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Thirteenth annual report of the Wisconsin Agricultural Experiment Association. Address of president, secretary's report with papers and addresses given by members of the association and others interes...

Wisconsin Agricultural Experimental Association
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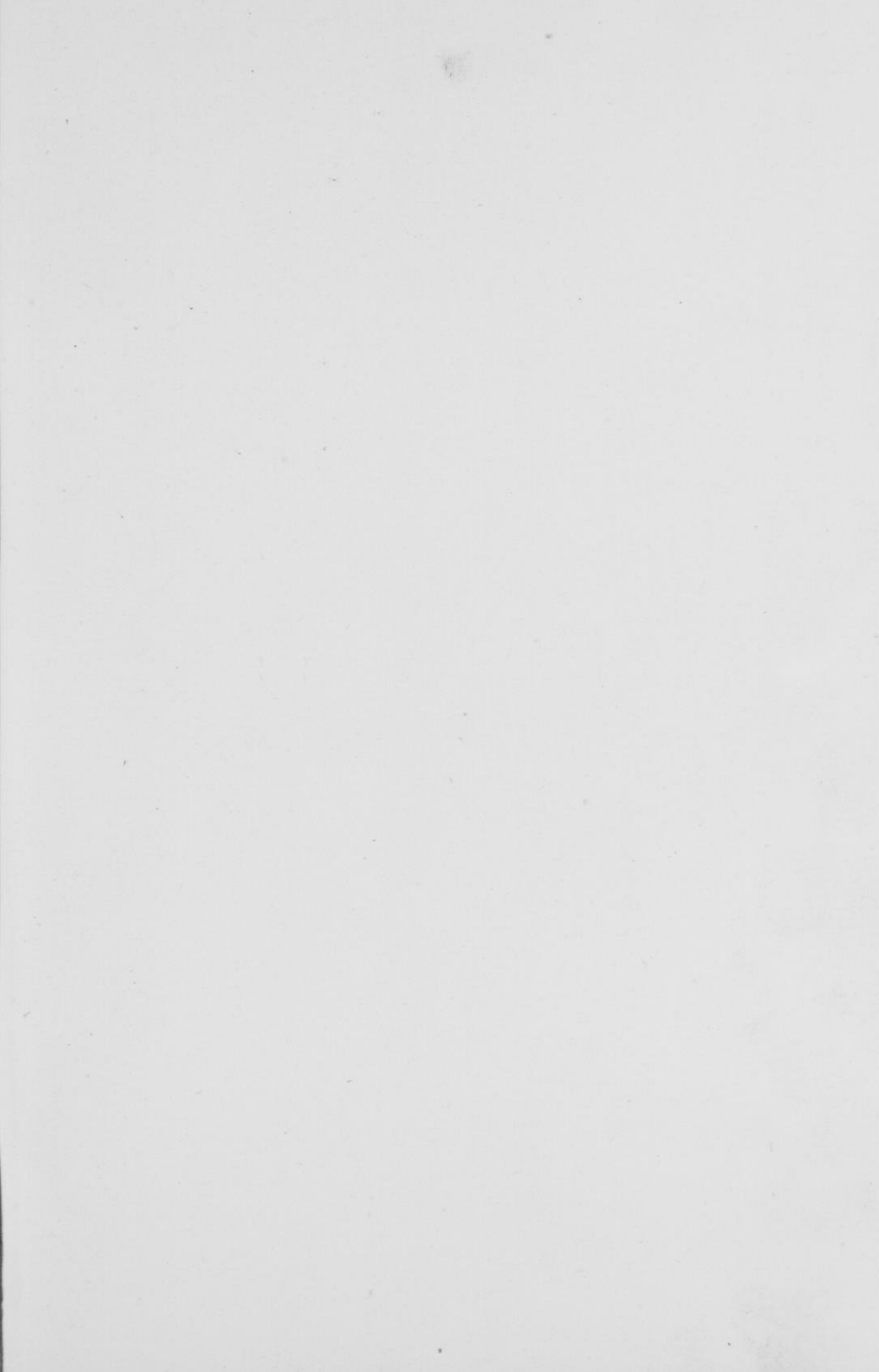
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THIRTEENTH ANNUAL REPORT

OF THE

Wisconsin Agricultural Experiment Association

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, WIS.
CANTWELL PRINTING COMPANY, STATE PRINTER
1915

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THIRTIETH ANNUAL REPORT

Wisconsin

Agricultural Experiment Station

REPORT OF THE DIRECTOR OF THE AGRICULTURAL EXPERIMENT STATION
FOR THE YEAR ENDING DECEMBER 31, 1910



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JUL 17 1942

LETTER OF TRANSMITTAL

WISCONSIN AGRICULTURAL EXPERIMENT ASSOCIATION.
MADISON, WIS., 1915.

To His Excellency, EMANUEL L. PHILIPP,

Governor of the State of Wisconsin:

Sir —I have the honor to submit for publication, as provided by law, the Thirteenth 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, December 18, 19, 1914.

Respectfully submitted,

R. A. MOORE,

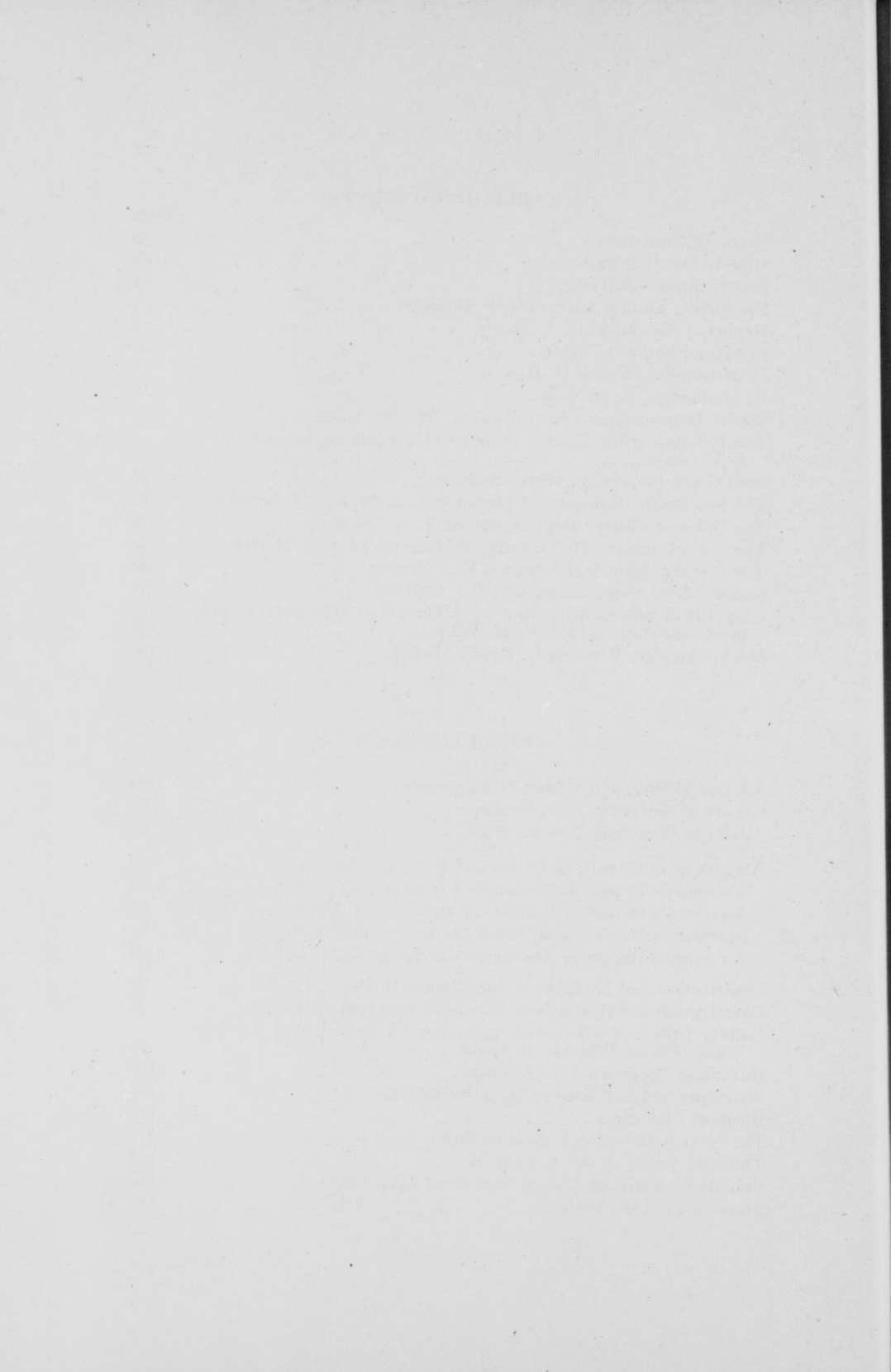
Secretary.

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OFFICERS, 1915

President.....	HENRY MICHELS, Malone
Vice President.....	J. R. THORPE, Tavera
Secretary.....	R. A. MOORE, Madison
Asst. to the Sec'y.....	J. J. GARLAND, Madison
Treasurer.....	H. E. KRUEGER, Beaver Dam
Clerk and Stenographer.....	CLARA BRABANT

COMMITTEES

Program:

Officers of the association.

Executive:

Officers of Association, Ex officio:

Geo. W. Davies.....	North Freedom
J. R. Thorpe.....	Tavera
A. L. Stone.....	Madison
Jesse Van Natta.....	Dodgeville
Frank Bell.....	Columbus

Resolutions:

J. B. Cheesman.....	Racine
C. P. Norgord.....	Madison
H. E. Krueger.....	Beaver Dam

Finance:

C. P. Norgord.....	Madison
H. N. Longley.....	Dousman
H. E. Krueger.....	Beaver Dam

Coöperative Experiments:

Farm Crops.....	R. A. Moore
Soils.....	A. R. Whitson
Farm Engineering.....	F. M. White
Agricultural Chemistry.....	E. B. Hart
Agricultural Extension.....	K. L. Hatch
Farm Management.....	D. H. Otis

OFFICERS' LIST

1. [Name] [Rank] [Branch] [Address]

2. [Name] [Rank] [Branch] [Address]

3. [Name] [Rank] [Branch] [Address]

4. [Name] [Rank] [Branch] [Address]

5. [Name] [Rank] [Branch] [Address]

RESERVE OFFICERS

1. [Name] [Rank] [Branch] [Address]

2. [Name] [Rank] [Branch] [Address]

3. [Name] [Rank] [Branch] [Address]

4. [Name] [Rank] [Branch] [Address]

5. [Name] [Rank] [Branch] [Address]

6. [Name] [Rank] [Branch] [Address]

7. [Name] [Rank] [Branch] [Address]

8. [Name] [Rank] [Branch] [Address]

9. [Name] [Rank] [Branch] [Address]

10. [Name] [Rank] [Branch] [Address]

11. [Name] [Rank] [Branch] [Address]

12. [Name] [Rank] [Branch] [Address]

13. [Name] [Rank] [Branch] [Address]

14. [Name] [Rank] [Branch] [Address]

15. [Name] [Rank] [Branch] [Address]

16. [Name] [Rank] [Branch] [Address]

17. [Name] [Rank] [Branch] [Address]

18. [Name] [Rank] [Branch] [Address]

19. [Name] [Rank] [Branch] [Address]

20. [Name] [Rank] [Branch] [Address]

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 coöperative 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 regulations 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 Roberts' 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.

Thirteenth Annual Report

OF THE

Wisconsin Agricultural Experiment Association

PRESIDENT'S ANNUAL ADDRESS

J. P. BONZELET, Eden.

Fellow members, ladies and gentlemen: It gives me great pleasure to again address the large number of members and friends of the Experiment Association who are assembled at our thirteenth annual meeting. The past year has indeed been full of good things for the Wisconsin farmers and I trust that the members of our Association have not been overlooked.

In reviewing the past year's work of the Experiment Association, one of the most important things which I desire to call to the members attention is the somewhat lax business methods of some of our farmers. It is through the improper handling of the correspondence and the failure to answer letters and inquiries regarding seed grains that the officers feel that many valuable orders are annually lost to the Association in the sales of seed grains.

Often when a member has sold out his stock of seeds, he fails to advise the Secretary of our Association of this fact, also when inquiries continue to come in he does not at once answer the letters and advise the party of other members in his county who may have seeds still on hand. The members need only take a few minutes' time to drop a post card to the inquirer and inform him that they are out of seed but to write some other member who perhaps has seed grain for sale. It is a business obligation which every member owes not only to himself but to the Association to give careful attention to such matters.

I would also urge that the members of our Association make exhibits of their grains at the County and State Fair. These fairs are kept up and generously supported by the state principally because they are patronized and attended by the farmers. It is therefore to your interest to take

advantage of these institutions which are given you and make of them a source of inspiration and good to yourself and neighbors. If we farmers would take more real interest in our fairs and make them truly exhibit places of the best products of the farms, most of the objectionable features which are now so attached to these fairs would be done away with.

Especially is the average county fair lacking in the best of agricultural displays and you will certainly be doing the fair and yourself a great amount of good when you place some of the choice samples of the pedigree grains on display. It will also be a very effective way of advertising what you may later have for sale.

Our State Fair could also stand a great deal of encouragement along this line and although we realize that the prize money offered on grains is small in comparison with what other state's fairs give, yet if our members make a few more exhibits and address a few letters to the State Fair Board I feel sure that there would soon be a proper adjustment along this line.

Another matter which I wish to speak of is the necessity of our members who have grains for sale having them inspected so nothing but the best quality of seed grains will be offered for sale. If the members can maintain for their Association a high reputation for producing and selling grains of only good quality, then will we be doing the agricultural industry of the state a real service.

Thousands of dollars are lost each year by the farmers of the state through planting inferior yielding grains, seeds mixed with weeds and grain of a doubtful germination. If we can so work to insure a high standard for all seed grains bought and sold on the market, through selling only the best ourselves and educating the public to appreciate and buy only good clean high quality of seed grains, then will much be done for Wisconsin's Agriculture.

And now just a word about harmony among the members of the Association. I feel that we are particularly fortunate in this organization in maintaining a wholesome and friendly spirit toward each other. In societies of a similar nature it is very easy for factions to spring up and quarrels over seemingly trivial matters disrupt the good work which might be carried on.

We must always realize that there are two sides to every question and although we are thrown into an unusual amount of competition in our work we should not let anything arise but the most friendly feelings toward each other. To guard against this and protect the usefulness of the Wisconsin Agricultural Experiment Association as a powerful agency for better agriculture in Wisconsin, let us all endeavor to work in harmony and coöperation and stamp out the first indications of impending disorder which may spring up.

In closing I wish to urge all to take an active part in our meetings for we are assembled here to aid in the building up our state's greatest industry and any results you have gained, no matter whether they came by way of success or failure will no doubt be invaluable to many of us.

SECRETARY'S ANNUAL REPORT, 1914

R. A. MOORE, Madison

It again gives me great pleasure to bear evidence of the rapid strides made by the Experiment Association. We are now passing the thirteenth year since our organization, and each year advance steps have been taken to further advance the great cause of the dissemination of pure bred seeds. Through the efforts of the loyal membership of the state association and its county auxiliaries, scrub grains and scrub methods of growing the same are rapidly being relegated to the past. The pedigree seeds are now every where known throughout our state, and farmers are able to secure them at a nominal figure and are no longer dependent upon seeds such as were formerly sold which had nothing to commend them but the name and a few unreliable testimonials.

PURCHASING UNDESIRABLE SEEDS

Canvassers travel the state each year visiting the farmers with beautiful catalogs and samples of seeds. Many thousands of dollars are wheedled out of the farmers in this way for high-priced seed annually for seed that has no breeding behind it whatever, when good pedigree seeds of corn, oats, barley, rye and wheat could have been secured from a

member of the Experiment Association backed by a breeding and yield record of from 10 to 15 years. The farmer may say that the sample from which he purchased *looked* better than the pedigree stock. He should remember that it is not always the best looking grain or animal that is able to win out in the test of production, and seeds that have many years' performance record behind them are the ones to purchase.

A great many farmers have purchased seed oats and barley by sample during the past year from traveling salesmen and paid four and five times as much for scrub seeds as they could have purchased the pedigree seeds for directly from a farm boy in their own county. This practice of panning off scrub seeds with high sounding names on the unsuspecting farmer should be condemned and reported immediately wherever found to be in practice.

MEMBERSHIP

The membership of the association has gradually advanced in number until at the present time we have a paid-up membership of 1,511.

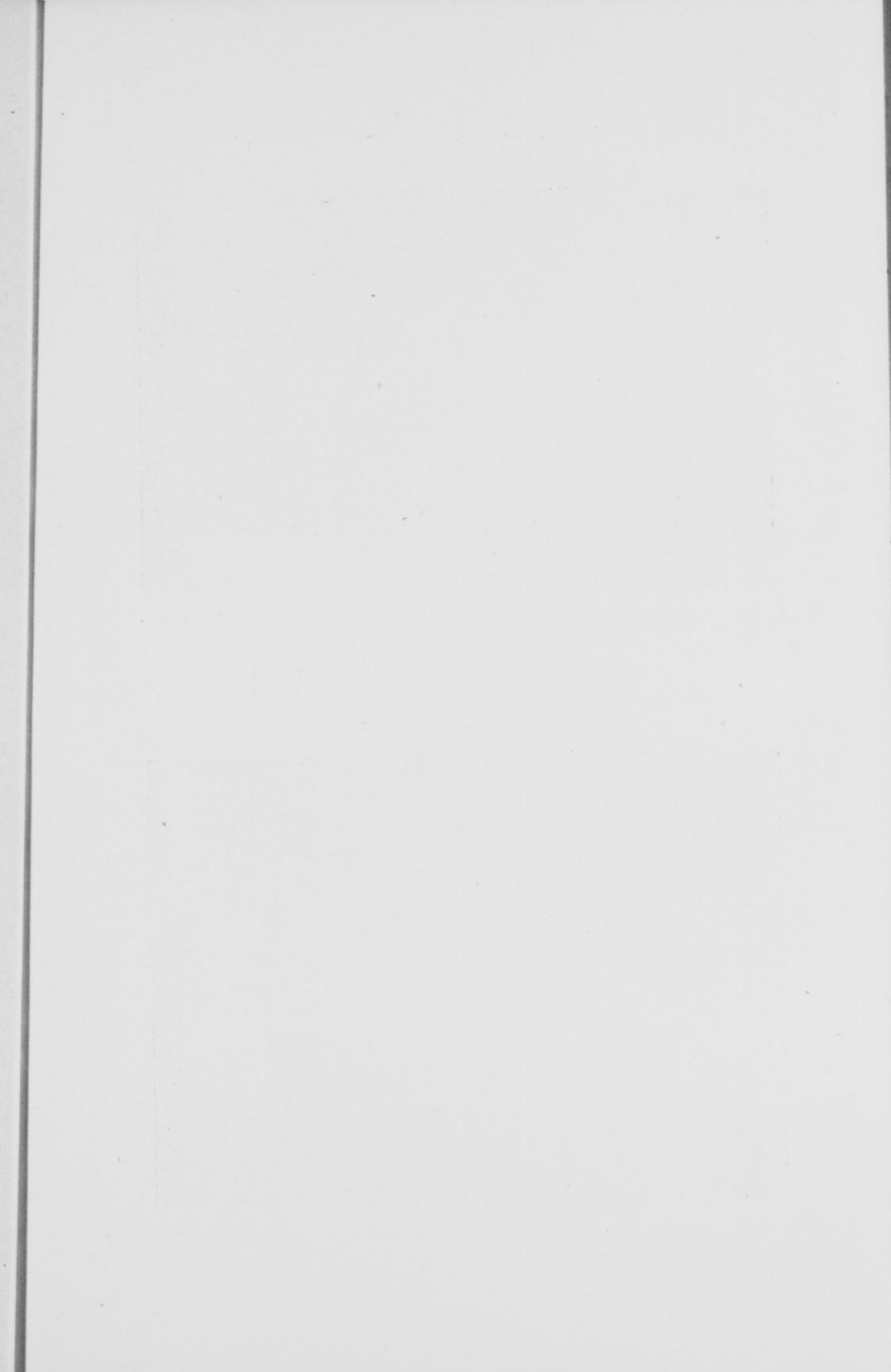
As the above represents only those who have paid their fees to date of annual meeting it would be a safe estimate to say that the Experiment Association has a bona fide membership of 2,000.

COUNTY ORDERS

Ten new County Orders were formed since our last annual meeting. We now have a total of 47 counties under organization. These county orders have a membership of not less than 3,000, all interested in the pure bred seed movement—and in the banishment of scrub grains from the state.

WORK OF THE COUNTY ORDERS

The County Orders are doing a great work in the way of building up a pride in the dear old farm home. No factor in the state has done a greater work in placing farming upon a higher plane. The work of the County Orders in assisting in the selling of farm products has been of great assistance to the membership. Lists of seeds and stock for sale by





Kewaunee County's Young Corn Growers led by Supt. C. F. Teske are putting the Pure Bred Grains to the front in their county. Exhibitors at their County Corn Show.



Sauk County Order won first prize at the 1914 State Fair with their attractive and well planned County exhibit.

each member are issued each year and distributed by letter or at public meetings so that persons in need of such seeds or stock will know where it can be purchased. No one factor gives a farmer greater pride in his farm or occupation than to know that everything that he grows or has for sale on the farm finds a ready market. The writer remembers during his boyhood days upon the farm the chagrin and humiliation of taking sheep, calves, and even loads of hay to town and then being obliged to cart them back home for the want of finding buyers. The Experiment Association is solving this great question of marketing which means so much to its membership and to the farmers in general throughout the state.

EXHIBITING AT THE STATE FAIR

County Orders made displays and were awarded premiums at the State Fair, The Sauk County Order was awarded first honors, Marathon County second, St. Croix County Order third.

The plan of exhibiting at the State Fair is commendable and should be encouraged in every way.

The work of the County Order in the way of securing corn schools, farmers' institutes and other educational factors for the uplift of agriculture in general is great. A systematic organization as the County Order can be instrumental in doing things for a county that an individual could not accomplish. The encouragement given the membership at each annual meeting is an important point of the work of the County Order and is instrumental in placing the occupation of farming on a higher plane.

SEED INSPECTION

The inspection of seeds on individual farms was attended to by Mr. Garland. Several secretaries of the County Orders and members of the Agronomy Department assisted with this work where it was found convenient. The work was satisfactory from every standpoint and is undoubtedly a move in the right direction. A total of 151 farms were visited and the seed grains inspected. The members having seeds that came fully up to standard were placed in the list

of inspected seed growers, and members were allowed to use the association tags for the shipment of the inspected seed.

The inspection of seeds by the Association should not be confused with the state seed inspection by members of the association. The state law in regard to the sale of seeds is rigidly enforced; every one selling seeds and all legal requirements in regard to the marking of shipments should be closely adhered to. A very large percentage of the inspected seed was sold and in many instances brought better prices than that which was not inspected. This fact leads me to believe that the purchaser first looks for quality and is willing to pay a good price for seed providing it is backed by good quality.

The Association is always willing to defend seeds of good quality and the members that use quality as their watchword will always find a good market for their seeds.

The following bins or lots of grains were examined and number of rejections made.

- 72 lots barley inspected, 6 rejected.
- 80 lots oats inspected, 15 rejected.
- 45 lots No. 12 corn inspected, 7 rejected.
- 35 lots No. 7 corn inspected, 5 rejected.
- 7 lots No. 8 corn inspected, 1 rejected.
- 5 lots No. 11 corn inspected.
- 3 lots No. 1 corn inspected.
- 9 lots wheat inspected.
- 21 lots clover inspected.
- 2 lots timothy inspected.

The total number of bushels of grains inspected were—

Barley.....	30,480 bushels.
Oats.....	45,205 bushels.
Corn, No. 12.....	4,905 bushels.
Corn, No. 7.....	3,920 bushels.
Corn, No. 11.....	305 bushels.
Corn, No. 1.....	140 bushels.
Corn, No. 8.....	1,470 bushels.
Corn, No. 13.....	45 bushels.
Clover.....	573 bushels.
Wheat.....	715 bushels.
Timothy.....	70 bushels.
Rye.....	265 bushels.

EXPERIMENTAL PROJECTS FOR 1915-16

1. Wider dissemination of Pure Bred Grains, special emphasis on winter wheat and rye.
2. Experiments on lateness of planting of fall grains and methods of seeding.
3. Use of Sudan grass and its adaptability. Dissemination of seed.
4. Soy beans for forage and soil improvement in sandy districts.
5. Use of phosphates for early maturity of seed corn and better yields.
6. Use of complete fertilizers for greater yields of seed corn.
7. Alfalfa experiments: Northern and southern grown seed and different varieties. Causes of failures. Methods of getting stands. Cuttings and Seedings.
8. Demonstration plots of Pure Bred Seeds with County Agricultural Advisors.

REPORTS FROM MEMBERS OF THE EXPERIMENT ASSOCIATION ON THE YIELDS OF PEDIGREE GRAINS GROWN IN 1914.

SILVER KING AND GOLDEN GLOW CORN

Number of members reporting.....	209
Average yield Silver King Corn.....	bu. 59.8
Average yield Golden Glow Corn.....	bu. 58.5
Average yield of corn for Wis. (State Bd. of Agr. Rept.).....	bu. 42.3
Average yield of corn for U. S. (U. S. Agr. Outlook).....	bu. 25.8

PEDIGREE BARLEY

Number of members reporting.....	161
Average yield Pedigree Barley.....	bu. 33.3
Average yield of barley for Wis. (State Bd. of Agr. Rept.).....	bu. 31.2
Average yield of barley for U. S. (U. S. Agr. Outlook).....	bu. 25.8

PEDIGREE OATS

Number of members reporting.....	249
Average yield Pedigree No. 1 Oats.....	bu. 37.1
Average yield Pedigree No. 5 and Swedish Select.....	bu. 33.7
Average yield of oats for Wis. (State Bd. of Agr. Rept.).....	bu. 20.5
Average yield of oats for U. S. (U. S. Agr. Outlook).....	bu. 29.7

PEDIGREE RYE

Number of members reporting.....	57
Average yield Pedigree Rye.....	bu. 25.1
Average yield of rye for Wis. (State Bd. of Agr. Rept.).....	bu. 19.8
Average yield of rye for U. S. (U. S. Agr. Outlook).....	bu. 16.8

YIELDS OF BARLEY ON FALL AND SPRING PLOWED LAND
FROM MEMBERS' REPORT

	FALL PLOWED	SPRING PLOWED
1912.....	38. bu.	31.0 bu.
1913.....	33.7 bu.	29.5 bu.
1914.....	33.8 bu.	32.2 bu.
Average yield.....	35.1 bu.	30.9 bu.

Difference in favor of Fall Plowing 4.2 bu.

On a 25 acre field, with barley selling at 62c. per bu. this means \$65.10 to the farmer.

YIELDS OF OATS ON FALL AND SPRING PLOWED LAND
FROM MEMBERS' REPORTS

	FALL PLOWED	SPRING PLOWED
1912.....	58.0 bu.	49.0 bu.
1913.....	54.9 bu.	50.8 bu.
1914.....	35.9 bu.	32.8 bu.
Average.....	49.6 bu.	44.2 bu.

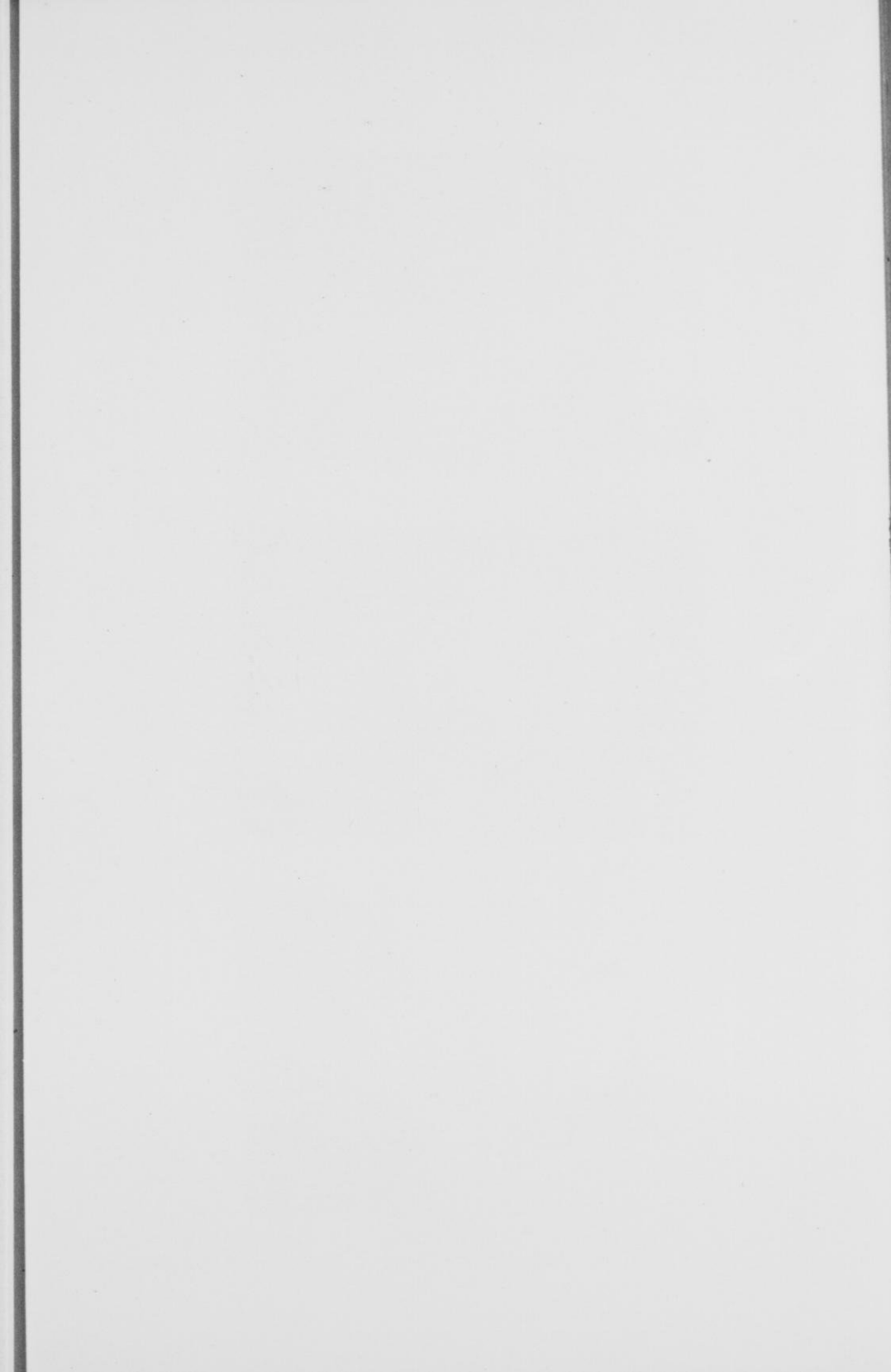
Difference in favor of Fall Plowing 5.4 bu.

On a 25 acre field, with oats selling at 30c. per bu. this means \$40.50 to the farmer.

IN MEMORIAM

JOHN L. LIBBY

In the recent death of John L. Libby of Madison, the Experiment Association loses one of its staunchest friends and ablest members. For many years Mr. Libby has been deeply interested in the work of the Experiment Association and was a faithful attendant at its meetings. He has also contributed much from his rich experience as a careful and intelligent farmer to advancing the cause of better agriculture in this state.

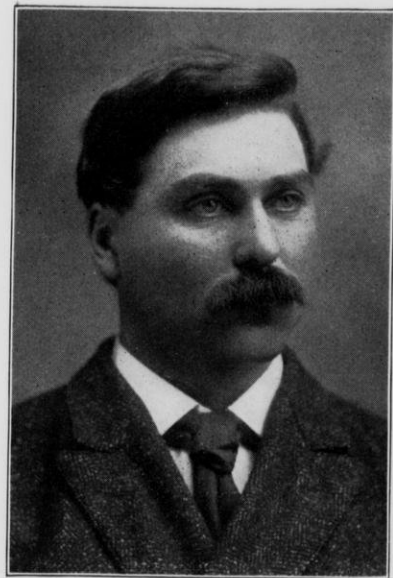




J. L. LIBBY



WALTER G. HOOPER



L. D. WILKE

Mr. Libby was a man noted for his sterling integrity and upright Christian character, and to know him was but to admire him. He was prominent in the church and business affairs of the community in which he lived and his neighbors will greatly regret the loss of such a broad and capable man.

Mr. Libby for many years was a trustee of the Methodist Episcopal Church at Syene. He was also a member of the town board of supervisors and a member of the school board a number of terms. For several years he was a representative of the state at the National Farmers' Congress and was president of the local social order.

The members of the Wisconsin Experiment Association unite in extending to his grief stricken relatives and friends their sincere and heartfelt sympathy.

WALTER G. HOOPER

We regret exceedingly to chronicle the death of our loyal member, Walter George Hooper. Especially is it sad when a member, so young, so full of promise and awake to the life before him is taken from us.

Walter G. Hooper was born near Palmyra, Wisconsin, and was 22 years, 7 months, and 22 days of age when he suddenly passed away. He graduated from the high school at Palmyra and later spent two years at Lawrence College. At college he was active in the athletic sports and popular with his teachers and fellow students, receiving many coveted honors for his remarkable abilities in his studies and athletics.

He was prominent in the (Y.M.C.A.) and a faithful attendant to the other religious duties which so often young men so popular and ambitious fail to observe.

That he might better fit himself for the noble profession of agriculture which he had chosen for his life work, he attended the Agricultural Course at Madison, entering the Short Course in 1912. While at the University he quickly gained the friendship and good will of all the instructors and his fellow students by his splendid character and personality.

It is indeed unfortunate that one who has so well prepared and fortified himself to fight life's battles, should be cut off so early in his career.

The Wisconsin Experiment Association extends its sincere sympathies to the sorrowing parents, relatives and friends of this splendid young man.

LEANDER D. WILKE

Once again has the grim reaper touched our Association and taken from its ranks one of our faithful workers and members. How sad to see the young farmer just firmly established in his chosen work, full of hope and encouragement, surrounded by friends and everything that this life holds dear, cut off as a branch in full bloom!

Leander D. Wilke was born in the town of West Bend on December 17, 1875. He received a good education at that place and grew up to manhood respected and admired by all who knew him.

To further widen his knowledge along the agricultural lines, he attended the Agricultural College at Madison where he stood high in the estimation of all his teachers. Mr. Wilke completed the two-year Short Course and graduated with the class of '96.

He took a deep interest in the work of the Experiment Association and by his industry and careful study of the best agricultural methods soon made his farm one of the most productive in the county. He early adopted the Pure Bred Standard for the grains and stock of his farm thus showing his excellent business judgment and insight for the future.

But alas, "We are like the grass of the field which to-day is and tomorrow is cast into the fire." To the heartbroken wife, sorrowing friends and relatives, the Wisconsin Agricultural Experiment Association extends its deepest and most sincere sympathies in their hour of sadness.

WHEAT IMPROVEMENT AND CULTURE

A. M. TEN EYCK,*

AGRICULTURAL AGENT, WINNEBAGO CO., ILL.

Wheat is the world's greatest cereal crop, but in the United States corn ranks first in productiveness, wheat second, and oats third by weight. The relative total yields of these grains in the United States in 1914 is given as follows:

Corn —2,672,804,000 bushels.

Wheat— 891,017,000 bushels.

Oats —1,141,060,000 bushels.

This wheat crop is nearly one-fourth of the world's crop and one of the largest yields ever produced in the United States. It is reported that a larger acreage of winter wheat was sown last fall than in former years, and if the spring wheat seedings are normal and the season favorable, the total production for the United States in 1915 promises to be even greater than 1914, and this is well, because the prospects indicate that the world's crop in 1915 outside of America, will be less than usual, and there should be a strong demand for our surplus wheat at good prices.

