded to Dodge county order of the Experiment Association.....	
	\$10 00
Greatest and best display of sheaf grains was awarded to Dodge county order of the Experiment Association.....	
	10 00

SPECIAL PRIZES AND TROPHIES GIVEN AT THE LAST ANNUAL SEED GRAIN CONTEST BY FRIENDS OF THE ASSOCIATION.

Through the kindness of friends of the Wisconsin Experiment Association, we were able to offer at the last annual display of grains and forage plants, the following special prizes and trophies:

- The William Galloway Company, Waterloo, Iowa, offered a Galloway Cream Separator for the best fifty ears of Silver King (Wisconsin No. 7 Corn), valued at \$80.00, won by Anton Bohl, Beaver Dam.
- J. L. Owens Co., Minneapolis, Minn., offered a New Superior fanning mill for best half peck of Swedish Select oats (Wis. No. 4), valued at \$45.00, won by Gustave Parsch, Wausau.
- Fuller & Johnson Co., Madison, offered a Sulky Plow for best half peck of Oderbrucker barley, valued at \$50.00, won by H. E. Krueger, Beaver Dam.
- Johnson & Field Mfg. Co., Racine, offered a complete fanning mill with all attachments, for best half peck of Medium Red clover seed, valued at \$45.00, won by Martin Haevers, Luxemburg.
- International Harvester Co. of America offered an Osborn Rival disc harrow for best fifty ears of any Wisconsin Standard Yellow Dent corn, valued at \$30.00, won by C. H. Howitt, Randolph.
- Fred Pabst, Oconomowoc, offered a Berkshire pig to the person taking the greatest number of cash prizes on pure bred corn, won by H. E. Krueger, Beaver Dam.
- A sterling silver trophy, for best sample Swedish Select oats, valued at \$40.00 given by Chamber of Commerce, Milwaukee, won by Gustave Parsch, Wausau.
- A sterling silver trophy, for best sample spring wheat, valued at \$40.00, given by Chamber of Commerce, Milwaukee, won by Anton Bohl, Beaver Dam.

- A sterling silver trophy, for best sample of Winter rye, valued at \$40.00, given by Chamber of Commerce, Milwaukee, won by H. E. Krueger, Beaver Dam.
- A sterling silver trophy, for best bundle Oderbrucker barley, valued at \$40.00, given by Chamber of Commerce, Milwaukee, won by J. P. Bonzelet, Eden.
- A sterling silver trophy, for best sample of Oderbrucker barley, valued at \$125.00, given by Wisconsin Brewers' Association, won by H. E. Krueger, Beaver Dam.
- A sterling silver trophy, for best ten ears of Golden Glow corn, valued at \$60.00, given by Wisconsin Agriculturist, Racine, won by C. H. Howitt, Randolph.
- A sterling silver trophy, for best ten ears Silver King corn, valued at \$40.00, given by Chamber of Commerce, Milwaukee, won by Fred P. Grebe, Fox Lake. Mr. Grebe having won this cup twice it now becomes his permanent possession.

PREMIUM LIST, 1910.

(Awards to be made January, 1911.)

DEPARTMENT OF FARM CROPS.

Class 1. Oats.

- Best $\frac{1}{2}$ peck Swedish Select oats (Wis. No. 4), \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best $\frac{1}{2}$ peck any other variety, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.

Class 2. Oats in Sheaf.

- Best bundle Swedish Select oats (Wis. No. 4), \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best bundle any other variety, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.

Class 3. Barley.

- Best $\frac{1}{2}$ peck Wisconsin Pedigree barley, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best $\frac{1}{2}$ peck Oderbrucker barley (Wis. 55), \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best $\frac{1}{2}$ peck any other variety, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.

Class 4. Barley in Sheaf.

- Best bundle of Wisconsin Pedigree barley, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best bundle of Oderbrucker barley (Wis. 55), \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best bundle of any other variety, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.

Class 5. Corn.

- Best ten ears, Clark's Yellow Dent (Wisconsin No. 1), \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best ten ears Silver King, (Wisconsin No. 7), \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best ten ears Early Yellow Dent (Wisconsin No. 8), \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best ten ears Golden Glow (Wisconsin No. 12), \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best ten ears Tooles North Star Yellow Dent (Wisconsin No. 11), \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best ten ears Yellow Flint, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best ten ears White Flint, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best ten ears, any other variety, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best single ear of corn, any variety, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.

Class 5½. Special.

- Best fifty ears of Silver King (Wisconsin No. 7) corn, \$10.00; 2nd, \$6.00; 3rd, \$3.00; 4th, \$2.00; 5th, \$1.00.
- Best fifty ears of any Wisconsin Standard Yellow Dent corn (Wisconsin No. 8, Clark's Yellow Dent, Golden Glow, Tooles North Star), \$10.00; 2nd, \$6.00; 3rd, \$3.00; 4th, \$2.00; 5th, \$1.00.

Class 6. Clover Seed.

- Best ½ peck of medium red clover seed, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best ½ peck of mammoth red clover seed, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best ½ peck of alsike clover seed, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.
- Best ½ peck of white clover seed, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.

Class 7. Soy Beans.

- Best ½ peck (black) soy beans, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.
- Best ½ peck (green) soy beans, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.
- Best ½ peck (yellow) soy beans, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.
- Best ½ peck (brown) soy beans, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.

Class 8. Soy Beans in Sheaf.

- Best bundle of soy beans, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.

Class 9. Alfalfa Seed.

- Best ½ peck of alfalfa seed, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.

*Eighth Annual Report of the**Class 10. Alfalfa Hay.*

Best sample of alfalfa hay, \$4.00; 2nd, \$3.00; 3rd, \$2.00; 4th, \$1.00; 5th, 50 cents.

Class 11. Rye.

Best $\frac{1}{2}$ peck winter rye, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.
Best $\frac{1}{2}$ peck spring rye, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.

Class 12. Timothy Seed.

Best $\frac{1}{2}$ peck timothy seed, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.

Class 13. Buckwheat.

Best $\frac{1}{2}$ peck Silver Hull buckwheat, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.
Best $\frac{1}{2}$ peck Japanese Buckwheat, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.

Class 14. Wheat.

Best $\frac{1}{2}$ peck winter wheat, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents
Best $\frac{1}{2}$ peck spring wheat, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.

Class 15. Wheat in Sheaf.

Best bundle winter wheat, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.
Best bundle spring wheat, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 40 cents.

Class 16. Field Beans.

Best sample of Field Beans, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.

Class 17. Field Beans.

Best three single stalks with pods attached, \$3.00; 2nd, \$2.00; 3rd, \$1.00; 4th, 50 cents.

Competitive Exhibits of the County Orders of the Wisconsin Experiment Association.

Greatest and Best Display of Threshed Grains.

1st, \$10.00; 2nd, \$5.00; 3rd, \$3.00; 4th, \$2.00.

Greatest and Best Display of Sheaf Grains.

1st, \$10.00; 2nd, \$5.00; 3rd, \$3.00; 4th, \$2.00.

RULES AND REGULATIONS UNDER WHICH PREMIUMS ARE GIVEN.

1. The exhibitor must be a member of the Wisconsin Experiment Association.
2. Grain or forage plants must have been grown the season previous to exhibition by the exhibitor.
3. No fees will be charged for exhibiting in any classes.

4. The samples of grain and forage plants exhibited are to be retained as the property of the Wisconsin Experiment Association and may be used by the association or sold at auction to the highest bidder after the awards are made.
5. Exhibits are to be brought in by members of the Association. If sent by express or freight all carrying charges should be prepaid.
6. Varieties of grain or forage plants not specifically named in the list can compete as "any other variety" in which case these different varieties compete against each other and not as an individual class.
7. Exhibitors cannot compete for two cash premiums on the same variety of grain or forage plant.
8. A proper entry of all grains, seeds, etc., must be made in the entry book at the Secretary's office before they are placed on exhibition tables.
9. Expert judges will be secured to place the awards.
10. Where doubt exists in regard to grains being entered according to rules and regulations the exhibitor may be required to verify by oath or affidavit to the correctness of the entries.
11. The grain exposition of the Association will be held at Madison in the Agronomy Building and rooms have been secured in that building for the exhibits.

ADDITIONAL RULES GOVERNING TROPHY AWARDS.

1. The Chamber of Commerce trophies must be won twice by one member before it becomes his permanent possession.
2. The Wisconsin Brewers' Association trophy must be won three times by one member before it becomes his permanent possession.
3. The Andrew Simonson trophy must be won three times by one member before it becomes his permanent possession.
4. The trophies must stay on exhibition in the Agronomy building, Madison, Wis., until they are permanently awarded. The name of each winner will be engraved on the trophy each year.

REPORT OF FOND DU LAC COUNTY FARM INSPECTOR.

HENRY MICHELS, MALONE.

The call for Wisconsin grown seeds is rapidly increasing. This growing demand makes it necessary for the members of our Association to grow more standard bred grains and corn and what is more important, they must keep them up to the high standard for which Wisconsin is known. In order to encourage and assist them in this work, the secretaries of the County Orders were appointed as farm inspectors with instruc-

tions to visit the farms of members residing in their respective counties. The object of the inspection was to secure information relative to the varieties of grains grown; to ascertain to what particular soils or climate they were best adapted; observe conveniences for handling grains and assist members of the Association in planning the proper equipment for handling to the best advantage the various select seed grains in the best possible manner.

In general it may be said that while Fond du Lac county has always been one of the foremost in the seed line, a majority of the members are just beginning to take an interest in selling seed grains. All of them have some grains of standard varieties and are disseminating them among their neighbors which in itself is a grand thing. Many of them, however, have splendid lots of grain which might easily net them 20 to 25 per cent more if advertised in agricultural papers and shipped to other states or to those sections of this State which have not yet begun to raise pedigree varieties of grain.

In order to handle seed grains on a commercial scale a majority of the farmers need better equipment. A good fanning mill is the first requisite. Grains which when cleaned up would present an excellent appearance, often do not sell well or give satisfaction when sold without cleaning because of the presence of weed seeds or light, shrunken kernels. Those farms which are equipped with gasoline engines or other power can easily make use of this in running the fanning mill and elevating the grain to upper bins from which it can easily be sacked from spouts.

Facilities for Handling Seed Corn.—Various devices of merit for curing seed corn were noted. A plan which is very practical in houses which are equipped with furnaces, is to put it up between the joists in the cellar above or near the furnace. Here it is out of the way and dries out splendidly.

In another place in this report will be found the plans of a large seed house constructed exclusively for the purpose of curing seed corn on a commercial scale. These plans will perhaps prove helpful to those who contemplate engaging in the seed corn business.



FAIRVIEW GRAIN AND STOCK FARM.

H. E. Krueger, Proprietor, Beaver Dam, Dodge County.

This beautiful farm of 140 acres is located near Beaver Dam and is run largely as a pure bred seed grain farm. Pedigree barley, Swedish Select oats, Silver King and Golden Glow corn receive marked attention. Mr. Krueger has put upon the market some of the best seed grains sold in Wisconsin. During the four years Mr. Krueger has sold pure bred seed grains, none but good reports have come to the office of the Experiment Association concerning his seeds.

No member of the Association is putting forth more effort in ridding the country of scrub grains and in the dissemination of knowledge regarding pure bred grains than Mr. Krueger. In addition to his duties upon the farm Mr. Krueger is secretary and manager of the Dodge Co. order of the Experiment Association and takes an active interest in county, state and national grain shows.



SALZMAN FARM HOME.

Edward Salzman was a former student of the College of Agriculture and has been an active member of the Experiment Association since he united with the organization. The above cut shows the great success he is having in growing and curing alfalfa. The home and fine farm buildings are prominent in the background.

REPORT OF DODGE COUNTY FARM INSPECTOR.

H. E. KRUEGER, BEAVER DAM.

Fellow Members, Ladies and Gentlemen:

My work along farm inspection has been short, but I have done enough to convince me that it is work along the right line. At every place visited I was met with a hearty welcome, but in order to get the best result I had to take the place of a critic to a certain extent. This brought out what was sought for, and gave me a chance to make many suggestions along the line that would be most effective.

I believe this is work in the right direction, as I find that there is a demand for ten times the present output of seed grains, if the members can be stirred up to advertise and let other states know that they have got the goods. In many places I found large quantities of fine seed oats and barley going to the elevator at common market prices, which could have just as well brought the grower one-third more money.

We desire to have pure bred grains go on to the general market as this will lift the standard of the state, but the members of the Association who have made it possible to grow select seed grains by assisting in the general dissemination are entitled to seed grain prices for their general out-put and should keep in close touch with their Order of the Experiment Association, which can aid them in getting seed grain prices.

Most all of our members visited were growing pure bred grains, and were leaders in their locality, but some were not up-to-date, as they had finished the Short Course some time ago and had not kept in touch with the outside world. They needed a brushing up and they were pleased to know of the many new things that could be told them and made free to ask questions on branches of work that were of vital interest to them. The matter of cleaning and grading grains was emphasized, also the importance of treating the seed grain for the prevention of smut and the sowing of such grains on land free from obnoxious weeds.

REPORT OF MANITOWOC COUNTY FARM INSPECTOR.

O. R. WIEGAND, CLEVELAND.

Fellow Members of the Experiment Association, Ladies and Gentlemen:

It has been a great source of pleasure for me to visit and inspect the different farms of our members in Manitowoc County, and I think I realize now as I never did before the great good that the state and local association can do for our members and the farmers in general.

The following report on individual farms is herewith given:

Mr. Ed. Kolb, Cleveland. Mr. Kolb has a farm of 60 acres, of which about 55 acres are under cultivation. Mr. Kolb has given Oderbrucker barley and Silver King corn a trial and is well pleased with results, his barley is of a very good quality.

Mr. Herman Roethel, Kiel. Mr. Roethel's farm consists of 140 acres of light clay loam soil, of which about 100 acres are under cultivation. Mr. Roethel grows Oderbrucker barley and Silver King corn, his success with the No. 7 corn has been very satisfactory, it yielded well and has always matured well. Mr. Roethel's facilities for handling seed grains are good, he has good seed houses and graders and his seed corn is fire dried. Mr. Roethel has distributed the improved seed grains quite extensively among his neighbors.

Mr. Ed. Thieleke, Kiel. Mr. Thieleke has a farm of 60 acres, 45 of this under cultivation, the soil is a light-clay loam. Oderbrucker barley and No. 7 corn are grown on this farm and his success with the No. 7 corn has been very satisfactory.

Mr. Carl Raquet, Kiel. Mr. Raquet has a farm of 119 acres of black loam soil, of which about 110 acres are under cultivation. Mr. Raquet is growing Oderbrucker barley and Swedish Select oats for seed, and is fully equipped with good seed house and grain grader so he can deliver fine grades of seeds. The results with Silver King corn were* very satisfactory. Mr. Raquet has distributed improved seeds quite extensively.

Mr. Arthur Arnold, Kiel. Mr. Arnold's farm consists of 160 acres, 135 under cultivation. The crops grown for seed are Oderbrucker barley and beans. Mr. Arnold has a good seed house and grain grader. Improved seeds are used considerably in Mr. Arnold's locality.

Mr. William Shulz, Kiel. Mr. Shulz has a farm of 70 acres of light clay loam soil of which about 58 acres are under cultivation, free from weeds. Crops grown for seed are oats and Oderbrucker barley. Improved seeds not used extensively by neighboring farmers.

Mr. Herman Duecker, Kiel. Mr. Duecker's farm consists of 143 acres of sandy and clay loam soil, of which 120 acres are under cultivation. Mr. Duecker is growing Swedish Oats and Oderbrucker barley for seed. Yield of oats 65 bushels, barley 35 bushels per acre. Mr. Duecker is well satisfied with improved grains and thinks them quite superior to common varieties, but has been so far unable to induce his neighbors to sow improved seeds extensively.

Mr. Edward Salzmänn, Kiel. Mr. Salzmänn has a farm of 78 acres of which about 45 are under cultivation. The soil is gravel, clay and other mixture. Mr. Salzmänn is not devoting his farm to seed growing, but is growing the Swedish Select oats for his own use, which he finds superior to common varieties formerly grown. Mr. Salzmänn has grown alfalfa successfully for several years.

Mr. Andrew Wigen, Quarry. Mr. Wigen has a farm of 120 acres of black muck soil, about 100 being under cultivation. Mr. Wigen is growing Swedish Oats and Oderbrucker barley for seed and considers these varieties much superior to common varieties. His barley yielded 50 bushels and oats 70 bushels per acre. Mr. Wigen has a good seed house and grain grader and has succeeded in distributing improved seeds to some extent among his neighbors.

Mr. James Tyler, Quarry. Mr. Tyler's farm consists of 87 acres of clay loam soil, of which 42 are under cultivation. Crops grown for seed on this farm are Oderbrucker barley and

Golden Glow corn. Barley yielded 32 bushels and corn 75 bushels per acre. Mr. Tyler considers Oderbrucker barley superior to common varieties and it is being grown to quite an extent by his neighbors. The corn did not prove quite as satisfactory as Pride of the North, either in yield or early maturing qualities.

Mr. Adolph Klann, Hayton.—Mr. Klann's farm consists of 320 acres of clay soil of which 180 acres are under cultivation. Mr. Klann is growing Swedish Select oats, Oderbucker barley and sixty day oats for seed. Mr. Klann is fully equipped with good seed houses and grain grader and his seed grains are known for their quality and purity all over the neighborhood. He has distributed the improved varieties quite extensively and has already sold all of his 1909 oat crop. Barley yielded 43 bu., 60 day oats 80 bu., and Swedish oats 75 bu. to the acre. Mr. Klann is well satisfied with improved seeds and thinks them quite superior to common varieties.

Mr. James Garey, Grimms.—Mr. Garey's farm consists of 80 acres, clay loam soil, 72 acres of it being under cultivation. Mr. Garey is growing Swedish oats for seed, his oats are of a very good quality and yielded 70 bushels to the acre. This variety of oats seems to do exceptionally well on Mr. Garey's farm and he has sold and shipped quite an amount of it for seed. His grain house and graders are good.

Mr. James Sullivan, Grimms.—Mr. James Sullivan has a farm of 280 acres, of sandy loam and clay soil, of which 200 acres are under cultivation. Crops grown for seed are Swedish oats and Oderbrucker barley, yield of barley 30 bu. and oats 65 bu. per acre. Mr. Sullivan is well satisfied with results obtained with improved seeds, his grain house and graders are good and he has succeeded in distributing improved grains quite extensively.

Mr. John Pritzl, Cato.—Mr. Pritzl has a farm of 100 acres of light clay loam soil, of which 92 acres are under cultivation. The only weeds found on this farm are Canada thistles to a small extent, which are destroyed by cultivation. The crops grown for seed on this farm are Oderbrucker barley and No. 8 corn. Barley yielded 30 bu. per acre, corn grown only for his

own use, grain house and grader good. Mr. Pritzl is well satisfied with barley and has supplied the neighborhood to some extent.

Mr. Almer Halverson, Cato.—Mr. Halverson has a farm of 77 acres of light clay soil of which 30 acres are under cultivation. Crops grown for seed on this farm are Oderbrucker barley and No. 7 corn. Barley yielded 35 bu. per acre. Corn did not mature very good. Mr. Halverson has a good seed house and grain grader.

Mr. Anton Berge, Valders.—Mr. Berge's farm consists of 210 acres of clay and black soil of which 120 acres are under cultivation. Mr. Berge is growing Oderbrucker barley and No. 7 corn for seed. Barley yielded 50 bu. per acre which was about the same as other varieties. No. 7 corn did very well on this farm and matured all right. This corn is grown by other farmers in this locality and the results are all very satisfactory.

Mr. Otis Berge, Valders.—Mr. Berge has a farm of 140 acres of black loam soil of which about 90 acres are under cultivation. Crops grown for seed are Oderbrucker barley, Swedish oats and No. 7 corn. Barley yielded 30 bu., oats 40 and corn 60 bu. per acre. Mr. Berge is well equipped with a grain house and grader and has arranged to fire dry his corn. Corn matured well, and neighbors supplied to some extent and all well pleased with it, using it quite extensively for silage. Mr. Berge thinks Oderbrucker barley superior to common varieties.

Mr. Otis Marken, Valders.—Mr. Marken's farm consists of 100 acres of clay loam soil, of which 75 acres are under cultivation. Mr. Marken is growing Oderbrucker barley and No. 7 corn. Yield of barley 33 bu. per acre, corn yielded exceptionally good, but exact yield not known, it matured very well and also makes a splendid silage corn. Farmers in this locality have all had very good success with the No. 7 corn and especially for silage purposes. It matured all right with all, yet they would like to try a variety a trifle earlier as they fear it might not always be able to mature. Mr. Marken has a very good seed house and grain grader and also facilities to fire dry his corn.

Mr. Alfred Hoefner, Manitowoc.—Mr. Hoefner has a farm of 80 acres of clay soil of which 68 acres are under cultivation. Mr. Hoefner is growing Oderbrucker barley and red clover for seed. Swedish oats was grown but not found satisfactory. Barley satisfactory, yield 40 bu. per acre. Mr. Hoefner has good seed house and grain grader.

Mr. Herbert Hoefner, Manitowoc.—Mr. Hoefner's farm consists of 160 acres of mostly clay soil, of which about 60 acres are under cultivation. Oderbrucker barley and Golden Glow corn are grown for seed, barley yielded 30 bu. per acre. Mr. Hoefner considers it about the same as other barley. Corn did not do quite as well as another variety grown on the same farm, resembling very much the No. 8 corn.

Mr. Fred Hoefner, Manitowoc.—Mr. Hoefner has a farm of 80 acres of sandy loam and clay soil of which about 60 acres are under cultivation. Mr. Hoefner is growing Oderbrucker barley, it yielded about 25 bu. per acre, quality very good.

Mr. Ed. Knudson, Manitowoc.—Mr. Knudson's farm consists of 67 acres of sand and clay soil of which 50 acres are under cultivation. Mr. Knudson is growing Oderbrucker barley and Golden Glow corn for seed, barley yielded 32 bu., corn 70 bu. per acre. Mr. Knudson is well satisfied with barley and corn and is well equipped with a seed house and graders, also facilities to fire dry corn.

Mr. Lars Ballestad, Manitowoc.—Mr. Ballestad has a farm of 85 acres of clay soil, of which about 55 acres are under cultivation. Mr. Ballestad is growing Oderbrucker barley for seed, yield was about 35 bu. per acre. He considers this barley quite superior to common varieties and has supplied neighbors with it to some extent. Mr. Ballestad is well equipped with seed houses and a grain grader.

Mr. J. E. Paulson, Manitowoc.—Mr. Paulson's farm consists of 100 acres of clay soil, of which about 75 acres are under cultivation. Mr. Paulson is growing Oderbrucker barley and Nos. 7 and 8 corn. Barley yielded 30 bu., corn 55 bu. per acre. Mr.

Paulson is well pleased with results of barley. He is also growing Swedish oats.

Mr. Walter Behm, Manitowoc.—Mr. Behm has a farm of 80 acres of clay soil of which about 70 acres are under cultivation. Mr. Behm is growing Oderbrucker barley and No. 8 corn. Barley did not turn out very satisfactorily, probably due to the dry season and other conditions, but will try it again. No. 8 corn did very well on this farm, but Mr. Behm has none for sale as neighbors have ordered their season's seed from him.

Mr. Clifford Gunderson, Manitowoc.—Mr. Gunderson's farm consists of 97 acres of clay soil of which 57 acres are under cultivation. Mr. Gunderson is growing Oderbrucker barley and No. 12 corn. Barley yielded 40 bu. and corn 70 bu. per acre. He has a good seed house and grader, his corn is air dried. Comparing with other barley, Mr. Gunderson is well pleased with Oderbrucker.

Mr. Mervin Geraldson, Manitowoc.—Mr. Geraldson's farm consists of 126 acres of clay soil of which 70 acres are under cultivation. Mr. Geraldson is growing Oderbrucker barley and Golden Glow corn, has good seed house and grain grader, but not fire dried corn. Corn yielded 110 bu. per acre, seed on hand already ordered by neighbors.

Mr. Charles Gustaveson, Manitowoc.—Mr. Gustaveson's farm consists of 80 acres of sand and loam soil, 60 acres of which is under cultivation. Crops grown for seed are Oderbrucker barley and No. 12 corn, both proving very satisfactory. Mr. Gustaveson has good seed house and grader, but has no seed for sale this year.

Mr. Reinhold Clusen, Manitowoc.—Mr. Clusen's farm consists of 120 acres of loam soil of which 95 acres are under cultivation. Mr. Clusen is growing Swedish oats, Oderbrucker barley and Golden Glow corn for seed. Yield of corn 100 bu., barley 30 bu. and oats 50 bu. per acre. Oderbrucker barley is grown quite extensively in Mr. Clusen's neighborhood. He is well pleased with the corn, it yielded very good and matured early, and has arranged for fire drying it. He has also a good seed house and grader.

Mr. Adolph Bauer, Manitowoc.—Mr. Bauer's farm consists of 80 acres of clay and clay loam soil, of which 70 acres are under cultivation. Mr. Bauer is growing Oderbrucker barley and Golden Glow corn for seed. Barley yielded 40 bu., corn 95 bu. per acre. Mr. Bauer has grown Golden Glow corn quite successfully and has sold quite an amount of fire dried seed. He has a good grain house and grader.

Mr. Wm. Huhn, Cleveland.—Mr. Huhn's farm consists of 120 acres of sandy and clay loam soil, of which 108 acres are under cultivation. Mr. Huhn has been growing Oderbrucker barley and is well pleased with it. He has grown some No. 7 corn for silage purposes with good results. It also matured, and he has saved some for seed, which he has arranged to fire dry.

Mr. Arthur Wagner, Haven.—Mr. Wagner has a farm of 100 acres of clay loam soil, of which 90 acres are under a high state of cultivation. His facilities for handling seed grain are of the best. Mr. Wagner is fully equipped with a good seed house and graders, and has arranged a room where he has stored and fire dried about 75 bu. of choice Golden Glow and No. 7 corn. Mr. Wagner has grown both varieties with most satisfactory results, the Golden Glow mostly for seed, and the No. 7 mostly for silage, but it also matures well. He is also growing Oderbrucker barley and Swedish oats, and both varieties seem to be well adapted to his soil, the yield is always satisfactory and the quality of the grain is of the best.

REPORT OF MONROE COUNTY FARM INSPECTOR.

G. A. FREEMAN, SPARTA.

Fellow Members of the Experiment Association.—The season of 1909 was somewhat disappointing to seed growers in some sections, as hail storms, drought and early frosts did much damage, and failure to obtain good farm help prevented many from getting their seed corn cured in quantities and conditions desired.

There is no question but that our next annual report will show a decided improvement in the general conditions, as many of the members are determined to "win out" in the fight against obnoxious weeds and in the production of the best seed grains, and thus maintain the reputation for Wisconsin as the greatest seed grain growing center in America. To this end plans for improving the quality and increasing the yield per acre, are being generally discussed in private by the members as well as at the meetings of local societies. While it is true that we have Canada thistles and quack grass, there need be no alarm as to their spread through seed grains sent out from these farms, as it is being closely guarded and in some cases Quack only appears in the orchard or fruit garden, where bundles of nursery stock wrapped in it were unpacked. Other cases under my personal knowledge had their origin in winter wheat straw bought from neighboring farms to be used as winter protection on strawberry fields. Intensive cultivation is here practiced and every visible vestige destroyed. In some cases where "Quack" is confined to a small patch only a few feet square, manuring is recommended to bring the root system near the surface and then cover with eight inches of sawdust which kills it completely. Others are practicing the late fall plowing and thorough and deep cultivation all the next spring, and then planting to potatoes about June 1.

Solution of the thistle problem lays in the farmer's success in getting lands so infested, seeded to alfalfa, which will completely eradicate them in two years. The most discouraging feature lies in the fact that owners of adjoining farms are sometimes wholly, or in part indifferent, and the thistle down is blown and wafted from higher lands on neighboring farms. "Quack" gains a foothold along ditches and surface drains.

The plan to have the farms inspected annually seems to have met with the unanimous approval of the members of the experiment association.

Everywhere was the inspector treated most cordially and hospitably and asked to repeat his visits.

The following data may be of interest to the members of the association:

Number farms inspected.....	27
Total acreage inspected.....	5,600
Total acreage under cultivation.....	3,258

Average acreage (total)	208
Average acreage cultivated.....	121
Number members growing:	
Manshury Barley	2
Oderbrucker Barley	19
Swedish Select Oats.....	8
Regenerated Swedish Select Oats.....	1
Sixty day Oats.....	1
Silver King Corn.....	12
Winter Rye	1
Seed Potatoes	1
Treated grain with formaline.....	13
Treated grain with hot water (F).....	1
Treated potatoes with formaline.....	3
Sprayed potatoes with Bordeaux.....	3
Grow two varieties of barley.....	1
Grow two varieties of oats.....	1
Total amount of seed grain sold 1909, prior to inspection:	
Barley	1,425 bu.
Oats	620 bu.
Corn	211 bu.
Farms reported free from obnoxious weeds.....	10
Cases where quack grass is present.....	7
Canada thistles.....	5
Yellow dock	10
Wild oats	1
Cases where neighboring farmers are careful to destroy these obnoxious weed pests.....	14
Instances where some only are careful and some indifferent or all are indifferent.....	13
Available for 1910:	
Barley	1,140 bu.
Oats	1,415 bu.
Corn	110 bu.

DIVISION OF FARM CROPS.

PLAN OF WORK FOR THE COMING YEAR.

R. A. MOORE.

I desire the energy of the Experiment Association concentrated on the corn and barley work again the coming season. We are now at the threshold of success and any delay on our part would mean the losing of the vantage ground already obtained. The call from all over the country for seed grains grown by our Association leads me to see that the farmers are quick to perceive the importance of growing crops from select seeds instead of continuing the mongrel bred varieties. The favor so far obtained for select seed grains can only be continued by observing strict rules of honest practice.

If for any reason our seed crop should be damaged or contaminated with noxious weed seeds we should at once notify the Secretary and refrain from selling such seed. All seeds of questionable character should be fed on the farm or sold as feed, and not listed as seed grains.

Our work in establishing standard varieties of corn for Wisconsin should be continued and pushed with the utmost vigor. No longer should we encourage the scoop-shovel method of supplying seed corn, but insist that the only true way of furnishing seed corn is in the ear and that to be kiln-dried corn. No seedsman can advance a single argument of value for not selling seed corn in the ear. Where shelled corn is supplied the farmer for seed, the danger of mixing and getting an inferior grade of seed is too great to be safely advocated. The only true way of preparing seed corn for market is to fire dry it and then store safely in a room for shipment. All seed corn should be shipped in the ear for which the grower should receive ample returns for his extra labor. By adhering strictly to the above principle, we will be able to throw new life and vigor into the corn plant and lead the world in production per acre.

