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Wisconsin Farmers' Institutes
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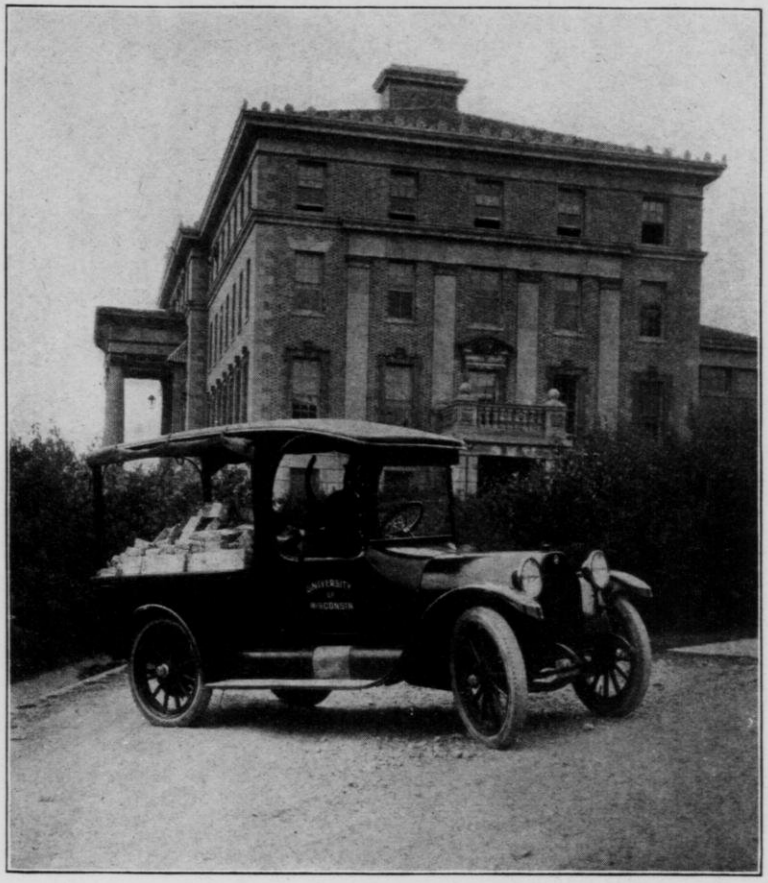
WISCONSIN FARMERS INSTITUTES

BULLETIN NO. 30

THE HEART OF THE PRUDENT GETTETH KNOWLEDGE

1910-37
1910-24



STARTING FOR THE RURAL SCHOOLS.

A copy of each Farmers' Institute Bulletin goes to each rural school. Has your school received yours?

WISCONSIN
FARMERS' INSTITUTES

A HAND-BOOK OF AGRICULTURE

BULLETIN No. 30

1916

"Farming is a business; agriculture is a science. The tiller of the soil who blends these two is the man to whom the future offers success."

CYRUS H. McCORMICK

Edited by

E. L. LUTHER

Superintendent

THIRTY THOUSAND COPIES ISSUED

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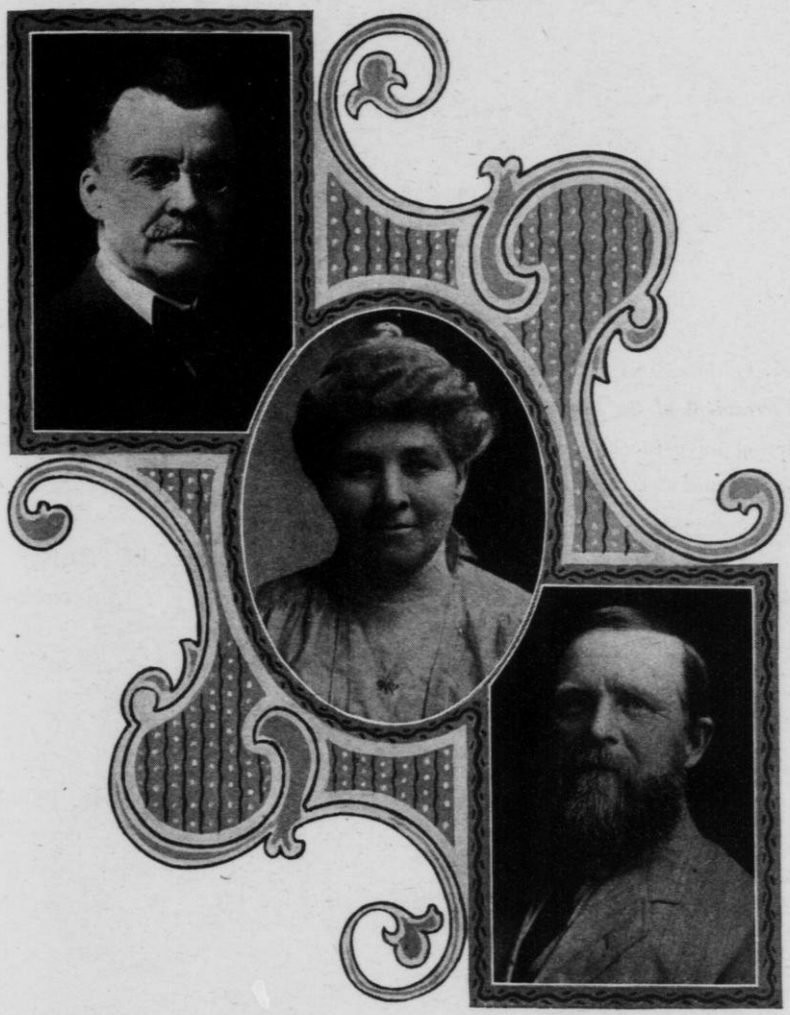
RECOGNITION OF MERIT



C. H. EVERETT ADDA F. HOWIE S. T. UHRENHOLDT

Granted Special Recognition by the University of Wisconsin for their Services in Upbuilding Agriculture.

LETTER OF TRANSMITTAL

HON. G. D. JONES,

President of the Board of Regents, University of Wisconsin:

Sir:—I have the honor of herewith presenting to you Bulletin No. 30 of Wisconsin Farmers' Institutes.

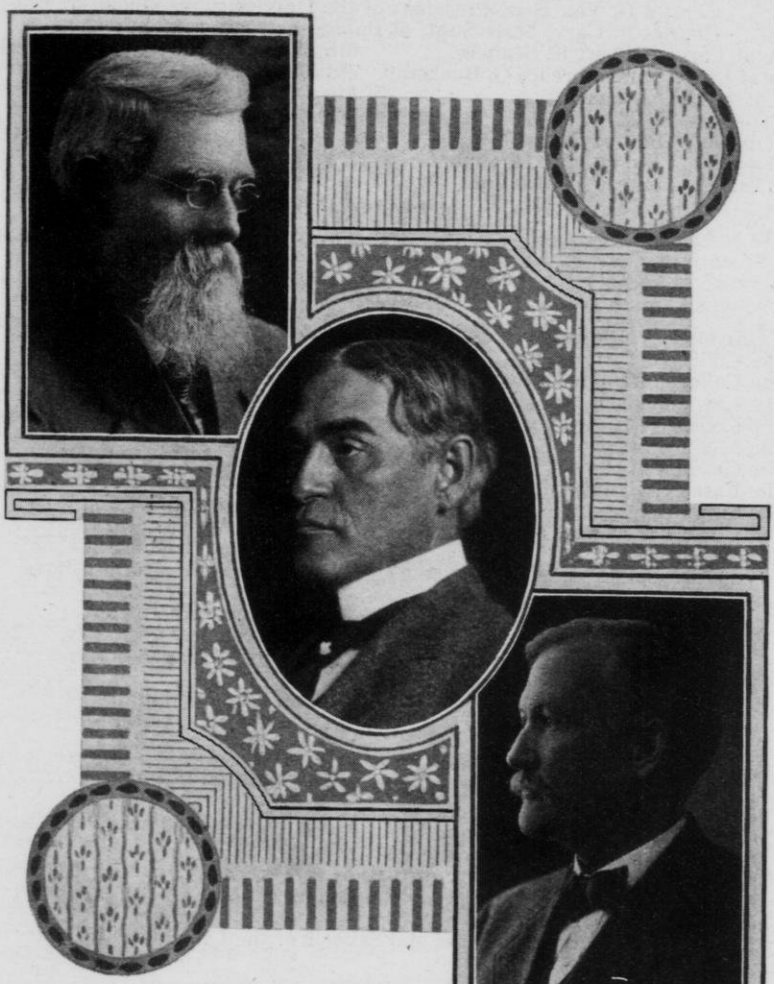
Most respectfully yours,

E. L. LUTHER,

Superintendent.

Madison, Wis., December, 1916.

REMEMBERED FOR WHAT THEY HAVE DONE



A. L. HATCH. DR. H. B. FAVILL. JAMES Z. McLAY.

THE UNIVERSITY OF WISCONSIN

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The University embraces—
- The College of Letters and Science.
- The College of Engineering.
- The Law School.
- The College of Agriculture.
- The Medical School.
- The Graduate School.
- The Extension Division.
- The Summer Session.
- The College of Letters and Science embraces—
  - General Courses in Liberal Arts.
  - Special Courses which include:
    - Chemistry.
    - Commerce.
    - Journalism.
    - Library Training Courses.
    - Music.
    - Pharmacy.
    - Training of Teachers.
- The Medical School embraces—
  - The First Two Years of a Medical Course.
- The Extension Division embraces—
  - The Department of Instruction by Lectures.
  - The Department of Correspondence-Study.
  - The Department of General Information and Welfare.
  - The Department of Debating and Public Discussion.
- The Summer Session embraces—
  - Courses in the various Colleges and Schools of the University.

The College of Engineering embraces—
- The Civil Engineering Course.
- The Mechanical Engineering Course.
- The Electrical Engineering Course.
- The Chemical Engineering Course.
- The Mining Engineering Course.

The College of Agriculture embraces—
- The Experiment Station.
- The Long Agricultural Course.
- The Middle Agricultural Course.
- The Short Agricultural Course.
- The Dairy Course.
- The Farmers' Institutes.
- Home Economics.
- The Forest Rangers' Course.

The Law School embraces—
- A Three Years' Course.

Branches of Study

The University presents a wide range of study embracing more than three hundred subjects. Something of the extent and variety of these may be indicated by the following synopsis: Twelve languages are taught, viz.: Greek, Latin, Sanscrit, Hebrew, German, Norse, French, Italian, Portuguese, Spanish, Anglo-Saxon and English. In Mathematics there are forty special courses. Under the Sciences there are a large number of courses in each of the following: Astronomy, Physics, Chemistry, Geology, Mineralogy, Zoology, Botany, Anatomy, Bacter-

iology, Pharmacy. In History there are fifty courses; in Political Economy, seventy-seven; in Political Science, forty-four; in Mental Sciences there are sixty-one, embracing Philosophy, Psychology, Ethics, Aesthetics, Logic and Education. There are twenty-seven courses in Music, and forty-three courses in Physical Education.

Physical Culture:—The Armory and Gymnasium is one of the largest buildings for its purposes connected with any institution of learning in the country. It is provided with rooms for lectures on Physiology and Hygiene, and for class and individual exercise in all the forms of gymnastic practice. There are also the most abundant and approved facilities for shower, sponge and swimming baths.

Adequate accommodations are provided for the women's gymnastics in Lathrop Hall, which is fully equipped. This furnishes ample facilities for systematic courses for young women, and is under the immediate direction of a trained instructor. This provides a gymnasium for the exclusive use of women.

In Mechanics and Engineering:—Elementary Mechanics, Mechanics of Material, Dynamics, Mechanics of Machinery, Theory of Construction, Thermodynamics, Elementary Surveying, Railroad and Topographic Surveying, Geodesy, Sanitary, Hydraulic, Railroad, Electrical, Steam Engineering, Hydraulic Motors, Hoisting Machinery, Theory and Construction of Locomotives, Railway Locomotives, Railway Location, Railway Equipment, Construction and Maintenance of Way, Railroad Field Work.

In Electricity:—Electrical Testing, Electrical Plants, Electrical Construction, Electrochemistry, and various forms of drawing are given; also shop work in wood, iron, brass, both hand work and machine work, machine designing, construction and testing machines.

In Agriculture:—Various courses are given in Agriculture, Animal Husbandry, Farm Management, Dairying, Agricultural Chemistry, Soils, Veterinary Science, Agricultural Physics, Agronomy, Horticulture and Economic Entomology, Bacteriology, etc.

