A quarter of a century of crop improvement in Wisconsin. Twenty-fifth annual report of the Wisconsin Agricultural Experiment Association : Madison, Wisconsin.

Wisconsin Agricultural Experimental Association
Madison, Wisconsin: Democrat Printing Company, [s.d.]

https://digital.library.wisc.edu/1711.dl/6DUPVXG4ODA3A9D

A Quarter of a Century of Crop Improvement IN WISCONSIN

Twenty-fifth annual report of
The Wisconsin Agricultural
Experiment Association
Madison Wisconsin

Twenty-Five Years of Service

The Wisconsin Agricultural Experiment Association, which is celebrating the completion of twenty-five years of activity and accomplishment, was organized February 22, 1901, by students of the agricultural short course.

The object of the organization, as set forth in the constitution, was to promote better farm living by carrying on cooperative experiments, by forming a beneficial union between former and present students of the College of Agriculture, by growing and disseminating new varieties of farm crops, by keeping its members informed on best farm practices, and by holding an annual meeting to discuss ways and means of encouraging progressive farming.

Since the 187 charter members, over four thousand names have been added to its membership role. There is scarcely a community in Wisconsin which has not one or more members who are rural leaders, and a great many have found their way into successful farm, business, and educational activities in other states.

The Experiment Association's activities have increased with the years, and it is the hope of the present members and officers that future efforts will bring progress comparable to that achieved in the first quarter century.

A QUARTER CENTURY OF PROGRESS IN CROP IMPROVEMENT

REPORT OF THE SECRETARY, FEBRUARY 1927

R. A. Moore

Members of the Wisconsin Experiment Association:

We have now passed our twenty-fifth milestone in the history of our organization and meet in annual convention assembled to celebrate our Silver Jubilee.

It seems strange that the twenty-five years should have flown by so rapidly and that the young men who united with the Experiment Association in 1901 are now the men of business affairs in our state. The Grim Harvester has taken many of our worthy members during the last decade, but many of the others are comfortably located, and the second generation is following in the footsteps of their fathers. Each year we find in the College of Agriculture, sons of fathers who attended the Short Course in the early days and became members of the Wisconsin Experiment Association.

It certainly is gratifying to see these faces that were so familiar twenty-five years ago and to feel that you each and all have played a very important part in promoting the welfare of the state. This is right and is as it should be, as the state expects a great deal from the young men who are favored by being enabled to take special work in the college of Agriculture. Every one of these should become a teacher of agriculture, and the magnificent influence which has been exerted upon the general public through the former Short Course students and especially by the members of the Association has been instrumental in making Wisconsin become known far and near as the "state of fine homes."

It isn't surprising that Wisconsin is successful even during these trying times when other states are groaning under the burden of taxation and other burdens which seem too heavy to carry. It shows plainly that Wisconsin farmers have an earning power which is far in excess of the earning power of farmers in most other states. The Wisconsin Experiment Association has played a very important part in this, and from its very beginning has been instrumental in bringing to its membership seed sales which through the years have amounted up into the millions.

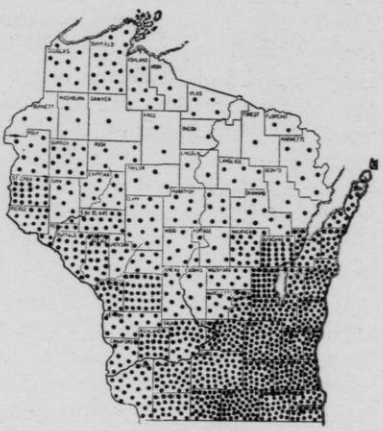
The feature that stands out very prominently to me today, after passing through this twenty-five years of work, is the tenacity with which the Association has held together. This, in my estimation,

has been quite largely because the members of the Association have always had so many important things to do that there was no occasion for bickering and quarreling which is so often instrumental in wrecking organizations. Many of the members of the Association today owe their initial start in agriculture to the money received for pedigree seeds, and the reason of their loyalty to the Association is that they have found an organization that is ever looking after their general welfare.

Early Days Of The Experiment Association

The Wisconsin Experiment Association was especially organized for the benefit of young men who had taken the Short Course in Agriculture at Madison, or taken an agricultural course in some other college. While having charge of this course at your state university, it occurred to me that it would be well to take up something that would be of special benefit to those who saw fit to come to the college and better themselves in their chosen calling. This led to a study to determine what things could be put into the course for the benefit of the young men.

On visiting the school of agriculture in Minnesota for new ideas to put into practice in our Short Course in Agriculture, my attention was drawn by Professor Willet M. Hayes to some wonderful work that he had done on the breeding of wheat. There was no mistake in regard to the increase in yield and quality of the wheat on which he had then placed from six to eight years breeding work. There seemed to be no reason if wheat could be bred so as to greatly increase the yield that corn, oats, barley, peas, rye, and other crops could not be bred likewise. It seemed that if this could be accomplished the men who were especially trained in the College of Agriculture would be the best ones to do this high grade work.



Barley Centers Established 1910-15

Lands were secured and work was begun upon grain breeding in 1898. It was soon found that crops responded just as readily as cattle to scientific breeding, and we were able in a few years' time to breed corn that would more than double in yield and we bred barley that gave a yield of ten bushels more per acre than the best barleys then grown in the state. Oats, rye, wheat and other grains yielded in like proportions, and a great work was started which still is continuing and expanding.

Realizing the value of cooperation, in the winter of 1901 the Wisconsin Experiment Association was formed with 187 charter members. That spring various seeds were given out to be tested in all parts of the state and we soon were able to establish hundreds of seed centers all over the state. Corn centers were so plentiful within a few years that a farmer, as a rule, didn't have to go outside of his own county and sometimes his own township in order to get good fire dried pedigreed seed corn. The same was true of barley, oats, wheat, etc., until we had a thousand or more members of the Association growing these pedigreed seeds and selling them all over the world. Many of the up-to-date farmers of today owe their entry into higher lines of agriculture to the start they got in disposing of pedigreed seed grains at good prices. Many of our best dairymen of

One Of The First County Order Grain Shows

the state got their first money to purchase pure bred calves from that received from Golden Glow corn, pedigreed barley or some of the other pedigreed grains. It has been a wonderful stimulus for better farming and today if we look over the state we find ranking among the best farmers of Wisconsin former students of the Short Course, of which a large portion have affiliated with the Wisconsin Experiment Association.

The work has grown so in the Experiment Association that we now require a man who devotes half his time and attention entirely to this work. We also have to maintain an office in which we have two half-time stenographers who devote their time to correspondence relating to the Experiment Association. Your secretary gives as much time as he possibly can to the work of this organization and

it has been a great pleasure to see the wonderful interest that the young farmers have taken in this work which is now running at high speed throughout the entire state.

The Association has always put forth special efforts to do everything in its power to better the quality and increase the quantity of pure bred seeds that are grown by its members. This has been done quite largely through the field and bin inspection of the growers' seeds as well as improving the quality of these seeds on the breeding fields of the university. Through the systematic field inspection pursued by the Association, using the county agents and the special staff of the Department of Agronomy, practically all fields of pure bred seed grains are examined free to the grower.

The corn crop is gathered and fire dried, and I am pleased to state before this Association that our seed corn business is expanding tremendously each year. It seems good to know that we are so thoroughly intrenched in the seed corn business and have such faith in the fire drying of seed corn that we gather our corn early and put it in such condition that it can go out practically with our guarantee.

County Pure Bred Seed Grain Growers Associations

For a few years after the Association was organized, the orders for seed were sent direct to the grower. However, the sales of seed became so large that in 1908 we were obliged to start organizing county pure bred seed grain growers associations. We organized over fifty counties of Wisconsin into county pure bred seed grain organizations and the larger portion of those are doing good work at the present time. Our county agricultural agents have been instrumental in keeping the county organizations in operation. Without the county agent system, it would have been practically an impossibility for us to have succeeded in holding the county associations together and doing the best possible work.

County Orders Have Been Organized In 57 Counties

The membership of the county association is somewhat different than that of the state association in that anyone who is especially interested in the growing of pure bred seeds can become a member. The county association has a great work to perform as through its efforts each farmer in the county can secure the pedigree seeds upon which the station has placed years of faithful work, within a few miles of his own farm.

Other Orders

In addition to the county orders of the Experiment Association we have several other organizations that were formed and connected with the state association for the performance of specific work.

The Alfalfa Order of the Experiment Association has a membership of over one thousand and at the present time is placing Wisconsin on the map in the way of spreading the glad tidings concerning this great crop. Through its instrumentality, the alfalfa acreage of Wisconsin has continually grown until at the present time we have over four hundred thousand acres of this great plant growing. The introduction of alfalfa is now going on at a rapid rate and it seems that our timothy and red clover are sure to take a back seat and let this queen of all forage crops spread over the acreage where a mixture of timothy and clover was once grown.

The Hemp Order of the Association has done a special work in the encouragement of growing hemp for fiber. Through the efforts of

County Order Exhibit At State Fair

this organization, approximately one million dollars worth of hemp fiber is marketed each year. The work is on a solid foundation and there is no special effort made to increase the acreage of hemp over what the association will be able to market to the best advantage. This organization is a good example of what can be done in growing crops to meet special market demands.

Through the Soybean Order of the Association emphasis has been placed quite largely upon the production of seed and a very fine line of pure bred soybean seed is annually grown for the trade. Wisconsin, up to the present time, has been able to market practically all of the beans that could be grown—hence has been able to get a much better price for the beans than in localities where soybean oil

factories are located. However, it may be well for Wisconsin to look forward to growing soybeans on a much larger scale. Even though we cannot secure seed prices, it should be remembered that soybeans can be grown on soil that is altogether too light to grow other crops. Where these conditions obtain, soybeans can be grown on a large scale and will bring greater returns to the farmer than any other crop that he can grow on such soil. This Association is now looking into the possibility of encouraging one or more factories to come into the state and we trust they will stand by both the farmers and the men who invest the money after they get under way.

The Necessity Of More Pure Bred Seed Grain Growers

The Wisconsin Experiment Association has developed into a large marketing organization. Through its influence and efforts over three hundred thousand dollars worth of seed is marketed each year. These markets have been obtained by long years of study and patient work and it is absolutely necessary that we try to grow as much as the market demands. If we were to lose the market, it would take a much greater effort to regain it than it did to establish the market years ago. Hence we have a need of many more pure bred seed growers. The Wisconsin Experiment Association has always been able to sell practically all of the pedigree seeds that the members could grow and often we would not have more than half enough seeds to supply the demand. We hope this will be remedied in the future and that we will have more people giving their time and attention to the growing of these pedigree seeds. The College is getting out plans for a special corn house at the present time which we hope will aid our pure bred corn growers in handling seed corn more cheaply than they have been able heretofore.

Wisconsin Grown Seed Corn Best

A custom in the seed trade has gradually grown up which threatens to some extent the pure bred seed corn grower. Many of the firms of this and other states handling large quantities of seed corn have been sending Wisconsin standard varieties of corn to states with longer growing seasons than our own and growing their supply of seed, which can be put on the market under our standard variety names. Under the state law, however, a statement of the place where the

Seed Demonstration Trains 1912, 1914, and 1917 Reached 21,000 People

corn was grown must accompany each shipment so a farmer can readily find out if it is Nebraska grown or Kansas grown corn. If the corn was grown only one year in a state farther south than our own or having an environment more favorable than our own the resultant crop might give almost as good returns. It seems that the growers in these states take advantage of the opportunity of selling their corn at a higher price and consequently it seems, from experiments carried on, that much corn that gets into our state has been grown for several years under a different environment and cannot come back very readily. It is a positive detriment for any farmers to attempt to grow such corn and the Association should be alive to denouncing that custom. Members of the Association, however, must not forget that if they cannot produce a sufficient amount of corn for the planting of Wisconsin that some other state will have to jump into the gap and do such producing. It requires about three hundred thousand bushels of corn to plant the state and unless our growers can produce this supply the seedsmen are practically forced to secure the seed corn elsewhere. Members of the Wisconsin Experiment Association could safely grow double the corn they are at the present time with no fear whatever of lowering the price of seed.

Alfalfa

One of the very important things I wish to call your attention to at the present time is the need for many more alfalfa growers. Members of the Association are asked to consider plans for supplying our dairymen with good baled alfalfa. We know from actual experience that there is no crop, unless it is pedigree seeds, that pays so well upon the farm as alfalfa. The establishment of a market is very simple as we can use all the alfalfa grown right within our own borders. What we need, however, is a hundred or more members of the Association to supply from two to five hundred tons of good baled alfalfa hay annually. We hope that a large number of members will get into this line of effort as we hate to see so many hundreds of thousands of dollars go out of our state in order to bring in often a lot of very poor alfalfa hay.

Sweet Clover

The rapidity with which sweet clover is gaining popularity in our state demands that more attention be paid to seed production. The Canadian Albotrea is especially noted as a great hay making plant and is grown quite largely to produce a hay that is almost as rich in feeding nutrients as alfalfa. It has been grown so successfully that it seems that at least a hundred members of the Wisconsin Experiment Association should go into the growing of Albotrea sweet clover seed. We are not producing very much seed at the present time and the four or five members of the Association who do produce seed have always sold out readily and at a good figure.

The Grundy County white blossom sweet clover is also one of the fine stemmed sweet clovers and like the Albotrea makes a good grade of hay and is also a good seed producer. While it is not as heavy yielder of hay or seed as the Albotrea yet it produces a quality that far surpasses that of the regular biennial white blossomed sweet clovers. Sweet clover is now being used as a pasture plant far and

Pure Seed Special—1917

near and a great deal of seed will be needed in the near future to meet the demands of those particular farmers who wish to increase their sweet clover acreage.

Advertising And Marketing

Through a quarter of a century of work, the Wisconsin Experiment Association has been able to build up exceptionally fine markets for her quality products. The only way we have been able to maintain these markets has been by putting out a grade of seed that has appealed to the purchasers. These seeds were put out at cost which netted the grower a good return and at the same time was not a hardship to the party who desired to grow these pedigree kinds of grain or forage plants.

With the spread of the pure bred grains far and near throughout our own country, as well as foreign countries, the Association has made it easier and easier to secure these seeds. However, the demand seems to be greater and greater as the years advance and never has the Association had pedigreed seeds that could not be disposed of.

We hope with our new members this year to enlist a great many of them in growing pure bred seeds which will be put on the market next year, hence we need this active cooperative effort in the selling of pedigree seeds.

No member of the Association should feel that the organization to which he belongs is going to take entire care of his sales, consequently he is expected to do something for himself along this line. Many things can be done. The first, in particular, is to have a nice letterhead for all correspondence. This attracts attention at once and people are led to believe that the grower is sympathetic in his manner of taking care of business as well as in growing seeds.

Secondly, practically everyone living in a certain county has access to his county paper. Often a party can get a great deal of nice advertising from a paper by writing it up as a story. The story must be of sufficient interest so that it will be attractive to the readers of the paper and so that the newspaper will feel that it is getting valuable news. Often a little ad, which costs but a small amount per week, could be run calling attention to the pure bred seeds that you have on hand.

Trees Beautify The Farm Home

Another way of advertising is for each grower to have in a prominent place a sign indicating his specialty in seed lines. These signs should be in conspicuous places at the roadside near the farm home. The sign should distinctly state that the party is a member of the Wisconsin Experiment Association and that he is a grower of pure bred seeds. Whatever he has for sale can also be listed thereon. It is really wonderful what a great help a road sign is for advertising a grower who has various things for sale on his farm. In these days of travel, one can hardly afford to be without such a sign to ad-

vertise his special products. Many farmers allow chewing gum manufacturers, tobacco manufacturers and others to utilize the best space on their barns and silos for advertising their concoctions. Let me ask you—does this pay?