Our experiments for the coming year are outlined in our last report and members of the Association who desire carrying on

these experiments can be governed by these outlines and will be furnished report blanks in due time for the purpose of reporting the experiments.

We should bear in mind that whatever experiment is undertaken the Secretary should have knowledge of the same so as to be able to compile the data for publication.

In my travels throughout the state, I frequently visit members of the Association who are growing and testing seed grains, but do not think it necessary to make a report. The value and importance of the work is lost entirely to others if we neglect so important a duty. In order to be placed on the seed grower's list one must notify the Secretary of the kind and amount of seed, the price per bushel, a quart sample of the seed, and any other data that may be well for the Secretary to know.

The grower of pure bred seed grains should be a business man in the strictest sense and should have business cards and letter heads for business correspondence. These cards and letter heads should be modest, giving the name of the farm, the owner's name, the seed grains grown, and any specialties, put in practice upon the farm.

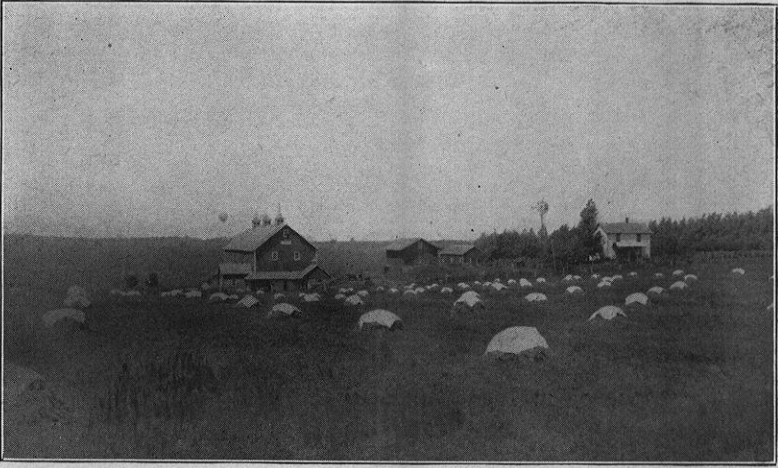
OUTLINE OF COOPERATIVE EXPERIMENTS.

EXPERIMENT 1.

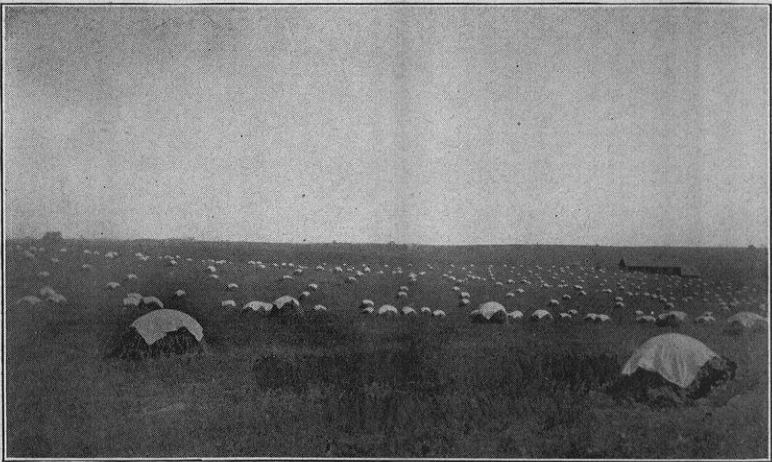
Trials with Alfalfa to Determine if It Can be Grown in Wisconsin Successfully as a Forage Plant.

No forage plant has been given more attention in the United States during the past ten years than alfalfa, and while it is yet in the experimental stage in some parts of Wisconsin, where proper precautions are taken it can be grown with a reasonable degree of success on any of our older and well cultivated farms.

Wisconsin is a great dairy State and the milk products bring to our farmers annually some sixty million dollars. A considerable portion of this money is expended for high protein



RESIDENCE AND STOCK BARN ON THE WAELTI DAIRY FARM.
Alfalfa in the Foreground.



THE WAELTI DAIRY FARM.

Owned and operated by John Waelti, Monroe, Green county.

This farm was purchased by its present owner in 1903 and since has been operated as a dairy farm. Mr. Waelti is one of the most successful alfalfa growers in the State and now has 75 acres into this great forage crop from which he received four cuttings last year. The dairy herd is composed of 55 individuals and the milk supply is disposed of at the condensing factory at Monroe for which the highest market price is obtained. Mr. Waelti compelled the Farmers' Course at the College and is an active member of the Experiment Association in which he takes a deep interest.

feeds, as oil meal, oil cake, cotton seed meal, bran, etc., with which to balance the feed ration. The cost and the time expended in carting the feeds make them expensive for the farmer and take from him a large portion of that which would otherwise be profit.

Alfalfa supplies the dairymen and stockmen with valuable forage and saves for them a large part of the money annually expended for high protein feeds. The value of alfalfa as a feed for all farm animals including swine and poultry, is so well known that it is unnecessary to speak of its merits here. No single forage plant combines the materials for a profitable ration for dairy cows, sheep, and brood sows so well as does alfalfa.

For eight years alfalfa has been grown successfully on the Station Farm near Madison, and many tests made to determine the best method of growing it under different conditions of soil and climate. When grown in comparison with red clover, timothy, and brome grass during the season of 1904, the yield per acre of hay was 5.4 tons for alfalfa, 2.5 tons for clover, 2.3 tons for timothy and 1.3 tons for brome grass. As a green forage the weight of alfalfa grown per acre was double that of clover, three times that of timothy, and five times that of brome grass. The per cent of protein found in the hay was as follows: 18.7 for alfalfa, 13.28 for clover, 4.74 for timothy, and 6.07 for brome grass. In total yield of protein per acre alfalfa produced three times that of clover, nine times that of timothy and twelve times that of brome grass.

Alfalfa or lucerne is a perennial plant and belongs to the clover family. If not killed by frost, water or some other element, it can be cut the second year after sowing three or four times per season for hay, for several years without re-seeding.

Locating the field.—Good growths of alfalfa are often secured in favorable seasons on level land, but better results will be obtained on land that is somewhat sloping, where water will not stand during any portion of the year. On level ground during sleet storms, water is apt to collect in all the depressions, forming on freezing an ice sheet which smothers many of the alfalfa plants. "Patchy fields" are hard to renew and generally necessitate replowing and reseeded. In no case should alfalfa be sown on land that is subject to overflow or

where the water level is but two or three feet below the surface.

Character of the soil.—Alfalfa will grow on a wide variation of soil ranging from a rich sandy loam to a heavy clay, but a rich clay loam over a gravelly sub-soil seems to be best. It is practically useless to try to grow alfalfa on sandy or "worn out" soils without an abundant supply of good barnyard manure. Alfalfa will not do well on new and unsubdued soil, but develops best on the well cultivated soils.

Soil inoculation.—On fields that have not before grown alfalfa the germs necessary for its best growth are usually wanting. Where such conditions prevail it is well to scatter soil, taken from an old alfalfa field or from the roadside where sweet clover grows, at the rate of one ton per acre. The ground should be scattered over the field just previous to sowing the alfalfa seed and should be immediately harrowed.

An excellent plan for supplying the soil with the proper germs is to use a mixture of one-fourth alfalfa seed and three-fourths clover seed for general seeding. The clover hay will be of a better grade where alfalfa is grown in connection therewith. The alfalfa plants that survive become bacteria producers and distributors for future crops of alfalfa.

Some seedsmen have advertised cultures of organisms for inoculating alfalfa seed previous to seeding. The data obtained from experiments indicate that they are of little value and that much more certain results can be secured by the use of the infected soil.

Soil preparation.—Good results have been obtained on both fall and spring plowed lands, depending upon the texture of the soil and freedom from weeds. With fall plowing it is well to plow early so as to cover the weeds before they produce seed. Double disc in the spring as soon as the land works well, and put in garden condition with a fine tooth harrow. The ground should be heavily spread with barnyard manure before plowing, using from ten to twenty tons per acre. If seeding is done on spring plowed land, the ground should be heavily manured during the winter and plowed in the spring. The fine tooth harrow should be used within a few hours after the furrows are turned to prevent drying and hardening of the soil. If the soil once becomes lumpy it is hard to put in proper condition for alfalfa seeding. A planker or roller should be

used immediately before and after seeding, which aids much in firming the soil to permit rapid germination of the seed.

Nurse crop.—Where ground is exceedingly weedy, it is preferable to use a nurse crop as it assists the alfalfa to keep down the weeds until it becomes established. When alfalfa is sown with a nurse crop the seed should be put into the ground as early as it is advisable to sow oats or barley. Barley sown three pecks per acre has given best results as a nurse crop, and can usually be left to ripen without apparent injury to the alfalfa. If oats are used do not exceed one bushel of seed per acre, and if the season is dry cut the oats for hay at the time of heading.

Land on which tobacco, sugar beets, or any highly cultivated crop has been grown the preceding year can be seeded to alfalfa without a nurse crop with the best chances of getting a good, thick stand. Where alfalfa is seeded without a nurse crop the ground should be cultivated with a disc and a fine tooth harrow until June 1. Weeds will then have been quite thoroughly killed and the ground will be in fine condition to sprout the alfalfa seeds in the shortest possible time. Where a nurse crop is not used, a cutting of alfalfa can usually be secured by September 1, the same season of sowing. On excellent method of getting a good stand of alfalfa is to manure the ground heavily in the fall and plow. As soon in the spring as the land works well disc and drag at intervals until June 1st. The discing and dragging not only put the ground in good tilth but aid in the sprouting and killing of weeds. Sow twenty pounds of good alfalfa seed per acre and drag once after sowing with fine tooth harrow. After nine years' experience with alfalfa on the station farm and elsewhere we are firmly convinced that sowing alfalfa without a nurse crop about June 1, after going through a weed killing process is the best method to pursue to secure a good catch which will last several years.

REPORT BLANK, EXPERIMENT 1.

Best Method of Getting a Stand of Alfalfa and Testing the Relative Value of Soil Inoculation and Sowing with and without a Nurse Crop.

- Name of experimenter.....
 P. O.....; County.....; State.....
 1. Date of sowing oats or barley and alfalfa.....
 2. What variety of alfalfa used?.....
 3. Nature of soil?.....

4. How prepared?.....
5. When were the alfalfa plants first noticeable?.....
6. Was the grain crop left to ripen?.....
7. Did you secure a good thick stand of alfalfa?.....
8. At what rate did you sow the alfalfa seed per acre?.....
9. At what rate did you sow the oats or barley per acre?.....
10. At what time did you sow the alfalfa seed without a nurse crop?.....
11. Which seems preferable, sowing with or without a nurse crop?.....
12. Did you examine the roots of the plants on both sections of the field for the bacteria-laden nodules?.....
13. Were any nodules found?.....
14. Were the nodules as plentiful on the roots of the plants growing on that portion of the field that was not inoculated as where the ground was scattered?.....
15. Could you detect any difference in the growth of the alfalfa?.....
16. Date of making this report?.....
17. Give in a brief way your opinion on growing alfalfa in Wisconsin, and the benefit, if any, from the inoculation of the soil.

EXPERIMENT 1. A.

Alfalfa after First Year's Seeding.

Through the encouragement of the Experiment Association many of its membership sowed in past years from one to two acres of alfalfa. The Association is desirous to learn the success of those who have sown alfalfa previous to 1909 and will send blanks and return envelope to any one who will agree to send in report.

REPORT BLANK, EXPERIMENT 1. A.

Report of Alfalfa after First Year's Seeding.

To be sent to the secretary by October 1, 1910.

- Name of experimenter.....
 Post Office.....; County.....; State.....
1. Year and season alfalfa was sown.....
 2. Was the alfalfa sown with or without nurse crop?.....
 3. Variety of alfalfa seed used.....
 4. Amount of seed per acre.....
 5. Was the crop cut for hay the year of sowing?.....
 6. If so, the amount obtained per acre.....
 7. Nature of the soil.....
 (Clay, muck, highland, lowland, etc.)
 8. Was good stand noticeable before the fall frosts?.....
 9. What per cent, if any, winter killed?..... per cent.
 10. How many cuttings did you get the year after seeding?.....



BROOK HILL FARM.

Howard Green, owner, David Williams, superintendent, Genesee Depot, Waukesha county.

We think this is one of the finest, up to date Guernsey farms in the state and has some of the best individual animals upon it found in America. This farm consists of 231 acres of fine farming land well supplied with spring water and just rolling enough to make the drainage perfect. Pure bred Guernsey cattle and white rock chickens are specialties upon the farm. Pure bred grains are grown generally upon the place and special attention is paid to growing alfalfa for the dairy herd. The Superintendent, Mr. Williams, is a graduate from the Short Course in Agriculture and a member of the Experiment Association in which he has always manifested a deep interest; his wide experience with dairy cattle and conscientious work has made him a leader in his chosen occupation.

11. Weight of hay from all cuttings for the season—
 (actual) (estimated)
 12. Did you experience any difficulty in curing the crop for hay?.....
 13. Did you use hay caps?.....
 14. Did the plants develop the proper nodules on their roots?.....

 15. Was the ground on which the alfalfa was sown inoculated with
 alfalfa or sweet clover soil?.....
 16. Date of making this report.....
- Please give in brief your method of growing alfalfa and your views as to its value as a forage plant for Wisconsin.

EXPERIMENT No. 2.

Wisconsin Seed Corn—Ten Ear Test.

Considerable has been done the past eight years in Wisconsin in the way of breeding good seed corn and taking care of the season's crop.

We feel that by judicious selection of seed and proper curing of the same, farmers of the state can increase the yield from ten to twenty-five bushels per acre. We know that members of the Experiment Association can do much good for the communities in which they reside by growing choice varieties of corn. Due care must be exercised in planting, cultivating the soil, harvesting and curing the crop as well as rigid selection of the seed. No matter how good the seed if planted on weedy or poor worn-out soil and not properly cared for we can not expect a good crop.

We expect to see great strides made in the improvement of corn within the next few years and may not the Wisconsin Experiment Association be the factor to bring this improvement about?

Twenty-five ears of corn are given to each member who desires to assist in corn improvement only 10 ears of which will be used in the experiment proper. The corn from each ear is to be planted in a separate row.

Use the ear with the least number of kernels first. Plant in hills three and one-half feet apart in the row and the same distance between the rows. The corn left from the different ears after planting individual rows can be mixed with the corn shelled from the remaining 15 ears and planted in close proximity.

Plant at least forty rods from any other corn, a greater distance, if convenient. Avoid having a field of corn near the west or south of the plot as the prevailing wind during the pollenizing season is from that direction and the corn is liable to cross.

REPORT BLANK No. 2.

Wisconsin Seed Corn—Ten Ear Test.

- Name of experimenter.....
 Post Office.....; County.....; State.....
1. Variety of corn planted.....
 2. Where was seed secured?.....
 3. Germinating test per cent.....
 4. Date of planting.....
 5. Nature of soil.....
 6. Fall or spring plowed.....
 7. Following what crop?.....
 8. How planted?.....
 9. When first noticeable above ground?.....
 10. Did corn germinate evenly?.....
 11. Give number of times and method of cultivation?.....
 12. Did corn mature well?.....
 13. Total number of stalks in each row.....
 14. Number of barren stalks in each row.....
 15. How harvested?.....
 16. Yield per acre, actual.....; estimated.....
 17. Yield per acre, any other variety, actual.....
 estimated.....
 18. Compare yield with home variety of corn if possible.
 19. The yield should be determined on the shelled corn basis, two bushels of ears being considered one bushel of shelled corn.

REPORT BLANK.—EXPERIMENT No. 2.

Wisconsin No. 7 Corn.

- Name of experimenter.....
 Post Office.....; County.....; State.....
1. Where was seed secured?.....
 2. Germinating test, per cent..... Date of planting.....
 3. Nature of soil.....
 4. Fall or spring plowed?.....
 5. Following what crop?.....
 6. How planted?.....
 7. When first noticeable above ground?.....
 8. Did corn germinate evenly?.....
 9. Give number of times and method of cultivation.....
 10. Did corn mature well?.....
 11. Did corn smut badly? Approximate amount of smut.....

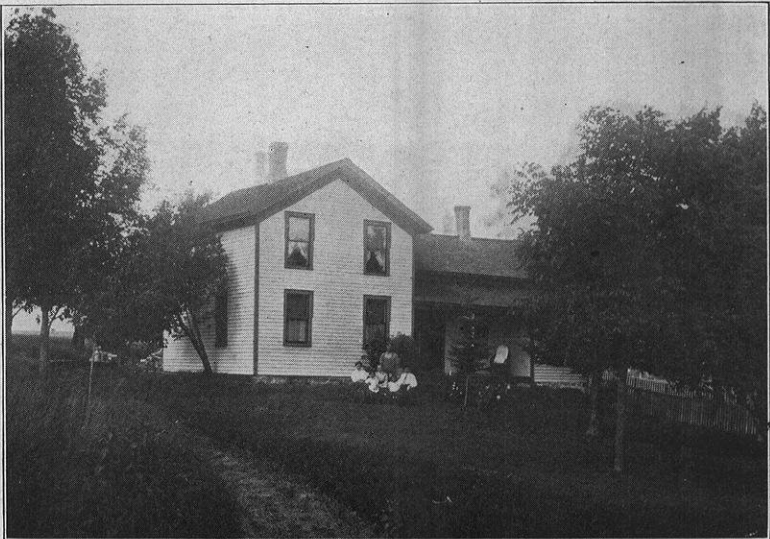


THE GOODLAND STOCK AND GRAIN FARM.

J. M. Wagner, Proprietor, Union Center, Wisconsin.

The Goodland Farm consists of 120 acres of high grade soil and is rapidly becoming known far and near as a farm noted for pure bred grains and stock. One of the chief lines of effort is dairying and a fine herd of 35 registered Holsteins are already upon the place. Poland China hogs and White Wyandotte poultry receive marked attention. Of the pure bred seed grains grown Swedish Select oats, Oderbrucker barley and Silver King corn are the leaders and have been widely disseminated by Mr. Wagner in his neighborhood.

Mr. Wagner completed the Short Course in Agriculture in 1898 and immediately returned to the farm to put in practice better methods of agriculture. His farm is now regarded as one of the best in southern Wisconsin and has become a stock and seed grain center where farmers can secure a foundation supply of pure bred animals or grains. Mr. Wagner is a member of the Experiment Association in which he has always taken a deep interest.



The Goodland Farm Residence, Home of J. M. Wagner.

12. What per cent of barren stalks was noticeable?.....
 To find per cent of barren stalks, count the whole number of barren and fruitful stalks present in a definite number of hills and divide the number representing the barren stalks by the number representing the whole number of stalks. Counts can be made in four or five places in the field and averaged.
13. How harvested?.....
14. How many acres harvested?.....
15. Yield per acre, actual.....; estimated.....
16. Yield per acre best other variety, actual.....; estimated
17. Compare yield with home variety of corn if possible. The yield should be determined on the shelled corn basis, two bushels of ears being considered one bushel of corn.
18. How many bushels of fire-dried corn in the ear will you have to sell for seed?.....
 Give brief description of what you think of the No. 7 corn.

REPORT BLANK.—EXPERIMENT NO. 2.

Wisconsin No. 12 Corn.

- Name of experimenter.....
 Post Office.....; County.....; State.....
1. Where was seed secured?.....
 2. Germinating test, per cent..... Date of planting.....
 3. Nature of soil.....
 4. Fall or spring plowed?.....
 5. Following what crop?.....
 6. How planted?.....
 7. When first noticeable above ground?.....
 8. Did corn germinate evenly?.....
 9. Give number of times and method of cultivation.....
 10. Did corn mature well?.....
 11. Did corn smut badly? Approximate amount of smut.....
 12. What per cent of barren stalks was noticeable?.....
 To find per cent of barren stalks, count the whole number of barren and fruitful stalks present in a definite number of hills and divide the number representing the barren stalks by the number representing the whole number of stalks. Counts can be made in four or five places in the field and averaged.
 13. How harvested?.....
 14. How many acres harvested?.....
 15. Yield per acre, actual.....; estimated.....
 16. Yield per acre best other variety, actual.....; estimated
 17. Compare yield with home variety of corn if possible. The yield should be determined on the shelled corn basis, two bushels of ears being considered one bushel of corn.
 18. How many bushels of fire-dried corn in the ear will you have to sell for seed?.....
 Give brief description of what you think of the No. 12 corn.

EXPERIMENT NO. 3.

Treating Seed Oats to Prevent Smut.

Smut affecting oats is prevalent in all parts of this and adjoining states.

Method of Treating Seed Oats for the Prevention of Smut.—The method that has proven to be the most effective during the past nine years, and that now generally used by the farmers of the state, is the formaldehyde method. If the desire is to treat one hundred bushels of seed oats, purchase at least four pints of formaldehyde from your druggist, and make up the solution by pouring one pint of the formaldehyde into thirty-six gallons of water. Put the solution in barrels or in a tank and submerge the sacks of seed oats in the solution at least ten minutes. It is preferable to leave the sacks about two-thirds full as the solution will then come in contact with each individual grain. Raise the sacks of oats from the solution and let them drain for a minute or two, in order to save solution, and then empty on a threshing floor, platform, or on a canvas to dry. Do not spread out immediately, but let the oats remain in a heap for two hours after treating. If the wet sacks or a canvas is spread over the pile of oats after treating it will prevent the rapid escape of the formaldehyde gas and make the treatment more effective. After the expiration of two or three hours the oats may be spread out and shoveled over at intervals, to facilitate drying.

It is the desire of the Association to know the effectiveness of this treatment by many observers, and to publish determinations in the next annual report.

Where smut has been noticeable in the oats the previous year all seed should be treated to prevent a re-occurrence.

For the following experiment it will be necessary to treat about three bushels, sufficient to sow an acre, in accordance with plan outlined in its instructions.

Experiment.—1. Take three bushels, or the usual allowance for seeding one acre, that were threshed from a field that was worse affected with smut the past season, and treat as stated in directions.

If the experimenter has no oats, he probably can obtain some from a neighbor whose grain has been affected with oat smut.

2. Take the same quantity from the same lot of oats and do not treat.

3. Sow both quantities on adjoining plots of one acre each. Be sure to have a distinct separation from the plot sown with the oats treated and that on which the oats are not treated.

4. After the oats are headed take an ordinary barrel hoop and make several counts on the plot where oats were treated and on the plot where oats were not treated. This can be done by placing a hoop over the oats and counting all the heads within the circle and then note the number affected with smut thus getting data to determine the percentage.

REPORT BLANK, EXPERIMENT NO. 3.

Treating Seed Oats to Prevent Smut.

- Name of experimenter.....
- P. O.....; County.....; State.....
- 1. Did you treat oats according to directions?.....
- 2. How much treated for the experiment?.....
- Size of plot.....
- 3. How much was sown on experiment that was not treated?
- Size of plot.....
- 4. Did you treat your seed that was sown for general purposes?..
-
- 1. Date of sowing seed not treated.....
- 2. Date when smut was first noticeable.....
- 3. When were oats cut?.....
- 1. Date of sowing seed treated.....
- 2. Date when smut was first noticeable.....
- 3. When were oats cut?.....
- 5. Did you make several counts after the oats were headed using the hoop in the manner suggested?.....
- 6. What per cent of oats were affected with smut on plot where seeds were treated to prevent smut?.....
- 7. What per cent of oats were affected on plot where seed was not treated?
- 8. Per cent saved by treatment.....

The data obtained by counting the heads within the circle of a hoop that are affected and those not affected is a fairly accurate method of arriving at the percentage of oats affected with smut.

EXPERIMENT NO. 4.

Tests with Swedish Select Oats.

The Swedish Select oats (Wis. No. 4) through several years' tests have proven to be satisfactory on the high well drained lands and on the poorer grades of soil in Wisconsin. On rich loose prairie soils the oats are such rank growers that they often lodge. The desire is now to have them grown as extensively as possible by members of the Association so that the variety will be in reach of all farmers.

In order to be placed on the list of seed growers it will be necessary to comply with certain conditions:

1. All seed oats must be treated for the prevention of smut previous to sowing that were at all affected the year previous.

2. Must be sown on land that is free from Canada thistles, mustard or quack grass.

3. If possible a comparison with another variety of oats should be made.

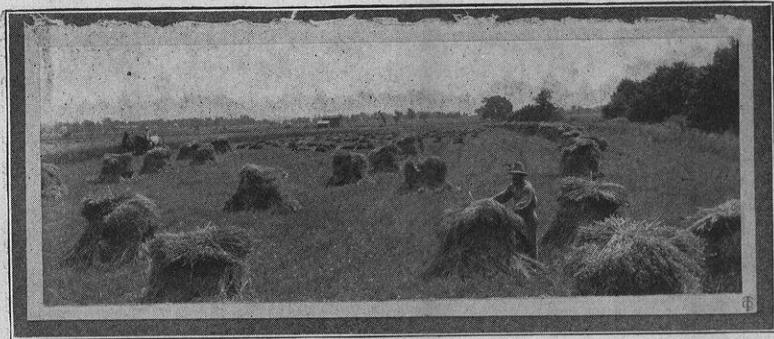
4. All oats shipped for seed purposes must be well cleaned with fanning mill or grain grader and have the following information on tag: Name of seedsman, purity of seed, foreign matter, germination of seed and obnoxious weed seeds.

5. A report must be sent to the Secretary immediately after threshing.

REPORT BLANK, EXPERIMENT NO. 4.

Swedish Select Oats.

- Name of experimenter.....
 P. O.....; County.....; State.....
 1. Date of sowing.....
 2. Amount of seed sown.....
 3. Amount of land covered (approximately).....
 4. Nature of soil?.....
 5. Fall or spring plowed?.....
 6. Sown with seeder or drill?.....
 7. Were heads of any other grain noticeable within the plot on
 which the oats were sown?.....
 8. Were they removed?.....
 9. Did the oats stand up well?.....
 10. Did you treat the seed for the prevention of smut?.....
 11. Did you notice any smut?.....



SWEDISH SELECT (WISCONSIN NO. 4) OATS ON THE LAMB DAIRY FARM.

Yield season of 1909, 65 bu. per acre.



LAMB DAIRY FARM.

Thiers and Campbell, Proprietors, Kenosha, Kenosha Co.

This farm of 206 acres is one of the finest in southeastern Wisconsin and is rapidly becoming noted for the production of pure bred seed grains. Odebrucker barley, Swedish Select oats and Silver King corn receive special attention. All grains raised that are not strictly high grade seed are fed upon the farm.

Dairying is the chief specialty and milk and cream are furnished the city of Kenosha from a high grade Guernsey herd.

Mr. Thiers has attended the College of Agriculture and is a member of the Experiment Association in which he takes a deep interest.



12. How much?.....
13. Was the ground on which oats were sown free from Canada
thistles, mustard and quack grass?.....
14. Did oats rust?.....
15. When were oats cut?.....
16. Yield per acre of Swedish Select oats.....
17. Yield per acre of any other variety of oats grown.....
18. How many of the Swedish oats on hand do you intend to sell for
seed oats?.....
19. Please give a brief description of what you think of the Swedish
Select oats.

BARLEY.

BREEDING OF THE WISCONSIN PEDIGREED VARIETIES.

The State of Wisconsin grows approximately thirty million bushels of barley annually, a part of which is sold upon the market as a ready money crop, either for feeding or malting purposes. Many varieties of barley of poor grade and quality have been grown by our farmers. The Experiment Station has put forth much effort to correct the evil wrought by growing so many scrub varieties of barley. This has been accomplished by disseminating the select strains of barley bred by the Station. The Oderbrucker and Manshury seemed to respond most readily to the attention given them and soon led other varieties in yield and other desirable characteristics. These two varieties are now most generally grown throughout Wisconsin, and constitute at least three-fourths of the barley crop. The Manshury barley (Wisconsin No. 62) was developed from the old Manshury formerly introduced by the College, but which had become mixed to such an extent that many of its most valuable characteristics had become almost extinct.

The Oderbrucker barley (Wisconsin No. 55) is an improved variety developed from seed secured from the Guelph, Ontario College in 1899. For stiffness of straw, plumpness and quality of kernel, little difference can be noted between the select Oderbrucker and the Manshury barleys but in a five year test in which over five hundred members of the Experiment Association took part, the Oderbrucker outyielded the Manshury five bushels per acre. Oderbrucker barley centres have been established and encouraged in the barley growing districts, so it is

now possible to find whole communities growing the Oderbrucker barley to the exclusion of other varieties. It is our earnest desire that freak barleys be discarded and the energy of our farmers concentrated on the growing of not more than two good varieties. Our farmers cannot afford to grow scrub barley any more than they can afford to breed scrub cattle, sheep or swine.

Pedigreed barleys.—In 1902 the Hays method of cereal breeding was adopted by the Agronomy department of this Station as being more exact and preferable to the selection method used prior to that date. Under the Hays system two thousand kernels or over of grain are taken from some select stock and planted with special machinery so that the kernels will be an equal distance apart. After careful study the grain from the best twenty plants is selected and put into envelopes, weighed and the ten heaviest retained as seed for the following year's crop. The second step is to take one hundred of the seeds retained from each envelope and plant in separate beds, known as centgener plots, each plot being planted from the progeny of a single seed of the previous year. The best heads are selected from the best plants of each centgener plot and are retained for the next year's centgeners. The work is repeated the next year, and the following year the best six centgener plots are selected and the seed saved for trial plots. One year in the trial plots may reduce the number of varieties to four or even less, to be continued in the increase plots until such time as sufficient seed is secured for dissemination.

EXPERIMENT NO. 5.

Test With Wisconsin Pedigree Barley.

The Wisconsin pedigree barleys were developed by twelve consecutive years breeding work put upon the Oderbrucker, Manshury, Golden Queen and Silver King, as foundation stock. The pedigree barleys are heavier yielders, more uniform in character and more perfect in development than the barleys from which they were bred. The Station and the Experiment Association are desirous of having these pedigreed strains of barley tested by a large number of members over a wide range of territory,

so as to determine if some strains are more suitable for Wisconsin conditions than others before a general distribution is made.

Every member receiving barley should be particular in recording the *pedigree number* so that no mistake will be made as to the identity of the barley when the time arrives to make the report.

Blanks for making the reports will be sent to the grower in due time.

REPORT BLANK, EXPERIMENT No. 5.

Pedigree Barley.