In Law:—Courses in Equity, Jurisprudence, Real Property, Constitutional Law, Wills, Contracts, Torts, Practice and Pleading, Law of Evidence, Corporations, Domestic Relations, Admiralty, Insurance, Estoppel, Partnership, Taxation, Criminal Laws, Common Carriers, Medical Jurisprudence, Probate Law, Code Practice, Agency, etc.

In Pharmacy:—Courses in Practical Pharmacy, Pharmaceutical Chemistry, Materia Medica, Pharmaceutical Botany and Practical Laboratory Work.

General Facilities:—The faculty embraces six hundred and eighty-five instructors of whom 160 average half time. The laboratories are new, extensive and well equipped; embracing the Chemical, Physical, Metallurgical, Mineralogical, Geological, Zoological, Botanical, Bacteriological, Civil, Electrical and Mechanical Engineering, Agricultural and Pharmaceutical Laboratories. Seminaries are held for advanced study in History, Language, Literature, Mathematics, and other branches.

The libraries accessible to students embrace that of the University, 218,595 volumes; of the State Historical Society, 386,588 volumes; of the State Law Department, 55,000 volumes; of the city, 34,779 volumes; of the Legislative Reference Library, 35,000 volumes and pamphlets; besides special professional and technical libraries, making in all more than 807,900 volumes, including pamphlets, thus affording very exceptional opportunities for reading and special research.

Any person who desires information in regard to any of the colleges or schools, should apply to

W. D. HIESTAND,
Registrar.

COURSES IN THE COLLEGE OF AGRICULTURE OF THE UNIVERSITY OF WISCONSIN, MADISON

Long Course. Covering four full college years, offers scientific training in agriculture, as well as training in the underlying sciences. Students may specialize in any line after the second year. In 1915, 504.

Middle Course. Consists of two full college years, modified to include as much practical work as possible in connection with the regular scientific training. In 1915, First Sem. 133.

Home Economics. A four-year course, leading to the degree of Bachelor of Science, for those who wish to prepare themselves as teachers in Home Economics, as home makers or for other related vocations. In 1915, 274 registered.

Summer Session. Last week in June to second week in August. This session includes 39 courses in agriculture. In 1915, 367 students attended.

Short Course. A term of 14 weeks in each of two years. Registration Friday, November 26. The course includes lectures, demonstrations, and practice work. In 1915–16, 403 attended.

Young Peoples' Course. This is a one week course of lectures and demonstrations in agriculture for boys and girls who have taken part in the Young People's Grain Growing Contests. It generally begins early in February.

Farmers' Week. This is a course of popular lectures, demonstrations and exercises in practical agricultural science, beginning early in February. It is open to farmers over 25 years old. In 1916, 978 attended.

Winter Dairy Course. A twelve weeks' session, beginning early in November, including lectures, laboratory and practice work in the manufacture of dairy products. It is designed especially for buttermakers and cheesemakers. In 1915–16, 166 attended.

Summer Dairy Course. This is a ten-weeks' training in dairy factory operation for beginners. Students are admitted any time during the spring or summer after March 1.

Special Dairy Course. This is for creamery and cheese factory operators and managers and covers ten days, including addresses and laboratory demonstrations. It is given at the time of the Farmers' Course.

Women's Course. This is a one-week course of lectures and demonstrations on various phases of home economics, cooking, nursing, etc., and is given during the first week of the ten days' Farmers' Course.

Women's One Week School. This is a laboratory course in cooking, given during the second week of the Farmers' Course.

FARMERS' INSTITUTES

E. L. Luther, Superintendent — Alice E. Hibbard, Clerk

THE FARMERS' INSTITUTES DEPARTMENT conducts meetings in various sections of the state where practical lectures and conferences on subjects pertaining to farm life and farm operations are presented. Women's Institutes are also conducted for the women. The Farmers' Institute Bulletin is issued annually in an edition of 30,000 copies, and distributed at Institutes and by mail; also 13,000 copies of the Farmers' Institute Women's Bulletin. Any community can secure an Institute upon proper application to the Superintendent. For further information address Supt. E. L. Luther, Madison, Wis.

FOREWORD

This bulletin is now not a report of the annual closing or "round-up" institute. That institute was discontinued in 1916 and will not be held in 1917. The last two institutes of this kind cost $550 and $750 respectively. The "round-up" could be held at only one place each year. It seemed an extraordinary expense to put upon one institute when from 50 to 100 applications for institutes at that many places are denied every year. For the sum spent upon the "round-up" from eight to ten more institutes may be held. The number of institutes for 1916–1917 will be increased from 110 to 120 in number.

The material for this bulletin consists of papers prepared by the authors whose names are attached. Plans are being laid for improving upon this bulletin and it is hoped to improve and not to decrease its usefulness or the appreciation of it.

Superintendent.

WISCONSIN FARMERS' INSTITUTE IDEALS

¶ EVERY SIRE IN WISCONSIN A PURE BRED

¶ EVERY DAIRY COW IN WISCONSIN UNDER TEST

¶ A SILO ON EVERY DAIRY FARM

¶ ALL CROPS GROWN IN A LIVE STOCK SYSTEM OF FARMING

¶ WISCONSIN PEDIGREE GRAINS ON EVERY FARM

¶ STANDARDIZATION OF WISCONSIN FARM PRODUCTS

¶ FARM MACHINERY PROPERLY HOUSED

¶ DECENT OUTHOUSES AT EVERY RURAL SCHOOL

¶ FARM ACCOUNTING ON EVERY FARM

¶ EVERY FARMER HAVING THE USE OF A ROAD DRAGGED ROAD

WHAT FARMERS' CLUBS MAY DO

An association organized without a well defined and fixed purpose which it goes about to accomplish is usually weak and short lived. Farmers' organizations will be strong and beneficial if they accomplish things. The doing of things is what must be accomplished if time and effort spent upon organizations are justified. Below are some things which farmers' clubs may do to warrant their existence:

1. Improve the country cemetery.
2. Provide better outhouse accommodations for their rural schools.
3. Hold semi-annual clean-up days about the premises of the members.
4. Road drag the roads in the community.
5. Conduct a community fair.
6. Sign-board all road corners.
7. Agitate and enforce the Wisconsin dog law.
8. Improve the landscape about the community creamery and cheese factory.
9. Build a community hall.
10. Make a community exhibit at the county fair.
11. Secure a consolidated school and pupil transportation.
12. Increase the bird population of the community.
13. Secure community growing of crops among the members, that is, the growing of one variety of potatoes, corn, oats or barley.
14. Clean the roadsides of the members.
15. Club buy and club sell.

Standing committees ought to be appointed upon the two or three things which the club proposes to accomplish.

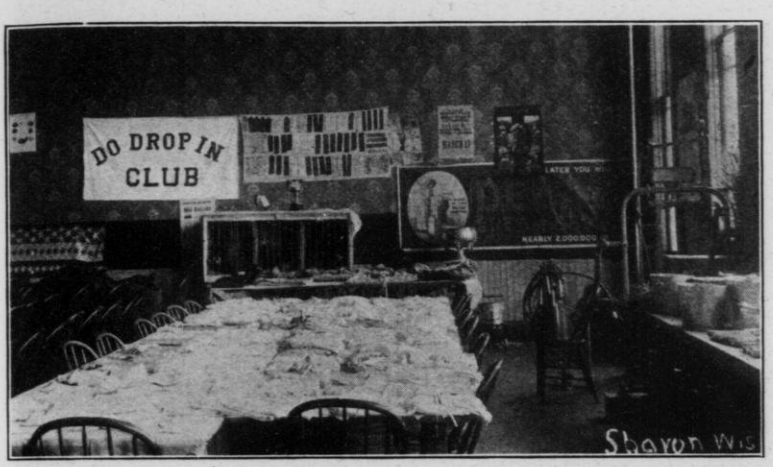
If any assistance is needed inquire of the

Superintendent of Farmers' Institutes

Madison, Wis.

That was a great exhibit at the Institute held at Plainfield, Wisconsin, Jan. 25 and 26, 1916. Neatly and tastily arranged. This was a great institute too. Institutes are what the people make them.

Exhibit of grains, corn and silage in connection with the Institute at Johnson Creek, 1916. Farmers can learn a lot about silage and silage making by bringing in exhibits of silage to the Institutes.



The Do Drop In Club was back of the Institute at Sharon, Wisconsin, 1916. Here is a part of the fine exhibit. Farmers' Clubs make successful Institutes and Institutes help Farmers' Clubs.

ALFALFA DEMONSTRATION INSTITUTE.

As we think of Central Wisconsin land and as much of it is. It could be different if men would apply right principles and practices of agriculture. This field was cropped and potatoed to death.

ALFALFA DEMONSTRATION INSTITUTE.

Just over the fence in an adjoining field on a farm near Friendship, Adams County, Wisconsin, is this fine four-year-old field of alfalfa. Alfalfa will renew central Wisconsin if handled rightly.

ALFALFA DEMONSTRATION INSTITUTE.

Why This Failure?

ALFALFA DEMONSTRATION INSTITUTE.

A Little Success Here.

ALFALFA DEMONSTRATION INSTITUTE.

Why Successful Here?

ALFALFA DEMONSTRATION INSTITUTE.
Very Much Interested Here.

ALFALFA DEMONSTRATION INSTITUTE.
Closing a great day with an everbearing strawberry lunch on the farm of C. T. Leonard.

WISCONSIN FARMERS' INSTITUTES

In order that the people of Wisconsin may realize the most good from the Farmers' Institutes it seems wise to set forth the general plan under which institutes are conducted.

KINDS OF INSTITUTES.

Regular Farmers' Institutes: These will be of two days' duration and will be conducted for the most part in a regular winter series of institutes. While in these institutes two main lines of work will be carried on, a number of subjects in which it is desired to *arouse interest* will be presented. For instance, dairying and poultry, dairying and potatoes, live stock and fruit, and so on may be carried on as the two lines. Then subjects like roads, libraries, cooperation, and so on may be introduced to furnish information in regard to single subjects. By carrying on two lines it is hoped to go a little deeply and more thoroughly into subjects.

Regular Women's Institutes: In conjunction with the regular farmers' institutes as many regular women's institutes will be conducted as the two women workers can conduct. These institutes will continue two days and will consist in lectures and demonstrations upon household subjects.

Special Women's Institutes: These institutes will be of one-day duration and consist in lectures and demonstrations upon canning and other household problems.

Special Crop and Live Stock Institutes: To develop in communities community growing of various crops with a view to standardizing them for better marketing, special one-day institutes will be conducted. For instance in communities where the people desire to improve the potato crop a day will be devoted to this one subject and will wind up with the organization of a community potato growers' association. Subjects like the following will be discussed:

1. Potato Growing in a Dairy System of Farming,
2. Varieties of Potatoes for Wisconsin,
3. Selection of Seed Potatoes,
4. Handling the Crop,
5. Potato Diseases and Their Treatment,
6. How to Prepare a Bushel of Potatoes for Exhibit,
7. The Value of Exhibiting at Potato Shows,
8. Marketing Potatoes,
9. Community Potato Growing,
10. The Organization of a Community Potato Growers' Association,
11. The Wisconsin Potato Growers' Association.

Demonstrations:

1. Well selected exhibits—poorly selected exhibits,
2. How to prepare spray materials,
3. Tuber cutting for seed,
4. Preparing potatoes for market,

If a number of people in a community desire to make more of the poultry business, then a special one-day poultry institute in which the following subjects may be considered will be conducted:

1. Breeds of Poultry for the Farm,
2. Selecting Eggs for Setting,
3. Incubating and Brooding,
4. The Care of the Growing Pullet,
5. Growing a Laying Strain,
6. Feeding for Winter Eggs,
7. Poultry House Construction,
8. Some Common Diseases of Poultry and Their Treatment,
9. Insect Pests and Their Treatment,
10. Community Poultry Associations and What They Can Accomplish,
11. The Organization of a Community Poultry Association.

Demonstrations:

1. Trap nests,
2. Poultry records,
3. Caponizing,
4. Dusting for pests,
5. Dressing poultry,
6. Judging poultry.

Likewise at special institutes the extension of sheep husbandry, swine husbandry, beef production, breeding farm draft horses, cow-testing (with the view of organizing a cow-testing association), horticulture, bee-keeping, alfalfa, drainage and so on may be taken up and enough time put upon them to get the community into active work with them. Special assistance will be given communities taking up this work and definite and sure results arrived at.