The state association has its regular methods of publicity in the way of sending circulars and bulletins to interested parties. This has taken care of millions of dollars worth of seeds which are put on the market annually and which we hope will continue to keep the same pulling power that it has had in the past.

Beautifying The Farm Home

Nothing can appear more cheerless to parties coming into our state than seeing homes which have been won from the mighty forests, without a single shade tree. We feel that in our farmers meetings voices should be raised showing the importance of having the home partially surrounded by the native trees. In many instances people set out fruit trees, but these do not take the place of trees that are set out for comfort and beauty, and those that are a reminder of the wonderful forests that once occupied the place where the farm now stands. The hard maple when taken quite young will soon develop into an exceedingly fine tree. The wonderful linden tree which grows abundantly in our forests makes an exceedingly fine tree and is a rapid grower. This gives fine shade and is especially recommended. The Conservation Commission will send evergreens at a small cost to parties interested in setting them out. By studying bulletins from the United States Department of Agriculture and from the State College of Agriculture upon the subject of setting out trees, any one can in a short time learn to secure trees from the forests and set them out so that in a few years the farm home will be greatly beautified. I feel that the members of the Association should put forth their utmost endeavors to beautify and make more comfortable their surroundings, as nothing speaks better for our state than to be known as the "state of fine farm homes."

IMPROVING OUR SMALL GRAINS

B. D. Leith

When the grain breeding work at the Wisconsin Experiment Station started it had to overcome the handicap of the popular notion that "oats is oats and barley is barley", and that it was futile to waste any time in experimenting with grains.

However, Professor Moore had studied the work of the Minnesota and Iowa stations, and he saw the possibilities in this line of work. He was able to procure a small patch of ground which had grown sugar beets until it had become so disease infested that it was no longer useful for this purpose, so in 1898 trials were begun in a small way with oats, wheat, barley, speltz, millet, and some other crops.

To start this work Prof. Moore had to agree to stand all expenses, do the work, and be responsible for the outcome.

When it came harvest time three plots of oats of the Swedish select variety were outstanding. There were also marked differences, in the barley varieties. This convinced the station authorities that there was something to grain improvement, and a movement was started to establish a department to carry on this work.

The next year a small plot of land south of the Dean's house, and the following year a small patch on the Southwest corner of Camp Randall, were secured for this purpose. Favorable action by the Legislature was secured for carrying on the work further and from this beginning the department of Agronomy was started. At this time several introductions of barley were brought in for test. The actual breeding work was begun on small grains in 1900 at the Experiment Station farm at Madison. Since the establishment of the northern branch stations at Ashland, Marshfield and Spooner, breeding work has been carried on there to produce improved varieties especially adapted to the conditions of this section.

Barley Experimental Plots, 1907

The Centgener Breeding

The centgener plan of breeding was adopted for the small grains. By this method the finest seeds from a sample were planted in a mother bed, usually 1000 kernels, and each kernel spaced four inches apart from the others so that individuals could be studied and from these the better plants selected.

The finest appearing plants were selected to start new lines, 100 kernels from these were planted in blocks by the centgener machine which spaced the kernels four inches apart, and guard rows were planted around the outside. The best plants in each of these were again selected and put in the centgener block the following year.

After three years of such selection the blocks as a whole were studied, the real value determined, and those having the best plants and giving the highest production were saved and given a pedigree number. In this way our best known standard varieties of small grains have been developed such as Wisconsin Wonder (Pedigree 1), Swedish Select (Pedigree 5), State's Pride (Pedigree 7), oats and the pedigreed barleys, winter wheat and rye.

Head Row Breeding

In later years the head row method was introduced and proved to be a more rapid and less cumbersome method of breeding than the Centgener method. It does not admit of the intensive reselection which was obtained by the centgener method but more varieties can be studied and compared on the same area. By this method the best heads from the superior plots are planted in short rows, and the best progenies from these are selected and harvested the next year. They are then put in rod rows for further study for two or three years and then into test plots to be compared with other varieties. By this method the Progress spring wheat, the Ashkof winter wheat and Forward oats have been developed.

Hybridization

Straight selection by the centgener method of breeding introduced no new characters that the plants did not already possess. In order to bring together desirable characters from different lines of small grains, crossing was resorted to. A great deal of effort has been put on hybridizing and later purifying the new strains. The problem is not a simple one because the undesirable and desirable characters come out together in the hybrid, and sometimes even are linked together so selection is difficult or impossible. The plant breeder therefore has a large array of combinations of characters to select from. He must eliminate the strains showing the undesirable characters, and retain only the desirable ones. This is not an easy matter because often recombinations of characters will reappear two or three years after they seem to have been removed by selection. Then again, an undesirable character is sometimes found linked with a desirable one and they cannot be sorted out by selection. Hybrids have been made of all the superior stocks of the small grains grown at the station. In winter wheat we have aimed to produce a combination of hardiness, beardless head, stiff straw, and high yield. So far this combination is only partly successful as the new hybrid does not quite equal that of the Pedigree 2 parent in yield.

In 1910 work was started to produce a barley without beards, and to maintain the high yield and good quality of the original Oderbrucker. Hybrids have been made and the beardless barleys have been produced, but none has yet been found to compare with the pedigreed

Oderbrucker in yield or in size and plumpness of the kernel. Unless these advantages can be coupled with the beardless condition the hybrids have little economic value. In 1917 breeding was started to obtain a smooth awned barley, to get rid of the disagreeable barbs on the beards. Crosses were made between a small headed, smooth awned, black variety and pedigree Oderbrucker. At the present time we have a very promising smooth awned barley which has the high producing qualities of the pedigreed Oderbrucker.

Crossing Wheat Varieties

The White Cross is our best hybrid oat to date, which carries most of the desirable features. It has fairly large kernel, is early, is taller strawed than most early oats, and a good yielder. The straw is not as strong as the stiffer strawed parent, hence it is not suitable for rich soils, but it seems very well adapted to sandy soils. Here, one of the difficulties with the common early oats has been that the straw did not grow tall enough to make harvesting with the binder always successful. Further selections are being made to improve the strength of the straw.

Pedigreed Grains Given State Wide Tests

When each new variety had proved itself at the Experiment Station, further tests were desired to determine its usefulness for the varying conditions of other parts of the state. For this purpose small lots of seed were supplied to a large number of Experiment Association members, who observed the crop carefully and reported in detail on the results. These reports covered all the essential points, such as nature of soil, fall or spring plowed, how sown, amount of lodging, disease, when ripe, yield, comparison with any other variety grown, and other remarks. The recommendations of the Agronomy Department have been influenced considerably by the results of these tests.

The crops from these test lots of seed, in the case of successful varieties, gave the association members a good start in producing seed for sale, so the acreage of the improved grains increased rapidly. It is probable that at least 98 percent of the

barley grown in Wisconsin came originally from pedigreed Experiment Station seed, and other more recently disseminated grains in proportion.

The work of breeding, testing, and disseminating improved grains, even after twenty-five years of successful activity, has just begun. The science of breeding is delving ever deeper into the mysteries of inheritance and learning to control it to desired ends, so the end is not yet in sight to the possibilities of accomplishment along this line.

WISCONSIN PEDIGREE GRAINS

Barley

The Oderbrucker and Manchuria barleys came originally from Manchuria in western China. These barleys were carried into eastern Europe years ago and one strain, grown in Oderbruch Germany, was called Oderbrucker.

The Wisconsin Experiment Station took up the work of barley breeding in 1898 and obtained a large number of samples from the United States Department of Agriculture, Canada, and Europe. After several years of careful testing of varieties and the breeding of pure lines 16 pedigreed varieties were developed. Of these the pedigree Oderbrucker is of outstanding merit.

This pedigree barley was bred for high protein, stiff straw and plump, light colored kernels. It is well adapted to the north central temperate climate where rainfall is not deficient.

Oats

Wisconsin Wonder (Ped. 1). This variety of oats has a stiff straw and does not lodge as readily as most other varieties. The kernel is large, white and plump. The awn is medium heavy. Wisconsin Wonder is medium early in maturity.

The seed was secured by the Experiment Station in 1901 and improved by the centgener method of breeding. A seven-year test on the agronomy plots proved it to be a superior variety. It became one of the most prominent pedigreed strains, which is well adapted to all clay and loam soils. On rich soils it seldom lodges.

Pedigree 5 Swedish Select. This is a high yielding plump white oat, with a larger kernel than Pedigree 1. It makes a rank growth and is well adapted to lighter soils and soils low in fertility. It is grown extensively in the sandy region in the central part of the state but on rich clay and prairie soils it has a tendency to lodge.

This oat originated in Sweden, was imported into Russia and became one of the standard varieties of that country. Dr. M. A. Carleton of the United States Department of Agriculture secured a small quantity of these oats and sent a portion to the Wisconsin Experiment Station in 1898. It was planted in centgener plots and

only the best heads from the best plants were planted each year. On the experimental plots it yielded exceptionally well, weighing from 36 to 40 pounds per measured bushel.

State's Pride (Ped. 7). This oats, a pure line selection from the Kherson variety, has come into prominence during the last few years. The original stock was obtained from the Nebraska Experiment Station in 1906. The Nebraska station obtained its lot from the Kherson district in Russia, where the climate is dry and early hardy varieties of oats are grown.

This oats is yellow, small-kerneled, thin hulled and early. As a rule the straw is fine and does not grow as tall as the Pedigree No. 1, and it matures about a week earlier. Owing to its earliness it is

Head Row and Rod Row Tests Show Promising Strains

one of the best nurse crops. It often escapes rust, heat and lodging. If it does lodge it fills out the kernel well. For this reason it is recommended for farms having very rich soils. It has been the highest yielder at the Madison Station over a period of 8 years. On light sandy soils, occasionally, it does not grow straw long enough to be cut with the binder.

White Cross (Ped. 19). As small size and yellow color were objectionable features of Pedigree No. 7, an attempt has been made to produce a white oat of larger size than the Pedigree No. 7, and still maintain the earliness and high yield. Several crosses have been made with that end in view. The White Cross, Pedigree No.

Increase Field Of State's Pride Oats, And Variety Test Plots, Madison

19 is a pure line selection from a cross made in 1911 between the Big 4 (Pedigree 2) and Sixty Day. The kernel is white, larger than the Pedigree No. 7, the straw is taller, and it is a high yielder. It has a tendency to lodge on rich soils, but is well adapted to sandy soils.

Forward (Ped. 1241). This is a selection from Silver Mine made at the Superior Demonstration Station in 1911, which was continued at the Ashland Branch Station in 1912. Forward has proved to be the best variety of oats tested at that Station, having outyielded its nearest competitors by five bushels as a ten year average. It is a stiff strawed mid-season oat of open panicle type. Kernels are white and medium plump. Awns are not prominent as a rule.

Pedigree Winter Rye

This is a selection from the Schlansted variety which grows from 5 to 6 feet tall with heads averaging 4 to 6 inches in length. It has a stiff straw and is noted for its high yields, hardiness, and quality of grain.

A small amount of seed was received by the Wisconsin Experiment Station in 1900 from the United States Department of Agriculture. It was carefully bred for several years and compares favorably with other varieties. Several re-selections have been made since its introduction.

It is well adapted to the lighter soils and to soils comparatively low in fertility. Excellent results have been secured on rich sandy soils. This rye responds readily to good soil treatment and will give better returns on the clay loam soils than it will on the light sandy soils.

Wheat

Pedigree 2 Turkey Red. This is bearded and has white chaff which firmly holds the dark amber kernels. The plants grow from 3 to 4½ feet tall. The heads are nearly square at the center and somewhat tapering toward the tip.

The Turkey Red was introduced in the United States from Russia in the early 70's. It was tested at the Wisconsin Experiment Station with many other varieties for hardiness and yield and finally used as the foundation stock upon which to breed the Wisconsin Pedigree No. 2 winter wheat, which is outstanding in hardiness and high yield.

It requires a well-drained and rather heavy loam or clay soil. The counties especially adapted to this crop are those adjoining Lake Michigan, Lake Winnebago, Green Bay and the lower Fox River. The region comprising Polk, St. Croix and Barron counties, as well as most of the counties in the southern part of the state are also particularly adapted to it.

Ashkof (Ped. 11825). This is a selection from Malakof winter wheat made in 1911 at the Ashland Station. This strain showed a greater resistance to winter killing than the ordinary hard wheats, and has ranked very high in this respect in cooperative tests with the United States Department of Agriculture. Ashkof is bearded and has red glumes. The kernels are of the hard red type, and rank high in baking qualities.

Marquis. This variety of spring wheat is awnless and has a smooth chaff and hard chunky kernel with a wide crease. Two or three short awns are usually found at the tip of the heads. In spite of the short chaff or glumes, the seed is held firmly and does not shatter. The milling quality is superior to any other variety grown in the state.

Marquis wheat is a selection from a hybrid produced by crossing a hard red wheat from India and the well-known Red Fife. This cross was made by the Canadian Experiment Station at Ottawa about 1892 and the Wisconsin Experiment Station received a small amount of this wheat directly from them. It was planted in centgener breeding plots and selections were made for several years. Marquis is now well acclimated to this state and grows vigorously on clay and loam soils, is one of the best milling wheats and a high yielder. It matures early and escapes the summer droughts, but is quite subject to rust.

Progress (Ped. M1611) is a selection from the Early Java variety, made at the Marshfield Station in 1915. The specific object in view was to get a wheat that would have a strong resistance to rust, and this strain is outstanding in this respect. It is a bearded, white glumed, hard red spring wheat, and is one of the highest yielders.

BREEDING CORN FOR WISCONSIN

R. A. Moore

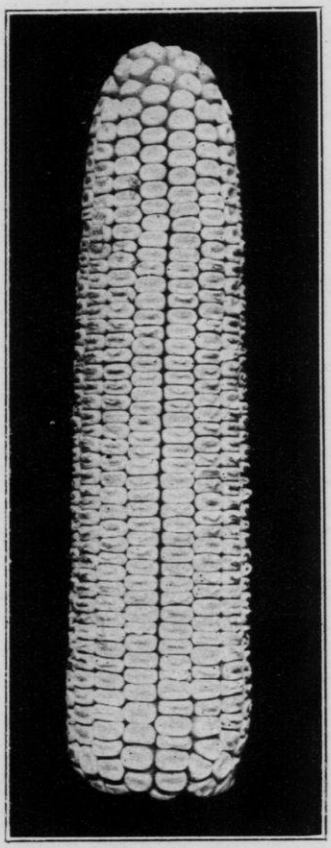
Serious attention was first given to improving Wisconsin's corn crop about 1900. After a general survey of the state, it was found that we were attempting to grow nearly a hundred varieties of scrub corn. Often seed would be purchased by farmers who would find that there were eight or ten different varieties of corn in the seed they received. Some of this would be early, some medium and some late, so consequently there was no uniformity to the corn in Wisconsin and many of our farmers felt discouraged about growing corn to any great extent, so the corn crop was quite largely held to the southern part of the state

I well remember the fact that at one time my father in Kewaunee County grew half of the corn crop of the county, and he grew less than ten acres, so one can readily see that in early days very little attention was paid to corn, especially in more newly developed

counties of the state. No one thought of growing anything except the Flints in these northern counties, and it seemed to be a settled fact that in Wisconsin we could not grow any other variety except Flints in the northern half of the state. However, soon after work was started at the Station Farm, it was found that there was no plant that would respond to breeding more rapidly than the corn plant.