Wisconsin No. —

- Name of experimenter.....
 P. O.....; County.....; State.....
1. Date of sowing.....
 2. Amount of seed sown.....
 3. Amount of ground covered (approximately).....
 (As near as possible try to cover $\frac{3}{4}$ of an acre with seed obtained.)
 4. Try and compare with some other variety.
 5. Nature of soil?.....
 6. Fall or spring plowed?.....
 7. Sown with drill or seeder?.....
 8. Following what crop in rotation?.....
 9. Were heads of any other grain noticeable within the plot on which barley was sown?.....
 10. Were they removed?.....
 11. Did the barley stand up well?.....
 12. Was the ground on which the barley was sown free from Canada thistles, mustard, and quack grass?.....
 13. Did the barley rust?.....
 14. Was any smut noticeable?.....
 15. When was barley cut?.....
 16. Yield per acre of Pedigree Barley.....
 17. Yield per acre of any other variety of barley grown.....
 18. May we put you on the seed growers' list?.....
 19. Please give a brief description of what you think of the pedigree barley.

EXPERIMENT No. 6.

Soy Beans.

The soy bean was probably introduced into the United States from Japan about fifty years ago and has been cultivated with success in the southern states. In Japan and China it is used extensively as a human food, but in this country it is grown for the seed, as a forage plant, and a soil renovator. As a forage its use as a soiling crop is becoming recognized by stockmen and dairymen, as it withstands the drought exceptionally well and will give a good cutting of green forage at the time when other feeds are shriveled and wilted. Soy beans of the late variety gave a cutting of 9.9 tons green forage per acre at the Wisconsin Experiment Farm in 1900 and yielded thirty-eight bushels of seed per acre in 1902, and forty bushels per acre in 1903. It makes an excellent hay, and at the Kansas Station a yield of about three tons of cured hay per acre was secured.

Like the clover the soy bean is a nitrogen gatherer and enriches the soil on which it is grown. It is said to grow on soil quite low in fertility, but a mellow, fairly rich soil is preferable. It requires a well drained porous soil; in no case should the seed be sown on low ground that is saturated with water during most of the growing period or on a heavy clay soil that is inclined to bake.

When sown for hay or a soiling crop, a drill or broadcast seeder can be used to advantage. If sown for seed, use a corn or bean planter and sow in drills about thirty inches apart and about three inches apart in the drill. When planted in drills as described, two or three pecks of seed per acre should be used.

Soy beans should not be planted while the ground is cold; immediately after corn planting is a favorable time.

Sow in accordance with suggestions above given, for growing soy beans for seed, one-tenth of an acre.

When desired for hay, soy beans should be cut when the pods are partly developed. Try a few square rods sown broadcast for a soiling crop and for hay. When grown for seed they should be harvested and threshed as our common variety of beans and put into a large open bin and shoveled over frequently to prevent heating.

If you have a silo try soy beans with corn. Plant in drills with the corn planter using one-third soy beans and two-thirds corn mixed. When planting with corn for the silo use the Medium Green variety as this variety is noted for its great leaf development. No difficulty will be experienced cutting the soy beans with the corn harvester at the time of harvesting corn. For pasture, hay or seed the Ito San variety will give excellent satisfaction and will usually ripen before the fall frosts.

Secure a sack of bacteria-laden soil from the Experiment Station and scatter on a portion of the field that you desire to plant to soy beans, and note the development of nodules. The roots of the soy bean plants growing on that part of the field add much fertility to the soil. When a few square rods of ground are inoculated and soy beans are grown thereon, henceforth ground can always be secured from this source of supply to scatter on other fields where the desire is to have the nodules develop.

REPORT BLANK, EXPERIMENT No. 6.

Soy Beans.

- Name of experimenter.....
- P. O.....; County.....; State.....
- 1. Date of planting soy beans.....
- 2. Character of soil.....
- 3. What crop had been grown the previous year?.....
- 4. Was the land used, fall or spring plowed?.....
- 5. Give your method of planting.....
- 6. How long after planting were beans first noticeable?.....
- 7. Give your method of cultivation.....
- 8. Did you try a few square rods for forage?.....
- 9. How many pounds of green forage did you cut from a square rod?
- 10. How many pounds of cured hay did you get from a square rod?
- 11. Did the stock eat the green and cured forage readily?.....
- 12. What kind of stock did you feed it to?.....
- 13. Did the beans left for seed ripen evenly?.....
- 14. Date of harvesting?.....
- 15. Manner of harvesting?.....
- 16. Method of threshing.....
- 17. Yield per acre of marketable beans.....
- 18. Did you use any bacteria-laden soil for inoculation purposes?.....
- 19. Were nodules noticeable on the roots of the soy beans at any time during the growing period where such soil was used?....
- 20. Were they noticeable where the soil was not used?.....
- 21. Date of sending report.....
- 22. Give in a general way your opinion of soy beans as a seed and forage plant for Wisconsin.

EXPERIMENT No. 7.

Field Beans.

No one important crop receives so little attention in Wisconsin as field beans. Annually the U. S. imports over three million bushels from Bulgaria and Austria and we pay a duty of forty-five cents per bushel on the same. Why not raise the needed quantity of beans in Wisconsin? Our lighter soils are admirably adapted to bean raising, and if farmers would plant such soils to beans instead of trying to raise cereal crops, their net returns would be much greater.

Beans are a good money crop to put on the market as the price is generally above two dollars per bushel. With the up-to-date bean machinery and with the growing and planting of improved varieties there is no reason why Wisconsin should not lead all states in America in bean production.

REPORT BLANK, EXPERIMENT No. 7.

Field Beans.

- Name of experimenter.....
 P. O.....; County.....; State.....
1. Date of planting beans.....
 2. Nature of soil.....
 3. How prepared?.....
 4. How were the beans planted?.....
 5. How many times were the beans cultivated?.....
 6. How harvested and threshed?.....
 7. Were they in any way injured by insect enemies or fungus diseases?
 8. Yield in bushels, per acre.....

DIVISION OF AGRICULTURAL EXTENSION.

WHAT MEMBERS OF THE EXPERIMENT ASSOCIATION MAY DO TO AID AGRICULTURAL EXTENSION.

K. L. HATCH.

The members of this association are, in a way, pioneers in the extension movement. It is they who have co-operated so nobly with the Agronomy Department of this College in securing the dissemination of pure bred grains. It is they who have become leaders in their respective communities by demonstrating the value of improved methods of agriculture. It is they who have contributed largely to the effort that has raised Wisconsin to the highest rank among seed growing states. New opportunities are now open to them along three distinct lines.

In the first place they should become active in the organization of county orders of the Experiment Association. Each county should be organized for the further development of the pure-bred seed growing industry and "it's up to you" to do it. They should not confine their attention, however, to seed growing but should co-operate for the improvement of live stock by becoming active in the organization of breeders' associations.

The political and industrial world has made rapid strides in advance through organization and farmers should realize the fact that if they are to keep pace with this forward movement they too must organize. A club where farmers get together and talk over their problems should be found in every community. The club program should embody four features: a social feature, since man is essentially a social being and should not live to himself alone; a literary feature for the mutual improvement of the members along culture lines; a co-operative feature for the financial advantage that would accrue to the members by acting together—like buying or selling and obtaining wholesale rates or reducing expenses; and finally an educational feature so that after each meeting each member may feel himself a little better posted along the line of his own business.

Such a club in every farming community, meeting once or twice a month and carrying out successfully a program along the lines suggested, would have a great influence in uplifting agriculture, and the members of this association are the proper ones to take the initiative.

In the second place the members of this association may aid greatly in the movement to spread advanced agricultural knowledge through the medium of the public schools. This does not mean that immature girls in these schools are expected to teach your children how to farm. It does mean, however, that they are expected through their teaching of agriculture to emphasize its importance, to create a wholesome respect and love for farm life, and to check those influences which have been at work in the schools leading the best blood of the country away from the farm. If agriculture is not taught in your schools as the law provides, the members of this association should find out why. Is it too much for them to insist that no teacher should be employed until she has pledged herself to comply with the law in this respect?

The third thing which the members of this association may do to advance agriculture in their communities, and perhaps the one of most potent force and immediate results, is to secure for their counties an agricultural extension farmers' course. These courses are carried on as the law provides "at the county schools of agriculture and in other favorable localities." If your county has a school of agriculture you should co-operate with the principal in every possible way in making the annual Farmers' Course a success. You are the ones to get out a splendid show of fruit and vegetables and stock and grain. You may assist in advertising the meeting and securing the attendance of your less progressive neighbors, and upon you will devolve the work of organizing the farmers in such a way that the teachings of the course may be followed up with effective work.

Should there be no agricultural school in your county then by co-operating with the business men's association in the town where the Farmers' Course is to be held and enlisting the support of all members of the various farmers' organizations, it is possible for you to secure a Farmers' Course for your county even though it should have no agricultural school. The law quoted above specifies "other favorable localities" and if you can demonstrate to the satisfaction of the college authorities

that yours is a "favorable locality, then you, too, may secure a Farmers' Course.

It is easy to follow, but hard to lead. In becoming members of this organization you have assumed the duties and responsibilities of leadership. "Forward" is the watchword of this great state. The movement is forward. Then, members of this association—"Forward"—"March."

DIVISION OF AGRICULTURAL ENGINEERING.

C. A. COCK.

The past year an effort was made to determine in a degree the number of silos in the several counties of the state, also a general idea of the number of barns containing a system of ventilation which would offer a more sanitary milk supply.

It seemed highly important that this information be secured and furnished to the members of the society since it is an encouragement to others to note the advancement in the work of the Association. If all were to exert an effort in this furtherance of knowledge there would be much encouragement and inspiration for a greater work. Without assistance from all the members this work can not be carried on in a satisfactory manner, and it is earnestly hoped that further efforts in this work will be given more careful consideration and that results will be forth-coming with which the Association will be highly satisfied.

The reports received were very complete and those who spent their time in preparing these should be commended upon the excellent data furnished. The unsatisfactory part of securing such information is the fact that so few report after blanks have been sent to them. There were one thousand letters sent out with return envelopes. From these there were one hundred and seventy-five returned, with one hundred and sixty-one reporting. It can be readily seen that this is not a successful report. There were several counties into which these letters were sent which never gave a single report. These were counties of importance and should have given some excellent returns.

The high price of feed stuffs is creating a demand for the erection of silos, and since many farmers desire concrete silos this department is furnishing blue print plans showing how to build the forms. There are also illustrations showing how to reinforce the walls and to place the door frames, and any one in the Association wishing these plans may secure them by addressing a letter or card to the department, stating that he is a member of this Association.

BARN PLANS.

The past year has been one in which a large number of farm barns have been built, and from every indication the coming year will see a larger number constructed. In the planning and construction of a barn one should try to incorporate the most up-to-date principles. A large number of plans have been sent to members of this Association as well as to many others in the state. To those residing outside of the state, unless members or past members of the Association, we find it necessary to make a small charge in order to cover cost of printing and postage.

These barns are plank frame, one general plan being sent out known as the Model barn. They were designed to meet the needs of a farm of one hundred and twenty acres, but may be modified to meet the requirements of the farm on which they are built. Anyone interested should state the preference as to whether heads or tails together, as plans have been prepared for the position in which they wish the rows of cows to stand, both.

DIVISION OF AGRICULTURAL CHEMISTRY.

E. B. HART.

One of the functions of this department is to emphasize by lectures and demonstrations the best methods of conserving farm manure. The immense loss of plant food and the actual decrease in money value and crop returns which result from careless handling of manure is a factor in profitable, successful and continuous farming in Wisconsin. More attention should be given to the care of this product. Comparative experiments with manure exposed for three to four months of weather conditions and fresh manure should be made. A flat area of uniform soil and of about $\frac{3}{8}$ of an acre should be chosen and divided into three plots of equal size. It would be better to secure an area that has not received manure for some years and plans made to continue the experimental plots for at least six years, manuring every third year in the manner described. To one plot apply in December, one ton of fresh manure and spread uniformly. At the same time place one ton of the same manure in a loose pile in the open barn yard. This is left until just previous to seeding or spring plowing and then apply to plot 2. Plot 3 is left as a blank. If the manure is from several classes of farm animals it should be well mixed in order that both applications are of the same character. Plots 60 x 90.7 feet have an area of $\frac{1}{8}$ of an acre.

REPORT BLANK.

Name of Experimenter.....
 Post Office
 County
 State
 Date

1. Size of experimental plot.....
2. Kind of soil, clay, loam, sand or peat.....
3. Is plot flat or rolling?
4. When were plots last manured?
5. What crops were harvested for the past five years?
6. What were the return from such crops?
7. Date of application of above parcels of manure.....
8. Kind of feed given animals at the time manure was collected and from what animals?
9. Applied as top dressing or plowed under.....
10. Weather conditions during exposure of manure.....
11. Yield of plots in pounds of straw, grain, hay, roots, as case may be

CORN CURING HOUSE.

HENRY MICHELS, Malone.

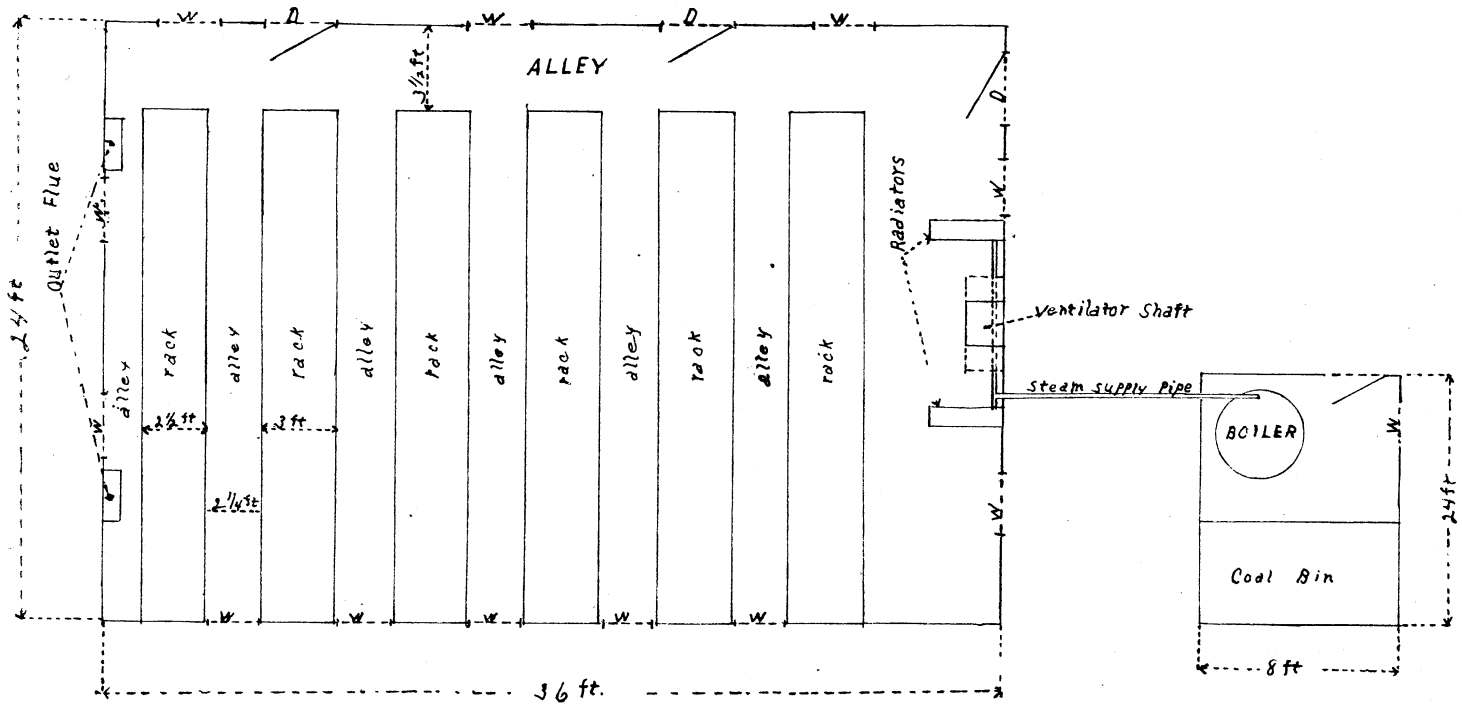
General description.—The three important things which were taken into consideration in planning this building were:

1. Ventilation.
2. Heat.
3. Convenience.

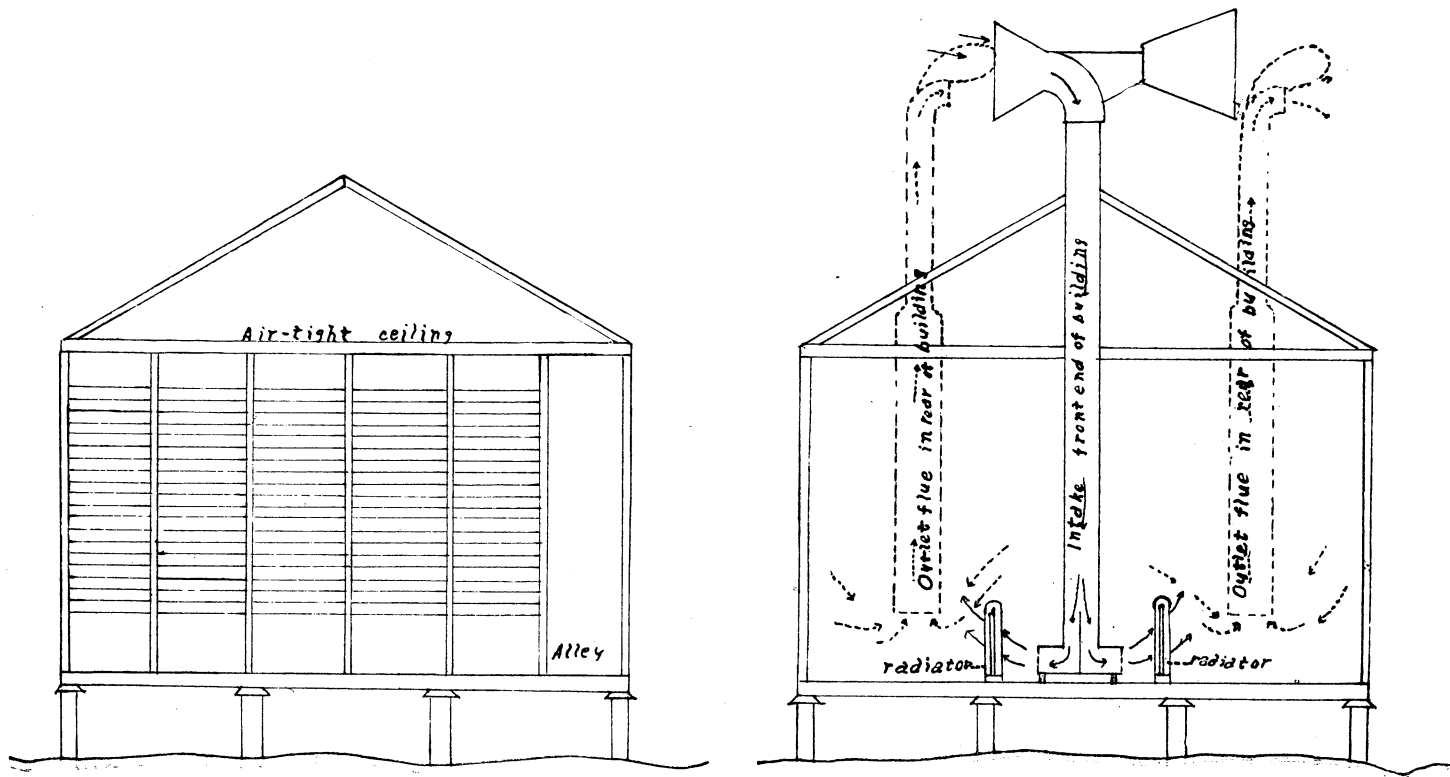
The first is secured by means of windows and ventilators. Twelve windows and three doors allow a very free circulation of air through the entire building to partly dry the corn before artificial heat is used. After the corn has been on the racks a week or 10 days all doors and windows are closed and the airtight construction of the building absolutely prevents the entry or exit of any air excepting through the ventilators especially constructed for this purpose. This results in a forced ventilation by means of which all air is heated by passing through the radiators before it can come in contact with the corn. Also no air can escape until it has passed through the corn and received its load of moisture.

The principle involved in securing the proper circulation is explained as follows: The large intake above the roof always faces the wind so there is always a strong current passing through it. This is forced through the flue to the floor of the building where the partition divides it into two currents going in opposite directions. Each is warmed by being forced through the steam radiators. Warm air tends to rise so the heated air will rise up through the corn and be carried back toward the rear of the building by the pressure of the fresh air being forced in. As the air nears the rear of the building it takes up more moisture, becomes heavier and sinks again through the corn taking up still more moisture as it descends. As it reaches the openings of the outlet flues which are in the rear of the building and 3 feet above the floor, the moisture-laden air is forced out by two forces, viz:—

1. The pressure of the fresh air coming in at the intake.
2. The suction of the warm air rising through the outlet flue into the free air. This suction is the same as that which pro-



SEED CORN CURING HOUSE.



SEED CORN CURING HOUSE.

duces a current in the outlet flue for the King system of ventilation which is almost universally used in stables.

The heating plant is located 8 feet from the main building. It contains a vertical steam boiler and a coal bin with a capacity of six tons.

The walls of the main building are double boarded with paper between, both boards being on the outside of the studding, leaving no hollow spaces to harbor mice.

The advantages of this building over the old type are as follows:

1. No matter what the direction of the wind there is always a circulation and its course is through the radiators and then through the corn. A back current is impossible.

2. The racks are of such construction that every ear is exposed to the drying currents. There are 20 racks placed one above the other, made by stretching, horizontally, 3-foot poultry netting between the rows of studding. They are six inches apart vertically, and each holds two layers of corn, leaving a space of about 2½ inches between the racks when loaded.

3. Steam heat is used. This is fully as dry as stove heat. The radiators made of flattened pipes present a much larger radiating surface than a stove. It is much safer and more convenient than stove heat as no fire is needed in the main building. This does away with the danger from sparks falling upon the floors and igniting husks or silks of corn which are always lying about.

4. Every part of the racks is at all times easily accessible.

5. The building is supported by concrete posts, capped by inverted tin pans, which exclude mice. The entrance is by steps which hinge on the building, and, when not in use, are turned up against the building affording no means by which mice can enter.

The drying capacity of this kiln is 1,500 bushels of ear corn.

WISCONSIN SEED GRAIN GROWERS 1910.

Members of the Experiment Association are rapidly becoming the seed growers of the state, and by systematic selection of seed and care in culture and curing of the crop, produce a fine grade of pure-bred seed grains. These seed grains are sold by the producers either in small or large quantities, at reasonable rates.

Growers of Swedish Select Oats (Wisconsin No. 4).

<p style="text-align: center;">Barron County</p> <p>Bilderbach, W. T.....Chetek Chrislaw, A. M.....Rice Lake Heldstab, C. O.....Rice Lake Poulter, C. J.....Cumberland</p> <p style="text-align: center;">Bayfield County</p> <p>Johnson, L. M.....Ashland Tomkins, O. Scott....Ashland, R. 2</p> <p style="text-align: center;">Brown County</p> <p>Nies, Peter.....Greenleaf, R. 3 Roeckel, Joseph P.....Lark</p> <p style="text-align: center;">Buffalo County</p> <p>Joos, Frank B.....Fountain City Mueleisen, Gottlieb.....Tell Spaulding, L. C.....Mondovi Suhr, A. A.....Cochrane</p> <p style="text-align: center;">Calumet County</p> <p>Peterson, H. N.....New Holstein</p> <p style="text-align: center;">Chippewa County</p> <p>Christianson, W. O..... Chippewa Falls, R. 6 Guptill, L. R.....New Auburn Kramer, H. F.....Bloomer Lebeis, F. J.....Bloomer Martiny, L. P.....Chippewa Falls</p>	<p style="text-align: center;">Clark County</p> <p>Zerbel, Paul.....Humbird</p> <p style="text-align: center;">Columbia County</p> <p>Chipman, W. R.....Morrisonville Ellickson, A. C.....Arlington Gloeckler, Theo.....Portage Lloyd, Evan B.....Cambria</p> <p style="text-align: center;">Crawford County</p> <p>Accola, Lawrence.....Steuben</p> <p style="text-align: center;">Dane County</p> <p>Beck, J. D.....Madison Benson, Ed.....Mt. Horeb Chatterton, R. W.....Basco Daley, E. S.....De Forest Dreger, Emil.....Deerfield Hopkins, B. F.....Morrisonville Hopkins, J. W.....Morrisonville Kaltenberg, Anthony....Waunakee Mikkelson, Carl.....Deerfield Mitchell, Geo.....Cottage Grove Mitchell, J. ....Cottage Grove Renk Bros.....Sun Prairie Thorstad, N. H.....Deerfield Toepfer, Otto.....Madison, R. 7 Wernich, Wm. H.....De Forest</p>
--	--

Dodge County

Bussewitz, W. E.....Juneau
 Ehrhardt, Daniel.....Knowles
 Goetsch, Albert A.....Juneau
 Grebe, F. P.....Fox Lake
 Jones, John G....Beaver Dam, R. 4
 Howitt, Chas. H.....Randolph
 Jones, John G.....Beaver Dam
 Jones, Owen R., Jr....Beaver Dam
 Jung, J. W.....Randolph
 Krueger, H. E.....Beaver Dam
 Lehmann, Mrs. A. W....Woodland
 Miller, A. H.....Waupun
 Owens, H. C.....Fox Lake
 Schiller, Claude E....Beaver Dam
 Schumann, Hugo.....Beaver Dam
 Steiner, W. H.....Brownsville

Door County

Antholt, Chas.....Brussels
 Boucsein, Gust L....Detroit Harbor
 Erickson, Ole C....Detroit Harbor
 Sullivan, Jas.....Forestville

Douglas County

Lindberg, E. J.....Itasca

Dunn County

Kent, H. W.....Rusk
 Millar, Will.....Menomonie

Eau Claire County

Donaldson, H. A...Eau Claire, R. 6
 Mayo, John H., Jr....Eau Claire
 Russel, A. C.....Augusta
 Wright, W. C.....Eau Claire

Fond du Lac County

Bonzelet, J. P.....Eden
 Briggs, L. W.....Peebles
 Briggs, J. W.....Peebles
 Carpenter, L. A.....Fond du Lac
 Hargrave, Robert L.....Ripon
 Hinz, A. F.....Ripon
 Hintz, William F...Oakfield, R. 26
 Kuehn, Chas. A.....Brandon
 Mathews, Lee G.....Brandon
 Meekin, H. W.....Fond du Lac
 Stroup, Fred G.....Fond du Lac
 West, R. N.....Ripon
 Whittaker, Horace E..Fond du Lac

Grant County

Barron, R. E.....Platteville
 Booth, Guy A.....Cuba City
 Searles, Wm. L.....Boscobel
 Wiseman, Paul.....Bridgeport

Green County

Biglow, L. F.....Brooklyn
 Dettwiler, John.....Monroe
 Marty, Matthias.....Monticello
 Smith, H. B.....Brooklyn
 Thorp, Eugene B.....Monroe

Iowa County

Gordon, A. L.....Mineral Point
 Gordon, C. D.....Mineral Point
 Gordon, J. Roy.....Mineral Point
 Jones, Owen Lloyd.....Hillside

Jackson County

Dettinger, Wm. F.....Hixton
 Engleman, John.....Hixton
 Thompson, Adolph, Blk. River Falls

Jefferson County

Anthes, Henry.....Jefferson
 Bell, William C.....
Oconomowoc, R. 27
 Brueckner, Justus....Ft. Atkinson
 Church, A. P.....Whitewater
 Guttenberg, Frank, Jr....Jefferson
 Klement, Otto C....Fort Atkinson
 Leonard, W. R.....Jefferson

Juneau County

Wagner, J. M.....Union Center

Kenosha County

Achen, Wm.....Bristol
 Bradley, J. Frank.....Somers
 Brook, J. W.....Salem
 Myrick, Mead O.....Bristol
 Orvis, L. C.....Salem
 Roberts, F. W.....Woodworth

Kewaunee County

Katel, W. C.....Kewaunee, R. 1
 Oestreich, R. C.....Kewaunee
 Smithwick, Jas.....Kewaunee

La Crosse County

Griswold, H. W.....West Salem
 Hemker, F. H.....West Salem
 Jones, E. E.....Rockland
 Nuttleman, Alfred....West Salem
 Nuttleman, Adolph....West Salem
 Sandman, W. D.....Holmen

La Fayette County

Bridgman, C. R.....Darlington
 Stewart, J. W.....Blanchardville
 Vinger, Milo J.....Argyle

Lincoln County

Lewerenz, Roy B.....Tomahawk

Manitowoc County

Clusen, Reinhold.....Manitowoc
 Garey, James.....Grimms
 Klann, Adolph.....Hayton, R. 1
 Roethel, Herman.....Kiel
 Strowig, Wm. A.....Cleveland R. 1
 Sullivan, James A.....Grimms
 Weigand, Otto R.....Cleveland

Marathon County

Ashbremer, H. H.....Stratford
 Baesemann, Otto.....Edgar
 Heinke, Alvin.....Stratford

Marinette County

Falarsh, Frank.....Peshtigo
 Olson, Otto W.....Walsh

Marquette County

Houslet, Neal.....Packwaukee

Milwaukee County

Basse, Wm. H.....
Milwaukee, St. A. R. 4
 Butler, Ed...No. Milwaukee, R. 11
 Pierner, Fred.....No. Milwaukee

Monroe County

Ebert, Edmund D.....Tomah
 Ebert, Francis E.....Tomah
 Fox, C. L.....Leon
 Freeman, G. A.....Sparta
 Harris, R. E.....Warrens
 Howell, H. P.....Sparta
 Leverich, J. W.....Sparta

Outagamie County

Letts, Edw. F.....Appleton, R. 4
 Merkel, Henry.....Appleton
 Mueller, Edw. O.....Appleton
 Ryan, Malachi.....So. Kaukauna
 Wussow, Chas. A.....Seymour
 Zahrt, F. H.....Hortonville

Ozaukee County

Clausing, Adolph.....Thiensville
 Kieffer, Mike.....Fredonia
 Kohlwey, Otto.....Grafton
 Pierner, John W.....Thiensville
 Wulff, Wm.....Grafton

Polk County

Gullickson, Chas. E.....Cushing
 Nelson, Peter C.....Milltown
 Peterson, Eri.....Amery

Portage County

Hanson, N. P...Amherst Jct., R. 2
 Smith, Casper A.....Amherst

Racine County

Wilson, Wm. C.....Union Grove
 Holloway, John W.....Racine R. 1
 Klofanda, Reuben.....Burlington