Farmers' Organizations Institutes: Farmers' clubs, Farmers' organizations, breeders' associations, cow-testing associations, potato growers' associations, and so on hold meetings and desire speakers. In all such cases where associations desire the assistance of the Farmers' Institutes for special information the Superintendent will be glad to supply speakers upon proper consideration of the matter.

Demonstration Institutes: During the regular winter institutes the conductors will secure the names of farmers desiring further information upon or special assistance with any problem developed at the institute. These names will be filed at the office of Farmers' Institutes and the problem will be "followed up" as closely as possible to a successful conclusion. When the problem or problems have been solved by the farmer a demonstration institute will be held at the farm and the neighbors will be invited to inspect the results with a view to adopt the methods which secured the desired result. Thus will farmers' farms become demonstration farms.

HOW TO SECURE THESE INSTITUTES.

Assistance through the various institutes named above may be obtained vithout further expense than furnishing a hall, if one is needed, and heat and light by filing with the Superintendent an application signed by a liberal number of the people of any community showing that the institute is really desired. Application blanks may be secured by addressing the Superintendent of Farmers' Institutes, Madison, Wisconsin.

THE WORK OF THE DEPARTMENT OF AGRICULTURE FOR THE FARMERS OF THE STATE.

C. P. Norgord, Commissioner of Agriculture, Madison.

The new State Department of Agriculture has been established through the consolidation of the following: The Office of the State Veterinarian and Live Stock Sanitary Board; the Bureau of Immigration; the Office of the State Apiary Inspector; the work of the State Board of Agriculture, consisting of the State Fair and Compilation of Agricultural Statistics. There has been added to this department, the office of State Entomologist, whose duty it is to inspect nurseries and orchards and control insect diseases within the State.

The Field of Work—Mainly that of Control and Regulation

In establishing this new department, it was the purpose of the legislature to form a department which should occupy a field of work entirely different from that of the Experiment Station. The work of the Experiment Station is to conduct experimental work for the discovery of new and improved methods of handling farm problems, that of the College of Agriculture to teach agricultural subjects in the University and to conduct agricultural institutes and meetings throughout the State.

The main function of the Department of Agriculture is that of controlling disease conditions among animals and farm crops throughout the State. This may be illustrated by the control and eradication of the foot-and-mouth disease the past year.

The Veterinary Division, in co-operation with the United States Bureau of Animal Industry, handled the foot-and-mouth disease by the method of slaughtering herds wherever the disease appeared. While some fault was found with this method by individuals, and the cost to the State amounted to nearly $70,000.00, nevertheless, the method pursued proved more effective and wiser than the quarantine method pursued by other countries, such as Denmark. For, after somewhat over a year's work following the first occurrence of this disease, it is now entirely eradicated from the boundaries of the state and nation. In pursuing the quarantine method at the close of the year's work, Denmark still had over 5,000 herds afflicted with the disease, and during the year lost 10% of its milk flow and between 10 and 15% of its young pigs and calves. Had we pursued this method and lost even 10% of our dairy products valued at $100,000,000, we would have lost $10,000,000, not to mention the losses in pigs and calves.

The control work may also be illustrated by the efficient work of the Dairy and Food Commission in the control of sanitary conditions in our creameries and cheese factories. Also by the seed inspection work of the state now being done by the State Experiment Station. Had this latter form of control work been established years ago, we might have kept out of this state Canada thistles, quack grass and other noxious weeds that are annually reducing our yields, adding to the cost of production and greatly diminishing the value of our lands. By this department also the germination of seed for sale is inspected. This is of particular importance this year when the amount of seed

corn is so scarce and germination so low.

Regulations Enforced Through Education

In carrying out the control work, it is not the purpose of the Department of Agriculture to simply enforce the law, but to educate the farmers to the importance of having regulatory laws and obeying them and to thus secure a willing compliance with the regulatory laws of the State. To this end the Department of Agriculture is co-operating with the University and College of Agriculture and has during the year sent its men to many Farmers' Institutes and University and College of Agriculture Extension meetings throughout the state to present subjects along control and regulatory lines.

Advantages of Combination

The advantage of combining the various inspection departments in one large department lies in the fact that in serious situations, such as the foot-and-mouth disease, where tremendous responsibilities and difficult decisions are imposed upon one man, there is opportunity for consultation with the heads of the other inspection divisions, who, being in the same department, are also responsible for the methods adopted by the particular division under consideration. Moreover, when a method has thus been adopted, it can be enforced with more confidence and authority by the person in charge when that person has behind him the authority of a large control department such as the entire Department of Agriculture.

A further advantage in this combination lies in the opportunity of using the inspectors of one line of work for the inspection of other lines as well. For instance, a part of the inspection of the Entomology Division can be done by the inspectors of the Veterinary Division and these inspectors in turn can also make observations of the condition and yield of crops throughout the state for the Crop Statistics Division.

The opportunity for combining work is particularly great in connection with the education work conducted to acquaint the people of the state with the inspection laws.

The chances for having different kinds of inspection work done by one person increases in proportion to the number of inspection divisions combined in the same department, hence the advantages of such a combination and the possibility of reducing the expenses by such combinations.

The Specific Work of Each Division of the Department

The Division of Immigration.

The Immigration Division performs the double duty of assisting in settling the great new lands of Northern Wisconsin and of seeing that prospective settlers are given the exact truth about the opportunities and difficulties of settling in Northern Wisconsin. The work of this division is kept absolutely separate from the sale of land. Its work is done entirely with a view to the benefit of the future settler and citizen of Wisconsin. The great rolling tracts of land in Northern Wisconsin have just as big a percentage of good fertile, tillable soils as southern Wisconsin or the great plains of the west. Indeed were it not for the remnants of the great forests left in the form of stumps and brush, this region could be called the great prairie region of Wisconsin. Yet the stumps, though difficult to remove, are not a permanent disadvantage.

Why did these great forests not extend into the Dakotas and Montana? Simply because there has not been enough moisture on the prairies in ages past to produce trees and forest. The stumps and the great forests that fill northern Wisconsin are the surest evidence of sufficient moisture in the past and the greatest guaranty that in the future we shall have abundant supplies of moisture, which working on the fertile soils of northern Wisconsin will in a short generation change the plains of upper Wisconsin from the forests of old to great fields of grains, grasses and corn, herds, barns and homes, taxable property for the state of Wisconsin. Then Wisconsin will become one great extensively cultivated area, from the southern border against Illinois not only to the central part of the state, but from the southern border of the state, on and upward, covering the whole state to the Great Lakes on the north and from the Mississippi River to Lake Michigan on the east.

These opportunities of northern Wisconsin the Immigration Division is holding forth to those who have the means and the health to conquer the wilds. Not all are prepared to succeed in northern Wisconsin and since the state of Wisconsin cannot be responsible for placing settlers on northern lands to fail, the Immigration Division takes great pains to present the effort required and problems to be encountered in subduing new lands, as well as the splendid opportunities this part of the state affords. In this work we are going out to find the farmer in southern Wisconsin, Illinois, Iowa, Minnesota and Indiana, who, having started on new lands himself and made money in farming, can start his sons in northern Wisconsin with sufficient funds to make a clearing, wishes to see them also make homes for themselves on cheap new lands, and while they are building their homes and making their living, secure the advantages of the rise in value of their lands that their fathers secured on the prairie land.

This division also helps the new settler by information about land clearing methods, plans for buildings, rations for dairy cows, etc. In this part of the work the division is greatly aided by the College of Agriculture. No other state gives so much personal service to the intending settler as does Wisconsin. In this way the Division of Immigration is helping settle northern Wisconsin.

In 1915 more than twenty-nine hundred families took up new farm homes in central and upper Wisconsin. Thirteen hundred located along the lines of a single railroad. Hundreds of these were assisted by the Division of Immigration and the prospect for 1916 is indeed encouraging.

Division of Entomology.

In creating the office of the State Entomologist, a division of the new State Department of Agriculture of Wisconsin, the legislature imposed upon this office the responsibilities for the prevention, control and alleviation of the tremendous insect damage to agricultural crops.

Under the head of preventive work in Entomology, may be noted the inspection of nurseries where young trees, shrubs and plants are propagated for sale, thereby insuring freedom from dangerous insects and disease in this material which is destined for shipment throughout the state. All nurseries in this state, numbering more than 150, are inspected at least once a year and if found clean are licensed to transact business.

Chemicals and other materials for spraying, classed as insecticides and fungicides for the control of insect pests

and fungus diseases, are inspected for purity and misbranding.

Information concerning methods of control of insects and diseases and the necessary spraying machines, accessories and the proper materials to be used in spraying are constantly demanded by citizens, park boards or commissions, companies and corporations. As an example, at the advice and instigation of the Entomologist, the city of Milwaukee Park Board has recently purchased a large high power sprayer for the treatment and care of park and boulevard trees in the city. The city of Racine is already equipped, and the cities of Kenosha and Sheboygan contemplate immediate purchase of such outfits. This marks great advancement in interest of our people in preservation of our ornamental trees and shrubs.

The farmers' insect foes, especially grasshoppers, army worms, cutworms, Hessian fly, potato beetles and many others are levying heavy tax on farm produce. It is the duty of the Entomologist to take measures to prevent serious infestations of these pests, and to give aid in reducing the large amount of damage occurring at the present time.

Every county in the State of Indiana is reported to be infested with the dangerous San Jose scale. Up to the present time our inspection service has controlled this pest so that it is known to occur at but a few points in southern Wisconsin, and those infested regions are being sprayed carefully.

By means of reports, timely bulletins and circulars, this information will be made available to the citizens of the state. It is believed that after a course of years, when control methods for these plant pests are better known, a very great reduction will be made in the amount of insect damage, which at present easily aggregates ten to fifteen million dollars each year in the state of Wisconsin.

Apiary Inspection.

The State Apiary Inspection work covers the inspection and control work of the diseases among bees. The bee industry, which is rapidly increasing in importance in the state of Wisconsin, is seriously threatened by a number of diseases, chief among which are the American and European Foul Broods. These diseases have gained extensive foothold in the state and are being combated by the destruction of infected comb and through disinfection of hives. The introduction of Italian Queens, immune to this disease, is another way by which this disease is combated. The Experiment Station is carrying on extensive breeding preparations to supply Italian Queens to the beekeepers of the state.

Veterinary Division—Office of State Veterinarian

The work of the Veterinary Division has already been mentioned in connection with the successful eradication of the foot-and-mouth disease. The work of this division is to prevent the introduction and spread of all contagious diseases among animals and to cooperate with the Board of Health in stamping out diseases which are dangerous to man as well as to animals. Among such diseases may be mentioned foot-and-mouth disease, glanders, among horses, rabies, anthrax, hog cholera, hemorrhagic septicemia and tuberculosis. Tuberculosis is probably one of the most dangerous diseases in its relation to man and one which causes great financial losses.

A commission in Germany appointed to study the causes of tuberculosis among children, found that 25% of all cases could be traced to drinking milk

and using dairy products. In England 23% was found. Wisconsin has made great progress in eradicating this disease.

Three years ago a law compelling the testing of all animals sold for breeding purposes was passed, but the following legislature repealed the law because the people were not ready for so stringent a measure. Since then there has been a lull in the testing and a consequent increase in the disease. Tuberculin testing has advertised the presence of tuberculosis rather than the good work done in eradicating tubercular animals.

Recently a good dairyman having a large milk trade tested his herd, removing five tubercular animals. This so advertised the presence of tuberculosis in his herd that the net result was a loss of trade to him. The Veterinary Division is, therefore, putting forth a new plan for the eradication of tuberculosis which is based upon the advertisement of the eradication of the disease rather than the discovery of it. The plan proposes to list all the herds that have been cleaned up according to the requirements of the Veterinary Division and the Live Stock Sanitary Board, and to advertise these as tuberculosis free animals. This, we believe, will increase the demand for these animals from within and without the state at a larger price than can be secured for common herds.

This plan has been adopted by all the Breeders' Associations within the state, was carefully scrutinized by committees from these associations and has been modified according to their suggestions. We have also the assurance from a number of states now closed to shipments made under Wisconsin's tests, that they will open to the shipment of cattle listed upon our tuberculosis free list. Already a number of herds have been tested and passed into the accredited tuberculin tested class.