VARIETIES TO PLANT

There are several hundreds of named varieties of wheat but only a few varieties are really best adapted for growing under the particular climatic and soil conditions of a certain state or locality. This has been proven by the testing of a large number of varieties at the experiment stations in several states. The first step in wheat improvement therefore, is to choose a variety for planting which is well adapted to the local conditions, and it is well for the grower to keep in touch with his State Experiment Station in order to secure the best seed of the best variety for growing in his locality.

The Wisconsin Experiment Station is doing some good work with wheat, and I observe that only three varieties are strongly recommended for planting as follows:

Pedigreed Kharkof winter wheat for northern Wisconsin.
Improved Turkey red winter wheat for southern Wisconsin.

Blue Stem spring wheat for general planting.

"Spring and winter wheat have given about equally good results at the Ashland Branch Station, but for central and southern Wisconsin winter wheat seems more desirable."

I might discuss wheat varieties and their qualities and adaptations for an hour and give no more actual information to the Wisconsin wheat growers than is contained in the few sentences quoted above. I have carried on a large amount of work in wheat improvement while connected with the Kansas Experiment Station, but those tests and results do not apply to Wisconsin conditions. However, the method of wheat improvement practiced in Kansas may be helpful to Wisconsin farmers, and I shall refer to this later.

GOOD SEED

Planting good pure seed of well-bred wheat of the type or variety best adapted to the local conditions is one of the most important factors in successful wheat culture. It is advisable to clean seed grain of all trash and very light kernels. Heavy plump seed germinates quickly, grows more vigorously and gives greater assurance of a regular stand and a large yield. However, carefully graded shriveled grain of a hardy, adapted variety may often be preferable for planting to well-developed seed brought from a different climate.

WHEAT IMPROVEMENT

The best varieties of wheat are strains that have been continuously and carefully selected and thus adapted to the soil conditions and acclimated in the climatic belt in which they are grown. The Turkey wheat owes its hardness and adaptation for growing in the western plains largely to the training which it has received on the steppes of Russia and Turkestan, where it has been grown for centuries. High-yielding varieties of wheat from moist climates generally give lower yields in dry climates than acclimated or native sorts, and vice versa, when the conditions are extreme, but

the quality of hard wheat in the more humid sections may be improved by planting seed grown under drier climatic conditions. Such changes of seed to a moister climate should generally be made from a dry area in about the same latitude or lying north rather than south of the moist climate section, because of the later maturing season of the southern grown seed.

HEAD-ROW METHOD OF BREEDING

The more valuable new varieties of cereals that are now being introduced have resulted from the careful multiplication of seed from selected individual plants. In the improvement of small grain, these plants are selected by a process of testing and elimination known as the "Head-row" method of breeding, similar to the "ear-row" method of breeding corn. A large number of the choicer heads of a high-yielding, well-adapted variety are selected from the field. Many of these heads which are inferior in points of structure, yield, and quality, may be discarded, but the grain from the better heads is saved and planted in individual rows in the breeding plot. The growth of the plants, hardiness, yield, and quality of the grain produced by each head is thus determined and the seed from the best yielding "head-rows" may be used to plant "increase rows" and the next year "increase plots" and so on until enough seed is secured to plant a large field with the new or pedigreed strain.

This may be accomplished in a relatively short period of time. In the experience of the writer the seed from a single head of wheat containing 30 kernels planted in the breeding row has produced a pound of good seed for planting the next season. If this pound of wheat is planted, and its product planted the next season and so on, and multiplied at the rate of 30-fold each year, it will produce 30 pounds of wheat the first year, 15 bushels the second year, 450 bushels the third year, or enough grain to plant 450 acres. Thus a single head of wheat planted in 1915, and its product planted each succeeding year, may produce enough seed in 1918 to plant several acres of the pedigreed strain.

This method of improving the cereal grains depends simply on discovering the *great individuals* which are present

in every well-adapted variety, and making them the progenitors of a new or superior strain of that variety. Its practice and application is giving remarkable results. It is particularly valuable for securing rapid adaptation of a new variety. The old method of improving crops by natural selection was slow because the field elimination process allows many of the weaker plants to persist and bear seed each year. The new method discovers the few hardy individuals at once and eliminates the weaker types so that the increase may be only from the hardy high-producing type.

CROP BREEDING THE WORK OF THE EXPERIMENT STATION

The average grain grower may not take the time to make "head-row" tests to improve his seed grain but this work should be carried on at every state experiment station and the pedigreed seed increased and distributed to farmers, who should grow it separately, keep it pure and sell the crop for seed to their neighbors, thus rapidly increasing and distributing the improved seed throughout the community and throughout the state. Your Experiment Association makes it possible to carry out such crop improvement work in this state with the greatest efficiency and dispatch.

MAINTAIN PURITY AND QUALITY OF IMPROVED SEED WHEAT

Farmers who are growing improved wheat should take care to keep the seed wheat pure in order to continue the distribution of the good seed and to maintain the yield and quality of the grain grown on their own farms. One of the principal factors which causes deterioration in wheat is the crossing or mixing of different varieties or strains. Common sources of mixing are from volunteer wheat which occurs when fields are reseeded to wheat from year to year, or mixing may occur in the harvesting or threshing where two or more varieties are grown on the same farm or on neighboring farms. Careless seedsmen and dealers also often allow the varieties to become mixed in grading and handling so that under present conditions it is quite difficult to maintain purity in seed grain.

COMMUNITY SEED

The breeding and introduction of pedigreed strains will eventually lead to the establishment and growing of one of the best producing pure bred varieties of each cereal grain in each community or in each locality or section which has a different climatic or soil condition. And thus may be established "community seed" which will be planted by all the farmers in that community. This will be a great advantage over the present conditions in which the rule is for every farmer to grow a different variety than his neighbor. At present much grain is grown which is not well adapted to the local conditions and there is a great mixture of types and varieties and because of the want of uniformity in type and quality, all of the grain sells on the market at a relatively low price which is fixed by the average quality of the crop, rather than by the best grain which the locality produces. The general planting of "community seed" would reverse these conditions and would result in larger yields and better prices and a greater prosperity for every farmer. The farmers in each community should get together and organize and adopt a "community seed."

THE SOIL

Generally speaking wheat requires a rather heavy strong soil. Light or sandy soils are better adapted for growing rye, but soft wheat succeeds well on lands of a loamy texture.

To produce the best quality of wheat requires fertile soil, land well-supplied with nitrogen and rich in mineral elements of plant food. The soil should be well-balanced in fertility. Soil which has an oversupply of nitrogen, as by heavy manuring or after growing alfalfa, is likely to cause too rank a growth of straw which may lodge and fail to fill, resulting in light shrunken grain.

THE SEED BED

The seed bed for wheat and other small grains should be mellow at the surface, but firm and well-settled below the

depth at which the seed is planted. This provides the best conditions for supplying the moisture, air and heat to the germinating seed and the young plant. Deep plowing should be encouraged, but timely, so that the soil may settle and fill with moisture, and such cultivation should be given after plowing to secure a favorable condition of the seed bed. The use of a packer is essential on late plowing. The disk harrow by setting the disks straight and weighting the harrow may be used as a substitute for the packer. It is advisable to weight the common harrow in order to cause it to stir the soil deeper, and prevent the slicking effect which is apt to result from light harrowing. A smooth, finely pulverized surface as left by continuous light harrowing is likely to shed heavy rains, and the surface often becomes too fine and compact, preventing the proper aëration of the soil and producing an unfavorable seed bed. During the early cultivation of the seed bed it is often advisable to use the disk harrow in order to keep the surface of the soil open and mellow and likewise to pulverize and firm the deeper soil in a plowed field. An ideal seed bed may be prepared after corn or potatoes without plowing, by disking and harrowing, and wheat succeeds well in such a rotation.

ROTATIONS FOR WHEAT

Wheat should be grown in rotation with other crops. It is a fault with most wheat producing sections that the land is cropped with wheat too continuously. And this has always proved disastrous to the soil fertility in the course of years. Fertile land which has been cropped with wheat for a long time becomes "wheat sick." Continuous grain cropping not only reduces soil fertility but it infects the soil with plant diseases and injurious insects which prey upon the crop and reduce the yield and impair the quality of the grain.

To secure the largest yields and the best quality of wheat requires a proper rotation of crops which will serve to aërate the soil and free it of weeds and infectious diseases and injurious insects, and at the same time renew the supply of organic matter and nitrogen in the soil.

ROTATION PLANS

In planning rotations four general classes of crops should be provided for if conditions will allow:

1. A "money" crop, or crop to be sold, which may remove from the soil considerable quantities of plant food.

2. A leguminous crop to return nitrogen and organic matter to the soil, and also by its deep root system to collect subsoil phosphorus, potassium and lime.

3. (a) A crop for feeding farm animals, the plant food of which is largely returned to the soil in manure, or (b) a crop to plow under for green manure in case live stock raising is not a part of the farming plan.

4. An intertilled crop for destroying weeds and improving the physical and sanitary conditions of the soil.

The arrangement or order of crops in a rotation system should follow as far as possible these rules:

1. To alternate shallow and deep rooted crops.

2. Crops which furnish organic matter should alternate with those which favor its rapid decomposition.

3. Use at least one leguminous crop in the rotation in order to increase the supply of plant food in the soil.

4. Crops in rotation should vary in time of planting, cultivation, and harvest season as much as possible, and in amounts and kind of their plant food requirements.

5. (a) Commercial fertilizer if used should be applied to the special crop which will be most benefited by its use, such as wheat, clover, or alfalfa. (b) Manure should be applied to the hardy, more vigorous growing crops, such as corn and forage crops, or grasses and clover, which should precede wheat.

The kinds of crops in the rotation will depend upon the climatic and soil conditions, the market requirements and the kind of farming. In the humid climate areas ideal rotation systems are not difficult to plan and execute. Wisconsin Bulletin No. 233 gives several rotation plans which are practicable and adaptable to the different farming conditions.

If commercial fertilizers are used in growing wheat they had best be applied directly to the wheat crop at seeding time by the use of a fertilizer drill. Manure may be applied

directly to wheat preferably as a surface dressing after seeding and often with good results. The writer increased the yield of wheat 33 per cent on upland at the Kansas Experiment Station by applying ten tons of well-rotted manure as a surface dressing to fall wheat. Coarse strawy manure should not be used for this purpose. A better plan is to supply the necessary plant food for the wheat crop by manuring or fertilizing other crops in the rotation. The manure may be profitably applied to corn, clover or grasses. And clover and grasses respond well also to phosphate and limestone.

An experiment in manuring in wheat rotations carried on for 20 years at the North Dakota Experiment Station demonstrates the accumulative effect of manuring. Only six loads of well-rotted manure was applied per acre to the corn or millet in a four year rotation with wheat. The percentage increase in yields of wheat from manuring compared with the same rotation without manure is given in Table II.

TABLE II.
INCREASE IN WHEAT YIELD DUE TO FARM MANURE BY PERIODS
OF FIVE YEARS (1892-1906).

Bul. No. 100 N. D. Experiment Sta.

Manure Applied to	1st. period	2nd period	3rd period	4th period	Average
Corn.....	5.5	9.3	21.5	12.5§	12.2
Millet.....	6.1	10.1	33.0	30.2§	19.3
Average.....	5.8	9.7	27.2	21.3§	15.8

§Three years only.

The average annual increase in wheat yields was nearly 16 per cent, due to the application of only one and one-half loads of manure per acre each year, and this was on the fertile wheat lands of the Red River Valley.

GREEN MANURING

An experiment in green manuring in wheat rotations at the North Dakota Experiment Station indicates that as the supply of organic matter decreases the benefit from green





The College and Experiment Association Exhibit starting for San Francisco and the Exposition.

manuring increases. This experiment has been carried on for 20 years, a crop of field peas or millet being plowed down every fourth year. The results of green manuring on the succeeding yields of wheat compared with the same rotation in which the peas and millet crops were harvested is given in Table III.

TABLE III.

SHOWING THE INFLUENCE OF GREEN MANURING UPON WHEAT YIELDS BY PERIODS OF 5 YEARS (1892-1906).

Bulletin No. 100. N. Dak. Exp. Sta.

Green Manured with	Per cent Increase or Decrease				
	1st period	2nd period	3rd period	4th period	5th period
Field Peas.....	-9.6*	-6.9*	+33.2	+17.6	+ 8.6
Millet.....	+ .6	-7.0*	+10.0	+10.5	+ 3.5
Average.....	-4.5*	-7.0*	+21.6	+14.1	+ 6.1

*Decrease.

The negative results during the first two periods are more than offset by the positive increase in yields in the last two periods. It should be remembered also that this North Dakota soil, (the typical Red River Valley wheat lands) is richer in organic matter than the average soil.

The danger from green manuring is that the seed bed will be left too loose the first year with a tendency to dry out and injure the crop. Also the wheat is apt to produce too rank a growth of straw, the first crop after green manuring. These objections may be in part overcome by early plowing and frequent cultivation in order to hasten the decay of the organic matter, conserve the soil moisture and secure a firm well-pulverized condition of the seed bed.

There are a number of other subjects related to successful wheat culture which I should like to discuss, such as seeding, harvesting, stacking, threshing, and marketing, but time and space will not permit.

*The writer is the author of "WHEAT," published by the Campbell Soil Culture Company, and in preparing this paper he has quoted frequently from his book.

THE RELATION OF THE COUNTY ORDERS TO THE
STATE ASSOCIATION

PROF. J. A. JAMES, Madison.

The Wisconsin Agricultural Experiment Association was organized nearly fourteen years ago with a charter membership of 187. These members were persons who had received agricultural training in the Wisconsin College of Agriculture, particularly the Alumni of the Short Course. No one of the charter members would have dared suggest such great results as have been accomplished up to the present time. The association membership, composed of Wisconsin's best, has now reached the fifteen hundred mark, but however phenomenal its growth may have been, it is insignificant in comparison to the wonderful agricultural uplift that the state has experienced in the same period. From her station as a minor state, Wisconsin has risen in the scale until she stands second to none in pure bred seed production.

The Wisconsin Agricultural Experiment Association has been a vitally important factor in this growth.

Six years ago Fond du Lac county members of the state association organized for the purpose of promoting the agricultural interests of the county through coöperation with the state association in the growing and marketing of seed grains, through annual association exhibits at fairs and other yearly meetings of the members where topics of interest to the members would be discussed.

In this way the efforts of the county order are directed upon the special problems, and a community coöperation is made possible for the production of larger quantities and a better quality of pure bred seed grains. The local organization also makes possible the community advancement along lines of local agricultural interests. The benefits of such organizations were realized, and to-day there are about forty in the state with a total membership perhaps greater than the state association. The relation of these county orders to the state association is the subject given me for discussion.

In the first place the purpose of the two organizations is the same, to promote the agricultural interests. The

membership plan is slightly different. All students of agricultural colleges may become members of the state association while the membership of the county orders consists of anyone who is interested in pure bred grains and live stock or in progressive farming. By attending meetings of the State Experiment Association members may receive inspiration for the work of the future. I feel that it is their duty to carry the inspiration to the brethren of the county order who have been unable to attend the state meeting. This organization makes it possible for every farmer of the state to receive the benefits of the pure bred seeds developed at the Experiment Association and disseminated by members of the state order to members of the county orders. The county orders then produce it in quantities large enough to supply the remainder of the state.

It is not the purpose of the county order that it consist entirely of members eligible for state membership. Such ideals have caused some county orders to sleep on in self-satisfaction as to their own righteousness. We must remember that we grow through helping others. That is the mission of the county order. The work of the state association is that of leadership while the county order should carry out the plans of the superior order. The state order tests out the pure bred grains and corn and when demonstrated a success by them, the county orders produce them in quantities for extensive distribution.

The educational values of both orders are of great importance. Programs are arranged in each case to give instruction and inspiration and the corn and grain shows give opportunity for comparison of types. A couple of weeks ago a man in attendance at a Bankers' Corn and Grain Show asked the agricultural instructor where he might see Golden Glow corn true to type. He was referred to the state show here this week. The visit gives him the opportunity of studying the judged samples of the particular variety which he produces and by so doing he may see his own mistakes in selection. The forty county order corn and grain shows give additional opportunities for this educational part of the plan. Members of the state order exhibiting at the county order grain show must place before the members of the local order samples conforming as near as possible

to the type and thus bring all to a realization of the proper type for the grain or corn. Only through a general knowledge of the types and characteristics of the grain as well as methods of culture, shall we be able to keep our seed reliable and pure. It is up to the members of the state order to demonstrate to the county order so that the gospel of good seed may reach all corners of the state.

The success of an organization depends upon the coöperation of the members, but more particularly upon the leadership. Great credit is due Professor Moore and the men of the Agronomy Department for the success of the Wisconsin Agricultural Experiment Association. These men have been elected to positions of responsibility and in spite of the demands of other work they have performed the tasks. Some county orders do many times more work than others. This may often be traced to leadership; not that they lack in ability or willingness but that the press of other duties makes it impossible for them to do justice to their offices. At least one officer, preferably the secretary-treasurer, should be chosen because of his interest, training and *willingness* to perform the duties. The office is not one of honor but of labor.

In every county there are men available who can secure the coöperation of the members and who are capable of assuming the leadership. In the counties where county schools are located it is desirable that some teacher assume the responsibility. Such a school should hold the same relation to the county order as the Agronomy Department of the College holds to the state order. The county representative is also a desirable man. Some of our best county orders have the leadership of the county superintendent whose interest in agriculture in these cases assures success to the order. In one I find a high school instructor of agriculture who was hired for the year and who was capable and willing to aid in the work. In other cases, men of the farm have the time to do this work and under such conditions they are the desirable ones. Leaders, the men with push, are necessary. The success of the county order as in the state order depends upon the officers putting their shoulders to the wheel.

The question is often asked by the farmer, "Where can I

get seed true to type?" The answer should be, "Buy of a member of the Wisconsin Agricultural Experiment Association." I wish that this were always true but in the past two years in buying nearly \$3,000 worth of pure bred seed I have found it necessary to send back seed because it was not the type and quality that Wisconsin Pure Bred seed demands. I am reminded of the words of our secretary who stated in one of his reports as follows: "Honesty, uprightness and strict integrity in growing and selling pure bred seed corn will gain the day for Wisconsin and our Wisconsin Agricultural Experiment Association." We must keep the high ideals of our leader ever in mind and uphold our reputation as a state. This is a responsibility shared equally by members of state and county orders.

Members of the state order have every opportunity to receive instruction at the state meeting. First of all, they are responsible to the state in keeping the standard because of their education and advantages. If they fall down where shall we look? They must hold up the standard and bring with them the members of the local order. Only in so doing will they be shouldering the responsibility placed upon them. Inspectors and seed laws are without avail if we lack the spirit of our leadership and fail to help.

For several years the Farm Inspector, an officer of the county order, inspected farms in the county where pure bred grain was grown. In Canada, I am told that grain is inspected in the field, and again after threshing, and the inspector seals the sacks. I am sure that with our state inspector, the assistance of the officers of the county order, the seed inspection law and the coöperation of the members, the quality of Wisconsin seed should continue to advance. The county order must keep in mind the high standards set by the state order. All must work together if we promote the best agricultural interests of Wisconsin.

SEED GRAIN INSPECTION

NOYES RAESSLER, Beloit.

One of the first questions which a prospective purchaser of pure bred seed will ask is, "How am I assured that this

is really pure bred seed, free from foul seed and disease?" If the grower has had both his fields and bins of threshed grains examined by an official inspector, has sent in a sample of each lot of seed to the seed testing department, he has done everything in his power to present the actual facts to the purchaser.

If his name has been placed on the recommended list and he is allowed to use the Experiment Association shipping tags it will certainly place him in a position whereby he can sell his seeds to a much better advantage and price than the grower who fails to have his seeds examined or who handles them in a careless manner, thereby getting a low germination and purity test.

As our seed inspection is divided into two parts I will speak of each one separately.

FIELD INSPECTION

During the three years in which I have carried on this work I have kept close watch of the farms where our members of the County Order live. It is surprising how fast a patch of Canada thistles and quack grass will spread if left alone. Also how smut will grow worse in untreated grain from year to year.

Quite a number of farmers were surprised when they were advised to treat their grain whether it contained smut or not. Some of these failed to treat it thinking the work unnecessary. The same season I found smut present in ninety per cent of the untreated fields.

Another common mistake is the mixing of grains. Three years ago I found less than a dozen fields of pedigree barley that was all strictly six-rowed. There was considerable wheat in the oats and a rather bad mixture of bald and bearded heads in the winter wheat. By calling the farmer's attention to these mistakes the trouble has been eliminated in most cases, and the result has been a decided increase in the amount of seed this county has placed on the market each year.

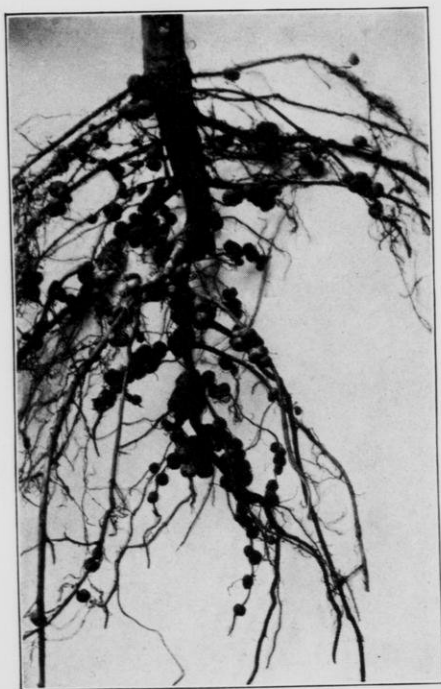
BIN INSPECTION

When we stop to think of the rigid inspection carried on by the State of Wisconsin on nursery stock and consider





Bundle of Soy Bean hay exhibited at the Association's Grain Show. Soy Bean hay is nearly equal to alfalfa in feeding value.



Root of Soy Bean Plant showing large number of nodules filled with nitrogen which is added to the soil each year this crop is grown.

the enormous wealth represented by the cereal crops compared to the fruit crop, we get some idea of the importance of seed inspection. By examining the bins of threshed grains and selecting a sample himself, the inspector is enabled to get a true idea of the condition of the entire crop. In some cases this has been the means of preventing the spread of wild oats and other troublesome weeds which were present, unknown to the farmer who grew the seed.

Bin burning and mould, so injurious to the germination and vitality of seed is often overlooked by the grower and a word of caution by the inspector may save the crop, from a seed standpoint.

Advice in proper handling grain intended for seed, such as grading and storing, is gladly given by the inspector. In short, the farmer should feel free to ask the inspector any questions relating to seed grains, he happens to have in mind. If the inspector cannot answer them, he will no doubt find some means of getting the desired information.

THE SOY BEAN—CULTURE AND DISSEMINATION

PROFESSOR E. J. DELWICHE, Green Bay.

The soy bean is a plant of comparatively recent introduction which promises of great economic importance for the Wisconsin farmer. While this plant has been grown for many centuries in oriental countries, its introduction in the United States only dates back to 1829, and not until some 17 years ago when the Experiment Station began experimenting with it, did it become at all known. In China and Japan, and other eastern countries, it is extensively grown and is used to a great extent as human food. The oil is extracted and this as well as the cake are exported to European countries. In composition it closely approaches flaxseed and therefore its uses in the arts and as feed for animals may become similar to that of the latter plant.

Tests with soy beans made at the Branch Stations and coöperative trials with farmers have shown the crop to be well-adapted to Wisconsin conditions. It can be used for many purposes. As a hay crop it is equal in feeding value

to alfalfa, and when grown for this purpose it will produce from one to three tons of cured hay per acre, the difference in yield being dependable on weather conditions, soil fertility, etc. Soy beans can be grown on land which is too poor to grow clover, alfalfa, and other hay crops. It is a splendid crop to plant on new breaking as tests made with the crops at the branch and demonstration stations have shown. It is a good substitute for clover when either by drought or through some other cause the latter has failed to make a catch. It will withstand more heat and drought than the common clovers. In dry hot seasons it is about the only sure hay crop for our light sandy soils.

The growing of soy beans for seed to supply the seed market offers plenty of opportunity. The seed is in good demand as the merits of the crop are getting to be recognized, particularly for sandy lands. As a concentrate for feeding to dairy animals it is about equal to linseed oil meal as the analysis shows. Feeding tests at different stations, such as Indiana, Massachusetts and Tennessee have shown the crop to be superior to cotton seed meal. When used as a concentrate, however, it should not be fed alone but in combination with corn or other feed of less feeding value.

TABLE I. AVERAGE DIGESTIBLE NUTRIENTS IN SOY BEANS AND OTHER CONCENTRATES

Feeding Stuff	Total dry matter in 100 Pounds	Digestible Nutrients in 100 Pounds		
		Crude protein	Carbo-hydrates	Fat
Soy beans.....	88.3	29.1	23.3	14.6
Cotton seed meal (choice)	92.6	35.8	23.2	8.0
Linseed meal (old process)	90.2	30.2	32.0	6.9
Wheat bran.....	88.1	11.9	42.0	2.5
Oats.....	89.6	8.8	49.2	4.3
Barley.....	89.2	8.4	65.3	1.6
Dent corn.....	89.4	7.8	66.8	4.3

It seems to me that this crop has a place on dairy farms to be grown for feeding purposes in order to lessen the amount of money spent for concentrated feeds.

Soy beans are also of value as a hog feed. The crop can be hogged-off, and the trouble in harvesting in this manner will be avoided. When fed with corn it makes a very good combination for growing pigs.

The crop may also be grown with corn for ensilage or it may be grown in a separate field and mixed in with the corn at the time the silo is filled.

The soy bean is a splendid crop to grow for improving soils when planted in drills about 18 to 20 inches apart and then given a few cultivations. It makes a rapid growth even on real light soils. When fully matured the crop may be turned under and the supply of nitrogen and humus in the soil greatly increased. It should not be inferred from what has been said that soy beans can be grown only on poor sandy soils. The fact of the matter is that while they will do better on light soils than almost any other legume crop, it is also true that the best yields are obtained on good land. On light soil 20 bushels per acre is considered a good yield while on rich loams, yields of over 40 bushels per acre are not uncommon.

Land may be prepared for soy beans in much the same manner as for corn with the exception that manuring is not considered necessary as a rule. The crop may be planted from the middle of May to the middle of June and even later if intended for hay. Soy beans may be planted before corn since the seed germinates at a lower temperature and the young plants are also more resistant to frost.

Inoculation is a necessity on land which has never grown soy beans. Several methods may be used. As a rule, soil inoculation gives the best results. An easy method is to mix in a little soil with the soy bean seed. The soil should be carefully sifted, however, so as to remove all stones and rubbish; otherwise there will be trouble in seeding. The seed and soil should be kept well mixed. When this method is followed about 100 pounds of soil per acre is sufficient. A better method is to drill in the soil at the time of planting, with a fertilizer attachment. Where plenty of soil is available, new fields may be inoculated by spreading the soil by broad-casting before soy beans are planted. In this case the method would be similar to that followed in inoculating for alfalfa.

Benefits derived from inoculation are striking, particularly on poor soils. Not only is the yield increased from 40 per cent to 100 per cent, but the benefits derived from the soil through inoculation are greatly increased. Professor

Bullock of the Marinette County Agricultural School has been carrying on coöperative tests with the station and he observed that where soy beans are not inoculated they freeze much more readily. This is undoubtedly due to the fact that the plant, not being properly fed, possesses less vitality.

When intended for grain soy beans should be planted in drills from 24 to 36 inches apart. The grain drill can be used for this purpose by stopping up the spouts. We like to plant in double drills 6 inches apart. This can be easily done with the grain drill by allowing the two center spouts and the two outside spouts to seed, and then turning the seeder as in sowing small grain. Seeds should be dropped from $1\frac{1}{2}$ to 2 inches apart.

When intended for hay soy beans should be planted closer together. On light soil, a space 18 to 20 inches should be left between double drills so as to permit of a few cultivations early in the season. On strong soils when soy beans are grown for hay they may be sown in solid drill as is done with field peas.

It is best to cultivate early in the season on light soils so as to conserve moisture, although in seasons of abundant rainfall good results have been had by sowing in solid drill without cultivation.

The amount of seed required varies. When planted in drills from $\frac{1}{3}$ to $\frac{1}{2}$ bushels is needed. If planted in solid drills where it is not intended to cultivate, about $1\frac{1}{2}$ bushels of seed is needed.

Soy beans grown for seed are harvested with the mower with a windrowing attachment. If the windrowing attachment is not used the seed should be forked out of the way of the team every round; otherwise the crop will be greatly wasted by shelling. The same method is here used as employed in harvesting peas. The binder has also been used in cutting soy beans for seed. When cut for hay the method used does not differ from that followed in cutting clover. Soy beans are threshed with the ordinary grain thresher using the precautions followed in threshing peas. Concaves should be removed and blanks inserted. The speed of the cylinders should also be lessened. By using a large pulley on the opposite side of the cylinder the speed of the separator

may be kept up so as to clean well. Cracked beans are of no value for seed but they may be used for feeding purposes.

Considerable experimental work with soy beans has been done with the object of producing pure line strains and finding out the best varieties for the different conditions. Extensive work along this line is in progress at the Spooner Station where over 50 strains and varieties are on test. Some of these are from hardy types which came directly from Siberia and northern Manchuria. This seed was secured through the U. S. Department of Agriculture.

For the southern part of the state, Ito San is recommended. In the northern part of the state, the Wisconsin Early Black is recommended for seed as it is several weeks earlier in ripening. A considerable amount of pure bred Early Black soy bean seed is now available. Several coöperators in northern Wisconsin grew soy beans during the past season, and while reports are not all in, I think it is safe to say that several hundred bushels of Early Black soy bean seed are available for seed.

Centers for the growing of soy beans have been started in Marinette, Lincoln, Burnett, Washburn, Barron, Portage and Oneida counties. A list of these seed growers will be compiled at an early date and copies of it furnished to the Secretary of the Experiment Association. This will enable members to secure pure bred seed of Early Black strains. We have experimented with soy beans on the sandy lands of northern Wisconsin for the last nine years and we feel safe in recommending their culture for the purposes enumerated. We think they are a coming crop for the Wisconsin farmer. Their value as a hay crop, as a concentrate for dairy cattle, and other live stock, and as a soil improver, has been amply demonstrated.

OFFICE OF COUNTY REPRESENTATIVE

F. G. SWOBODA, Antigo.

“How can I be of largest service to the people of my county?” is the question which every County Representative asks himself as he enters upon his work. He realizes full

well that a man's capacity for accomplishment, in whatever line of endeavor, is limited when working single-handed. He appreciates too that it is only as he can summon to his assistance the united energies of a large number of individuals that his efforts begin to tell in a large way.

It is a fact that the County Representative in going into a new field of work is obliged to overcome considerable prejudice toward his position. Too often instead of being viewed as an agency for service, the position is considered the real "white man's burden" and the representative anything but the real "white hope." Under such conditions as these he looks with favor upon any real live organization that he can tie to. The County Order of the Experiment Association if one exists in his county he is fairly safe in assuming is made up of the real live wires of the county. The members are of the type that he can best work with. By proper methods of approach they can all be gotten to coöperate in any campaign for better agriculture.

The county order while it may not include all the best farmers of the county in its membership, does include many of them.

Under the Wisconsin plan the County Representative does not come into a county with an established organization known as the County Farm Bureau, as is the case in Illinois and other states. Each representative must surround himself with groups of individuals with whom he can work and through whom things can be accomplished. To render his county the greatest service, he must bring to his help such organizations as the Cow Testing Association, County Potato Growers' Association, County Order of the Experiment Association and County Breeders' Association.

Of the eleven Wisconsin counties which now have County Representatives, seven have county orders. Letters recently sent to these men reveal that the county order is being effectively used. Those who haven't one in their county have in mind to get one started the present winter. The men are unanimous in considering the county order an organization fraught with great possibilities for good. They are using it in various ways. Some merely to stimulate interest in the planting of pure bred seed grains and corn, others have added pure bred potatoes to the list and are

making the great movement for standard potatoes which is sweeping over the state, a legitimate part of the work of the county order. One or two have even gone further and are making it include live stock.

One reply received, characteristic of the spirit of all of them to the question, "What has the County Order done to further the interest in Pure Bred Wisconsin Seed Grains and Corn?" follows: "It has established a standard in the county, in that seeds that are not of the pure bred pedigree varieties are outlawed." Our order has undertaken not only the pure breed seed line but also the various breeds of potatoes and live stock. As a result of the order, varieties of potatoes are disappearing in the county and are largely being grouped under two varieties; Rural New Yorker and potatoes. Inquiries are now coming in regarding seed oats for next year. Farmers are becoming corn breeders. Some of the representatives have secured the free seed from the College and distributed same, later assisting the farmers to sell this same grain to other farmers.

Local grain shows have been held by some of the county men. These have done much to enlarge interest. Dissemination of Wisconsin bred seeds like the sale of certain well-known brands of soap of high per cent purity, much relished breakfast foods or comfortable suspenders, is largely an advertising proposition. The County Representative can make the County Order an effective agency for this very thing.

How valuable the representative may make himself in this cause for better seed was clearly demonstrated at the recent Potato Growers' Convention held at Grand Rapids. Thoroughly roused to the situation by the Secretary of the Association, Prof. J. G. Milward, practically all of the county men were present with exhibits from their counties. That they were in strong on the winnings is shown by the following summary: Out of a possible 85 prizes; County Representative Counties won 59, out of a possible 13 first prizes, they won 10; out of a possible 13 seconds, 10 also; and 9 out of 13 thirds.

As is well-known the State Potato Growers' Association is working towards the standardization of the potato crop, that this is being best accomplished in counties where there

is a man continually driving home the arguments was also shown in the winnings at the state show. On Rural New Yorker one of the two leading varieties and the largest class in the show, there being eighty-four entries, thirteen out of a possible fifteen prizes, including first, second and third went to county representative counties. The same was true of Green Mountains, Triumphs and Irish Cobblers.

These facts are mentioned not to speak boastfully of the work of the County Representative, but to demonstrate the possibilities of the position in the cause of better seed.

I am a little fearful, however, that a look at the grain display in the Agronomy building would reveal no such creditable activity in pure bred seed grains and corn as in potatoes. So far as corn goes, the county representative counties are somewhat removed because of geographical location from the sphere of possible successful competition. Not so with grains, however. Experts on grain growing concede to northern counties the ability to grow grain of exceptionally fine quality. When these counties are thoroughly aroused to their possibilities, when the pure bred pedigreed grains have become well-established and perhaps properly acclimated, then it will be necessary for the Bonzelets, and Kreugers and Wests of the central and southern counties to look well to their laurels.

To have a few of the prizes scattered in the northern counties would be a mighty boon to the pure bred seed business in our northern country. The representatives will consider it a part of their duty to get them there.

It must be remembered that the county men are for the most part new on the job. Of the eleven counties which have men, one county has had such a man but three years, three two years, one sixteen months and six less than one year. If the County Representatives stir up the same interest in better grains that they have in better potatoes, and if this county representative movement continues to spread over the state as it has started, then Wisconsin will in the near future bear the same relation toward her present self in the pure bred seed business as a certain man of whom I once heard.

Along about dusk one late summer day, this man went to look at a house in a thinly settled section of the town with

a view of renting it. The shadows were falling as he walked up the grass grown path from the road. The man took in the surroundings from the front with the careful eye of a prospective renter and then walked around the side of the house to get the other view. As he rounded the farther corner suddenly came upon his attention a spooky object garbed in white. A ghost he thought at once, turned abruptly in his tracks and started down the road at a Ford clip, the ghost in pursuit. After hitting it up at top speed for several blocks he dropped in the road from exhaustion. In a few minutes he came to, roused himself and began to get up. As he did so he became conscious of something sitting astride of him. "Been running, have you?" said the spook in ghostly tones. "Yep," answered the man, "but watch me now," and even before he had finished he was off down the road like a Blitzen Benz.