Richland County

Ghastin, Floyd.....Twin Bluffs
 Ghastin, Wm. J.....Twin Bluffs
 Post, H. L.....Sextonville
 Turgasen, J. H...Richland Center

Rock County

Austin, A. G.....Janesville, R. 6
 Devine, C. B.....Evansville
 Hoague, Chas. C.....Janesville, R. 7
 Howe, Louis H.....Brodhead
 Smith, L. E.....Beloit

Rusk County

Beebe, A. G.....Bruce
 Pritchard, John T.....Flambeau

St. Croix County

Brunner, R. W.....Hudson
 Imholt, B. A.....Houlton
 Paulson, P. A.....Hudson

Sauk County

Accola, John.....Prairie du Sac
 Capener, W. R.....Baraboo
 Clavadatscher, Tobias...Sauk City
 Frederickson, Fred...Spring Green
 Gallagher, J. F.....Reedsburg
 Riek, Anthony.....Plain
 Toole, W. A.....Baraboo
 Volz, Robert.....Ableman

Shawano County

Berg, C. J. Tigerton
 Kløvdahl, John J. Wittenberg
 Norrborm, G. C. Eland
 Wedgewood, A. E. Shawano

Sheboygan County

Dennerlein, Arthur J. Plymouth
 Eastman, F. A. Sheboygan Falls
 Frauenheim, O. R. Random Lake
 Illian, W. L. Adell, R. 19
 Parrish, J. O. Plymouth
 Wagner, Arthur L. Haven

Trempealeau County

Hegge, E. A. Pigeon Falls
 Mattison, Thos. Blair
 McCauley, Rex. Osseo

Vernon County

Aberg, Jacob. De Soto
 Cass, Leonard E. Viroqua
 Olson, G. E. Westby
 Sebion, Cornelius. Westby
 Sebion, Tennis. Westby

Walworth County

Anderson, Alvin M. Whitewater
 Coburn, Ora. Whitewater
 Dunbar, Harry D. Elkhorn
 Meurer, Paul. Genoa Jct.
 Ranney, P. C. Elkhorn
 Warmington, Prentice.
 Honey Creek

Washington County

Gruhle, W. H. Barton
 Puls, John. Hartford
 Schultz, N. F. West Bend

Waukesha County

Bartlett, Geo. W.
 Menomonee Falls
 Burton, Roy. Eagle, R. 35
 Jones, Albert. Dousman
 Kaul, E. H. Waukesha, R. 7
 Rosenow Bros. Oconomowoc

Rust, S. H. Mukwonago
 Schafer, Chas. H. Waukesha, R. 7
 Schroeder, F. C. Hartland
 Spaulding, C. E. Oconomowoc
 Swoboda, F. G. Dousman
 Van Buren, E. W.
 Waukesha, R. 2
 Williams, Arthur R. Waukesha
 Williams, D. T. Waukesha, R. 8
 Wright, H. W. Waukesha

Waupaca County

Feathers, O. C. Manawa
 Kneip, William. Weyauwega
 Larson, LeRoy. Iola
 Pinkerton, A. J. Waupaca
 Pirner, Fred. Sugar Bush

Waushara County

Clark, J. J. Berlin, R. 1

Winnebago County

Blakely, Albert J. Neenah
 Blodgett, Gordon R. Neenah
 Miller, Henry C. Allenville
 Schaefer, R. J. Appleton
 Smith, Seymour. Oshkosh
 Wood, Calvin. Oshkosh, R. 4

Wood County

Kieffer, J. C. Auburndale

NON-RESIDENTS

Illinois

Hitchcock, H. R. Pecatonica
 Phillips, Jesse. Elizabeth

Iowa

Thompson, Thos., Jr. Wadena

Michigan

Meyer, A. J. Howell, R. 7

New York

Mills, Stanley. Walden

Growers of Pedigree Barley (Wisconsin Pedigree Barley).**Adams County**

Johnson, Billie....Strongs Prairie
Mikkelson, Wm. J.....Arkdale
Walker, Ray C.....Plainville

Ashland County

Hodan, A. B.....Friendship
Johnson, L. M.....Ashland

Barron County

Anderson, Thos. E....Chetek, R. 1
Chrislaw, A. M.....Rice Lake
Howe, John O.....Comstock
Jorstad, Ed.....Cameron
LeJeune, Ernest....Rice Lake, R. 2
Olson, Nalvin A.....Chetek
Otterholt, Henry.....Chetek
Plenty, Robert.....Rice Lake
Rauchenstein, Emil....Rice Lake
Rauchenstein, John....Rice Lake
Sackett, Clyde M.....Cumberland
Svacina, Jacob Jr.....Rice Lake

Bayfield County

Nelson, John A.....Port Wing

Brown County

Anderson, Alfred....Denmark R. 2
Dillon, Austin.....DePere
Dillon, James.....DePere
Kersten, Leo M.....DePere
Nulloy, John B.....Wayside
Nies, Peter.....Greenleaf, R. 3
Roffers, John H....Green Bay R. 7

Buffalo County

Arms, Edward.....Fountain City
Bilderbach, W. T.....Mondovi
Engel, George.....Fountain City
Fetting, Elmer.....Cochrane
Fetting, Romeo.....Cochrane
Haigh, Gerhard.....Cream
Jahn, Chas.....Cream
Kaste, Alfred H.....Cream
Kaste, Chas.....Cream
Kennedy, Bernard.....Nelson
Kennedy, Larry.....Nelson
Krampeter, Frank H., Mondovi, R. 3
Loesel, Wm.....Cream
Muehleisen, Gottlieb.....Tell

Noll, Louis.....Alma
Quale, John H.....Mondovi
Reinhardt, R. F.....Nelson
Reinhardt, Chas. F.....Nelson
Suhr, A. A.....Cochrane
Suhr, Otto A.....Cochrane
Wendt, Reinhold.....Cream

Burnett County

Peterson, Conrad T....Grantsburg
Rylander, Ed.....Shell Lake

Calumet County

Christoph, Theo F.....Chilton
Koehler, John P.....Hayton
Sevenich, Tony.....Hilbert
Tagge, Herman.....New Holstein

Chippewa County

Bekken, Oscar.....Bloomer
Christiansen, W. O., Chippewa Falls
Emerson, O. R....Chippewa Falls
Finsnes, A. I.....Chippewa Falls
Harrison, Geo.....Chippewa Falls
Herr, John G.....Stanley
King, Wm. T.....Jim Falls
Lebeis, F. J.....Bloomer
Martiny, L. P.....Chippewa Falls
Siepert, F. W.....Chippewa Falls

Clark County

Beyreis, C. E.....Dorchester
Buddenhagen, Elmer E..Neillsville
Dallenbach, Chris.....Abbotsford
Hegge, Julius.....Galesville
Huckstead, A. A.....Neillsville
Korth, Leo R.....Neillsville
Krause, Wm. H.....Thorpe
Nelson, Carl A.....Greenwood
Portz, Herman.....Chili
Rued, Axel.....Curtiss
Steuerwald, Walter.....Loyal
Zerbel, Paul.....Humbird

Columbia County

Anderson, Adolph W....Portage
Anoker, B.....Portage
Bancroft, Benj. T.....Rio
Bradley, Roy.....Randolph
Brereton, Hugh H.....Lodi
Brereton, Thomas D.....Lodi

Capener, Howard H.....Portage
 Carncross, J. E.....Okee
 Chipman, W. R.....Morrisonville
 Chrisler, Elmer A.....Lodi, R. 4
 Chrisler, Elvin A.....Lodi, R. 1
 Chrisler, Harley E.....Lodi
 Church, W. H.....Lodi
 Ellickson, A. C.....Arlington
 Gloeckler, Louis P.....Portage
 Grove, Christian.....Columbus, R. 6
 Lintner, Sam.....Arlington
 Lloyd, Evan B.....Cambria
 Morse, Albert.....Kilbourn
 O'Connor, Edward F.....Lodi, R. 1
 Owen, Roger A.....Portage, R. 2
 Richards, W. M.....Lodi
 Sharpee, Alfred B.....Rio
 Sharpee, Carl S.....Columbus
 Sharpee, Endre A.....Rio, R. 1, Bx 34
 Sharpee, Johannes A.....Rio
 Verbeck, C. W.....Lodi

Crawford County

Accola, Lawrence.....Steuben
 Bohonek, John.....Prairie du Chien
 Brodt, Clarence D.....Bridgeport
 Hjelle, Ole K.....Soldiers Grove
 Johnson, E. T.....Soldiers Grove
 Johnson, J. E.....Ferryville
 Lintz, Willis.....Gays Mills

Dane County

Anderson, H. C.....Cambridge
 Anderson, Lewis.....Morrisonville
 Angvick, Lars.....Cottage Grove
 Anthony, David C.....Oregon
 Barton, C. R.....Mt. Horeb
 Bayles, Rollo.....Dane
 Beck, J. D.....Madison
 Bergum, Albert P.....De Forest
 Bergum, Andrew.....De Forest
 Bergum, P. B.....De Forest
 Bewick, W. M.....Sun Prairie
 Bewick, Wm. W.....Madison
 Bollig, F. A.....Black Earth
 Brickson, A. C.....McFarland
 Brickson, Andrew.....Cottage Grove
 Brereton, Lawson.....Dane
 Brigham, Chas. I.....Blue Mounds
 Britzke, Paul.....London
 Brue, N. H.....De Forest
 Chase, J. P.....Sun Prairie
 Coldwell, John.....Mazomanie
 Colladay, C. M.....Stoughton
 Colladay, W. E.....McFarland
 Daley, Thos.....McFarland
 Damler, Walter F.....Sun Prairie
 Davidson, W. L.....Verona

Davison, R. W.....Sun Prairie
 Deneen, Michael.....Blue Mounds
 Derke, Adolph.....Madison, R. 2
 Derr, Gilbert.....Columbus
 Dreger, Emil L.....Madison, R. 6
 Elver, E. C.....McFarland
 Fisher, Wm. G.....Middleton
 Foll, Walter.....Deerfield
 Ford, J. F.....Mazomanie
 Gest, Chas.....Windsor
 Gillette, Rufus.....Verona
 Gillies, J. H.....Stoughton
 Grady, Geo.....Oregon
 Grove, Albert.....Columbus, R. 6
 Guitzkow, Arthur.....Madison, R. 3
 Hanna, Oliver O.....Mt. Horeb
 Hill, Otto C.....Mt. Horeb
 Hofmann, Carlie.....Mendota
 Holscher, A. C.....Cottage Grove
 Hopkins, B. F.....Morrisonville
 Hopkins, J. W.....Morrisonville
 Hougan, O. O.....Stoughton
 Jones, E. F.....Sun Prairie
 Kaltenberg, Anthony.....Waunakee
 Kaltenberg, Jacob.....Waunakee
 Kaltenberg, Joseph.....Waunakee
 Kaltenberg, P.....Waunakee
 Keenan, Wm. M., Jr.....McFarland
 Kendell, Geo. W.....Sun Prairie
 Kittleson, K. T.....Mt. Horeb
 Kittleson, Knudt.....Mt. Horeb
 Kittleson, Wm.....Mt. Horeb
 Koltas, Jos. F.....Dane
 Lee, Lewis Johnson.....De Forest
 Lee, Oliver.....Klevenville
 Lee, Peter A. G.....Deerfield
 Lukken, Amil.....Cambridge
 McConnell, Oren S.....McFarland
 Maeder, J. W.....Oregon
 Mielke, F. D.....Windsor
 Mielke, J. E.....Basco
 Mitchell, Geo.....Cottage Grove
 Mitchell, J. T.....Cottage Grove
 Nellen, P. J.....De Forest
 Nicholls, Harry G.....Stoughton
 Nordlie, Alfred.....Deerfield
 Norsman, Jerome O., Madison, R. D.
 Pierstorff, H. H.....Madison
 Pope, R. W.....Sun Prairie
 Radamacher, John.....Middleton
 Raftery, Agnes.....Windsor
 Reindahl, A. K.....Madison
 Renk, Wm. F.....Sun Prairie
 Ruhrmann, B. J.....Cross Plains
 Ruste, C. O.....Blue Mounds
 Ryan, Gerald.....Sun Prairie
 Sager, Milo.....Deerfield
 Sharpee, P. A.....Morrisonville
 Skalas, Herman.....Deerfield
 Sime, J. O.....Stoughton

Strommen, Geo. K.....Cambridge
 Tenjum, A. A.....De Forest
 Thielke, Emil.....Madison
 Thompson, Melvin.....Mt. Horeb
 Tjugum, E. E.....Sun Prairie
 Toepfer, Otto F.....Madison
 Tverberg, Alf.....Stoughton
 Veium, Even.....Stoughton
 Vetter, Carl.....Madison, R. 3
 Vetter, John.....Madison, R. 3
 Vroman, H. E.....Verona
 Wernick, Wm. H.....De Forest
 Willmarth, E. E.....Sun Prairie
 Woodward, John L.....Madison

Dodge County

Adams, Lester B.....Lowell
 Barstow, Jas. E.....Randolph
 Bohl, Anton.....Beaver Dam
 Bremer, Felix E.....Hustisford
 Bussewitz, Orla J.....Juneau
 Bussewitz, Raymond H. Reeseville
 Bussewitz, W. E.....Juneau
 Coulter, Harry S.....Randolph
 Dieckhoff, John.....Randolph
 Gilmore, Everett H.....Randolph
 Goetsch, A. A.....Juneau
 Grebe, Fred P.....Fox Lake
 Gunderson, Forrest D. Oconomowoc
 Henke, Louis.....Lowell
 Howitt, Chas. H.....Randolph
 Hutchinson, Wm. D.....Rubicon
 Indermuehle, Felix A. Beaver Dam
 Jones, Arthur.....Randolph
 Jones, John G. Beaver Dam, R. 4
 Jones, Owen R.....Beaver Dam
 Jung, A. E.....Randolph
 Kings, Benj. J.....Reedsville
 Krueger, H. E.....Beaver Dam
 Kuhlman, Arthur H.....Lowell
 Kuhlman, Fred.....Lowell
 Mahoney, David.....Juneau
 Neuberger, Wm. T.....Reeseville
 Owens, H. C.....Fox Lake
 Rex, Edgar H.....Beaver Dam
 Roberts, Wm. E.....Randolph
 Schiller, Claude E. Beaver Dam
 Schumann, Hugo W. Beaver Dam
 Sette, O. E.....Juneau
 Steiner, W. H.....Brownsville
 Young, Rudolph T. Beaver Dam
 Ziemann, Ernest F. Beaver Dam

Door County

Delcorps, Louis.....Sturgeon Bay
 Dreutzer, C. B.....Sturgeon Bay
 McKernan, R.....Sturgeon Bay
 Larson, Eli.....Sawyer

Madoche, Leo J.....Sawyer
 Mueller, Rudolph.....Forestville

Dunn County

Chase, A.....Knapp
 Cramer, Joe.....Menomonie
 Gerking, F. J.....Elk Mound
 Hageseth, Frank.....Menomonie
 Kent, J. S. and H. W.....Rusk
 Knapton, W. E.....Downing
 Sampson, August.....Menomonie
 Stevens, Ernest A.....Eau Galle

Eau Claire County

Burce, Ruth E.....Eau Claire
 Carlson, A. T.....Augusta
 Donaldson, H. A.....Eau Claire
 Faast, Ben. F.....Eau Claire
 Koll, C. A.....Eau Claire
 Konz, John, Jr.....Fairchild, R. 2
 McDermid, G. A.....Eau Claire
 Schield, John.....Fall Creek

Fond du Lac County

Adams, A. E.....Eden
 Adams, Richard F. Campbellsport
 Atwood, P. W.....Waupun
 Beilke, Walter.....Fairwater
 Block, A. F.....Brandon
 Bonzelet, J. P.....Eden
 Briggs, E. T.....Fond du Lac
 Briggs, Lynn W.....Peebles
 Briggs, J. W.....Peebles
 Donovan, Frank.....Van Dyne
 Hargrave, Robert.....Ripon
 Hintz, George E. Oakfield, R. 26
 Hinz, A. F.....Ripon
 Hoard, Harry H.....Waupun
 Koenigs, Phillip.....Fond du Lac
 Kuehn, Chas. A.....Brandon
 Lehman, Edwin.....Ripon
 Leith, Ray H. Van Dyne, R. 9
 Lother, O. A.....Waupun
 Mathews, L. G.....Brandon
 Maug, Arthur J.....Ripon
 Meier, Edward F.....Eden, R. 36
 Michels, Henry.....Malone
 Michels, Math.....Peebles
 Mihills, D. R.....Fond du Lac
 Mihills, G. N.....Fond du Lac
 Miller, Arthur.....Waupun
 Miller, A. H.....Waupun
 Miritz, O. F.....Fond du Lac
 Nolan, J. H.....Eldorado
 Northrup, J.....Waupun
 O'Hearn, Dennis.....Eldorado
 Oleson, James P.....Ripon

Patrick, Ed. H.....Waupun
 Patrick, Robert.....Waupun
 Pattee, Drew J.....Waupun
 Pattee, John R.....Waupun
 Peters, Hubert.....Calvary
 Randall, S. M.....Waupun
 Rather, Armand.....Peebles, R. 37
 Rieman, Elmer W.....Ripon
 Ruesink, H. G.....Waupun
 Sattler, James H.....Rosendale
 Sheldon, Ben F.....Brandon
 Smith, Almer J.....Brandon
 Smith, Harvey G.....Brandon
 Smith, Samuel A.....Oakfield
 West, H. P.....Ripon
 West, Ray N.....Ripon
 Whitney, R. A.....Eldorado

Forest County

Grandine, Lester D..North Crandon
 Grandine, Morton D. North Crandon

Grant County

Barnes, R. E.....Boscobel
 Barron, R. E.....Platteville
 Booth, Guy A.....Cuba City
 Booth, Lester.....Cuba City
 Carmody, Daniel.....Mt. Ida
 Carmody, P. J.....Mt. Ida
 Cull, James, Jr.....Mt. Hope
 Dieter, Bert.....Montfort
 Dieter, Wm. A.....Montfort
 DiVall, W. F.....Montfort
 Edwards, Elliot.....Glen Haven
 Groom, Harvey L....Cassville, R. 1
 Kaiser, Wm. S.....Cuba City
 Keating, P. H.....Mt. Hope
 Nagle, Lee.....Bridgeport
 Niemer, Frank.....Cassville, R. 1
 Orr, Lea B.....Bagley
 Patten, W. H.....Boscobel
 Preston, Geo. M.....Montfort
 Ralph, Will H.....Cuba City
 Runde, Albert.....Hazel Green
 Runde, Aloysius.....Cuba City
 Simmons, Will.....Cuba City
 Spink, L. O.....Platteville, R. 10
 Steinhoff, W. J.....Platteville
 Stivarius, Geo. A.....Fennimore
 Trewartha, Edw. J....Hazel Green
 Wayne, Joseph.....Boscobel

Green County

Anderson, A. T.....Monroe
 Austin, Elmer E.....Brodhead
 Barker, W. H.....Brodhead
 Bechtolt, A. B.....Browntown

Bechtolt, J. D.....Browntown
 Biglow, L. F.....Brooklyn
 Burt, Charley.....Brodhead
 Cornelius, E. C.....Monroe
 Dettwiler, John.....Monroe
 Douglas, Robert J.....Juda
 Doyle, W. E.....Brodhead
 Gapen, Frank Wm.....Monroe
 Gardner, Harry.....
 ..Monroe, care E. C. Cornelius
 Geigel, John.....Monroe
 Gwynne, Sam.....Brodhead
 Klassy, Henry.....Monroe
 Klassy, Henry C.....Monticello
 Klassy, Wm. E.....Monticello
 Legler, L. G.....Juda
 Mau, H. G.....Brodhead
 Niffenegger, J. Talmage...Monroe
 Ritschard, Emil...Monticello, R. D.
 Ritschard, Fred.....Monroe
 Silver, C. R.....Belleville
 Simmons, Geo. W., Jr....Monroe
 Thorp, Eugene B.....Monroe, R. 6
 Tochterman, C., Jr.....Monroe
 Trumpy, Fred.....Clarno
 Willis, A. W.....Brodhead
 Wood, H. D.....Brodhead

Green Lake County

Davies, Elias.....Markesan
 Kutchin, Victor.....Green Lake
 Page, G. F.....Berlin
 Vine, Callice H.....Markesan

Iowa County

Anderson, Louis H.....Highland
 Aavang, H. O.....Barneveld
 Church, W. H.....Lodi
 Convey, Thos.....Ridgeway
 Davies, Llewellyn...Mineral Point
 Farwell, R. R.....Ridgeway
 Hanson, Carl O.....Hollandale
 Harker, Irving.....Dodgeville
 Harker, John J.....Linden
 Ley, Nicholas.....Dodgeville
 Ley, Peter.....Dodgeville
 Morrissey Bros.....Arena
 Paulson, H. E.....Hollandale
 Smedsrud, Melvin C....Hollandale
 Thomas, Edw. J.....Ridgeway, R. 2

Jackson County

Anderson, Ubbe.....Melrose
 Bullock, James P.....North Bend
 Curran, W. T.....Taylor
 Dettinger, Wm. F.....Hixton
 Dietrich, John J..Black River Falls

Engleman, John.....Hixton
 Haag, Frank.....Melrose
 Haag, Henry.....Melrose
 Hecketsweiler, O. J...Alma Center
 Horswill, W. K..Black River Falls
 Merrill, W. M.....Taylor
 Patterson, Harvey.....Melrose
 Patterson, J. D.....Melrose
 Somerville, John..Black River Falls
 Thompson, Adolph.....
Black River Falls
 Wallen, Sigur B.....Taylor

Jefferson County

Anthes, Henry.....Jefferson
 Becker, Harry J.....Ft. Atkinson
 Brown, A. A.....Waterloo
 Brueckner, H. C.....Ft. Atkinson
 Brueckner, Justus.....Jefferson
 Graper, Arthur.....Helenville
 Haus, Joe T.....Jefferson
 Joice, G. W.....Waterloo
 Krueger, Alexander.....
Watertown, R. 2
 Lee, Gilbert A.....Ft. Atkinson
 Lehmann, Theo...Watertown, R. 7
 Leonard, Wm. R.....Jefferson
 Luebke, H. W...Watertown, R. 1
 McIntyre, Ivan.....Ft. Atkinson
 Mathews, Milton D..Helenville, R. 1
 Milkee, Geo.....Ft. Atkinson
 Neuberger, Frank G., Jr..Jefferson
 Niere, Stuart P.....Watertown
 Parsons, Wm. A.....Ft. Atkinson
 Perry, J. H.....Ft. Atkinson
 Popp, Arthur.....Jefferson
 Schultz, Rudolph.....Lake Mills
 Ward, Charles.....Ft. Atkinson
 Ward, Harold L.....Ft. Atkinson
 Ward, Robert W.....Ft. Atkinson
 Ward, Theodore S...Ft. Atkinson
 Wollin, Albert..Johnson Creek, R. 2

Juneau County

Curtis, J. C.....New Lisbon
 Hall, W. H.....Wonewoc
 Harvey, Caleb B.....Wonewoc
 Hoover, Kenneth M...New Lisbon
 Lee, Royal D.....Arkdale
 McNown, J. H.....Mauston
 Mills, Milo E.....Mauston
 Solem, Edward.....Wonewoc

Kenosha County

Blumer, George.....Salem
 Bradley, J. Frank.....Somers
 Myrick, M. O.....Bristol
 Orvis, L. C.....Salem

Paddock, A. D.....Salem
 Paddock, Alva.....Salem
 Sheen, C. J.....Trevor
 Sheen, Wray J.....Trevor
 Swenson, Earl S.....
Kenosha, 660 Pleasant St.
 Thiers, L. M.....Kenosha
 Thom, J. A.....Bristol

Kewaunee County

Boudnik, John.....Kewaunee, R. 7
 Cherveney, Wenzel..Kewaunee, R. 2
 Collin, D. W.....Luxemburg
 Defnet, Jule J.....Casco, R. 2
 Dworak, H. A.....Kewaunee
 Katel, W. C.....Kewaunee
 Kocmich, Ed.....Kewaunee
 Koller, Wm.....Kewaunee
 Krofta, Rudolph...Kewaunee, R. 2
 Nemetz, Frank J.....Kewaunee
 Pelisek, Frank W.....Kewaunee
 Smithwick, James.....Kewaunee
 Stangel, Richard...Kewaunee, R. 1
 Thibodeau, Elmer F....Kewaunee

La Crosse County

Bosshard, Eugene.....Bangor
 Brown, E. D.....West Salem
 Davis, L. H.....Bangor, R. 3
 Griswold, H. W.....West Salem
 Harr, Ernest B.....Bangor, R. 3
 Jones, E. E.....Rockland
 Lawrence, F. W.....Bangor
 Lawrence, W. J.....Bangor
 Nuttleman, Fred.....West Salem
 Restow, Harry.....Onalaska
 Sandman, W. D.....Holmen
 Schilling, Harry W.....Onalaska
 Van Loon, John.....La Crosse

Lafayette County

Andrews, A. L.....South Wayne
 Glindinning, H. L.....Shullsburg
 Hartsough, A. L.....Gratiot
 Ingwell, Albert.....Blanchardville
 Jorenby, Carl O....Blanchardville
 Larson, Joseph S.....Woodford
 Perry, Will H.....Gratiot
 Rood, Henry.....South Wayne
 Rood, Minnick C....South Wayne
 Smith, Alva J.....Gratiot
 Smith, John F.....Darlington
 Strommen, Anton A..Blanchardville
 Thompson, Gilbert G..Blanchardville
 Usher, Earl.....South Wayne
 Watrud, Hjelmer...Blanchardville

Langlade County

Kalouner, Edward....Antigo, R. 5
 Leykom, J. Wallace.....Antigo
 Person, Alfred.....Bryant

Manitowoc County

Arnold, Arthur A.....Kiel
 Axley, Walter.....Cleveland
 Behm, Walter F.....Manitowoc
 Bender, Fred.....Cleveland
 Bauer, A. H.....Manitowoc, R. 3
 Berge, Anton O.....Valders
 Berge, Oscar A.....Valders
 Berge, Otis J.....Valders
 Bruhn, John F...Two Rivers, R. 1
 Clusen, Reinhold.....Manitowoc
 Eisenmann, Harvey.....Mishicot
 Garey, James.....Grimms
 Geraldson, Mervin....Manitowoc
 Gigstad, Benneth.....Manitowoc
 Gunderson, Clifford. Manitowoc, R. 4
 Gustaveson, Chas.....Manitowoc
 Halvorson, Arthur E...Manitowoc
 Hansen, Warner.....Manitowoc
 Hayden, Thomas H.....Grimms
 Johannes, Albert.....Two Rivers
 Kielsmeier, Hugo C.Cleveland, R. 3
 Kirby, James J.....Grimms
 Klann, Adolph....Reedsville, R. D.
 Klessig, Edwin O.....Cleveland
 Knutson, Ed. A....Manitowoc, R. 4
 Koellmer, Gustav.....Cleveland
 Kolb, Ed.....Cleveland, R. 2
 Lutze, George.....Cleveland
 Marken, Otis A.....Valders
 Moldenhauer, W. C. Manitowoc, R. 1
 Nate, George B.....Grimms
 Paulson, J. E.....Manitowoc
 Peitzl, John A.....Cato, R. 1
 Riederer, Blas.....Cato
 Roethel, Herman.....Kiel
 Salzmann, Ed.....Kiel, R. 2
 Schulte, Peter J...Cleveland, R. D.
 Straka, Edward E....Maribel, R. 2
 Strowig, Wm. A....Cleveland, R. 1
 Sullivan, Jas. A.....Grimms
 Thielke, Ed. A.....Kiel, R. 2
 Thompson, Geo. H.....Quarry
 Tyler, James G.....Valders
 Wiegand, Otto R.....Cleveland
 Wigen, Andrew.....Quarry
 Wigen, Walter E.....Manitowoc
 Wilkowske, Hugo.....Mishicot

Marathon County

Aderhold, H. F.....Athens
 Arnold, Philip.....Edgar

Baesemann, Otto.....Edgar
 Brehm, E. A.....Colby
 Brotherton, Alvin.....Colby
 McAdam, Cecil.....Schofield
 Parsch, Gustav A.....Wausau

Marinette County

Falarsh, Frank.....Peshtigo
 Gould, Guy.....Peshtigo
 Gould, Merrill M.....Peshtigo
 Magee, Ellis.....Coleman
 Schneider, Gottlieb P.....Walsh

Marquette County

Dimond, Nicholas.....Montello
 Hamilton, T. S.....Westfield, R. 1
 Haskins, Leon O.....Montello
 Johnson, Sam A.....Westfield
 Judd, Jesse L.....Endeavor
 Parrott, Alfred.....Endeavor

Milwaukee County

Basse, Wm. H....West Allis, R. 5
 Dennison, Nicholas.....
No. Milwaukee, R. 10
 Diderrich, Nicholas A.....
No. Milwaukee
 Guenther, Nelson W.....
South Milwaukee
 Hickcox, Gilbert ...Whitefish Bay
 Kinney, Clinton.....Wauwatosa
 Kurtze, Otto C....West Allis, R. 15
 Machimura, K.....
West Allis, care Rust Bros.
 Meyer, Alfred J...Oakwood, R. 18
 Pierner, Fred.....No. Milwaukee
 Swan, Earling.....
Milwaukee, Sta. B. R. 6
 Swan, Robert G.....
Milwaukee, Sta. B. R. 6
 Unger, Edward F.....
North Milwaukee, R. 9
 Unger, Ernest F., Jr.....
No. Milwaukee R. 29

Monroe County

Aarness, O. C.....Cashton
 Anderley, Louis.....Kendall
 Foth, F. D.....Norwalk
 Freeman, G. A.....Sparta
 Funcan, Wm.....Kendall
 Gamerdinger, John.....Kendall
 Grassman, Alfred.....Kendall
 Hanchett, W. H.....Sparta
 Hansen, Henry.....Sparta

Hanson, Niel.....Cataract
 Harris, R. E.....Warrens
 Hitchcock, Wm. P.....Sparta
 Hoard, L. R.....Cataract
 Howell, Horace P.....Sparta
 Kirst, Ernest J.....Tomah
 Lee, L.....Leon
 Leverich, J. W.....Sparta
 Moseley, A. G.....Cataract
 Nathan, Paul R.....Kendall
 Pratt, Vernon.....Cataract, R. 2
 Von Haden, Eddie.....Kendall
 Whitehead, H. W.....Leon
 Wisner, L. R.....Merrill
 Wyatt, E. E.....Tomah

Outagamie County

Bixby, Phil T.....Appleton
 Jahnke, Albert.....Black Creek
 Jamison, Clarence.....Appleton
 Jamison, Harvey.....Appleton
 Jamison, Robert.....Appleton
 Jamison, Stanley.....Appleton
 Jamison, W. G.....Appleton
 Johnson, Chas. G.....Welcome
 Johnston, Oney.....Appleton
 Klemm, Lewis J.....Welcome
 Koss, Otto W.....Medina
 Lemke, Albert.....Welcome
 Letts, Edw. F.....Appleton
 Merkel, Henry.....Appleton, R. 3
 Mills, Roscoe C.....Appleton, R. 2
 Mueller, Edward O.....Appleton
 Ryan, Malachi.....So. Kaukauna
 Schaefer, R. J.....Appleton
 Schmit, Albert.....Appleton
 Schmit, Alois E.....Hortonville
 Schmit, A. W.....Appleton
 Schmit, Geo.....Greenville
 Schmit, Wm. F.....Appleton, R. 2
 Thoma, Ernest.....Sugar Bush
 Tubbs, J. Herbert.....Seymour
 Wussow, Chas. A.....Seymour

Ozaukee County

Behrens, Bernh.....Grafton
 Blank, Geo. A.....Grafton
 Groth, Louis.....Cedarburg
 Kieffer, Mike.....Fredonia
 Meyer, A. H.....Grafton
 Pierner, John W.....Thiensville
 Quast, Arthur E.....Saukville

Pepin County

Fleishauer, C. K.....Arkansaw
 Fox, Phil, Jr.....Durand
 Gustafson, Theodore.....Stockholm

Jahnke, J. F.....Pepin
 Pattison, H. A.....Durand, R. 2

Pierce County

Brown, Monroe.....Bay City
 Brown, Wm.....Spring Valley
 Hanson, Henry O.....
Spring Valley, R. 4
 Hinze, Louis.....Prescott
 Lowe, James.....River Falls
 Neystrom, Archie.....Maiden Rock
 Peirce, W. O.....River Falls
 Persons, W. B.....Plum City
 Smith, Fred.....River Falls

Polk County

Elkins, Arthur O.....Amery
 Ferris, Sherman....St. Croix Falls
 Germanson, Herbert.....Luck
 Jerdee, Perry S.....Deronda
 Lee, Oliver.....Amery, R. 2
 Lindberg, Clinton H.....
Dresser Jct., R. 1
 Miller, A. J.....Milltown
 Nelson, Willie.....Milltown
 Peterson, E. M.....Amery, R. 4
 Rehbein, A. E.....St. Croix Falls, R. 1
 Uhlin, Albin S.....Clayton
 Uhlin, F. E.....Clayton

Portage County

Arnott, Grace M.....Stevens Point
 Brekke, Anton B.....Stevens Point
 Gullickson, Gust.....Nelsonville
 Hanson, N. P.....Amherst Jct., R. 2
 Williamson, Boyd.....Amherst Jct.
 Wrolstad, Alfred M.....Amherst Jct.