Division of Agricultural Statistics

This division compiles estimates by counties of the acreage, production and condition of various crops, also an estimate of the number and value of farm animals. The farmer is benefited in many ways by this service. The publications are available to the farmer so that he can secure up-to-date information on the various crops in this locality as well as in other sections of the country. If statistics of this kind were not compiled and given publicity, many so-called boards of trade would issue figures with an object in view of influencing the market. The accurate estimates of this Division have prevented the publication of misleading reports. The publication of crop reports by counties proves to the prospective settler that crops can be matured in the northern section of the State, and shows how rapidly this territory is being developed.

The State Fair Division—Premiums

A total of $37,500.00 will be offered in premiums for live stock, agricultural, horticultural, dairy products, poultry, and to encourage the agricultural boys and girls of the state at the 1916 State Fair.

The premium list of this great exposition has been thoroughly revised, members of the faculty of the Agricultural College of the University of Wisconsin, well known agriculturists and breeders of the state assisting State Fair officials in this work.

Every effort is being made to emphasize the agricultural features of the State Fair in order that it may stand out before the people as a great show of model stock and farm products.

The Department of Agriculture also acts in an advisory capacity to the district and county fairs. In this capacity this department is sending out to the

secretaries of these fairs a suggestive premium list to aid these fairs in building up a classification and premium list that will be of maximum educational value to the various agricultural communities of the state.

This year's State Fair will be open to world-wide competition and plans have been made to present this year the greatest State Fair and Exposition in the history of Wisconsin. This will be the sixty-fifth year the Badger State has given a State Fair and it will be fitting indeed to have this great exposition the best the state has ever seen.

This year's State Fair will cost no more than the 1915 State Fair, which, but for rainy weather, would have paid its own way.

The aim of the State Fair officials is to, if possible, give the citizens of Wisconsin a great State Fair each year without cost to the tax payers. When it is remembered that to accomplish this means an expenditure of about $110,000 in five days, some idea of the magnitude of the State Fair may be obtained.

Entertainment Features

There has been some criticism during past years of the entertainment features of the State Fair. It has been charged that some features of the so-called "Pike" were unworthy of a place on the State Fair Grounds.

State Fair officials already have taken steps to eliminate cause for this criticism by doing away with these so-called "Pike" shows. There will be nothing objectionable on the State Fair grounds this year. In place of the "Pike" there will be a combined Mexican and Wild West show, using about 100 people with several carloads of horses and cattle. It will be entertaining and instructive. It costs the State Fair nothing, and a small admission fee will be charged.

There will be a fine array of special attractions and bands, with another record breaking automobile show.

The aim will be to provide a Fair worth more than the admission fee, and to provide attractions worth traveling miles to see. Those who care nothing for entertainment will find the Fair itself worth more than the price of admission. Those who come to be entertained as well as informed will also find what they desire to see.

The 1916 State Fair will be so large that no one can see it all in one day.

The city of Milwaukee is going to cooperate to make the Fair a success and as a result a harvest festival, costing that city many thousands of dollars, will be provided each night for entertainment of visitors who attend the Fair during the day.

In 1915 steps were taken in the direction of a greater and cleaner Fair, conducted economically, and this year this policy is being continued.

The State Fair belongs to ALL CITIZENS OF WISCONSIN, and the aim of the State Fair officials is to provide a Fair that will be of interest to all citizens of Wisconsin, whether they are from rural sections or cities of the state.

Let all citizens of the state co-operate to make the Fair successful.

NORTHERN WISCONSIN FOR WISCONSIN FOLKS

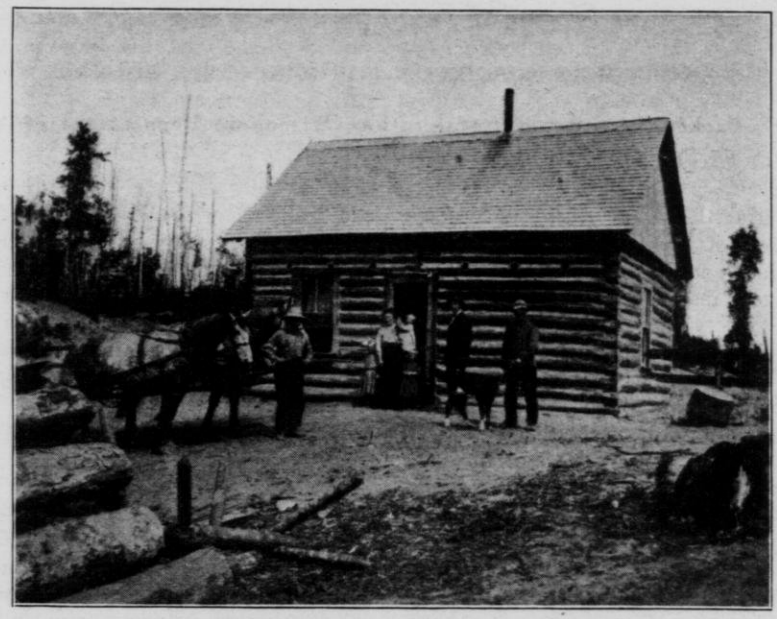
B. G. Packer, Director of Immigration, Wisconsin Department of Agriculture.

During the recent years I have made exhibits of Wisconsin crops at thirty-five fairs and expositions in other states. In every instance those sections where land prices are highest have been chosen as points for display purposes. My wheat from the Lake Superior region has been scored at the Illinois State Fair and received a perfect double "A" award, equalling the best shown at that great fair and surpassing most samples. The Illinois expert judge who passed on this wheat claimed it equalled the best he had ever seen and he was a man of wide experience in passing on farm crops. We have exhibited oats from Port Wing, Bayfield county, that weighed forty-five pounds per stroke bushel; barley plump, heavy and bright and rye of such size as to be mistaken for wheat. Down in Iowa we have repeatedly shown garden vegetables, ripe and sound, at fairs where we were practically without competition because of dry August weather. No section of any state produces better garden truck than the central and northern portions of Wisconsin. At these outside expositions we have shown alsike clover five feet in length and timothy and red clover fully as high, products that appeal strongly to the livestock farmers of this great central west. All this effort assists in further enrichment of the state so today men able to buy higher priced land in old settled communities now are buying and developing new lands in central and northern Wisconsin. These include a great number of farmers from Iowa, Illinois, Indiana and other states, who are bringing with them considerable capital. They have seen the clover growing wild in cut-over districts and have been convinced of the fertility of large sections still to be put under the plow. These men endorse the country. They are urging former neighbors and friends to locate near them.

The Essentials

Hard work, patience and some cash capital are required to fit new land for crops in any state—and Wisconsin is no exception. The new settler should not pay excessive prices nor put all his funds in land, for he must reserve sufficient ready money to erect a small house and barn, to do some clearing and to provide for his family until he gets land in shape for cultivation. His buildings, of course, need not be costly—lumber is cheap in the cut-over country—and first-class manhood and womanhood have been developed in log houses. If thought best log buildings can be constructed for practically only the labor of putting them up and they will furnish warm, comfortable shelter.

No hard and fast rules can be given as to the manner in which the new settler should use his capital but usually it doesn't pay to place large sums in buildings at the start. There's a more profitable way to use money. During this early period, however, the beginner can grow all the vegetables his family will need, roots and hay for his stock, and can make steady headway if he will observe simple suggestions



THE COMFORTABLE PIONEER.
A Polish citizen from Milwaukee just starting near Rhinelander, Oneida County, Wisconsin.

As our Polish citizen will be in a few years. This nice house is owned by Anton Stephanic, Jr., who started only a few years before our Polish citizen did. They are neighbors.

showing how to open up the farm, what crops to grow and how to grow them. The new land is productive. This division has assisted many settlers in locating and their reports show definite progress where they profit by the experience of successful neighbors and the work of the state experiment stations.

began with small means—they were compelled to do so or not start at all—and without the credit, transportation and markets found today. Both husband and wife denied themselves some things they should like to have had—and were all the better for so doing. But the soil was good, and

Here a physician turned farmer cleared six acres almost by hand. Many more acres like it lie beyond.

The Early Pioneers

Still, the new settler's capital certainly is not to be measured wholly in terms of dollars and cents, for his earning power must be considered and the active man will find employment, if it becomes necessary, in most sections of the state. The amount of money needed depends upon the extent and condition of land purchased and how he goes at the job, but more especially does it depend upon the man, and upon his wife, and their habits of thrift.

Most well-to-do Wisconsin farmers because it was good, they made good. Today they look back upon those times of pioneer effort as the happiest period of their lives. The children were growing up and character was being developed. They had their wholesome pleasures too, enjoyable social life, and plain food in abundance.

Now, the virtues of our fathers by no means are absent at this time, and thousands of settlers are winning out in Wisconsin in like manner. There are better opportunities for the man who will look. The same effort put forth brings more results, for what the farmer has to sell is in greater demand than in early days; sugar, kerosene and dress

CLOVER, THE GREAT SOIL BUILDER

The cut over lands of Northern Wisconsin lie in the great "Cloverland."

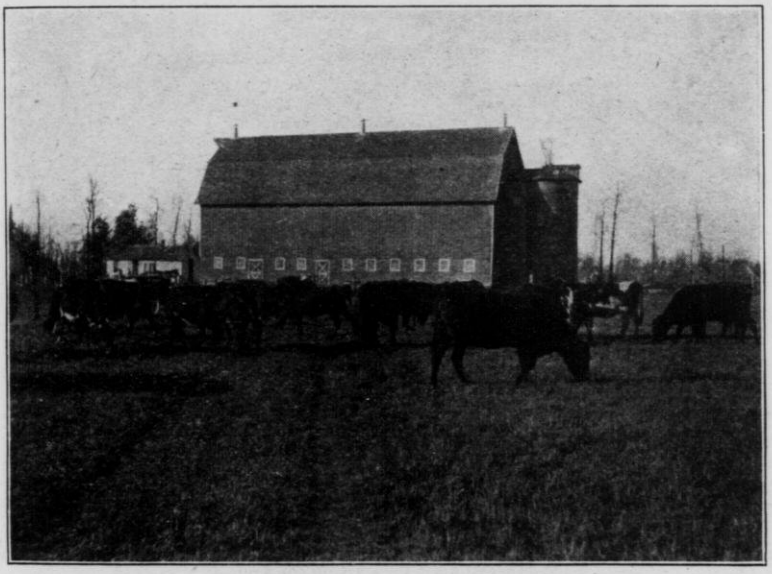
Mr. Goodell, aged about 65 years, grubbed in three and one half acres of potatoes near Rhinelander, Oneida county, with no other implement than the grub hoe which you see on his shoulder. He got a prize winning crop.

goods cost less and the average purchasing power of his crop is 30 per cent larger than even so recent a period as 1899. The man who buys right, starts right and lives right will come out all right.

The Importance of Starting Right

It is our duty to furnish, or at least attempt to furnish information that will lead to a wise selection of land for developing. This service is free, but, of course, it will not serve as a substitute for personal visit and investigation. In choosing a location deal only with established firms or owners and don't take too seriously statements of agents or the irresponsible fellow idling away his time about the depot or on the street. Get out into the country and examine the propositions offered. Take plenty of time. Wisconsin still has large areas of fertile unoccupied well-drained lands that can be made to support excellent crops, year after year, so it is needless to buy types that are too sandy, too stony, or sadly deficient in drainage.

And while the division of immigration has no financial interest in the sale of lands, every assistance is offered that will lead you to discover the exact locality you would prefer. In adding to the farm wealth of Wisconsin it is the purpose of all forces, public and private, to build from the bottom up and not from the top down. The settler's welfare and the state's interest are, and always will be, one and the same thing.



WHY RENT? WHY NOT OWN?
Such splendid farms as these lie under the stumps and trees in Northern Wisconsin waiting for owners.

Wisconsin Ranks High

It is no idle nor unsupported statement to assert that the average production of Badger farm products compares

favorably with the highest priced sections of other states. Our farms are smaller but more intensively cultivated. Someone has said that "comparisons are odious." They usually are—to the other fellow—yet when comparisons are taken from an impartial source their weight cannot be gainsaid. There must be some yardstick of measure, and

Production of Clover Hay for 1916.

Wisconsin	1,172,000 tons
Iowa	1,171,000 "
New York	1,112,000 "
Illinois	850,000 "
Indiana	785,000 "

And right here is one reason for our high average yield. The most prosperous countries of Europe are those growing the most forage crops and Wisconsin leads the nation in clover production.