I believe that as yet our northern counties do not appreciate their possibilities for producing high class grains. In my limited experience of less than two years in the northern country, I have seen grains of very superior quality and have heard of many phenomenal yields. These conditions plead eloquently for greater effort on the part of the county men to develop a more general interest in better seeds.

Whether the County Representative should serve as an officer of the County Order, offers a difference of opinion among the county men. Some feel that the position of secretary is his legitimate sphere. With office facilities it is easier for him to attend to the necessary correspondence, get out printed matter, notices, etc., than it would be for some farmer member. In his regular work the representative is here, there and everywhere over the county, he is always in touch with conditions over the county and can as a regular part of his work help along the movement. A very few years of this activity will revolutionize conditions in a county. This wider interest should drive the glib-tongued seed house representatives out of the state, concerns who now find easy money in abundance, especially in newer sections, selling ordinary seeds at extraordinary prices on the strength of a very roseate verbal guarantee as to big yields, and further tempting inducement of easy payment deferred to time of harvest. Payments are made

secure, however, by the signing of a paper innocent in appearance, yet powerful in its innocence, for it is virtually a promissory note.

Many hundreds of dollars are taken out of many northern counties each year by these parties. Five hundred dollars was the toll of two sparsely settled townships in one northern county and then all the farmers didn't bite.

With the county thoroughly awakened to the needs of better seeds and educated to the value of the Wisconsin bred for production varieties, and this no one is in a better position to do than the County Representative, it will be impossible for these out of the state seed house representatives to reap rich harvests of Wisconsin farmers' hard earned dollars on overpriced seeds. These men have for years had easy picking in many of our northern counties. Some of them have exacted tolls in excess of fair profits many times the county's share of the County Representative's salary and with one-tenth the groans evinced at taxpaying time by some of these same fleeced individuals because of the needlessly high expense.

Last May there came to my office a young farmer from Marathon county. He lived just across the line from Langlade. His tale of woe was eight bags of oats, one of barley and a two bushel box of potatoes. The lot meant an expenditure to him of better than seventy dollars. It was bought apparently under the hypnotic influence of the agent, for the man seemed able to give no other explanation. The purchase price in the beginning did not seem so enormous. With the time to pay at hand, however, the buyer would have been glad to have found a way out. But the inevitable little paper made this impossible.

To inform this man that he could have purchased the same number of bushels of oats, barley and potatoes grown right in our own county and of superior quality was not easing the burden, though it did serve to strengthen the lesson.

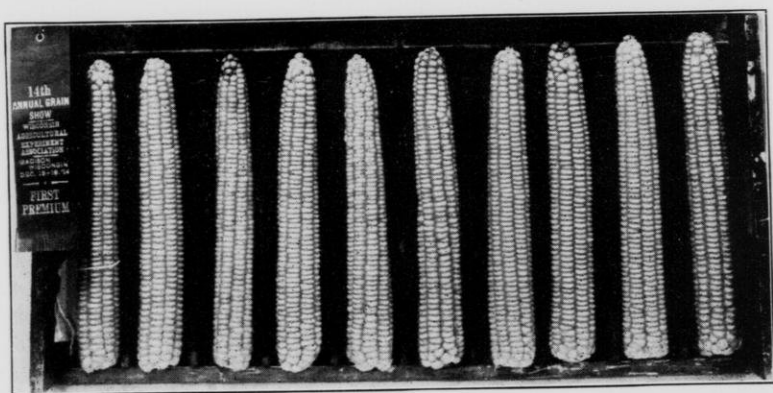
This man was only one of a large number in one northern Wisconsin county whose hard earned cash went to pay abnormally high commissions, not state controlled. So long as farmers are not awakened to the value of Wisconsin





First Annual Corn Show Grant County
Order of Experiment Sta.

The first corn show of the Grant County Order at Platteville Normal School was well attended and certainly a success.



First prize sample eight row flint corn exhibited at the Association's Annual Grain Show, grown and exhibited by Geo. Leonard, Jefferson, Wisconsin.

bred seeds these seed house representatives of out of the state concerns will find ready buyers.

The County Representative will find in his county order an effective weapon for combating this very thing. Whatever steps need be taken to make the work of the order effective should not go untried. Special recognition in county fair premium lists, experimental plots, seed dissemination, in fact every possible movement should be utilized to entrench the Wisconsin bred grains and corn, not only in the counties having County Representatives, but in all the counties of the state.

FARM CONTEST, ITS MEANING AND RESULTS

PROF. D. H. OTIS, Madison.

Success in farming is the result not only of growing the best grains; breeding, feeding and handling the best live stock or the production of the best fruit, etc., but it is also dependent upon how the manager integrates, organizes, and manages his farm work so as to make the entire farm show the best results.

Our work in farm management shows great variations in the net income obtained on different farms. These variations are being studied with a view of discovering the factors that contribute either to success or failure. We believe the time is ripe to give some attention to the successful management of farms, and to recognize the men who have both the knowledge and the skill to organize and conduct their farms so as to make them financially successful and at the same time contribute to the health, happiness, and uplift of those who live on the farm.

To this end we inaugurated a farm contest in which recognition is given for fertility, home life, health of herd, and general appearance, as well as managerial income.

For encouragement in this work, we are indebted to Ex-Governor Hoard of Hoard's Dairyman for his liberal offer of \$300 annually to be used as prizes and to be awarded to the farms that score the highest, all points considered.

One of the important features of this work is the bringing of farmers face to face with the business conditions existing

on their farms during the year. We realize, of course, that conditions may exist that make it impossible for a good farm to pay out each year, and for this reason we hope to continue this work until we shall have several years' records to study, and we hope that sufficient encouragement may be given the work that we may enlarge the contest and have a three, five, and even a ten-year contest.

SOME OF THE RESULTS

One hundred and fifty farms have competed in this contest during the past year. We have the data of these farms showing the capital invested and its distribution; the receipts and the factors contributing thereto; the expenses and their distribution, which enables us to figure the net results obtained on the farm. We have conducted contests in eleven counties and in each of these we have held a local meeting in which we have shown those in attendance the average results obtained in the county and state. Each farmer in the contest has been given a statement of the results obtained on his farm and along with this statement is a comparison showing the average results of the county, the average of the state, the best ten, and the poorest ten. In this way each farmer in the contest has been brought face to face with the conditions upon his farm, and he has been able to see what are his strong points and his weak points.

In considering the results and the difference that exist between farms and the reasons therefore, we have listed thirty-three factors contributing toward the results. We have found that some factors which we had assumed were very important, were really of minor consideration, and other factors upon which we laid comparatively little stress we have found to be rather important factors. The principles at the bottom of this work and upon which success seems to be dependent may be brought out by the discussion of three groups of ten farms each, which may be considered as representatives of different classes of farms and methods of farming comprising the farm contest. These farms we have labeled, "Above the Average," "The Average," and "Below the Average." For reasons that are not pertinent at this time we have not included all of the farms

that have shown the highest managerial income in the group "Above the Average," but the group does contain the farms that have won out in the farm contest.

The group "Below the Average" contains some good farms, and the low results for this year are due to the conditions for which the farmer is not entirely responsible, and we expect a number of these to make a much better if not a satisfactory showing for next year.

We realize that in sizing up the situation on the farms that conditions may exist that make it impossible for a farm to make a satisfactory showing in a given year due to peculiar or exceptional conditions. On the other hand, a farmer may be exceptionally fortunate one year and may make a showing that he cannot expect to maintain for a series of years. And in the discussion of these results these points must be borne in mind and due allowance given for them. Some of the problems apparently underlying success may be stated and discussed as follows:

SIZE OF FARM

This is a question that is frequently raised and by a good many would seem to have an important bearing on the results. We are discussing it here, not because it seems to have a particular bearing, but in order to answer a question that is frequently raised.

There appears to be no indication that the results are coïncident or coördinate with the size of the farm as measured in acres. In all three groups are both large and small farms, and the net results or managerial income was not connected with farms of any particular size. It will be interesting to know that the average size of the farms in Group I, is 188 acres; in Group II, 170 acres; and in Group III, 185 acres. Practically the same relative condition exists in regard to the acres in crops.

It will also be interesting to know that a similar condition has existed in all the county contests except one, and that apparently the number of acres, between certain extremes either way, has very little to do with the managerial income.

TOTAL CAPITAL

Total capital undoubtedly has something to do with the results on farms. We find that in the first group the average total capital amounts to \$34,494. In Group II, (the average) it amounts to \$21,825, while in Group III, (below average) the total capital amounts to \$25,091. This would indicate that the total capital has but little influence between the average and the poorest farms, but apparently it does have some, if not considerable, influence upon the better farms, as there is nearly \$10,000 increase in this group over that of Group III.

OPERATING CAPITAL

Operating capital on the farm is a variable quantity and is subject to more frequent and sudden variation than is the fixed capital. Undoubtedly the amount and judicious use of operating capital has an important and direct bearing upon the financial success of the farm. It is, therefore, important to know not only the amount but what relation, if any, the operating capital bears to the fixed capital, and to what extent it influences the managerial income.

In Group I, we find the operating capital amounts to \$9,337; in Group II, \$4,905; and in Group III, \$5,474. Here we find a somewhat similar relation to that found in total capital, but the differences are perhaps more striking.

The per cent of operating capital to total capital in Group I, is 27.06; in Group II, it is 22.6; and in Group III, it is 21.8. It is significant that on practically all the farms that we have studied we have found that those farms that make the best success have from 25 to 35 per cent, or above, of operating capital, and on those farms where the operating capital falls below 15 to 20 per cent usually you can count on poor results.

On the farms before us we find that the per cent of operating capital in Group III, is almost as much as in Group II, but there is 5 to 6 per cent more operating capital in Group I, than in the other groups. My studies lead me to believe that the per cent of operating capital is more closely connected with the financial results on the farm than any other factor connected with the capitalization of the farm.

It is important and interesting to study the factors which constitute the operating capital, and if possible, discover the relative value of these factors. Table II throws some light on the situation.

CROPS

As indicated in Table II, the number of acres seems to have little to do with the net results. It is interesting, however, to notice that the results from crops vary considerably in the different groups.

In Group I, the sales and increased inventory amount to \$1,762, or 21.9 per cent of the total income of the farm. In Group II, to \$975, or 26.3 per cent of the total income, and in Group III, to \$564, or 24.6 per cent. It is also interesting to note in this connection that the yield of barley in Group I, is 31 bushels per acre; Group II, 23 bushels per acre; and in Group III, 19 bushels per acre.

The yield of corn for Group I, is 59 bushels, Group II, 52 bushels, and in Group III, 41 bushels.

The yield of oats for Group I, is 48 bushels, Group II, 43 bushels, and Group III, 46 bushels.

It will be noticed that the largest receipts from sales and increased inventory seems to be coincident with the managerial income of the various crops, although the difference in yields per acre between these are not as great as one might naturally expect.

Apparently there is little or no relation between the managerial income and the yields of hay and silage per acre. With alfalfa, Group I, has 20 acres per farm that yielded 3.2 tons

TABLE II—DISTRIBUTION OF OPERATING CAPITAL

	GROUP I		GROUP II		GROUP III	
	Amount	Per cent	Amount	Per cent	Amount	Per cent
Machinery and equipment.....	\$1,380.35	14.7	\$ 902.95	18.4	\$ 20.41	16.9
Horses.....	1,334.00	14.2	1,638.00	33.3	1,222.50	22.3
Cattle.....	6,104.70	65.4	1,895.10	38.6	2,404.70	43.9
Swine.....	280.50	3.0	191.90	3.8	402.32	7.3
Poultry.....	43.95	.4	37.98	.7	5.37	.9
Other live stock.....	6.10	.1	52.80	1.0	351.70	6.4
Cash reserve.....	187.50	2.0	186.00	3.7	120.50	2.2
Total operating capital.....	9,337.10		4,904.73		5,473.50	
Managerial income.....	3,820.75		1,294.64		-716.55	

per acre; Group II, 15 acres per farm that yielded 2.5 tons per acre; Group III, four acres per farm that yielded 3.75 tons per acre. While the yields of alfalfa are not coordinate with the managerial income, the number of acres per farm seems to be. With other hay crops and with silage there seems to be no relation either between the number of acres and the yield per acre.

LIVE STOCK

The number of horses on the farm in all the groups ranges from five to six horses per farm, and no relation seems to exist between the number of horses and the managerial income. There seems to be, however, a relation between the efficient management of the horse equipment and the net results as is shown by the fact that in Group I, the receipts per horse, which included both sales and increased inventory, amount to \$18; for Group II, \$7.71; and for Group III, \$3.88.

It is significant to note that the number of cows seems to have an intimate and direct bearing upon the net results of the farm. In Group I, we have an average of 28.4 cows per farm; in Group II, an average of 17.6 per farm, and in Group III, an average of 11.6 cows per farm. Comparing the number of cows with the managerial income, there seems to be a very close connection.

Not only is there a close connection between the number of cows but along with it is the interesting results of receipts from the sale of live stock and live stock products. In Group I, the receipts from the sale of live stock amount to \$3,329, or 41.4 per cent of the total receipts for the farm; in Group II, to \$1,291, or 34.9 of the total receipts for the farm; and in Group III, to \$1,085, or 47.4 of the total receipts.

The receipts from live stock products, which are milk and cream, in Group I, amount to \$2,761, or 34.3 per cent of the total receipts; in Group II, \$1,214, or 32.8 per cent of the total receipts; and in Group III, \$598, or 26.1 per cent.

Not only does the total income from live stock show up well, but the income from milk and cream per cow. In Group I, this amounts to \$91; in Group II, to \$66; and in Group III, to only \$42. In like manner the receipts per cow from the sale of live stock in Group I, amount to \$87 per

cow; in Group II, \$42; and in Group III, \$32. The number, the income from milk and cream per cow, and the income from the sale of live stock per cow, all indicate that the three factors are intimately connected with the net results on the farm.

TOTAL RECEIPTS

The volume of business as expressed by the total receipts seems to have a close connection with the managerial income. We find that in Group I, the total receipts amount to \$8,034, in Group II, \$3,696, and in Group III, \$2,288.

The above factors seem, from our study in this contest, to be the leading factors in the results on Wisconsin farms, which, of course, are largely dairy farms. Other factors, such as the number of ewes, the number of sows, the average number of men kept, miscellaneous receipts, receipts per ewe and per sow, crop acres per man, animal units per man, crop acres per horse, do not, from the results that we have obtained on the farms this past year, seem to be connected to any large extent with the net results of the farm.

We feel, however, that this study is only a tentative one and that further study extended through a longer period of years may throw greater light upon our problem.

I wish to state in this connection that the farm contest during the past year in Wisconsin has been made possible through the hearty coöperation and good will of the farmers entering it. I wish to commend in a hearty manner the most excellent spirit and coöperation that we have received in our work and study of these problems. I hope it will be the means of forming a close link between the farmers and the college. I am sure that as far as we are concerned it has put us in closer sympathetic touch with the farmers and the farm community. We have a clearer conception of the farmer's needs and the difficulties that he has in so organizing his work as to make everything work out satisfactorily. On the other hand, we believe that it has been beneficial to the farmers in opening up their eyes to some of the problems they have upon their own farms. They have been led to feel the need of applying business methods upon their farms and many of them have requested us to furnish them with some method of keeping farm accounts so that they can know

what they are doing. Farmers have told us that next year they expect to keep closer account, that they are going to study their business, and believe that they can make a better showing next year than during the past year. It is this spirit of coöperation that makes us feel encouraged in taking hold of this work and pushing it. We believe it has a great future before it.

THE COUNTY AGRICULTURAL SCHOOL

F. J. SIEVERS, Wauwatosa.

Superintendent Milwaukee County Agricultural School.

There are at the present time seven county agricultural schools in the State of Wisconsin. These schools have been established by and receive their support from the state and county and have had a comparatively hard fight, in that they inaugurated something new in our established educational system. They were misunderstood and often times were not managed so as to meet the demands of the community.

I dare say that no thinking person will question for one moment the fact that this kind of education is essential and desirable. Evidence to substantiate this statement is being brought to us at the present time more strikingly than ever before, in that the farmer has never seen a period of greater prosperity, while the labor conditions in the larger cities are such that it has become necessary in some instances to establish free "soup houses." Such lack of equilibrium certainly indicates that there is something at fault with our social life and I am satisfied that I am safe in saying that part of this fault is due to the shortcomings of our educational system. We have just recently begun to feel that agriculture deserves a place in our public school curriculum. The peculiar thing about introducing agriculture in our public schools, however, is that the advocates of this kind of education seem to feel that agriculture is simply meant for the farm boy, with the result that the city trained boy has no conception of the details pertaining



MILWAUKEE COUNTY SCHOOL OF AGRICULTURE AND DOMESTIC ECONOMY



to the greatest industry in the world. At our school we see things from an entirely different standpoint. From observations and experiences so far, we have come to the conclusion that the county agricultural school in particular, and agricultural education in general, is primarily introduced in our school system for the benefit of the city boy. It is he that needs the help, information and encouragement necessary to convince him that the country is a better place for him to live. If by means of this system of education our state and nation will be instrumental in getting more people to leave the city to become established on farms, the effect will be most desirable. The outgrowth of this rearrangement of affairs would relieve the congested conditions that exist among factory laborers at the present time and give many of those people now without employment in the city, a place where they could at least make their own living on the farm. On a conservative estimate based on business conditions, it is safe to assume that there are 20% more laborers in the city than the city is able to employ. This condition is brought about by the large demand made by the cities for laborers at a time when business is booming. This attracts a large percentage of farm boys to the city while the same percentage of city labor is not attracted by the country during a "hard time" spell. We in Milwaukee county feel that our main work lies in the direction of establishing a sane social equilibrium and all our plans are made with this in mind.

There are several ways in which a city boy can be induced to become interested in the country and we try not to lose track of any of these. In the first place agricultural courses must be given and so arranged that they will furnish sufficient instruction in practical agriculture to aid the individual in determining his fitness for the occupation of farming.

2nd. The desirable and undesirable features of the farm occupation must be pointed out to him in the greatest detail so that he will not choose his life's work with a false impression.

3rd. Due to the great demand for labor on the farm, a city boy with comparatively little training may secure a position on a well-managed and up-to-date farm at almost

any time. In order, however, to make the individual feel that it is not necessary for him to lower his social standards in order to take up practical farming, the school makes every effort to raise the social standing of the farmer to such a plane that it will meet the demands of the average intelligent city prospect. To accomplish this, extension work is carried on in the following ways:

1st. By holding farmers' meetings throughout the county and organizing, in connection with these meetings, local farmers' clubs. These clubs, having for a center the local schoolhouse, will carry on, in coöperation with the school, social and educational programs.

2nd. By giving a course in the city for the purpose of explaining and pointing out to city residents who are already interested in agriculture, the possibilities of this line of work, as well as giving them aid in backyard gardening methods.

3rd. By conducting contests for the improvement of agricultural products. At the present time plans are being made for a general crop growing contest, with an annual exhibit at the school; a calf raising contest and a corn growing contest with possibilities of some competitive work along the poultry line as well. These contests are carried on under the supervision of some member of the agricultural school faculty for the purpose of inaugurating better agricultural methods and also to point out to the farm boy and girl what the opportunities for development along these different lines are, and thereby inducing them to remain in the country.

4th. By direct aid to the individual in furnishing him such information as will help in solving his problem.

After the boy or girl is once interested in choosing farming as his or her life's work, it is a comparatively easy matter to point out to them the value of special training along that particular line. By comparing farming to any of the trades, it is easy to show the necessity of an agricultural education for assured success in farming. Let me illustrate. The average tradesman who has served an apprenticeship of a few years knows only too well that he reaches his greatest earning capacity at a time when he is able to do most efficient work with his hands. This holds

true with every tradesman unless he should at some time become an employer. This, I dare say, is not possible for more than a few per cent. On the other hand the farmer will reach his stage of greatest efficiency and financial return at a time when he has partly retired, as far as his physical activities are concerned. I am referring to the man above the age of 50 or 55 years. Consequently the successful farmer knows only too well that he is not making the greatest financial success from his physical labors but that there is much more to be expected from the returns due to successful management. Such being the case, would it not be reasonable to suppose that it would be profitable for a farm boy, as well as for a boy who comes from the city, to take a course in agriculture which would put him in a position where he could get his experience in less time and thus make it possible for him to assume the responsibilities of an efficient manager on either his own or somebody else's farm while he is still in the prime of life? We must not lose track of the fact that every farmer must have some ability as a manager because he is the "boss" over the labor of his family at least, even though he may not keep a hired man. His occupation is different from any other in the fact that a man not only finds employment here for himself, but for his whole family. There is no other occupation where all members of a man's family work together for a common purpose. For this reason an individual with some managerial ability can take advantage of the labor of the members of his family in such a way that it will furnish him a financial return, and at the same time be good healthful recreation and training for his children. The tradesman does not have this factor to contend with and consequently does not need as much training along lines of management. Therefore, when we consider that it is absolutely essential that an individual taking up any one of the different trades should have a training along his particular line, is it not justifiable to suppose that the farmer, who has only very recently been given consideration in our education system, deserves a training along his line as well?

I am satisfied that the county agricultural school system when it is once thoroughly understood and properly con-

nected up with the rest of our education work will be a wonderful success and I will predict that the time will come when every county in the state of Wisconsin will have a similar institution.

SUMMER SEED FARM INSPECTION

J. J. GARLAND, Madison,

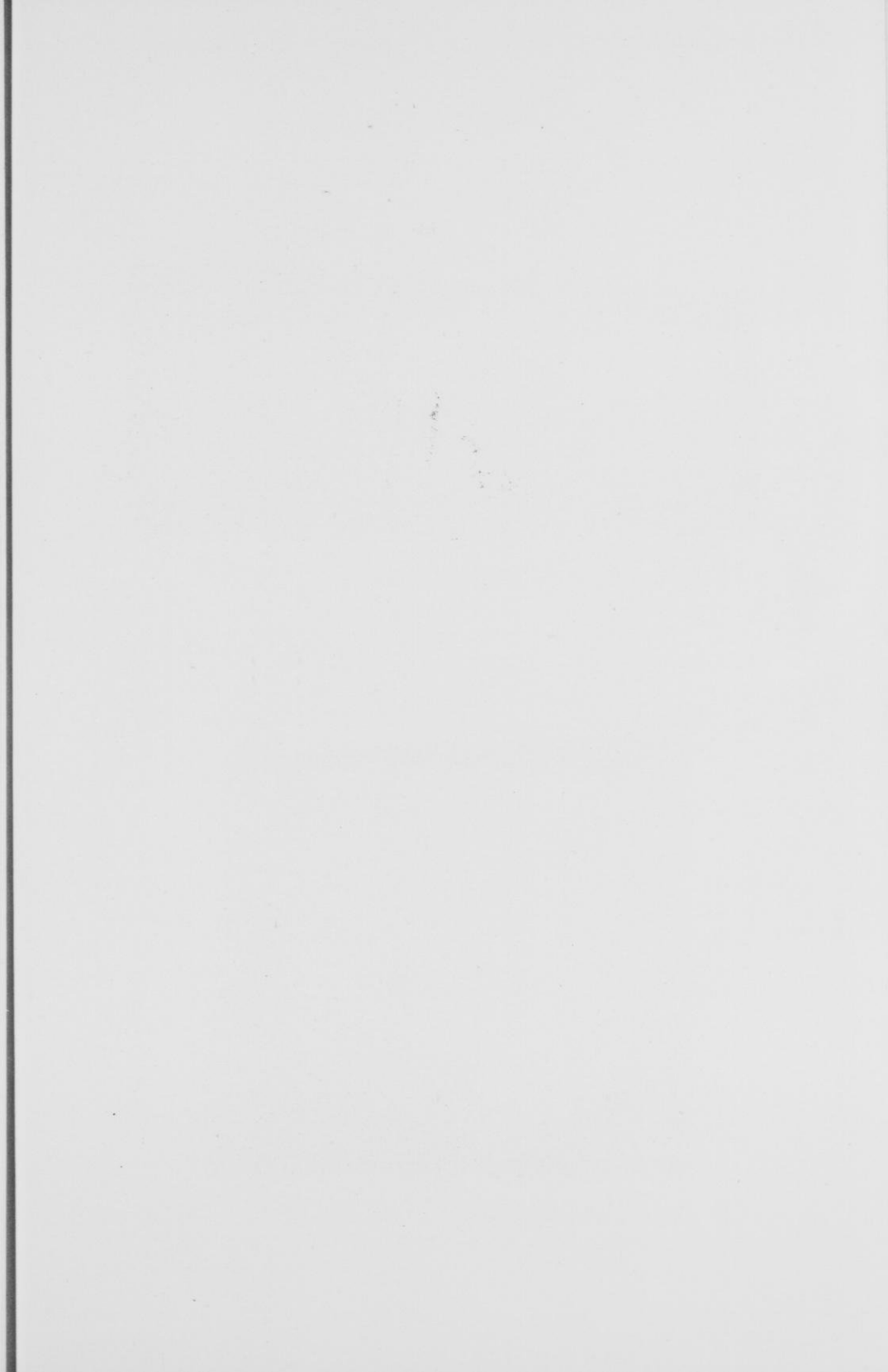
Experiment Association Seed Grain Inspector.

At our meeting last year a report was rendered on the winter inspection of seed grains on the members' farms and the work of the Association's Seed Grain Inspector discussed. At this time I wish to speak concerning another sort of inspection, a summer farm inspection, which was made on a number of the members' farms last July and August. A review of the conditions found on these farms may be of some interest and possibly benefit to those of the Association who are here to-day.

The speaker's connection with the Association is quite recent as compared to the length of membership of some of our growers. So perhaps some of his ideas on how a pure bred seed farm should be run are a little hazy or impractical. One would therefore expect a sort of disappointment should come to the inspector, and one did. It is not necessary then to confess that he received a shock when some of the Association's seed grain farms were visited.

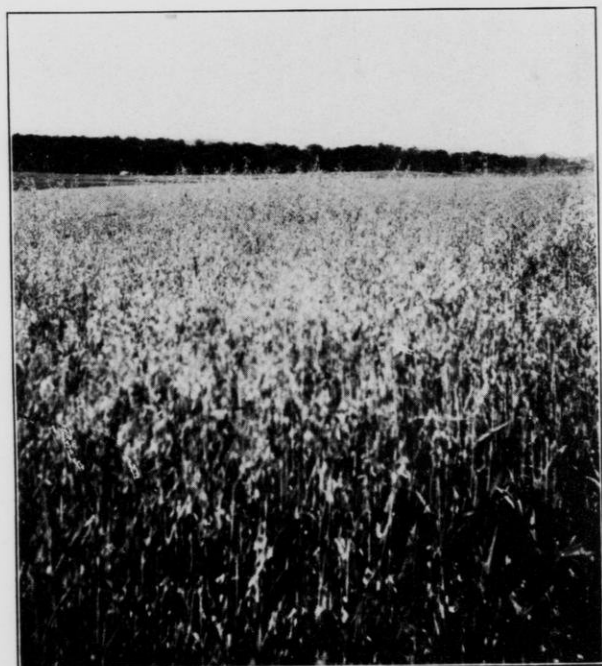
The inspector used to think that the Association members must be about the best farmers in the state, that an Experiment Association member didn't need a sign in front of his place to let the travelers know who lived there. All that anyone had to do to pick out an Association member was to drive along the road until he came to the best looking farm to be seen and that sure must be the place.

Not that the Association members were expected to have the finest houses or the largest barns but another quality or characteristic which does not depend on capital or investment in dollars and cents. A neatness or order about a farm, the repair and paint on buildings and fences, the absence of weeds and brush along the fences and in the





A heavy crop of Wild Oats along a Dodge County road. It would be easy to mow this roadside and prevent the spread of this noxious weed.



Wild Oats in a Dodge County oat field. The wild oat can be easily detected for it is taller and more widely branched than the common oats.

fields are more quickly noticed than a thousand dollar silo.

The rather indifferent success which Prof. Stone has been having with the members in getting them to run experiments in weed eradication, was attributed to the fact that the members didn't have any weeds on their farms to experiment on. This next year the inspector hopes to hear of a large number of the Association members coöperating with Prof. Stone in this weed eradication. A number can well afford to have a cropping or clean culture system planned, which will rid their farms of not only the common weeds but such noxious ones as wild oats, quack grass, and thistles.

How members can consistently try to grow clean seed grains and have their farms filled with all manner of noxious weeds is more than the inspector can understand. Especially since "Quality and Purity of Seed Grains" has been Prof. Moore's motto ever since the Experiment Association was organized.

On none of the farms visited had the owner recently moved so we can hardly excuse any of them on that ground for weedy farms. Most of the owners had been there for ten years or more and it was about time the weed problem was being settled.

After visiting quite a number of farms, the inspector came to the conclusion that some of the members are trying to farm too much land to produce the best quality of seed grains. It takes a little more than the ordinary care to keep our grain fields free from weeds and see that no mixture of varieties occurs in the threshing or handling. Where the farm is too large or too much land is in grain these important things are apt to be neglected in the hurry and rush of spring and fall work.

The Wisconsin farmer's season is all too short so he doesn't have time to do all the things he would like. With haying, cultivating and a few more things that have to be done coming on all at once, it is impossible for the ordinary man on a large farm to properly keep things in shape for high quality seed production. On such farms we find the barley full of oats, the oats full of wheat and weeds in everything and the grower trusting to the fanning mill to correct all the mistakes.

Some of the young men in the Short Course who are looking forward towards a farm of their own, don't need to wait until they can buy a "160" or more. If they start in on a small farm which is in a fair condition of fertility and do a little intensive farming, it won't be long before they can buy the "160" if one is wanted.

But don't get the idea that all the small farms are well-managed and kept in an ideal condition. The inspector found one small farm less than 50 acres in a worse condition than any of the larger farms in regard to the presence of weeds and smut.

During a recent trip in a southeastern county, the inspector drove by a large farm and saw a "For Sale" sign on the fence. The place looked rather badly run down as far as the buildings went but the location was good and the soil looked fair. Later on the inspector inquired from a neighborhood farmer about the price of the place and was told that it was worth about \$25 less than was asked for it. And the figure it was held at didn't seem high either as compared with what good farms were selling for in such a locality. But because this place was so foul with all kinds of weeds and it was known, the value of the farm had been sacrificed.

You all know of such farms in your own counties and how weeds play such an important yet generally unrecognized part in the valuation of a farm.

When out examining grains if the inspector fails to find weed seeds in the grain or a weedy field and remarks of the unusual cleanness of every thing, there is certainly a tone of pride in the grower's voice when he says, "Well I guess you'll find this farm pretty free from weeds. We have tried to keep it clean and are rid of most of them."

On some members' farms, the weed question is overlooked as well as the maintaining of the purity of our standard varieties. Where two or three varieties of corn are grown in the same field there is no use of the member trying to save pure seed.

Ever since the first report of the Association came out the easy mixing of varieties has been preached and hammered on. No one can expect to maintain pure bred seed

corn and grow two varieties side by side. Surely growers can't conscientiously sell seed from such fields as Pure Bred.

Every member of the Association has had it told him time after time in the classroom of the agricultural school and in the discussions and papers at these meetings that pollen from one cornfield will easily cross and mix with another field close by. This pollen from the tassels can be carried in the air easily a quarter to a half a mile if there are no obstructions such as buildings or woods between the fields. If any of our members expect to grow more than one variety of seed corn he must plant the different varieties at a considerable distance from each other. It is often said that one variety will mix easier than another. For instance, if a neighbor is growing a scrub yellow corn it won't pay to grow a white variety as they'll mix too easily. The grower then plants a yellow variety so they won't mix. But they do mix just as easily as if they were of the same color only one doesn't see all the damage which is done.

It is in fact a most dangerous mixing of varieties for it can't be detected except by poor yields and reduced quality and the Pure Bred Seed gets the credit of being no good. It is even better to have a cross between white and yellow corn for then it can be often detected and the cause of the poor seed known.

The officers of the Association have been asking that the Pure Bred Seed Grains be kept absolutely pure. It has taken years of breeding and selection to stamp on these grains a certain quality and definite characteristics. The growers should go on improving and advancing these grains in value and yields or at least they should not lose what has been given them.

We don't hear of a dairy man or beef cattle breeder stopping after he has gotten together a herd of pure breds. Why he has just reached the state where he feels that he can accomplish something when the barn is full of such animals. And it is just as true with every farmer that is growing any of the Pure Bred Grains on his farm. His work of improvement and selection of his grains will be evident ten times quicker than his work on animals.

On one medium sized farm of a member, there were found growing six different varieties of corn. When the farm was visited after the seed had been selected three of the varieties were found so mixed they couldn't be recommended for seed.

It is doubtful if growers realize how much damage is really done when they sell mixed grains for pure seed. The purchaser gets disgusted with the member, the grain and the Association. Not only does he generally withdraw from the ranks of better seed growers but he can influence many others against purchasing the Pure Bred Seeds. Many buyers are naturally critical against the Pure Bred Grains for they imagine their introduction to be more or less of a book-farming idea. Even though the yields may be satisfactory yet poor or mixed seed will make the increased yields forgotten.

A short summary will now be given of the conditions actually found on some of the farms visited last summer by your inspector.

The first farm we will take up had three different varieties of yellow dent corn growing side by side. The grower has been selling seed from two of these varieties as Pure Bred Corn and expected to continue. It isn't very doubtful that the seed he has is far from being pure bred. There were a few wild peas in the barley, also a little smut. It will therefore be necessary for this farmer to get a pure start of corn, try and clean his barley seed a little better next year and treat it with formalin.

At another farm a few miles away the grower had a field of No. 7 and 12 corn quite close together. Also a neighbor's field of corn was so near that it couldn't help but mix. When this farm was visited at the winter inspection the No. 7 corn was found badly mixed with the yellow and was unfit for seed. The barley field had quite a large amount of oats in it which could hardly be cleaned out well enough to make it good seed grain.

The third farm visited that day was badly contaminated with quack grass. It was in a nearby solid mass along the lane up to the house and extended into the fields on each side. The member had been living there only ten years so wasn't quite ready to fight this dangerous pest.

The next day two large farms were visited and found to be in excellent condition. Except for a trace of oat and barley smut there was nothing else of danger in the fields. The cornfields were isolated from all others so there was no chance of foreign pollen visiting them.

The next place visited seemed to be one of those places where too much land was trying to be farmed for the production of a very high quality of seed grain. The extremely weedy condition of the fields made it evident that proper care wasn't taken with the fields, and as the buildings didn't show any great degree of repair the inspector felt certain that something was wrong somewhere. Of course the inspector realizes that his opinion will probably have not the slightest influence on the size of any of the farms but it is not a bad guess that the owners would be making just as much off a fewer acres better farmed. Unless there is plenty of help under a good manager large amounts of grain can't as a rule be handled properly to insure the best quality of seed.

At another farm near by an abundance of wild oats was found in the fields. This member explained that they came from a neighbor's field. It is no doubt extremely hard to maintain clean fields when weeds from an adjoining farm continually come across the line. The only remedy seems to be that of getting the neighbor interested in a general weed eradication campaign.

A few miles from there, wild oats were again found in the oat fields in large numbers. The cornfields were well isolated but a field of wheat was thoroughly filled with cheat and also had some vetch.

All these farms spoken of were found in one county and the owners were quite prominent members of the Association. In considering these farms along with a few more visited, one is astonished to find such a small percentage of clean well-managed farms.

In another county a member's farm to all outward appearance looked to be a model of cleanness and order, but appearances are deceiving. The oat field had 20 to 30 per cent of smut and nearly ruined the Inspector's suit when he walked through it. In the barley field was found large areas of nothing but quack grass. The Inspector

was assured that quack could be easily cleaned out of the grain by the member's fanning mill. If such is the case there seemed less excuse than ever for the badly infested fields. When the fields of a member are in such shape as on this farm, and the owner is selling large amounts of seed grains each year, it looks like something should be done to preserve the good name of our Association. It is to the best interests of every member of the Association who is making seed grain selling an important part of his farm operations to take great care in keeping the fields of pedigree grain absolutely clean and pure.