At first an effort was made to acclimate the large southern varieties such as Leaming and Reed's Yellow Dent. This did not prove satisfactory, so a careful study was made of various corns grown in this and neighboring northern states so as to procure good foundation stock upon which to breed. Among this stock might be named Clark's Yellow Dent, Minnesota No. 13, Silver King, North Star, Murdock, and several other varieties. These varieties of corn were grown on the Station Farm and farms of members of the Wisconsin Experiment Association so as to keep them isolated as far as possible from other varieties. The selection method was used quite extensively. The ear to the row remnant, as well as the straight ear to the row methods were also used on most of these varieties.

Selecting Seed Ears In The Field



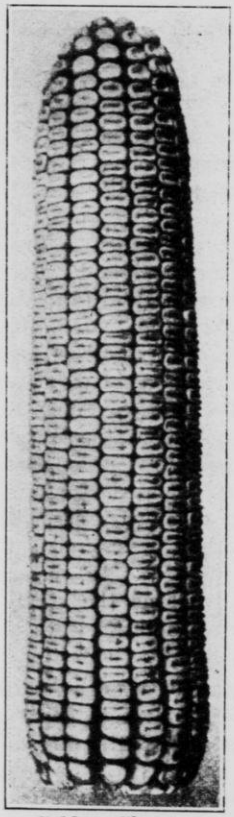
Silver King

Special attention was paid to the selection of the mother plants as it was found early in the breeding work that ears of corn coming from good mother plants in the various fields gave better and more

uniform yields than those that came from promiscuous plants that did not have the desired characteristics. In the ear to the row work, it was found that where several rows were put in from the same number of ears that there would be two or three or perhaps a few more rows that would be far superior to the others.

It was found to be particularly true that where ears of corn showed ability to breed true to type and produce plants that were quite similar to that from which the ears were taken, these particular rows were the ones to save to go into the plots for further breeding. This work was followed through a series of years until often the ear to the row work was performed on the second and third generations before it was tested out in various portions of the state.

In the summer of 1904 extensive tests were carried on by members of the Experimental Association to determine the usefulness of several of the improved varieties for various parts of the state. Clark's Yellow Dent (Wis. No. 1) which was a selection from a variety which had been grown for many years by Mr. Ben Clark near Whitewater, and Silver King (Wis. No. 7), a white corn originally from northern Iowa, were reported on very favorably by many members.



Golden Glow

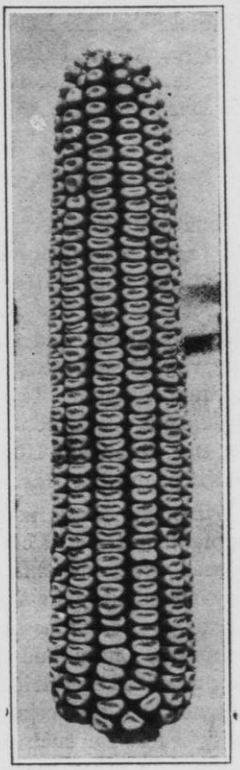
The first list of Experiment Association seed growers was included in the annual report published in the spring of 1905, and among the corn varieties listed were Clark's (Wis. No. 1), Silver King (Wis., No. 7), and Tooles North Star. The latter variety was obtained from Mr. W. A. Toole, Baraboo, who had grown and selected it for many years on his farm. The Experiment Station selection was called Wis. No. 11. The cooperative tests were continued in succeeding years with these and newer varieties and the seed supplied for this purpose by the Experiment Station was the foundation stock for seed crops of the association numbers.

The 1906 seed list included growers of Wisconsin No. 8 corn, later named Early Yellow Dent, which was a selection in 1904 from Minnesota No. 13. The following year Golden Glow (Wis. No. 12) made its appearance in the seed list.

One of our early tests in which 1550 members of the Association took part found that the Golden Glow corn gave a general yield of 69 bushels per acre—something like 20 bushels above the best varieties compared

against it and better than 25 bushels per acre over and above the average yields of the state.

The Golden Glow corn was different than the other varieties, being a hybridized corn. It was produced in 1904 by crossing the Wisconsin No. 8 on the Toole's North Star, to combine the yielding power of the North Star with the earliness of the No. 8. After a year of selection to fix the type tests were made in different parts of the state, and all tests showed that this particular cross resulted in a much better variety of corn than any of the many other crosses made at the same time. This corn, which was named Golden Glow, was then given further breeding by the ear to the row and row remnant methods for several years before the general test previously referred to was made.



Wis: No. 25

It was through such methods as these that the Clark's Yellow Dent, Wisconsin No. 1; Silver King, Wisconsin No. 7; Golden Glow, Wisconsin No. 12; Early Yellow Dent, Wisconsin No. 8; and later Murdock, Wisconsin No. 13; Smut Nose Flint, Wisconsin No. 15, and Northern Yellow Dent, Wisconsin No. 25, were bred, and put into service on thousands of Wisconsin farms.

The Golden Glow, (Wis. No. 12) early took the lead in popularity and has held it through long successive years. It is estimated that nearly half of all the corn now grown in Wisconsin is of this variety. The next most popular corn is the Silver King, (Wis. No. 7). This corn is grown extensively as a silage and seed producing crop. It is noted for its great leafiness for which it was bred and the wonderful amount of succulent silage that can be secured per acre. It is the most popular silage corn grown in the state and it is estimated that at least ten percent of all the corn in the state is of this variety. The other forty percent of the corn is usually derived from the other standard varieties named and some scrub corn which is brought in and sold to the farmers because it is cheap.

Wisconsin has made an enviable record as far as corn is concerned. She rapidly took her place among the corn growing states and through a long series of years has held her own with the best states in the corn belt proper as shown by the following comparative yields:

State	1919	1920	1921	1922	Gen. Avg. 4 Yrs.
Missouri	27.0	32.0	30.0	28.5	29.3
Illinois	36.0	24.6	34.0	35.5	35.0
Indiana	37.0	40.5	36.0	37.0	37.6
Michigan	37.0	39.0	39.0	36.3	37.6
Minesota	40.0	37.5	41.0	33.0	37.9
Ohio	43.0	43.4	41.0	39.0	41.6
Iowa	41.6	46.0	43.0	45.0	43.9
Wisconsin	45.0	43.2	46.2	44.5	44.7

Fire Dried Seed Corn

Immediately after the standard varieties of corn had been bred and tested out under various soil and climatic conditions in the state, Wisconsin jumped into prominence as a seed corn producing state. A proclamation was issued to the members of the Experiment Association that no seed corn should be shipped by any member of the Experiment Association unless it was fire dried to insure rapid and thorough curing. This lead to severe criticism by many corn men throughout the United States and many came forth bitterly denouncing the practice. However, the Wisconsin Experiment Association held firm until its last critic has ceased to croak.

Wisconsin Experiment Association members are now growing in the neighborhood of between two and three hundred thousand bushels of seed corn and this is sold to farmers in practically every corn growing country in the world. Shipments are being made to such far away countries as the Transvaal, Egypt, Russia, Germany, Hungaria, China and Japan. These countries have found out that the pure bred fire dried seed corn of Wisconsin will give them better returns than seed corn that has been merely air dried, and they send many orders for such seed. The demand for Wisconsin corn has been so great in other states that the farmers quite often order by telegram to hurry up the shipment. The growing and selling of the pure bred seeds, and especially corn, by members of the Experiment Association has had a lasting effect upon its membership. No one line of agricultural effort has put more pleasure into farming than the pure bred seed grain business. In many instances young men have secured sufficient funds in a single season to purchase a farm and get in the business of farming for themselves.

The Department of Agronomy, which is the field crop breeding department of the university, is now working in cooperation with the Plant Pathology Department to produce a disease free corn and one that is genetically pure. While we do not know what the outcome will be at the present time, yet we have every reason to believe that a corn can be bred that will surpass even our fondest expectations. If we succeed in this latest experimental work, the product will be

tested out thoroughly by the membership of the Wisconsin Experiment Association as we feel that before we make any claims for varieties of corn they should have the general stamp of approval but upon them by the wide test which is possible only through the large membership of the Wisconsin Experiment Association.

Description of Wisconsin Corn Varieties

Silver King (Wis. No. 7). This is the only standard white variety grown in the state. It is especially adapted to what is termed the southern corn-growing zone of Wisconsin and also is a leading variety throughout northern Iowa. It is considered one of the very best and highest yielding silage varieties. The ears are of average length, ranging from 7 to 9 inches, and have a glistening white cob. The color of the kernels is a creamy white, with a fairly rough indentation. The number of rows usually varies between sixteen and twenty.

Where Pure Bred Corn Varieties Are Best Adapted

Golden Glow (Wis. No. 12). This is undoubtedly the most popular yellow variety grown in the state. It is especially valuable for the southern and central zones of the state on account of its early maturity, hence producing hard, ripe corn. It is slightly smaller than Silver King and not quite as rough. The ears are a deep, soft, golden yellow with a medium cherry red cob, having from 14 to 18 rows.

Cold-Resistant Golden Glow. Standard Golden Glow has been carried into the northern part of the state through an early maturing strain known as Cold-Resistant Golden Glow. It has all of the good qualities of the parent stock and makes a very valuable addition to adapted varieties for the North.

Early Yellow Dent (Wis. No. 8). This is a standard early maturing yellow variety used throughout the North. The ears are smaller than Golden Glow, somewhat lighter yellow in color, smoother in indentation and have fewer rows of kernels. It is not as good a yielder as the larger varieties, but is considered the standard yellow variety for the northern zone of the state, especially for the southern part of this section.

Northern Yellow Dent (Wis. No. 25). Like Golden Glow, this also is a hybrid variety. Two early maturing varieties were used in

producing it. It was bred at the Ashland Brand Station especially for the North. The ears are somewhat smaller and the kernels more flinty than Wis. No. 8, and are inclined to show greater variations in color.

Murdock (Wis. No. 13). This variety stands next to Golden Glow in popularity among the yellow varieties for the southern sections of the state. It ranks with Silver King in time of maturity. The

Sweepstakes Fifty Ears Golden Glow Shown By Fred Black Milway

ears are about the same size as those of Silver King, having the same number of rows and the same degree of roughness. The kernels are a rich orange color and the cob is a dark cherry red.

Clark's Yellow Dent (Wis. No. 1). This is also a yellow variety grown to some extent in the southern section of the state. It is not as popular as either Golden Glow or Murdock. It resembles Murdock in general appearance, excepting that it has a narrower and rougher kernel.

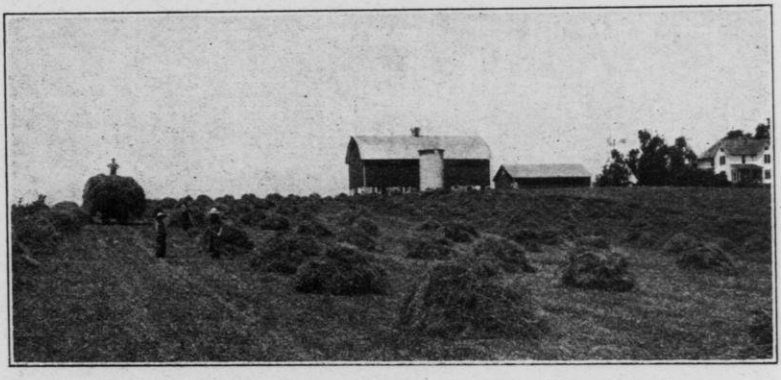
Smut Nose Flint (Wis. No. 15). Of the numerous varieties of flint corn this is considered the best one for Wisconsin. The body color of the ear is yellow with a smoky appearance extending about one-third down the ear from the tip, hence the name given to this variety. It is eight rowed and the ears usually run from eight to eleven inches in length. For a flint variety it is a high yielder both of corn and forage.

SIXTEEN YEARS OF ALFALFA PROGRESS

L. F. Graber

Secretary of the Alfalfa Order

The Alfalfa Order was organized in September, 1911, as a branch of the Wisconsin Experiment Association for the purpose of extending, as rapidly as feasible, the alfalfa acreage of the entire state. At first, progress was slow. Alfalfa was new. The amount of information available as to the best methods and means of growing alfalfa was very meagre. We knew about the value of lime, but not enough to appreciate its full importance in making alfalfa succeed. Inoculation was accomplished by the transference of soil from old alfalfa fields to the new fields that were being started— a slow and rather laborious process. Lime itself was not readily available,



Alfalfa Helps Make Fine Dairy Herds And Prosperous Farms

especially to those farmers who lived several miles from railroad stations and who were required to haul lime long distances.

The proper manner in which to cut alfalfa, in order to make it last, was not fully known. The ability of alfalfa to grow on sandy soils was in doubt. The sources of seed supply were not well established and it was difficult to obtain kinds of alfalfa seed that were hardy and would withstand Wisconsin conditions. The fact that new seedings of alfalfa are generally much hardier than old stands was not known. The value, under some circumstances, of mixing about two pounds of timothy seed an acre with alfalfa was not appreciated. The importance of an early removed nurse crop—one that would not draw too heavily on the supply of moisture in the soil—was but little appreciated in the early days of alfalfa in Wisconsin.

Such was the state of our information sixteen years ago when the Alfalfa Order was first organized. Not only did we have a lack of

information, but the sentiment prevailed throughout the state that alfalfa was not adapted to Wisconsin conditions. "Clover was good enough." "If the same attention was given to clover as was required by alfalfa, clover would be the superior hay crop." In general, the public sentiment was against, rather than for, alfalfa. Farmers had little confidence in it because the pioneer efforts of a few growers sometimes met with failure. Alfalfa failures years ago stood out "like sore thumbs" in the community. Even though clover may have failed, time after time, an occasional failure of alfalfa attracted the widest attention. Perhaps clover failures were so common, that they were, in a measure, expected from time to time. Alfalfa, being a new crop, naturally was subjected to ruthless criticism wherever failure occurred.

Alfalfa Plots At The Experiment Station Where Best Varieties Of Seed Were Determined

Alfalfa Order Members Conduct Cooperative Tests

There has been a mighty change in the sentiment towards alfalfa throughout Wisconsin in the last sixteen years. To begin with, the pioneer efforts of Governor Hoard, Professor R. A. Moore, and others, did much to give alfalfa its start in the state. To the members of the Alfalfa Order who co-operated in conducting over three thousand experimental tests, unlimited credit should be given, for they not only aided in obtaining the vast amount of information which we now have available on alfalfa, but they were "alfalfa leaders" in communities of every county in the State of Wisconsin.

The co-operative experimental work of the members of the Alfalfa

Order effectually supplemented the results of experiments conducted on the University Farm so that our present fund of information is amply supported by evidence both of practical and scientific nature. Such information has made alfalfa the safest, surest, and most dependable hay crop for Wisconsin conditions. Alfalfa has greatly reduced the hay crop hazards of dry weather and of winter injury.

It is interesting to note that between the years of 1910 and 1917, the alfalfa acreage in Wisconsin made a four-fold increase from 18,000 acres to 72,000 acres. From 1917 to 1925, it increased up to 312,000 acres, representing another four-fold increase in a similar period of time. In 1926 there were 326,000 acres of alfalfa cut for hay in Wisconsin.