A new and fertile farm in Northern Wisconsin. The background of timber shows where others like it lie waiting for you.

to the man who says statistics are dry and uninteresting we can reply that the sporting page of the daily paper would be dull and uninteresting indeed were it not for the statistics showing the averages of baseball teams comprising the American and National leagues. Of great importance to Wisconsin's people are statistics showing in averages the annual production of crops in this and adjoining states. So I know you will be proud of this showing:

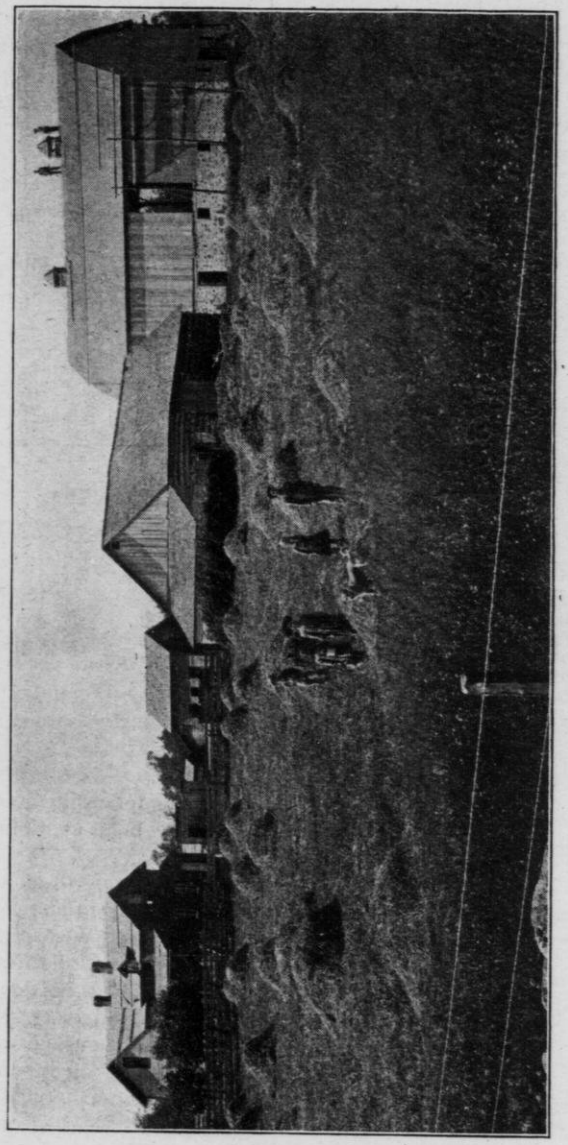
Ten Year Average Yield 1906–1915

Flaxseed

Wisconsin	13.4 bu. per acre
Iowa	10.6 " " "
Minnesota	9.7 " " "
South Dakota	8.5 " " "
Nebraska	8.5 " " "
Missouri	7.1 " " "
Kansas	6.9 " " "

Oats

Wisconsin	32.5 bu. per acre
Iowa	31.9 " " "
Illinois	31.2 " " "
Minnesota	30.8 " " "
Indiana	29.0 " " "
Kansas	24.9 " " "



Log houses and log barns soon build fine homes and big barns in Northern Wisconsin.

Potatoes

Wisconsin	100	bu. per acre
Minnesota	100	" " "
Iowa	82	" " "
Indiana	80	" " "
Illinois	75	" " "
Kansas	65	" " "

Tobacco

Pennsylvania	1,334	lbs. per acre
Wisconsin	1,200	" " "
Ohio	871	" " "
Florida	856	" " "
Kentucky	838	" " "
South Carolina	760	" " "
West Virginia	756	" " "
Virginia	730	" " "
North Carolina	633	" " "

Barley

Illinois	29.0	bu. per acre
Wisconsin	27.5	" " "
Iowa	26.2	" " "
Indiana	25.7	" " "
Minnesota	24.1	" " "
Kansas	17.2	" " "

Corn

Indiana	37.1	bu. per acre
Wisconsin	36.3	" " "
Iowa	34.9	" " "
Illinois	34.8	" " "
Minnesota	33.3	" " "
South Dakota	28.1	" " "
Kansas	19.9	" " "

Average Annual Value Per Acre of Crops During the 15 Year Period, 1901–1915, From Report of the U. S. Dept. of Agriculture, and the 1910 Census.

Corn	Value Per Acre
Wisconsin	$17.58
Indiana	15.90
Illinois	15.30
Iowa	14.06
Minnesota	13.56

Wheat	
Wisconsin	$14.24
Illinois	12.85
Indiana	12.47
Iowa	12.34
Minnesota	10.62

Oats	
Wisconsin	$11.48
Illinois	10.75
Indiana	9.99
Minnesota	9.82
Iowa	9.02

Barley	
Wisconsin	$15.69
Illinois	15.17
Indiana	14.30
Iowa	12.79
Minnesota	11.46

Hay	
Wisconsin	$14.80
Indiana	13.38
Illinois	13.11
Iowa	10.72
Minnesota	9.89

Wisconsin Compared with the South 10-Year Average, 1906–1915

Oats

Wisconsin	32.5	bu. per acre
North Carolina	17.0	" " "
South Carolina	20.0	" " "
Virginia	19.0	" " "
West Virginia	22.4	" " "

Corn

Wisconsin	36.3	bu. per acre
North Carolina	17.6	" " "
South Carolina	16.2	" " "
Virginia	24.2	" " "
West Virginia	29.8	" " "

Potatoes

Wisconsin	100	bu. per acre
North Carolina	75	" " "
South Carolina	80	" " "
Virginia	81	" " "
West Virginia	84	" " "

Tobacco

Wisconsin	1,200	lbs. per acre
North Carolina	633	" " "
South Carolina	760	" " "
Virginia	730	" " "
West Virginia	756	" " "

I have been asked to address you on the subject; "Northern Wisconsin for Wisconsin Folks." It is a good subject for Badger folk to consider for those reasons:

1. Northern Wisconsin is the grassland of America;

2. The largest country creamery in America is located in northern Wisconsin;

3. Northern Wisconsin alfalfa won world's championship at the National Corn Show held at Columbia, South Carolina;

4. The first cow to make a thousand pounds of butter in one year was a product of northern Wisconsin;

5. The value of all farm property increased 200% in northern Wisconsin during the period 1900–1910;

6. Seventy thousand acres of new land are being brought under the plow every year in northern Wisconsin;

7. Northern Wisconsin leads the Mississippi Valley in acre production of potatoes;

8. The lands of northern Wisconsin have excellent drainage;

9. Thirteen hundred families located along the lines of one railroad in northern Wisconsin in 1915. These were settlers going onto the land. (I have been unable to get statistics from other roads than the Soo Line.)

10. Northern Wisconsin vegetables excel in quality.

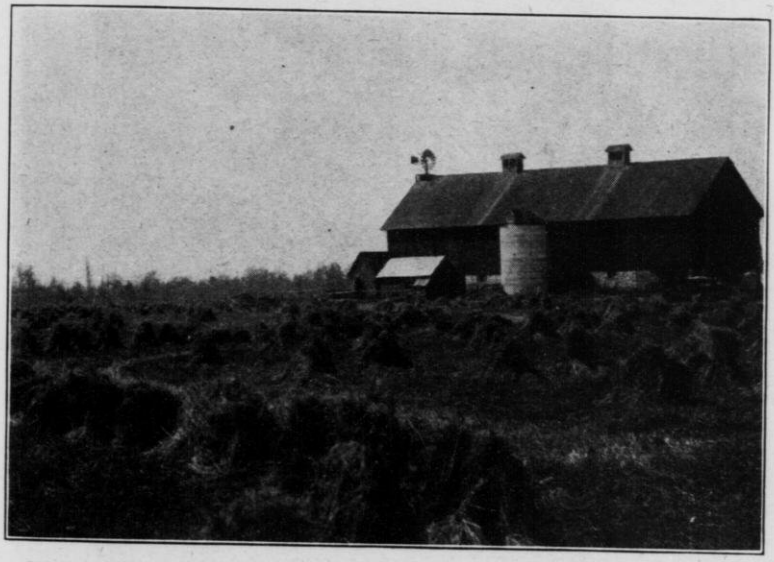
11. In the production of forage crops northern Wisconsin is supreme.

18. Northern Wisconsin cows contribute capital for bigger bank balances.

19. Wisconsin's 1915 cranberry crop would make four million of the most delicious pies.

20. Wisconsin is the first state in the acre yield of flax.

21. Wisconsin's cream industry exceeds that of any other state.



HERSANT FARM, NEAR ANTIGO, LANGLADE CO., WISCONSIN.

This fine farm is the result of muscle, mind, soil and climate in this great county. Hersant was not endowed with millions when he started there.

12. Northern Wisconsin spring water is for sale in principal cities.

13. The corn belt of Wisconsin has been pushed clear to Lake Superior.

14. Northern Wisconsin sugar beets average high in sugar content.

15. The finest canning peas are grown in northern Wisconsin.

16. One-half of the Nation's cheese and one-twelfth the butter are produced in Wisconsin.

17. Northern Wisconsin is the sportsmen's paradise.

22. Wisconsin has more dairy cattle than any other state.

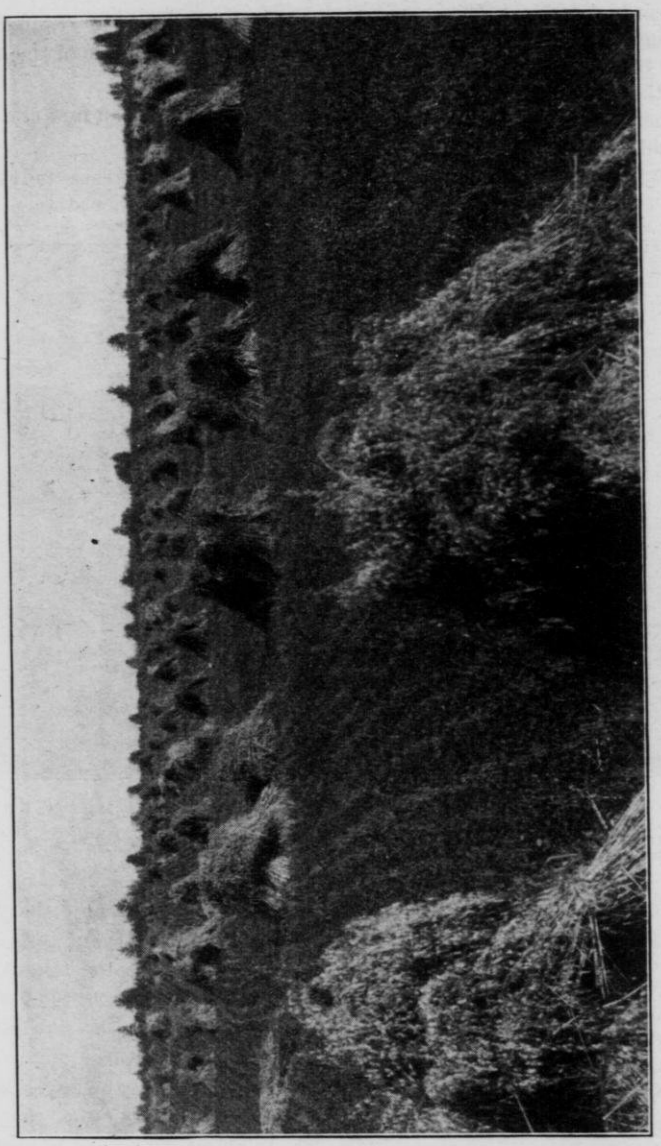
23. Wisconsin has the largest breeding centers of pure bred dairy stock.

24. Wisconsin has the greatest number of silos on its farms.

25. Wisconsin has the largest number of Brown Swiss dairy cows.

26. Wisconsin is second in number of Holstein cattle.

27. Wisconsin leads in the number of pure bred Guernsey cattle.



FRUITFUL WISCONSIN

On H. E. Rolf's Farm at Hayward, Sawyer Co. Wisconsin. Where can you beat it?

28. Wisconsin has 50 per cent of the cheese industry of the U. S.

29. Wisconsin has the largest grain elevator in the world.

30. Wisconsin has the largest ore docks.

31. Wisconsin has the largest zinc oxide plant.

32. Wisconsin has one of the largest steel plants in the world.

33. Wisconsin has the largest manufacturing creamery in the world.

34. Wisconsin has more available water power near large markets than any other state.

35. Wisconsin has the greatest and most influential agricultural college in America.

36. Wisconsin has 9,000,000 acres of farming land which only needs to be cleared.

37. Wisconsin is the leading pure bred sheep breeding state in the central west.

38. Wisconsin has a number of the most prominent show prize winning beef cattle herds.

39. Wisconsin is the leader among the northern tier of states in swine production.

40. Wisconsin ranks eleventh as a horse breeding state.

41. Wisconsin's equipment from a market center standpoint is unexcelled. Chicago, Milwaukee, St. Paul and Minneapolis are within easy access, and such progressive towns as Fond du Lac and Madison are big consuming centers.