The Inspector visited a few farms in each of the following counties: Dodge, Fond du Lac, Green, Jefferson, Rock, Walworth and Washington, a total of 27 farms being inspected about the time the grains were heading out. A comment on each farm will not be made for there is not enough difference except here and there a particularly good place or a bad one.

From the typical examples which have been given in detail it will be seen that things are not in a very satisfactory way on some of our so-called best seed grower's farms. There is absolutely no excuse for the conditions such as were found on some of the farms and it is time the Association awoke to a need of cleaner farms on which to produce grains of a high quality. Members who persist in letting noxious weeds crowd out the good grains should be dealt with in a manner that will bring them to time.

However, there is coming on a lot of young seed growers who are going to clean up their farms and it will only be natural that they should get the business of supplying the increasing demand for Wisconsin's Pure Bred Seed Grains.

Another inspection of farms was made last summer in the western part of the state by the secretary of a county order. He visited 20 farms in his county and the report of his inspection is not very encouraging either.

Parts of the report read as follows: "Farm No. 1 had the No. 7 and No. 12 corn too close together and only a few bushels of seed could possibly be saved. The oats were a little smutty and the pedigree barley was mixed with another strain.

Farm No. 2 had the cornfields well located. The oats were clean having been treated that spring. Barley also free from smut and weeds.

On farm No. 7 oats were badly mixed in the barley field, also quack grass and smut were present.

Farm No. 15 had Silver King and Gold Glow corns but fields were widely separated. Oats were treated last year, no smut seen. Pedigree rye and another variety of oats clean and pure. This is a good farm, the noxious and common weeds are well attended to."

Altogether twenty farms were inspected in the county, yet from only eight of that number could seed grains be safely purchased. It was also noted that on five member's farms no Pure Bred grains were being grown. On another five farms no seed of any kind was for sale. On three other farms which might have had good seed, the weeds, smut and mixture of varieties were so bad that grain could not be recommended.

This report of only one county could hardly be called flattering and doesn't prove that the western part of the state farmers are any better than those on the east.

In summing up the results of the summer inspections, it is quite evident that a great many of the Association's members should give more attention to ridding their farms of weeds. That smut is coming back quickly into our fields if the seed is not treated at intervals with the formalin solution. The members should reduce the number of varieties of grain grown on one farm. To raise only one kind of pure bred grain and keep it pure is much preferred to raising three or four varieties and having them mixed. It seems that a rule limiting the number of varieties grown on one farm could well be adopted for those members making seed growing such a prominent part of their farm operations.

The fanning mill cannot be used to correct all the results of poor farming. The Inspector has never seen a fanning mill which can separate two badly mixed varieties of grain well enough to use the grain for seed production purposes. The majority of one variety of seed can probably be removed but not the last few kernels which will still serve to keep the variety impure. The fanning mill and grader should

assist all good farmers but they cannot take the place of careless farming.

The production of seed grains is now a specialized industry and to produce good seed grains calls for more than ordinary care and attention. The membership of the Experiment Association was limited years ago with the idea of keeping this Association for men trained in the agricultural schools so a better quality of grains could be produced and the varieties sent out kept clean and free from mixtures. If membership was open to everyone, then there might not be the high regard for the experimental work that there now is, and it would be more difficult to keep the grains at a high standard. It is therefore necessary for every member who is thoroughly interested in better grains and who hopes to help supply the demand for the best types of the Pure Bred Seeds, to heartily coöperate with the officers of the Association by maintaining clean weedless farms and giving reasonable care to seed production.

COÖPERATIVE SILO CONSTRUCTION FOR MEMBERS OF WISCONSIN EXPERIMENT ASSOCIATION

PROF. F. M. WHITE, Madison.

Silos grow like weeds. There are approximately 47,000 silos in this state to-day. Any prediction of the number of silos to be built during the coming summer could be but a guess. Last year silo-service for members of the experiment association was started on a plan similar to that already adopted by the Agricultural Engineering Department of the College of Agriculture, which has been in successful operation for four years. The object of this plan, as explained last year at the annual meeting of this association, was to enable the association members to secure a silo form for building concrete silos at a reasonable cost, and thereby to build a permanent type of silo at a very low cost.

The first member to avail himself of the splendid opportunity of securing a form for building a concrete silo was Oscar Hitt of Alma, Wisconsin. Mr. Hitt wanted to build

two silos and paid thirty dollars for the use of the forms. Unfortunately, Mr. Hitt was unable to get help. This prevented his completing his work until it was too late to send the forms to other applicants. Mr. Hitt finds that his silos give excellent satisfaction and he states that the keeping quality of silage in them is about perfect. Mr. Hitt makes the following statement regarding his silos:

"The only difference that I can see between all the types of silos lies in their cost and lasting qualities. I would not pay anything for an air space in a silo wall as this seems absurd and a poor sale argument. Our silo has no roof over it this year and I have no trouble with frozen silage which is caused only by the careless man taking it out and not wanting to use the grub hoe in chopping away the inch or so of frozen silage next to the wall before taking out from the middle. Silage next to the wall freezes only after passing it and not before. Very soon we will build another silo also of concrete, as I think that material is the best for permanent construction. Our silos are 14 feet in diameter and 42 and 43½ feet high."

Mr. Hitt further says that he will build much higher, say 50' or 60' next time as he has found that the silage in the bottom is the best. I think his are excellent examples of good silos.

Many members of this association have no silo. I think every man who has many cattle realizes the value of silage. If you are going to build and wish to cooperate in the use of the Wisconsin Experiment Association forms consider the requirements of a good silo.

The requirements of a good silo are an air-tight wall, round and smooth walls perpendicular from top to bottom. Two important features for every silo builder to consider are permanent construction, which means low cost of maintenance, and fireproof construction. The solid wall concrete silo embodies these desirable points. Our farms are not equipped with fire fighting apparatus and therefore every precaution must be taken to build a construction which will not be affected by fire. Solid wall concrete silos are simple to construct and will last indefinitely. I have no record of the oldest concrete silo in this state, but I do know of one silo that has been in use for sixteen years and it shows no evidence of disintegration. The concrete silo on the University Farm is giving equal satisfaction with the other types of silos.

Concrete materials are found in all parts of this state. Many of you have concrete materials on your own farms. Why not make use of what is otherwise a useless material? A gravel pit is going to be the gold mine of the future.

If you desire to use these silo forms write to the Agricultural Engineering Department for an application blank. There will be a big demand for silo forms this year and if you desire a form for the coming season you should put in your application at once.

MARKETING PURE BRED SEEDS

HENRY MICHELS, Malone.

While the business of the pure bred seed dealer differs widely in many respects from the ordinary mercantile enterprises, with which we come in daily contact, the fundamental factors which must be considered in marketing are the same. The seller, first of all must realize that it is necessary for him to have the kind and quality of goods that the prospective purchaser wants, and second, he must have a systematic way of letting him know of it.

An advertising campaign that is not backed by a dependable grade of goods is bound to be a failure. Therefore the first efforts must be directed toward securing a select stock of seed. While persons who are not members of this association may legitimately sell No. 2 seeds as such, those who are members are morally and legally bound to handle only the highest quality.

The chief object of the Association is to increase the yield of the various crops grown in the state and elsewhere. The first step in attaining this object is the dissemination of improved varieties of seeds among its members. These seeds are given free, not because the members are an especially favored class, but because they agree when they join the Association, to do certain things in return. The next step is the sale of the progeny of these seeds by the members to farmers outside the Association thus bringing about the general distribution of the choicest seeds and elimination of the scrub stock. In order not to defeat the object of

the Association, the member is under the strictest obligation to sell only seeds of the highest quality. Failure to do this is not only defrauding the purchaser but also the Association without the help of which the sale would have been impossible. Too often members forget that the Association, either directly or indirectly, is responsible for every sale that is made and upon the member rests the responsibility of furnishing a grade of goods which fully comes up to the standard of the Association.

Even without the enforcement of restricting laws members are still obliged to sell only the very best if permanent success is to be attained. A purchaser can force a seedsman to refund money paid for poor seeds, but the loss to the seller does not end there. There is no more powerful advertiser than a dissatisfied customer. By conversation, by telephone and by mail he spreads news of an act of bad faith over an incredibly large territory. It is true that some customers expect too much and will complain without reason, but it is business policy immediately to quiet dissatisfaction by having the seeds returned without asking the customer to stand any loss whatever. The "money back" policy has enabled the mail order houses to build up their tremendous business. If it has paid them, there is no reason why it should not be profitable for seed dealers, large or small.

I firmly believe in giving the broadest kind of a guarantee. Pardon me for giving the results of my own experience of six years along this line. In a prominent place in my catalog, I give a guarantee that all seeds are true to name, free from noxious weeds and of high germination, and that money will be refunded for any seeds that are unsatisfactory in any way. It has cost us practically nothing to live up to this guarantee. Out of several hundred orders shipped each season, there are usually one or two complaints. Some that we have received have been entirely justifiable as mistakes were made in filling orders, and we would much rather correct such mistakes than to have a dissatisfied customer. Even when we do not consider a complaint justifiable, we never have refused to refund money a customer has paid, since we are put to no loss other than freight charges. In many instances these people will give us their orders the next year.

We realize that a prospective customer is much more likely to send us his order if he can judge for himself whether or not he has received full value for his money. People naturally hesitate to send money to a perfect stranger unless they have good assurance that he intends to give them a square deal. The average buyer is honest and reasonable and anyone treating him as he has a right to expect to be treated, need have no fear.

The publicity end of the seed business is one that merits the closest attention of the members of this association. When the association was in its infancy, the available supply of seeds was so small that more orders came in to Prof. Moore than could be filled. Now, however, there are approximately 1,500 seed growers, and while there is a market for their seeds, it is entirely beyond the capacity of the officers to find buyers for all of them. The members themselves must now find customers for the bulk of their seeds.

While a considerable portion of seeds may be sold in the grower's immediate neighborhood without selling expense, by far the larger portion must be sold through the mails, and the first problem that presents itself is to get in touch with people who want to buy. The proper way to do this is through advertising in agricultural journals. It should not be the object to secure orders directly from an advertisement. This would necessitate giving a great deal of information which would take up large space and its cost would be prohibitive. Comparatively very few farmers out of the many thousands who read a paper are interested in any one advertisement. To try to tell all of them what only a few care to know is therefore a needless expense. What an advertisement should do is merely to get the names of the few who are interested.

An agricultural paper is to be preferred to a general newspaper as its entire issue goes to farmers. Farmers of all classes whether live stock raisers or grain growers are in need of seeds every year so there is perhaps little to choose between a general agricultural paper and one that is devoted strictly to live stock. In the case of newspapers, not only does a large percentage of the edition go to city people who are not interested in seeds, but a prospective pur-

chaser knows that he can get in touch with the man who has what he wants more surely through a farm paper which caters to the farmer's needs in particular. There may be instances where economical results can be obtained by using the home newspapers, but judging from my own limited experience, I would say that such cases are rare, and that such advertising, even though the rate per line or per inch is low, is expensive when the proportion of sales to advertising expense is considered. The particular farm paper or papers to use would depend largely upon the nature of the seed to be sold. In general I would say, "Try to get in touch with Wisconsin people, by using Wisconsin papers." Wisconsin farmers buy more improved seeds than do the farmers of other states because the work of the Association has brought them to realize their superiority more fully. Also farmers will generally prefer to buy in their own state to save freight charges. Choose a paper which has a large circulation in the territory which you wish to reach. For instance, if you have Clark's Yellow Dent seed corn place your advertisement in the paper that has a large circulation in the southern part of the state. It would be needless waste of money to send thousands of advertisements into the northern part of the state for farmers there do not grow this late variety. If the same article is advertised in several papers, each one should be keyed so the advertiser may know which is bringing the business. The simplest way for a farmer advertiser to key an advertisement is to give a different route number or box number as part of the address in each paper. For instance, an advertisement in the Wisconsin Farmer might give the address as Route 1; in the Wisconsin Agriculturist as Route 2; in Hoard's Dairyman as Route 3. The source of all inquiries which are received addressed to Route 1 must then be credited to the Wisconsin Farmer; those addressed to Route 2 to Wisconsin Agriculturist and to Route 3 to Hoard's Dairyman. At the end of the season, the record will show which paper brought the most inquiries and which, if any, failed to bring a return in proportion with the money spent. If desired, this system of checking can be carried a step farther and records made as to the number and value of orders resulting from advertisements in each paper. The proportion of orders to

inquiries is not always the same. Especially is this true when out of state papers are compared with home publications. The former will usually bring a smaller number of orders from the same number of inquiries. In all cases the values of the different papers used must be calculated on the basis returns per dollar expended, and not per inch of space used.

Having obtained the names of parties who are interested in seeds, the next step is to induce them to become customers. The reply to an inquiry may be made either in the form of a written letter or printed circular, or both. The reply should give the prospective customer all the information he needs in regard to breeding, productivity, germination, purity and prices. The seller must claim for his goods all they will stand but no more. Unreasonable boasts or bluffs never get a customer. Every statement must be clear and easily understood so the reader gets the impression that he is about to deal with a square man.

Samples should be sent in all cases whether they are asked for or not. The sample must represent the actual condition of the seed as it will be shipped out. If it is better cleaned or in any way superior to the seed sent, it will result in a dissatisfied customer and a permanent loss of trade from that customer and all others with whom he communicates. The sample need not be large. One which can be mailed with the letter without necessitating extra postage is usually large enough. Of course, if a large order is in sight, a liberal size sample sent under cover of a separate mailing envelope will do no harm. Sample ears of corn should not be sent. It is as impossible to convey a correct impression of a lot of corn by sending one ear as it is to form an idea of the quality of a sack of barley by examining one kernel. It is harder to accurately sample corn than other seeds especially if the sample be small.

In carrying on a correspondence, neat letterheads should be used and the writing carefully done. A typewriter is not an absolute necessity but it is very desirable. It permits greater speed in writing. A typewritten letter has a neat, businesslike appearance; its writing is clear and distinct and leaves no chance for errors in reading. One of its best points is that carbon copies can be kept of all correspondence.

As a matter of convenience and also economy, I prefer the use of government stamped envelopes. They can be bought in lots of 500 or more with sender's name printed thereon at a cost but slightly higher than the stamps. Envelopes spoiled in addressing will be redeemed at full stamp value.

The seller should always bear in mind, that a person who is in the market for any considerable quantity of seed usually addresses inquiries to a number of parties, and the one who finally gets the order is the one who the customer believes will give him the most satisfactory deal.

It is of utmost importance that all correspondence be taken care of promptly. There is little excuse for not answering a letter by return mail. If letters are left to lie around for several days until a number have accumulated, the answers are likely to be written hastily, penmanship will be careless, explanations be inadequate, and in general the prospective customer will be given the impression that you do not care enough about his business to give it your thought and time. A buyer so slighted, usually does and is entirely justified in giving his order to some one who gives him better treatment. We must never lose sight of the fact that successful marketing of seeds requires just as careful methods as the marketing of any other commodity, and that, other things being equal, the man who is the most careful in looking after the smaller details is the one who gets the business. There is no other mark which betrays carelessness so surely and so quickly as the failure to give all matters prompt attention. If a correspondent has to wait a week before he gets an answer to an inquiry, he is fully justified in believing that the shipment of his order will be delayed still more.

After receiving an order, the earlier seeds can be shipped the better. In the early part of the season when seeds will not be needed for some time and when orders are not coming in fast, it is permissible in most cases to delay the shipment for a few days, but later in the season shipments must be made at once as customers are then in a hurry and will worry about any unaccounted for delay. In all cases a customer must be notified by return mail of the receipt of his order and the amount of money it contained. If shipment is not made immediately, he must be told at what date it

will go forward. The bill of lading should be mailed immediately after the shipment is consigned. It is not enough to merely send a card saying that goods have been delivered to the railroad. I have found by my own experience that this is not conclusive evidence. I had bought seeds and had received notice by return mail of receipt of the order and that shipment had been made, only to find by examining the freight receipt when the goods finally reached me that delivery to the railroad actually was made two weeks later than had been stated. I have even known of shippers sending a false bill of lading and that the waybill covering the consignment was dated much later than the date borne on the bill of lading. Such acts of bad faith on the part of a shipper are easily discovered. They are inexcusable and are sufficient reason for the customer to refuse to patronize him further.

Shipments should be made in substantial packages. Burlap sacks are hardly suitable for shipping seeds. They are likely to be torn in shipment, and they are almost useless to a customer after he has emptied the seed from them. We make all our shipments in new 16-oz. cotton grain bags and charge market value for them. Packages should be made to look as neat and attractive as possible, but an artistic shipping tag and fancy box will not make up for a deficiency in quality but rather serve to set it off.

It may seem unnecessary to call attention to the law which requires shippers to state name of variety, purity and germination percentages on shipping tags, but I know it to be a fact that some of our members fail to do this. Not only is this a violation of the law punishable by a fine, but it inspires a distrust in the customer and his future orders are likely to be sent to a law abiding seedsman.

The duty of the shipper does not end with the delivery of the seed to the railroad. He must be willing to help trace delayed shipments for a customer, and in case of loss or damage he is the man who should file the claim for damages against the railroad as he is more familiar with the steps necessary to take than his customer.

Finally the shipper must stand ready to promptly refund money to any customer who is not satisfied even though it may seem that he expected too much. In short, the entire





Through the efforts of Mr. John P. Denison, the Hartford Business Men's Association held an exceptionally good grain show at their Farmers' Institute Meetings last winter.

treatment of the customer from the time that his inquiry is received until after the seed has been delivered must be such that he will order again. Besides one word which he may say in your favor to a neighbor or a friend of his who is in the market for seeds, will do more for you than the best circular you can get out or the most convincing letter you can write.

Neither a seed business nor any other business can ever be made a permanent success if a new customer must be found for every sale that is made. If it be true that a new sucker is born every minute, it is just as true that every one that is caught makes enough of a splash about to serve as an effective warning to all others who may be within hearing distance. As hearing distance is very great in these days of telephones and fast mails, the fishing soon becomes very poor for the man who does not give a dollar's worth for every dollar received.

Before closing, I would like to take this opportunity to touch upon a matter which I have been trying to agitate for several years. It is the coöperative buying and selling of clover seeds within the Association, direct from the producer to consumer. There are districts in the state which annually raise large quantities of seed, while others raise less than they need and have to have it shipped in. As clover seed is ordinarily handled, it goes through many hands on its way from the producer to the consumer. The ordinary course is from producer to local dealer who recleans the seed. He sells to a wholesaler in the producing district. It is resold, often through a jobber to a wholesaler in the consuming district. Then to a retail dealer who finally sells to the consumer. Each man who handles it must have a profit which, together with the freight charges, is added to the original price until the cost to the consumer is often 50 per cent higher than the price paid the producer.

I can see no reason why a member living in a producing district should not collect the seed grown in his neighborhood, reclean it and ship it direct to a representative of a body of consumers in a nonproducing section. Coöperative marketing associations are being talked of everywhere, and I feel certain that it would be as easy to make a success of

it with clover seed as with any other line. It is a work in which county orders could well take a hand.

The details of such transactions would have to be worked out by the principals, but I should like to make a few general suggestions as to the general plan that might be followed. The matter should be taken up at the annual meeting of the county order. Before the meeting, the secretary should inform the holders of seed that the Association proposes to buy and invite them to send samples each marked with purity and germination tests and prices. The samples are to be on exhibition at the place of meeting and members desiring to purchase are to give their orders to the secretary, making a small deposit at the time. The amount should be about twice as much as is needed to pay the freight charges on the seed. Ordinarily this would be about \$1.00 per cwt. At the close of the meeting the orders will be forwarded to the sellers together with one-half of the deposit with orders when to ship. Before the seed arrives the buyers will deposit the balance of the cost with the secretary. The seed will be shipped to the secretary with sight draft for the amount of the order less the first payment attached to the bill of lading with the privilege of examination before paying the draft. Upon arrival the secretary will take samples of the seed and if they are considered inferior to the sample first submitted should be sent to Madison at once for test. If the test shows the seed to be below grade it should be refused and returned to sender. If the seed is of grade equal to sample the secretary will pay the draft and hold the seed until the proper parties call for it. The secretary or any other member who may be the representative of the buyers should be given a small commission of perhaps 25 cents per cwt. for his work.

The handling of any considerable quantity of clover seed involves a large amount of money, but by a system like this, the interests of all parties are safeguarded and payment made only upon delivery of a satisfactory article. The first deposit which the members are asked to make is for the purpose of making their order binding. The half of the deposit sent to the seller is to give him assurance that all of the buyers are acting in good faith and is to be retained by him to pay freight charges one way even if the seed be re-

fused. If members fail to claim their seed without reason, the entire deposit should be sent to the seller. I fail to see any reason why such coöperation should not prove satisfactory and profitable to all concerned.

ALFALFA SESSION

**Given Under Auspices of the Alfalfa Order of the Experiment
Association**

PRESIDENT'S ADDRESS

ALFALFA GROWERS ACTIVE

Suggestions for Improvement

JAMES B. CHEESMAN, Racine.

During the year just closed alfalfa growers all over the land have proved their usefulness in extending a knowledge of the great value of alfalfa. We know beyond doubt, that the alfalfa plant once firmly entrenched in the soil, will do more for its permanent improvement than any other plant grown. Alfalfa improves the soil in every detail; in that it first increases its humus, improves its mechanical texture, its absorptive capacity for gathering and retaining water, and maintains a temperature control unknown under any other condition. Its action in all these phases promotes the accumulation of nitrogenous matter and enables the soil to grow abundant yields of the crops which follow.

Kansas is perhaps the best illustration of the value of alfalfa, since all the world knows what a prolific crop of wheat was grown after the disastrous experience of 1913. Much of the work done during the past year in our own state may be described as reënforcing. Many of the state growers who had not before practiced liming and inoculation were induced to practice both in 1914, with the general result that a better and stronger root system was established and good stands were more general than had been found before.

The great improvement recorded in every county by farmers who have grown alfalfa for the first time, and by those whose acquaintance with it is more than a year old is the most encouraging note of last year's experience. The

experience of live stock growers, and of dairymen in particular, is suggestive and convincing. When we remember how our meat animals are being reduced and how slowly the number of dairy cows are increased we may well ask ourselves what is to be the future of the milk industry in the United States.

Wisconsin's experience has been phenomenal in that it has had the rare advantage of settling much raw land, and alfalfa, common clover, creameries, and calf raising have worked for the well-being of our state farmers. We do well to pause here and ask what is our standing in relation to the food supplies of the future.

Do we realize that only within the last twenty years have the eastern states awakened to the economic phase of dairying? In 1890 New York state had nearly one and a half million cows. In the ten years following the aggregate increase was only sixty-one thousand, and during the next ten year period the increase was less than eight thousand. Pennsylvania was worse off, while in the New England group of states the shrinkage was enormous. It is encouraging to learn that New York increased the value of its dairy cows twenty-one millions of dollars.

Now what are the facts respecting the areas around Chicago? In what is called the northeast and west central groups of states we had in 1910, or five years ago, about sixty per cent of the dairy cows of the United States. Let me state roughly that while the great state of Illinois had over a million cows in 1910 her increase in ten years was but forty-two thousand. Indiana had two-thirds of a million and increased only fifty-nine thousand. Michigan had three quarters of a million, and had an increase of two hundred and three thousand; while Wisconsin recorded a cow population of one million four hundred and seventy three thousand five hundred and five, and our increase was four hundred and seventy-five thousand one hundred and eight. Let us not get elated over this fact but keep in mind the enormous increase in the demand. We are called upon to supply other states with dairy cows. We have to maintain our status as the first dairy state in the country. We go on producing more and better animals every year; Michigan and Wisconsin have grown more cows because of their large

areas of leguminous plants of which clover has been the most conspicuous.

It is rapidly becoming known that alfalfa will do more for agriculture, and the live stock industry in particular, than any of the clovers. No small part of this increase of nearly half a million cows may be credited to the new country, or upper Wisconsin. Seven years ago there were fifteen million acres of new lands there; to-day there is only half that amount seeking a market. To Wisconsin farmers belongs the privilege of leadership in all that makes for prosperity in agriculture. The name of the state is known throughout the world as a dairy country.

Do we realize that to us is committed the opportunity to make this state the greatest and strongest in every phase of farm practice? In this state more than in any other the function of coöperative work has reached its highest development. To the administrative work done in the departments of Agronomy, and Animal and Dairy Husbandry may be traced the high attainment of the state's agriculture. It has been the good fortune of the Alfalfa Order to have been an active factor in the Agronomy work.

As each individual grower learns more of alfalfa he will the more earnestly appreciate its place in farm practice, and will be better able to measure the value of the plant and its relation to the permanent fertility of our soil. Just now our country is passing through a period of trial. The more than five billions of dollars worth of American crops have already enabled us to cancel the trade balance against us in Europe. If it is correct that our total indebtedness to foreign lands exceeds two billions of dollars, let us learn in the face of plenty to be thrifty, to save more, to raise our standards of value and to face the future with reliance on the farmer as the greatest asset in our ledger account, and alfalfa as one of his most available aids which offers the quickest, the most profitable return, and which provides the greatest addition to farm capital.

SECRETARY'S REPORT AT THIRD ANNUAL MEETING OF THE ALFALFA ORDER OF THE WISCONSIN AGRICULTURAL EXPERIMENT ASSOCIATION

L. F. GRABER, Madison.

This is the third annual meeting of our Wisconsin alfalfa growers' association—the Alfalfa Order. Our membership has increased until we now have over twelve hundred coöperating in this work of determining the difficulties, the advantages, and the disadvantages of alfalfa growing in Wisconsin. It is undoubtedly true that alfalfa has its place as an exceedingly important forage crop on many farms but there are conditions where the advisability of attempting its growth is doubtful. In those sections of the state where clover grows luxuriantly and bounteous yields of this great crop can be easily and cheaply obtained, alfalfa should not be too greatly emphasized, especially if its establishment is difficult, costly, and uncertain. Alfalfa in many ways and places is a better crop than clover and in many ways and places clover is better than alfalfa. In some sections of the state clover grows with such certainty and a stand is so easily secured that unless alfalfa is likewise not difficult or costly to establish and does not suffer from winterkilling, it may not be nearly so profitable a crop as clover. On the other hand, where trouble is experienced with growing clover, and liming and special cultivation is necessary, alfalfa is particularly valuable. These treatments make ideal conditions for alfalfa growing and where alfalfa can be successfully grown **it excels all other hay crops in yields per acre, in feeding value, drought resistance, and soil enrichment.** The farmer can well afford to take special care and go to reasonable expense in getting a stand of alfalfa but he must know alfalfa before he can grow it. The beginner should try only a small patch and study the crop in reference to his local conditions. It is one of the particular objects of our association to secure the results of these trials on alfalfa and make this information available to all our members. In this way all

alfalfa growers can profit by the experience of others, whether it be success or failure, and a healthy sentiment creating confidence in the possibilities of alfalfa growing in Wisconsin is brought about.

It is not the purpose of our organization to enthusiastically encourage alfalfa growing under all conditions. We are endeavoring to obtain information, through the experiences and experiments of the members, to determine under what conditions alfalfa growing is advisable as well as the important problems connected with the growing of this crop, for the benefit of all growers in the state.

Success in growing alfalfa is reasonably certain with the man who carefully studies the crop in reference to his local conditions but where the farmer "takes a chance" and fails to test his soil for sourness, inoculate, and has not studied the best Wisconsin methods of seeding, alfalfa is often a sore disappointment. It is these things which have been so forcefully called to your secretary's attention in the reports on alfalfa failures sent in by the members. We are now arranging to send each member direct information along these lines so as to decrease the errors and resulting failures of alfalfa in the state.

WHY ALFALFA FAILS

During the past three years over one thousand reports on alfalfa growing throughout the state have been received. These reports clearly show that the principal reasons for alfalfa failures in Wisconsin are as follows:

1. Lack of inoculation

The importance of inoculation is often not fully appreciated and in most places here in Wisconsin it is very essential. It is not a difficult matter to provide the soil with the proper bacteria for alfalfa growing, and yet this simple matter is often neglected and poor stands result.

Spread a ton of soil taken from a successful alfalfa field or from the roadside where sweet clover is growing, on each acre of the land you are to seed to alfalfa. Do this just before sowing the alfalfa seed and harrow it in. Then you have introduced the proper alfalfa bacteria in the soil which

are so essential in securing a healthy, vigorous growing alfalfa crop.

All farmers are advised to mix a quart of alfalfa seed per acre with the timothy and clover seed when seeding down, as this will get a few alfalfa plants established in the field which will become bacteria distributors and thus inoculate the soil for future crops of alfalfa.

A fair inoculation can be obtained by securing some alfalfa soil direct from the Experiment Station or from some good alfalfa field and then mix two parts of soil and one part alfalfa seed by weight. Sow the soil and seed mixture by hand. For limited areas of one or two acres this method of inoculation is practical.

In some instances cultures for inoculating alfalfa seed previous to sowing have given good results. These can be secured **free**, by any farmer if he will merely write Professor Karl F. Kellerman, Bureau of Plant Industry, Washington, D. C.

2. Sour soils

Alfalfa will not do well on sour or acid soil. Before growing alfalfa the soil should be tested with blue litmus paper which can be secured from a druggist. Take a handful of moistened earth from a few inches beneath the surface of the ground and press into a ball. Break this mud ball into halves and place a strip of blue litmus on one of the halves and cover with the other. After five minutes examine the litmus paper and if it has changed in color from blue to pink or becomes spotted with pink spots the soil is acid and needs lime for successful alfalfa growing. Lime and alfalfa growing are closely associated. Alfalfa is a lime loving plant and the presence of a goodly supply of limestone in the soil helps to insure a good stand.

3. Poor preparation of seed bed

Alfalfa requires a rather firm seed bed with a fine, loose surface of only one or two inches. Too often when the alfalfa is seeded with a nurse crop the land is plowed rather deeply just prior to seeding time. This makes a loose seed bed which is not favorable to the alfalfa or the nurse crop. Rolling should be practiced under these conditions. Fall plowing, except on light soils and hilly lands, is generally

preferable to establish a firm seed base. The surface soil should always be worked into a fine state of tilth.

4. Weeds

Heavy growths of weeds have often crowded out promising stands of alfalfa. In its early stages alfalfa is a tender plant and especially if seeded with a nurse crop its development is easily checked or stunted, if weeds are in abundance. With a weedy soil the best policy is to put the land through a careful weed killing process by frequently harrowing the soil, as previously described, up to the middle of June or July before seeding the alfalfa. This not only cleans the soil of ordinary weeds but makes an ideal seed bed for the alfalfa.

5. Too thick seeding of the nurse crop

Alfalfa in its early stages of growth will not stand crowding. When seeded with a nurse crop, such as barley or oats, only one bushel of the grain should be sown. Oats should be cut for hay when in the milk stage, to prevent too much shading and stunting of the alfalfa. Barley ripens from one to two weeks earlier than oats and does not dry out the soil so badly and may be cut for grain without danger to the alfalfa.

6. Late seeding

Alfalfa should not be seeded in Wisconsin later than the fifteenth of August. Before the first frost in the fall alfalfa should have a growth of at least six or eight inches to afford sufficient winter protection.

7. Late cutting

Cutting alfalfa later than the first week in September has resulted in serious winterkilling with many good stands of alfalfa. If cut late sufficient growth is not made in the fall before freezing to withstand the winter weather. Often, if the first or second crop has not been cut at the proper stage, the third crop will not be ready for harvest the first week in September. Two or three weeks later, however, the alfalfa will begin to blossom and the farmer often cuts this tempting crop, late as it may be. This will frequently result in a total or partial winterkilling of the field as well as a serious weakening of the plants which may survive. Blue grass will rapidly develop in the thinned stand the following spring and

the weakened plants will soon be crowded out by this natural grass, due to late fall cutting. Farmers who wish to maintain a good stand of alfalfa are strongly advised not to cut the third crop later than the first week of September.

8. Pasturing

Alfalfa should not be pastured if good stands are to be maintained. Late pasturing is especially disastrous.

9. Poor soil

Alfalfa is a great soil enricher but it requires at least a medium fertile soil. Poor soils should be well manured.

10. Low, flat, poorly-drained soil

Alfalfa requires a well drained soil. On flat, heavy loam or clay soils, which hold the water from melting snows and heavy rains in the early spring, alfalfa may be heaved out of the ground by alternate freezing and thawing weather. A sloping field which will provide ample run-off for surface water is better adapted for alfalfa growing.

11. Like clover and timothy, alfalfa may winterkill

Open winters and much alternate freezing and thawing weather in the spring are climatic conditions which cause the killing of alfalfa plants. Too often, however, improper methods of growing the crop so weaken the plants that they succumb regardless of weather conditions. To grow alfalfa in Wisconsin is to know alfalfa. The best soil and cultural conditions should be afforded the crop to give it a good strong, healthy growth which is so essential for the plants to withstand our winter conditions.

These are important factors every alfalfa grower should carefully consider and especially beginners in alfalfa culture.

EXPERIMENTAL WORK OF THE ALFALFA ORDER

ON RATES OF SEEDING ALFALFA

A matter of much recent discussion has been in reference to the best rate of seeding alfalfa in Wisconsin. In general twenty pounds per acre has been recommended but many have claimed that ten pounds is sufficient. In fact, parties from outside the state have freely advocated the ten pound

rate for Wisconsin. In the arid sections of the west as little as two to five pounds per acre are seeded with good results, and it is theoretically true that with perfect seed, perfect soil, and perfect weather a five pound rate of seeding will produce a very thick stand (about 26 plants per square foot if every seed developed into a strong healthy plant). In fact, with fields over two years old ten good, strong, healthy, vigorous plants per square foot will make a good stand. While from a theoretical standpoint all this is very much in favor of the lighter rate of seeding alfalfa, the experience of 180 members of the Alfalfa Order who have tried out both ten and twenty pound rates during the past two years has very emphatically shown that under average Wisconsin conditions fifteen to twenty pounds of seed per acre should be used. With our humid climate light rates of seeding are not practical because of the rapid thinning of stands due to winterkilling, weeds, blue grass and numerous other woes to which the young alfalfa plant is subjected.

With these 180 tests on ten and twenty pound rates of seeding in all parts of the state the following conclusions may be drawn.

- No. 1. That weeds and particularly blue grass cause greater and more serious difficulty with the ten pound rate of seeding.
- No. 2. That the twenty pound rate gives the best quality of hay.
- No. 3. That the ten pound rate will probably produce a somewhat taller alfalfa than a thicker rate of seeding.
- No. 4. That the twenty pound rate gives the thickest and best stand.
- No. 5. That the twenty pound rate gives the best yield.
- No. 6. That with the best conditions such as weed free, not acid, inoculated and carefully prepared soil a lower rate of seeding (15 to 20 lbs. per acre) will give good results. However, only 12% of all replies were in favor of the ten pound rate, against 88% who declared in favor of fifteen or twenty pounds as the best rate with these ideal conditions.

SUMMARY OF REPORTS BY MEMBERS OF THE ALFALFA ORDER
 ON TESTS WITH TEN AND TWENTY POUND RATES OF SEEDING.

REPORTS RECEIVED OCTOBER, 1914.