Reliable Seed Secured For Wisconsin Growers

Winterkilling has been one of the worst factors in curtailing the expansion of Wisconsin's much needed alfalfa acreage. The winterkilling problem is being solved, however, by the early activities of the Alfalfa Order in locating the supplies of hardy seed and in fostering strict rules of registration and certification of Grimm and other hardy varieties of alfalfa in the states and provinces where such seed is produced in abundance. In this work, the Alfalfa Order has had wonderful co-operation from the leaders in the development of the certified seed program of western states, and provinces of Canada. This sort of co-operation has made possible the production of two or three million pounds of Grimm alfalfa seed that comes from officially recognized fields and which is put into bags that are sealed and tagged by officials of the states or provinces where the seed was grown. In 1926 the Wisconsin Department of Agriculture took a very progressive step when they established a ruling which permits (except in less than thirty pound packages) the sale of only officially certified Grimm alfalfa seed in Wisconsin.

SOYBEANS A VALUABLE CROP FOR WISCONSIN FARMS

G. M. Briggs

The need for a green manure crop to better keep up our soil fertility, and for a high protein feed for Wisconsin dairy cattle early prompted the search for crops which could be grown successfully on our farms to supply these needs. The introduction into this country of the soybean from China and its rapid spread and wide use in the southern states, led to experiments to determine its value for Wisconsin.

Soybeans were first grown at the Experiment Station in 1899, and in 1900 Black, Yellow, and Green seeded varieties were tested out

for adaptability to our state. The seed came from southern states and difficulty was encountered because of lateness in maturing. In 1901 several plots were planted with northern grown seed from Michigan, and several former students of the Short Course cooperated with trials on their farms to learn the possibilities of the crop for pasturing or soiling on poor land.

Experiments were begun in 1902 in growing and ensiling corn and soybeans together to raise the protein content of the silage. Hogs were pastured on a plot of mature soybeans and made good gains. Twenty-six Experiment Association members in 22 counties ran tests for forage and seed production, and for mixed silage. Breeding work was begun at this time to increase yields of both seed and forage.

Up to this time no nodules had been found on the soybeans, and as it was known that the nitrogen gathering power of the legumes depended on the presence of nodule forming bacteria, an inoculation experiment was conducted. A small quantity of soybean nodules obtained from Michigan was mixed thoroughly with wet soil, which was scattered over and worked into the surface soil of a plot which had never grown soybeans. This, and an adjoining plot used as a check, were planted, with the result that the plants on the inoculated plot bore an abundance of nodules while the check plot plants on uninoculated soil had none.

Including the season of 1903 twenty-nine varieties had been on trial at the Experiment Station and on the farms of Experiment Association members. That season 10 tons of soybeans were ensiled

Cutting Soybean Hay On The Experiment Station Farm, Madison

alone for a dairy feed test in cooperation with the animal husbandry department. This trial turned out unfavorably, although soybeans mixed with corn had made excellent silage.

In 1904 soil inoculation was advocated, and soil from the Experiment Station plots furnished to Association members who were growing this crop. This and the following two seasons the comparative value of soil and artificial culture inoculation was tested by the Experiment Station. The cultures, which were supplied by the U. S. Department of Agriculture, proved unsuccessful, while soil inoculation gave good results. Since that time methods of making cultures have been perfected so now they are reliable and successful.

For several years tests were carried on by many Experiment Association members in different parts of the state in conjunction with tests at the Experiment Station, on cultural methods and uses.

Soybeans Sown Broadcast For Hay

The 1905 Association list of seed growers gave the names of three members having seed for sale, and this number increased rapidly until in 1909 there were 160. The varieties which up to that time had proved most popular with these growers and which were offered for sale in the seed lists were Ito San, Early Black, Black, Medium Early Green, Yellow, and Brown.

In 1906 Soybeans were tried at the Iron River Substation to see if they could be acclimated and used profitably in the northern part of the state. In succeeding years this work was expanded to include all the northern branch stations. Breeding work with the varieties which proved promising has resulted in strains which are successful in the North, so the advantages of the Soybean crop are now available to farmers in all parts of this state.

Mottled Seed Problem Solved

More recently the problem of the mottled coloring of the seed of some varieties of soybeans under certain conditions has been solved by research study. Formerly it was thought that mottling always

indicated accidental crossing and mixing of varieties, so mottled seed was looked upon as impure and not eligible for certification.

Experimental work showed that this condition is more of an environment problem, may be produced in pure varieties by certain soil conditions, and that the same seed gave a mottled crop in some soils and solid colored seed in others. This discovery removes an obstacle which caused considerable trouble to growers and buyers of soybean seed. Testing and breeding work is still being carried on to improve cultural practices, find better varieties and combinations for seed, hay, silage and other uses, and to improve the varieties best adapted for these special uses.

Wisconsin has taken an important part in organizing and supporting the National Soybean Association. Its purpose is to expand the use of this crop, and to agree on varieties and practices. In 1923 Wisconsin entertained visitors from many states at the national soybean summer field meeting held at University Farm, Madison.

During the many years that investigational work at the Experiment Station and on Experiment Association farms has been carried on we have collected data making it possible to give accurate information on this crop for all sections of the state as to the following points:

Soybeans Grown In Rows For Seed

Best seed to use. These many tests in all parts of this state with varieties from different states, and from different sources and for different purposes have made it possible to eliminate scores of varieties as being unfit for Wisconsin conditions, making it easier to standardize varieties the state and county over. Many times in these

tests we would find that soybeans, even though having different names, were the same variety.

It was demonstrated that soybeans of certain varieties, regardless of where grown, are adaptable to Wisconsin. So when seed is produced in abundance in the southern part of our own state and in states farther south at less expense than our farmers can produce it farther north, seed can be obtained from these regions. There are some varieties, however, as the Wisconsin Black, that are grown to advantage only in this north region, and a few farmers reap a fair reward yearly for producing a limited amount of good seed.

Best cultural practices. Cultural practices have been improved. Where we used to think that this crop required rowing and cultivating, now thousands of farmers are planting it in solid drill, using a harrow or weeder, caring for large fields at small expense. As to handling the crop for hay, many demonstrations of best methods of curing hay have been held. Many farmers who at first thought that soybean hay could not be cured have found that if it is put in small cocks soon after cutting and left alone five to seven or more days before handling at all, then turned a little while before hauling in, soybean hay can be made as easily and cheaply as though cut earlier in the summer. Even many farmers have found that the use of the binder in cutting this crop for hay, as well as for seed, gives splendid satisfaction.

Soybean Demonstrations Are Convincing

Best uses of the crop. Probably its greatest value to Wisconsin lies in its uses as a hay crop and as a soil improver. In olden days when clovers and alfalfa failed, timothy and millet and corn fodders helped fill in the gap, while today as a shock absorber the soybean crop takes the jar out of farming, offering a hay high in yield, in minerals, and protein, making it unnecessary to buy high protein supplements. Another use to which the crop is being put by thousands of farmers is planting with corn for silage or for hogging and sheeping off. The majority of experiments indicate that total tonnage is not increased but that the total yield of protein is materially increased. Where we

used to recommend planting the corn and soybeans separate and then ensiling, they are now planted together. So few farmers follow the former practice that it is hardly worth mentioning, even though this method is more certain of giving the desired results.

Within this past twenty-five years it has been quite definitely demonstrated that Wisconsin farmers, if they will, can make themselves about self maintaining so far as meeting their dairy feed needs is concerned. Raising mature seed for grinding for cows and poultry, taking the place of oil meal and tankage, and planting corn and soybeans together for hogging and sheeping off, provide excellent growing and fattening rations without the addition of any purchased mill feeds.

During the last eight years a special campaign has been waged to familiarize Wisconsin farmers with the varieties, cultural practices and many uses of soybeans, and to increase the acreage of this valuable crop. It has been my job to familiarize a great progressive group of farmers like we have in Wisconsin with a grand crop like soybeans, and it has been a pleasant task. It has brought new hope in farming by taking some of the uncertainties out of the game. To learn the lessons from all the Station experiments, and the trials and experiences of farmers, and then pass these on to farmers who take them as appreciatingly as Wisconsin farmers do, is indeed gratifying.

USES OF SOYBEANS RECOMMENDED FOR WISCONSIN

	Hay	Seed	Silage	Hogging and Sheeping off
Northern Wisconsin Heavy soils	1. Wis. Black	1. Wis. Black 2. Mandarin	1. Wis. Black 2. Ito San 3. Blk.Eyebr'w 4. Manchu	1. Wis. Black 2. Mandarin
Medium to light soils	1. Blk. Eyebr'w 2. Wis. Blk. 3. Manchu 4. Ito San	1. Wis. Black 2. Blk. Eyebr'w 3. Ito San	1. Blk. Eyebr'w 2. Manchu 3. Ito San	1. Ito San 2. Mandarin
Central Wisconsin Heavy soils	1. Wis. Black	1. Wis. Black 2. Blk. Eyebr'w, Ito San, Manchu	1. Manchu 2. Blk. Eyebr'w 3. Ito San 4. Wis. Black	1. Ito San 2. Manchu 3. Mandarin
Medium to light soils	1. Manchu 2. Ito San 3. Blk. Eyebr'w	1. Ito San, Blk. Eyebr'w, Manchu 2. Wis. Black	1 Manchu 2. Blk. Eyebr'w 3. Ito San 4. Midwest	1. Ito San 2. Manchu 3. Mandarin
Southern Wisconsin Heavy soils	1. Manchu 2. Ito San	1. Manchu, Ito San, Blk. Eyebr'w 2. Wis. Black	1. Manchu 2. Blk. Eyebr'w 3. Ito San	1. Ito San 2. Manchu
Medium to light soils	1. Midwest 2. Manchu	1. Manchu 2. Ito San 3. Blk. Eyebr'w	1. Midwest 2. Manchu 3. Blk. Eyebr'w 4. Ito San	1. Manchu 2. Ito San

Best Varieties for Wisconsin

Wisconsin Early Black. Matures in 90 to 110 days. Plants stout and erect. Stems medium fine. Leaves persist well. Seeds pure black, 3,000 to the pound.

Ito San. Matures in 100 to 117 days. Plant stout. Stems medium fine. Seeds yellow with small dark spot at end of seed scar, 2,300 to the pound.

Manchu. Matures in 100 to 120 days. Plant stout with heavy lateral branches. Seeds yellow with dark seed scar, 2,300 to the pound.

Black Eyebrow. Matures in 100 to 120 days. Plant stout and erect, less widely branching than Ito San or Manchu. Seeds black with a light brown saddle.

Midwest. (previously known as Mongol, Medium Yellow, Roosevelt, and Hollybrook). Does not mature in Wisconsin except in fer-

Meeting Of National Soybean Association At Madison, September, 1923

tile loam soil in southern portion of the state or in exceptional years. Matures in 120 to 135 days. Plants stout, erect, and bushy. Seeds yellow, 4,000 to the pound.

Improved Mandarin. A selection from the common Mandarin that looks promising as a medium early bean for seed, hay, or for hogging and sheeping off. This selection was made about 10 years ago at one of the northern branch stations and is holding up well for northern Wisconsin in comparison with the Early Black. Matures in 95 to 105 days. Plant stout, leafy and medium fine stemmed. Seeds yellow, about size of Manchu.

DEVELOPING WISCONSIN'S HEMP INDUSTRY

A. H. Wright

Among the new crops brought into Wisconsin to provide an additional source of revenue for our farms is the fiber crop, hemp. Practically unknown to Wisconsin farmers fifteen years ago, hemp gradually established itself as an important cash crop until in 1922 Wisconsin became the leading hemp fiber producing state in the Union.

Hemp is the oldest cultivated fiber plant in the world. It was grown in China as early as 2800 B. C., and in more recent times it spread to Europe, Africa, and South America. It was introduced into North America soon after the colonial settlements were established, and has been grown at different times in several scattering states. The present producing areas are largely in Wisconsin, Illinois and Kentucky.

Hemp is an annual, woody, branching plant, growing from 6 to 9 feet tall on the average. The fiber is obtained from the inner bark of the stem. In early days the fiber was used for home spun clothing and other domestic purposes. Now it is used largely for the manufacture of commercial twines, and to some extent for rope and thread.

Hemp Experiments Begun

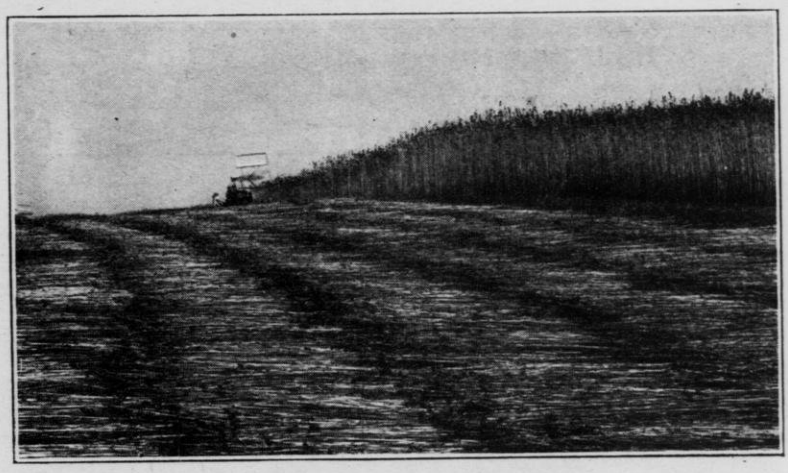
In 1908 six acres of hemp were grown at Mendota and three acres at Waupun by the Agronomy Department in cooperation with the United States Department of Agriculture. The results were so promising that the investigational work was rapidly increased. At Waupun in 1911 hemp was grown on land badly infested with quack grass, with the result that a good yield of fiber was obtained and the quack grass was practically destroyed. This and subsequent tests have established hemp as our best smother crop for weeds.

Hemp Fiber And Some Of Its Products

In 1912, 125 acres were grown near Waupun. From this center, the hemp area expanded over the rich prairie soils of Fond du Lac, Green Lake, and Dodge Counties, where during recent years 70% of the U. S. acreage has been produced.

With the expansion of this new industry in Wisconsin sev-

eral problems were encountered. There were no satisfactory machines for harvesting, spreading, binding or breaking, as these processes had always been performed by hand. As it was realized from the beginning that no permanent progress could be made so long as it was necessary to depend on hand labor, immediate attention was given to solving the problem of power machinery.



Hemp Field At Harvest Time

Community interest is essential to successful hemp production. One farmer, without the cooperation of his neighbors, will fail. Machinery for handling the crop is expensive, and without machinery little or nothing can be accomplished. To meet this situation the industry was organized into hemp centers, consisting of a hemp mill with enough hemp acreage surrounding to give sufficient volume of production.

The Wisconsin Hemp Order

To promote the general welfare of the hemp industry of the state, the Wisconsin Hemp Order was organized in 1917. This is a public association for advancing the industry, and its membership is composed largely of those in the hemp milling business.

The work done by the organization varies from year to year to meet the special needs of the time. At first much attention was given to the growing and field management of the crop. As farm problems were worked out more attention was given to milling and the uses of the fiber.