42. Wisconsin has the greatest average number of dairy cows on its farms.

43. Wisconsin has the oldest and strongest dairymen's association in the United States.

44. Wisconsin was the first state to hold farmers' institutes and at the present time holds more than 100 annually.

45. Wisconsin has the oldest horticultural society.

46. Wisconsin has the greatest number of breeders' associations.

47. Wisconsin leads as a potato growing state with a yield of 37,000,000 bushels.

48. Wisconsin farmers have more money on deposit in banks than any other class of its citizens.

49. Wisconsin has great hardwood forests. Lumbering industry, $59,000,000 a year.

50. Wisconsin has more lakes than any other state.

51. Wisconsin is a great tobacco growing state—50,000,000 pounds a year.

52. Wisconsin ranks third in the production of cabbage.

53. Wisconsin has five beet sugar factories.

54. Wisconsin's small towns are considered to have more good hotels than any other state.

55. Wisconsin has the third lowest rate of mortality

56. Wisconsin possesses and markets more pedigreed seed grain than any other state.

57. Wisconsin yields more corn per acre than any other Mississippi valley state.

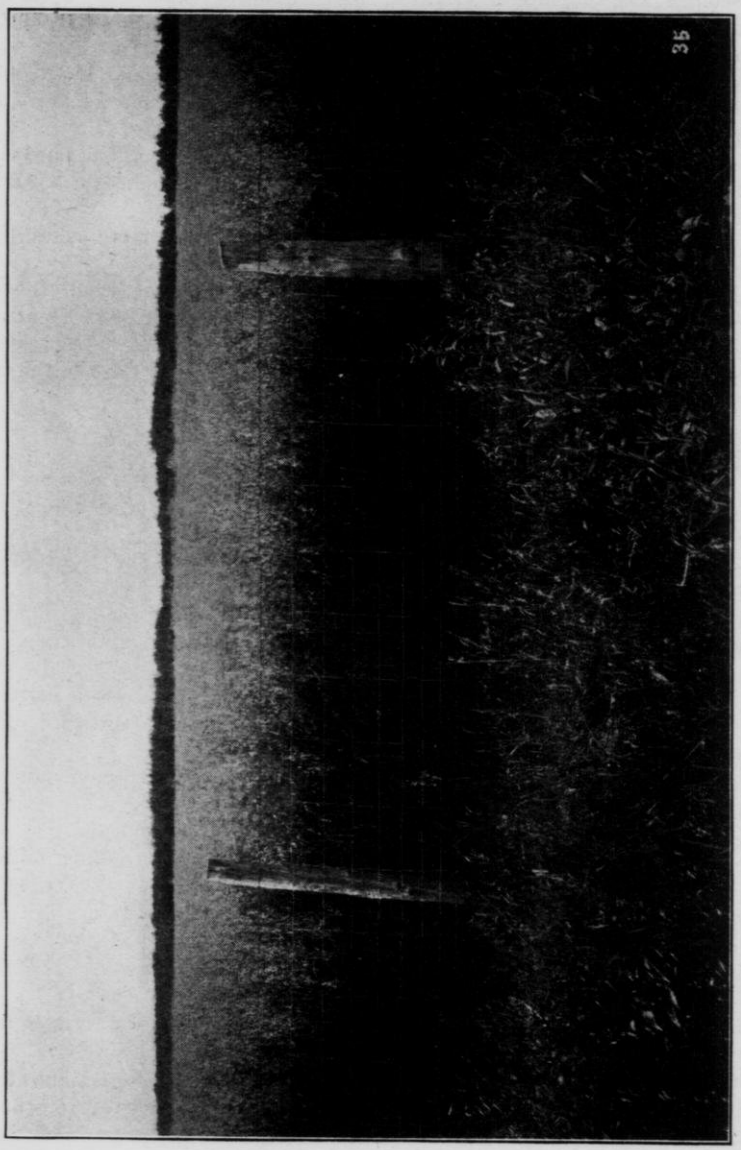
58. Wisconsin tobacco pays more per acre than that of any other tobacco state producing open culture.

59. Wisconsin's pea packing industry represents 40 per cent of the entire country.

60. Wisconsin has $24,000,000 invested in automobiles—60 per cent owned by farmers.

61. Wisconsin has the largest tannery in the United States.

It must be remembered, however, that successful farming requires broad and diversified knowledge, and sometimes seasons are unfavorable. The wise selection of land for farming calls for considerable care. Take plenty of



BANNER CROPS.

Oats on the soils of Northern Wisconsin.

time in choosing your location. Look carefully into soil conditions and especially drainage. The general prosperity of a country is at least partly indicated by the condition of farm buildings in the section you are considering. It is well to confer with successful farmers, recognized by their neighbors as men who are making good. Don't be hurried with making a decision.

If you have lived in the city all your life and wish to win out on the land, get some practical experience, if possible, before beginning your operations, and don't take too seriously the articles sometimes seen in magazines that make farming very easy. The city-bred man, active, ambitious and anxious to learn, who will profit by his mistakes—and the mistakes of others—will succeed in spite of his inexperience. Intelligent effort will win in any line of work and farming is no exception. There are good openings for profitable farming in every county of Wisconsin.

Remember that in choosing Wisconsin for a farm home you are locating in a state producing a wide variety of products;

That farmers in Illinois, Iowa and other states who are able to pay more and buy improved land in old settled communities are now purchasing and developing new lands in Wisconsin;

That more Wisconsin farmers, (85 per cent) own the farms they operate than do those of any other state in the Mississippi valley;

That Wisconsin winters are more enjoyable—and kill more insect pests—than in states where mud and slush are prevalent;

That these winters prevent the leaching of fertility from the land and render available a greater amount of plant food than in soil not subject to freezing;

That good, unimproved lands may be obtained in the central and northern counties at prices ranging from $15.00 to $25.00 an acre, close to towns, railways, mails and telephones;

That these lands can be fitted for crops at half the expense required in irrigated sections or in the logged-off regions of the far west;

That 70,000 acres of new land conservatively represents the amount annually being brought under cultivation;

That timber products are an important asset to the man compelled by force of circumstance to begin operations with limited means;

That there is plenty of fuel and an abundance of water so pure that millions of gallons are shipped yearly to points outside the state;

That there are county agricultural representatives in many new sections, employed for the express purpose of giving assistance to those tilling the soil;

That the college of agriculture with its branch experiment stations is performing a wonderful work in assisting new settlers to develop their land with the least expenditure of money and effort;

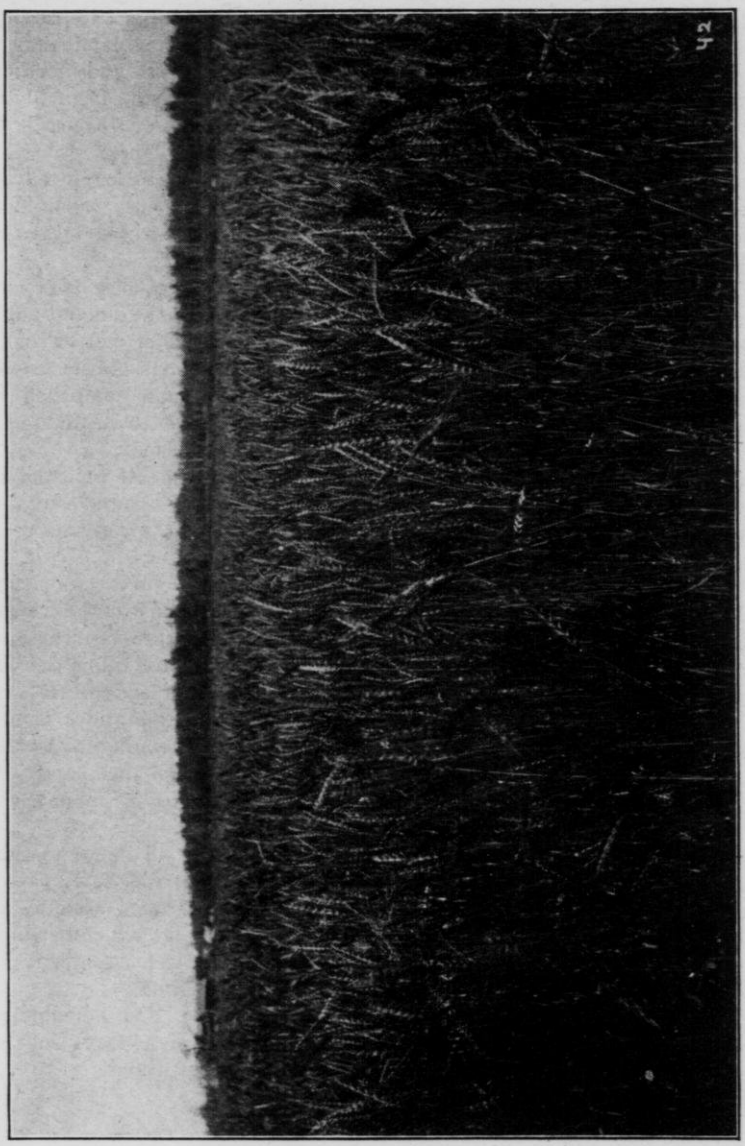
That churches of all denominations are found throughout the state;

That lodges and farmers' societies are numerous, and have large memberships;

That schools are well equipped;

That rainfall is ample;

That the people are law-abiding, having confidence in and respect for, their courts and institutions.



WISCONSIN BREAD.

Wheat is a great crop on the clay up by Lake Superior.

W. H. Clark, Rice Lake.

In building up a dairy herd, the selection of the sire is the most important factor. Too many of us buy our herd bull just because he is cheap and others simply because he is "registered," giving the matter no other consideration. Both are unwise and unsafe.

Every breeder of high class registered stock has his own problems to solve in securing a sire for his herd. The more successful he is in developing his herd, the more difficult it is for him to secure a sire that will keep up or improve the quality or production of his stock. However, the subject I will deal with is the "pedigree" for the dairy farmer, the man that furnishes our country with milk, cream, butter and cheese and breeds the thousands of dairy cows that are used for that purpose and that go on the market to replenish the herds in the many producing sections.

In buying a dairy sire, we should buy mainly for what there is in the animal or what he is able to do for the improvement of our herd, and not entirely for his appearance. A grade bull may look as well as a well bred registered animal and be absolutely worthless as far as improving the herd is concerned.

For that reason we should by all means buy a proven sire whenever we can find one. In this case it is not so much the pedigree or confirmation of the sire which we should consider, as the production, conformation, general dairy type and uniformity of his daughters which we should judge.

Unfortunately such sires as are obtainable are scarce. For that reason we are often obliged to turn to the young sire and consider his breeding and judge as far as possible his power to reproduce cows of high dairy quality and large production. For this we must look to his pedigree.

Don't be afraid to pay good money for a good pedigree, but with the pedigree buy a good vigorous bull; one with good constitution, good dairy conformation, well grown, thrifty, good sized for age, backed up with a good bunch of high producing ancestry, and you are pretty sure of placing in your herd a bull that will increase production, quality and be of great value to the breeder. It is understood, however, that the calves must be well fed and developed.

I find in talking with farmers and by sending out pedigrees that not all purchasers know what a good pedigree looks like, or know how to follow out a pedigree. For that reason I refer you to the cut, a sample pedigree.

First you will find the name of the calf or bull, time of birth, description, etc., and directly following the name a bracket ( ); at the top line of the bracket you will find the name of the sire (Big John), at the bottom of the bracket the name of the dam (Bess). After the name Big John you find another bracket, at the top of the line we find "Bill." Bill is the sire of Big John and the grandsire of the calf on the sire's side.

At the bottom line of this bracket we find "Jenny," the dam of Big John and the granddam of the calf on the sire's side.