Questions asked members who conducted this test	Replies	Started 1912		Started 1913		Average 1912 and 1913	
		No.	Per Cent	No.	Per Cent	No.	Per Cent
1. Did the weeds or blue grass cause greater trouble with 10 lb. rate?	Yes.....	31	63	35	80	66	70
	No.....	18	39	9	20	27	30
2. Which alfalfa gave the best quality of hay?	No difference.....	4	10	5	13	9	11
	10 lb.....	4	10	2	5	6	8
	20 lb.....	32	80	31	82	63	81
3. Which grew taller?.....	No difference.....	17	40	13	32	30	36
	10 lb.....	17	40	17	41	34	40
	20 lb.....	9	20	11	27	20	24
4. Which gave the thickest and best stand?	No difference.....	4	10	5	12	9	11
	10 lb.....	3	7	1	2	4	5
	20 lb.....	33	83	37	86	70	84
5. Which gave the best yield?	No difference.....	4	10	6	14	10	12
	10 lb.....	3	8	1	2	4	5
	20 lb.....	32	82	35	84	67	83
6. Which is the best rate of seeding alfalfa on weed free, not acid, inoculated and carefully prepared soil?	No difference.....	3	6	0	0	3	3
	10 lb.....	5	10	4	8	9	9
	15 lb.....	20	42	18	37	38	40
	20 lb.....	20	42	27	55	47	48
7. What is the best rate for seeding, where alfalfa is seeded for the first time on soil fairly well prepared but somewhat weedy?	10 lb.....	1	2	0	0	1	1
	15 lb.....	2	4	4	8	6	9
	20 lb.....	45	90	47	92	92	96
	30 lb.....	2	4	0	0	2	2

No. 7. That under average conditions where alfalfa is seeded for the first time on soil fairly well prepared but somewhat weedy the 20 lb. rate is undoubtedly best. Only 1% of the reports declared in favor of the ten pound rate under these circumstances while 91% were in favor of the twenty pound rate, 6% for the fifteen pound rate, and 2% for the thirty pound rate of seeding alfalfa in Wisconsin.

This data is very conclusive that the heavier rates of seeding are best for Wisconsin. Land that has previously grown alfalfa and is thoroughly inoculated and in good tilth will of course require less seed and occasionally good stands are secured even with as little as ten pounds per acre. But

under average conditions and especially where alfalfa is seeded for the first time the twenty pound rate is best. Blue grass establishes itself with the lighter rates of seeding much more quickly than with the heavier rates and crowds out the alfalfa plants more rapidly. These results coincide very closely with the tests made on the Experiment Station Farm.

ALFALFA PLANTED BY MEMBERS OF THE ALFALFA ORDER
IN THE SPRING OF 1912 HAS NOT WINTERKILLED BADLY.

The alfalfa seed planted by the members in the spring of 1912 has now passed through two winters and is just entering the third. Last year two hundred and forty reports showed that there were about ten to twelve per cent failures due to winterkilling and other causes the first winter. Two hundred and one reports this year on this same seed show that last winter there were twenty-three more failures due to winterkilling from late cutting and pasturing and severe winter weather. This makes the total winterkilling for the two years about twenty-three per cent. Considering the fact that last winter was an open one, with much alternate freezing and thawing, this alfalfa in general has stood through two winters very well. Fifty-six per cent of these fields are still in good condition while twenty-one per cent have been partly winterkilled but were good enough to give fair yields of hay.

REPORTS RECEIVED SUMMER OF 1914 ON ALFALFA SEED
PLANTED BY MEMBERS OF THE ALFALFA
ORDER IN THE SPRING OF 1912

In answer to the question "Has this alfalfa winterkilled?" 201 replies were received, as follows:

	No. of Reports.	Per Cent.
None winterkilled.....	113	56
Partly winterkilled.....	41	21
Badly winterkilled.....	47	23

The 88 cases of partial and serious winterkilling were distributed between the winters of 1913 and 1914 as follows:

	No. of Reports.	Per Cent of Total.
Winterkilled during the winter of 1912-13.....	Partly — 26	13
	Badly — 24	12
Winterkilled during the winter of 1913-14.....	Partly — 15	8
	Badly — 23	11

The same percentage of winterkilling occurred the second year. This is seldom the case, as alfalfa generally kills out worse the first year. However, last winter was a severe one for alfalfa fields—in fact, much more so than the previous winter.

REPORTS ON ALFALFA PLANTED SPRING OF 1913

The winter of 1913-14 was a severe one for alfalfa. The open weather with the fields devoid of a protecting snow cover and the alternate freezing and thawing in early spring worked havoc with many fields. Out of 314 reports received there were 93 cases (30%) of bad winterkilling and 56 cases (18%) of partial winterkilling. This is very serious and represents the highest percentage of winterkilling so far reported by the members of the association. It is fortunate, however, that our association is so organized that we can learn how well alfalfa succeeds year after year. We should know when, where and how this winterkilling occurs and endeavor in some way to eliminate these difficulties in as far as possible. It requires some time to determine just what relation winterkilling has to the weather, soil, seed, cultural and harvesting practices. Through the coöperation of our membership these factors are being determined as they could be in no other way.

The greatest winterkilling (as before stated) generally occurs the first year the alfalfa has been seeded, and unless

same has been properly planted under the best soil conditions it is very apt to winterkill if an open winter obtains. This high percentage of winterkilling strongly indicates that if we are to grow alfalfa successfully in Wisconsin we must pay attention to all details. The beginner in alfalfa growing should study the crop, inquire into the best methods of seeding and not take chances on "any old method." It is true that with the best of care alfalfa may winterkill, but when seeded under the best conditions the chances for winterkilling are undoubtedly much less.

REPORTS ON ALFALFA PLANTED BY MEMBERS OF THE
ALFALFA ORDER SPRING OF 1913

Total replies received: 314 as follows:	Number.	Per Cent.
None winterkilled.....	165	52
Partly winterkilled.....	56	18
Badly winterkilled.....	93	30

WHY ALFALFA WINTERKILLS

Out of all the reports received last summer (1914) 307 gave the following reasons for the winterkilling of alfalfa.

Cause.	Number.	Per Cent.
Lack of snow cover.....	82	27
Freezing and thawing.....	47	15
Heaving (due to freezing).....	18	6
Poorly drained flat land.....	32	10
Lack of inoculation.....	25	8
Weeds.....	24	8
Late seeding.....	18	6
Too thick nurse crop.....	13	4
Sour soil.....	14	5
Pasturing.....	9	3
Late cutting.....	8	3
Cause unknown.....	17	5

Other causes for failure to get a good stand are here given which were mentioned one or more times in the reports. Figures in parentheses indicate number of times mentioned when more than once.

- White hard clay soil (2)
- Heavy clay soil (2)
- Seeded on loose, dry spring plowing seed bed (3)
- Pocket gophers and moles
- Sowed with red clover (2)
- Snowdrifts
- Died out after nurse crop was removed (2)
- Manure coating
- Northern slopes killed worse than southern (5)
- Grasshoppers (3)
- Cutworms

From the above we can make a rough inference that about fifty per cent of the winterkilling of alfalfa is probably due to severe climatic conditions and about the same percentage can be ascribed to improper methods of seeding and harvesting and unfavorable soil conditions, which weaken the alfalfa plants so that they may be killed out even with the best winter climatic conditions.

SOUTHERN VS. NORTHERN ALFALFA SEED

Just what effect the kind of seed has on the winterkilling of alfalfa stands is an exceedingly important problem which is now being worked out by the members of the association. Southwestern grown alfalfa seed has generally been considered less hardy than that produced in the more northern states where winters are more rigorous. While sufficient work has not been carried on to definitely determine this matter, reports and experiments conducted so far seem to indicate that Kansas and Nebraska and other southern seeds may be adapted to our conditions. Excellent seed can be secured from the southwest and in dry years when there is a big crop it sells for from two to four dollars less than the northern grown strains. If southwestern grown seeds are hardy here in Wisconsin, it is of great importance that our alfalfa growers should know it. In view of this, a year ago two pounds of Oklahoma grown seed were sent to a number of the members, for growing and comparison with northern

grown alfalfa seed. Sixty-two reports on this seed are summarized as follows:

REPORTS ON SOUTHERN GROWN ALFALFA SEED PLANTED
SPRING OF 1913 BY MEMBERS OF THE
ALFALFA ORDER JUNE, 1914

Questions asked members who conducted this test.	Answers.	Number.	Per Cent.
Has the Southern alfalfa winterkilled?	Slightly....	5	8
	Yes.....	9	15
	No.....	43	77
Has the Northern grown alfalfa seed beside it winterkilled?.....	Slightly....	4	7
	Yes.....	7	13
	No.....	43	80
Which looks most vigorous?.....	No dif.....	29	54
	Northern..	18	33
	Southern..	7	13
Which gave the thicker stand?.....	No dif.....	29	52
	Northern..	17	30
	Southern..	10	18
Which is the leafier and healthier looking?.....	No dif.....	30	56
	Northern..	18	33
	Southern..	6	11
Which is the taller?.....	No dif.....	27	49
	Northern..	17	31
	Southern..	11	20
From your experience with this test, what do you think of Southern grown alfalfa seed for your locality?.....	No dif. apparent	35	64
	Superior to North	8	15
	Slightly inferior to North	8	15
	Noticeably inferior.....	4	7

NOTE—Five persons reported total failures of both varieties; hence were not included in this summary.

In analyzing this data it is clear that for the first year there was little difference in the winterkilling of the southern and northern grown seed and we should remember that the open winter of 1913-14 was especially disastrous to alfalfa fields in general. So that the southern seed at least has stood one severe winter quite well. In these tests it will be noted that fifteen per cent of the southern alfalfa winterkilled in comparison with thirteen per cent of the northern; not a wide difference. About thirty-two per cent declared the northern seed seemed to have given a more vigorous, healthier, thicker, leafier, and taller alfalfa than the southern, but about fifty-two per cent reported they could see no difference in these respects, and sixteen per cent declared the southern seed excelled in these points over the northern. This surely indicates there was not a wide variation between the two types of alfalfa and in fact, on the Experiment Station Farm, little difference could be noted.

In answer to the question: "From your experience with this test, what do you think of southern grown alfalfa seed for your locality?" sixty-four per cent declared they could see no apparent difference. Fifteen per cent declared the southern alfalfa superior to the northern, and fifteen per cent declared the northern alfalfa slightly superior to the southern. Seven per cent stated the southern alfalfa was noticeably inferior to the northern.

These reports indicate that for the first year there is not wide difference in the hardiness and character of the southern alfalfa compared to the northern. But we cannot base our conclusions on a one-year test. This alfalfa will have to pass through at least two or more winters before we are able to determine definitely its hardiness. It is safe to say, however, that the indications so far are that the southern grown alfalfa seed may be adapted to our conditions.

TESTS WITH KANSAS, NEBRASKA, DAKOTA, MONTANA AND GRIMM ALFALFA SEED

To further test out the northern and southern seed last year over three hundred and twenty-five tests comparing Kansas, Nebraska, Dakota, Montana, and Grimm alfalfa seed were arranged. The data from these experiments will be

available year after year and should be sufficient to decide the value of these different strains of alfalfa here in Wisconsin. It is such work as this that our association can carry on which will be such a valuable source of information that could be secured in no other way. Our membership has increased until it now numbers over twelve hundred. We do not wish a larger membership, as our funds and expenses are such that we cannot well accommodate a greater number. Expenditures for postage, stationery, printing of reports, etc., are not covered by the small membership fee of 25c. We feel proud of our organization and believe it stands as one of the leading alfalfa growers' associations in the United States. Let us keep up this work and gain all the information necessary to place the alfalfa industry of Wisconsin on a firm and lasting basis.

ALFALFA IN WISCONSIN

JOS. E. WING,

Mechanicsburg, Ohio.

From my studies of alfalfa in various states of America, I believe that the essential thing of most use to Wisconsin farmers at this time is a knowledge of varieties adapted to their soil and climate, knowledge of the limestone and phosphorous requirements of the soil and knowledge of how and when to cut and save the crop when they get it. Let us take up first the question of varieties.

There were imported into the United States last year four million pounds of Turkestan alfalfa seed. This seed has been sold and sown, some of it probably in Wisconsin and certainly much of it along the Atlantic seaboard and probably pretty widely distributed over all the central western states. This is a calamity and nothing less, since Turkestan alfalfa never reaches any great size or yield in the humid states of America. It is adapted only to certain dry regions like parts of the Dakotas or possibly some parts of Montana and Arizona. It is not at all adapted to Wisconsin conditions. In Europe where it has been tested in almost every

country, in some tests it yielded only half as much as the other alfalfa and in Italy it yielded only one-third as much. On Woodland Farm it yielded about two-thirds, perhaps, as much as the other alfalfa but showed marked inferiority in almost every respect and we discarded it a year ago although we were among the first to give it field tests. Its characteristic is to grow short and slowly, making ordinarily but two cuttings where an ordinary alfalfa would make three and sometimes possibly four. Turkestan alfalfa seed can be bought cheaply by seed dealers and it seems to seed very heavily in Turkestan and has recently become a source of much revenue to the farmers of that region. I hope we will cease to import it into the United States or at least when we do import it that it will be sold for what it is.

The very best alfalfa for Wisconsin, I believe, is the Grimm; the only difficulty being that at present the seed is a little high priced and short in supply. In a few years there will no doubt be plenty of Grimm seed on the market because it is being grown more and more in the Dakotas and in Montana for both hay and seed production. The Grimm was produced in Minnesota from seed brought from Germany and from the effects of very hard winters of Minnesota every tender plant was destroyed and finally only the ironclad, hardy ones were left so that as nearly ironclad in absolute hardness as a plant can be, the Grimm is.

There is another variety called the Baltic, originated in Dakota, from an accidental seedling of a very hardy nature. This is very much like the Grimm, probably has similar blood lines and probably fully as good. It is also in short supply and the seed is high at this time.

However, I believe that any alfalfa seed produced in the Dakotas or in Montana or even in Nebraska will give good results in Wisconsin. We are distributors of alfalfa seed and I suppose we retail more than anyone else in America. We have to be very careful where we get the seed; for recently we have discovered that even Kansas seed is not hardy every year in the north, and so we have had to discriminate against Kansas seed for our northern customers. Seed from Oklahoma or Arizona or California would be very dangerous, I am sure, for Wisconsin. Get it from the Dakotas and from Nebraska and Montana for there is

plenty coming from there now and I am sure your plantings will be safe.

Next is the matter of limestone. The more I study alfalfa the more I am impressed that its permanent success is a matter of having an alkaline condition of the soil, that condition brought about by the presence of plenty of carbonate of lime. The remarkably good alfalfa in many parts of Wisconsin is due to the very large amounts of limestone found. There are a good many regions in Wisconsin abundantly supplied with limestone in the form of pebbles in the subsoil, small pieces of carbonate brought there by the glaciers. These regions will always grow alfalfa markedly well and will contribute mightily towards keeping Wisconsin the great live stock and dairy state that it is. There are other large regions in Wisconsin, however, without this lime in the subsoil and I believe unless a man is able to buy the lime and put it on, that he had better not sow alfalfa.

The best kind of lime to use, we have found is the unburned lime, finely ground or ground as coarse as corn meal. It is just the limestone rock powdered up in some form. Sometimes one can buy it in the shape of screenings used by concrete workers, getting it for a very low price and although it may be a little coarse it will all go into the soil in time. Sometimes on one's own farm he can find ledges of limestone that he can pulverize up with a machine right on the spot. This is being done more and more in many states of the Union, notably in Tennessee, Kentucky and Ohio. There are machines now designed for this work that give very efficient service.

As to rate of application: an acre is a large place and to treat the soil and subsoil of 160 square rods of land, one should supply at least four tons of ground limestone, and if he can get it easily and cheaply, by pulverizing it perhaps on his own farm or by shipping it a short distance by rail, he can well afford to use even larger amounts than that.

When there is an abundance of limestone in the soil the alfalfa is so markedly vigorous that it can withstand winters and weeds and insect enemies and blight and yellowness and all these other things that come to trouble alfalfa, and will live for many, many more years than it will on a lime deficient soil. The truth is that the lime is needed for

the little bacteria that grow on the roots and gather nitrogen from the air and store it up for the alfalfa plant. And so when one is sowing lime over the soil it is very much as though he were sowing nitrate of soda on the land. It has even better and more permanent results than the nitrate of soda would, because the limestone can be used year after year, being lost from the soil at the rate perhaps of 700 pounds per annum through the leaching of the rainfall and the absorption of the plant roots. That means only that we must restore a ton once in three years. It can be harrowed in with a spring tooth harrow and thus the lime balance of the field can be restored. That makes me think of the subject of cultivation of alfalfa.

Many men ask me whether we cultivate our fields much and I reply "No," that we cultivate very little, usually once a year and seldom, almost never, more than that and some fields not at all. But when foxtail grass comes in it must be cultivated yearly or the alfalfa will suffer very much. The best type of cultivator that we have found is a spring tooth harrow made purposely for alfalfa growers with stiff springs and sharp points that will dig up the weeds and grass and not harm the alfalfa plants. The best type that I know of is made in Canton, Ohio, although I believe other manufacturers are now taking up and making a similar tool. This harrow, by the way, is useful for many other purposes about the farm wherever hard ground is required to be loosened up. I have said that we do not always cultivate at all. The reason why in some fields we do not find it necessary to cultivate, I will now tell.

When conditions are right alfalfa itself is about as vigorous a plant as there is in the world. That means when it has plenty of limestone and good drainage under it and has plenty of phosphorous and potash in the soil. When it has these things it will spring up rapidly and outgrow weeds and grasses. And so we have learned that since we have been applying phosphorous to the land and maintaining the full phosphorous need of the alfalfa plant and giving sometimes a little potash as well, that there is no longer any need of cultivation for the eradication of foxtail grass or any annual weeds or grasses. The alfalfa is so strong and vigorous that it quite smothers them all out and only Kentucky

bluegrass or such perennials as that will be able to encroach upon it. Since we have learned this fact we now regularly apply phosphorous to our alfalfa meadows. We have tried several forms of phosphorous, each one giving satisfactory results in its way. There is nothing better than bone meal only it is a little slower to act and must be dug into the soil by cultivation. There is basic slag which is a by-product of the steel factories of Germany. It contains phosphorous and lime and gives fine healthy, thrifty alfalfa. The only trouble with basic slag is that it is costly and now since the war is on we can get it no more for a time. Then there is acid phosphate. That's our standby at the present time, and it certainly gives us marked results, making the alfalfa grow vigorous and strong, easily climbing over the annual grasses. We have tried the raw rock or Tennessee rock phosphate as well and where it has been well mixed with manure and put under the ground as a previous preparation for alfalfa I assume that it has done us good because I cannot very well gainsay the experiments of Dr. Hopkins of Illinois and Director Thorne of Ohio. But where we used it as a top dressing for alfalfa we found that it gave us little or no results. As a matter of fact where we had applied 1,100 pounds to the acre of floats we were disappointed with the appearance of the alfalfa and afterwards applied strips of acid phosphate and basic slag across this field leaving other strips unfertilized with the result that we increased the yield 300 per cent on the twice fertilized portion. Since then we have used no more raw rock phosphate as we believe that a dollar spent in basic slag or acid phosphate will on our soil give us quicker returns. We have, however, a series of experiments going on to demonstrate to us whether raw rock phosphate at the rate of two tons to the acre may not ultimately give up its phosphorous to the alfalfa plant and prove profitable. I cannot tell about that yet because the experiment has not gone far enough. As to the amount to be applied, we apply about 400 pounds to the acre of slag or acid phosphate and a little less of bone meal. Remember how big an area an acre is with its 160 square rods, for when you apply 320 pounds you have given only two pounds to the square rod. If you were to give 3 pounds to the square rod or 480 pounds to the acre you would apply none too much.

As to potassium, we have used muriate of potash on black soils inclined to be peaty with very marked benefit indeed. That we applied at the rate of about 200 pounds to the acre when we seeded the alfalfa and we are now growing about the heaviest alfalfa on Woodland Farm on land that once was so light and chaffy that it would not grow corn more than knee high and would not grow alfalfa successfully at all. To-day it grows alfalfa almost waist high and the weeds and grasses are entirely suppressed. Naturally that land needed limestone as well as potash and phosphorous.

Now the only thing to mention is the time of cutting. That is the most essential thing for the farmer to learn and sometimes the hardest to teach him. Alfalfa should never be cut as long as it is growing. That is the first rule. As long as there is any growth taking place, let it grow. How can you tell if it is growing? Oh, by the looks of the buds at the top of the plant. As soon as it ceases making new leaves and the branches have begun to form flower buds, then it is probably time to cut it. But then before you start the mower get down on your knees and examine close to the ground to see whether the little basal shoots are coming forth. These little shoots or buds appear close to the surface of the ground, sometimes a little under the ground. Oftentimes I take hold of the stems and vigorously pull them up. You will never get the roots, of course, but you break off the stems under the ground a little ways. Then I can examine carefully to see whether the new shoots are ready to come and if they are half an inch long or an inch long, then you may as well start the mowers. To cut the alfalfa before these shoots appear is to cause it to be unhealthy and to turn yellow, to blight and to be sickly perhaps for all the rest of the year, maybe cause it to winter-kill as well. Why that is true I do not know and no one else has ever found out. To delay cutting long after the shoots appear is to lose the benefit of their growth and to make the last cutting come too late in the fall. So the safe rule is to watch closely for the shoots and as soon as they appear in most every part of the field, take out the mowers and cut the alfalfa as rapidly as you can.

Now the last I will mention is the time of cutting. Alfalfa should be cut promptly as soon as it is ready in the spring

which I suppose would mean here about the first of June or maybe the tenth of June. The next cutting will come off in approximately 35 days, watching, of course, the shoots to determine accurately, and the third cutting will come off in about 40 or 45 days depending upon the season and how much rainfall you have had and how much moisture is in the subsoil. After the third cutting is taken off, which should not be later than the first of September in this latitude, then cut it no more, neither pasture it, but let the alfalfa grow as high as it will and let it stand all winter to protect the crowns and to prevent winterkilling. Winterkilling hardly ever will take place in a field when it is tile-drained and a good growth stands up through the snow. But when the ice sheet forms on the alfalfa and the stems of the last year's growth stick through the ice they will often carry down enough air to keep the roots alive and it will come through where the late cut was absolutely destroyed. Now some have asked me what is our rotation on Woodland Farm. Well, it used to be two years of corn and then four years of alfalfa following, then back again to two years of corn, but you know since we have learned to apply all the phosphorous it needs and give it potassium occasionally, we find it so markedly strong and vigorous year after year and producing better as it gets older that we are all mixed up about our rotation. We cannot bear to plow up any of the fields and we are really thinking that perhaps we will get the whole farm down to alfalfa and buy the corn of the neighbors. Alfalfa is a wonder plant, a miracle worker, but it cannot work its miracles unless you give it its raw materials—drainage, limestone, phosphorous and sometimes potassium. Despite the drouth of last year our alfalfa made 4 tons of hay to the acre on most of the land, our corn but two-thirds of a crop. The feeding value of the alfalfa was at least equal to a crop of 150 bushels, and the cost of production was so much less.

To conclude, lime well, if you need lime, manure well and plow it under deep; use plenty of phosphorous, cut at the right time and your alfalfa will remain to bless you for many years, growing stronger and stronger for several years.

SECRETARY'S REPORT OF KEWAUNEE COUNTY
ORDER

CHAS. F. TESKE, Kewaunee.

The Kewaunee County Order of the Wisconsin Agricultural Experiment Association has been organized one and a half years. We now have fifty-four members. The first meeting of the order for 1914 was held at the Bohemian Hall at the time of holding the County Spelling Contest on May 23. Prof. C. P. Norgord addressed the members on Alfalfa. At this meeting it was decided to appropriate \$20 in prizes to be given for premiums on the exhibit of pure bred grains to be made at the annual meeting, Nov. 13. The arrangement for prizes was referred to the executive committee. At a meeting of this committee on August 3rd, it was decided to issue prizes on the following sheaf and threshed grains: barley, rye, wheat, and oats, also on the different varieties of peas.

The members receiving first prize had their grain shipped to Madison by the secretary of the county order to compete at the grain show held the 18th and 19th of December. That good pure bred grain can be raised in Kewaunee county was evident, for the spring and fall wheat and the No. 13 barley received sixth place at Madison, and if the exhibitors had been more careful in cleaning their grain would have come very near capturing first place.

With a steadily growing membership and the interest manifested in the corn contest carried on by the pupils in the country schools the past year, we may confidently predict that our membership will be doubled the coming year and that the farmers belonging to this order are being greatly benefited thereby.

SECRETARY'S REPORT, RACINE COUNTY
ORDER

E. A. POLLEY, Burlington.

The past year has been the best in the history of the Racine County Order. The work of the year 1913 was one

of promise but the season of 1914 brought the County Order to the attention of practically every person in the county. Our membership has increased and we now have sixty-six members. After paying for our printing, premiums for our grain show and other necessary expenses we have \$82.55 in the treasury and have \$510.00 promised for our corn and grain show the coming spring.

The County Order has had the hearty support of the banks of the county and enterprises such as Horlick's, J. I. Case Company and Wisconsin Condensed Milk Company. The Order has also coöperated with the Racine County School of Agriculture and Commercial Club of the city of Racine. This coöperative spirit has brought success to the order and has meant much to the agricultural interests of the county.

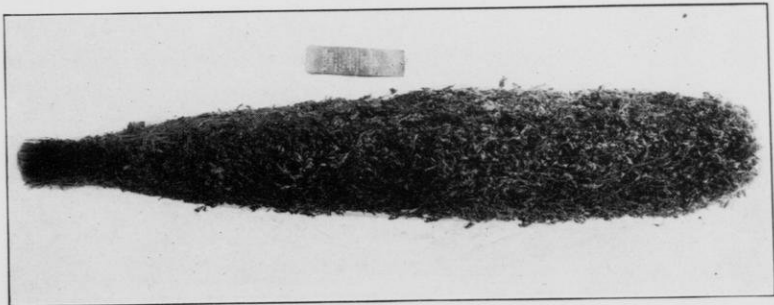
The annual meeting was held on Friday, February 13, 1914, at the County School of Agriculture at Rochester. This was the closing day of the four days Farmers' Course. The corn and grain exhibit of the order was collected during the week and judged by Professor Stone of the College of Agriculture. The variety and quality of exhibits was a revelation to the people of the county as a whole. All agreed that it was the best exhibit of agricultural products ever collected in the county. There were almost 300 exhibits and prizes amounting to \$350.00 were given. A picture of the exhibit was given in the 1914 Annual Report of the Wisconsin Agricultural Experiment Association.

Two weeks later the prize winning exhibits were taken twenty-five miles to the city of Racine. The Commercial Club arranged for a farmers' meeting and dinner and the exhibit was displayed here for several days. It was then taken to Union Grove, near the center of the county. A Corn and Soils School was held, March 3-7, at Union Grove, by the County School and the College of Agriculture. The exhibit was shown here during the week. The last day of the Corn and Soils School was given to the County Order at the conclusion of which an auction sale of exhibits was held.

It was planned that the County Order should arrange for a county exhibit the past summer at the state fair but this was postponed for the year in favor of the Farm Man-



Pierce County Sweepstakes sample of Wisconsin No. 7 corn, grown by Fred Smith, River Falls, Wisconsin.



To prepare bundles of alfalfa for exhibition, care must be taken to preserve the color and the leaves. First prize alfalfa exhibited by Swartz Bros., Cornalfalfa Farms, Waukesha, Wisconsin.



agement Contest. This has been organized and twenty farms have entered. Later it is planned to have dairy cow competition contests. This is in accordance with the plan of the order in being of general help in all departments of agricultural activity. During the past year Racine county has produced more pure bred seed than ever before and this has meant much more in the matter of sales. We are planning our annual meeting and corn and grain show this winter at the Commercial Club Rooms at Racine. From present indications the meeting should be one of the best in the history of our order.

SECRETARY'S REPORT OF THE ST. CROIX COUNTY ORDER

WM. SCHWANDT, Deer Park.

This is our sixth annual report and we believe it shows the St. Croix County Order to be in a thriving condition. The year 1914 has been a strenuous one for the order owing to the numerous enterprises we have been in. We have held our own in membership but look to a larger number next year. At the state fair our County Order took third place with its exhibit; one of our features being the many and superior varieties of pure bred grains.

A boys' acre corn growing contest was carried on in the county last year in charge of H. A. Aune, superintendent of schools, and under the auspices of the County Order. The County Order offered a scholarship at Madison as a first premium. The prize was won by Earl Uber of New Richmond, who produced $109\frac{3}{4}$ bushels of Golden Glow corn on one acre, certainly an excellent showing for this young man and the pure bred corn.

We are just completing a very successful five days' Farmers' Course at Deer Park. These courses are of great value and we hope to have one every year in St. Croix county.

Owing to the fact that many of our best members are dairymen and feed practically all of the grains produced on their farms, we have not been able to do so well in the selling of pure bred grains as some of the counties. But as the mem-

bership increases, we will be in a better position to advance our county along this line during the coming year.

In our county we hear reports from time to time that the university is in politics and how it is the cause of all our high taxes. It is very unfortunate, we feel, that such things have been said for our farmers are finding out that such is not the case and that their university is certainly a profitable investment.

SECRETARY'S REPORT OF THE MARINETTE COUNTY ORDER

D. S. BULLOCK, Marinette.

The Marinette County Order has just closed its second year's work and we feel very well satisfied with what has been accomplished thus far.

Practically all of the active members are growing pure bred grains of some kind. All who had any grains of any kind for sale last spring had no trouble in disposing of them.

Last spring an effort was made to secure the coöperation of members in the growing of soy beans in different parts of the county. Thirty members located in practically all parts of the county put in small plots. Through the kindness of Prof. E. J. Delwiche these men were furnished with seed and soil for inoculation. During the summer the secretary visited most of these plots and found them in most instances very successful. With only one or two exceptions all the men who had these plots are planning on putting in much more the coming season. In nearly every instance the results of inoculation were very apparent. In one field visited on September 11, one end of the plot, the part not inoculated, was entirely killed by frost, while the remainder of the plot was almost entirely untouched by frost.

In the month of January we issued our first members' list, and with this we published information concerning the breeds of live stock kept by members as well as the varieties of grains and tubers grown by them and the amounts of each for sale.

Our membership at the beginning of the year was 114. Since then we have lost two members by death and one by removal from the county. We have received during the year 151 new members, thus making the total membership at the present time 262.

Our plans for the future include the publication of another list of members in January, coöperative experiments with different varieties of grains, and plans for a county exhibit at the state fair next fall.

CONSTITUTION AND BY-LAWS OF THE COUNTY ORDERS OF
THE WISCONSIN AGRICULTURAL EXPERIMENT
ASSOCIATION

ARTICLE I.—*Name.* The organization shall be known as the.....
.....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 and State in general.

1st. By coöperating with the Wisconsin Agricultural Experiment Association in growing and disseminating pure bred seed grains.

2nd. By having Associations' exhibits at agricultural fairs.

3rd. By having annual meetings in order to report and discuss topics beneficial to the members of the Order.

ARTICLE III.—*Membership.* 1. Any person may become a member of this Order who has taken a course in the College of Agriculture at Madison or at any place in the State under the jurisdiction of the College.

2. Any one who is interested in pure bred grains and live stock or in progressive farming in general may become a member of this Order.

3. Honorary membership may be conferred upon anyone 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 Order shall consist of a President, Vice President and Secretary-Treasurer, whose terms of office shall be 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 Order 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 Order.

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 Order, also the names of all members and their addresses. He shall also keep the funds of the Order, 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 Order shall be used to defray its expenses or by vote of the Order for such purposes as will advance the agricultural interests of the Order 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 Order present.

BY-LAWS

ARTICLE I. The officers of this Order shall be elected by ballot at the annual meeting.

ARTICLE II. This Order shall be governed by Robert's Rules of Order.

ARTICLE III. All members joining at the organization of this Order shall be known as Charter Members.

ARTICLE IV. The time and place of holding the annual meeting shall be determined by the officers.

Adopted....., 19.....

CONSTITUTION AND BY-LAWS OF THE TOWNSHIP AGRICULTURAL CLUBS OF THE COUNTY ORDERS OF THE EXPERIMENT ASSOCIATION.

ARTICLE I. NAME.

The organization shall be known as the (Name of township) Agricultural Club of the (Name of County Order) of the Experiment Association.

ARTICLE II. OBJECT.

The object of this organization shall be to promote the agricultural interests of the town, county, and state.

1st. By cooperating with the County Order and State Experiment Association in growing and disseminating pure bred seed grains.

2nd. By having town and individual exhibits at County Fairs and other agricultural exhibitions.

3rd. By having at least one annual meeting and several special meetings in order to report and discuss topics beneficial to the members of the club.

4th. The special meetings should be social in character and the program shall consist of debates, discussions, readings, together with vocal and instrumental music.

ARTICLE III. MEMBERSHIP.

1. Any person may become a member of this township club who is especially interested in agriculture.

2. Honorary membership may be conferred upon anyone interested in progressive agriculture by a majority vote at any annual or special meeting.

ARTICLE IV. DUES.

A fee of twenty-five cents shall be collected from each member annually.

ARTICLE V. OFFICERS.

The officers of this organization shall consist of a president, vice president, and secretary-treasurer, whose term of office shall be 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 club, and to enforce the observation 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 club, also the names of all members and their addresses. He shall also keep the funds of the club, 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 club shall be used to defray its expenses or by vote of the club for such purposes as will advance the agricultural interests of the organization 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 club present.

BY-LAWS.

ARTICLE I.

The officers of this club shall be elected by ballot at the annual meeting.

ARTICLE II.

This club shall be governed by Robert's Rules of Order. The secretary shall report the organization of the club with names and addresses of officers to the secretary of the county order and the secretary of the state association immediately after organization and all changes annually in officers thereafter.

COUNTY ORDERS OF THE WISCONSIN EXPERIMENT
ASSOCIATION AND OFFICERS WHO GUIDE THEM.

BARRON COUNTY.

President—Wm. Bartlett, Barron,
Vice President—W. H. Clark, Rice Lake.
Secretary-Treasurer—Frank D. Otis, Barron.

BROWN COUNTY.

President—R. A. Ryan, De Pere,
Vice President—Geo. A. Lucia, Green Bay,
Secretary-Treasurer—J. B. Brockman, De Pere.

CLARK COUNTY.

President—Fred Sears, Neillsville, R. F. D. 2,
Vice President—J. E. Counsell, Neillsville, R. F. D. 1,
Secretary-Treasurer—Geo. E. Crothers, Neillsville.

COLUMBIA COUNTY.

President—F. E. Bell, Columbus,
Vice President—S. R. Webster, Columbus.
Secretary-Treasurer—E. J. Fritz, Columbus, R. 3.

DANE COUNTY.

President—Chas. A. Lyman, Madison,
Vice President—Otto Toepfer, Madison, R. F. D.,
Secretary-Treasurer—J. J. Garland, Madison.

DODGE COUNTY.

President—Theo. Lehman, Watertown,
 Vice President—J. G. Jones, Beaver Dam,
 Secretary-Treasurer—H. E. Krueger, Beaver Dam.

EAU CLAIRE COUNTY.

President—Chas. L. Koll, Eau Claire, R. F. D.,
 Vice President—J. H. Halbert, Augusta,
 Secretary-Treasurer—A. C. Russell, Augusta.

FOND DU LAC COUNTY.

President—A. W. Hargrave, Ripon,
 Vice President—Frank Donovan, Van Dyne,
 Secretary-Treasurer—

GRANT COUNTY.

President—W. J. Steinhoff, Platteville,
 Vice President—Ray M. Bushnell, Platteville,
 Secretary-Treasurer—J. C. Brockert, Platteville.

GREEN COUNTY.

President—M. L. Karney, Brodhead,
 Vice President—Wm. Smiley, Albany,
 Secretary-Treasurer—C. Tochterman, Jr., Monroe.

GREEN LAKE COUNTY.

President—W. F. Kolb, Berlin,
 Vice President—Bert Brewer, Berlin,
 Secretary-Treasurer—Wm. Michaels, Berlin.

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President—J. F. Davis, Barneveld,
 Vice President—Otto Oimoen, Barneveld,
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President—C. S. Ristow, Black River Falls,
 Vice President—P. A. Hemmi, Humbird,
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President—Frank Guttenberg, Jefferson,
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President—Don Vincent, Wilmot,
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President—Frank Pelisek, Kewaunee, R. F. D. 2,
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President—S. P. Markle, La Crosse, R. F. D. 1,
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President—A. H. Morse, Merrill,
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President—Fred Bandy, Wausau, R. F. D. 2,
 Vice President—Herman Amhaus, Edgar,
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President—Fred Sweningson, Peshtigo,
 Vice President—J. A. Tiedjens, Peshtigo,
 Secretary-Treasurer—D. S. Bullock, Marinette.