During the last few years marketing has been given major consideration. A monthly market report is regularly issued which gives detailed information on market prices of hemp and other prin-

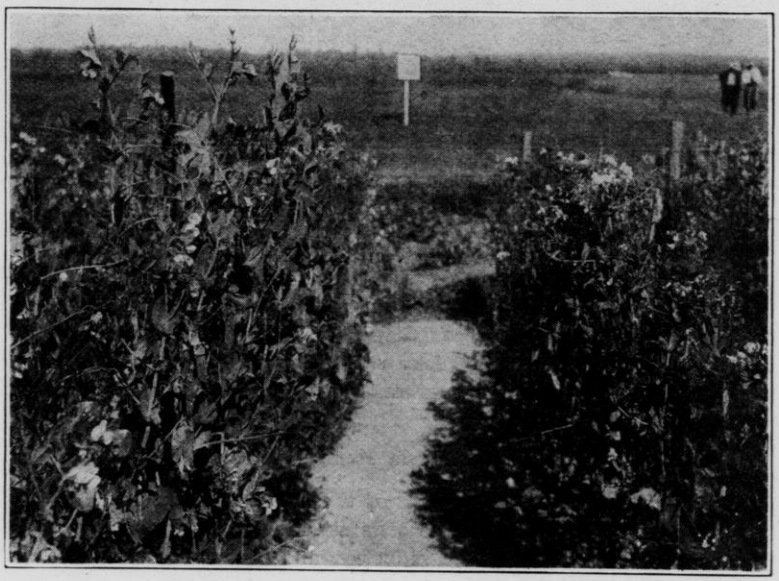
cipal fibers, supplies, market trends, crop acreage and condition. In addition, special reports are issued at frequent intervals.

All of these activities have contributed to the welfare of both the growers and the mills. The association has functioned actively and has had a loyal membership since its organization. Its work is greatly appreciated by all those interested in the hemp industry.

FIELD PEA IMPROVEMENT SAVED A VALUABLE CASH CROP

R. A. Moore

Over a quarter of a century ago Wisconsin became famous for its wonderful soup peas. These peas were largely what were known as the Scotch, the Green and the Canadian Yellow. These peas were grown extensively in all the counties bordering on the lakeshore and



Field Peas On Trial In The Breeding Plots

to some extent in the counties that were farther in the interior of the state. Wisconsin became famous far and near for these wonderful strains of peas, which commanded a much higher rate on the market than those grown in other states. However, there came a time, through the introduction of many varieties, good, bad and indifferent, that our peas got badly mixed and no longer had that uniform time of cooking nor the flavor that they had in previous years.

The fame of Wisconsin peas soon became a thing of the past and our prestige which existed everywhere throughout the pea purchasing market waned. No longer could people get those uniform stocks which they had formerly received from our state, but instead got a mixture of four or five different strains which were not uniform in character.

Some years ago Wisconsin became engaged in trying to get back this prestige which earlier we lost. In 1908 preliminary tests were made on the branch station farm near Ashland. The results were so satisfactory that work with peas has been strongly emphasized at the station and at the Superior demonstration station, and this region has become a pea producing center. Here the conditions are typical of the northern and eastern parts of the state which comprise the main dry pea producing areas. The comparatively cool summer climate of this region, the prevailing clay soil well supplied with lime, and freedom from insect enemies and plant diseases are the chief factors favoring production in these regions. Several hundred varieties and strains from various sources were tested at the branch stations, and from the best of these pedigreed strains were bred.

We now have the pedigree Scotch, pedigree Green, and the pedigree Marrowfat, each of which was bred up from a single pea. Each of these varieties carries the same chemical constituents and has practically the same characteristic flavor throughout. We feel that we ought to have at least a hundred members of the Experiment Association making it a business to grow these peas. The demand for good seed peas comes not only from farmers in our own state, but also from other states. We ought to be ready to meet this demand for seed and I am sorry to say that only about a dozen members can help supply the call which is now coming in.

Pedigree Field Pea Varieties

Pedigree Scotch. These are one of the most highly prized soup or field varieties. They are bright green with a whitish circle and are well adapted to heavy soils. Because the Pedigree Scotch peas require a long season to mature, they should be sown early. As a rule they command the highest market price.

Pedigree Green. In general these peas are bluish green although they vary somewhat in color. This variety is of wider adaption than the Scotch, is somewhat earlier in maturity and has greater resistance to heat and drought. Some strains of the Pedigree Green field peas are especially suited to sandy soils. It is an excellent soup variety and usually sells for a little less than Scotch.

Pedigree Marrowfat. This is a large white or yellow seeded variety which is a heavier yielder under good cultural conditions than the preceding varieties, but somewhat more exacting in its needs. It is

one of the highest priced peas and often exceeds the Scotch and the Green in this respect. Pedigree Marrowfat grows to best advantage on heavy soil; it also requires more seed to the acre than the small sized pea.

COOPERATIVE EXPERIMENTS AN AID IN CROP IMPROVEMENT

E. D. Holden

As its name indicates, one of the primary objects for which the Experiment Association was formed was to carry on experiments and investigations. It was felt that the work of the Experiment Station with field crops could be made more conclusive by being checked up with the experiences of many observing growers under the diverse soil and climatic conditions of various sections of the state.

The season of 1902 about 200 members cooperated in experiments in growing alfalfa, rape, Swedish Select (Wis. No. 4) oats, soybeans, potatoes, and treating oat seed for smut and potato seed for scab. On the experiences in growing these various crops reports were sent in covering all points on which information might be valuable. For instance with alfalfa data were returned on kind of soil, when seeded, with or without nurse crop, variety of seed, rate of seeding, germination period, stand, time of cutting, and yield.

When the reports were compiled comparisons showed the relative success of the various practices, and useful information was thus obtained. At the annual meeting of the Association reports and discussions by the experimenters made vivid the lessons learned from these tests. Cooperative tests with alfalfa were continued by Experiment Association members until 1911, when the Alfalfa Order was formed which took charge of this work.

The oat smut survey conducted in 1902 by Association members on 115 farms gave the startling information that in fields planted to untreated seed 16.5% loss was suffered from smut, while on the treated fields there was less than 1% loss. Twenty-one members planted treated and untreated seed side by side, the result being 18.6% infection from untreated and two-thirds of 1% from treated seed. These tests were continued for several years, and the results made the basis for a state wide campaign for treating seed oats, which continues to this day.

In succeeding years the new improved crop varieties which were being bred at the Experiment Station were tested extensively by Association members before being disseminated generally. In 1904 Silver King and No. 8 corn, Mansury Barley and the new pedigree strain of Oderbrucker, as well as crops tested the previous year, were grown and reported on by about 400 members.

Sweet Clover Seeds Abundantly

Tests with barley smut, and an oat rust survey were run in 1906, a weed survey and weed control campaign in 1907, tests with field beans in 1908, and rye in 1910. Sudan grass was introduced in 1915, and tests with phosphate fertilizer for corn were carried on that year.

Tests Show Sweet Clover Useful

Sweet clover cooperative tests were started in 1915, when 82 members were supplied seed of the biennial white blossom variety from Kansas, and certificates entitling them to artificial cultures of inoculation from the U. S. Department of Agriculture. The following year sixty-nine reports from these tests gave data on this crop grown with and without a nurse crop, on acid and non acid soil, with and without inoculation. In 1916 and 1917 sweet clover experiments were continued, using hulled and unhulled seed, with and without a nurse crop, with early and late spring seeding, used for hay, pasture, and seed. Reports from these numerous tests showed that sweet clover could be grown and used successfully, and the methods of growing and handling which gave best results.

The first extensive trials with Albotrea sweet clover were started in 1922 when 250 five pound lots of seed were distributed to members of the Experiment Association. This variety had been popular in certain parts of Canada for some years. It is a yellow blossom, fine stemmed plant, somewhat shorter and earlier than the common biennial white blossom variety. In these tests it proved successful for pasture and as a seed producer. On the strength of these tests and those carried on at the Experiment Station Albotrea sweet clover has been widely disseminated the past four years.

The number of cooperative experiments conducted during the past 25 years runs into the thousands. These examples show their use and value in providing needed information. They have aided in large measure in Wisconsin's crop improvement program up to the present time, and will be used extensively in the expanding work of the future.

PURE BRED SEEDS MADE AVAILABLE BY EXPERIMENT ASSOCIATION GROWERS

E. D. Holden

As the volume of seed sold by members mounted rapidly during the early years of the Experiment Association, it became very desirable to have some means of checking up on the quality of the seed to see that it conformed to good seed standards and was a credit to the organization.

A start was made in this direction in 1909. The secretaries of the county orders, several of which had been formed the previous year, were appointed farm inspectors for seed growers in their respective counties. They were to visit the farms, take note of the facilities for growing and marketing pure bred seeds, and offer suggestions along these lines.

This plan was continued, until in 1913 an assistant secretary was appointed by the state association, who took charge of the inspection work. That fall the threshed grain in the bins and the seed ears in the curing rooms of members on 151 farms were inspected by members of the Agronomy Department and several special inspectors.

The following year field inspection of small grains after they were headed out and before harvest, was added to the program. It was thought that these two inspections would give accurate check on vigor, purity, weeds and disease in the field, and color, weight, purity, and how well the seed was cleaned and graded, with reference to the final product offered for sale. The inspection of corn in the

curing rooms was to determine trueness to type, and whether the ears were well cured under proper conditions.

Beginning wth 1905 lists of growers of the several improved varieties were included in the annual report of the association. From 1907 on the list of seed growers was published as a separate pamphlet for distribution as a seed list. After the inspection work was started the results were entered in the seed list, showing which lots of seed offered for sale had been inspected and approved.

Registered and Certified Seed

To conform to the recommendations of the International Crop Improvement Association whose object was to bring about greater uniformity in classification of and requirements for the seeds sold through the state asociations, in 1924 it was decided to adopt the terms "Elite", "Registered" and "Certified" for the three main classes of seed.

Elite Seed is pure foundation stock from the Experiment Station, which is distributed to Experiment Association seed growers.

Registered Seed is of especially high quality and purity and is recommended particularly for those who intend to grow the improved varieties for seed production and sale.

Certified Seed is improved seed of high quality and purity which carries all the advantages of the improved varieties in uniformity and high yield for general purposes.

Requirements were drawn up for these classes of seed by a committee of Experiment Association members. The reports from field, laboratory, and curing house inspections are checked against these requirements to determine whether the lots of seed reported on can be listed as Registered or Certified.

Several thousand copies of the annual seed list are printed and distributed each January. This contains descriptions of the pure bred varieties, and the names and addresses of growers who have them for sale. Between a quarter and a third of a million dollars worth of seeds are listed each year, and made available to thousands of farmers who want to increase the productiveness of their fields by using the improved varieties.

In order to identify the members of the Experiment Association and

the seeds they grow and sell, with the organization whose name stands for high quality pure bred seeds, the Experiment Association adopted a trade mark for use of its members. Shipping tags, seed sample envelopes, and cotton and jute sacks bearing the attractive Association three color trade mark are sold to members at cost. A special cut for printing the trade mark on letter heads is loaned free on request.

Each member, by using these aids to identify himself and his seeds can take advantage of the Association's reputation which has been built up through many years of painstaking effort by older members. And each member should see that every lot of seed that he sells conforms to the best standards so he in turn will still further advance the reputation of the Experiment Association for high quality pure bred seeds.

SEED INSPECTION AND WEED CONTROL

A. L. Stone

The problems of controlling the weed pests of the field and garden, and of getting good seed, are among the most serious that farmers have to contend with. Weeds cut down crop yields, and may damage the crops and injure stock. They reduce profits and cause a lot of hard work. Seeds may not grow, they may contain weed seeds or other undesirable foreign seeds, or they may be from a source which cannot produce seed adapted to the region where the crop is to be grown.

As early as 1861 the state legislature recognized the seriousness of the weed problem, and passed a Weed Law which stands, with very little change, to this day. It provided that land owners shall destroy certain noxious weeds at a time and in such a manner as shall prevent them from bearing seed or spreading to adjoining property. The authority to investigate weed conditions and enforce the law was given to weed commissioners appointed by town chairmen, village presidents, and city mayors. Penalties were provided for failure to conform to the law.

In 1917 the legislature passed a law requiring the names of the weed commissioners to be filed with the recently created Department of Agriculture, and a report as to whether they had faithfully performed their duties.

In 1921, in order to strengthen and make more effective the weed control work, the Department of Agriculture was given power to supervise and direct the work of the local weed commissioners, and to prescribe and furnish the forms and blanks used for the reports required by law.

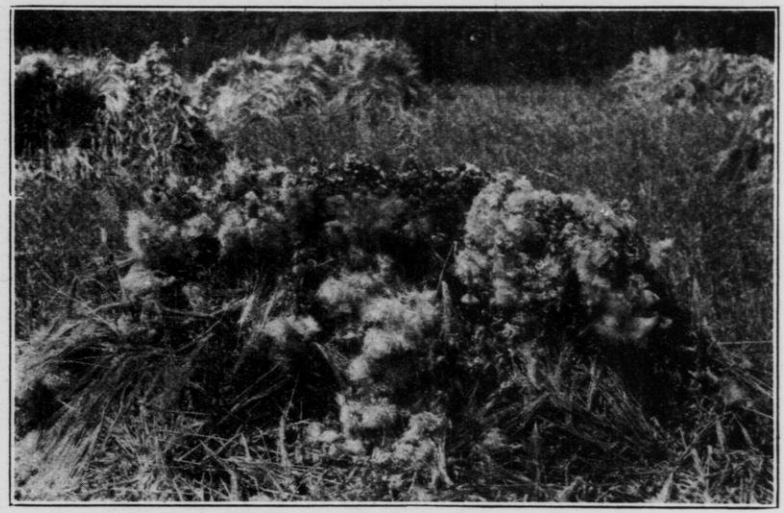
Purpose of Weed Control Work

The aims and purposes of the weed control work, as they have developed through the experience of the 65 years since the first weed law went into effect are as follows:

Through meetings and discussions and through the press to convince Wisconsin farmers that noxious weeds are damaging farm crops, are requiring a vast amount of labor for control, and are a menace to profitable agriculture.

To encourage and support town, village and city officials and local weed commissioners in the discharge of their duties in connection with the destruction of noxious weeds.

To inspect the work of local weed commissioners and when deemed wise to take action prescribing times and methods of eradication.



Thistles are Taking The Joy Out Of Life Here

A campaign of education has been under way since 1915, through meetings with farmers, school boards, school teachers, and county boards, to convince them of the seriousness of the situation and urge the cooperation of everyone in the effort to prevent the spread of, and eventually to eradicate, the noxious weeds.

The results of our efforts to date are evidenced by a much greater knowledge of the problem in its relation to the State as a whole, increased effort, and a fine spirit of cooperation. It is hoped that our efforts finally will be rewarded with victory over these crop enemies, and that our future agriculture will be relatively free from the noxious weed menace.

Law Protects Seed Buyers

The seed problem was first given attention by the legislature of 1909, which passed the Seed Control Act. This provided that seed offered for sale in Wisconsin in lots exceeding one pound must bear a label showing (1) name and kind of seed, (2) name and address of seller, (3) statement of purity of the seed, and (4) germinating power of the seed. Later the requirement was added that for cereal grains, corn, and alfalfa seed the label must show (5) state or locality where the seed was grown.

A seed laboratory was established controlled by the State Experiment Station and supported by fees at the rate of 25 cents for each seed sample tested. Reports were given on germination, proportion of weed and other crop seeds, and inert matter. The first year of operation under the new law the seed laboratory tested 1795 samples sent in by farmers, seed dealers, and others.

In 1913 the legislature appropriated funds which made possible better equipment, and the employment of a traveling inspector to visit dealers and ascertain if the seeds offered for sale to farmers were being tested and labeled as required by law. The legislature of 1915 amended the law, greatly increasing its efficiency and increasing the appropriation to provide for better inspection facilities.

State Department of Agriculture Takes Over Seed Work

By act of the legislature of 1917 the control of the seed inspection work was transferred from the Experiment Station to the State Department of Agriculture. To avoid the expense of providing a new laboratory and to continue the close association of the seed inspection work with the other agencies for crop improvement, such as the Experiment Station and the Wisconsin Experiment Association, the well equipped seed laboratory in the Agronomy Building on the University Campus was retained with the director's office adjoining.