Price County

Anderson, Martin.....River Falls
 Hoffmann, Conrad.....Phillips

Racine County

Chambers, O.....Union Grove
 Cook, Joe C.....Burlington
 Dukleth, J. O.....Waterford
 Gehrand, Arthur A.....Rochester
 Holloway, Ed. M.....Union Grove
 Jacobson, Clarence H.....
Waterford, R. 25
 Klofanda, Reuben.....Racine, R. 1
 Klofanda, Royal.....Racine, R. 1
 Odland, P. H.....North Cape
 Renak, Edw.....Racine, R. 2
 Robers, Wm. J.....Burlington

Rolfson, C. E.....Waterford
 Skewes, Edwin B. Union Grove, R. 6
 Spartz, N. A.....Union Grove

Richland County

Annear, Rolland...Richland Center
 Collins, Edmund.....Tavera
 Collins, Robert.....Tavera
 Ghastin, Floyd L.....Twin Bluffs
 Ghastin, Wm. J.....Twin Bluffs
 Oman, Carl.....Tavera
 Post, H. L.....Sextonville
 Schmitz, Edw.....Lone Rock
 Schmitz, Hubert.....Lone Rock
 Straug, Frank.....Lone Rock
 Thorpe, J. R.....Tavera
 Turgasen, J. H....Richland Center
 Welsh, S. L.....Tavera

Rock County

Austin, Alva G.....Janesville
 Austin, A.....Janesville
 Austin, Clifford P.....Janesville
 Austin, Geo. M....Janesville, R. 6
 Austin, Henry L.....Evansville
 Austin, Wilbur D.....Janesville
 Austin, Willard O.....Milton
 Benedict, E. L.....Beloit
 Bingham, E. L.....Milton
 Bingham, Howard L.....Milton
 Caldo, Leslie.....Janesville, R. 1
 Dougan, W. J.....Beloit, R. 30
 Ellis, E. J.....Evansville, R. 19
 Emery, Sydney L....Edgerton, R. 2
 Kimble, N. G.....Milton Jct.
 Lathers, Chas. F.....Beloit
 Latta, F. L.....Clinton Jct.
 Lefeber, Wilbur F.....Evansville
 McCoy, Geo. L.....Evansville
 Marston, Albert E.....Beloit
 Marston, Roy C.....Beloit
 Moore, Fred W.....Beloit
 Moseley, H. B.....Beloit
 Mueller, M. J.....Edgerton
 care of Emery Farm.
 Porter, W. N.....Evansville
 Porter, W. B.....Evansville
 Shuman, Chas. F.....Koshkonong
 Simpson, Lloyd S.....Edgerton
 Smith, Lewis E.....Beloit
 Snyder, Elmer G.....Clinton Jct.
 Snyder, Elmer G.....Beloit
 Tiff, J. Ringland.....Wauwatosa

St. Croix County

Alberts, Will.....New Richmond
 Arnquist, J. T.....New Richmond
 Bailey, H. E.....Hudson
 Batten, S. E.....Hudson

Bennett, Wm. L.....Stanton
 Boardman, Benj....New Richmond
 Bradley, H. C.....Hudson
 Brunner, Fred F.....Hudson
 Brunner, R. W.....Hudson
 Cook, Winfred.....Deer Park, R. 1
 Fay, Albert W.....New Richmond
 Hogan, E. J.....New Richmond
 Kruschke, Alvin C..New Richmond
 Kruschke, Geo. H...New Richmond
 Legrid, Henry E.....Deer Park
 Paulson, P. A.....Hudson
 Peterson, August.....Stanton
 Schwandt, Wm.....Stanton
 Utgaard, Peter W.....Cylon

Sauk County

Borck, Sam.....North Freedom
 Clavadatscher, T.....Sauk City
 Enge, Eugene.....Prairie du Sac
 Gade, Adolph.....Reedsburg, R. 2
 Getschmann, Willie.North Freedom
 Grass, Christian F..Prairie du Sac
 Gravin, D. W.....Baraboo
 Hatz, Jacob A.....Prairie du Sac
 Henrichs, Ernest.....Reedsburg
 Herwig, R. B.....Delton
 Herwig, Theo. E.....Delton
 Hill, J. L.....Prairie du Sac
 Hood, D. L.....Spring Green
 Johnson, Glenn....Baraboo, R. 2
 Kindschi, Edwin...Prairie du Sac
 Koenecke, A. E.....Reedsburg
 Koenecke, Ed. H....Reedsburg, R. 5
 Moely, Conrad.....Prairie du Sac
 Ochsner, Arthur C.....Plain
 Pearson, Clarence.....La Valle
 Riek, Anthony.....Plain
 Rieser, Alfred E.....Spring Green
 Rusch, E. W.....Reedsburg
 Schuette, Herman W...Reedsburg
 Sherwood, Chas. B...Spring Green
 Steidtmann, Edwin...Merrimac
 Toole, W. A.....Baraboo
 Vonder Ohe, William H.Reedsburg
 Weirich, Martin J.....Baraboo
 Wichern Bros.....Baraboo, R. 4
 Wischhoff, E. H.....Reedsburg

Sawyer County

Uhrenholdt, Jens.....Leonard
 Uhrenholdt, S. J.....Leonard

Shawano County

Berg, Carl J.....Tigerton
 Hildemann, Alex E...Belle Plaine
 Klovdahl, J. J.....Wittenberg
 Norrbom, C. G.....Eland
 Wedgwood, R. E.....Shawano

Sheboygan County

Dennerlein, Arthur J. Plymouth
 Frauenheim, O. R. Random Lake
 Garside, Harry R. Cedar Grove
 Illian, William L. Adell
 Lubbers, William. Cedar Grove
 Parrish, J. O. Plymouth
 Reineking, Rudolf H.
 Sheboygan Falls
 Schaefer, Henry G. Plymouth
 Veldboom, John. Cedar Grove
 Wagner, Arthur L. Haven
 Wunsch, Alfred J. C. Haven
 Wunsch, Hugo E. Haven

Trempealeau County

Gilbertson, C. P. Arcadia
 Gaul, Edw. J. Independence
 Hagestad, A. C. Ettrick
 Johnson, Frank L. Osseo
 Markham, F. C. Independence
 Mattison, Thos. Blair
 Pederson, Peter. Eleva, R. 3
 Ristau, Emil O. Osseo
 Thompson, A. L. Blair
 Thompson, Paul. Blair

Vernon County

Aberg, Jacob. De Soto
 Amodt, Marcus. Viroqua
 Cade, Jos. M. Viroqua
 Dahl, A. J. Viroqua
 Fisher, Leslie. Viroqua
 Fisher, Perl. Viroqua
 Henry, Ernest E. Viroqua
 Herold, Rudolph, Jr. Stoddard
 Hoilien, David. Westby
 McClurg, Walter F. Viroqua
 Neprud, Nels O. Coon Valley
 Olson, G. C. Westby
 Sebion, Cornelius. Westby
 Sebion, Stanley. Westby
 Sebion, T. Westby
 Sherry, Selmer. Viroqua
 Stegne, Chris. Viroqua
 Swiggum, Neil. Viroqua
 Swiggum, Oscar. Viroqua

Walworth County

Arnold, Walter C. Lake Geneva
 Brentner, George F. Lake Geneva
 Bromley, Fred G. Whitewater, R. 4
 Coates, Clinton J. Elkhorn, R. 6
 Coit, H. W. Darien
 Dow, Everett J. Whitewater
 Dunbar, Harry D. Elkhorn

Ells, R. H. Darien
 Foerster, M. F. Whitewater, R. 2
 Gie, Fred. Sharon
 Kiteley, Leonard W. Sharon, R. 2
 Kuehne, Edw. H. Lake Beulah
 Lauderdale, Roy. Elkhorn
 Lewis, E. H. Whitewater
 McCarthy, Edw. Walworth
 McLeod, Stanley. Lake Geneva
 Meurer, Paul. Genoa Jct.
 O'Dell, William. Lake Beulah
 Palmer, Earl. Lake Geneva
 Peterson, Peter. Walworth
 Piper, Harry B. Sharon
 Robinson, A. S. Lake Geneva
 Schwartz, John A. Troy Center
 Smith, Carroll H. Delavan, R. 3
 Thacher, Louis E. Zenda
 Thompson, Alfred W. Delavan
 Utter, Delwin H. Lake Beulah

Washburn County

Busch, Andrew F. Spooner
 Soholt, Gustav L. Madge

Washington County

Backus, Franklin G. Kewaskum
 Baer, A. C. West Bend
 Baertlein, V. J. So. Germantown
 Baertlein, William A.
 So. Germantown
 Connell, Clarence James.
 Colgate, R. 1
 Flynn, John W. Hartford
 Gutschenritter, F. J. West Bend
 Klumb, Albert J. Rockfield
 Klumb, Hugo G. Kewaskum
 Klumb, Oscar. Rockfield
 Puls, John. Hartford
 Schermerhorn, S. B. Hartland
 Schottler, Conrad J. S.
 So. Germantown
 Sleep, S. S. Hartland, R. 21
 Stuesser, Eugene. Richfield
 Ziemer, Paul. Jackson, R. 2

Waukesha County

Baird, Robt. L. Waukesha
 Blackwell, Leslie E. Waukesha
 Boyd, James G. Waukesha
 Brown, R. P. Hartland, R. 21
 Butler, G. C. Templeton
 Cooper, Joe. Pewaukee
 Dance, Geo. Brookfield
 Dance, James. Brookfield
 Davies, Evan. Waukesha, R. 8
 Dibble, R. A. Menomonee Falls

Dineen, C. F.....Pewaukee
 Dopp, Paul B.....Waukesha
 Fuller, Albert.....North Lake
 Fuller, Horace.....North Lake
 Fuller, Roland.....North Lake
 Graser, Adam H...Waukesha, R. 4
 Gurke, Erwin A.....Waukesha
 Hall, Frank.....Hartland, R. 21
 Hall, John M.....Hartland, R. 21
 Hardy, John.....Waukesha
 Hart, William C.....Brookfield
 Heling, Paul.....
Menomonee Falls, R. 18
 Hill, Charley.....Brookfield
 Hill, Chas. T.....Brookfield
 Hill, J. T.....Brookfield
 Holt, Lester H.....Oconomowoc
 Jones, Albert.....Dousman
 Kaul, E. H.....Waukesha
 Knowlton, A. R.....Waukesha
 Kraetsch, Alvin C.....
Menomonee Falls
 Kultz, Harvey A.....Waukesha
 Lewis, Owen H....Genesee Depot
 Longley, H. N.....Dousman
 Mitchell, Dean.....Brookfield
 Mitwede, Henry.....Waukesha
 Omann, C. H.....Nashotah
 Peebles, John.....Oconomowoc
 Peebles, Percy A.....
Oconomowoc, R. 26
 Pokfuss, Edward H....Waukesha
 Price, W. Howard..Waukesha, R. 9
 Reyer, Walter R..Templeton, R. 20
 Rosenow, Arthur....Oconomowoc
 Rosenow, H. E.....Oconomowoc
 Schumacher, John F....Waukesha
 Stuart, Joe H.....Wales
 Swanton, John.....Oconomowoc
 Swartz, Peter C.....Waukesha
 Swoboda, F. G.....Dousman
 Tempero, Roy J..Menomonee Falls
 Williams, Orson P.Waukesha, R. 8

Waupaca County

Bestul, Martin.....Scandinavia
 Harrington, Forest.....Waupaca
 Harrington, Myron.....Waupaca
 Johnson, Hanford.....Iola
 Kendall, Myron.....Iola
 Kneip, William.....Weyauwega
 Knoke, Hugo.....Readfield
 Kunkel, Arthur M.....Manawa
 Larson, LeRoy.....Iola
 Pinkerton, A. J.....Waupaca
 Rosholt, Jacob A.....Scandinavia
 Wall, Floyd.....Weyauwega
 Wied, Edw.....Waupaca

Waushara County

Bartleson, H. C.....Pine River
 Evans, Edgar.....Wild Rose
 Larson, J. M.....Wautoma
 Owens, Edwin.....Wild Rose
 Peterson, Emar A.....Milladore
 Thorstad, Clarence..Wautoma, R. 6

Winnebago County

Blakely, Albert J.....Neenah
 Boss, Sam., Jr.....Oshkosh, R. 7
 Boss, Ulrich.....Oshkosh
 Bussey, W. P.....Omro
 Cross, A. J.....Allenville
 Davies, J. C.....Oshkosh
 Marshall, A. C.....Omro
 Miller, Henry C.....Allenville
 Olson, Harry.....Larsen
 Palfrey, John R.....Omro
 Smith, Seymour L.....Oshkosh
 Tanner, A. V.....Omro
 Wood, Calvin D.....Oshkosh

Wood County

Allen, E. S.....Vesper
 Kronholm, Edward..Grand Rapids

NON-RESIDENTS

Illinois

Beitel, Perry A.....Rochelle, R. 3
 Bennett, H. J.....Cherry Valley
 Bruning, Jacob.....Shermerville
 Bryson, Donald L.....Elizabeth
 Chetlain, Louis A.....Galena
 Christensen, Emil.....Woodstock
 Christenson, Emil.....Hartland
 Corley, Fay H.....Tower Hill
 Gaston, L. E.....Barrington
 Hitchcock, H. R.....Pecatonica
 Horton, James E.....Waukegan
 Hoxsey, E. R.....Seneca
 Jones, Ira P.....Hinckley
 McGeachie, Edw. R....Winnebago
 Phillips, Jesse.....Elizabeth
 Richardson, Geo. J....Spring Grove
 Sargent, Lester.....Warren
 Vullmahn, Ernest F...Edgebrook

Iowa

Anderson, Theo.....Waterville
 Brandt, Elmer H.....Garnaville
 Brooks, Homer H.....Hopkinton
 George, Russel.....Scranton
 Thompson, T., Jr.....Wadena

Indiana	Nebraska
Dewire, M. E.....Hamilton	Semb, Allen.....Schuyler, R. 1
Fuller, Robt.....Mishawaka	Wrabetz, Frank.....Schuyler, R. 1
Lindemann, J. H.....Mishawaka	
Michigan	New York
Meyer, A. J.....Howell, R. 7	Mills, Stanley.....Walden
	Northrop, H. R.....
	....East Hampton, Long Island
Minnesota	Ohio
Peace, Jas. W.....Duluth, R. 3	Messerschmidt, S. H....Flat Rock
Vollrath, Aug.....St. Bonifacious	
Wiker, N. H.....Mabel	South Dakota
	Porter, W. L.....Madison
Missouri	Texas
Bliss, Geo. M.....Warrensburg	Smith, Ray K.....El Paso
	Utah
Montana	Carey, James.....Fruitland
Meyer, Sidney.....Kalispell	

Growers of Oderbrucker Barley (Wisconsin No. 55).

Adams County	Brown County
Johnson, Billie.....Strongs Prairie	Nies, Peter.....Greenleaf, R. 3
Lee, Royal D.....Arkdale	Roeckel, Joseph P.....Lark
Rodger, Almon.....Endeavor	
Ashland County	Buffalo County
Johnson, L. M.....Ashland, R. 2	Ames, Edward.....Fountain City
	Engel, George H.....Fountain City
Barron County	Petting, Edwin.....Alma
Allen, Eugene S.....Cumberland	Florin, Emil J.....Cochrane, R. 2
Bartlett, Ray.....Barron	Florin, Henry.....Cochrane, R. 2
Bilderbach, W. T.....Chetek	Joos, Frank B.....Fountain City
Chrislaw, A. M.....Rice Lake	Knospe, Chas. G., Jr....Alma, R. 1
Heldstab, C. O.....Rice Lake	Muehleisen, G.....Tell
Hustad, K. E.....Rice Lake	Rosenow, H. G.....Waumandee
Hustad, Milon.....Rice Lake	Rosenow, Wm. F.....Waumandee
Kamrath, Wm.....Cameron	Rosenow, L. J.....Waumandee
Matthys, Peter B.....Barron	Spaulding, L. C.....Mondovi
Matthys, Walter.....Barron	Stuber, John H.....Cochrane
Otterholt, Henry.....Chetek	Suhr, Adolph A.....Cochrane
Poulter, Chas. J.....Cumberland	Suhr, Otto A.....Cochrane
Rauchenstein, John.....Rice Lake	
Sackett, Clyde.....Cumberland	Calumet County
Bayfield County	Kircher, H. W.....Chilton, R. 3
Daly, Richard E.....Washburn	Peik, Arthur.....Chilton
	Peik, Edmund.....Chilton
	Peterson, Hy. N.....New Holstein

Chippewa County

Bailey, Alfred B.....Jim Falls
 Christianson, W. O.....
 Chippewa Falls, R. 6
 Finsnes, A. I.....Chippewa Falls
 Guptill, L. R.....New Auburn
 Johnson, Albert L.....Bloomer
 King, Wm.....Jim Falls
 Kramer, Henry F.....Bloomer
 Lebeis, F. J.....Bloomer
 Martiny, L. P.....Chippewa Falls
 Siefert, F. W.....Chippewa Falls
 Upton, Harold F.....Jim Falls

Clark County

Beach, Glenn H.....Loyal
 Griffith, Jas.....Spencer
 Huckstead, A. A.....Neillsville
 Hughes, Jas.....Neillsville, R. 1
 Imig, Arthur H....Neillsville, R. 1
 Ives, L. W.....Granton
 Krause, Fred W.....Thorpe
 Nelson, Carl.....Greenwood
 Schultz, Walter W.....Neillsville
 Umlauft, Rudolph.....Dorchester
 Zerbel, Paul.....Humbird

Columbia County

Anaaker, Bernhard.....Portage
 Earstow, Jas. E.....Randolph
 Chipman, W. R.....Morrisonville
 Christer, Harley.....Lodi
 Curtis, Ray.....Poynette
 Dalton, Ernest E.....Pardeeville
 Dalton, Roy E.....Pardeeville
 Ellickson, A. C.....Arlington
 Gloeckler, Theo.....Portage
 Grove, Albert.....Columbus, R. 6
 Grove, Christian.....Columbus
 Hoffman, Herman.....Portage
 Jones, R. G.....Columbus
 Livingston, E. C.....Randolph
 Lloyd, Evan B.....Cambria
 McElroy, W. H.....Pardeeville
 Owen, Thos. M.....Portage
 Roberts, A. C.....Pardeeville, R. 7
 Sharpee, Endre A.....Rio, R. 1
 Sharpee, J. A.....Rio, R. 1
 Steuber, L. J.....Lodi

Crawford County

Accola, Lawrence.....Steuben
 Davig, Neli.....Soldiers Grove
 Hjelle, Ole K.....Soldiers Grove
 Johnson, E. T.....Soldiers Grove
 Johnson, J. E.....Ferryville, R. 3
 Lawrence, W. J.....DeSoto
 Nagle, Lee.....Bridgeport

Dane County

Angvick, Lars.....Cottage Grove
 Anthony, D. C.....Oregon
 Beck, J. D.....Madison
 Bendickson, I. E.....Cambridge
 Benson, Ed. E.....Mt. Horeb
 Berge, Wm.....Cambridge
 Bewick, W. W.....Madison
 Birkinbine, Frank.....Sun Prairie
 Erickson, Abram.....McFarland
 Brickson, Andrew.....Cottage Grove
 Brigham, Chas. I....Blue Mounds
 Britzke, Paul.....London
 Brue, N. H.....De Forest
 Charles, Ed. S.....Madison
 Chase, J. P.....Sun Prairie
 Chatterton, R. W.....Basco
 Christianson, Irvin.....Deerfield
 Cobb, Homer A.....Sun Prairie
 Coldwell, John.....Mazomanie
 Colladay, W. E.....Stoughton
 Daley, E. S.....De Forest
 Daley, Julius.....De Forest
 Daley, O. S.....De Forest
 Daley, S. S.....De Forest
 Danielson, K. O.....Mt. Horeb
 Davison, R. W.....Sun Prairie
 Dineen, Michael.....Blue Mounds
 Doerfer, Wm.....Madison, R. 6
 Dreger, E. L.....Madison
 Egge, John S.....Cambridge
 Eley, T. B.....Madison, R. D.
 Erdall, M. N.....Deerfield
 Felland, George.....Madison, R. 1
 Gay, John.....Madison
 Gillies, J. H.....Stoughton
 Gillette, R. A.....Verona
 Goecks, Wm.....Madison, R. 1
 Graves, E. H.....Madison
 Grinde, L. S.....Morrisonville
 Grady, Geo.....Oregon
 Hanna, O. O.....Mt. Horeb
 Henning, Walter.....Mazomanie
 Hill, Otto C.....Mt. Horeb
 Holmen, O. H.....Belleville
 Holscher, A. C.....Cottage Grove
 Hopkins, B. F.....Morrisonville
 Hougen, Halvor O.....Stoughton
 Hougen, S. O.....Stoughton
 Howe, T. R.....Sun Prairie
 Kaltenberg, Anthony...Waunakee
 Kaupunger, Gilman T...Stoughton
 Kendall, Geo. W.....Sun Prairie
 Kittlerm, Knut.....Mt. Horeb
 Kneeland, Peter.....Windsor
 Knudsen, Henry.....Mt. Horeb
 Koltes, Jos. F.....Dane
 Larson, Albert.....Madison, R. 1
 Larson, Lewis.....Madison, R. 1

Lee, Oliver.....Klevenville	Goetsch, Albert A.....Juneau
Lunde, K. I.....Edgerton	Grebe, Fred P.....Fox Lake
Lythjohan, Carl.....Cottage Grove	Howitt, Chas. H.....Randolph
Mac Lean, Geo.....Madison, R. 6	Hutchinson, Wm. D.....Rubicon
Mandt, Lawrence.....Sun Prairie	Johnston, Oney.....Watertown
McConnell, Oren M.....McFarland	Jones, John G.....Beaver Dam, R. 4
Mielke, F. D.....Windsor	Jones, Owen R., Jr.....Beaver Dam
Meilke, J. E.....Basco	Jones, Seneca T.....Watertown, R. 1
Mikkelson, Thos.....Deerfield	Jung, J. W.....Randolph
Mikkelson, Carl.....Deerfield	Krueger, Alexander.....
Mitchell, Geo.....Cottage Grove	.....Watertown, R. 2
Mitchell, J. T.....Cottage Grove	Krueger, Henry E.....Beaver Dam
Moen, Herman.....Cambridge	Lehmann, Mrs. A. W.....Woodland
Moore, Harry G.....McFarland	Lehmann, T. A.....Watertown
Naef, Jacob.....Riley	Luebke, D. W.....Watertown, R. 1
Nellen, Jac.....DeForest	Mahoney, David.....Juneau
Ohman, Alfred.....Deerfield	Miller, A. H.....Waupun
Ohman, S. S.....Deerfield	Neuberger, William.....Reeseville
Ohnstad, K. O.....Stoughton, R. 1	Owens, H. C.....Fox Lake
Palmer, Levi.....Verona	Randall, S. M.....Waupun
Peck, Henry M.....Marshall	Rockhill, Wm. E.....Waupun
Pierstorff, Henry W.....Madison, R. 6	Rex, Edgar.....Burnett
Pope, Roy W.....Sun Prairie	Roberts, Wm. E.....Randolph
Rafferty, Agnes.....Windsor	Rusink, H. G.....Waupun
Reindahl, A. K.....Madison	Schiller, Claude E.....Beaver Dam
Reiner, Andrew.....Sun Prairie	Schumann, Hugo.....Beaver Dam
Renk Bros.....Sun Prairie	Steiner, W. H.....Brownsville
Rhiner, Albert.....Riley	Ulrich, Erwin C.....Horicon
Rhiner, Caspar.....Riley	Voigt, Alvin.....Oconomowoc, R. 26
Rorge, A. O.....Stoughton	
Rorge, A. J.....Stoughton	Door County
Royston, Thos.....Mazomanie	Anthott, Chas.....Brussels
Ryan, Gerald.....Sun Prairie	Boucein, Gust L.....Detroit Harbor
Showers, M. W.....Mazomanie	Bowman, Wallace.....Detroit Harbor
Silver, C. R.....Belleville	Buschman, Hugo.....Forestville
Skare, Albert.....McFarland	Delcorps, Louis.....Sturgeon Bay
Smithback, Marvin.....Cambridge	Erickson, Ole C.....Detroit Harbor
Stensly, Anton.....Cottage Grove	Keogh, Harry.....Forestville
Stensly, Fd. P.....Cottage Grove	Larson, Eli.....Sawyer
Strommen, Geo. K.....Cambridge	Sorenson, Camillo.....Sturgeon Pay
Swerig, Carl.....Stoughton	Sullivan, J. J.....Forestville
Thorstad, Harlon.....Deerfield	
Thorstad, N. H.....Deerfield	Douglas County
Tjugum, F. E.....Sun Prairie	Lindberg, E. J.....Itasca
Toepfer, Otto.....Madison, R. 7	
Veum, Tillof.....Stoughton, R. 3	Dunn County
Wernich, Wm. H.....De Forest	Chase, A.....Knapp
Wittenberg, E. F.....Middleton	Knapton, W. E.....Downing
Wrabetz & Semb.....Madison, R. 6	Meacham, C.....Downing
Zabel, Edward.....Deerfield, R. 1	Miller, Will.....Menomonie
	Snell, Earl D.....Downing
Dodge County	
Adams, Lester E.....Lowell	Eau Claire County
Parnes, Amy B.....Waupun	Allen, C. L.....Eau Claire
Barstow, J. E.....Randolph	Carlson, Axel T.....Augusta, R. 4
Rohl, Anton.....Beaver Dam, R. 1	Donaldson, H. A.....Eau Claire R. 6
Russewitz, W. E.....Juneau	
Craig, Geo. D.....Oconomowoc	
Dirks, Arthur.....Waupun	
Ehrhardt, Daniel.....Knowles	

Faast, Ben F. Eau Claire
 Konz, John, Sr. Fairchild
 Mayo, John H. Eau Claire
 McDermid, G. A. Eau Claire
 Russell, A. C. Augusta
 Wright, W. C. Eau Claire, R. 4

Florence County

Burgess, A. J. Florence

Fond du Lac County

Adams, A. E. Eden
 Adams, Richard F. Cambellsport
 Beilke, Walter. Fairwater
 Bonzelet, J. P. Eden
 Briggs, L. W. Peebles
 Briggs, J. W. Peebles
 Bristol, Wm. A. Oakfield
 Donovan, Frank. Van Dyne
 Giebel, Karl A. Fond du Lac, R. 7
 Hargrave, Robert O. Ripon
 Hinz, A. F. Ripon
 Hintz, William F. Oakfield, R. 26
 Howland, W. L. Waupun
 Hunter, Hobart R. Fond du Lac
 Jacky, Gilbert G. Malone, R. 39
 Jacky, H. L. Malone, R. 39
 Kastein, Herman. Waupun
 Kuehn, Chas. A. Brandon
 Lawson, W. A. Rosendale
 Mathews, Lee G. Brandon
 Maug, Arthur J. Ripon
 Meekin, H. W. Fond du Lac
 Meier, Edward F. Edin, R. 33
 Messner, Edward F. Oakfield
 Michels, Henry. Malone
 Mihills, D. R. Fond du Lac
 Mihills, G. N. Fond du Lac
 Miller, A. H. Waupun
 Northrup, Jesse. Waupun
 Patric, William. Waupun
 Peebles, S. S. Fond du Lac R. 2
 Porter, W. L. Fond du Lac
 Rieman, W. L. Ripon
 Sheldon, Ben F. Brandon
 Stroup, Fred G. Fond du Lac
 West, H. P. Ripon
 Whittaker, Horace E. Fond du Lac

Forest County

Grandine, Marton D. North Crandon

Grant County

Andrew, Geo., Jr. Livingston
 Barron, R. E. Platteville
 Bennett, Ora F. Glen Haven