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President—W. C. Schroeder, Elm Grove,
 Vice President—Nelson Guenther, So. Milwaukee,
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 Asst. Sec.—H. F. Schroeder, Sta. D., Milwaukee.

MONROE COUNTY.

President—C. F. Hansen, Sparta,
 Vice President—L. A. Miller, Sparta,
 Secretary-Treasurer—C. E. Hitchcock, Sparta.

OCONTO COUNTY.

President—Geo. Beyer, Oconto,
 Vice President—Chris. Peterson, Oconto Falls,
 Secretary-Treasurer—Ellen B. McDonald, Oconto.

ONEIDA COUNTY.

President—Geo. H. Dawes, Tomahawk Lake,
 Vice President—Willis Jewell, ————.
 Secretary-Treasurer—W. D. Juday, Rhinelander.

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President—Wm. J. Bichler Belgium,
 Vice President—Chas. J. Nieman Cedarburg,
 Secretary-Treasurer—Richard F. Berger, Fredonia.

PIERCE COUNTY.

President—W. O. Peirce, River Falls,
 Vice President—Ed. Campbell, Ellsworth,
 Secretary-Treasurer—W. W. Clark, Ellsworth.

POLK COUNTY.

President—Clinton Lindber, Dresser Jct,
 Vice President—G. A. Hendrickson, Dresser Jct,
 Secretary-Treasurer—J. S. Klinka, Balsam Lake.

PRICE COUNTY.

President—Geo. Lawton, Park Falls,
 Vice President—C. A. Peterson, Prentice,
 Secretary-Treasurer—Griffith Richards, Phillips.

RACINE COUNTY.

President—James B. Cheesman, Racine,
 Vice President—C. L. Gittings, Racine,
 Secretary-Treasurer—C. E. Fawcett, Rochester,
 Asst. Secretary-Treasurer—Arthur E. Skewes, Union Grove.

RICHLAND COUNTY.

President—J. R. Thorpe, Tavera,
 Vice President—H. T. Draheim, Gotham,
 Secretary-Treasurer—H. L. Post, Sextonville.

ROCK COUNTY.

President—Geo. Hemingway, Hanover,
 Vice President—A. G. Russel, Janesville,
 Secretary—E. L. Bingham, Milton,
 Treasurer—Edgar Huebbe, Beloit.

ST. CROIX COUNTY.

President—R. W. Brunner, Hudson,
 Vice President—Geo. H. Kruschke, New Richmond,
 Secretary—Wm. Schwandt, Deer Park,
 Treasurer—Chas. Stiles, Hudson.

SAUK COUNTY.

President—Riley Martiny, Baraboo,
 Vice President—A. K. Bassett, Baraboo,
 Secretary-Treasurer—Geo. W. Davies, North Freedom.

SHAWANO COUNTY.

President—E. S. Hildeman, Belle Plaine,
 Vice President—Ben Smith, Shawano.
 Secretary-Treasurer—Paul Ashman, Belle Plaine,

SHEBOYGAN COUNTY.

President—W. J. Zelm, Plymouth,
 Vice President—A. Miller, Plymouth,
 Secretary-Treasurer—W. G. Streiber, Elkhardt Lake.

SUPERIOR ORDER

ASHLAND, BAYFIELD AND DOUGLAS COUNTIES.

President—C. F. Bogenrief, Washburn,
 1st Vice President—Roscoe Hosmer, Ashland,
 2nd Vice President—E. C. Stevens, Washburn,
 Secretary-Treasurer—E. J. Delwiche, Ashland.

TAYLOR COUNTY.

President—John Gamper, Medford,
 Vice President—Anton Drake, Medford,
 Secretary-Treasurer—R. A. Kolb, Medford.

VERNON COUNTY.

President—Nels O. Neprud, Coon Valley,
 Vice President—Cornelius Sebion, Westby,
 Secretary-Treasurer—Walter McClurg, Viroqua.

WALWORTH COUNTY.

President—Harry Dunbar, Elkhorn,
 Vice President—Ross H. Ells, Darien,
 Secretary-Treasurer—Jesse S. Harris, Delavan.

WASHBURN-BURNETT COUNTIES.

President—M. W. Cadle, Shell Lake,
 Vice President—E. H. Allen, Shell Lake,
 Secretary-Treasurer—Ed. Rylander, Shell Lake.

WAUKESHA COUNTY.

President—Sam L. Maun, Waukesha,
 Vice President—Wm. J. Wright,
 Secretary-Treasurer—Dr. G. S. Love, Waukesha.

WINNEBAGO COUNTY.

President—A. J. Cross, Allenville,
Vice-President—E. Race, Omro,
Secretary-Treasurer—

WOOD COUNTY.

President—M. H. Jackson, Grand Rapids, R. F. D.,
Vice President—A. P. Bean, Vesper, R. F. D. 1,
Secretary-Treasurer—O. J. Leu, Grand Rapids, R. F. D. 3.

OUTLINE OF COÖPERATIVE EXPERIMENTS

THE USE OF ACID PHOSPHATE IN SEED CORN PRODUCTION

This year some thirty members of the Experiment Association in different parts of the state are conducting a series of experiments on the effects of acid phosphate on seed corn production. Owing to the lack of potash this year the use of high grade acid phosphate alone is being tried. Acid phosphate is said to hasten the maturity of the seed and give a larger number and better filled and finished ears, a very important matter to our seed corn growers.

The member undertaking this experiment agrees to carefully and accurately spread a certain amount of this fertilizer over a measured quarter acre of his cornfield. At harvest time he must weigh the ear corn from this plot and from a similar sized check plot grown in the same field without the use of phosphate. The ear corn from each plot should be gone over carefully and divided into two grades, (a) seed corn, (b) feeding corn and nubbins, each lot to be weighed separately. He should also try and determine whether or not there is any difference in the size of ears and their maturity from the two plots.

This experiment will give an excellent opportunity to our members to see whether the addition of a phosphate fertilizer will be profitable in the production of a larger percentage of seed ears, also if it hastens maturity.

The members of our Association who are carrying out these experiments certainly deserve the thanks of the As-

sociation for the careful and painstaking way in which they are giving their time and attention to the work.

It is very seldom that agricultural colleges or experiment stations can get the farmers out in the state to conduct as extensive experiments as our members are carrying on, so the officers of the Association are especially proud of the coöperation they are getting from the members.

The results which the experimenters get from these tests, no matter if they be negative or positive, will be of great value to the other members of the Association in guiding them towards getting better yields from their farms.

The directions for carrying on these experiments are as follows:

MEASUREMENT OF PLOTS

The two plots or sections of your cornfield on which the fertilizer is applied should be fairly uniform as to soil and location. Likewise the third or check plot. For example, one plot should not be on a sandy knoll while the others are on lower or richer soil. Also it is important to see that the same seed is used for all the plots and it is planted on the same day. Often a few days' delay between planting will have an appreciable effect on the yield.

Before you are ready to plant the corn and when the field is about ready select any side or corner answering the above requirements and measure off three one-fourth acre plots. The shape of the plot is not so important, but 4x10 rods or 5x8 rods will be very convenient.

With a piece of string or binder twine four rods long (66 feet) one can quickly lay off a line about 12 feet from the fence and parallel to it. Then at right angles from both ends of this line take $2\frac{1}{2}$ lengths of the measuring string and you have 10 rods. Thus making a plot 4x10 and enclosing one-fourth of an acre. It is well to tie something to the fence or put in a stake close to it and opposite the corner of the plot so the exact location of it can be determined if other stakes are lost.

In a like manner lay off the two other plots but leave a strip wide enough for two rows of corn between plots so fertilizer will not be washed or scattered from one to the

other by rains or cultivation. By having the plots set 12 feet from the edge of the field there will be room for at least two rows of corn which will serve as guard rows and prevent any of the rows in the plot from being injured by insects, animals, or while cultivating.

If the plots are not measured off accurately so fertilizer is correctly distributed and a correct yield determined, such a mistake, in this sort of experimental work, makes an error which is multiplied many times in the results.

The plots can be measured off and fertilizer applied after corn is planted but it is necessary that this be done within three days after planting.

APPLYING THE PHOSPHATE

Due to the fact that the phosphate comes in 125 lb. bags and the fertilizer companies do not ship it out in smaller lots, we are forced to ask you to apply this amount on two plots in place of one as was first intended.

With the limited amount to be applied it will be rather difficult to get the fertilizer evenly distributed. Care, therefore must be taken not to put it on too thickly at first or there may not be enough left to cover the rest of the plot.

In spreading such small amounts, the fertilizer is often diluted by mixing with it an equal or larger amount of dirt, sand or other fine material. Thus, there is more to spread and it can be more evenly distributed over the plot.

The bag of phosphate sent you should weigh 125 pounds thus making an application of 50 pounds to one plot and 75 pounds to the other. This will be putting on the acid phosphate at the rate of 200 and 300 pounds per acre respectively which is about the rate recommended for some soils.

NOTE—To one set of experimenters will be sent two bags of the phosphate and they will make an application of 100 lbs. to one plot and 150 lbs. to the other. They will be putting on the acid phosphate at the rate of 400 and 600 lbs. per acre.

If the sacks should be lacking a few pounds in weight, it will probably be best to make up a full application for one plot and let the other plot receive the balance.

The phosphate should be scattered or broadcasted on the plot just before planting or immediately after and harrowed in. *Do not* plow or disc the fertilizer under or it will not be of greatest value to the crops. Care should be taken not to spread the fertilizer on a windy day or much of it may be blown off the plot and the results influenced.

If the member possesses a fertilizer attachment on his corn planter or drill, then the phosphate can be put on quite easily.

DETERMINING THE RESULTS OF THE EXPERIMENTS

To determine whether or not the acid phosphate has influenced the maturity of the corn, examine a number of the ears in each plot several times before frost. Note if there is any difference in their ripeness, hardness or maturity.

In the fall when the corn is well matured the plots can be harvested and the yields of the experiments determined.

It would be well to examine the boundaries and measurements of the plots before husking, to make sure that no rows will be harvested which are not in the plots.

The corn can either be husked out from the standing stalks or it can be cut by hand and shocked in the center of each plot, and at some later time husked out and weighed. But the corn from all the plots must be husked out or weighed at the same time. If several days or weeks lapse between the time of weighing the different plots, the corn will dry out some and the results are of no value.

In weighing up the corn you will want to know first the total weight of ears from each plot.

If there isn't a wagon scales on the farm so the entire corn from one plot can be weighed at one time, a basket full can be weighed on smaller scales and the total weight estimated from that.

Now divide the corn of each plot into two grades—1st., seed ears, 2d., feed corn and nubbins. No difference need be made between nubbins and feed corn but put all which is not good enough for seed ears into the second grade.

After the corn is divided into the two grades, weigh up each lot.

You can now tell how the weights check by adding the two last separate weighings together and seeing if it equals the total weight of corn as first determined.

Weigh the corn from each of the plots on which the acid phosphate was spread, also the check or blank plot on which no fertilizer was spread. If the check plot is not carefully measured and yield weighed there will be no guide to show whether there was any increase in yield with the use of the acid phosphate.

If a member is interested to know how the fertilizer affected the growth of fodder it would be worth while weighing that after husking.

A sheet will be sent you about harvest time on which to record the results. It will be similar to the following one.

RECORD AND WEIGHT SHEET.

ACID PHOSPHATE EXPERIMENT.

Name of experimenter.....Post Office.....

What were the dimensions of the plots?.....

Character of soil on plots?.....

Variety of corn grown on plots?.....

When was corn husked?.....weighed?.....

Was corn weighed on large scales or by basket?.....

What results did you find in regard to maturity of corn on different plots?

.....

.....

Did you notice any difference in size of ears on fertilized or unfertilized plots?.....

.....

ONE-FOURTH ACRE PLOT FERTILIZED WITH.....LBS.
ACID PHOSPHATE. (Fill out)

Weight of total yield of ears.....
Weight of seed ears.....
Weight of feed corn and nubbins.....

ONE-FOURTH ACRE PLOT FERTILIZED WITH
.....LBS. ACID PHOSPHATE.
(Fill out)

Weight of total yield of ears.....
Weight of seed ears.....
Weight of feed corn and nubbins.....

ONE-FOURTH ACRE CHECK PLOT NO ACID PHOSPHATE USED.

Weight of total yield of ears.....
Weight of seed ears.....
Weight of feed corn and nubbins.....

WISCONSIN AT THE PANAMA-PACIFIC EXPO-
SITION

Through the coöperation of the Wisconsin Agricultural Experiment Association and the Wisconsin Exposition Commission our state is well represented agriculturally at the Panama-Pacific Exposition in San Francisco with an excellent exhibit of farm products. It is surprising the great interest people are taking in Wisconsin out there. Our state has a reputation which extends from coast to coast, for its progress along agricultural and industrial lines. Thousands of westerners and visitors from all parts of the United States have shown a deep interest in the exhibit as well as in the undeveloped northern section of Wisconsin. The exhibit is well located in the Palace of Agriculture. Only the prize samples at the Experiment Association Grain Show and State Fair were sent to represent Wisconsin's grain and forage crops. These are of rare quality and when they enter into competition with the products of other states they will maintain Wisconsin's reputation as a Pure Bred Seed State.

We were particularly fortunate in having Mrs. Adda F. Howie, of Elm Grove, Wisconsin, in charge of the exhibit. Mrs. Howie was recently a member of the State Board of Agriculture and for eight years was connected with the Farmers' Institutes. Mrs. Howie has been called the leading woman farmer in Wisconsin, if not in the United States, having developed her farm along practical and profitable lines until now it is recognized as one of the leading pure bred Jersey farms of the state. Wisconsin may feel proud that its agricultural display is in charge of such an eminent authority and one of such wide reputation as Mrs. Howie. She will give weekly lectures and daily demonstrations on Wisconsin's opportunities and our progress in pure bred seeds and dairying. Her connection with the exhibit has doubled its value. It is the one exhibit where the visitors of the exposition will find a mine of valuable and interesting information and not merely decorative designs with grains, grasses, seeds, etc. Education and utility are the keynotes of the Wisconsin Exhibit rather than decoration and design and in this regard it shines out above many of the other state displays which cost from three to five times as much.

The Exposition is wonderful. In its broadest sense it is one vast university representing the world's progress in science and art and in all industries. Marvelous exhibits from all parts of the United States and from foreign lands are housed in eleven colossal palaces covering from three to ten acres each. Wisconsin's rapid advance in the last few years along agricultural lines makes us more than worthy of participating in this memorable international event commemorating the opening of the Panama Canal to the commerce of the world. The Experiment Association has been fortunate in securing the necessary financial assistance from the Wisconsin Exposition Commission to portray our high-class agricultural products and agricultural activities with facts and figures, photographs and oil paintings, charts, etc.

Entering the Palace of Agriculture and proceeding along most any aisle one will see an immense sign "WISCONSIN, THE LEADING DAIRY STATE" calling attention to our leading industry. Directly beneath is an enormous artistic painting 106 ft. long and fifteen feet high—in center

of which is a beautiful dairy scene representing typical animals of our leading dairy breeds grazing in a beautiful Wisconsin pasture. On one end is a representation of an immense cheese about 14 ft. in diameter and 6 ft. high so divided into three parts as to show graphically who makes the nation's cheese. Wisconsin produces over 47%, New York 34% and other states 19%. Beneath this one will find that one-half the cheese factories of the United States are located in Wisconsin. On the opposite end is an artistic painting of three tubs of butter the sizes of which show graphically the production of butter for the three leading states, Wisconsin (131,000,000 lbs.), Iowa (127,000,000 lbs.), and New York (69,000,000 lbs.). That Wisconsin has more dairy cows than any other state is a fact also characterized in an artistic manner.

Beneath this large sign Wisconsin crops are featured on a wall space 106 ft. long and fifteen feet high which is artistically divided into appropriate sections for Wisconsin Pure Bred Corn, Wheat, Oats, Barley, Rye, Grasses, Clovers, the Experiment Association and College of Agriculture and the central section—"OUR SYSTEM OF AGRICULTURE DIVERSIFIED CROPS AND LIVE STOCK FARMING." In this section is shown why Wisconsin avoids the dangerous one crop system of farming and that our agriculture is on permanent and lasting basis.

On either side of this central display the crops are illustrated with the very finest samples of all the pure bred grains, grasses and forage crops. Nothing but the prize samples of the Wisconsin Agricultural Experiment Association's state grain show held in December and the State Fair are on display in the exhibit. Their excellent quality and the fact that they are displayed in open boxes where they can be conveniently handled and examined instead of being bottled up as is the case with many other exhibits has proved a great drawing card for those visitors who are particularly interested in Agriculture. A large relief map of Wisconsin loaned to the Experiment Association by the State Board of Immigration has been of great value in demonstrating Wisconsin's ideal location near the world's greatest market for farm products. With Duluth and Superior to the North and their excellent harbor facilities for lake traffic and

Minneapolis and St. Paul to the West and Milwaukee and Chicago and Lake Michigan on the East Wisconsin farmers are surrounded by the best possible markets for their farm products.

Wisconsin's rapid rise as a corn producing state is shown by the results of the introduction of the pure bred varieties such as Silver King, Golden Glow, etc., which have rapidly replaced the scrub corns and late maturing varieties which were not adapted. Fortunately Wisconsin crops are not sold off the farm but are fed on the land and particularly is this true with the corn crop. Wisconsin has more silos (48,000) than any other state in the Union and over 40 per cent of our corn is harvested for silage purposes. Wisconsin is a state of rural population—over 50 per cent of our people live on farms or in small villages. That 85 per cent of our farms are operated by owners is indicative that we are not a renting state—that our farms are being well-maintained to fulfill the pride of the owners. Such important factors as these are emphasized throughout the exhibit in an attractive manner but in such a way that the facts rather than the decorations are the important features.

From an artistic standpoint the exhibit contains a miniature farm scene constructed by C. J. Berg of Tigerton, Wisconsin. It is a scene of his farm made entirely of mosses, grasses and seeds grown on his farm. It is fourteen feet in length and 7 feet high and has proven a great attraction. Thousands of people have admired this scene and proclaimed it, in every detail, a work of art.

The Wisconsin Exhibit is housed in the Palace of Agriculture with the other state agricultural exhibits. Over 400 samples of pure bred grains and corn and seeds will be entered in competition for awards of merit at the Exposition. Judging will take place in May and Wisconsin is well prepared to maintain her old time reputation in securing world championship prizes on her pure bred seeds and grasses.

BUSINESS MEETING

Friday, 2:00 P. M., Auditorium Agricultural Hall.
Meeting called to order by President Bonzelet. The

minutes of the last meeting were read and adopted, after which the following officers were unanimously elected.

President, Henry Michel, Malone.

Vice President, J. R. Thorpe, Tavera.

Secretary, Ransom A. Moore, Madison.

Assistant to the Secretary, John J. Garland, Madison.

Treasurer, Henry E. Krueger, Beaver Dam.

On motion, W. A. Hayes, Milwaukee, and Joseph E. Wing, Mechanicsburg, Ohio, were unanimously elected honorary members of the Experiment Association. Both responded with words of kindly encouragement to the members of the association.

REPORTS OF COMMITTEES AND OFFICERS

Executive Committee—

The following report of the Executive Committee was read by Chairman George W. Davies and unanimously adopted by the association.

Report of Executive Committee of the Wisconsin Experiment Association.

Meeting held Thursday evening, Dec. 17, 1914.

Meeting was called to order by Geo. W. Davies, chairman, and the chair appointed J. A. Van Natta secretary.

Present:—R. A. Moore, A. L. Stone, J. J. Garland, H. E. Krueger, William Leonard, J. R. Thorpe, J. P. Bonzelet, J. A. Van Natta, G. W. Davies.

Prof. R. A. Moore explained fully the duties of the Executive Committee, enumerated as follows:

1. Use of funds.
2. Needs of the Association.
3. Recommendation for the continuance of experiments.
4. Needs of operative plans.
5. Planning of future projects.
6. Ways and means of caring for the growth of the association.
7. Plans for the further development of the County Orders.

Mr. H. E. Krueger was voted a member of the committee to fill the place on the committee of Mr. Bell of Columbus, Wisconsin.

Motion made and carried that the secretary of the State Experiment Association be authorized to expend not to exceed \$100 for the purpose of experimentation with commercial fertilizers.

Moved and carried that the Secretary be authorized to expend not over \$1,500 for the purchasing and disseminating of pure bred seed grains.

Moved and carried that this committee recommend the adoption of the budget as proposed by Secretary R. A. Moore, for the years 1915-16 and 1916-17.

Moved and carried that the secretary be authorized to draw an order upon the Wisconsin Experiment Association funds for \$217.27 to reimburse Secretary R. A. Moore for his expenditure in settling personally a portion of the deficit of the National Corn Association, said assessment being made upon Mr. Moore as a director of the National Corn Association. The state of Wisconsin and the Experiment Association were the benefactors of the National Corn Show, and the assessment rightfully should be paid by the association.

Moved and carried that the association expend not to exceed \$50 in purchasing seed for experimentation of Sudan grass.

Moved and carried that the association expend not to exceed \$100 for the advancement of the production of soy beans.

Moved and carried that President Bonzelet appoint Geo. W. Davies, J. A. Van Natta, and J. R. Thorpe to act in coöperation with H. E. Krueger upon recommendations for changes to be made in the rules governing the county exhibits and grains at the Wisconsin State Fair.

Moved to adjourn.

Geo. W. Davies, Chairman.

J. A. Van Natta, Secretary.

Committee on Resolutions—

The following resolutions were read by the Chairman, Mr. Cheesman, and unanimously adopted.

This association in fourteenth annual meeting expresses its high appreciation of the work of the County Agricultural Representative. We earnestly desire that the agricultural committee of the Legislature will so amend the law providing for the support of this work as to increase the term of service, and place it on a more permanent basis.

The increasing demands on the Agronomy Department of the College of Agriculture necessitate increased housing accommodation. We therefore respectfully request such an appropriation of money as will complete the original building plan of the Agronomy Building within the year 1915.

WHEREAS, The various agricultural societies of the State of Wisconsin deem it advisable to confine the efforts of these organization to the production of a few varieties of seeds, fruits, and vegetables, that are most practical in meeting the needs of the state and the market, and

WHEREAS, The agricultural organizations wish to encourage the growing of such products possessing excellent quality, and

WHEREAS, The county exhibit building at the State Fair grounds does not permit the adequate exhibition of a large number of varieties, and

WHEREAS, The county exhibits could be arranged to a better advantage, thus allowing counties to make special displays representative of their products and counties,

BE IT RESOLVED; That this organization, the Wisconsin Agricultural Experiment Association, go on record as favoring the following changes in the rules governing the county exhibits of the Wisconsin State Fair:

Minimum number of varieties of wheat.....	5
Minimum number of varieties of corn.....	10
(6 field corn, and 4 sweet and pop corn)	
Minimum number of varieties of oats.....	7
Minimum number of varieties of barley.....	5

TREASURER'S REPORT

Mr. Noyes Raessler, Treasurer, reported on the financial condition of the association as follows:

Balance in Association Treasury, Jan. 10, 1914.....	\$708.52
Received from fees, auction fund and premium donations.....	1,139.92
Total Receipts.....	\$1,848.44
Total Disbursement Jan. 1, 1914 to Dec. 18, 1914.....	1,205.17
Balance in Association Treasury, Dec. 18, 1914.....	\$643.27

R. A. Moore, Secretary, reported on the use and condition of state funds. His report showed a

Balance in State Treasury Jan. 1, 1914.....	\$3,897.48
State Appropriation July 1, 1914.....	5,000.00
Total Receipts.....	\$8,897.48
Total Disbursement Jan. 1, 1914 to Jan. 1, 1915.....	5,388.11
Balance in State Treasury Dec. 18, 1914.....	\$3,509.37

We the undersigned committee appointed to examine the Treasurer's and Secretary's reports of receipts and disbursement of funds for the past year, beg leave to report that we found them correct.

(Signed) H. N. LONGLEY,
C. P. NORGORD,
H. E. KRUEGER.

Fourteenth annual meeting Dec. 18, 1914. The itemized financial reports are on file for inspection in the office of the Experiment Association.

THE NEXT ASSOCIATION PURE BRED GRAIN SHOW

HONORARY CLASS

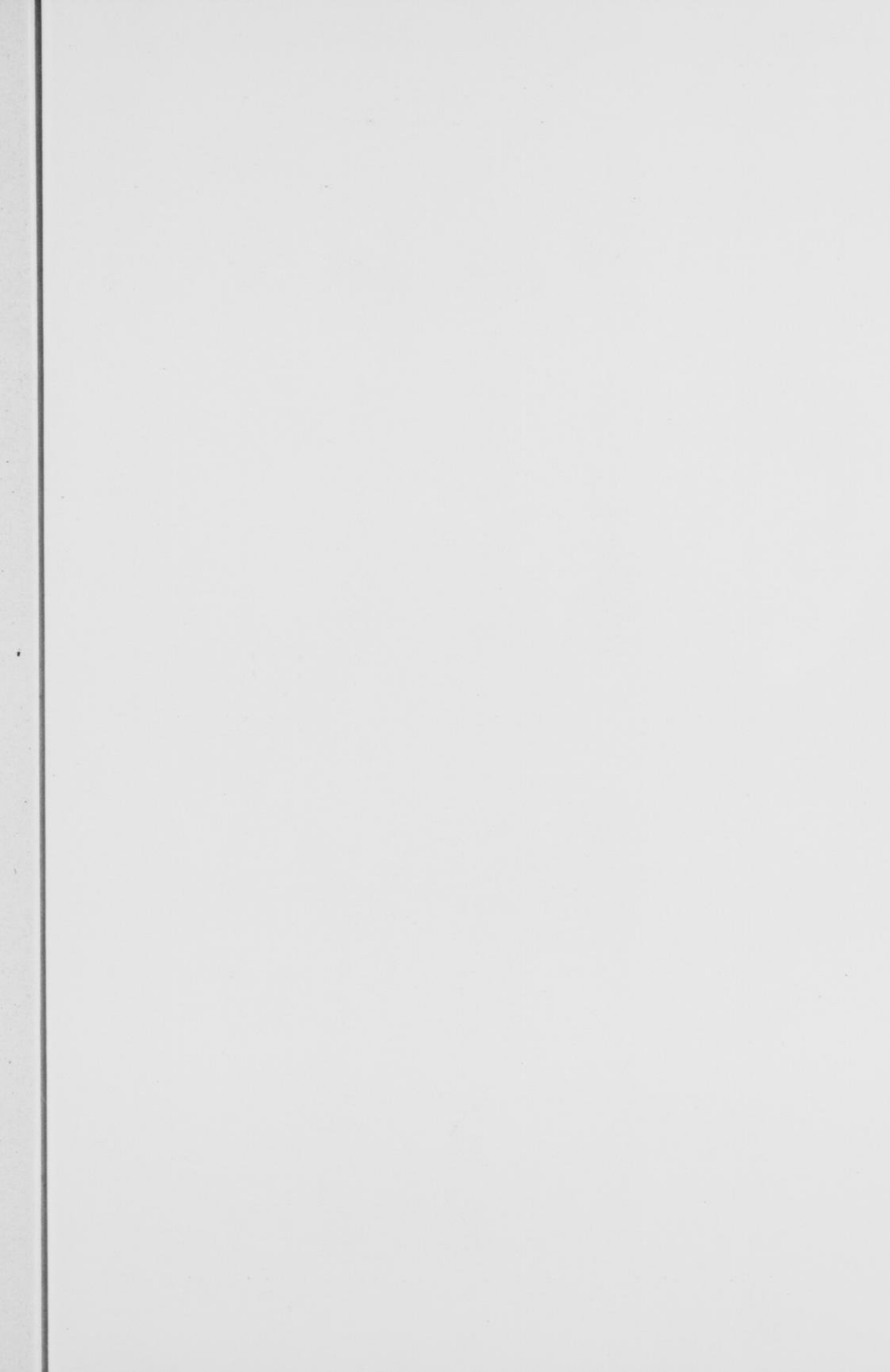
Last year a new plan was adopted in the exhibiting of grains at our Annual Show and from all indications it was regarded as very successful. Now all members who have ever taken a first prize on a certain variety of grain are to exhibit in a class by themselves, called the Honorary Class. The exhibitor is only in the Honorary Class for that particular variety of grain he has taken a first on and for other grains he exhibits as in the past in the general class.

This lets the inexperienced and new members exhibit by themselves. They are, therefore, not placed at so great a disadvantage as when competing with the old experienced exhibitors as was heretofore the custom. The names of those eligible to exhibit in the Honorary Class will be found in the 12th Annual Association Report. Those winning 1st. prizes last year (see premium awards page 118) are also eligible to exhibit in this class.

It is hoped that there will be a large list of entries for both classes, as large elegant ribbons will be awarded as well as substantial prize money at the coming show.

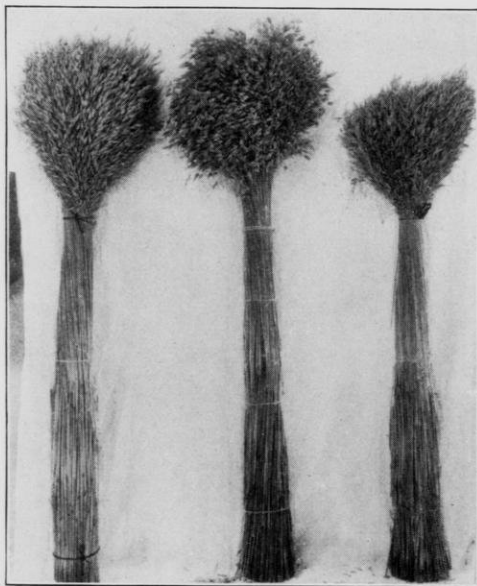
HIGHEST YIELDING EAR CONTEST

Another interesting feature at next year's show you will desire to see will be the results of the Highest Yielding Ear Contest. Some forty corn growers have each entered a single ear of corn and it will be determined which is the best yielding ear. Half of each ear is to be planted at the





It is easy to prepare an attractive sheaf of wheat for your County Fair or the Experiment Association Grain Show. Prize winning sheaves exhibited at our 1914 Show.



Three well made sheaves of the Pedigree Oats at the Experiment Association Grain Show. From the left,—Swedish Select or Pedigree 5; Wisconsin Wonder or Pedigree 1, and Sixty Day or Pedigree 6.

University Farm this year and the remaining half will be exhibited next winter at the show with its yield. Prizes will be given the grower who entered the highest yielding ear.

HOW TO PREPARE GRAINS AND GRASSES FOR SHOWS

Now is the time to think of making an exhibit at the next show especially in regard to grasses and sheaves of grains. A very small amount of work at the right time will insure your having some nice samples. Let the young folks get the clovers, grasses and other forage plants ready, they will find it interesting and instructive.

The following directions may be helpful and if you desire further information read the article by Prof. Stone in the 1914 report.

Collect tall, *healthy*, leafy samples having medium sized stems and cure slowly in a rather dark room or shady drier place. Don't pile too thickly or leaves will turn yellow or red and may mold. Stirring the hay will prevent this. Put up neatly in bundles or sheafs about three or more inches in diameter at the base. Tie these bundles with strong cord. Do not use wide ribbons or binder twine. With timothy and blue grass choose large heads and long stems and strip off the leaves of each stalk before making sheaf. With alfalfa and clover the dry leaves may drop off in handling. This may be prevented by covering your samples with a damp cloth for a short time before making up the sheaf but do not get your sample too damp. It may mold. Prepare two or more nice sheafs of timothy, red clover, alsike, alfalfa, blue grass, and red top to send to our grain show next winter. Collect clover when in blossom, alfalfa when just beginning to bloom, and timothy and other grasses when heads are nearly ripe.

SHEAF GRAINS

Pick out of your field some nice ripe heads and tall stalks of oats, barley, wheat, rye or whatever grains you may be growing and allow to cure out under cover. Then strip off all leaves on each stem, put together in a three or four inch bundle. Try to secure well filled out heads and as bright

straw as possible. We are going to give very liberal awards on all sheaf grain.

THRESHED GRAINS

The first step is to get good color and plump grain. You know how the rain will discolor oats and barley for example. This can be avoided by hauling a small load of the bundles and let them cure in your barn. Then thresh this grain separately. Later run your grain through the fanning mill and blow out all light seeds, chaff, etc. To increase the weight of your sample put some in a sack and tramp it. You will observe that this treatment rubs off the beards and tips of oats and barley and chaff which may adhere to the kernel. Blow this light stuff out of grain you have tramped and you can readily see how the weight will be greatly increased. There is danger, however, of overdoing the tramping. If, for example, the tips of oats and barley are rubbed off so that the meat of the kernels is exposed badly the judges will object and say that the grain has been overworked. Get a half bushel or more ready. Pick out by hand any bad kernels you may find. It is not a very difficult matter to get a show sample of any good grain ready. Every member of the Association should send samples of their grains to the show next winter. But now is the time to get ready for it.

THE 1915 GRAIN SHOW

PROF. A. L. STONE, Judge of Exhibits.

It might be possible to find a show where there were varieties of corn with larger ears, oats weighing more to the bushel and alfalfa of taller growth than were shown at the 1915 meeting of the Experiment Association. It would be extremely difficult, however, to find a show where the quality and the general excellence of the exhibit would excel the one put up by the Association. There is a slow but steady growth in the size of the show and the Association may well be proud of the results of the careful work on corn and grain breeding being conducted by its members and evidenced in its remarkable exhibit.

The impression seems to have become general, however, that it was useless for the majority of the members to make exhibits and that all the premiums were being won by a few men who were so situated that they could produce crops with which it was impossible to compete. While there was a time when there was some foundation for this impression that foundation no longer exists. Under the new rules of the Association the winner in the amateur class each year graduates into the honorary class and is no longer able to compete against those with less experience or who are not so favorably situated. There is a fine opportunity for anyone who wishes to show what he can do and to build up his reputation for the production of good grains and forage crops. While our exhibit is a good one it can be doubled in size if more members will decide to plan for exhibits and show what they can do. Even should success not come the first time persistence will win. The victory means not only great personal gratification because of work well done, but will be a source of financial gains also. Even should no premiums be won, each exhibit helps to make the show better and larger.

Wisconsin has now a great reputation as an agricultural state. We pride ourselves on raising corn and small grains which can compete successfully with like crops produced any where in similar climatic conditions. Our exhibit should be an exponent and a demonstration of that pride. This improvement of living condition is a form of patriotism as valuable as that which leads a man to face the enemy's guns and sometimes entails even more endurance and courage. So let us exhibit, whether we win or lose and make the Annual Show such that it cannot be equalled anywhere on this continent. We can do it. Will we?

PREMIUM AWARDS

At Annual Pure Bred Grain Show held by the
WISCONSIN AGRICULTURAL EXPERIMENT ASSOCIATION

Dec. 18-19, 1914

College of Agriculture, Madison, Wisconsin.

10 EARS SILVER KING (WISCONSIN NO. 7) CORN.

First J. E. Bruncker, Ridgeway
Second Hieron Block, Burlington
Third C. S. Ristow, Black River Falls
Fourth Geo. H. Leonard, Jefferson
Fifth O. A. Haney, Lone Rock

10 EARS EARLY YELLOW DENT (WISCONSIN NO. 8) CORN.

First Wm. Schwandt, Deer Park
Second A. C. Ellickson, Arlington
Third J. W. Jung, Randolph
Fourth Frank Joos, Alma Center
Fifth H. P. West, Ripon

10 EARS GOLDEN GLOW (WISCONSIN NO. 12) CORN.

First J. R. Thorpe, Tavera
Second H. T. Draheim, Gotham
Third O. J. Hecketsweiler, Alma Center
Fourth R. E. Freehoff, Coon Valley
Fifth E. E. Clingman, Reedsburg

10 EARS CLARK'S YELLOW DENT CORN.

First H. T. Draheim, Gotham
Second Bert Thorpe, Tavera
Third Joe Hans, Jefferson
Fourth Eugene B. Thorpe, Monroe
Fifth J. W. Jung, Randolph

10 EARS NORTH STAR CORN.

First William Wichern, Baraboo
Second Albert Wichern, Baraboo
Third Rob Rodwell, Baraboo
Fourth Ray T. Bohl, Beaver Dam

10 EARS MURDOCK.

First J. R. Thorpe, Tavera
Second H. C. Brueckner, Jefferson
Third H. S. Hintz, Oak Field
Fourth A. N. Kelly, Mineral Point
Fifth Arthur Popp, Jefferson



The sheaf grains exhibited at our last show were the best ever shown. These sheaves were taken to the Panama Pacific Exposition to decorate the Wisconsin Exhibit.