As the value of the seed inspection service became more and more appreciated by the farmers and seed dealers, the number of samples sent in increased. In 1913 it was over 2000, 1914 over 3000, 1923 over 4000, and the 1926 report shows 6,242 samples.

Beginning in 1913 the inspectors began taking samples from the stocks of dealers, and comparing the purity and germination tests with the standards established by the Department of Agriculture. The beneficial effects of this inspection are shown by the improvement in the purity and germination of the seeds being offered for sale on the Wisconsin market. In 1909–10, the first year when the inspection went into effect, the purity of all samples analyzed was 92.1%, and the average germination 82.5%. Eight years later the average purity was 96.6% and average germination 89%.

As crop seeds which are contaminated with weed seeds are a prolific cause of the spread of noxious weeds, the seed control work is

Laboratory Inspection Shows Purity And Germinattion Of Seeds

an important aid in fighting the weed menace. The improvement in the purity of seeds used on our farms in recent years is encouraging for it shows that this source of weed propagation is being reduced to large extent.

THE STATE GRAIN SHOW

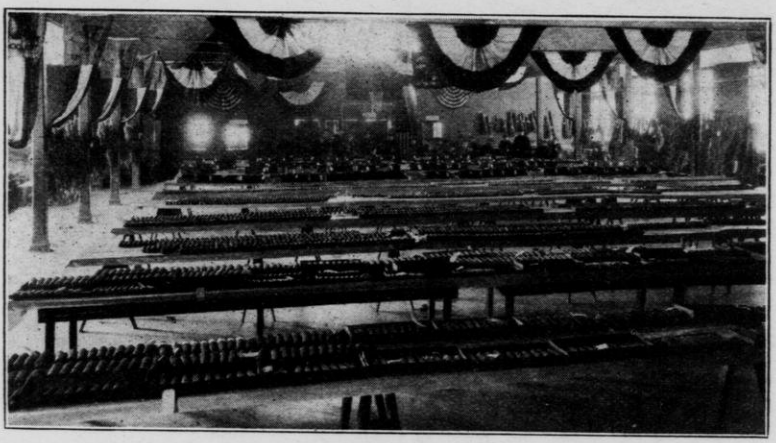
E. D. Holden

The annual seed grain show of the Wisconsin Experiment Association made its first appearance at the time of the fourth annual meeting, February 8–9, 1905. The purpose in starting the show was to encourage the growing of pure bred grains and forage plants by displaying them attractively, and to determine by competition which ones would prove to be of greatest merit. Two hundred dollars was set aside the first year for this purpose.

The first premium list comprised classes for Swedish Select (Wis. No. 4) oats and any other variety oats; Mansury and any other variety barley; Reid's Yellow Dent, Leaming, Clark's, Silver King, and any other variety corn; Red, Mammoth, and Alsike clover seed; Soybeans, and Alfalfa hay. This display proved to be one of the most attractive features of the meeting and it was deemed advisable to continue this line of work.

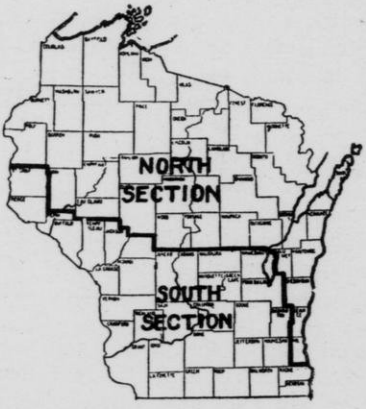
The succeeding year saw additional classes for grains and soybeans in sheaf, Oderbrucker barley, Toole's North Star, Early Yellow Dent (Wis. No. 8), and flint corn. As new pure bred varieties were

produced and disseminated from the Experiment Station classes and premiums were provided for them in the grain show so they could take their place as "full fledged" and recognized members of the pure bred family.



Nearly 1000 Samples Competing At Green Bay, 1922

Exhibitors who continued to show grains year after year became very proficient and carried off a large share of the premiums. In order to give the younger and less experienced members a better show, and to give distinction to the past first prize winners, in 1914 an Honorary Class was established. Exhibitors who had won first premiums in certain classes were made Honorary exhibitors for these classes and could compete only against each other. The exhibits in the Honorary class are the cream of the show, having been prepared by past masters in the art of fitting show samples.



Winnings on corn were largely confined to the southern part of the state because of the more favorable conditions for producing large, fine show ears. To give the Northern exhibitors and corn varieties better recognition, in 1916 it was decided to divide the state into two sections, north and south, and that for certain varieties of corn competition would be only between exhibitors in the same section. This was put into effect at the February, 1917

show, and resulted in a greatly increased showing of northern corn.

As one looks over the awards of the early shows he is pleasantly surprised to see many familiar names of exhibitors who still are competing. Many of these have extended their efforts to the State Fair and the International Grain and Hay Show and have made nation wide reputations. The story told by these old records is convincing evidence that our younger members who work faithfully and persistently toward their goal will in a few years be rewarded with gratifying success and an enviable reputation in their chosen calling.

Grain Show Goes Visiting

For many years the Experiment Association's annual meeting and grain show were held at the headquarters at Madison. However, many farmers in other parts of the state who would be benefited greatly by hearing the discussions on crop improvement and seeing the show were unable to leave home to attend.

In 1920 the LaCrosse County Seed Growers Association cooperating with the Chamber of commerce of the city of LaCrosse invited the Association to meet and hold the grain show there. This invitation was accepted, and in January, 1921, the largest show in the association's history, 898 samples, was put on at LaCrosse. The unusually large showing was due to the great effort made by the local exhibitors to keep as many as possible of the premiums at home Their efforts were successful in winning the County Order Trophy, which was put into competition in 1920 to be awarded to the County whose exhibits would win the most award points in competition. Brown County had captured it at the 1920 show. Green Bay and the Brown County Seed Growers Association were hosts to the grain show in January, 1922, which broke the previous record with 951 samples. With a tremendous number of local exhibits Brown County won back the County Order Trophy and kept the major honors at home.

An important feature of the 1922 show was Children's Day. The rural schools of the county closed to allow pupils and teachers to visit the show and attend a special program. Prizes were awarded for the best essays on the visit to the show, to be written in school the following week. This feature was so successful that it has been continued whenever the show has been held away from Madison.

Dairy Feed Crops Emphasized

In 1923 the show returned to headquarters. In January 1924 it was taken to Richland Center for the purpose of putting on a campaign for home grown dairy feeds. So much interest was aroused in this subject that the auditorium was crowded to capacity for every meeting. The program for plenty of corn silage, barley for grain feed, and alfalfa for high protein hay to cut feed bills was given a strong boost.

After holding in Madison again in 1925, Menomonie, Dunn County, with a program for home grown dairy feed similar to that of the meeting two years previous entertained the show and meeting the following November. The meetings were very large and successful, and resulted in the organization of a County Seed and Alfalfa Growers Association to carry on the good work.

An Attractive Setting For The Threshed Samples at Richland Center

A great effort was made to secure the cooperation of every Dunn County farmer in putting on a record breaking show, and the goal was more than reached with a total of 1105 samples in competition. The show and meetings were fine examples of what can be done through these agencies to put driving force behind a crop improvement program in any locality.

Judges Comments Sent To Exhibitors

The show held last February in connection with the Silver Jubilee meeting at Madison was not as large as some we have had in more favorable years, but the quality of the exhibits was surprising considering the handicaps.

At the Menomonie show an experiment was tried of having the judges comments on samples taken down by clerks and sent to exhibitors. It was thought that this would enable exhibitors to see the short comings in their methods of preparing exhibits, and improve the quality of future shows. This practice pleased the exhibitors and was continued.

The next show and meeting will be held in Antigo, Langlade County, early in November of this year. The business men of Antigo and the agricultural organizations of the county are backing the

project. In cooperation with these forces and the county agent we plan to start a crop improvement program which will definitely fit the special needs of the county.

THE HIGH SCHOOL CROP JUDGING CONTESTS.

E. D. Holden

The first state high school corn judging contest was held in February, 1918, in connection with the state grain show and the state livestock judging contest. The Experiment Association executive committee had decided to make this an annual affair, in order to stimulate thorough study of corn in the high school agricultural classes, and promote practice in selecting seed ears.

Nine high schools and county agricultural schools were represented by teams of three students each. The contest brought out some

Part Of The Corn And Sheaf Display Richland Center, 1924

excellent work in judging, and resulted in the first prize trophy, a silver cup, going to the Marinette County School of Agriculture.

This corn judging contest was continued as a feature of the experiment Association annual meeting and grain show, with the exception of 1919 when an influenza epidemic prevented, until the fall of 1926. The winners for the succeeding years were: Waterloo H. S., 1920; Viroqua H. S., 1921; Oshkosh H. S., 1922 and 1923; Omro H. S., 1924; Belleville H. S., 1925; Viroqua H. S., November 1925.

In the fall of 1926 the Experiment Association accepted the invitation of the Department of Agricultural Education to cooperate in a program of judging contests including field crops, livestock, fruit,

potatoes, poultry and knot tying. Two contests were arranged for field crops, the corn judging contest, as conducted previously, and a grain and forage judging and identification contest. A new trophy was provided for the latter contest.

Bruce and Oconto Falls Lead in Corn and Grain

Twenty-five high schools were represented by teams of three members each, which, with five other individuals made a total of 80 competing in the crops contests, October 30, 1926. The competition was keen and the work showed the results of excellent training. The Bruce High School team, consisting of Ray Pavlok, Paul Graham, and Homer Graham, under the leadership of Wm. Wichelman, won the corn judging trophy, with Belleville second and Mineral Point third.

Oconto Falls High School captured the honors in grain and forage judging and identification, Chilton being second and Marshall third. Gilbert Tuttle, Dexter Angus, and Francis Anderson represented Oconto Falls, with John Anderson as coach. Louis Genin, Belleville, was high individual in corn judging, and Gilbert Tuttle, Oconto Falls, was high in grain.

The advance in the quality of work in the high school agricultural courses in recent years has been aided considerably by the stimulus of competition in crop and livestock contests. Last year's experience in a cooperative program of contests was very successful, and we look forward to a great expansion of this work in the future.

INTERNATIONAL CROP IMPROVEMENT ASSOCIATION

In July, 1919, the secretaries and representatives of a number of state crop improvement associations met in St. Paul, Minnesota, to discuss methods of coordinating the work of the several state associations into a larger national program. Out of this meeting evolved the International Crop Improvement Association, the organization of which was perfected at a meeting in Chicago December 2, 1919, at the time of the first International Grain and Hay Show.

The members of this organization are the state and Canadian crop improvement associations. Its purpose is to unite the efforts of the smaller groups to attack effectively national and international crops problems. It has accomplished important work along this line, and we can well feel proud in having taken an active part in starting and in cooperating in this larger organization.

Among the important accomplishments of the International Association are the improving and standardizing of the seed inspection and certification systems of the various state associations, promoting experimental work and legislation looking toward the keeping out of unadapted foreign clover and alfalfa seed, and exerting all possible influence to have adequate resources provided for checking

the ravages and spread of the threatening and ruinous corn enemy, the European Corn Borer.

TWENTY-SIXTH ANNUAL MEETING AND SILVER JUBILEE OF THE WISCONSIN EXPERIMENT ASSOCIATION

Madison, Wisconsin, Thursday, February 3, 1927.

This twenty-fifth anniversary meeting of the Experiment Association brought together an enthusiastic group of old members in a real "old-timers" reunion. The program was of a reminiscent character, and was a review of the early days of the association and its progress down to the present time.

The meeting was called to order by president J. A. Brunker, who spoke as follows:

PRESIDENT'S ADDRESS

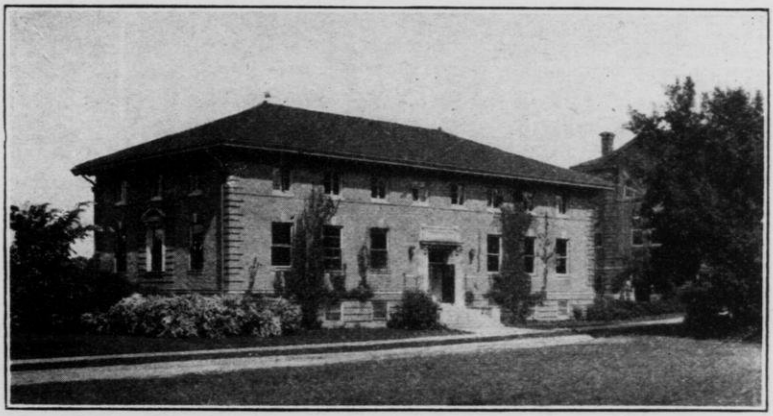
J. A. Brunker

Members of the Wisconsin Experiment Association:

It is a great pleasure to welcome you to this twenty-sixth annual meeting and silver Jubilee of the Wisconsin Experiment Association and the completion of a quarter of a century of active service in the improvement and develoment of farm crops.

We are proud of the fact that we have no apology to offer the progress that has been made since the beginning of the organization.

Records available show that as far back as 1850 attention was given to the improvement of our livestock industry. By application of scientific principles in the breeding and selection of livestock much



Agronomy Building—Experiment Association Hearquarters

has been accomplished in developing high producing cows and prize winning herds of other fancy livestock.

With this fact in mind our worthy secretary, R. A. Moore, conceived the idea that farm crops responded just as readily as livestock to scientific breeding. The work upon the grain breeding was begun in 1898, and has been continued ever since. In this work had their origin the Golden Glow, Wis. No. 12 and Silver King, Wis. No. 7 corn, Wis. Pedigree Barley, pedigreed varieties of oats, rye, and wheat. Those varieties outyielded by many bushels per acre our common and scrub grain.

Prof. Moore being a far sighted man realized that the success already obtained in the breeding of those high quality seed grains would be of very little benefit to the farmers of our state if they were placed in the hands of those having no knowledge of the practices involved in producing them. To do so would mean destruction, and the pure bred varieties would soon be lost.

Being interested in the Short Course Students in our College of Agriculture (being a graduate of this course myself I am proud of the fact) he desired that they might have some thing that would be of special benefit to them when they returned to their respective farms. He organized the Wisconsin Experiment Association.

The object of the organization set forth in the constitution, to promote the agricultural interests of the state, has been fulfilled beyond all expectations. All members have enjoyed a very profitable enterprise in marketing several million dollars of seed grains to every agricultural region of the world.

It is the hope of the officers and those members present today that when this organization celebrates its Golden Jubilee its efforts will be rewarded with a report of progress comparable to that accomplished within the past quarter of a century, and that the work of the Wisconsin Experiment Association will be recognized as largely responsible for a body of energetic prosperous farmers enjoying all the advantages of life that the world can offer.

* * *

Professor R. A. Moore followed with his secretary's report, which appears on page 1.

We were fortunate in having with us to help celebrate this occasion Professor A. J. Meyer, the first president of the Association, who is now director of extension, University of Missouri, Columbia, Missouri.

PRODUCTIVE IDEAS AND A LEADER

Address by first president of the Experiment Association

A. J. Meyer

It has been well said here this morning that the founders of the Wisconsin Experiment Association "builded better than they knew". As we look down the span of 25 years of steady growth and development, we see the reason why.

The Association came into being with an unusual endowment. That endowment consisted of two ideas—big, productive ideas—and a man —a real leader.