Now, we will come down to the dam of the calf (Bess). After her name we find a bracket and at the top line we

CALF
Dropped—
3 full sisters with authenticated tests

- BIG JOHN
  No. 468
  Sire of 15 authenticated tested cows
  - BILL
    No. 94
    Sire of 25
    - SAM
      Sire of 45 tested cows
    - LILY
      Test 30 lbs. butter in 7 days
  - JENNY
    No. 840
    Test 590 lbs.
    - MIKE
      Sire of 6
    - SPOT
      Test 460 lbs.
- BESS
  Test 560 lbs.
  Dam of 4 record cows
  - JAKE
    Sire of 14
    - JIM
      Sold for $5,000
    - BETTY
      Test 15 lbs. in 7 days
  - SUE
    Test 600 lbs.
    Dam of 2
    - JAMES R.
      Sire of 60 tested daughters
    - MOLLY
      Test 390 lbs.
      Dam of 3 record cows

find the name "Jake." Jake is the sire of Bess and the grandsire of the calf on the dam's side.

At the bottom line we find "Sue," the dam of Bess, and the granddam of the calf on the dam's side. By keeping in mind that the name at the top line of the bracket is always the sire and the bottom line the dam we can follow the breeding of the animal for many generations.

Under each name you will find the registry number, as 468 for Big John, 94 for Bill, 840 for Jenny and so on for each one. Then following each number you will usually find written with red ink the performance or production, if any record of each animal has been kept, and it is this production that makes the animal more or less valuable.

We will notice that every ancestor to the calf is a producer except Jim. This is a good well balanced pedigree. Every sire for four generations is a producer of record cows except one, and every cow a producer not only of butter fat but three of them are producers of record cows as well. This gives strong backing on the dam's side.

You will also notice that the calf has three full sisters with records. That shows that the particular mating of Big John and Bess was a good one and helps to strengthen our belief that those two "nick" well, and the characteristics of the daughters will likely show up in the offspring of the calf.

By the term "record cows" we mean a cow that has made by semi-official or authenticated test 360 pounds or more of butter fat in a year or, if under five years of age, the equivalent of that standard. Take 250.5 pounds for a heifer exactly two years old and add one-tenth of a pound a day for every day over two years. This would bring the standard up to 360 pounds of fat at five years of age. These tests are called Advance Registry or Register of Merit tests, as the different breed associations term them.

In selecting the sire, get one especially well backed with tests on the dam's side, not on the reputation of a big test of some relative or an animal back three or four generations, but the dam should be a good one, as Bess is (560 pounds), and the granddam Sue (600 pounds) and Molly the great-granddam (390 pounds) of fat in a year, adding to that the fact that all three of the cows are producers of record daughters.

Insist on the dam being a good cow, then get just as much backing behind that as possible.

Now we will go to the sire's side of the pedigree. We want a well balanced pedigree. We find the sire of the calf (Big John) has fifteen authenticated tested daughters to his credit. Where space is sufficient, they are usually listed, giving the production of each, so we may judge not only by the number of tested daughters, but the quality of them.

Now, we find the sire of Big John (Bill) a good one (25 tested daughters) and his dam Jenny a good cow (590 pounds). So on through the pedigree we find producers. Lily the dam of Bill has a seven-day record of 30 pounds of butter. This short time test, while it is some indication of the capability of a cow, is not nearly as reliable a test of the capacity of the cow as a long time or year test.

Oftentimes we find large sums of money recorded for the sale of certain animals, as with Jim in this pedigree. To be sure $8,000 is a large sum of money, but don't think that because an animal sold for a big price that all his stock are going to be exceptionally valuable. If this large sum of money was paid for show quality, it will be of little value to the dairyman. If it

was paid for the producing quality of a cow or bull, it does add value to the pedigree.

It is production we should breed and feed for. It is production we sell on the open market. Of course we must look to constitution and conformation, but if we breed for production, selecting sires of good constitution from lines of producing families or backed by a good bunch of producing ancestry, dairy conformation or type must come.

You may not get animals that would suit the most critical in the show ring, but while you may get some of that kind, you will get large, strong, dairy cattle, capable of large production if properly fed, and with proper selection will have a very profitable herd, one that will be a source of satisfaction and pleasure and bring the means of obtaining the conveniences of the home and surroundings that make farm life less the burden and life worth living.

POINTERS ON CONTROL OF INSECTS.

J. G. Sanders, State Entomologist, Madison.

Nearly every agricultural crop or product manufactured therefrom is attacked at some stage by insects, which levy a tax of varying proportions unless active measures for control are applied. These losses are so great at times that the most careless people are suddenly awakened to the situation and call for help. The wise grower or producer will learn the best methods by careful study of these problems and will apply timely controls.

Successful methods for the control of insect pests are based on the knowledge of at least two fundamental factors—feeding habits and life history.

The life history of insects is subject to great alteration and diversity resulting from several factors, namely, climate, temperature, the seasonal growth and rotation of food plants, the presence of parasites or other enemies of insects, and sanitation.

Insect Characteristics

It must be remembered that insects are invertebrate animals, differing widely in structure and functions from higher animals. They breathe by means of pores situated along the sides of the various segments of the body. From these pores tiny air passages lead to all parts of the body, and there is no blood which carries oxygen as is found in the higher animals. Consequently, poisonous gases or oily substances act very quickly upon insects.

Insects pass through several different stages which are frequently so different in appearance that they are not recognized as a stage of an insect. Typical insects have four distinct stages—egg, larva, chrysalis and adult. In some insects the chrysalis stage is lacking, and there is a direct change through several stages from the youngest larva to the adult without a complete metamorphosis. As a rule, the larval stage is the most destructive, this being the stage in which the insect is growing. An insect never grows or becomes larger after once reaching a matured adult condition.

Control Methods

Two great classes may be defined under insect control, namely, preventive and remedial. Under the preven-

tive controls are found many of the common farm practices generally carried on without reference to insect control, such as rotation of the crops, fall plowing, clean cultivation and sanitation or removal of crop remnants.

Remedial methods are more familiar to people generally, and consist largely in the application of poisons for killing insects already causing damage. Many insects, however, cannot be controlled after once gaining a foothold, and preventive methods only are available.

Feeding Habits

There are three distinct types of feeding habits among insects, namely: (1) biting or chewing; (2) piercing and sucking; and (3) sucking or lapping. Probably the most important question for determination when attempting to control an insect is the type of mouth parts and the feeding habits.

(1) Biting or chewing insects which swallow portions of plant tissue can generally be controlled by the application of arsenical poisons, such as arsenate of lead or Paris green.

(2) Piercing and sucking insects which obtain their nourishment by sucking the juices from the deeper tissues of plants or animals, evidently cannot be killed by arsenical poisons, but can only be controlled by the application of "contact" insecticides which may be of an oily or caustic nature.

(3) Sucking or lapping insects, of which the house fly is an example, can be readily killed by exposing or spraying a poison bait generally containing sweet substances with soluble arsenical poisons.

Paris Green

Our best known arsenical spray is not so satisfactory as arsenate of lead, since it may burn the foliage, washes off more readily during rains, and unless lime is added it is with difficulty that the quality of spraying may be determined. Paris green should be used at the strength of one pound in 100 gallons of water, to which has been added the milk of lime, made by slacking about two pounds of fresh lime and straining it into the sprayer.

Arsenate of Lead

Arsenate of lead, although an arsenic compound, is a less powerful poison than Paris green and must therefore be used in large quantities. It is lower, however, in price than Paris green. Arsenate of lead may be obtained in two forms, viz.: a thick, white paste or a very fine powder. The powdered form, although not differing chemically from the paste, has advantages over the paste form since it is not injured by freezing or drying. The paste arsenate of lead is one-half water and for this reason twice as much of the paste as of the powder must be used in the usual spraying operations.

The powdered form is coming into general favor and use for dry applications by means of dusting apparatus. The rapidity and ease of application and the good results secured are tending toward a widespread use of this form of poison.

Arsenate of lead has advantages over Paris green in adhesive quality, non-burning of foliage, and the white color by means of which thorough spraying is more easily determined. Arsenate of lead remains in suspension in water longer than Paris green, which settles to the bottom more quickly.

Proportions for Spraying

Arsenate of lead (powder).....1–3 lbs.
Water, Bordeaux mixture or lime-sulfur solution.....50 gals.

or

Arsenate of lead (paste).....3–6 lbs.

Water, Bordeaux mixture or lime-sulfur solution.....50 gals.
In small quantities use,
Arsenate of lead (powder)....1 tablespoonful
Water.....1 gallon

Contact Insecticides

Insecticides of this type are used principally against insects which derive their nourishment from the tissues of plants by means of a sucking beak. Kerosene emulsion is a satisfactory spray material and when properly made can be kept in stock solution for some time without deterioration. The following formula and directions for making kerosene emulsion, if carefully followed will prove satisfactory:

Kerosene.....2 gallons
Water (soft or rain).....1 gallon
Hard Soap.....½ pound

Dissolve the soap in boiling water and after removing from the fire, add kerosene, agitating it violently until a creamy-whitish emulsion is produced, which on cooking should have a gelatinous consistency. This can best be done by pumping the material back upon itself with a small foot pump.

This is a stock solution, 66% oil, and must be diluted before it is sprayed on plants.

For 7% strength add 8½ gal. of water to 1 gal. of stock sol.
For 10% strength add 5⅔ gal. of water to 1 gal. of stock sol.
For 12% strength add 4½ gal. of water to 1 gal. of stock sol.
For 15% strength add 3½ gal. of water to 1 gal. of stock sol.
For 20% strength add 2½ gal. of water to 1 gal. of stock sol.

On trees or plants in foliage, never use stronger than 12% kerosene emulsion and 15 to 18 or 20@ is satisfactory when trees or shrubs are in dormant condition.

Nicotine Solutions or Tobacco Extracts

This class of contact sprays is being very highly favored and widely used at the present time. Some very highly concentrated tobacco extracts are now on the market which are very dark colored liquids prepared for use by diluting with water according to directions. Any of these tobacco preparations will be much more effective if a pound or two of soap is dissolved in each 50 gallons of spray. One of the best of these nicotine preparations is known as "Black Leaf 40", manufacured by the Kentucky Tobacco Products Company of Louisville, Kentucky. This material contains 40% of nicotine and will kill aphis or other soft-bodied insects, diluted 1 part to 800 or 1,000 of water and used as a spray.

Lime Sulphur

This is a most satisfactory material to be used in fall or early spring for spraying trees, shrubs, and vines. Commercial lime sulphur, used at the rate of 1 part to 8 or 10 parts of water, kills scale insects, overwintering eggs of aphids, and aids in the control of fungus diseases, forming what we call a double purpose spray.

Fumigation

Occasionally it is desirable to attempt the control of insects attacking grains, such as weevils and related forms. Fumigation with carbon-bisulphide in a perfectly tight box is most satisfactory. One pound of carbon-bisulphide for each two or three hundred cubic feet of space in a tight box, with an exposure of 24 to 36 hours, will kill all insects in the grain without harming the germination qualities. Clothes moths, etc., are readily killed by this method without injury to fabrics from the fumes.

Mechanical Control

Sometimes it seems advisable to resort to hand picking of some cater-

pillars, such as the tobacco worms, but generally sprays if properly applied are more satisfactory. Cultivation of the ground and frequent tillage aids in the control of some insects, stages of which are found in the ground. The various farm practices, including crop rotation; the burning of stubble; the use of trap crops to be destroyed later after insects have laid eggs on them; fall plowing to expose larvae and pupae of insects; and fertilization to induce rapid plant growth, are some of the principal farm practices used in combating certain field crop pests.

Drainage

Several insects, including mosquitoes, and certain horse flies, can be largely controlled by draining the water of marshy places which serve as a breeding ground. The application of a slight film of kerosene to standing water in ponds, marshes or in rain barrels or other containers, will prevent the breeding of mosquitoes from the "wigglers" which are generally found in these situations.

Poison Bran Mash

A mixture of Paris green, bran syrup and water is a satisfactory control for cutworms, including the species generally called the "army worm." Cutworms generally hide under debris or rubbish in the ground during the day and come out to feed at night. A single broadcast application in the late evening of poison bran mash is generally sufficient for effective control of these troublesome pests.

Formula for Preparation

Ingredients	Large Quantity	Small Quantity
Bran	20–25 lbs.	1 qt.
Paris green	1–2 lb.	1 teaspoonful
Common molasses	1 qt.	1 tablespoonful
Water—just enough to thoroughly moisten.		

For grasshopper control the poison bran mash will be more efficient and attractive if the juice and pulp of three or four lemons or oranges is added to the larger quantity above. Applications of the bran mash for grasshoppers should be made in the early morning, so that the young grasshoppers will have an opportunity to feed on it before it is dried out by the sun.