Booth, Guy A. Cuba City
 Booth, Lester G. Cuba City
 Bryant, Clinton A. Hazel Green
 Bryant, R. J. Hazel Green
 Carmody, Daniel. Mt. Ida
 Carmody, P. J. Mt. Ida
 Cubela, Jos. M. Muscoda
 Dieter, Wm. A. Montfort
 Draves, Henry F., Jr. Montfort
 Farwell, Roy R. Ridgeway
 Frey, E. J. Mt. Hope
 Graham, P. S. Fennimore
 Kaiser, Wm. Louisburg
 Orth, A. F. Muscoda
 Rodda, Matt. Hazel Green
 Runde, Aloysius. Cuba City
 Runde, August. Sinsinawa
 Rundell, Dale E. Livingston
 Searles, Wm. L. Boscobel
 Simmons, Will. Cuba, R. 1
 Stivarius, Geo. A. Fennimore
 Trewartha, Edw. J. Hazel Green
 Wayne, Joseph. Boscobel
 Wieland, Charles. Lancaster

Green County

Austin, Elmer E. Brodhead
 Barmore, T. J. Monroe
 Pechtolt, A. B. Browntown
 Pechtolt, J. D. Browntown
 Biglow, L. F. Brooklyn
 Blumer, Ezra, Jr. Monroe
 Collentine, Arthur. Monroe
 Cornelius, E. C. Monroe
 Dettwiler, John. Monroe
 Gapen, C. E. Monroe
 Grenzow, Jesse H. Juda
 Iverson, C. M. Browntown
 Marty, Matthias. Monticello
 Mau, H. G. Brodhead
 Olson, William. Browntown, R. 2
 Preston, Wm. N. Juda
 Furintum, C. G. Monticello
 Strommen, A. A. Blanchardville
 Taucher Bros. Monroe
 Thompson, Gilbert G.
 Blanchardville
 Thorp, Eugene B. Monroe
 Tochtermann, C. Jr. Monroe
 Tschudy, B. O. Monroe, R. 5
 Waelti, John. Monroe, R. 4
 Ward, Harold. Brodhead

Green Lake County

Block, Albert F. Markesan
 Davies, Elias. Markesan
 Robinson, Earl P. Markesan

Iowa County

Aavang, Henry O. Barneveld
 Berryman, Chas. H. Dodgeville
 Buss, Will G. Mineral Point
 Chappel, Steve J. Dodgeville
 Dolpin, Clarence Cobb
 Davis, Llewellyn Mineral Point
 Farwell, R. R. Ridgeway
 Gordon, A. L. Mineral Point
 Gordon, C. D. Mineral Point
 Gordon, J. Ray Mineral Point
 Graber, Edward Mineral Point
 Graber, Laurence F. Mineral Point
 Griffith, James Ridgeway
 Hanson, Carl O. Hollandale
 Jones, Chas. Lloyd Hillside
 Jones, Orren Lloyd Hillside
 Jones, T. O. Rewey
 Kitchen, Jos. H. Edmund
 Ley, Nicholas Dodgeville, R. 4
 Paulson, H. E. Hollandale
 Smedsrud, Melvin C. Hollandale
 Steensland, August Hollandale
 Theobald, John S. Barneveld
 Thomas, Roy E. Dodgeville

Jackson County

Curran, W. F. Taylor
 Dettinger, W. F. Hixton
 Engleman, John Hixton
 Hecketsweiler, O. J. Alma Center
 Merrill, W. A. Taylor
 Thompson, Adolph
 Black River Falls

Jefferson County

Altpeter, Ed Ft. Atkinson
 Brueckner, H. C. Ft. Atkinson
 Brueckner, Justus Ft. Atkinson
 Christ, Albert Cambridge
 Church, A. P. Whitewater
 Guttenberg, Frank, Jr. Jefferson
 Joice, Geo. E. Waterloo
 Keuler, Aaron F. Helenville
 Keuler, Harry Helenville
 Klement, Otto C. Ft. Atkinson
 Leonard, Wm. R. Jefferson
 Linton, Gilbert A. Ft. Atkinson
 Main, H. A. Ft. Atkinson
 Mathews, M. D. Helenville
 McIntyre, Ivan Ft. Atkinson
 Norman, Frank Helenville
 Parsons, Wm. A. Ft. Atkinson
 Popp, Arthur Jefferson, R. 2
 Ward, Charles E. Ft. Atkinson
 Ward, Harold L. Ft. Atkinson
 Ward, Robert W. Ft. Atkinson

Juneau County

Curtis, J. C. New Lisbon
 Hanzlik, Otto J. Wonewoc
 Salem, Edward Wonewoc
 Smith, R. M. Elroy, R. 1
 Wagner, J. M. Union Center

Kenosha County

Bradley, J. Frank Somers
 Brook, J. W. Salem
 Bullamore, Roy Kenosha
 Bullamore, R. G. Kenosha
 Curtis, Mark W. Trevor
 Curtis, Wm. V. Trevor
 Deuter, Walter S. Kenosha
 Holloway, John W. Union Grove
 Mueller, Math J. Bristol
 care of F. J. Thom.
 Myrick, M. O. Bristol
 Orvis, L. C. Salem
 Paddock, Alvin D. Salem
 Roberts, F. W. Woodworth
 Sheen, Clarence J. Trevor
 Sheen, W. J. Trevor
 Thom, J. A. Bristol, R. 30

Kewaunee County

Blahnik, Geo. F. Algoma
 Roudnik, John Kewaunee, R. 7
 Collin, D. W. Luxemburg
 Hoffman, Jacob Algoma
 Kafel, W. C. Kewaunee, R. 1
 Krofta, Rudolph Kewaunee, R. 2
 Oestreich, R. C. Kewaunee
 Smithwick, Jas. Kewaunee

La Crosse County

Bonsack, Theo. West Salem
 Egler, Victor H. La Crosse, R. 1
 Engebretson, Edwin S. West Salem
 Harr, Ernest B. Bangor
 Hass, Reinhold A. La Crosse, R. 1
 Hemker, Fritz H. West Salem
 Jewett, Harry Bangor
 Jones, E. E. Rockland
 Lawrence, F. W. Bangor
 Nelson, Osan La Crosse
 Nuttleman, Alfred L. West Salem
 Nuttleman, Fred West Salem
 Sandman, W. D. Holmen

LaFayette County

Akins, Clyde E. Warren, Ill.
 Carey, W. H. Argyle

Erickson, Clarence...South Wayne
 Jorneby, Carl.....Blanchardville
 McConnell, F. J.....Darlington
 Perry, Will H.....Graftiot
 Rood Bros.....So. Wayne
 Sargent, Roy E.....Warren, Ill.
 Stewart, J. W.....Blanchardville
 Usher, Earl.....So. Wayne
 Usher, J. M.....So. Wayne
 Vinger, Milo J.....Argyle

Langlade County

Kalouner, Edward.....Antigo, R. 5
 Persen, Alfred.....Bryant

Manitowoc County

Axley, Walter.....Cleveland
 Ballestad, Lars.....Manitowoc
 Bauer, Adolph H.....Manitowoc, R. 2
 Bruhn, John F.....Two Rivers, R. 1
 Berge, Otis I.....Valders
 Clusen, Reinhold.....Manitowoc
 Geraldson, Mervin.....Manitowoc, R. 4
 Gigstad, Benneth.....Valders
 Gunderson, Clifford.....Manitowoc, R. 4
 Gustavson, Chas.....Manitowoc, R. 4
 Halverson, Almer.....Manitowoc, R. 1
 Heidemann, O. C.....Kiel, R. 2
 Hessel, Louis.....Manitowoc, R. 6
 Kielsmeier, Rudolph C.....Timothy
 Klann, Adolph.....Hayton, R. 1
 Knutson, Ed A.....Manitowoc, R. 4
 Kolb, Ed.....Cleveland, R. 2
 Marken, Otis A.....Valders
 Marken, Richard L.....Valders
 Paulsen, J. E.....Manitowoc, R. 4
 Rein, Robert.....Cleveland, R. 1
 Roethel, Herman.....Kiel
 Schulte, Peter J.....Cleveland
 Straka, Edward E.....Maribel
 Strowig, Wm. A.....Cleveland, R. 1
 Sullivan, Jas. A.....Grimms
 Tyler, J. G.....Valders
 Wiegand, Otto R.....Cleveland
 Wigen, Andrew.....Quarry
 Wilkowske, Hugo.....Mishicot

Marathon County

Aschbrenner, H. H.....Stratford
 Baesemann, Otto.....Edgar
 Brehm, E. A.....Colby
 Griffith, James.....Spencer
 Heinke, Alvin E.....Stratford
 Nieman, Walter.....Hamburg, R. 1
 Reinhardt, Walter H.....Wausau

Marinette County

Falarsh, Frank.....Peshtigo
 Olson, Otto W.....Walsh
 Gould, Merrill.....Peshtigo

Marquette County

Cairns, J. H.....Montello
 Gaffney, Ellery.....Oxford
 Houslet, Neal.....Packwaukee
 Johnson, Sam.....Westfield
 Judd, Jasper.....Endeavor
 Judd, Jesse L.....Endeavor
 Landgraaf, Henry.....Endeavor
 McMillen, R. A.....Endeavor
 Parrott, Alfred.....Endeavor

Milwaukee County

Basse, Wm. H.....
Milwaukee, Sta. A., R. 4
 Guenther, Nelson W.....
So. Milwaukee, R. 17
 Hardy, John.....Wauwatosa
 Milwaukee, 935 Teutonia Ave.
 Kurtze, Otto C.....West Allis, R. 15
 Meyer, Alfred.....Oakwood, R. 18
 Pierner, Fred.....No. Milwaukee
 Pierner, John W.....Thiensville
 Warzynakoski, Arthur.....
Oakwood, R. 18

Monroe County

Aarness, O. C.....Cashton
 Andrew, J. S.....Wilton
 Ebert, Edmund D.....Tomah
 Ebert, Francis E.....Tomah
 Finegan, Louis.....Sparta
 Foth, F. D.....Norwalk
 Fox, C. L.....Leon
 Freeman, G. A.....Sparta
 Grassman, Irwin.....Kendall
 Hanchett, W. H.....Sparta
 Hansen, Carl F.....Sparta
 Harris, R. E.....Warrens
 Heasty, Ralph.....Sparta
 Hitchcock, Clarence.....Sparta
 Howell, H. P.....Sparta
 Jones, S. R.....Leon
 Kirst, Ernest J.....Tomah
 McDonald, James P.....Sparta
 Peterson, John H.....Cashton
 Whitehead, H. W.....Leon

Outagamie County

Jamison, Robert.....Appleton
 Letts, Edward F.....Appleton, R. 4

Merkel, Henry.....Appleton, R. 3
 Mueller, Edward O.....Appleton
 Ryan, Malachi.....So. Kaukauna
 Schaefer, R. J.....Appleton, R. 1
 Schmit, A. W.....Appleton
 Schmit, Geo.....Greenville, R. 16
 Schmit, John A.....Hortonville
 Tubbs, Herbert.....Seymour
 Wussow, Chas. A.....Seymour

Ozaukee County

Ahlers, Walter.....Grafton
 Blank, George A.....Grafton
 Clausing, Adolph.....Thiensville
 Gould, Merrill.....Peshtigo
 Meyer, A. H.....Grafton
 Pierner, John W.....Thiensville
 Port, Mike.....Port Washington
 Wulff, Wm.....Grafton

Pepin County

Fleishauer, Chas. K.....Arkansas
 Hicks, Earl L.....Pepin, R. 1

Pierce County

Brown, Wm.....Spring Valley
 Dunbar, Geo. W., Sr.....River Falls
 Dunbar, Harold.....River Falls
 Hanson, Henry O.....Spring Valley
 Heinze, Louis.....Prescott
 Nelson, Emil.....River Falls
 Neystrom, Archie.....Maiden Rock
 Otis, Frank.....Maiden Rock
 Scheid, Byron J.....Bay City

Polk County

Christensen, Herman.....Milltown
 Germanson, Herbert.....Luck
 Hedlund, Adolph.....Clayton
 Lindberg, Clinton.Dresser Jct., R. 1
 Nelson, Peter C.....Milltown
 Peterson, Eni.....Amery, R. 4
 Uhlin, Albin.....Clayton, R. 1
 Uhlin, Frank.....Clayton

Portage County

Arnott, Grace M.....Stevens Point
 Cafe, Geo.....Stevens Point, R. 1
 Gullickson, Gustave.....Nelsonville
 Gullickson, Thos. O.....Nelsonville
 Hanson, J. K.....Stevens Point
 Hanson, N. P.....Amherst Jct., R. 2
 Lewis, Lloyd.....Stevens Point, R. 1
 Precourt, L. A.....Plover
 Smith, C. A.....Amherst

Wagner, Raymond G.....
Stevens Point, R. 1
 Wrolstad, Alfred M.....Amherst Jct.

Price County

Hoffman, Conrad.....Phillips, R. 1

Racine County

Cook, Geo. L.....Burlington
 Gehrand, Arthur A.....Rochester
 Grass, Frank.....Rochester
 Holloway, E. M. Union Grove, R. 8
 Klofanda, Reuben.....Racine, R. 1
 Nau, Ray H.....Franksville
 Renak, Edw.....Racine, R. 2
 Robers, Wm. J.....Burlington, R. 20
 Rolfson, Clarence E.....
Waterford, R. 25
 Wilson, Wm. C.....Burlington

Richland County

Ghastin, Floyd.....Twin Bluffs
 Ghastin, Wm. J.....Twin Bluffs
 James, Geo. A.....Richland Center
 Janecek, Cyril.....Bloom City
 Jaquish, J. E.....Twin Bluffs
 Lord, Karl W.....Richland Center
 Nourse, Glen.....Sextonville
 Post, H. L.....Sextonville
 Schmitz, Edw. H.....Lone Rock
 Schmitz, Hubert.....Lone Rock
 Turgasen, J. H.....Richland Center

Rock County

Austin, Alpheus.....Janesville
 Austin, Alva G.....Janesville, R. 6
 Austin, Alvina L.....Evansville
 Austin, Clifford P.....Janesville
 Austin, George M.....Janesville, R. 6
 Austin, Wilbur B.....Janesville
 Austin, Wilbur D.....Janesville
 Babcock, J. G.....Evansville
 Barker, E. S.....Janesville
 Churchill, Arthur.....Janesville, R. 7
 Devine, C. B.....Evansville
 Dougan, W. J.....Beloit
 Ellis, E. J.....Evansville
 Fish, Esli.....Janesville, R. 7
 Godfrey, Burt K.....Janesville, R. 1
 Greene, J. I.....Clinton
 Hoague, Chas. C.....Janesville, R. 7
 Jacobs, S. M.....Janesville, R. 3
 Latta, F. L.....Clinton Jct.
 Marston, Albert.....Beloit, R. 30
 McCoy, Geo. L.....Evansville, R. 20

Nelson, Martin.....Milton
 Porter, J. K. P.....Evansville
 Porter, L. W.....Evansville
 Smith, L. E.....Beloit, R. 30
 Snyder, Clyde L.....Forestville
 Snyder, Robt. B.....Clinton

Rusk County

Beebe, A. B.....Bruce
 Pritchard, John T.....Flambeau

St. Croix County

Bennett, Wm. L....New Richmond
 Brunner, R. W.....Hudson
 Hecker, Paul.....New Richmond
 Imholt, B. A.....Houlton
 Kraschke, Geo. H..New Richmond
 Paulson, P. A.....Hudson
 Utgaard, Peter W.....Cylon

Sauk County

Accola, John.....Prairie du Sac
 Borck, Sam.....No. Freedom
 Clavadatscher, T.....Sauk City
 Cobleigh, Rollo S.....Delton
 Capener, W. R.....Baraboo
 Emery, George.....Logansville
 Frederickson, Fred..Spring Green
 Gade, Adolph.....Reedsburg
 Gallagher, J. G.....Reedsburg
 Gasser, George W....Spring Green
 Graves, D. W.....Baraboo
 Hansch, Albert.....Baraboo
 Hamburg, J. F.....Baraboo
 Harvey, C. B.....Wonewoc
 Hasz, Theodor.....Loganville
 Henrichs, Ernest.....Reedsburg
 Herwig, Richard.....Delton
 Herwig, Theo.....Delton, R. 1
 Hood, D. L.....Spring Green
 Koenecke, E. H.....Reedsburg
 Marshall, W. S.....Delton
 Ochsner, Arthur C.....Plain
 Pearson, Clarence..La Valle, R. 4
 Raltzman, A. L.....Reedsburg
 Rich, O. S.....Baraboo
 Rich, W. V.....Baraboo
 Riek, Anthony.....Plain
 Robson, Melvin.....Spring Green
 Rodewald, Walter C.....Baraboo
 Rusch, E. W.....Reedsburg
 Schaefer, Erwin S....Black Hawk
 Schuette, Herman W.....
Reedsburg, R. 3
 Siggelkow, M. E.....Baraboo
 Spencer, Hardy.....Baraboo
 Stone, Riley.....Reedsburg

Volz, Robert.....Ableman
 Vonder, Ohe, Wm. H...Reedsburg
 Weirich, Martin J.....Baraboo
 Wischoff, Edwin.....Reedsburg

Sawyer County

Thulin, Edwin.....Hayward
 Uhrenholdt, Jens.....Leonard

Shawano County

Berg, Carl.....Tigerton
 Hildemann, E. S.....Belle Plaine
 Klovdahl, John J.....Wittenberg
 Norrborn, C. G.....Eland
 Wedgwood, R. E.....Shawano

Sheboygan County

Blonien, Peter.....Elkhart
 Dennerlein, Arthur J...Plymouth
 Fisher, Louis.....Haven
 Frauenheim, O. R....Random Lake
 Garside, Harry R....Cedar Grove
 Herdrich, S. F.....Adell, R. 19
 Illian, W. L.....Adell, R. 19
 Oosterhuis, Alvin C.....
Sheboygan Falls
 Parrish, J. O.....Plymouth
 Te Selle, Clarence J.....
Sheboygan Falls
 Wagner, Arthur L.....Haven

Trempealeau County

Chrysler, Harvey.....Osseo
 Cooke, Carl.....Independence
 Coon, Leslie.....Osseo
 Dean, Robert.....Eleva
 Graul, Edw. J.....Independence
 Graul, Geo. W.....Independence
 Hegge, Julius.....Galesville
 Markham, F. C.....Independence
 Mattison, Thos.....Blair
 McCauley, Rex.....Osseo

Vernon County

Aberg, Jacob.....De Soto
 Bean, A. P.....De Soto
 Cade, Jos. M.....Viroqua
 Christensen, Johan...West Prairie
 Kjelland, Christian.....Viroqua
 Lewison, Thomas....Viroqua, R. 5
 McClurg, Walter.....Viroqua
 Neprud, Nels O.....Coon Valley
 Olson, Clarence.....Westby
 Olson, Gilbert C.....Westby
 Solem, Edw.....Wonewoc

Sebion, Cornelius.....Westby
 Sebion, Tennis.....Westby
 Sorem, Erick....West Prairie, R. 1
 Stegene, Chris.....Viroqua, R. 5
 Stromstad, P. L.....Coon Valley

Walworth County

Anderson, Alvin M....Whitewater
 Bromley, Fred G.....
Whitewater, R. 4
 Cassidy, Wm. S.....Whitewater
 Coates, Clinton J.....Elkhorn
 Anderson, Alvin M....Whitewater
 Coburn, Ora.....Whitewater
 Downey, U. J.....Whitewater
 Dunbar, Harry D.....Elkhorn
 Harris, Jesse S.....Delavan
 Lean, R. J., & Son.....Elkhorn
 Ledger, David.....Lake Geneva
 Lewis, E. H.....Whitewater
 Mack, Warren L.....Whitewater
 Marck, Fred R.....Honey Creek
 Meurer, Paul.....Genoa Jct.
 Mitchell, Edw. H.....Delavan
 Peters, Ezra.....Sharon
 Peterson, Peter.....Walworth
 Piper, Harry.....Sharon
 Ranney, P. C.....Elkhorn
 Robinson, A. S.....Lake Geneva
 Thacher, Ed. F.....Zenda
 Thacher, Louis E.....Zenda
 Thompson, A. N.....Delavan
 Thompson, Alfred.....Delavan

Washington County

Bast, Paul J.....Rockfield
 Berg, Jacob.....So. Germantown
 Dhein, Henry.....Rockfield
 Groth, C. A.....Cedarburg
 Hayes, Thos., Jr.....Richfield
 Klumb, Albert.....Richfield
 Klumb, Hugo G.....Kewaskum
 Klumb, Oscar.....Rockfield
 Kressin, Gustav R.....Cedarburg
 Milkee, George.....West Bend
 Murphy, Lawrence.....Hartford
 O'Connell, James.....Hartford
 Puls, John.....Hartford
 Schroeder, H. F.....West Bend
 Schottler, Conrad J.....
So. Germantown
 Schultz, Nelson F. West Bend, R. 3
 Stuesser, Eugene.....Richfield
 Waldt, Hugo.....Jackson
 Ziemer, Joseph.....Jackson
 Ziemer, Paul.....Jackson

Waukesha County

Adams, Jay.....Waukesha, R. 5
 Adams, M. J.....Waukesha
 Baird, Wm. J.....Waukesha
 Blackwell, Leslie C....Waukesha
 Cook, Irving O....Nashotah, R. 23
 Dance, Geo.....Brookfield
 Dance, Ja...es.....Brookfield
 Dibble, Roy A....Menomonee Falls
 Fuller, Horace.....North Lake
 Graser, Adam H.....Waukesha
 Greene, Howard....Genesee Depot
 Haylett, Henry O..Waukesha, R. 9
 Heling, Paul....Menomonee Falls
 Jones, Albert.....Dousman
 Kaul, E. H.....Waukesha, R. 7
 Kultz, Harvey A.....Waukesha
 Longley, H. N.....Dousman
 Montague, C. R.....No. Prairie
 Nicolaus, Chas. A.....Waukesha
 Roberts, Jack.....Waukesha
 Rosenow Bros.....Oconomowoc
 Rust, Shirley H.....Mukwonago
 Schafer, Chas. H..Waukesha, R. 7
 Schroeder, F. C.....Hartland
 Shannon, M. J.....Oconomowoc
 Spaulding, C. F.....Oconomowoc
 Stewart, Joe H.....Wales
 Swan, L. W.....Mukwonago
 Swoboda, F. G.....Dousman
 Tempero, Roy J..Menomonee Falls
 Weir, W. W.....Mukwonago
 Wetzel, Alvin.....Brookfield, R. 12
 Williams, Arthur R.....Waukesha
 Williams, D. T....Waukesha, R. 8
 Wright, H. W.....Waukesha
 Zillmer, Wm. C.....Brookfield

Waupaca County

Ashnum, C. S.....Waupaca, R. 2
 Bestul, Martin J.....Scandinavia
 Bestul, Otto O.....Scandinavia
 Bigford, W. W.....Manawa
 Feathers, O. C.....Manawa
 Gorges, H. F.....New London
 Harrington, Myron.....Waupaca
 Heinrich, Otto W.....New London
 Klemm, Louis J.....Welcome
 Kneip, William.....Weyauwega
 Larson, LeRoy.....Iola
 Lemke, Albert.....Clintonville
 Nace, Franklin.....Iola
 Pinkerton, Altai J.....Waupaca
 Pirner, Fred.....Sugar Bush
 Raisler, Theodore.....Welcome
 Rosholt, Jacob A.Scandinavia, R. 1
 Spencer, Earl.....Waupaca, R. 3
 Wied, Edward.....Waupaca

Waushara County

Anderson, Thos. E. Wild Rose
 Bartleson, Harvey. . Pine River, R. 1
 Carey, Henry. Redgranite
 Clark, J. J. Berlin, R. 1
 Egan, J. J. Wautoma, R. 6
 Harris, A. M. Plainfield
 Knuteson, Ernest L. Wautoma

Winnebago County

Blakely, Albert J. Neenah
 Blodgett, Gordon R. Neenah
 Bussey, W. P. Omro, R. 24
 Cross, A. J. Allenville
 Hoeft, Chas. A. Oshkosh,
 Linwood Farm
 Jackson, H. H. Oshkosh
 104 Main St.
 Michels, Math. Picketts
 Miller, Henry C. Allenville
 Palfrey, John. Omro
 Rasmussen, Fred. Neenah, R. 11
 Schaefer, R. J. Appleton
 Smith, Seymour L. Oshkosh
 Tanner, A. V. Omro, R. 24
 Treleven, Guy T. Omro
 Waite, Sumner R. . . . Oshkosh, R. 7
 Wood, Calvin D. Oshkosh, R. 4

Wood County

Christensen, Peter. . Marshfield, R. 3
 Hanifin, Leo. Grand Rapids
 Kieffer, J. C. Auburndale
 Kronholm, V. E. Grand Rapids

NON-RESIDENTS

California

Hauck, Nathan. Alton

Connecticut

Haas, Geo. H. Meriden

Illinois

Charles, Fred. Woodstock
 Coffin, Russel H. Rockford, R. 7
 Fellows, Samuel M. Rockford
 George, W. R. Sterling
 Hitchcock, H. R. Pecatonica
 Halley, Guy R. Rockford
 Hoxey, Edw. H. Serena
 Richardson, G. J. Spring Grove
 Smith, Russell. Crystal Lake
 White, Arthur Rockford
 503 N. Church St.

Iowa

Anderson, Theo. Waterville, Iowa
 Berns, Xavier. Guttenberg, R. 1
 Brooks, Homer H. Hopkinton
 Hawkins, A. B. Farley
 Mathis, Adolph J. Lansing
 Thompson, Thor., Jr. Wadena

Maine

Fernald, Paul E. West Oldtown

Michigan

Eskil, Odin. Iron Mountain
 Meyer, A. J. Howell, R. 7

Minnesota

Meyer, Wm. Ellsworth
 Smith, J. G. Farmington

Ohio

Doerschuk, John J. Shanesville

Growers of Manshury Barley (Wisconsin No. 62).

Buffalo County	Kenosha County
Muehleisen, Gottlieb.....Tell	Orvis, L. C.....Salem
Spaulding, L. C.....Mondovi	
Columbia County	Kewaunee County
Lloyd, Evan B.....Cambria	Oestreich, R. C.....Kewaunee
Dane County	La Crosse County
Koltes, Leo. J.....Dane	Sandman, W. D.....Holmer
Mitchell, J. T.....Cottage Grove	
Palmer, Levi.....Verona	Manitowoc County
Dodge County	Garey, James.....Grimms
Bohl, Anton.....Beaver Dam, R. 1	Marinette County
Krueger, Henry E.....Beaver Dam	Falarsh, Frank.....Peshtigo
Eau Claire County	Racine County
Allen, Chas. L.....Eau Claire	Spartz, N. A.....Union Grove
Donaldson, H. A.....Eau Claire	
Konz, John, Sr.....Fairchild	Richland County
Fond du Lac County	Ghastin, Wm J.....Twin Bluffs
Hinz, A. F.....Ripon	Rock County
West, H. P.....Ripon	Austin, Alpheus.....Janesville
Grant County	Austin, W. B.....Janesville
Wiseman, Paul.....Bridgeport	Sauk County
Green County	Capener, Walter R.....Baraboo
Marty, Matthias...Monticello, R. 1	Ochsner, Arthur C.....Plain

Growers of Ito San Soy Beans.

<p>Adams County</p> <p>Lee, Royal D.....Arkdale</p>	<p>Fond du Lac County</p> <p>Hendrichs, J. H.....Campbellsport Meekin, H. W.....Fond du Lac Whittaker, Horace E..Fond du Lac</p>
<p>Buffalo County</p> <p>Bilderbach, Wm.....Mondovi Muehleisen, G.....Tell</p>	<p>Grant County</p> <p>Carmody, P. J.....Mt. Ida Runde, Aloysius.....Cuba City Runde, Martin C.....Cuba City</p>
<p>Calumet County</p> <p>Feik, Arthur.....Chilton</p>	<p>Green County</p> <p>Dettwiler, John.....Monroe Tschudy, B. O.....Monroe, R. 5 Ward, Harold.....Brodhead</p>
<p>Chippewa County</p> <p>King, Wm.....Jim Falls Upton, H. F.....Jim Falls</p>	<p>Iowa County</p> <p>Caldwell, John.....Mazomanie Farwell, Roy R.....Ridgeway Fitzsimmons, Ira A..Mineral Point</p>
<p>Columbia County</p> <p>Lloyd, Evan B.....Cambria</p>	<p>Jefferson County</p> <p>Brown, A. A.....Waterloo</p>
<p>Crawford County</p> <p>Hjelle, Ole K.....Soldiers Grove Stevenson, Carl....Soldiers Grove</p>	<p>Juneau County</p> <p>Hall, W. H.....Wonewoc</p>
<p>Dane County</p> <p>Anthony, D. C.....Oregon Bewick, Wm. M.....Sun Prairie Birrenkott, M. J.....Klevenville Brigham, Chas. I....Blue Mounds Davidson, W. L.....Verona Mitchell, J. T.....Cottage Grove Schroeder, Robert...Morrisonville Wernich, Wm. H.....DeForest</p>	<p>Kenosha County</p> <p>Bradley, J. Frank.....Somers</p>
<p>Dodge County</p> <p>Bohl, Anton.....Beaver Dam Buzzewitz, Raymond...Reeseville Grebe, Fred P.....Fox Lake Jones, John G.....Beaver Dam Jones, Owen R.....Beaver Dam Krueger, H. E.....Beaver Dam Neuberger, Wm. T....Reeseville Schumann, Hugo.....Beaver Dam</p>	<p>Kewaunee County</p> <p>Collin, D. W.....Luxemburg</p>
<p>Door County</p> <p>Erickson, Ole C....Detroit Harbor</p>	<p>La Crosse County</p> <p>Bonsack, Theo.....West Salem Van Loon, John.....La Crosse</p>
<p>Eau Claire County</p> <p>Allen, Chas. L.....Eau Claire</p>	<p>La Fayette County</p> <p>Akins, Clyde E.....Warren, Ill. Sargent, Roy E.....Warren, Ill. Usher, Earl.....So. Wayne</p>
	<p>Langlade County</p> <p>Stewart, Blaine G.....Antigo</p>

Manitowoc County

Pauer, Adolph H..Manitowoc, R. 2
Sullivan, Jas. A.....Grimms

Marquette County

Cairns, J. H.....Montello
McDowell, D. P.....Packwaukee

Milwaukee County

Guenther, Nelson W.....
.....So. Milwaukee

Monroe County

Lee, L.....Leon
Mistele, Wm.....Kendall

Outagamie County

Jamison, Clarence..Appleton, R. 2
Jamison, Robert....Appleton, R. 2
Jamison, W. G.....Appleton, R. 2
Koss, Otto W.....Medina
Mills, Roscoe C....Appleton, R. 2
Schmit, Albert.....Appleton
Schmit, A. W.....Appleton
Schmit, Geo.....Greenville
Schmit, Wm. F.....Appleton

Portage County

Hicks, S. E.....Almond
Lewis, Lloyd..Stevens Point, R. 1
Wagner, Raymond G.....
.....Stevens Point, R. 1

Waupaca County

Ashmun, C. S.....Waupaca
Harrington, Myron H....Waupaca
Larson, LeRoy.....Iola
Pinkerton, Altai J.....Waupaca
Spencer, E. H.....Waupaca
Wied, Edward.....Waupaca

Richland County

Ghastin, Wm. J.....Twin Bluffs
Nourse, Glen.....Sextonville
Post, H. L.....Sextonville
Welsh, S. L.....Tavera

Rock County

Hemingway, Geo. L.....Hanover
Peik, Edmund.....Edgerton
Porter, J. K. P.....Evansville

St. Croix County

Alberts, Will.....New Richmond
Kruschke, Geo. H..New Richmond

Sauk County

Clavadatscher, T.....Sauk City
Gallagher, J. F.....Reedsburg
Herwig, Richard.....Delton
Herwig, Theo.....Delton, R. 1
Jens, Otto A.....Sauk City
Ochsner, A. C.....Plain
Riek, Anthony.....Plain
Rusch, E. W.....Reedsburg

Sheboygan County

Dennerlein, A. J.....Plymouth
Frauenheim, O. R....Random Lake
Illian, Wm. L.....Adell, R. 19
Leonard, M. J.....Plymouth
Ogle, James.....Waldo
Schaefer, Henry G.....Plymouth

Vernon County

Nepруд, Nels.....Coon Valley
Staley, John N.....Hillsboro

Walworth County

Lean, R. J., & Son.....Elkhorn
Peterson, E. C.....Whitewater

Waukesha County

Dibble, Roy A.....
.....Menomonee Falls, R. 17
Heling, Wm. C..Menomonee Falls
Kaul, E. H.....Waukesha, R. 7
Kuhtz, Harvey A.....Waukesha
Rosenow Bros.....Oconomowoc
Tempero, Roy J..Menomonee Falls

Wauwasha County

Winge, Wm.....Wild Rose

Winnebago County

Bussey, W. P.....Omro, R. 24
Cross, A. J.....Allenville
Michels, Math.....Pickett
Miller, Henry C.....Allenville
Palfrey, John.....Omro

Growers of Early Black Soy Beans.