First let me speak of the two ideas. The company a man keeps is a pretty safe measure of the man. The membership of the Experiment Association is composed of those who have been more or less in the company of the Wisconsin College of Agriculture. The recent amendment to the constitution which permits the acceptance of members who have not had a course at the College, but who are recommended by a County Agent, still retains the idea of admitting to membership only those who have had close contact with the College. I maintain that any person who has been associated with a county agent must certainly be rated as having had a very definite and positive connection with the College, inasmuch as the Agent is the representative of the College on the firing line.

Throughout the years the College has functioned as a concentration point for the most progressive agricultural thought gathered from the four corners of the earth. It has been a prolific source of new information in regard to farming. It has been the rallying ground of people whose ambitions have sought the higher levels in all things pertaining to farm life.

The idea of limiting membership in the Wisconsin Experiment Association to those who might place themselves under the influence of the College of Agriculture has proven its value in maintaining a uniformity of ideals which is one, at least, of the essentials in any organization which aspires to permanency.

The second idea, which I include in the original endowment of the association is the idea of building its activities on an educational foundation. Every great movement and every successful organization—has had its strong educational programs. In the church, those denominations which have refused to adopt educational programs have, with the passing of years gone out of existence or dwindled to positions of insignificance. The same general disaster has overtaken farm organizations which have failed to recognize the importance of educational activities in their general affort.

The Wisconsin Experiment Association was born with an educational plan of unusual scope. It was to receive the full force of every constructive idea that the College of Agriculture had to offer. Moreover, its own membership, by means of trials on their own farms,

were to make their contribution of knowledge and, through the Association machinery, this knowledge was to be diffused among its membership and to the farming public generally. For twenty-five years members of the Wisconsin Experiment Association have been receiving knowledge, developing knowledge, and diffusing knowledge.

Most important of all in the Association's endowment is the man —the leader of men. The greatest endowment any farm organization can have is leadership with vision, determination and sound judgment. We are familiar with the apt illustration of the plowman attempting to lay out a land by plowing straight toward a calf grazing in the pasture on the opposite side of the field. Too much of our farm leadership has been well intentioned but has steered its course toward a shifting goal, or new leaders have arisen each with a new idea as to the course which should be followed.

The Wisconsin Experiment Association through the entire quarter century of its existence has moved steadily forward in a positive way without running in circles or wobbling crazily in the wake of a shifting goal. Our secretary of 25 years ago, who is your secretary of today, has proven a master helmsman. He has kept the course regardless of adverse winds or rough seas. He has furnished the agricultural world with an example of superb leadership. He has given his very life in most generous manner to the consummation of a high ideal. And in that unselfish giving the Association has been made a better place in which to live. We honor ourselves in honoring Prof. R. A. Moore, whose good judgment, boundless energy, and unselfish devotion have made possible the building of this great Association.

* * *

Besides Prof. Meyer and Mr. Brunker, four other of the nine past presidents were on hand to speak of the Association's work, as follows:

A. L. Stone—Watching The Association From Headquarters.

Henry Michels—Opportunities In Seed Production Through the Experiment Association.

Frank Bell—The Association's Influence In Inspiring The Farm Boys.

C. S. Ristow—The Association's Influence In Crop Improvement In Wisconsin.

Mr. C. P. Norgord, our third president who is now occupying the responsible position of Deputy Commissioner of Agriculture of the state of New York, was unable to be present but sent his greetings.

REMINISCENCES OF A FORMER PRESIDENT

C. P. Norgord

The announcement of the Silver Jubilee meeting of the Wisconsin Experiment Association brought to my mind many memories of pleasant experiences which I had in days past with many members of the Association and especially with the Agronomy staff of efficient workers.

I remember especially the first meetings and beginnings of the Association and the interesting anticipations that the various participants had as they took their samples of grain and corn and proceeded to test them out during the following season. Each year since then has brought its new additions to the pedigreed grains and corn which have gone out for test, and likewise has brought into the meetings and records of the Association reports of the results obtained, and thus the good work has gone on.

The Wisconsin Experiment Association was one of the earliest cooperative associations in the United States established for the improvement of farm crops. Well do I remember the investigators who came in the years to learn how Wisconsin, through Prof. Moore and the Experiment Association, was capitalizing and putting into practice the results of the breeding work of the Station among the farmers of the State.

The Agronomy Department has put out many splendid varieties of farm crops. The pure strains of barley developed from the Oderbrucker and the Manchurian varieties, you may see in many places in the United States and they have come to make up the main part of the barley grown in Wisconsin.

The varieties of oats are interesting, especially the early ripening types. These types at first did not look very promising, but the analysis showed a small percentage of husk and a large percentage of kernel. Experience in the field proved that they would ripen before the hot weather came on to stunt the kernels. These facts were discovered by the Department of Agronomy at the Wisconsin Station, and several splendid pure strains were bred and sent out in the early days.

The Silver King corn with its beautiful ears and rich foliage; Golden Glow; Wisconsin No. 25; the pure strains of peas, and many other varieties have been bred and sent out to the farmers of the State by the Department of Agronomy and the Wisconsin Experiment Association.

My mind also goes back to the long rows of beautiful samples of corn on exhibit in the Agronomy Building at the annual meetings, and Prof. Stone, Prof. Graber and other capable judges, wrinkling their brows to discover the fine points of difference between the leading samples. Then the auction sales at which these beautiful samples were sold in keen competition, and made the basis of "ear to

row" breeding plots for the production of future corn on many farms of the State.

All these are interesting and inspiring memory pictures on which I like to dwell. In connection therewith comes up the pictures of many fine men who were winners of prizes from year to year and faithful efficient workers in the Experiment Association. It gives me great pleasure to extend to these many people my personal appreciation and greetings.

The Wisconsin Experiment Association has made possible the practical use on a State-wide scale of the splendid varieties of crops produced by the scientific breeding methods carried on by the Department of Agronomy. In many parts of the country breeding work has been done and good varieties produced, but they have remained in the archives of the Experiment Station. The work of the Wisconsin Experiment Association and the activities of Prof. Moore and the workers of the Agronomy Department, has resulted in the practical testing of these pure bred varieties, discovering the best and increasing the amount, so that they have become the leading varieties of the State, replacing many of the older, less productive and less desirable varieties. This is a combination of scientific and practical work which has resulted in much good to the Badger State.

* * *

In behalf of the many charter members who could not attend the reunion, much as they wanted to, Mr W. S. Guilford, now of Sacramento, California sent greetings and best wishes.

AN APPRECIATION BY A CHARTER MEMBER

W. S. Guilford

Fellow members of the Wisconsin Experiment Association:

Great as our association has become, and it is one of the greatest agricultural organizations that has ever functioned in the world, I wonder if we al give full credit to the man who conceived it and has shaped its destinies—our own Prof. Moore.

As many of you know, I had the honor to be one of the commission appointed by the Governor of California a few years ago to study the agricultural colleges and experiment stations of America.

The outstanding feature of this investigation was the work of the Wisconsin Agricultural Experiment Association.

Great experiment station results are of little value unless put to use on hundreds of farms.

Professor Moore was one of the first to see that the life and usefulness of experiment stations depended on this, and our organization is the results.

His value to Wisconsin and the world is probably more appreciated by those of us who are a long distance away than by residents of the state.

When the story of the agricultural progress of the past three decades is written his name will be one of those in big type in the headlines.

I consider it one of the greatest honors that has ever come to me to have been privileged to have been one of the charter members of the Wisconsin Agricultural Experiment Association and to have been a student of Prof. Moore.

* * *

Mr. W. L. Ames, Oregon, who since 1904 has been an honorary member of the association and who several times has appeared on its programs, gave a stirring impromptu talk reminiscent of the many times in past years when he has inspired the younger members.

Upon a motion put before the meeting, seconded and carried, Prof. A. J. Meyer was made an honorary member of the Wisconsin Experiment Association.

GENERAL FARMERS' WEEK PROGRAM

On this day the Experiment Association was host to the Farmer's Week guests, and the general program, which filled the seating capacity of Agricultural Hall Auditorium, comprised the following addresses:

V. I. Jordan, New York—The Agricultural and Industrial Situation in America.

A. J. Meyer, Columbia, Missouri—The Crop of Results from the Seeds of Early Ideas.

G. I. Christie, Director of the Experiment Station, Purdue University, Lafayettte, Indiana—The Menace of the Corn Borer.

Director Christie is chairman of the National Corn Borer Committee, and at a time when this destructive insect is working its way slowly but surely through the more southern corn belt states toward our borders, his address had a special significance and importance.

Immediately after the program a special conference of interested persons was held to discuss with Director Christie the plans for national and state campaigns against the corn borer.

BUSINESS MEETING

At the short business meeting held just previous to the general session, the secretary reported on the use and condition of Association funds, and officers were elected.

Secretary's Financial Report

Balance in State Treasury, Nov. 15, 1925	$4741.87
State Appropriation, July 1, 1926	5000.00
Receipts, Nov. 15, 1925 to January 1, 1927	1930.92
Total	$11672.79
Disbursements, Nov. 15, 1925 to Jan. 1, 1927	7215.47
Balance on hand, January 1, 1927	$4457.32

OFFICERS AND COMMITTEES—1927

Experiment Association

President	W. E. Spreiter, La Crosse
Vice President	Linus Spangler, Jefferson
Treasurer	Emil Jacobson, Green Bay
Secretary	R. A. Moore, Madison
Assistant Secretary	E. D. Holden, Madison
Clerk and Stenographer	Lillian Sherven, Madison

Alfalfa Order

President	James Lacey, Green Lake
Vice President	H. G. Seyforth, Ellsworth
Secretary-Treasurer	L. B. Graber, Madison

Executive Committee

Chas. Ristow, Black River Falls
F. E. Bell, Coumbus
A. L. Stone, Madison
J. B. Keenan, Lancaster
George Briggs, Madison
E. J. Delwiche, Ashland
J. N. Kavanaugh, Green Bay
Henry Michels, Fond du Lac

THE INTERNATIONAL GRAIN AND HAY SHOW

E. D. Holden

The first International Grain and Hay Show was held in connection with the International Live Stock Exposition November 29—December 6, 1919. The Chicago Board of Trade contributed a $10,000 premium list. In this show culminated the dreams and the efforts of many of the nation's leading agriculturists to have a great inclusive exposition featuring our two most important agricultural industries, crop and livestock production.

The Experiment Association took a leading part in starting the International Grain Show, and each year since has been active in its support. Our fine samples put up by able show men have taken many high premiums in international competition. Our exhibits have turned the attention of thousands of people outside our state to Wisconsin as a source of pure bred seeds.

Last year eighty-six exhibitors showing 171 samples represented Wisconsin at the International. Our exhibits won 70 premiums in addition to one sweepstakes and one reserve championship.

We made a very favorable showing, especially considering the backward season and the rainy weather during harvest and threshing. In some classes in particular our record was outstanding as you will see by the accompanying list of winnings. Our International showing means much to the Association and we are glad that so many of our exhibitors take part each year and maintain the fine record we have had since the International Grain Show was started.

INTERNATIONAL WINNINGS—1926

Corn—10 Ears Yellow—Region 2

1. Loetta Draheim, Gotham
2. H. T. Draheim, Gotham
3. Fred Black, Midway
4. R. H. Lang, Jefferson
5. Noyes Reassler, Beloit
7. John Bendel, Jr., Stoddard
8. Ralph J. Boersma, Sr., Midway
10. Albert Spangler, Jefferson
11. Katterhenry Bros., Beloit
12. Willard Boersma, Onalaska
14. Linus Spangler, Jefferson
15. Richard Bibby, Ettrick
16. A. O. Popp, Jefferson
21. Peter Norby, Beloit
22. J. C. Storck, McFarland
24. Robert Erickson, Melrose

Corn—10 Ears White—Region 2

4. Albert Spangler, Jefferson
7. John Bendel, Jr., Stoddard
8. Otto Wolf, La Crosse
12. Sam Waage, Blanchardville
17. Linus Spangler, Jefferson
22. Otto Rhiner, Riley
23. Herman Jahn, Green Bay
25. Curtin Relph, Beloit

Corn—Single Ear—Region 2

1. Katterhenry Bros., Beloit
4. Noyes Raessler, Beloit
7. Albert Spangler, Jefferson
9. Linus Spangler, Jefferson
11. Fred Black, Midway
15. R. H. Lang, Jefferson

Flint Corn—Region 2

1. Albert Spangler, Jefferson
2. Frank Lindley, Fox Lake
3. Leo. J. Winkler, Jefferson
4. Linus Spangler, Jefferson
5. H. T. Draheim, Gotham
6. Gus. Guskalkson, Columbus
9. Andrew Devore, Fox Lake

Flint Corn—Region 1

6. Napoleon Clemmons, Saxon

Junior Corn—10 Ears Yellow—Region 1

4. Malcom Woodard, Weyauwega

Junior Corn—10 Ears Yellow—Region 2

1. Earl Fischer, Holmen
2. Norman Ravnum, Ettrick
3. Emmett Algrem, McFarland
4. Norman C. Storck, McFarland

Junior Corn—10 Ears White—Region 2

5. Theodore Stauffacher, Monroe

Sweepstakes Junior Corn—Region 2

Earl Fischer, Holmen

Early Oats

13. Richard Kleinsmith, Onalaska
14. Loetta Draheim, Gotham

Oats—Region 2

4. Loetta Draheim, Gotham
5. Richard Kleinsmith, Onalaska
6. H. T. Draheim, Gotham
8. Gus Guskalkson, Columbus
11. Alfred Ravnum, Ettrick
12. R. H. Lang, Jefferson
13. Otto Wolf, La Crosse
24. Lester Stueck, Mishicot

Oats—Region 1

4. George Newman, Park Falls

Barley—Six Row

9. H. T. Draheim, Gotham
10. Richard Kleinsmith, Onalaska
24. Daniel Kazmerschek, Kewaunee

Barley—Two Row

15. Richard Kleinsmith, Onalaska

Soy Beans—Yellow—Region 2

1. P. W. Jones, Black River Falls
9. Gus Guskalkson, Columbus
5. J. L. Krause, Reeseville

Soy Beans—Any Other Variety—Region 2

1. P. W. Jones, Black River Falls
3. J. L. Krause, Reeseville
9. Gus. Guskalkson, Columbus

Reserve Champion Soy Beans

P. W. Jones, Black River Falls

Flax—Region 2

3. John Lonergan, Fredonia
7. Gus Guskalkson, Columbus
12. Harvey H. Fisher, W. De Pere

Timothy Seed

10. Ellickson Bros., Arlington

PREMIUM AWARDS

Annual Grain Show of the Wisconsin Experiment Association

Madison, Jan. 31—Feb. 4, 1927

Ten Ears Northern Yellow Dent (Wis. #25) (North Section) Wm. H. Moore, Sawyer; Fred T. Jordan, Ridgeland; Walter H. Bankert, Cecil;

Ten Ears Yellow Dent (Wis. #8) (North Section) Harry F. Hansen, Menomonie, R#4; G. R. Rousseau, Cecil; Adolph C. Feifarek, Peshtigo; Malcolm Woodard, Weyauwega;

Ten Ears Golden Glow (Wis. #12) (North Section) Roy McDonald, Menomonie; Jacobsen Bros., Green Bay; Harry F. Hansen, Menomonie, R#4; Aug. Dahlberg, Frederic; R. W. Krueger, Cecil; Henry J. Roffers, De Pere; Mrs. Aug. Wiesmann, Fenwood; Walter H. Bankert, Cecil.

Fifty Ears Golden Glow (Wis. #12) (North Section) Jacobsen Bros., Green Bay; Henry J. Roffers, De Pere; R. W. Krueger, Cecil.

Fifty Ears Wis. #8 and Wis. #25 (North Section) O. C. Woodard, Weyauwega.