10 EARS YELLOW FLINT.

- First Fred Grebe, Fox Lake
- Second Arthur Popp, Jefferson
- Third Joe Hans, Jefferson
- Fourth Charles H. Howitt, Randolph
- Fifth E. L. Benedict, Beloit

10 EARS WHITE FLINT.

- First Geo. H. Leonard, Jefferson
- Second Wm. Leonard, Jefferson
- Third A. O. Popp, Jefferson
- Fourth H. L. Draheim, Gotham
- Fifth H. P. West, Ripon

10 EARS POP CORN.

- First Joe Hans, Jefferson
- Second H. P. West, Ripon
- Third Wm. Leonard, Jefferson
- Fourth H. L. Draheim, Gotham
- Fifth O. F. Miritz, Fond du Lac

SINGLE EAR DENT.

- First J. R. Thorpe, Tavera
- Second H. C. Brueckner, Jefferson
- Third J. E. Bruncker, Ridgeway
- Fourth Adolph Thompson, Black River Falls
- Fifth John Dettwiler, Monroe

50 EARS SILVER KING CORN.

- First J. R. Thorpe, Tavera
- Second Hieron Block, Burlington
- Third C. S. Ristow, Black River Falls
- Fourth A. C. Ellickson, Arlington
- Fifth S. H. Messerschmidt, Madison

50 EARS ANY STANDARD WISCONSIN CORN.

- First H. C. Brueckner, Jefferson
- Second J. R. Thorpe, Tavera
- Third Jippa Wielinga, Midway
- Fourth William Wichern, Baraboo
- Fifth Kaltenberg & Son, Waunakee

PECK BARLEY PEDIGREE AND ODERBRUCKER.

- First Ray T. Bohl, Beaver Dam
- Second H. P. West, Ripon
- Third J. R. Thorpe, Tavera
- Fourth Alfred Klein, Lomira
- Fifth Herman Schoeneck, Enterprise

PECK 2 ROW BARLEY.

- First H. T. Draheim, Gotham
- Second H. P. West, Ripon

PECK OATS PEDIGREE No. 1.

First	H. T. Draheim, Gotham
Second	J. R. Thorpe, Tavera
Third	E. C. Pommering, Oshkosh
Fourth	M. R. Zachar, Racine
Fifth	O. F. Miritz, Fond du Lac

PEDIGREE 5 OR SWEDISH SELECT OATS.

First	H. T. Draheim, Gotham
Second	Alfred Klein, Lomira
Third	Chas. Getchmann, North Freedom
Fourth	J. R. Thorpe, Tavera
Fifth	Geo. H. Leonard, Jefferson

60 DAY OR KHERSON OATS.

First	Wm. Leonard, Jefferson
Second	Geo. H. Leonard, Jefferson
Third	J. R. Thorpe, Tavera
Fourth	H. T. Draheim, Gotham
Fifth	Alfred Klein, Lomira

ANY VARIETY OATS.

First	Wm. Moos, Onalaska
Second	A. C. Ellickson, Arlington
Third	Jos. Koltas, Dane
Fourth	A. G. Russell, Janesville, R. 8
Fifth	Robt. Ward, Ft. Atkinson

SALZER'S REJUVENATED.

First	Alfred Klein, Lomira
Second	J. L. Krause, Beaver Dam

PECK WINTER WHEAT.

First	J. L. Krause, Beaver Dam
Second	Hieron Block, Burlington
Third	H. P. West, Ripon
Fourth	Arthur Popp, Jefferson
Fifth	H. T. Draheim, Gotham

PECK SPRING WHEAT.

First	H. P. West, Ripon
Second	J. R. Thorpe, Tavera
Third	Theo. Ward, Ft. Atkinson
Fourth	Robt. Ward, Ft. Atkinson
Fifth	Joe Hans, Jefferson

PECK RYE PEDIGREE.

First	Lloyd Hubbard, Evansville
Second	E. E. Clingman, Reedsburg
Third	Joe Hans, Jefferson
Fourth	H. T. Draheim, Gotham
Fifth	M. R. Zachar, Racine

PECK MEDIUM CLOVER.

- First J. L. Krause, Beaver Dam
- Second Arthur Ochsner, Plain
- Third Stanley Sebion, Westby
- Fourth E. L. Benedict, Beloit
- Fifth J. W. Jung, Randolph

PECK MAMMOTH CLOVER.

- First Stanley Sebion, Westby
- Second Jos. Koltcs, Dane
- Third Schmidt Bros., Foxboro
- Fourth H. P. West, Ripon
- Fifth J. W. Jung, Randolph

PECK ALSIKE CLOVER.

- First J. L. Krause, Beaver Dam
- Second H. P. West, Ripon
- Third Schmidt Bros., Foxboro
- Fourth P. A. Hemmy, Humbird

PECK TIMOTHY SEED.

- First A. C. Ellickson, Arlington
- Second A. N. Kelly, Mineral Point
- Third H. P. West, Ripon
- Fourth Chas. Getchmann, North Freedom
- Fifth J. W. Jung, Randolph

PECK BUCKWHEAT, SILVER HULL.

- First H. P. West, Ripon

PECK BUCKWHEAT, JAPANESE.

- First J. L. Krause, Beaver Dam
- Second H. P. West, Ripon

PECK SOY BEANS, BLACK.

- First H. T. Draheim, Gotham
- Second M. E. Gorsege, Haven
- Third A. O. Popp, Jefferson
- Fourth H. P. West, Ripon

PECK SOY BEANS, GREEN.

- First Robt. Ward, Ft. Atkinson
- Second H. T. Draheim, Gotham
- Third Wm. Leonard, Jefferson
- Fourth Geo. H. Leonard, Jefferson

PECK SOY BEANS, YELLOW.

- First Wm. Leonard, Jefferson

PECK YELLOW FIELD PEAS.

- First H. P. West, Ripon
- Second J. W. Jung, Randolph

PECK GREEN FIELD PEAS.

First H. P. West, Ripon
 Second J. W. Jung, Randolph

PECK GARDEN PEAS, SMOOTH.

First H. P. West, Ripon

PECK GARDEN PEAS, WRINKLED.

First H. P. West, Ripon
 Second J. W. Jung, Randolph

PECK NAVY BEANS.

First H. P. West, Ripon
 Second Peter Kneeland, Windsor

PECK KIDNEY BEANS.

First Peter Kneeland, Windsor

SHEAF PEDIGREE OR ODERBRUCKER BARLEY.

First Chas. H. Howitt, Randolph
 Second Wm. Leonard, Jefferson
 Third Joe Hans, Jefferson
 Fourth Geo. Leonard, Jefferson
 Fifth H. T. Draheim, Gotham

SHEAF 2 ROW BARLEY.

First J. R. Thorpe, Tavera

SHEAF PEDIGREE OATS OR SWEDISH SELECT OATS.

First Theo. Ward, Ft. Atkinson
 Second Peter Dengel, La Crosse
 Third Arthur Popp, Jefferson
 Fourth Robt. Ward, Ft. Atkinson
 Fifth Chas. Howitt, Randolph

SHEAF ANY VARIETY OATS.

First H. T. Draheim, Gotham
 Second N. Raessler, Beloit
 Third Arthur Popp, Jefferson
 Fourth Robt. Ward, Ft. Atkinson

SHEAF WINTER WHEAT.

First H. T. Draheim, Gotham
 Second Robt. Ward, Ft. Atkinson
 Third Theo. Ward, Ft. Atkinson
 Fourth N. Raessler, Beloit

SHEAF SPRING WHEAT.

First Theo. Ward, Ft. Atkinson
 Second Robt. Ward, Ft. Atkinson
 Third Joe Hans, Jefferson
 Fourth F. E. Bell, Columbus

SHEAF PEDIGREE RYE.

- First N. Raessler, Beloit
- Second Louis Groth, Cedarburg
- Third M. R. Zachar, Racine
- Fourth W. C. Katel, Kewaunee

ALFALFA HAY.

- First Swartz Bros., Waukesha
- Second P. A. Paulson, Hudson
- Third Chas. Howitt, Randolph
- Fourth Enoch Hans, Rochester
- Fifth Arthur Popp, Jefferson

RED CLOVER HAY.

- First Standly Sebion, Westby
- Second J. R. Thorpe, Lomira
- Third Walter Steinhoff, Platteville
- Fourth Arthur Popp, Jefferson

ALSIKE CLOVER HAY.

- First H. T. Draheim, Gotham
- Second J. R. Thorpe, Tavera
- Third Joe Hans, Jefferson
- Fourth F. J. Lindly, Fox Lake

TIMOTHY HAY.

- First H. T. Draheim, Gotham
- Second L. Hanson, Eleva
- Third A. N. Kelly, Mineral Point
- Fourth Fred Grebe, Fox Lake

BLUE GRASS HAY.

- First H. T. Draheim, Gotham

SHEAF SOY BEAN.

- First Robt. Ward, Ft. Atkinson
- Second Theo. Ward, Ft. Atkinson
- Third A. O. Popp, Jefferson
- Fourth J. L. Krause, Beaver Dam

HONORARY CLASS

10 EARS CLARK'S YELLOW DENT.

- First J. R. Thorpe, Tavera

10 EARS SILVER KING CORN (WIS. NO. 7).

- First J. R. Thorpe, Tavera
- Second Fred Grebe, Fox Lake
- Third N. Raessler, Beloit
- Fourth H. E. Rosenow, Oconomowoc

10 EARS EARLY YELLOW DENT (Wis. No. 8)

First Chas. H. Howitt, Randolph
 Second Fred Grebe, Fox Lake

10 EARS GOLDEN GLOW (Wis. No. 12).

First N. Raessler, Beloit
 Second Chas. H. Howitt, Randolph
 Third Fred Grebe, Fox Lake
 Fourth John Van Loon, La Crosse

PECK PED. NO. 1 OATS.

First N. Raessler, Beloit
 Second H. P. West, Ripon

PECK PED. NO. 5 OATS.

First H. P. West, Ripon

SWEEPSTAKES

BEST 10 EARS SILVER KING OF ENTIRE SHOW.

First J. R. Thorpe, Tavera

BEST 10 EARS YELLOW DENT CORN OF ENTIRE SHOW.

First J. R. Thorpe, Tavera

GRAND CHAMPION 10 EAR SAMPLE OF ENTIRE SHOW.

First J. R. Thorpe, Tavera

BEST PECK PEDIGREE BARLEY OF ENTIRE SHOW.

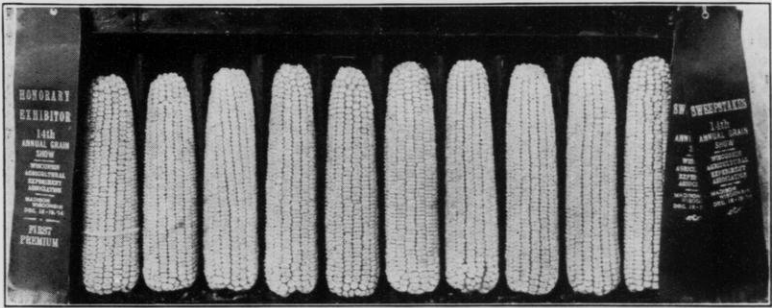
First Ray T. Bohl, Beaver Dam

BEST PECK PEDIGREE NO. 1 OATS OF ENTIRE SHOW.

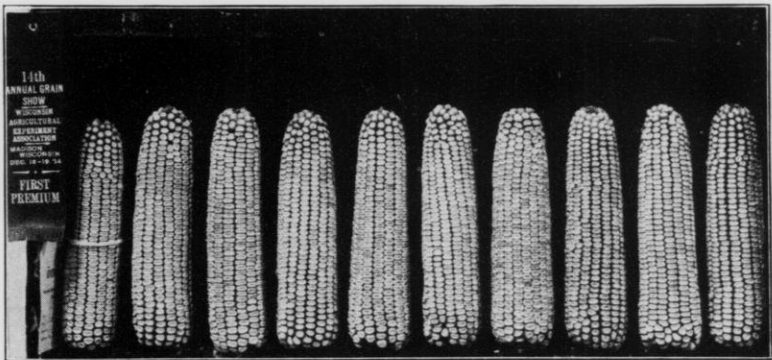
First H. T. Draheim, Gotham

BEST PECK PEDIGREE NO. 5 OATS OF ENTIRE SHOW.

First H. T. Draheim, Gotham



Sweepstakes sample of corn, Wisconsin No. 7, at the 1914 Experiment Association Grain Show, grown and exhibited by J. R. Thorpe, Tavera, Wisconsin.



First prize sample Wisconsin No. 8 corn exhibited by Wm. Schwandt, Deer Park, Wisconsin. Mr. Schwandt finds the No. 8 corn well-suited to his locality and cures considerable seed each year.

MEMBERSHIP LIST, 1915

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 Kennedy, P. H. Nelson
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 Suhr, O. A. Cochrane
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 Cherrier Bros. Chippewa Falls
 Christiansen, W. O. Chippewa Falls
 Kramer, H. F. Bloomer

Lebeis, Frank..... Bloomer
 Loether, E. J..... Holcombe
 Martiny, L. P..... Chippewa Falls
 Roe, Edwin..... Stanley
 Siepert, F. W..... Chippewa Falls
 Vincent, Chas..... New Auburn

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 Jorenby, Carl..... Greenwood
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 Anacker, Leonard, R. F. D. 2, Portage
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 Brereton, Hugh..... Lodi
 Brereton, Thos. L..... Lodi
 Brown, I. C..... Lodi
 Buckley, Lawrence..... Kilbourn
 Carncross, J. E..... Lodi
 Church, W. H..... R. F. D. 1, Lodi
 Derr, Arthur..... Columbus
 Derr, Eugene..... Columbus
 Ellickson, A. C..... Arlington
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 Hughes, J. W. R. F. D. 1, Columbus
 Johnson, Theo..... Rio
 Lloyd, E. B..... Cambria
 O'Connor, Edw. F..... Lodi
 Peck, E. G..... Portage
 Richards, F. G..... Lodi
 Richards, R. E..... Lodi
 Richards, W. M..... Lodi
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 Trapp, Zeno O., R. F. D. 6, Box 17,
 Columbus
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 Wheeler, J. R..... Columbus

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 Brodt, C. D..... Bridgeport
 Carbaugh, F. A..... Townville, Pa.
 Hjelle, Ole H..... Soldiers Grove
 Hudson, Willie..... R. F. D. 3, Boscobel
 Olsen, Archie, R. F. D. 3, Ferryville
 Patten, Wayland..... Boscobel
 Stevenson, Carl, R. F. D. 5,
 Soldiers Grove

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 Anderson, H. C..... Cambridge
 Anderson, Henry..... Mt. Horeb
 Bacon, C. W..... Burke
 Belda, W. F..... De Forest
 Bergum, Andrew..... De Forest
 Bergum, Arthur..... De Forest

Bergum, P. B..... De Forest
 Best, Thos. A..... Belleville
 Brickson, Andrew..... Cottage Grove
 Brictson, A. M..... Deerfield
 Brigham, Chas. I..... Blue Mounds
 Birkinbine, R. C..... Sun Prairie
 Birkinbine, Robt..... Sun Prairie
 Chase, J. P..... Sun Prairie
 Chatterton, R. W..... Basco
 Chatterton, W. E..... Basco
 Chipman, W. R..... Morrisonville
 Daley, Edwin..... De Forest
 Daley, S. S..... De Forest
 Damler, Walter..... Sun Prairie
 Damp, De Witt..... Dane
 Davison, R. W..... Sun Prairie
 Derr, Arthur..... Columbus
 Derr, Eugene..... Columbus
 Dreger, Emil..... Madison
 Drumasky..... Sun Prairie
 Elvehjem, E. S..... Macfarland
 Fadness, J. H..... Deerfield
 Ford, J. F..... Mazomanie
 Garland, J. J..... Madison
 Gehrand, G. W. 408 N. Charter
 St., Madison

Geib, W. J., 314 Campbell St., Madison
 Gillette, Rufus..... Verona
 Goth, W. H..... R. F. D. 6, Madison
 Graber, L. F..... Madison
 Green, O. J..... Oregon
 Holman, Peter..... Windsor
 Hopkins, B. F..... Morrisonville
 Hopkins, J. W..... Morrisonville
 Howie, John..... Waunakee
 James, J. A..... Madison
 Johnson, L. O..... Sun Prairie
 Jones, E. F..... Sun Prairie
 Kaltenberg & Sons..... Waunakee
 Kendell, F. W..... Sun Prairie
 Kendell, G. W..... Sun Prairie
 Kneeland, Peter..... Windsor
 Koltas, Jas. F..... Dane
 Larson, A. C..... Madison
 Lee, Lewis J..... De Forest
 Lee, Oliver..... Klevenville
 Lee, P. A. G..... Deerfield
 Lein, L. O., Sr..... Cambridge
 Leith, B. D..... Madison
 Lewandoske, H..... Milton
 Lyman, C. A..... Sun Prairie
 Mandt, Gilmore G. 505 E. Jefferson
 St., Stoughton

Marks, John, 818 W. Dayton St.,
 Madison
 McCoy, Everett..... Sun Prairie
 Messerschmidt, L. H..... Madison
 Mitchell, Geo..... Cottage Grove
 Mitchell, James..... Cottage Grove
 Moore, R. A..... Madison
 Nelson, O. L..... Cambridge
 Norgord, C. P..... Madison
 Notseter, O. H..... Deerfield
 Noyce, Elmer..... Oregon
 Oldenburg, F. W. 923 Clymer
 Place, Madison

Pederson, B. S..... Windsor
 Pierstorff, Otto..... Madison
 Punzel, Max..... Cambridge
 Radermacher, John..... Middleton
 Rasmussen, H. G..... Black Eartu
 Reindall, A. K..... Madison
 Renk, W. F..... Sun Prairie
 Rorge, A. J..... Stoughton
 Rosen, Ben..... R. F. D. 5, Box 78,
 Madison

Ross, M. F..... Belleville
 Ruste, C. E..... Blue Mounds
 Ruste, C. O..... Blue Mounds
 Ryan, Gerald T..... Sun Prairie
 Schaffer, Dan A., 615 Lake St. Madison
 Showers, M. W..... Mazomanie

Slinde, Sydney.....R. F. D. 1, Madison
 Sorenson, C. A.....Klevenville
 Sprecher, F. F.....Burke
 Stoerber, E. J.....R. F. D. 7, Madison
 Stone, A. L.....Madison
 Strouse, N. L.....Edgerton
 Tee, P. A. G.....Deerfield
 Thompson, Melvin.....Mt. Horeb
 Veith, Arthur J.....Sun Prairie
 Veium, Halvon.....Stoughton
 Vroman, H. E.....Verona
 Wagner, John.....Middleton
 Warner, R. E.....R. F. D. 7, Madison
 Wernick, Wm.....De Forest
 White, Wave.....Marshall
 Whitmore, Lester M.....Madison
 Willmarth, E. E.....Sun Prairie
 Zerbel, Louis.....Madison

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 Anton, Chas.....Randolph
 Barstow, Jas. E.....Randolph
 Becker, H. H.....Juneau
 Beule, E. A.....Beaver Dam
 Block, A. F.....Lomira
 Bohl, Anton.....Beaver Dam
 Bohl, Raymond T.....Beaver Dam
 Bradley, J. L.....Randolph
 Bremer, E. O.....Hustisford
 Brown, L. H.....Waupun
 Bush, C. W.....Waupun
 Bush, Leonard.....Waupun
 Bussewitz, Orlo J., R. F. D. 2, Juneau
 Bussewitz, Wm.....Juneau
 Canniff, H. T.....Juneau
 Canniff, Russell.....Juneau
 Constance, F. R.....Waupaca
 Cortte, A. P.....Lomira
 Eartman, Aug. C., R. F. D. 3, Juneau
 Grebe, F. P.....Fox Lake
 Goetsch, A. A.....Juneau
 Goetsch, F. A.....Juneau
 Hesprich, John F.....Lomira
 Howitt, C. H.....Randolph
 Indermuehle, F. A.....Beaver Dam
 Iskin, Armin.....Brownsville
 Jones, J. G.....Beaver Dam
 Jones, O. R.....Beaver Dam
 Jung, J. W.....Randolph
 Krause, J. L.....Beaver Dam
 Kreuger, H. E.....Beaver Dam
 Luebke, Frank W.....Hustisford
 Luebke, Otto.....Hustisford
 Meyer, Albert.....Beaver Dam
 Miller, Arthur G.....Oconomowoc
 Neuberger, Wm. T.....Reeseville
 Owens, W. E.....Fox Lake
 Pahlke, N. A.....Juneau
 Schumann, Hugo S.....Beaver Dam
 Voigt, Fred.....Lomira
 Voigt, Wm. C.....Lomira

DOOR COUNTY

Abramson, Joll.....Sawyer
 Barry, Rudolph.....Egg Harbor
 Beyler, Geo.....Egg Harbor
 Goff, M. B.....Sturgeon Bay
 Larson, Eli.....Sawyer
 Powers, W. C.....Ellison Bay
 Swenson, Walter.....Sister Bay

DOUGLAS COUNTY

Findlay, R. W.....Superior
 Schmidt Bros.....Foxboro
 Smith, A. K.....Superior
 Smith, R. L.....Gordon
 Stone, B. N.....So. Range
 Webb, W. H., 1425 Tower St. Superior

DUNN COUNTY

Campbell, Hugh C.....R. F. D. 2,
 Menomonie
 Donald, R. M.....Menomonie
 Emerson, Albert.....Wheeler
 Gehrking, F. J.....Elk Mound
 Johnson, John W.....Elk Mound
 Kent, H. W.....Rusk
 Kent, J. S.....Rusk
 Kopp, Elmer F.....Caryville
 Langseth, Ingvald.....Menomonie
 Larson, F. W.....Knapp
 Larson, J. M.....Knapp
 Larson, Lewis O.....Downing
 Meacham, C. W.....Downing
 Meacham, E. R.....Downing
 Mitzger, H. B.....Menomonie
 Schlough, Roy.....Wheeler
 Stegne, Chris.....Wheeler

EAU CLAIRE COUNTY

Allen, C. L.....Eau Claire
 Arries, B. M.....Augusta
 Faast, B. F.....Eau Claire
 Frye, E. C., 110 Rust St., Eau Claire
 Halbert, J. H.....Augusta
 Hatch, C. L., 123 Barland, Eau Claire
 Jackson, Vernon.....Eau Claire
 Mayo, J. H., Jr.....Eau Claire
 Pierce, M. A.....Fall Creek
 Pritchard, J. T.....Eau Claire
 Rebendorf, Fred.....Fairchild
 Rounds, Douglas, So. Farwell St.,
 Eau Claire
 Russell, A. C.....Augusta
 Winter, W. W.....Eau Claire
 Wright, W. C., R. F. D. 4, Eau Claire

FLORENCE COUNTY

Anderson, Victor.....Florence
 Bergsten, Emil.....Florence
 Helgren, Chas. J.....Florence

FOND DU LAC COUNTY

Bonzelet, J. P.....Eden
 Briggs, E. T., R. F. D. 7, Fond du Lac
 Burg, Harold O.....Peebles
 Chopin, Arthur J.....Brandon
 Dickman, Ed.....Brandon
 Donovan, F. J.....Van Dyne
 Finder, Fred.....Van Dyne
 Gibbard, P. J., R. F. D. 17, Ripon
 Goebel, Henry N., R. F. D. 8,
 Box 52, Fond du Lac
 Grennell, N.....Brandon
 Hammen, Louis H.....Ripon
 Hargrave, Robt.....Ripon
 Hills, L. H.....Waupun
 Hintz, Hugo F.....Oakfield
 Horner, G. B.....Ripon
 Hughes, John.....Campbellsport
 Kuehn, Chas. A.....Brandon
 Leemon, Roy E.....Waupun
 Leith, R. H., R. F. D. 9, Van Dyne
 Martin, H. A.....Eden
 Meekin, H. W.....Fond du Lac
 Michels, H.....Malone
 Michels, Math.....Peebles
 Miller, A. H.....Waupun
 Miller, L. H., R. F. D. 8, Fond du Lac
 Miritz, O. F.....Fond du Lac
 Moore, A. P.....Campbellsport
 Rather, A. P.....Peebles
 Redmond, E. M., R. F. D. 4, Calvary
 Roach, J. M.....Fond du Lac
 Ruesink, H. G.....Waupun
 Schmoldt, Clarence.....Rosendale
 Schussmann, Harry.....Malone

Sheldon, Ben F.....	Brandon
Walgenbach, John R. F. D. 5, Box 57, Fond du Lac	
West, H. P.....	Ripon
West, H. Vaughn.....	Ripon
West, Ray.....	Ripon
Whiting, Warren J.....	Brandon
Wilsie, T. C.....	Brandon

FOREST COUNTY

Grandine, Lester.....	No. Crandon
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GRANT COUNTY

Allen, Martin.....	Livingston
Banner, R. E..... R. F. D. 3,	Boscobel
Bennett, A. J.....	Platteville
Bennett, Clarence V.....	Platteville
Bennett, O. J.....	Platteville
Chitwood, Loyd.....	Blue River
Cubela, Joseph M.....	Muscoda
Cullen, Clarence.....	Sinsinawa
Di Vall, Wm.....	Montfort
Gilbertson, O. E.....	Livingston
Groom, H. L.....	Cassville
Hampton, Clark.....	Lancaster
Kahle, John.....	Louisburg
Kettler, Clarence J.....	Platteville
Knutson, Murel.....	Livingston
Morse, Edw. B.....	Mt. Hope
Pink, Leo.....	Lancaster
Preston, Geo.....	Montfort
Ralph, Le Roy.....	Cuba City
Runde, August.....	Sinsinawa
Runde, Elmer.....	Louisburg
Runde, Frank.....	Louisburg
Spencer, R. R.....	Boscobel
Steinhoff, Walter.....	Platteville
Stivarius, Geo. A.....	Fennimore
Tiedemann, H. G.....	Platteville
Wayne, Joseph..... R. F. D. 3,	Boscobel
Wienbergen, Oscar.....	Platteville
Wise, John H., Jr.....	Platteville

GREEN COUNTY

Ames, F. M. & Son.....	Brooklyn
Biglow, L. F.....	Brooklyn
Coldren, Wm.....	Juda
Dettwiler, John.....	Monroe
Douglas, Robt. J.....	Juda
Douglas, O. M.....	Brodhead
Geigel, John..... R. F. D. 6,	Monroe
Haman, E. E..... R. F. D. 2,	Monroe
Hoesly, Clarence.....	New Glarus
Jeffery, F. D.....	Monroe
Klassey, Henry.....	Monroe
Man, H. G.....	Brodhead
Morgan, Chas.....	Albany
Richards, Ed.....	Brooklyn
Thorp, E. B.....	Monroe
Thorp, H. E.....	Monroe
Trumpy, Fred.....	Monroe
Tschudy, A. R.....	Monroe
Tullis, Victor C.....	Brooklyn
Van Wagenen, Lewis.....	Monroe
Waelti, Sam W.....	Monroe

GREEN LAKE COUNTY

Davison, Harley.....	Markesan
Frei, John.....	Markesan
Kutchin, V. S.....	Green Lake
Kutchin, Victor M. D.....	Green Lake
Page, G. F.....	Berlin

IOWA COUNTY

Bainbridge, Clayton G.....	Livingston
Bainbridge, R. J.....	Livingston
Brunker, J. A.....	Ridgeway

Brunker, J. E.....	Ridgeway
Conway, Thos.....	Ridgeway
Duffey, Edw.....	Highland
Enloe, Jefferson.....	Rewey
Grunenwold, Le Roy C.....	Livingston
Hughes, J. E.....	Ridgeway
Kelly, A. N.....	Mineral Point
Lauper, Wm. G.....	Hollandale
McKenzie, Maxwell.....	Barneveld
Mitchell, G. P.....	Dodgeville
Morrissey Bros.....	Arena
Mueller, Alfred.....	Arena
Mueller, Henry.....	Livingston
Oimoen, Otto.....	Barneveld
Paulson, H. E.....	Hollandale
Peterson, Carl.....	Barneveld
Ross, Roland.....	Mineral Point
Shannon, H. L.....	Avoca
Swenson, W. E.....	Hollandale
Van Natta, J. A.....	Dodgeville

IRON COUNTY

Peter, Max H. A.....	Mercer
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JACKSON COUNTY

Bullock, Jas. P.....	North Bend
Dettinger, Stanley.....	Hixton
Dettinger, Wm. F.....	Hixton
Dietrick, J. J.....	Black River Falls
Erickson, Rob.....	Melrose
Engleman, John.....	Hixton
Haag, Frank.....	Melrose
Haag, Henry.....	Melrose
Hecketsweller, O. J.....	Alma Center
Huseboe, H. M.....	Taylor
Jones, P. W.....	Black River Falls
Joos, F. B.....	Alma Center
Lane, O. J.....	Hixton
McNab, A. J.....	Black River Falls
Odeen, Axel L.....	Black River Falls
Olsen, A. O.....	Black River Falls
Olson, Peter S.....	Northfield
Patterson, Harvey.....	Melrose
Ristow, C. S.....	Black River Falls
Thompson, Adolph.....	Black River Falls
Wallen, Aron.....	Taylor

JEFFERSON COUNTY

Hans, Joe, R. F. D. 1.....	Jefferson
Albertz, E. F., R. F. D. 5.....	Watertown
Albrecht, John, R. F. D. 6.....	Watertown
Bauer, Victor.....	Jefferson
Bridge, Russell W.....	Lakemills
Bueckner, H. C.....	Jefferson
Bueckner, Justus.....	Jefferson
Emmert, H. L.....	Johnson Creek
Emmert, O. J.....	Johnson Creek
Goecke, P. L.....	Watertown
Grill, H. J.....	Johnson Creek
Guttenberg, Frank, Jr.....	Jefferson
Hardtke, Wm.....	Watertown
Haselen, E. E.....	Waterloo
Hooper, S. C.....	Palmyra
Huppert, Clifford.....	Ft. Atkinson
Huppert, Loran.....	Ft. Atkinson
Jaeger, H. C.....	Ixonix
Kracht, Albert.....	Jefferson
Kreuger, Alex.....	Watertown
Langley, Walter M.....	Dousman
Lang, R. H.....	Jefferson
Lean, G. A.....	Palmyra
Lehmann, Theo.....	Watertown
Leonard, Geo. H.....	Jefferson
Leonard, Wm. R.....	Jefferson
Longley, H. N.....	Dousman
Longley, Walter M.....	Dousman
Lowe, Harry.....	Ft. Atkinson
Lowe, Laverne.....	Ft. Atkinson
Niere, Stuart.....	Watertown

Northey, F. G.	Palmyra
Northey, W. G.	Palmyra
Parsons, Wm. A.	Ft. Atkinson
Popp, Arthur	Jefferson
Rabenhorst, B. W.	Jefferson
Reynolds, Glenn C.	Ft. Atkinson
Tschudy, A. H.	Palmyra
Tschudy, J. J.	Palmyra
Ward, R. W.	Ft. Atkinson
Ward, Theo. S.	Ft. Atkinson
Woelfler, Herbert	Waterloo

JUNEAU COUNTY

Braund, Luther	Elroy
Cuenot, Fred L.	Mauston
Curtis, E. L.	Mauston
Frederickson, E. A.	Necedah
Hansen, Harry	New Lisbon
Mead, R. E.	New Lisbon
Moore, Henry G.	Mauston
Niles, Milo E.	Mauston
Nowicki, John, Jr.	Mauston
Remington, H. E.	Mauston
Remington, Merl O.	Mauston
Wagner, J. M., R.F.D. 1	Union Center

KENOSHA COUNTY

Beimer, Geo.	Salem
Betzer, R. A.	Kenosha
Bradley, Frank	Somers
Coopley, W. R.	Kenosha
Curtis, M. W., S. P.	Salem
Curtis, W. R.	Trevor
Dexter, Walter S.	Kenosha
Holt, Frank & Son	Pleasant Prairie
Kreuscher, Wm. R.	Somers
Lubeno, H. B.	Trevor
Neuhaus, John	Bristol
Orvis, L. C.	Salem
Roberts, F. W.	Woodworth
Sheen, C. J.	Salem
Sheen, W. J.	Trevor
Thiers, L. M.	Kenosha

Kewaunee County

Boudnick, John, R. F. D. 1	Kewaunee
Cherveny, Wenzel	Kewaunee
Collin, D. W.	Luxembourg
Glandt, R. C.	Kewaunee
Haegers, Martin	Luxembourg
Jelinek, Wm.	Kewaunee
Katel, Wm.	Kewaunee
Krofta, Rudolph, R. F. D. 3, Box 73	Kewaunee
Nelson, Ben. O.	Stangelville
Nemetz, Frank	Kewaunee
Peckman, John, R.F.D. 1	Luxembourg
Prochnow, F. F.	Luxembourg
Schmidt, Wm. Jr.	Algoma
Servais, Ole	Luxembourg
Shestock, F. E.	Kewaunee
Stangel, Richard	Kewaunee
Teska, Chas.	Kewaunee
Thibodeau, Elmer	Luxembourg
Zahorick, A. J.	Kewaunee

LA CROSSE COUNTY

Campion, T. H.	Onalaska
Cashberg, C. M.	Holmen
Davis, L. H.	Bangor
Dawson, W. J.	La Crosse
De Boer, Martin	Midway
Dengel, Peter	R. F. D. 1, La Crosse
Egler, V.	R. F. D. 1, La Crosse
Griswold, H. W.	West Salem
Harrison, F. A.	Bangor
Hoeth, Geo.	La Crosse
Hoffma, C. F.	Midway

Jones, E. E.	Rockland
Lauterbach, Adolph	La Crosse
Lawrence, F. W.	Bangor
Lovejoy, H. D.	West Salem
Markle, S. P.	La Crosse
Moos, Wm.	Onalaska
Nuttelman, Alfred	West Salem
Nuttelman, Fred	West Salem
Ofstedahl, Walter	Holmen
Peters, Edw.	La Crosse
Quall, O. P.	Midway
Ristow, Harry	Onalaska
Schaller, F. J.	Holmen
Schaller, Geo. W.	Holmen
Van Loon, John	La Crosse
Westerhouse, Garret, R. F. D. 1	Onalaska
Whitbeck, W. F.	Onalaska
Whitehead, H. W.	Rockland
Wielinga, Jippa	Midway

LAFAYETTE COUNTY

Andrews, A. L.	So. Wayne
Chapman, J. R.	So. Wayne
Glindinning, H. L.	Shullsburg
Gunderson, A. O.	Argyle
Helms, Erwin	Belmont
Homb, H. C.	So. Wayne
Ingwell, Albert	Blanchardville
Lacy, Jas. J.	So. Wayne
Larson, J. S.	Woodford
Merriam, L. J.	Darlington
Monson, M. O.	Woodford
Perry, Wm. H.	Gratiot
Riechers, E. J.	Belmont
Smith, A. J.	Gratiot
Smith, J. F.	Darlington

LANGLADE COUNTY

Follstad, Anton	Elcho
Hutchinson, Paul	Bryant
Schmidt, Rose	Antigo
Schwartz, John	R. F. D. 4, Antigo
Oldenburg, Albert	R. F. D. 1, Antigo