<p>Dodge County</p> <p>Krueger, H. E.....Beaver Dam</p> <p>Dunn County</p> <p>Kent, J. S.....Rusk</p> <p>Manitowoc County</p> <p>Sullivan, Jas. A.....Grimms</p> <p>Outagamie County</p> <p>Schmit, Geo.....Greenville Schmit, John A.....Hortonville Wussow, Chas. A.....Seymour</p>	<p>Pepin County</p> <p>Hicks, Earl L.....Pepin, R. 1</p> <p>St. Croix County</p> <p>Bennett, Wm. L....New Richmond</p> <p>Sheboygan County</p> <p>Frauenheim, O. R...Random Lake</p>
---	---

Growers of Black Soy Beans.

<p>Adams County</p> <p>Walker, Ray C.....Plainville</p> <p>Barron County</p> <p>Bilderbach, W. T.....Chetek</p> <p>Calumet County</p> <p>Peik, Arthur.....Chilton</p> <p>Columbia County</p> <p>Dalton, Ernest E.....Pardeeville Dalton, Roy E.....Pardeeville</p> <p>Dane County</p> <p>Schroeder, Robt.....Morrisonville</p> <p>Dodge County</p> <p>Bohl, Joseph N.....Beaver Dam Howitt, Chas. H.....Randolph Jones, John G....Beaver Dam, R. 4 Jones, Owen, R., Jr....Beaver Dam Kreuger, Henry E.....Beaver Dam Schiller, Claude E....Beaver Dam</p> <p>Green County</p> <p>Dettwiler, John.....Monroe</p>	<p>Iowa County</p> <p>Jones, Orren Lloyd.....Hillside</p> <p>Manitowoc County</p> <p>Heidemann, O. C.....Kiel, R. 2</p> <p>Outagamie County</p> <p>Mueller, Edw. O.....Appleton</p> <p>Richland County</p> <p>Ghastin, Wm. J.....Twin Bluffs</p> <p>Sauk County</p> <p>Ochsner, Arthur C.....Plain</p> <p>Sheboygan County</p> <p>Garside, Harry R.....Cedar Grove</p> <p>Waukesha County</p> <p>Swoboda, F. G.....Dousman</p> <p>Winnebago County</p> <p>Schaefer, R. J.....Appleton</p>
--	---

Growers of Medium Early Green Soy Beans.

Dodge County		Richland County	
Ehrhardt, Daniel.....	Knowles	Ghastin, Wm. J.....	Twin Bluffs
Grant County		Waukesha County	
Runde, August.....	Sinsinawa	Swoboda, F. G.....	Dousman
Outagamie County			
Wussow, Chas. A.....	Seymour		

Growers of Yellow Soy Beans.

Dodge County	
Howitt, Chas. H.....	Randolph
Jones, John G.....	Beaver Dam
Krueger, H. E.....	Beaver Dam

Growers of Brown Soy Beans.

Dodge County		Monroe County	
Bohl, Anton.....	Beaver Dam	Whitehead, H. W.....	Leon
Fond du Lac County		Walworth County	
Meekin, H. W.....	Fond du Lac	Peterson, E. C.....	Whitewater
Manitowoc County		Waukesha County	
Bauer, A. H.....	Manitowoc, R. 2	Tempero, Roy J.	Menomonee Falls

Growers of Silver King Corn (Wisconsin No. 7).

Adams County	
Lee, Royal D.....	Arkdale
Markham, F. C.....	Independence
Rodger, Ray.....	Endeavor
Walker, Ray C.....	Plainville
Barron County	
Bartlett, Ray.....	Barron
Christlaw, A. M.....	Rice Lake
Bayfield County	
Kinstler, Clarence L....	Washburn
Brown County	
Nies, Peter.....	Greenleaf, R. 3
Buffalo County	
Arms, Edward.....	Fountain City
Rilderbach, W. T.....	Mondovi
Engel, Geo. H.....	Fountain City
Joos, Frank B.....	Fountain City
Suhr, A. A.....	Cochrane
Whelan, John.....	Mondovi
Calumet County	
Kircher, H. W.....	Chilton, R. 3
Peik, Arthur.....	Chilton
Peik, Edmund.....	Chilton
Peterson, Hy. N.....	New Holstein
Chippewa County	
Pekken, Oscar.....	Bloomer
Martiny, L. P.....	Chippewa Falls
Clark County	
Beach, Glenn H.....	Loyal
Columbia County	
Cannon, F. A.....	Pardeeville
Canener, Howard.....	Portage
Chipman, W. R.....	Morrisonville
Dalton, Ernest E.....	Pardeeville
Dalton, Roy E.....	Pardeeville
Ellickson, A. C.....	Arlington
Emery, Geo. Q.....	Poynette
Gloeckler, Theo.....	Portage
Grove, Christian.....	Columbus
Grover, Albert.....	Columbus, R. 6
Jones, John R.....	Columbus
Lloyd, Evan B.....	Cambria
Sharpee, Carl.....	Columbus
Sharpee, Endre A.....	Rio, R. 1
Sharpee, J. A.....	Rio, R. 1
Steuber, L. J.....	Lodi
Crawford County	
Accola, Lawrence.....	Steuben
Bannen, R. E.....	Poscobel
Hjelle, Ole K.....	Soldiers Grove
Johnson, J. E.....	Ferryville
Stevensen, Carl.....	Soldiers Grove
Dane County	
Angvick, Lars.....	Cottage Grove
Anthony, David C.....	Oregon
Aslaxson, Alfred.....	Mt. Horeb, R. 4
Bendickson, I. E.....	Cambridge
Bewick, Wm. W.....	Madison
Birkinbine, Frank P....	Sun Prairie
Bollig, F. A.....	Black Earth
Brigham, Chas. L.....	Blue Mounds
Brue, N. H.....	De Forest
Chamberlain, Geo. C.....	Windsor
Chase, J. P.....	Sun Prairie
Chatteron, Ray W.....	Basco
Christianson, Andrew....	Deerfield
Christianson, Irvin.....	Deerfield
Clayton, A. W.....	So. Madison
Coldwell, John.....	Mazomanie
Colladay, W. E.....	Stoughton
Davidson, Wm. L.....	Verona
Davison, R. W.....	Sun Prairie
Donahue, M. J....	Madison, R. F. D.
Dreger, Emil.....	Madison, R. 6
Elvehjem, O. J.....	McFarland
Elver, E. C.....	McFarland
Ford, J. F.....	Mazomanie
Gav, John.....	Madison
Gillies, J. H.....	Stoughton
Gillette, R. A.....	Verona
Graves, E. H.....	Madison
Heineck, W. E.....	Madison
Hill, Otto C.....	Mt. Horeb
Hogan, Dominic.....	Waunakee
Holscher, A. C.....	Cottage Grove
Holzhtuter, Walter.....	Marshall
Hopkins, J. W.....	Morrisonville
Howe, T. R.....	Sun Prairie
Jones, E. F.....	Sun Prairie
Kalscheur, Lawrence....	Klevenville
Kaltenberg, Anthony....	Waunakee
Keenan, W. M., Jr.....	McFarland

Kendall, Geo. W.....Sun Prairie	Johnston, Oney.....Watertown
Koltes, Leo. J.....Dane	Jones, John G...Beaver Dam, R. 4
Koltes, Jos. F.....Dane	Jones, Owen R., Jr...Beaver Dam
Lee, N. A.....Deerfield	Jones, Seneca T..Watertown, R. 1
Lee, Oliver.....Klevenville	Klatt, Ernest.....Beaver Dam
Lee, Severt A.....Deerfield	Krueger, H. E.....Beaver Dam
Lunde, Gunder.....Stoughton	Kuhlman, A. H.....Lowell
Lyman, C. A.....Sun Prairie	Lehmann, Theo.....Watertown
Mandt, Lawrence.....Sun Prairie	Lindemer, Geo. H.....Juneau, R. 2
Mickelson, Thos.....Deerfield	Mahoney, David.....Juneau
Mielke, J. O.....Basco	Miller, A. H.....Waupun, R. 2½
Mikkelson, Carl.....Deerfield	Neuberger, Wm. T.....Reeseville
Mitchell, Geo.....Cottage Grove	Owens, H. C.....Fox Lake
Mitchell, J. T.....Cottage Grove	Randall, S. M.....Waupun
Moore, H. G.....McFarland	Roberts, Wm. E...Randolph, R. 3
Morgan, H. H.....Madison	Schiller, Claude E...Beaver Dam
Morris, Geo. C.....Madison	Schumann, Hugo...Beaver Dam
Nordlie, Alfred.....Deerfield	Sette, O. E.....Juneau
Nordlie, C. K.....Rockdale	Ulrich, Erwin C.....Horicon
Ohman, Alfred.....Deerfield	Voigt, Alvin.....Oconomowoc
Ohman, S. S.....Deerfield	
Patterson, Harley...Cottage Grove	
Pope, Roy W.....Sun Prairie	
Radermacher, John....Middleton	
Raftery, Agnes.....Windsor	
Reindahl, A. K.....Madison	
Rhiner, Albert.....Riley	
Rovston, Thos.....Mazomanie	
Ruhrmann, B. J.....Cross Plains	
Ryan, Gerald.....Sun Prairie	
Schroeder, Robert...Morrisonville	
Sharpee, P. A.....Morrisonville	
Showers, Milton W....Mazomanie	
Simonson, S. K.....Deerfield	
Skre, Albert.....McFarland	
Smithback, Marvin....Cambridge	
Stensly, Anton.....Cottage Grove	
Stensly, Ed. P.....Cottage Grove	
Swalem, P. O.....De Forest	
Thielke, Emil.....Madison, R. 6	
Thorstad, Harlon.....Deerfield	
Thorstad, N. H.....Deerfield	
Toepfer, Otto.....Madison, R. 6	
White, F. G.....Oregon	
Willmarth, E. E.....Sun Prairie	
Zabel, Edward.....Deerfield, R. 1	

Dodge County

Adams, Lester B.....Lowell
Barstow, Jas. E....Randolph, R. 1
Bohl, Anton, Jr...Beaver Dam, R. 1
Bohl, Jos. N.....Beaver Dam
Brooks, Ed. J.....Watertown
Russewitz, Raymond...Reeseville
Russewitz, W. E.....Juneau
Goetsch, Albert A.....Juneau
Grebe, Fred P.....Fox Lake
Henke, Louis.....Lowell
Joice, George.....Waterloo

Door County

Bowman, Wallace..Detroit Harbor
Hocks, Walter.....Sturgeon Bay

Dunn County

Meacham, C.....Downing

Eau Claire County

Allen, Chas. L.....Eau Claire
Carlson, Axel T.....Augusta, R. 4
Faast, Ben F.....Eau Claire
Konz, John, Sr.....Fairchild
Mayo, John, Jr.....Eau Claire
Oliver, C. S.....Eau Claire
Wright, W. C.....Eau Claire, R. 4
Wyman, A. E.....Eau Claire

Fond du Lac County

Adams, Richard F...Campbellsport
Adkins, M. V.....Ripon
Briggs, E. T.....Fond du Lac
Briggs, L. W.....Peebles
Eriggs, J. W.....Peebles
Donovan, Frank.....Van Dyne
Fisher, W. J...Fond du Lac, R. 7
Halferman, R. K.Fond du Lac, R. 5
Hendricks, J. H....Campbellsport
Hintz, Geo. E.....Oakfield, R. 26
Hintz, Wm.....Oakfield, R. 26
Hinz, A. F.....Ripon
Hunter, Hobart R.Fond du Lac, R. 5
Kastein, Herman.....Waupun
Kitchen, J. H.....Eldorado
Koenigs, Phillip.....Fond du Lac

Lawson, W. A.....Rosendale
 Maug, Arthur J.....Ripon
 McCormick, Fred W..Fond du Lac
 Meekin, H. W.....Fond du Lac
 Meier, Edward F.....Eden, R. 36
 Michels, Henry.....Malone
 Oltery, Henry.....Fond du Lac
 Peebles, E. C.....Peebles
 Peebles, C. E.....Peebles
 Rather, Armand....Peebles, R. 37
 Rather, W. A.....Peebles, R. 37
 Rieman, Elmer.....Ripon
 Root, Alvin W.....Fond du Lac
 Pcot, Frank W.....Fond du Lac
 Smith, Samuel A.....Oakfield
 Stauchfeld, S. C.....Fond du Lac
 Stroup, Fred G.....Fond du Lac
 West, R. N.....Ripon
 Whitaker, Horace E..Fond du Lac

Grant County

Barron, R. E.....Platteville
 Pennett, Ora F.....Glen Haven
 Pcoth, Guy A.....Cuba City
 Bryant, Clinton A....Hazel Green
 Carmody, Daniel.....Mt. Ida
 Childs, S. S.....Boscobel, R. 6
 Dieter, Pert.....Livingston
 Dieter, Wm. A.....Montfort
 Di Vall, W. F.....Montfort
 Graves, Henry F., Jr....Montfort
 Graham, P. S.....Fennimore
 Kaiser, Wm.....Louisburg
 Millman, D. R.....Platteville
 Rodda, Matt.....Hazel Green
 Runde, August.....Sinsinawa
 Runde, Martin C.....Cuba City
 Searles, Wm. L.....Boscobel
 Simmons, Will.....Cuba, R. 1
 Stivarius, Geo. A.....Fennimore
 Trewartha, Edw. J....Hazel Green
 Wayne, Joseph.....Boscobel
 Wieland, Charles.....Lancaster
 Wiseman, Paul.....Bridgeport

Green County

Bechtolt, A. B.....Browntown
 Bechtolt, J. D.....Browntown
 Collintine, Arthur.....Monroe
 Dettwiler, John.....Monroe
 Gapen, C. E.....Monroe
 Iverson, C. M.....Browntown
 Kundert, Wm.....Monroe
 Marty, Mathias.....Monticello
 Mau, H. G.....Brodhead
 Murdock, C. R.....Brodhead
 Murdock, John C.....Brodhead
 Olson, Wm.....Browntown, R. 2

Preston, W. N.....Juda
 Roderick, Lee M.....Juda
 Smiley, Jas. B.....Albany
 Stauffacher, A. J.....Monroe
 Strommen, A. A.....Blanchardville
 Thompson, G. G....Blanchardville
 Tochtermann, C., Jr.....Monroe
 Tschudy, B. O.....Monroe, R. 5
 Waelti, John.....Monroe, R. 4
 Ward, Harold.....Brodhead
 Wood, John.....Albany

Green Lake County

Block, Albert F.....Markesan
 Davies, Elias.....Markesan
 Page, G. F.....Berlin
 Vine, Callice H.....Marquette

Iowa County

Aavang, Henry O.....Barneveld
 Berryman, Chas. H....Dodgeville
 Buss, Will G....Mineral Point, R.
 Coldwell, John.....Mazomanie
 Dolplin, Clarence.....Cobb
 Farwell, R. R.....Ridgeway
 Fitzsimmons, Ira A..Mineral Point
 Gordon, A. L.....Mineral Point
 Gordon, C. D.....Mineral Point
 Gordon, J. Roy.....Mineral Point
 Graber, Edward....Mineral Point
 Jones, Chas. Lloyd.....Hillside
 Jones, Orren Lloyd.....Hillside
 Kitchen, Jos. H.....Edmund
 Ley, Nicholas.....Dodgeville, R. 4
 Paulson, H. E.....Hollandale
 Thomas, Roy E.....Dodgeville

Jackson County

Curran, W. F.....Taylor
 Engleman, John.....Hixton
 Sims, Orley F.....Melrose
 Thompson, Adolph.....
Black River Falls

Jefferson County

Anthes, Henry.....Jefferson
 Recker, Harry J.....Ft. Atkinson
 Rell, Wm. E....Oconomowoc, R. 27
 Brueckner, Justus....Ft. Atkinson
 Church, A. P.....Whitewater
 Emmert, H. L.....Johnson Creek
 Guttenberg, Frank, Jr....Jefferson
 Joice, Geo. E.....Waterloo
 Klement, Otto C.....Ft. Atkinson
 Lehmann, Theo...Watertown, R. 1
 Leonard, Wm. R.....Ft. Atkinson
 Main, H. A.....Ft. Atkinson

McIntyre Bros.....Ft. Atkinson
 Nouman, Frank.....Helenville
 Parsons, Wm. A.....Ft. Atkinson
 Popp, Arthur.....Jefferson, R. 2
 Ward, Charles E.....Ft. Atkinson
 Ward, Harold L.....Ft. Atkinson
 Ward, Rcbt. W..Ft. Atkinson, R. 1

Juneau County

Curtis, J. C.....New Lisbon
 Hall, W. H.....Wonewoc
 Hansen, Harry.....Camp Douglas
 Mead, R. E.....New Lisbon
 Moore, Henry G.....Mauston
 Ritland, Carl.....Elroy
 Solem, Edward.....Wonewoc
 Wagner, J. M.....Union Center

Kenosha County

Bradley, J. Frank.....Somers
 Myrick, Mead O.....Bristol
 Northway, M. J.....Kenosha
 Orvis, L. C.....Salem
 Paddock, Alvin.....Salem
 Sheen, W. J.....Trevor
 Thiers, L. M.....Kenosha
 Thom, J. A.....Bristol

Kewaunee County

Collin, D. W.....Luxemburg
 Defnet, J. J.....Casco, R. 2
 Hoffman, Jacob.....Algoma
 Kocmich, Ed.....Kewaunee

La Crosse County

Bonsack, F. M.....La Crosse
 Bonsack, Theo.....West Salem
 Eggler, Victor H....La Crosse, R. 1
 Griswold, H. W.....West Salem
 Harr, Ernest B.....Bangor
 Herold, Rudolph.....Stoddard
 Jewett, Harry.....Bangor
 Jones, E. E.....Rockland
 Kammlade, Stephen G.....Bangor
 Lawrence, F. W.....Bangor
 Mueller, Walter E.....La Crosse
 Mulder, B. W.....Midway
 Nelson, Osan.....La Crosse
 Nuttleman, Adolph...West Salem
 Nuttleman, Alfred L...West Salem
 Sandman, W. D.....Holmen
 Van Loon, John.....La Crosse

Lafayette County

Bridgman, C. R.....Darlington
 Bryant, Clinton A....Hazel Green

Jorenby, Carl.....Blanchardville
 Rood Bros.....South Wayne
 Ruskell, L. E.....Belmont
 Usher, J. M.....South Wayne
 Vinger, Milo J.....Argyle

Manitowoc County

Behm, Walter.....Manitowoc
 Berg, Anton.....Valders
 Berge, Otis I.....Valders
 Garey, James.....Grimms
 Heidemann, O. C.....Kiel, R. 2
 Kielsmeier, R. C.....Timothy
 Klann, Adolph.....Hayton, R. 1
 Paulson, J. E.....Manitowoc, R. 4
 Pederson, Cornelius.....Cato
 Pritzl, John.....Cato
 Roethel, Herman.....Kiel
 Tyler, James.....Valders
 Wilkowske, Hugo.....Mishicot

Marathon County

Aschbrenner, H. H.....Stratford

Marinette County

Gould, Guy.....Peshtigo
 Gould, Merrill.....Peshtigo
 Schneider, G. P.....Walsh

Marquette County

Houslet, Neal.....Packwaukee
 Judd, Jesse L.....Endeavor
 McDowell, D. P.....Packwaukee
 McMillen, C. A.....Endeavor, R. 1
 Parrott, Alfred.....Endeavor

Milwaukee County

Basse, Wm. H....West Allis, R. 5
 Butler, Ed...North Milwaukee R. 11
 Diderrick, N. A.....
No. Milwaukee, R. 10
 Fuller, S. L. Milwaukee, 126 26th St.
 Gridley, Ben.....Wauwatosa
 Guenther, Nelson W. So. Milwaukee
 Jelinek, Benj.....
 ..Milwaukee, 935 Feutonia Ave
 Kroeger, B. C.....
Milwaukee, 403 1st Ave.
 Kurtze, Otto C...West Allis, R. 15
 Mahr, Henry.....Caledonia
 Meyer, A. J.....Oakwood, R. 18
 Muller, Geo. C.....
Milwaukee, 232 Grove St.
 Pierner, Fred....North Milwaukee
 Schlapman, Fred W..No. Milwaukee

Swan, Earling.....
Milwaukee Sta. B., R. 6
 Unger, Edw...No. Milwaukee, R. 9

Monroe County

Andrew, J. S.....Wilton
 Babcock, H. E.....Sparta
 Boeder, Otto.....Milton
 Ebert, Edmund D.....Tomah
 Ebert, Francis E.....Tomah
 Foth, F. D.....Norwalk
 Fox, C. L.....Leon
 Freeman, G. A.....Sparta
 Gamerdinger, John.....Kendall
 Grassman, Irwin.....Kendall
 Hanchett, W. H.....Sparta
 Hansen, Carl F.....Sparta, R. 3
 Hitchcock, C. E.....Sparta
 Hoard, L. R.....Cataract
 Howell, Horace P.....Sparta
 Kirst, Ernest J.....Tomah
 Lee, L.....Leon
 Leverich, J. W.....Sparta
 Miller, Louis A.....Sparta
 Mistele, W.....Kendall
 Moseley, A. G.....Cataract
 Nathen, Paul R.....Kendall
 Peterson, John H.....Cashton
 Steinbach, Otto.....Kendall, R. 2
 Whitehead, H. W.....Leon

Outagamie County

Dietz, Ed.....Greenville
 Hanson, H. Edward.....Appleton
 Jamison, Robert.....Appleton
 Jochman, Peter...Greenville, R. 16
 Letts, Edward F...Appleton, R. 4
 Ryan, Malachi.....So. Kaukauna
 Schmit, A. W.....Appleton
 Schmit, Geo.....Greenville, R. 16
 Schmit, John A.....Hortonville
 Schmit, Wm. F.....Appleton
 Taege, John.....Appleton, R. 4
 Wussow, C. A.....Seymour

Ozaukee County

Ahlers, Walter.....Grafton
 McCarthy, Geo.....Fredonia
 Wulff, Fred.....Grafton

Pepin County

Hicks, Earl L.....Pepin

Pierce County

Aastrum, Chas. J.....
Spring Valley, R. 3
 Bailey, H. E.....River Falls
 Nelson, Emil.....River Falls
 Scheid, Byron J.....Bay City
 Smith, Fred.....River Falls, R. 6

Polk County

Christenson, Herman....Milltown
 Hedlund, Adolph.....Clayton
 Hecker, Paul.....Osceola
 Peterson, Eni.....Amery, R. 4

Portage County

Arnott, Grace M.....Stevens Point
 Boston, W. J.....Stevens Point
 Gullickson, Gustave...Nelsonville
 Gullickson, Thomas...Nelsonville
 Hicks, S. E.....Almond
 Katerndahl, Carl...Stevens Point
 Wagner, Raymond G.....
Stevens Point, R. 18
 Wrolstad, Alfred M...Amherst Jct.

Price County

Hoffmann, Conrad.....Phillips

Racine County

Gehrand, Arthur A.....Rochester
 Holloway, Ed. M.....
Union Grove, R. 8
 Klofanda, Reuben.....Racine, R. 1
 Nau, Ray H.....Franksville
 Renak, Edw.....Racine, R. 2
 Robers, Wm. J.....Burlington
 Spartz, N. A.....Union Grove
 Wilson, Wm. C.....Burlington

Richland County

Durnford, G. A.....Rockbridge
 Ellsworth, Raymond.....Tavera
 Ghastin, Wm. J.....Twin Bluffs
 James, Geo. A.....Richland Center
 Janecek, Cyril.....Bloom City
 Nourse, Glen.....Sextonville
 Post, H. L.....Sextonville
 Schmitz, Hubert.....Lone Rock
 Thorpe, J. R.....Tavern

Rock County

Austin, Alpheus.....Janesville
 Austin, A. G.....Janesville, R. 6
 Austin, A. L.....Evansville

Austin, W. B.....Janesville
 Bingham, E. L.....Milton
 Caig, Ernest M.....Milton Jct.
 Caldo, Leslie.....Janesville
 Chase, Albert L.....Milton
 Cooper, M. W.....Edgerton
 Crandall, W. T.....Milton
 Devine, C. B.....Evansville
 Dougan, W. J.....Beloit
 Ellis, E. J.....Janesville
 Emery, Sydney.....Edgerton
 Godfrey, Burt K....Janesville, R. 1
 Greene, J. I.....Clinton
 Hemingway, Geo. L.....Hanover
 Hcague, Chas. C....Janesville, R. 7
 Howe, Louis H.....Brodhead
 Lathers, Chas. F.....Beloit
 Latta, F. L.....Clinton Jct.
 Marston, Albert.....Beloit, R. 30
 Marston, Roy C.....Beloit
 Moseley, H. B.....Beloit
 Peik, Edmund.....Edgerton
 Pierce, Henry.....Milton Jct.
 Seeger, Carl.....Beloit
 Smith, L. E.....Beloit, R. 30
 Snyder, Clyde L.....Footville
 Snyder, R. B.....Clinton

St. Croix County

Batten, Sidney.....Hudson
 Bennett, Wm. L....New Richmond
 Brunner, R. W.....Hudson
 Hecker, Paul.....New Richmond
 Inholt, B. A.....Houlton
 Jerdee, Alfred O.....Deer Park

Sauk County

Accola, John.....Prairie du Sac
 Clavadatscher, T.....Sauk City
 Capener, Walter A.....Baraboo
 Frederickson, Fred...Spring Green
 Gade, Adolph.....Reedsburg
 Gallagher, J. F.....Reedsburg
 Gasser, Geo. W.....Spring Green
 Gasser, Roy.....Prairie du Sac
 Grub, C. H.....Baraboo
 Harvey, C. B.....Wonewoc
 Herwig, Theo.....Delton
 Hood, D. L.....Spring Green
 Houghtan, F. T.....Reedsburg
 Koenecke, Edw. H.Reedsburg, R. 5
 Lachmund, Robert.....Sauk City
 Luetscher, Irvin.....Plain
 Marshall, W. S.....Delton
 Palmer, H. P.....Baraboo
 Pearson, Clarence...La Valle, R. 4
 Raltzman, A. L.....Reedsburg
 Rich Bros.....Baraboo

Riek, Anthoney.....Plain
 Robson, Melvin.....Spring Green
 Rodewald, W. C.....Baraboo
 Rusch, E. W.....Reedsburg
 Shaefer, Ervin S....Black Hawk
 Schuette, H. W....Reedsburg, R. 3
 Sherwood, Chas. B....Spring Green
 Seidtmann, Edwin.....Merrimac
 Stone, Riley.....Reedsburg
 Wichern, L. M.....Baraboo, R. 4
 Wischoff, Edwin.....Baraboo

Shawano County

Berg, Carl.....Tigerton
 Jahnke, H. F.....Regina

Sheboygan County

Blonien, Peter.....Elkhart
 Frauenheim, O. R....Random Lake
 Garside, Harry R.....Sheboygan
 Herdrich, S. F.....Adell
 Leonard, M. J.....Plymouth
 Ogle, James L.....Waldo
 Oosterhuis, Alvin C.....
Sheboygan Falls
 Schaefer, Henry G....Plymouth
 Wagner, Arthur L.....Haven

Taylor County

McMillan, H. N.....Medford

Trempealeau County

Graul, Edward J.....Independence
 Hegge, Julius.....Galesville
 Hermann, F. F.....Osseo

Vernon County

Aberg, Jacob.....De Soto
 Bean, R. P.....De Soto
 Burris, W. E.....Kendall, R. 5
 Cass, Leonard E.....Viroqua
 Dach, C. B.....Viroqua
 Everson, Fred.....De Soto, R. 2
 Grimsrud, J. A.....Coon Valley
 Haverley, H. L.....Victory
 Herold, Rudolph.....Stoddard
 Salem, Edw.....Wonewoc
 Staley, John N.....Hillsboro

Walworth County

Anderson, Alvin M....Whitewater
 Coates, Clinton J.....Elkhorn
 Cusack, M. E.....Darien
 Downey, U. J.....Whitewater