Ten Ears Silver King (Wis. #7) (South Section) A. Kleinsmith, La Crosse; Victor Kastenschmidt, Midway; V. Richter, La Crosse; O. C. Nute, Glen Haven; Ela & Haus, Rochester; Harry Pralle, La Crosse, R#3; Sam Waage, Blanchardville.

Ten Ears Golden Glow (Wis. #12) (South Section) Albert Apangler, Jefferson; Carl G. Lee, West Salem; J. M. Metcalf, Glen Haven; Earl C. Fischer, Holmen; Bennie Sheppler, Rockland; A. O. Popp, Jefferson; Harry Pralle, La Crosse, R #3; Richland Bibby, Ettrick; Al Kleinsmith, La Crosse; Gus. Guskalkson, Columbus.

Ten Ears Murdock & Clark's Yellow Dent (South Section) Leo. Brueckner, Jefferson; Linus Spangler, Jefferson; Albert Spangler, Jefferson; R. H. Lang, Jefferson; Gus. Guskalkson, Columbus; Harold F. Marsch, Jefferson.

Fifty Ears Silver King (Wis. #7) (South Section) A. B. Bloomstrom, Plum City; Linus Spangler, Jefferson; Homer Wolf, La Crosse; Archie Peters, La Crosse.

Fifty Ears Golden Glow (Wis. #12) (South Section) Fred Black, Midway; Katterhenry Bros., Beloit; R. H. Lang, Jefferson; Jos. A. Brunker, Ridgeway; Wm. H. Jacques, Prescott; Monro Brown, Bay City J. C. Storck, McFarland; Earl C. Fisher, Holmen; A. M. Algrem, McFarland.

Fifty Ears Murdock & Clark's Yellow Dent (South Section) H. T. Draheim, Gotham; Leo Brueckner, Jefferson; Harold F. Marsch, Jefferson.

Ten Ears Yellow & Smut Nose Flint

Chas. Fountaine, Elkhorn; Ida Guskalkson, Columbus; Carl G. Lee, West Salem; Otto Wolf, La Crosse; Mr. & Mrs. John B. Haukins, Mauston; Mrs. Aug. Wiesmann, Fenwood.

Ten Ears White Flint—Albert Spangler, Jefferson; Otto Wolf, La Crosse; Ida Guskalkson, Columbus; Carl G. Lee, West Salem;

Single Ear Yellow Dent—Jos. A. Brunker, Ridgeway; Carrol Hallock, Rockland; Linus Spangler, Jefferson; Katterhenry Bros., Beloit; Leo Brueckner, Jefferson.

Single Ear White Dent—Linus Spangler, Jefferson; Albert Spangler, Jefferson; Homer Wolf, La Crosse.

Peck Six Row Barley—Archie Peters, La Crosse; Richard Bibby, Ettrick; Otto Wolf, La Crosse; Wm. Herrmann, Shawano; H. T. Draheim, Gotham; Edmund Fierke, Columbus; Homer Wolf, La Crosse; O. C. Nute, Glen Haven; Ed. T. Kruel, Fennimore; A. M. Algrem, McFarland.

Peck Wis. Ped. 1 or Silvermine Type Oats—A. O. Popp, Jefferson; Ellickson Bros., Arlington; Guskalkson, Columbus; R. H. Lang, Jefferson; A. E. Rehbein, St. Croix Falls; Jacobsen Bros., Green Bay; Fred. T. Jordan, Ridgeland.

Peck Wis. Ped. 5 or Swedish Select Type Oats P. E. Sheppler, Rockland; R. H. Lang, Jefferson; Baumgartner Bros., Wrightstown; Ela & Haus, Rochester.

Peck Wis. Ped. 7 or Kherson Type Oats.—Alden E. Kolb, Cleveland; P. E. Sheppler, Rockland; Derr Bros., Marshall; Alfred Ravnum, Ettrick; Fred Black, Midway; Gus Guskalkson, Columbus.

Peck Any Other Variety—H. T. Draheim, Gotham; P. E. Sheppler, Rockland; A. E. Rehbein. St. Croix Falls; Aug. Dahlberg, Frederic; J. M. Metcalf, Glen Haven.

Peck Winter Wheat—Aug. Dahlberg, Frederic; John Rotermund, Wisconsin Rapids; R. H. Lang, Jefferson; Robert Zeitler, Luxemburg; Guy Doves, Stitzer.

Peck Spring Wheat—August Dahlberg, Frederic; Walter H. Bankert, Cecil, Fremont Conrad, West Allis, R#5; Alden E. Kolb, Cleveland; Geo. A. Stivarius, Fennimore.

Peck Winter Rye—Tom Moore, Green Bay; Albert C. Allen, Green Bay; Fred Black Midway; A. B. Bloomstrom, Plum City; A. M. Algrem, Mc Farland.

½ Peck Medium Red or Mammoth Clover—John Fletch, Potosi; Frank Morehouse, Lancaster; R. H. Lang, Jefferson; Gus. Guskalkson, Columbus; Mat Bremer, Webster; John Rotermund, Wisconsin Rapids.

½ Peck Alfalfa—Swartz Bros., Waukesha; Mike Schoblocher, Jacksonport.

½ Peck Sweet Clover—Jos. M. Mleziva, Luxemburg; Mike Schoblocher, Jacksonport.

½ Peck Timothy—Ellickson Bros., Arlington; L. F. Hubbard, Evansville; John Rotermund, Wisconsin Rapids; R. H. Lang, Jefferson; John Lonergan, Fredonia.

Peck Black Soybeans—P. W. Jones, Black River Falls; Gus. Guskalkson, Columbus; Mat Bremer, Webster; Ida. Guskalkson, Columbus; A. G. Cox Osseo; Mr. & Mrs. John B. Haukins, Mauston.

Peck Ito San & Manchu Soybeans—P. E. Sheppler, Rockland; Wm. Herrmann, Shawano; H. T. Draheim, Gotham; P. W. Jones, Black River Falls.

Peck Any Other Variety Soybeans—P. W. Jones, Black River Falls; Mat Bremer, Webster.

Peck Scotch Field Peas—Wm. Moore, Sawyer; Rob't Zeitler, Luxemburg; John M. Hull, Markesan; P. E. Sheppler, Rockland; H. T. Draheim, Gotham.

Peck Green Field Peas—P. E. Sheppler, Rockland;

Any Other Variety Field Peas—John Rotermund, Wisconsin Rapids; John M. Hull, Markesan; Mrs. Aug. Wiesman, Fenwood.

Peck Alaska Peas—Arthur M. Derr, Columbus; Derr Bros., Marshall; Frank J. Lindley, Fox Lake; John M. Hull, Markesan.

Peck Wrinkled Peas—Arthur M. Derr, Columbus; Derr Bros., Marshal; G. R. Rousseau, Cecil; Mrs. Aug. Wiesman, Fenwood.

Peck Flax—John Lonergan, Fredonia.

Sheaf Six Row Barley—H. T. Draheim, Gotham; Jacobsen Bros., Green Bay; Carl G. Lee, West Salem; Otto Wolf, La Crosse; Baumgartner Bros., Wrightstown; Leo Brueckner, Jefferson Archie Peters, La Crosse.

Sheaf Early Oats—Carl G. Lee, West Salem; P. E. Sheppler Rockland; Otto Wolf, La Crosse; H. T. Draheim, Gotham, Gotham, Katterhenry Bros., Beloit.

Sheaf Swedish Select Type Oats—Katterhenry Bros., Beloit; Ida Guskalkson, Columbus; Baumgartner Bros., Wrightstown.

Sheaf Any Other Late Oats—Carl G. Lee, West Salem; Baumgartner Bros., Wrightstown; P. E. Sheppler, Rockland; H. T. Draheim; Gotham.

Sheaf Winter Wheat—Eino E. Ozemaa, Brule Box 122; R. H. Lang, Jefferson; P. E. Sheppler, Rockland; Katterhenry Bros., Beloit.

Sheaf Spring Wheat—Alden E. Kolb, Cleveland; Baumgartner Bros., Wrighstown; P. E. Sheppler, Rockland; Leo Brueckner, Jefferson.

Sheaf Rye—Carl G. Lee, West Salem; Katterhenry Bros., Beloit; P. E. Shepper, Rockland; Otto Wolf, La Crosse.

Bundle Alfalfa—R. H. Lang, Jefferson; Fremont Conrad, West Allis; Jacobsen Bros., Green Bay; Fred Black, Midway; Herman R. Berndt, W. De Pere; Homer Wolf, La Crosse; Katterhenry Bros., Beloit; Geo. Wheelock, Green Bay; Alfred Ravnum, Ettrick.

Bundle Medium Red & Mammoth Clover—H. T. Draheim, Gotham; Carl G. Lee, West Salem, R#1; Otto Wolf, La Crosse; Homer Wolf, La Crosse; Alfred H. Olson West Salem; Leo Brueckner, Jefferson; Katterhenry Bros., Beloit.

Bundle Alsike Clover—Alfred H. Olson, West Salem; H. T. Draheim, Gotham; Carl G. Lee, West Salem R#1; Otto Wolf, La Crosse.

Bundle Timothy—Otto Wolf, La Crosse; Carl G. Lee, West Salem, R#1; Homer Wolf, La Crosse.

Bundle Sudan Grass—Carl G. Lee, West Salem; Homer Wolf, La Crosse.

Bundle Any Other Hay—Alfred H. Olson, West Salem; Fremont Conrad, West Allis, R#5; H. T. Draheim, Gotham.

Bundle Soybean Hay—R. H. Lang, Jefferson; H. T. Draheim, Gotham; Katterhenry Bros., Beloit; Walter H. Bankert, Cecil; Alfred H. Olson, West Salem; Ida Guskalkson, Columbus.

Bundle Mature Soybeans—P. W. Jones, Black River Falls; Gus. Guskalkson, Columbus; P. E. Sheppler, Rockland; Carrol Hallock, Rockland.

Bundle Field Pea Hay—P. E. Sheppler, Rockland; Carl G. Lee, West Salem, R#1; John Lonergan, Fredonia; Gus. Guskalkson, Columbus; Ida Guskalkson, Columbus; Katterhenry Bros., Beloit.

Bundle Mature Peas—P. E. Sheppler, Rockland; Carl G. Lee, West Salem, R#1; Carrol Hallock, Rockland; Gus. Guskalkson, Columbus.

Bundle Hemp—Ida Guskalkson, Columbus; Gus. Guskalkson; Columbus;

Sheaf Flax—Eino E. Ozemaa, Brule, Box 122; Harvey H. Fischer, W. De Pere, R#1; C. H. Odden, Barronette.

Honorary Classes

Ten Ears Clark's Yellow Dent—H. T. Draheim, Gotham.

Ten Ears Silver King (Wis. #7) Albert Spangler, Jefferson; Linus Spangler, Jefferson.

Ten Earl Early Yellow Dent (Wis. #8) R. H. Lang, Jefferson.
Ten Ears Golden Glow (Wis. #12) Fred Black, Midway; Noyes Raessler, Beloit; Linus Spangler, Jefferson.
Ten Ears Any variety 8 Row Flint—H. T. Draheim; Gotham; Linus Spangler, Jefferson.
Peck Wis. Ped. Barley—Richard Kleinsmith, Onalaska.
Peck Wis. Ped. #1 or Silvermine Type Oats—Wm. Herrmann, Shawano; Alfred Ravnum, Ettrick.
Peck Wis. Ped. #5 or Swedish Select Type Oats Richard Kleinsmith, Onalaska; H. T. Draheim, Gotham.
Peck Winter Wheat—Wm. Herrmann, Shawano; A. O. Popp, Jefferson.
Peck Spring Wheat—H. T. Draheim, Gotham.
Peck Wis. Ped. Rye—Wm. Herrmann, Shawano
Bundle of Alfalfa—Otto Wolf, La Crosse; Carl G. Lee, West Salem, R#1; H. T. Draheim, Gotham.

Sweepstakes and Trophy Awards

Ten Ears Yellow Dent Corn—Fred Black, Midway
Ten Ears Silver King Corn—A. Kleinsmith, La Crosse
Ten Ears Dent Corn (North Section)—Roy McDonald, Menonomie
Grand Champion Ten Ears Corn—Fred Black, Midway
Fifty Ears Dent Corn—Fred Black, Midway
Peck Six Row Barley—Richard Kleinsmith, Onalaska
Peck Ped. No. 1 Oats—Wm. Herrmann, Shawano
Peck Ped. No. 5 Oats—Richard Kleinsmith, Onalaska
Peck Spring Wheat—H. T. Draheim, Gotham.
Peck Winter Rye—Wm. Herrmann, Shawano
Bundle Pedigree Barley— H. T. Draheim, Gotham
Sweepstakes Sheaf Grain—H. T. Draheim, Gotham
Sweepstakes Sheaf Forage—Alfred H. Olson, West Salem
Sweepstakes Small Seeds—John Fletch, Potosi.

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 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 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 investigation to its membership, and

5th. By holding an annual meeting and pedigreed seed exposition, in order to report and discuss topics and experiments beneficial to the members of the association.

Article III—Membership

Section 1. All former, present and future students and instructors of the Wisconsin College of Agriculture shall be eligible to membership in this association.

Any county order member who has been actively engaged in county order work for two or more years, and who is recommended by the secretary of his county order and the secretary of the state association, is eligible to membership in the association.

Section II. Honorary membership may be conferred upon any one by a majority vote at any annual or special meeting of the association.

Article IV—Dues

A fee of one dollar 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 1. 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.

Section II. In the absence of the president, the vice president shall preside and perform all duties of the president.

Section III. It shall be the duty of the secretary to keep all records of the association; to report the results of all cooperative 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.

Section 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 Wiscon-

sin 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

Students of any County Agriculture School or High School course in agriculture within the state may be admitted to membership in the Experiment Association upon recommendation of 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.

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

Article I.—Name. The organization shall be known as the_____ _____County Pure Bred Seed Growers Association—an order of the Wisconsin 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 cooperating with the Experiment Association in growing and disseminating pure bred seeds.

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. 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 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____

LETTER OF TRANSMITTAL

WISCONSIN AGRICULTURAL EXPERIMENT ASSOCIATION
MADISON, WIS., 1927.

To His Excellency, F. R. ZIMMERMAN,
Governor of the State of Wisconsin:

Sir:—I have the honor of submitting for publication, as provided by law, the Twenty-fifth Annual Report of the Wisconsin Agricultural Experiment Association, showing the receipts and disbursements the past year, and giving an account of the Association's activities, in cooperation with the College of Agriculture and State Experiment Station, in the past quarter century of crop improvement.

Respectfully submitted,

R. A. MOORE,
Secretary.

TABLE OF CONTENTS

Some Worthwhile Accomplishments

Cooperating with the College of Agriculture in the improvement of farm crops.

Growing and wide dissemination of Wisconsin pedigree seeds.

Making it possible for its members to market several million dollars worth of seed.

Cooperating with thousands of boys and girls in placing the pure bred varieties of corn on the home farms.

Encouraging local enterprise by forming county seed growers associations.

Promoting intensive cooperative work with special crops by establishing the Alfalfa Order, Hemp Order, and Soybean Order.

Helping make alfalfa a half million acre crop in Wisconsin.

Helping to make Wisconsin the leading hemp producing state in America.

Helping to put opportunities in the paths, and courage and sunshine into the hearts and minds of the farm boys and girls.

Helping to make Wisconsin known far and wide as "THE STATE OF FINE FARM HOMES"

DEMOCRAT PRINTING COMPANY
MADISON, WISCONSIN