LINCOLN COUNTY

Parrott, G. L.	Merrill
Wrabetz, Frank	Tomahawk

MANITOWOC COUNTY

Axley, Walter	Cleveland
Bauer, A. H.	R. F. D. 2, Manitowoc
Berge, Albert	Valders
Bernhardt, Oscar	Two Rivers
Beyer, Hans	Mishicot
Brockhoff, Paul	Manitowoc
Bruhn, J. F.	R. F. D. 1, Two Rivers
Clusen, Reinhold	Manitowoc
Dvorak, Henry	R. F. D. 3, Mishicot
Eiseman, Harvey, R. F. D. 2	Two Rivers
Garey, James, R. F. D. 6	Manitowoc
Geraldson, M. E. G.	Manitowoc
Gunderson, Clifford, R. F. D. 4	Manitowoc
Gustavson, Chas., R. F. D. 4	Manitowoc
Hetzel, Gilbert	Cleveland
Hoefner, Herbert, R. F. D. 1	Manitowoc
Jackson, Van E.	Valders
Johannes, Albert	Two Rivers
Kiel, Fred	Manitowoc
Klann, Adolph	Reedsville
Klessig, Edwin	Cleveland
Koellmer, Gustav	Cleveland
Kozelka, J. A.	Mishicot
Linnane, Dan J.	Reedsville

Lorfield, A. E.	Cleveland
Lutze, Geo.	Cleveland
Mandel, Arthur.	Two Rivers
Moldenhauer, W. E., R. F. D. 1	Manitowoc
Nelson, Lawrence.	Manitowoc
Paulson, J. E.	Manitowoc
Reinertson, Thos. E.	Valders
Riederer, Blasius.	Cato
Roethel, Herman.	Kiel
Rogney, E. T.	Valders
Sampe, Fred C.	Manitowoc
Specht, E. A.	Manitowoc
Strowig, Wm. A.	Cleveland
Tyler, J. G.	R. F. D. 1, Valders
Wagner, Joseph M.	Cleveland
Wiegand, O. R.	Cleveland
Witte, Fred.	Two Rivers

MARATHON COUNTY

Baisemann, Otto.	Edgar
Burg, A. G.	Wausau
Franc, Victor.	Colby
Helmke, Ben W.	Hamburg
Lueck, Martin.	Hamburg
Maguire, Leo.	Halder
Munkwitz, W. E. R.	Edgar
Olson, Melvin L., R. F. D. 1,	Mosinee
Otto, Geo.	Mosinee
Parsch, Gustav.	Wausau
Reiser, Arthur.	Ringle
Steinhaus, W. E.	Rozellville
Steinwand, Theo.	Colby
Vaughan, John M.	Unity

MARINETTE COUNTY

Bullock, D. S.	Marinette
Christ, Harold J.	Wausaukee
Miller, Frank J.	Peshigo
Remington, Ray.	Marinette
Ramsay, John L.	Peshigo
Ramsay, R. C.	Peshigo

MARQUETTE COUNTY

Hamilton, R. S.	Westfield
Manweiler, W. L.	Westfield
Marti, H. E.	Packwaukee
Parrott, A. H., Jr.	Endeavor
Reid, D. H.	Endeavor
Williams, J. R.	Packwaukee

MILWAUKEE COUNTY

Angebrot, Chas. H., 1303-8th	St., Milwaukee
Austin, Edward, Jr., Station D.,	R. F. D. 2, Box 15, Milwaukee
Babcock, Chas. L., 404 Colby-	Abbot Bldg., Milwaukee
Basse, Wm. H., R. F. D. 5, West Allis	Bernhardt, Chas. R., Hales Corners
Dodd, L. A., 788-38th St., Milwaukee	Duve, H. F., R. F. D. 5, Box 126,
Hickcox, J. Gilbert.	West Allis
Kremer, Paul, 434 Wells Bldg.	Milwaukee
Kurtze, Otto.	R. F. D. 4, West Allis
Marti, Herman, Sta. D., R. F.	D. 2, Milwaukee
Meyer, Alfred J., R. F. D. 18 Oakwood	Pagenkoff, Louis, 1486-17th
Patton, Wm. H. 556 Frederick	St., Milwaukee
Rasche, A. L., 785 Indiana Ave.	Milwaukee
Sievers, F. J.	Wauwatosa
Swan, N. J.	Wauwatosa

MONROE COUNTY

Aarness, O. C.	Cashton
Aney, Earle L.	Norwalk
Ebert, Francis.	Tomah
Foth, E. A.	Norwalk
Foth, F. D.	Norwalk
Freeman, G. A.	Sparta
Harris, R. E.	Warrens
Kirst, A. L.	Tomah
Kirst, Fred.	Tomah
Leverich, J. E.	Sparta
Leverich, J. W.	Sparta
Mistele, Wm. O.	Kendall
Olson, Louis F.	Tomah
Poss, Arthur.	Sparta
Vieth, H. E.	Norwalk
Zirk, P. A.	Kendall

OCONTO COUNTY

Anderson, Alfred.	Mosling
Berger, J. H.	Oconto Falls
Boysted, A. C.	Lena
Brock, Martin L., R. F. D. 1, Box	30, Lena
Bubolz, Otto.	R. F. D. 1, Underhill
Cole, Schley.	Mountain
Howell, John.	Gillett
John, A. C.	Gillett
Kehl, John.	R. F. D. 1, Oconto
Marek, Viola.	Oconto
Martineau, Andrew.	Gillett
Piepenburg, Bert.	Gillett
Wegner, Henry.	Oconto
Weber, Aug.	Underhill

ONEIDA COUNTY

Grusch, Jos.	Enterprise
Haase, Wm.	Enterprise
Luther, E. L.	Rhinclander
Schoeneck, Adolph.	Enterprise
Schoeneck, Herman.	Enterprise
Schoeneck, Gust. Jr.	Enterprise
Schoeneck, Otto.	Enterprise
Schoeneck, Paul.	Enterprise

OUTAGAMIE COUNTY

Brusewitz, C.	Black Creek
Cuff, O. P.	Hortonville
Jamison, Clarence, R. F. D. 2.	Appleton
Jamison, Harvey, R. F. D. 2.	Appleton
Jamison, Howard, R. F. D. 2.	Appleton
Jamison, Rob., R. F. D. 2.	Appleton
Jamison, Stanley, R. F. D. 2.	Appleton
Jamison, W. G., R. F. D. 2.	Appleton
Knapstein, Wm.	New London
Letts, E. F.	R. F. D. 4, Appleton
McDaniel, Chester, R. F. D. 13.	Kaukana
Meulemans, Mathias.	Kaukana
Mueller, Ed. O.	Appleton
Nieman, Arnold.	Greenville
Pirner, Fred.	Sugar Bush
Rahmlow, Edward, R. F. D. 4.	Appleton
Rahmlow, H. J.	R. F. D. 4, Appleton
Ryan, Malachi.	So. Kaukana
Stichtman, H. C.	New London
Thoma, Ernest.	Sugar Bush
Tubbs, Frank W.	Seymour
Tubbs, Herbert.	Seymour
Wussow, C. A.	Seymour

OZAUKEE COUNTY

Blank, G. A. Grafton
 Blank, Harry. Grafton
 Brunnel, Herbert, R. F. D. 2. Port Washington
 Brunnel, Wolfram, R. F. D. 2. Port Washington
 Dineen, C. F. Cedarburg
 Harbach, Ralph, R. F. D. 2. Port Washington
 Kieffer, Mike. Fredonia
 Kressen, Gustav, R. F. D. 1. Thiensville
 Kressen, Reinhold, R. F. D. 2. Cedarburg
 Kressen, Wm. Cedarburg
 Mueller, Nick J. Grafton
 Nero, Wm. C. Cedarburg
 Pierner, J. W. Thiensville
 Sorweid, Wm. R. F. D. 2, Cedarburg

PEPIN COUNTY

Fleishauer, C. K. Arkansaw
 Gustafson, Theo. Stockholm
 Jahnke, Julius. Pepin

PIERCE COUNTY

Anderson, Oscar. Ellsworth
 Batho, Lester. Plum City
 Chapman, J. L. River Falls
 Chapman, W. A. River Falls
 Finstad, Frank. Beldeville
 Fuller, R. J. Maiden Rock
 Goodwin, H. V. Prescott
 Hanson, H. O. Spring Valley
 Jacobson, Chas. Spring Valley
 Peirce, W. O. River Falls
 Smith, Fred. River Falls

POLK COUNTY

Berg, A. E. Centuria
 Chelstrom, H. Herb. Turtle Lake
 Larsen, Fred S. Milltown
 Klinka, J. S. Balsam Lake
 Pedersen, H. M. R. Luck
 Peterson, Henry. R. F. D. 1, Box 35, Centuria
 Perry, R. F. Amery
 Perry, E. B. Amery
 Rehbein, A. E. R. F. D. 1, St. Croix Falls
 Rouzer, Paul C. St. Croix Falls
 Tasker, J. B. Turtle Lake

PORTAGE COUNTY

Breppe, Anton B. R. F. D. 1, Rosholt
 Fisher, Ray. Almond
 Frost, H. G. Almond
 Hanson, N. P. R. F. D. 2, Amherst Jct.
 Kollock, Henry. Bancroft
 Peterson, Arthur. Nelsonville
 Peterson, A. O. R. F. D. 2, Amherst Jct.
 Shelburne, A. H. Bancroft
 Shaffer, Dan A. Almond

PRICE COUNTY

Frank, Dismas. Phillips
 Hoffman, Conrad. Phillips
 Maeder, J. W. Prentice
 Morner, Arvid. Ogema
 Nelson, Elmer. Prentice

RACINE COUNTY

Block, Hieron J., R. F. D. 22. Burlington
 Chambers, O. Q. Union Grove
 Cooper, Archie H. Franksville
 Dunkelow, W. H. Franksville
 Erbe, Geo. Caledonia
 Fawcett, C. E. Rochester
 Hinchliffe, Walter. R. F. D. 18, Burlington
 Nelson H. A. Union Grove
 Nelson, R. W. Union Grove
 Reese, H. G. R. F. D. 12, Burlington
 Renak, Edw. Racine
 Rhodes, Clarence. Kansasville
 Rhodes, F. L. Kansasville
 Robers, W. J. R. F. D. 20, Burlington
 Roberts, Lynn J. Corliss
 Schelling, Edw. W. R. F. D. 2, Racine
 Schelling, J. J. R. F. D. 2, Racine
 Skewes, Arthur E. Union Grove
 Sorenson, Hilbert. R. F. D. 9, Franksville
 Stephen, Geo. R. F. D. 1, Racine
 Zachar, M. R. R. F. D. 1, Racine

RICHLAND COUNTY

Draheim, H. T. Gotham
 Fogo, Geo. Gillingham
 Ghastin, Floyd. Sextonville
 Ghastin, Wm. Twin Bluffs
 Helm, Elmer. Boaz
 Honer, Wm. M. Twin Bluffs
 Jewel, Harold. Richland Center
 Matthes, Fred G. Viola
 Nourse, Glen. Sextonville
 Smith, J. H. Gotham
 Thorpe, Burt. Tavera
 Thorpe, J. R. Tavera
 Turgasen, J. H. Richland Center
 Welton G. E. Twin Bluffs

ROCK COUNTY

Austin, C. P. R. F. D. 6, Janesville
 Austin, Frank. Janesville
 Austin, G. M. R. F. D. 6, Janesville
 Austin, Ira D. Janesville
 Austin, W. B. Janesville
 Benedict, E. L. Beloit
 Bergh, Lawrence E. Orfordville
 Bingham, E. L. Milton
 Bingham, H. L. Milton
 Bradley, James, 1240 Chapin St. Beloit
 Brown, Sherman. Janesville
 Caldo, Leslie. Janesville
 Donner, Chas. F. Janesville
 Dougan, W. J. Beloit
 Coon, Elam P. Milton Jct.
 Craig, Walter S. 603 Court St., Janesville
 Creydt, Ervin. Watertown
 Emery, S. L. Edgerton
 Foerster, M. F. Whitewater
 Gooch, O. D. Hanover
 Greene, J. H. Clinton
 Hahn, Robt. Clinton Jct.
 Hahn, Robt. F. R. F. D. 3, Clinton
 Hemmingway, G. L. Hanover
 Holmes, G. A. Beloit
 Howorth, Arthur. R. F. D. 1, Janesville
 Huebbe, E. Beloit
 Johnson, Roy M. Edgerton
 Jones, Arthur E. Janesville
 Kramer, Lawrence A. Edgerton

Marston, A. E.	Beloit
Miller, Robert, Jr.	Koshkonong
Moore, F. W.	R. F. D. 30, Beloit
Offerdale, P. W.	Clinton
Raessler, F. H.	Beloit
Raessler, N. R.	Beloit
Sarrow, Otto.	Evansville
Sayre, J. E.	Edgerton
Sherman, Chas.	Koshkonong
Sherman, Frank.	Koshkonong
Shuman, Charlie.	Koshkonong
Shuman, Frank.	Koshkonong
Smith, L. C.	Beloit
South, Geo. Burr.	Evansville
Waldmen, Fred.	Janesville
West, C. P.	Edgerton
Wheeler, E. D.	Beloit
Winkley, C. A.	Clinton Jct.

RUSK COUNTY

Brainerd, Benj. A.	Bruce
Brainerd, E. K.	Bruce
Gillies, J. H.	Glen Flora
Nelson, Earl.	Glen Flora
Reihmer, Carol.	Weyerhauser
Van Patter, Jim.	Glen Flora

SAUK COUNTY

Bayles, D. A.	Merrimack
Bickford, B. M.	Prairie du Sac
Borck, Sam.	No. Freedom
Clingman, E. E.	Reedsburg
Davies, G. W.	North Freedom
Fraust, Albert.	Prairie du Sac
Getchell, Dwight.	Baraboo
Grass, C. F.	Prairie du Sac
Grasser, C. O.	Baraboo
Hahn, Wm. J.	Reedsburg
Hatz, J. A.	Prairie du Sac
Hatz, O. J.	Prairie du Sac
Herwig, Theo. E.	Delton
Hinrichs, Ernest.	Reedsburg
Hillmer, Benj.	Loganville
Johnson, Glenn.	R. F. D. 2, Baraboo
Kinsman, Glenn.	La Valle
Kuehn, H. F.	Spring Valley
Lachmund, Robt.	Sauk City
Langdon, Earl.	Baraboo
Lochmund, Rob.	Sauk City
Luetsher, Alvin.	Plain
Martiny, Pierce.	Baraboo
McGinnis, Chas.	Baraboo
Metcalf, Raymond.	Spring Green
Ochsner, Arthur.	Plain
Owen, George.	Baraboo
Peck, Burton.	Spring Green
Peck, H. B.	Spring Green
Premo, W. H.	Baraboo
Richardson, A. Merrill.	Spring Green
Rodewald, W. C.	Baraboo
Rusch, E. W.	Reedsburg
Steidtmann, Edwin.	Merrimack
Schuetta, H. W.	R. F. D. 3, Lavallo
Thorne, F. L.	Ableman
Voock, G. E.	North Freedom
Vonder Ohe, W. H.	R. F. D. 2, Reedsburg
Weirich, M. J.	Baraboo
Wheeler, I. W.	Limeridge
Wichern, Wm.	Baraboo

SAWYER COUNTY

Lindner, Walter.	Hayward
Uhrenholdt, S. J.	Hayward
Uhrenholdt, Jens.	Hayward

SHAWANO COUNTY

Berg, Carl J.	Tigerton
Boldig, W. L.	R. F. D. 1, Tigerton

Erickson, Elmer.	Rose Lawn
Gjermandson, Martin.	Tigerton
Grinstad, Arthur.	Wittenberg
Hildeman, Alex E.	Belle Plaine
Johnson, Rudolph.	Rose Lawn
Noorbom, Gust.	Eland
Olson, Willie G.	R. F. D. 2, Wittenberg
Peterson, W. F.	R. F. D. 2, Pulaski
Pleshek, Frank.	Shawano
Pushek, Frank.	Shawano
Sorley, E. B.	Tigerton

SHEBOYGAN COUNTY

Bechlem, E. W.	Plymouth
Athorp, Geo. O.,	R. F. D. 1, Box 59, Sheboygan
Athorp, W. G.	R. F. D. 1, Sheboygan
Forke, E. J.	Adell
Gorsege, W. E.	Haven
Heberer, C. H.	R. F. D. 19, Adell
Hoppert, M. J.,	R. F. D. 4, Sheboygan
Kaufmann, Ernst L.	905 Indiana Ave., Sheboygan
Marx, O. H.	R. F. D. 6, Haven
Opgenorth, Anton.	R. F. D. 4, Sheboygan
Parrish, J. O.	Plymouth
Reineking, Rudolf H.	Sheboygan Falls
Streiber, W. G.	R. F. D. 33, Elkhart Lake
Ubbelohde, F. G.	Sheboygan Falls
Wagner, A. L.	Haven
Wunsch, Alfred J. C.	R. F. D. 6, Haven
Wunsch, Hugo.	R. F. D. 6, Haven

ST. CROIX COUNTY

Alton, C. P.	River Falls
Arnquist, J. F.	New Richmond
Arnquist, J. P.	New Richmond
Aune, H. A.	Baldwin
Bader, Alfred.	New Richmond
Bader, R. C.	New Richmond
Beebe, C. C.	Boardman
Bennett, W. E.	New Richmond
Buttner, Albert.	New Richmond
Carlson, Carl.	Glenwood City
Casey, W. H.	New Richmond
Chapman, Lyman.	River Falls
Christensen, V. F.	Roberts
Cook, Winfred.	New Richmond
Cody, John F.	New Richmond
Dowling Bros.	Hudson
Fay, A. W.	New Richmond
Fay, R. E.	New Richmond
Foster, S. S.	New Richmond
Gridley, Bert.	Hudson
Gust, Wm.	R. F. D. 2, Deer Park
Hanley, O. H.	Roberts
Hennessey, R. E.	R. F. D. 2, New Richmond
Hogan, E. J.	New Richmond
Imrie, David.	Roberts
Jabusch, Arthur,	R. F. D. 2, Deer Park
Jabusch, Henry,	R. F. D. 2, Deer Park
Jabusch, Wm.	Deer Park
Jones, F. B.	Deer Park
Jones, Walter.	Deer Park
Koltke, Geo. P.	Deer Park
Krueger, Arthur.	Deer Park
Kruschke, A. C.	New Richmond
Kruschke, G. H.	New Richmond
Lamb, W. A.	Roberts
Legvid, H. E.	R. F. D. 1, Deer Park
Legvid, Wm.	R. F. D. 1, Deer Park
Lowe, Hugh.	River Falls
Meimpe, Emil.	Somerset
Neitge, Ed.	Deer Park

Ohman, E. D.....Glenwood City
 Olson, Chas.....R. F. D. 2, Deer Park
 Paulson, P. A.....Hudson
 Pederson, Theo.....Glenwood City
 Pudd, R. R.....Deer Park
 Ruemmele, Albert.....Hudson
 Ruemmele, Geo. J.....Hudson
 Ruemmele, J. F.....R. F. D. 1, Hudson
 Schwandt, Wm.....Deer Park
 Setter, Nels.....R. F. D. 1, Deer Park
 Silver, W. W.....New Richmond
 Stiles, Chas. L.....Hudson
 Stindt, C. W.....New Richmond
 Stindt, Forrest.....New Richmond
 Thom, Fred.....Hudson
 Thome, Raymond.....Hudson
 Thoreson, David.....Barronett
 Torkelson, Arthur.....R. F. D. 2,
 Deer Park
 Tracy, Lyman.....New Richmond
 Uber, Dewey.....New Richmond
 Webster, W. E.....Hudson
 Williamson, G. S.....R. F. D. 2,
 Deer Park

TAYLOR COUNTY

Bergmann, Paul W.....Medford
 Brandt, Henry.....Medford
 Buehler, Geo.....Medford
 Harden, Henry C.....Medford
 Schemanski, Albert.....Stetsonville
 Schmoldt, P. C.....Whittlesey
 Searle, R. O.....Donald

TREMPEALEAU COUNTY

Becker, P. V.....Galesville
 Bishop, W. E.....Arcadia
 Bohrnstedt, L. S.....Trempealeau
 Brovold, A. J.....Ettrick
 Chappell, G. E.....Trempealeau
 Eid, Albert.....Pigeon Falls
 Ford, Lester.....Trempealeau
 Graul, Geo.....Independence
 Hagestad, A. C.....Ettrick
 Hanson, L. M.....Eleva
 Hegge, Albert.....Galesville
 Holderson, R. H.....Trempealeau
 Johnson, J. G.....R.F.D. 3, Blair
 Kinservick, Thor.....Whitehall
 Markham, F. C.....Independence
 Mattison, Thos.....Blair
 Moen, Gilbert.....Eleva
 Peterson Bros.....Blair
 Ristau, E. O.....Osseo
 Strader, Rolla A.....Osseo
 Thompson, A. L.....Blair
 Thompson, E. H.....Blair
 Speerstra, Peter J.....Whitehall
 Lowe, Robert.....Strum

VERNON COUNTY

Bendel, John.....Stoddard
 Dahl, A. J.....Viroqua
 Davis, J. Kenneth.....Viroqua
 Eckhardt, Burton.....Viroqua
 Erickson, H. N.....Cashton
 Framcoli, Emil.....Genoa
 Gianoli, John A.....Genoa
 Freehoff, R. E.....Coon Valley
 Getter, Pearl.....Viroqua
 Hanson, M. L.....Viroqua
 Hoilien, Dave.....Westby
 Johnson, Alf.....Westby
 McClurg, Harry.....Viroqua
 McClurg, Walter.....Viroqua
 McMullin, Ray.....Viroqua
 Mills, Kenneth.....Viroqua
 Molley, Glenn F.....Ontario
 Oberson, Selmer.....Westby
 Paulsen, S. J.....Westby

Rogers, H. J.....Stoddard
 Sebion, Stanley.....Westby
 Shumway, Philip.....Genoa
 Welch, R. S.....R. F. D. 3, Viroqua

WALWORTH COUNTY

Ames, H. F.....Elkhorn
 Anderson, H. E.....Whitewater
 Bowers, C. W.....Delavan
 Brennan, G. E.....Lake Geneva
 Brennan, John.....Lake Geneva
 Church, A. P.....Whitewater
 Cooper, W. H.....Whitewater
 Cowles, Percy.....Elkhorn
 Coyner, J. M.....Mondovi
 Dunbar, H. D.....Elkhorn
 Ells, F. W.....Elkhorn
 Ells, Ross H.....Darien
 Fuller, E. M.....Lake Geneva
 Haps, Oscar.....Genoa Jct.
 Harris, J. S.....Delavan
 Hatch, H. R.....Zenda
 Kassman, Oscar.....Elkhorn
 Kassner, Edward.....R.F.D. 6, Kewaunee
 Kimball, L. A.....R. F. D. 1,
 Lake Geneva
 Kiteley, Leonard W.....Sharon
 Kossman, Oscar.....Elkhorn
 Kuenzli, H. C.....Lake Beulah
 Layman, Kenneth.....Lake Geneva
 Ledger, Albert.....Lake Geneva
 Lewis, E. H.....Whitewater
 Mathews, M. D.....Whitewater
 Pester, C. J.....Whitewater
 Pester, J. H.....R.F.D. 3, Whitewater
 Pester, Walter J.....R.F.D. 3,
 Whitewater

Peters, Ezra.....Sharon
 Peters, Ralph A.....Darien
 Peterson, Ira L.....Whitewater
 Peterson, R. F.....East Troy
 Piper, Harry.....Sharon
 Reith, Edward.....Lake Geneva
 Robinson, A. S.....Lake Geneva
 Schultz, K. J.....Delavan
 Sweno, Harley.....R.F.D. 4, Whitewater
 Taube, H. E.....Elkhorn
 Thacher, Ed. F.....Zenda
 Thompson, Alfred.....Delavan
 Thomson, Peter.....Genoa Jct.
 Utter, Delwin.....Lake Beulah
 Wermuth, Geo.....Richmond
 Westphal, Ray.....Elkhorn

WASHBURN COUNTY

Carlson, M. J.....R.F.D. 2, Spooner
 Melby, Dan.....Spooner
 Rylander, Ed.....Shell Lake
 Rylander, Frank.....Shell Lake
 Soholt, G. L.....Spooner
 Soholt, Ole S.....Madge

WASHINGTON COUNTY

Baertlein, W. A.....South Germantown
 Bartel, Paul.....Jackson
 Ebbing, Albert A.....Richfield
 Frohmann, R.....Kewaskum
 Gerner, Ed. W.....Barton
 Groth, Albert.....Rockfield
 Groth, Henry.....Rockfield
 Groth, Hugo.....Cedarburg
 Groth, Louis.....Cedarburg
 Groth, Walter.....R.F.D. Cedarburg
 Gutschenritter, F. J.....West Bend
 Hoelz, Jacob, Jr.....Rockfield
 Inundt, Wm. F.....Hartford
 Joeckel, H. G.....Jackson
 Klinka, Joe.....West Bend
 Lepien, Roy.....Hartford
 Puls, John.....Hartford

Quandt, Wm. F.	Hartford
Rather, Edw.	Colgate
Rather, Herman	Colgate
Salter, Milo.	R.F.D. 5, Box 70, West Bend
Schottler, C. J.	So. Germantown
Schwalter, E. J.	Jackson
Techtman, C. W.	Kewaskum
Woldt, Hugo	Jackson
Ziemer, P. F.	R.F.D. 2, Jackson

WAUKESHA COUNTY

Blott, Lorimer	R.F.D. 3, Waukesha
Bowe, R. E. L.	Oconomowoc
Boyd, J. T.	R.F.D. 7, Waukesha
Brady, L. A.	Mukwonago
Clark, H. L.	Genesee Station
Claffey, Jas.	Pewaukee
Comstock, Robt.	Oconomowoc
Craig, Geo. D.	Oconomowoc
Connell, E. J.	Menomonee Falls
Connell, Wm. A.	Menomonee Falls
Cumming, G. H.	R.F.D. Dousman
Dibble, Roy	R.F.D. 21, Hartland
Edwards, David R.	R.F.D. 31, Wales
Evans, David J.	R.F.D. 31, Wales
Freehoff, W. A.	Waukesha
Goetz, Clarence	R.F.D. 22, Waukesha
Graser, A. H.	Waukesha
Greene, H. T.	Genesee Depot
Gunderson, A. Lee	Oconomowoc
Gunderson, Forrest	Oconomowoc
Hall, Frank	Hartland
Hall, John	Hartland
Hensel, Herbert E.	Dousman
Hensel, Max H.	Dousman
Hill, Chas. F.	Brookfield
Hill, Chas.	Brookfield
Hill, J. T.	Waukesha
Hill, W. H.	Brookfield
Holt, F. C.	Oconomowoc
Holt, L. H.	Oconomowoc
Husten, Lawren E.	Eagle
Jeffery, H. B.	Menomonee Falls
Jenkins, Emery	Wales
Jones, I. D.	Wales
Kollath, Wm.	Menomonee Falls
Kuhtz, Conrad H.	Waukesha
Kuhtz, P. H.	R.F.D. Waukesha
Lean, Roy	R.F.D. Dousman
Lobdell, Lloyd	Mukwonago
Lobdell, M. C.	Mukwonago
Lowry, S. S.	Waukesha
Lowry, G. G.	Waukesha
Luebke, Wm.	R.F.D. 26, Oconomowoc
McAdams, A. J.	Mukwonago
Mitchell, C. J.	Brookfield
Mitchell, Dean S.	Brookfield
Mitchell, Paul	Brookfield
Mitwede, Henry	Waukesha
Nicholas, D. C.	R.F.D. 4, Waukesha
Reyer, W. R.	Templeton
Rosenow, Arthur	Oconomowoc
Rosenow, H. E.	Oconomowoc
Schmidt, Barney	Skidmore
Swartz Bros.	Waukesha
Tebbetts, Frank	Plainfield
Voje, J. H. Jr.	Oconomowoc
Weaver, E. W.	Waukesha
Weeks, Allen	Templeton
Weir, Robt. J.	Mukwonago
Will, Chas. J.	Menomonee Falls
Williams, Alvin	218 Borney St., Waukesha
Williams, Edw. T.	R. F. D. 31, Wales
Wilson, Lewis K.	R. F. D. 29, Waukesha
Zimbehl, Erwin	Brookfield

WAUPACA COUNTY

Bille, J.	Waupaca
Boyce, Eugene	Waupaca
Daniels, Dallison	R. F. D. 4, Manawa
Erickson, Archie	Waupaca
Glocke, A. A.	Weyauwega
Green, J. D.	R. F. D. 2, Waupaca
Hartan, Jay	New London
Harrington, M. H.	Waupaca
Harrington, O. C.	Waupaca
Hoyord, W. E.	Scandinavia
Jensen, L. J.	Ogdensburg
Keating, F. E.	Ogdensburg
Keating, J. R.	Ogdensburg
Kendall, Myron	Iola
Knoke, Hugo	Readfield
Knutson, A. C.	Ogdensburg
Kunkel, A. M.	R. F. D. 4, Manawa
Larson, Le Roy	Iola
Meisner, Wm.	Embarrass
Nace, F. A.	Iola
Olson, Ludvik C.	Scandinavia
Pirner, John	R. F. D. 4, Manawa
Potts, A. R.	Waupaca
Procknow, W. C.	New London
Rowe, A. B.	Waupaca
Sawall, Harvey	New London
Schmidt, Nicholas	New London
Schroeder, A. M.	New London
Shambean, A. D.	Ogdensburg
Smith, Henry	R. F. D. 4, Waupaca
Steege, Herbert	Embarrass
Tubaas, O. G.	Iola
Weinnann, H.	R. F. D. 2, Iola

WAUSHARA COUNTY

Barnes, P. H.	Hancock
Bartleson, H. C.	Pine River
Bartleson, Roy F.	Pine River
Bridgeman, C. G.	Wautoma
Byse, Gage B.	Wautoma
Eagan, J. J.	Wautoma
Ellickson, Chris.	Wautoma
Ellickson, Jay	Wautoma
Hamlin, H. J.	Wautoma
Harris, A. M.	Plainfield
Hughes, John D.	1 R. F. D., Wild Rose
Jacobs, A. F.	R. F. D. 1, Coloma
Knuteson, E. L.	Wautoma
Peck, W. W.	Coloma
Roberts, Ellis W.	Wild Rose
Shippee, Geo. L. Jr.	Plainfield
Simonson, Clarence	Wautoma
Simonson, Glenn	Wautoma
Storzach, Emil N.	Plainfield
Thompson, Ellef N.	Wautoma
Thompson, H. A.	Wautoma
Thompson, Martin	Wautoma
Wiley, W. J.	Hancock
Williams, G. Elmer	Wild Rose

WINNEBAGO COUNTY

Boss, U. C.	Oshkosh
Boss, Sam Jr.	Oshkosh
Bussey, W. P.	Omro
Calkins, U. B.	Allenville
Cross, A. J.	Allenville
Hinz, A. F.	Pickett
Ihrig, J. J.	Oshkosh
Jahnke, Albert	R. F. D. 11, Neenah
Jennings, J. E.	Pickett
Jennings, J. W.	Fisk
Krings, Joseph	Winneconne
McFetridge, Wm.	R. F. D. 4, Oshkosh
Miller, Homer	Pickett
Parks, Wm. S.	Pickett
Pommerening, Edw. C.	R. F. D. 2, Oshkosh
Race, Edw.	R. F. D. 22, Omro

Raucenstein, Emil.....Omro
 Roberts, Kiel S.....Pickett
 Teela, F. W.....Winneconne
 Treleven, Gay.....Omro
 Westcot, George Lee.....Omro

WOOD COUNTY

Bean, A. P.....Vesper
 Behling, Wm. R.....R. F. D. 1, Vesper
 Fast, H.....Vesper
 Huser, C. J.....R. F. D. 3,
Grand Rapids
 Leu, O. J.....Grand Rapids
 Mars, Chas.....Marshfield
 Moss, Chas.....Marshfield
 Ten Pas, John A.....Arpin

CANADA

Kramer, C. N.....Walkersville, Ontario

CALIFORNIA

Betz, F. A.....R. F. D. 2, Box 89,
Visalia

DELAWARE

Gawthrop, J. N. Jr.....814 Wash. St.
Wilmington

IDAHO

Douglas, C. O.....Payette

ILLINOIS

Akins, C. E.....Warren
 Allen, Frank.....Lyndon
 Bartos, Otto T., 1824 S. Ashland Ave.
Chicago
 Bathum, S. C., 6377 Ingleside Ave.,
Chicago
 Bennett, H. J.....Cherry Valley
 Boothroyd, F. C.....Chicago
 Briggs, Lynn.....Barrington
 Brown, Floyd.....Genoa
 Bruning, Oliver.....
 Campbell, Fred T., 314 So. Hale St.,
Wheaton
 Chetlain, L. A.....Galena
 Diemer, W. E.....Dakota
 Evans, Merle L.....Charter Grove
 Frank, W. M.....Red Oak
 Graham, M. Y.....East Dubuque
 Heffron, Donald., 10347 Longwood
 Drive.....Chicago
 Hill, Donald.....Monee
 Hill, Grant.....Solon Mills
 Hitchcock, H. R.....Pectonica
 Hoyt, Ralph E., Elizabeth Ave.,
Zion City
 Huet, L. P.....1139-5th St. Rockford
 Huntington, C. P.....Grays Lake
 Jones, Ira P.....Hinckley
 King, Emmet W.....Russell
 Krumm, F. O.....Glenwood
 Lundberg, Carl M313 N. Bluff
 St.....Joliet
 Maxson, W.....Waukegan
 Miller, Louis S.....157 5th St.
Aurora
 Miller, R. B.....Antioch
 Newburn, D. A., R. F. D. 5, Hoopston
 Palmer, Glen.....Yorkville
 Ruser, Arthur.....1943 N. Kuler
 Ave.....Chicago
 Scheidecker, Chas.....Serena
 Shepherd, W.....Rockford
 Smith, Lounie.....Ringwood
 Smith, S. M.....Box 69, Cedarville
 Swayer, Wilbur J.....Waukegan
 Turnbull, K. L.....Glencoe

Von Doemining, Ernst.....1947 Hud-
 son Ave.....Chicago
 Westlake, Mark H.....Sycamore
 Whipple, Wm. S.....Genoa
 Williams, R. K.....465 Adams Ave.
Glencoe

INDIANA

Jessup, Don Carlos.....Camby
 Lewallen, Floyd C.....West Newton
 Webbe, W. E.....Fort Wayne

IOWA

Gronna, Theo.....Waterville
 Meyer, Clifton J.....McGregor
 Schlick, M. F.....Charles City

MICHIGAN

Arnold, H. A.....Boyne City
 Bailey, Herbert A.....Sault St. Marie
 Blanchard, Wm. B.....Elk Rapids
 Cook, Chas. I.....310 Main St.
Menominee
 Eskill, O. F.....Whitney
 Hatch, L. M.....Lansing
 Maesenaire, J. L.....Menominee

MINNESOTA

Hillier, H. B.....Brownsdale
 Holcomb, W. R.....Plummer
 Wiker, N. H.....Mabel

MONTANA

Bennett, C. S.....Somers
 Kirk, C. S.....Salesville
 Sattler, Jas. H.....Glendine

NEW HAMPSHIRE

Hunter, Roy.....West Claremont

NEW YORK

Cady, Foster B.....Troupsburg
 Clark, W. E.....R.F.D. 1,
Darien Center
 Colenso, V. E.....L.I.N.Y., Oyster Bay
 Low, Francis.....222 Holland St.
Syracuse
 Scheerhorn, G. B.....Keeseville

NORTH DAKOTA

Chidlaw, L. S.....217 Euclid Ave.
Grand Forks
 Daly, R. E.....Wahpeton
 Lawson, A. C.....R.F.D. 1 Box 46,
Kenmare

OREGON

Drolshagen, A. F.....Hermiston

PENNSYLVANIA

Fowler, Harry.....Macungie
 Rorer, Wm. A.....Mt. Gretna

SOUTH DAKOTA

Conklin, Raymond D.....Oldham

UTAH

Carey, J. E. L.....Fruitland

WASHINGTON

Newberry, W. T.....R.F.D. 1, Mica

Wisconsin Ag. Expt. Assoc.
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