Dunbar, Harry D. Elkhorn
 Fuller, Leroy Lake Geneva
 Harris, Ben F. Delavan
 Harris, Jesse S. Delavan
 Ledger, David Lake Geneva
 Mack, Warren Whitewater
 Meurer, Paul Genoa Jct.
 Mitchell, Edward H. Delavan
 Nichols, Vernon Walworth
 Peterson, E. C. Whitewater
 Peterson, Ezra Sharon
 Peterson, Peter Walworth
 Petrie, Merton Elkhorn
 Piper, Harry Sharon
 Ranney, P. C. Elkhorn
 Robinson, A. S. Lake Geneva
 Thacher, Ed. T. Zenda
 Thompson, A. N. Delavan
 Warmington, Prentice. Honey Creek

Washington County

Backhaus, Franklin G. Kewaskum
 Bast, Paul J. Rockfield
 Berg, Jacob So. Germantown
 Dhein, Henry Rockfield
 Hayes, Thomas, Jr. Richfield
 Juergens, Henry Hartford
 Klumb, Albert Rockfield
 Klumb, Hugo G. Kewaskum
 Puls, John Hartford
 Schottler, Conrad J.
 So. Germantown
 Schultz, Nelson F. West Bend, R. 3
 Stuesser, Eugene Richfield
 Ziemer, Paul Jackson

Waukesha County

Allen, Arthur J. Wales, R. 31
 Baird, J. W. Waukesha
 Baird, R. L. Waukesha
 Bartlett, Geo. W. Menomonee Falls
 Blackwell, Leslie Waukesha
 Boller, J. F. Nashotah
 Burton, Roy Eagle, R. 35
 Christensen, John L. Hartland
 Dance, George Brookfield
 Dibble, Roy A. Menomonee Falls
 Dopp, Paul B. Oconomowoc
 Evans, Wm. H. Wales, R. 1
 Fuller, Horace North Lake
 Graser, Adam H. Waukesha
 Grengo, A. L. Menomonee Falls
 Hall, Frank Hartland, R. 21
 Hart, C. B. Brookfield
 Hart, Wm. C. Brookfield, R. 12
 Heling, Paul Menomonee Falls
 Hicken, Alfred B. Pewaukee
 Hill, Chas. T. Brookfield

Hill, J. Thos. Brookfield
 Jeffery, H. B. Menomonee Falls
 Kaul, E. H. Waukesha, R. 7
 Kultz, Harvey H. Waukesha
 Longley, H. N. Dousman
 Mitchell, Dean Brookfield
 Mitwede, Henry Waukesha
 Montague, C. R. No. Prairie
 Morris, Leslie D. Waukesha, R. 8
 Peebles, John Oconomowoc
 Rosenow Bros. Oconomowoc
 Rowlands, R. W. Waukesha
 Ryan, Geo. Brookfield, R. 12
 Schafer, Chas. H. Waukesha, R. 7
 Schley, E. G. Waukesha
 Schroeder, F. C. Hartland
 Shultis, A. D. Waukesha
 Sleep, S. S. Waukesha, R. 21
 Spaulding, C. F. Oconomowoc
 Stewart, J. H. Wales
 Swan, L. W. Mukwonago
 Swoboda, F. G. Dousman
 Tempero, Roy J. Menomonee Falls
 Van Buren, E. W. Waukesha, R. 2
 Weir, R. J. Mukwonago
 Wetzell, Henry Brookfield

Waupaca County

Ashuun, C. S. Waupaca, R. 2
 Bestul, Otto O. Scandinavia
 Bigford, W. W. Manawa
 Gorges, H. F. New London
 Harrington, Myron Waupaca
 Heinrich, Otto W. New London
 Klemm, Louis J. Welcome
 Kneip, William Weyauwega
 Larson, LeRoy Iola
 Olson, Nels E. Iola
 Pirner, Fred Sugar Bush
 Rosholt, Jacob A. Scandinavia, R. 1
 Spencer, Earl H. Waupaca, R. 3

Waushara County

Anderson, Thos. E. Wild Rose
 Bartleson, Harvey. Pine River, R. 1
 Bell, L. C. Wautoma
 Clark, J. J. Berlin
 Eagan, J. J. Wautoma, R. 6
 Harris, A. M. Plainfield
 Jacklin, B. H. Redgranite
 Knuteson, Ernest L. Wautoma
 Peterson, James Pine River
 Selsing, Andrew Wautoma
 Tice, Ray Redgranite
 Tice, Roy Redgranite
 Winge, Wm. Wild Rose

Winnebago County

Bussey, W. P.....Omro, R. 24
 Cross, A. J.....Allenville
 Hoeft, Chas. A.....Oshkosh, R. 1
 Ihrig, J. J.....Oshkosh
 Jackson, H. H.....
Oshkosh, 104 Main St.
 Michels, Math.....Picketts
 Miller, Henry C.....Allenville
 Palfrey, John.....Omro
 Rasmussen, Fred....Neenah, R. 11
 Schaefer, R. J.....Appleton
 Smith, Seymour L.....Oshkosh
 Tanner, A. V.....Omro, R. 24
 Treleven, Guy T.....Omro
 Waite, Summer R....Oshkosh, R 7

Wood County

Clark, Chas. F.....Babcock
 Leu, O. J.....Grand Rapid:
 Rector, Carroll V....Grand Rapi:s

NON-RESIDENTS

Connecticut

Haas, Geo. H.....Meriden

Illinois

Bryson, Donald L.....Elizabeth
 Charles, Fred.....Woodstock
 Coffin, Russell H....Rockford, R. 7
 Fellows, Samuel H....Rockford
 George, W. R.....Sterling

Hitchcock, H. R.....Pecatonica
 Hoxsey, Edw. H.....Serena
 McGeachie, E. P.....Winnebago
 Richardson, G. J.....Spring Green
 White, Arthur.....Rockford
503 N. Church St.

Iowa

Anderson, Theo.....Waterville
 Berns, Xavier....Guttenberg, R. 1
 Brooks, Homer H.....Hopkinton
 Thompson, Thos., Jr.....Wadena

Michigan

De Forest, Theo. R....Ann Arbor
 Meyer, A. J.....Howell, R. 7

Minnesota

Meyer, Wm.....Ellsworth

Nebraska

Wrabetz, Frank.....Schyler, R. 1

New York

Mills, Stanley.....Walden

Ohio

Doerschuk, John J....Shanesville
 Ernst, Claude.....Thompson
Flat Rock

Growers of Golden Glow Corn (Wisconsin No. 12).

Adams County

Walker, Ray C.....Plainville

Barron County

Allen, Eugene S.....Cumberland
 Howe, John.....Comstock
 Matthys, Peter.....Barron
 Matthys, Walter.....Barron
 Poulter, Charley.....Cumberland
 Poulter, C. J.....Cumberland
 Rauchenstein, John....Rice Lake
 Sackett, Clyde.....Cumberland

Bayfield County

Daly, Richard E.....Washburn

Buffalo County

Rosenow, Arthur.....Alma

Calumet County

Christoph, Theo F.....Chilton

Chippewa County

Bailey, Alfred B.....Jim Falls
 Christianson, W. O.....
Chippewa Falls, R. 6
 King, Wm.....Jim Falls
 Schroeder, Herman F....Jim Falls

Clark County

Nelson, Carl.....Greenwood
Smith, Jesse.....Loyal
Zerbel, Paul.....Humbird

Columbia County

Cannon, E. A.....Pardeeville

Crawford County

Accola, Lawrence.....Steuben

Dane County

Silver, C. R.....Belleville
Thorstad, N. H.....Deerfield

Dodge County

Bohl, Anton.....Beaver Dam
Grebe, F. P.....Fox Lake
Howitt, Chas. H.....Randolph
Krueger, H. E.....Beaver Dam
Lehmann, Mrs. Eva.....Woodland
Owens, H. C.....Fox Lake
Randall, S. M.....Waupun
Steiner, W. H.....Brownsville

Door County

Delcorps, Louis.....Sturgeon Bay
Herrhold, J. W.....Sturgeon Bay
Hocks, Walter.....Sturgeon Bay
Larson, Eli.....Sawyer
Sorenson, Camillo....Sturgeon Bay

Dunn County

Gerking, F. J.....Elk Mound
Hanson, Carl H.....Elk Mound
Knapton, W. E.....Downing
Snell, Earl D.....Downing
Stevens, Ernest.....Eau Galle

Eau Claire County

Konz, John, Sr.....Fairchild
Mayo, John H., Jr.....Eau Claire
McDermid, J. A.....Eau Claire

Fond du Lac County

Bonzelet, J. P.....Eden
Priggs, Lynn W.....Peebles
Giebel, Karl.....Fond du Lac
Kitchen, J. H.....Eldorado
Maug, Arthur J.....Ripon
Meekin, H. W.....Fond du Lac

Michels, Henry.....Malone
Root, Alvin.....Fond du Lac
Smith, Elmer J.....Brandon
Smith, Harvey G.....Brandon
West, R. N.....Ripon

Grant County

Andrew, Geo., Jr.....Livingston
Runde, Aloysius.....Cuba City
Stivarius, G. A.....Fennimore

Iowa County

Graber, Laurence F..Mineral Point

Jackson County

Hecketsweiler, O. J..Alma Center

Jefferson County

Brown, A. Abbott.....Waterloo
Linton, Gilbert A.....Ft. Atkinson
Moore, Henry G.....Mauston

Kewaunee County

Kocmich, Ed.....Kewaunee, R. 2

La Crosse County

Hass, Reinhold.....La Crosse

Lafayette County

Bridgeman, C. R.....Darlington

Langlade County

Kalouner, Edward.....Antigo, R. 5

Manitowoc County

Arnold, Arthur A.....Kiel
Bauer, Adolph H..Manitowoc, R. 2
Clusen, Reinhold.....Manitowoc
Eisenman, Ben.....Michicot
Geraldson, Mervin..Manitowoc, R. 4
Gigtsad, Benneth.....Valders
Gunderson, Clifford..Manitowoc, R. 4
Gustaveson, Chas.....Manitowoc
Hanson, Warner.....Manitowoc
Hoefner, Herbert.....Manitowoc
Klann, Adolph.....Hayton, R. 1
Knutson, Ed. A...Manitowoc, R. 4
Riederer, Blasius.....Cato
Schulte, Peter J.....Cleveland
Straka, Edward E.....Maribel
Strowig, Wm. A....Cleveland, R. 1

Sullivan, Jas. A.....Grimms
 Wehrwein, Walter.....Manitowoc, R. 2
 Wigen, Andrew.....Quarry
 Wilkowske, Hugo.....Mishicot

Marathon County

Aderhold, Herman.....Athens
 Brehm, E. A.....Colby
 McAdam, C.....Scofield

Marquette County

Houslet, Neal.....Packwaukee
 Johnson, Sam.....Westfield

Milwaukee County

Mower, H. Poyson.....Wauwatosa

Monroe County

Harris, Ruthven E.....Warrens

Outagamie County

Jamison, W. G.....Appleton
 Koss, Otto W.....Medina
 Letts, E. F.....Appleton
 Mills, Roscoe C.....Appleton, R. 2
 Ryan, Malachi.....So. Kaukauna
 Schmidt, A. W.....Appleton, R. 2
 Tubbs, Herbert.....Seymour

Ozaukee County

Blank, George A.....Grafton
 Clausing, Adolph.....Thiensville
 Meyer, A. H.....Grafton

Pierce County

Brown, Wm.....Spring Valley
 Dunbar, Geo. W.....River Falls
 Hanson, Henry O.....Spring Valley
 Martin, Arthur W.....River Falls
 Nelson, Nels J.....River Falls
 Neystrom, Archie.....Maiden Rock

Polk County

Germanson, Herbert.....Luck
 Jerdee, Perry S.....Deronda
 Lindberg, Clinton H.....
Dresser Jct., R. 1
 Miller, A. J.....Milltown
 Nelson, Wm.....Milltown
 Uhlin, Albin.....Clayton, R. 1
 Uhlin, Frank E.....Clayton, R. 1

Portage County

Haus, Enoch.....Junction City
 Siegert, A.....Junction City

Price County

Hoffmann, Conrad.....Phillips

Richland County

Ghastin, Floyd.....Twin Bluffs
 Lord, Karl W.....Richland Center
 Post, H. L.....Sextonville
 Schmitz, Edw. H.....Lone Rock
 Welsh, S. L.....Tavera

Rock County

Marston, A.....Beloit, R. 30
 Smith, L. E.....Beloit, R. 30

St. Croix County

Alberts, Will.....New Richmond
 Carlson, Nels P.....Hudson, R. 1
 Kruschke, Geo. H.....New Richmond
 Utgaard, Peter W.....Cylon

Sauk County

Borck, Sam.....No. Freedom
 Ochsner, A. C.....Plain

Sawyer County

Uhrenholdt, Jens.....Leonard

Shawano County

Norrborn, C. G.....Eland, R. 1

Sheboygan County

Hoppert, Martin J.....Sheboygan, R. 4
 Wunsch, Hugo E.....Haven

Trempealeau County

Chrysler, Harvey.....Osseo
 McCauley, Rex.....Osseo
 Pederson, Peter.....Eleva
 Thompson, A. L.....Blair

Vernon County

Cade, Jos. M.....Viroqua
 McClurg, Walter.....Viroqua

Walworth County

Bromley, Fred G. Whitewater, R. 4
 Kruse, Wm. Whitewater, R. 4
 Thacher, Louis E. Zenda

Washington County

Groth, C. A. Cedarburg
 Klumb, Oscar. Rockfield
 Kressin, Gustav R. Cedarburg
 Woldt, Hugo. Jackson
 Ziemer, Joseph. Jackson

Waukesha County

Bartlett, Geo. W. Menomonee Falls
 Schley, E. G. Waukesha
 Swoboda, F. G. Dousman

Waupaca County

Howland, Howard H. Waupaca

Winnebago County

Boss, S. J. Oshkosh, R. 7

Wood County

Howard, A. E. Marshfield

NON-RESIDENTS

Illinois

Smith, Russel Cystal Lake

Iowa

Hawkins, A. B. Farley

Maine

Fernald, Paul E. West Oldtown

Michigan

Eskil, Odin Iron Mountain
 Meyer, A. J. Howell, R. 7

New York

Coleman, Chas. H. Perry Center

Growers of Early Yellow Dent Corn (Wisconsin No. 8).

Ashland County

Johnson, L. M. Ashland, R. 2

Brown County

Roeckel, Jos. P. Lark

Buffalo County

Spaulding, L. C. Mondovi

Chippewa County

Christianson, L. Chippewa Falls
 Christiansen, W. O. Chippewa Falls, R. 6
 Finsnes, A. I. Chippewa Falls
 Kramer, Henry F. Bloomer

Clark County

Umlauft, Rudolph. Rochester

Columbia County

Gloeckler, Theo. Portage
 Lloyd, Evan B. Cambria
 Steuber, L. J. Lodi

Dane County

Peck, Henry M. Marshall

Dodge County

Howitt, Chas. H. Randolph
 Jung, J. W. Randolph
 Owens, H. C. Fox Lake

Door County

Boucein, Gust L. Detroit Harbor
 Buschman, Hugo. Forestville
 Erickson, Ole C. Detroit Harbor
 Sullivan, J. J. Forestville

Eau Claire County

Allen, C. L. Eau Claire
 Wright, W. C. Eau Claire, R. 4

Fond du Lac County

Carpenter, L. A.....Fond du Lac
 Hinz, A. F.....Ripon
 Meekin, H. W.....Fond du Lac
 Stroup, Fred G.....Fond du Lac

Jackson County

Curran, W. F.....Taylor
 Dettinger, W. F.....Hixton

Kewaunee County

Smithwick, Jas.....Kewaunee

Lafayette County

McConnell, F. J.....Darlington
 Rood Bros.....South Wayne

Manitowoc County

Paulson, J. E.....Manitowoc, R. 4
 Straka, Edward E.....Kellnersville
 Sullivan, Jas. A.....Grimms
 Wiegand, Otto R.....Cleveland
 Wigen, Chas.....Manitowoc

Marathon County

Baesemann, Otto.....Edgar

Marinette County

Falarsh, Frank.....Peshtigo
 Olson, Otto W.....Walsh
 Sorenson, Hilbert.....Marinette

Milwaukee County

Basse, Wm. H.....West Allis, R. 5

Monroe County

Andrew, J. S.....Wilton
 Leverich, J. W.....Sparta

Outagamie County

Merkel, Henry.....Appleton, R. 3
 Wussow, Chas. A.....Seymour

Ozaukee County

Wulff, Fred.....Grafton

Polk County

Hedlund, Adolph.....Clayton
 Nelson, Peter C.....Milltown

Portage County

Hanson, N. P....Amherst Jct., R. 2

Rock County

Austin, Alpheus.....Janesville

St. Croix County

Bennett, Wm. I....New Richmond
 Imholt, B. A.....Houlton

Sawyer County

Thulin, Edwin.....Hayward

Shawano County

Jahnke, H. F.....Matoon, R. 1

Sheboygan County

Dennerlein, Arthur J....Plymouth
 Eastman, F. A. and S. A.....
Sheboygan Falls
 Frauenheim, O R....Random Lake
 Herdrich, S. F.....Adell
 Illian, W. L.....Adell, R. 19
 Parrish, J. O.....Plymouth

Walworth County

Coburn, Ora.....Whitewater
 Lewis, E. H.....Whitewater
 Warmington, Prentice.Honey Creek

Waukesha County

Mitwede, Henry.....Waukesha
 Shannon, M. J.....Oconomowoc

Waushara County

Anderson, Thos. E.....Wild Rose

Winnebago County

Blakely, Albert J.....Neenah

Wood County

Kronholm, V. E.....Grand Rapids
 Leu, O. J.....Grand Rapids, R. 3

Growers of Clark's Yellow Dent Corn (Wisconsin No. 1)

<p>Chippewa County</p> <p>Finsnes, A. I.....Chippewa Falls</p> <p>Columbia County</p> <p>Dalton, Ernest E.....Pardeeville Dalton, Roy E.....Pardeeville</p> <p>Dane County</p> <p>Davidson, Wm. L.....Verona Kendell, Geo. W.....Sun Prairie</p> <p>Dodge County</p> <p>Barstow, Jas. E....Randolph, R. 1 Howitt, Chas. H.....Randolph Jung, J. W.....Randolph</p> <p>Green County</p> <p>Biglow, L. F.....Brooklyn</p>	<p>Iowa County</p> <p>Paulson, H. E.....Hollandale</p> <p>Racine County</p> <p>Wilson, Wm. C.....Burlington</p> <p>Richland County</p> <p>Post, H. L.....Sextonville</p> <p>Rock County</p> <p>Austin, A. G.....Janesville, R. 6</p> <p>Walworth County</p> <p>Coburn, Ora.....Whitewater Dunbar, Harry D.....Elkhorn</p> <p>Winnebago County</p> <p>Elodgett, Gordon R.....Neenah</p>
--	--

Growers of North Star Corn (Wisconsin No. 11).

<p>Chippewa County</p> <p>Martiny, L. P.....Chippewa Falls</p> <p>Dane County</p> <p>Boyce, Charlotte.....Dane Palmer, Levi.....Verona Thorstad, N. H.....Deerfield</p> <p>Dodge County</p> <p>Randall, S. M.....Waupun</p>	<p>Rock County</p> <p>Austin, Alpheus.....Janesville</p> <p>Sauk County</p> <p>Palmer, H. P.....Baraboo Toole, W. A.....Baraboo</p>
--	---

Growers of Smut Nose Flint (Wisconsin No. 15).

Frauenheim, O. R....Random Lake

Growers of Medium Red Clover.

<p style="text-align: center;">Barron County</p> <p>Chrislaw, A. M. Rice Lake</p>	<p style="text-align: center;">La Crosse County</p> <p>Harr, Ernest B. Bangor</p>
<p style="text-align: center;">Brown County</p> <p>Roeckel, Jos. P. Lark</p>	<p style="text-align: center;">Lafayette County</p> <p>Akins, Clyde E. Warren, Ill. Bridgman, C. R. Darlington Usher, J. M. South Wayne</p>
<p style="text-align: center;">Buffalo County</p> <p>Joos, Frank B. Fountain City Spaulding, L. C. Mondovi</p>	<p style="text-align: center;">Manitowoc County</p> <p>Berge, Otis I. Valders Clusen, Reinhold. Manitowoc Garey, James. Grimms Heidemann, O. C. Kiel, R. 2 Straka, Edward E. Kellnersville Sullivan, Jas. A. Grimms</p>
<p style="text-align: center;">Calumet County</p> <p>Peterson, H. N. New Holstein</p>	<p style="text-align: center;">Marinette County</p> <p>Falarsh, Frank. Peshtigo</p>
<p style="text-align: center;">Columbia County</p> <p>Dalton, Ernest E. Pardeeville Dalton, Roy E. Pardeeville</p>	<p style="text-align: center;">Milwaukee County</p> <p>Pierner, Fred. No. Milwaukee</p>
<p style="text-align: center;">Dodge County</p> <p>Barston, James. Randolph Howitt, Chas. H. Randolph Joyce, Geo. Waterloo Krueger, H. E. Beaver Dam Miller, A. H. Waupun</p>	<p style="text-align: center;">Monroe County</p> <p>Freeman, G. A. Sparta</p>
<p style="text-align: center;">Eau Claire County</p> <p>Wright, W. C. Eau Claire, R. 4</p>	<p style="text-align: center;">Ozaukee County</p> <p>Kieffer, Mike. Fredonia Pierner, John W. Thiensville</p>
<p style="text-align: center;">Fond du Lac County</p> <p>Adams, A. E. Eden Briggs, L. W. Peebles Briggs, J. W. Peebles Jacky, Gilbert G. Malone, R. 39 Jacky, H. L. Malone, R. 39 Meekin, H. W. Fond du Lac</p>	<p style="text-align: center;">Shawano County</p> <p>Hildemann, E. S. Belle Plaine</p>
<p style="text-align: center;">Jackson County</p> <p>Dettinger, Wm. F. Hixton</p>	<p style="text-align: center;">Sheboygan County</p> <p>Dennerlein, Arthur J. Plymouth Frauenheim, O. R. Random Lake Illian, Wm. L. Adell, R. 19 Wagner, Arthur L. Haven</p>
<p style="text-align: center;">Jefferson County</p> <p>Church, A. P. Whitewater Leonard, Wm. R. Ft. Atkinson</p>	<p style="text-align: center;">Walworth County</p> <p>Harris, Jesse S. Delavan Meurer, Paul G. Genoa Jct.</p>
<p style="text-align: center;">Kewaunee County</p> <p>Plahnik, Geo. F. Algoma</p>	<p style="text-align: center;">Washington County</p> <p>Bast, Paul J. Rockfield Puls, John. Hartford Schottler, Conrad J. So. Germantown</p>

Waukesha County

Bartlett, Geo. W. Menomonee Falls
 Longley, H. N. Dousman
 Swan, L. W. Mukwonago

Waupaca County

Kneip, Wm. Weyauwega
 Rosholt, J. A. Scandinavia

Waushara County

Clark, J. J. Berlin, R. 1

Winnebago County

Miller, Henry C. Allenville

NON-RESIDENT

Thompson, Thos., Jr. Wadena, Ia.

Growers of Alsike Clover.

Dodge County

Barston, Jas. Randolph, R. 1
 Bohl, Anton. Beaver Dam
 Krueger, H. E. Beaver Dam

Eau Claire County

Konz, John, Sr. Fairchild, R. 2

Fond du Lac County

Briggs, L. W. Peebles
 Briggs, J. W. Peebles
 Giebel, Karl A. Fond du Lac, R. 7
 Jacky, Gilbert G. Malone, R. 39
 Jacky, H. L. Malone, R. 39
 Meekin, H. W. Fond du Lac

Jackson County

Curran, Wm. F. Taylor
 Hecketsweiler, O. J. Alma Center

Jefferson County

Anthes, Henry. Jefferson

La Crosse County

Harr, Ernest B. Bangor

Manitowoc County

Klann, Adolph. Hayton, R. 1

Ozaukee County

Keiffer, Mike. Fredonia
 Pierner, John W. Thiensville

Sauk County

Ochsner, A. C. Plain

Shawano County

Hildemann, E. S. Belle Plaine

Sheboygan County

Frauenheim, O. R. Random Lake
 Herdrich, S. F. Adell, R. 19

Growers of Mammoth Clover.

Calumet County

Klann, Adolph. Hayton

Dodge County

Krueger, H. E. Beaver Dam

Eau Claire County

Konz, John, Sr. Fairchild, R. 2

Sheboygan County

Frauenheim, O. R. Random Lake

Walworth County

Harris, Jesse S. Delavan

Waukesha County

Longley, H. N. Dousman

Growers of Japanese Buckwheat.

Ashland County		Racine County	
Tomkins, O. Scott	Ashland, R. 2	Robers, Wm. J.	Burlington
Dodge County		Walworth County	
Bohl, Anton	Beaver Dam	Dunbar, Harry D.	Elkhorn
Krueger, H. E.	Beaver Dam		
Juneau County		Waushara County	
Moore, Harry G.	Mauston	Carey, Henry	Redgranite

Growers of Silver Hull Buckwheat.

Dane County		Outagamie County	
Chatterton, R. W.	Basco	Schmit, Geo.	Greenville, R. 10
Palmer, Levi	Verona		
Dodge County		Richland County	
Bohl, Anton, Jr.	Beaver Dam	Post, H. L.	Sextonville
Ehrhardt, Daniel	Knowles		
Howitt, C. H.	Randolph	Sauk County	
Krueger, H. E.	Beaver Dam	Lachmund, Robert	Sauk City
Fond du Lac County		Waukesha County	
Meekin, H. W.	Fond du Lac	Bartlett, Geo. W.	Menomonee Falls

Growers of Field Beans.

Calumet County		Dane County	
Peik, Arthur	Chilton	Beck, J. D.	Madison
Chippewa County		Bewick, W. W.	Madison
Martiny, L. P.	Chippewa Falls	Gillette, R. A.	Verona
Upton, H. F.	Jim Falls	Ohman, S. S.	Deerfield
Columbia County		Stensly, E. P.	Cottage Grove
Lloyd, Evan B.	Cambria	Thieleke, Emil	Madison, R. 6
Crawford County		Dunn County	
Bannen, R. E.	Boscobel	Meacham, C.	Downing
		Eau Claire County	
		Wyman, A. E.	Eau Claire

Fond du Lac County

Costello, Dan A..Fond du Lac, R. 5

Jefferson County

Guttenberg, Frank, Jr., Jefferson
Leonard, Wm. R.....Jefferson

Juneau County

Smith, R. M.....Elroy

Kenosha County

Mueller, Math J.....Bristol
care of P. J. Thom
Myrick, M. O.....Bristol
Thom, J. A.....Bristol

La Crosse County

Hass, R. A.....La Crosse

Lafayette County

Sargent, Roy E.....Warren, Ill.
Usher, J. M.....So. Wayne

Manitowoc County

Arnold, Arthur A.....Kiel
Kielsmeier, R. C.....Timothy
Wiegand, O. R.....Cleveland

Marinette County

Falarsh, Frank.....Peshtigo, R. 2
Schneider, Gottlieb.....Walsh

Milwaukee County

Guenther, Nelson W..So. Milwaukee
Miller, Geo. C.....
.....232 Grove St., Milwaukee

Monroe County

Gamerdinger, John.....Kendall

Pierce County

Nelson, Emil.....River Falls
Neystrom, Archie....Maiden Rock

Polk County

Germanson, Herbert.....Luck
Jerdee, Perry S.....Deronda
Lindberg, Clinton H.....
.....Dresser Jct., R. 1
Miller, A. J.....Milltown
Nelson, Willie.....Milltown

Racine County

Holloway, Ed. M.....Union Grove
Klein, W. C.....Racine, R. F. D

Richland County

Ghastin, Floyd.....Twin Bluffs
Lawton, A. R.....Viola
Lord, Karl W....Richland Center
Post, H. L.....Sextonville

Rock County

Austin, Alv. J.....Janesville, R. 6

St. Croix County

Jerdee, Alfred O.....Deer Park
Paulson, P. A.....Hudson

Sauk County

Rodewald, Walter C.....Baraboo

Waukesha County

Hicken, A. B.....Waukesha, R. 7
Swoboda, F. G.....Dousman
Zillmer, Wm. C.....Brookfield

NON-RESIDENT

Michigan

DeForest, Theo. R.....Ann Arbor

Growers of Timothy Seed.

Barron County	Grant County
Plenty, Robt.....Rice Lake	Graham, P. S.....Fennimore
Columbia County	Racine County
Chipman, W. R.....Morrisonville	Wilson, Wm. C.....Burlington
Dodge County	Rock County
Bohl, Anton.....Beaver Dam	Austin, W. B.....Janesville
Howitt, C. H.....Randolph	Sauk County
Krueger, H. E.....Beaver Dam	Ochsner, A. C.....Plain
Fond du Lac County	Shawano County
West, H. P.....Ripon	Hildemann, E. S.....Belle Plaine

Growers of Alfalfa Seed.

Dodge County	Fond du Lac County
Krueger, H. E.....Beaver Dam	Meekin, H. W.....Fond du Lac
	Michels, Henry.....Malone
Douglas County	Waukesha County
Lindberg, E. J.....Itasca	Shannon, M. J.....Oconomowoc

Growers of Spring Wheat.

Columbia County	Fond du Lac County
Lloyd, Evan B.....Cambria	West, H. P.....Ripon
Dane County	Manitowoc County
Kaltenberg, Anthony.....Waunakee	Klann, Adolph.....Hayton
Dodge County	Sheboygan County
Krueger, H. E.....Beaver Dam	Frauenheim, O. R....Random Lake
Schiller, Claude E.....Beaver Dam	

Growers of Winter Rye.

<p>Clark County</p> <p>Zerbel, Paul.....Humbird</p> <p>Dodge County</p> <p>Bohl, Anton.....Beaver Dam Krueger, H. E.....Beaver Dam Voigt, Alvin H.....Oconomowoc</p> <p>Door County</p> <p>Sullivan, J. J.....Forestville</p>	<p>Fond du Lac County</p> <p>West, H. P.....Ripon</p> <p>Jefferson County</p> <p>Leonard, Wm.....Ft. Atkinson</p> <p>Sheboygan County</p> <p>Frauenheim, O. R....Random Lake Wagner, A. L.....Haven</p>
--	---

Growers of Spring Rye.

<p>Dodge County</p> <p>Bohl, Anton.....Beaver Dam Howitt, C. H.....Randolph Krueger, H. E.....Beaver Dam</p>

Growers of Nordheim Sweet Corn.

<p>Ihrig, J. J.....Oshkosh</p>