For advice on controls for special insect pests, it is well to consult your State Entomologist, Experiment Station Entomologist or the Federal specialists of the United States Bureau of Entomology.

It is hoped that the very general information given here will be as "first aid" in the fight against insect pests, and that more definite information will be sought when needed.

Pointed Paragraphs About Insects

1. Part of the equipment of the modern farmer is a practical knowledge of and business acquaintance with farm pests.

2. The farmer's wholesale business with nature in bringing large areas under cultivation for a single crop has upset nature's order and is advantageous to insect pests for tremendous multiplication and consequent damage.

3. The farmer generally breeds on his own farm those insects which later devastate his crops. Clean up fence rows, hedge rows and burn refuse. Thousands of grasshoppers breed in a narrow uncultivated fence row.

4. Rotation of crops is the greatest control method for farm pests generally. Do not plant corn on newly plowed sod or pasture land, on account of white grub damage.

5. "White grubs" and "wireworms" feed below the surface of the ground, hence cannot be poisoned. Fall plow

and cultivate or summer-fallow infested land.

6. "Cutworms" come out of hiding places at night and can be poisoned by the use of "poisoned bran mash" or cut clover previously sprayed heavily with Paris green. "Poisoned bran mash."—Stir one pound of Paris green in 40 pounds of dry wheat bran and moisten slightly with thin cheap molasses. Scatter broadcast in late evening and keep out poultry for a few days.

7. One must know how an insect feeds in order to know how to deal with him. Some insects chew their food while others suck the juice from foliage, stalk or root. The sucking insects cannot be killed by spraying with poison.

8. Do not be afraid to kill "currant worms," "cabbage worms" with Paris green or arsenate of lead. No harm can come from it.

9. "Lady bugs" of all kinds are beneficial, as they prey on other insects.

10. Kerosene emulsion is made up as follows:—Stock solution.

1 gallon soft water
½ pound soap
2 gallons kerosene

Thoroughly dissolve soap in boiling water and add kerosene and churn violently. Dilute with 5 parts of water.

11. Remember that Bordeaux mixture is not intended to kill insects but control the fungus diseases.

BETTER CONVENIENCES FOR RURAL SCHOOLS.

L. E. Scott, Stanley, Wis.

Fifty years ago the writer attended a rural school in one of the older sections of the state, in a building painted with common red barn paint, with windows on all sides admitting "cross light" and "cross light," and the furniture of which consisted of four rows of homemade board seats and desks, with three aisles, a box stove in the center of the room, a water pail and dipper, a blackboard about six feet long and a torn dictionary.

The only decorations were some artistic(?) carvings on the desks of the boys who were so unfortunate as to own jack-knives and a liberal supply of "spit-balls" adhering to the ceiling, made from pages torn from spelling books, chewed to a pulp and thrown upward when the teacher was demonstrating upon the six feet of blackboard.

It was the veritable "Little Red School House" of that day and probably cost about three hundred dollars. Many farmers in the district at that time lived in log houses.

A very few years later and one year previous to the building of the first brick farm residence in the neighborhood, the district built a brick veneered building with patent seats with blackboard extending across one end, with windows on opposite sides and a "Round Oak" Stove at one end of the room, and at a cost of twelve hundred dollars.

Recently the state authorities condemned this building and this same district, with a smaller number of pupils than it possessed a half century ago, erected another one-room school house with basement and furnace heat, at a cost of thirty-two hundred dollars.

While this is the history of one district, it represents fairly well what is being done throughout the state, and the point I wish to make is that, notwithstanding adverse criticisms, the improvements in Wisconsin's rural school buildings and environments are keeping pace fairly well with the progress in the farmers' own surroundings, or following closely in its wake.

LIKE MANY RURAL SCHOOL OUTHOUSES.

Are the outhouses at your rural school much better than these? How little enterprising, how low in civilization and moral tone are districts which tolerate such conditions. Better inspect the outhouses at your rural school.

The school house with its grounds and appointments is the home of our children for seven hours each day, for a large portion of their time during their growing and developing years. We should therefore be as particular regarding the conveniences and sanitary conditions of their school home as we are of their parental home.

While there are many improvements being made, there are still many just and constructive criticisms that may be made and with an intent only to be constructive, I may be pardoned for offering a few suggestions.

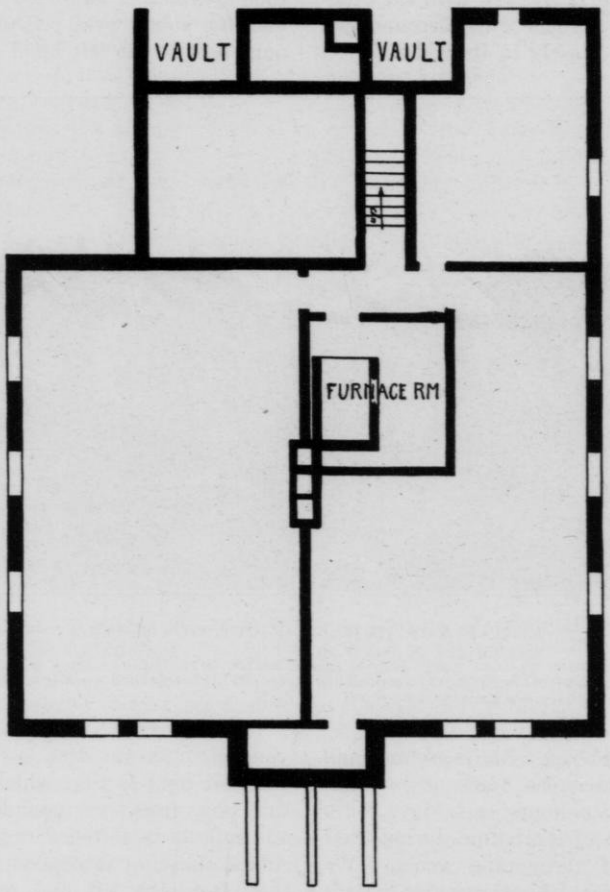
The Lighting System

I have mentioned the "cross light" admitted into the old-fashioned school rooms, which is admitted by all to be bad for young eyes. Reading from a page held in the left hand or a little to your left upon the desk in front of you, the best light is that which falls upon that page from over your left shoulder and reflects in softened ray to the eye. Admit the light into your school room then from the left and rear and the light from the rear should be high.

Where light is admitted from one side only, I have sometimes thought it might be well to arrange the seats diagonally facing the teacher's desk in the opposite left-hand corner, after the manner of many modern churches.

Heat and Ventilation

The box stove in the center was bad, the encased stove in corner is far from satisfactory. In some schools the vent flue is not more than ten feet from the heater and all on one side of the room. In such case, the air in the larger portion of the room is dead air with but slight circulation and consequently the warming of the remote portions of the room is a very slow process. The vent flue should be upon the opposite side



BASEMENT FLOOR PLAN
8" Scale

The word "vault" in the cut showing the basement plan for the country school near Stanley, Wisconsin, does not mean the ordinary deep vault which can not be cleaned and in time must be filled up. The vaults will be concrete lined and concrete floored and will be no deeper than the ground level at the back of the school building. When the building is completed, there will be good tight doors to these vaults through which the vaults may be cleaned and some absorbent material will be placed in the bottom of each vault. The cut on next page gives a notion of what the vault will be.

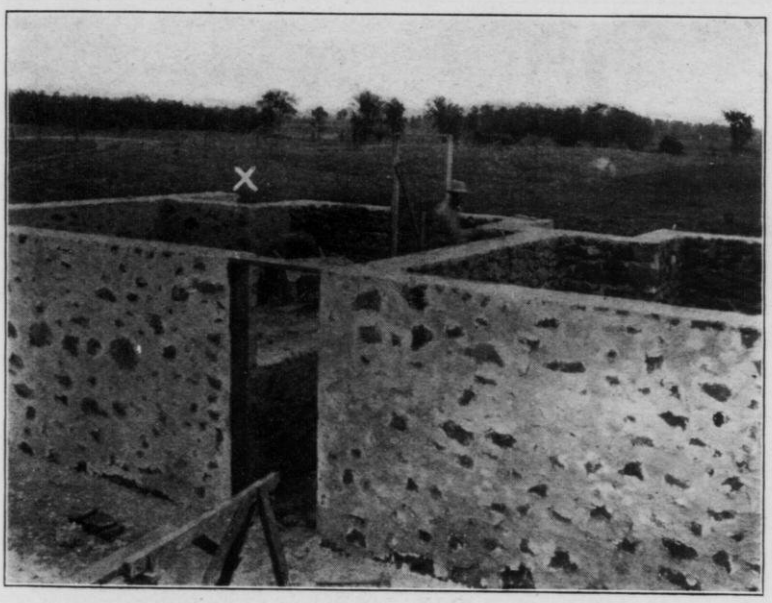
of the room from the heater, so that the warm air may be drawn entirely across the room.

A bare hardwood floor, in an unbanked room with porous foundation, and heated only from above, is a pretty cold proposition. Two hours after the fire was built in our district school one day last winter the thermometer showed the temperature to be 72°, but when laid upon the floor it registered 52°. Nor was this the temperature of the floor but rather of the atmosphere immediately above the floor. The floor itself was still colder and the constant conduction of heat from the children's feet downward will often render them colder during the day than when they first take off their rubbers.

I would encourage the placing of the heating plant in the basement.

Toilets

I wouldn't say that the average rural school toilet is an abomination; I wouldn't even say that they are necessary evils. The least I can say is that many of them are evil necessities. They are better than they used to be and more carefully inspected by teachers than formerly, but they are still bad.



COUNTRY SCHOOL, STANLEY, WISCONSIN.

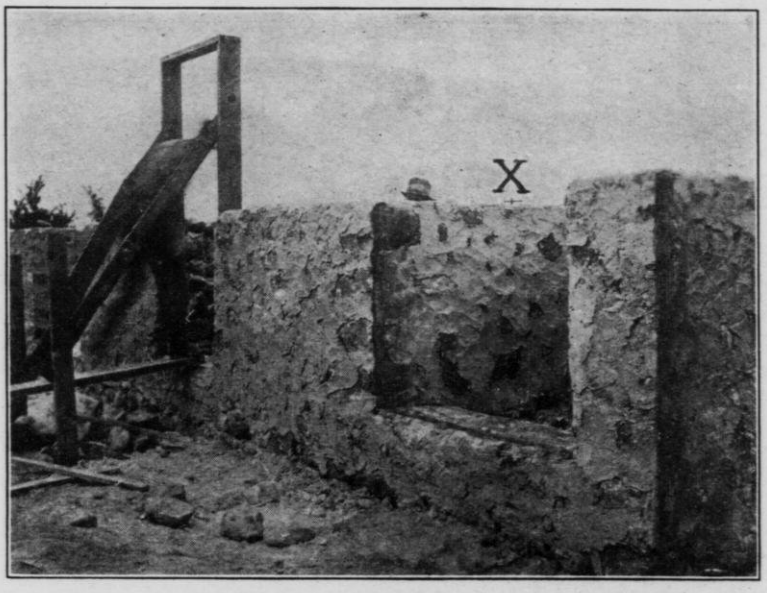
You see here the basement of the schoolhouse. The toilet vaults will be in the rear wall and are shown in the above illustration.

Their location is usually bad. Placed in the opposite rear corners of the grounds, which are generally one of the four corners of the crossroads, barren of trees or shrubbery, they are thus exposed to public view and unsightly at least. I passed a fairly neat schoolhouse recently with toilets thus located, screened with high and tight board fences and all painted red. Children were visiting and playing behind the screens at each corner.

Nor is this all. In nearly every case you will find the doors of such toilets open and in wintertime snow and sleet blowing in.

To run the gauntlet of a winter's wind exposed to public gaze and to find the toilet when reached in such a condition will cause many a child to postpone the calls of nature. Any physician will tell you that colds and more serious derangements, complications and diseases have their primary origin in this very neglect. Such neglect in early life lays the foundation of that all too common complaint, "chronic constipation," with its long attendant train of evils, resulting frequently, directly or indirectly, in premature death.

In a treatise on "The Sanitary Privy," our State Board of Health says: "When properly constructed and cared for, the privy need not be placed any great distance from the house." The Board recommends a well kept, inviting place of easy access, without exposure to public, and if these conditions are complied with they say "We will meet fewer people who have pasty complexion, a coated tongue, little appetite, lack of interest in their daily task, headaches and other evidences of the absorption of their own sewage." Can we not do this much for our own children?



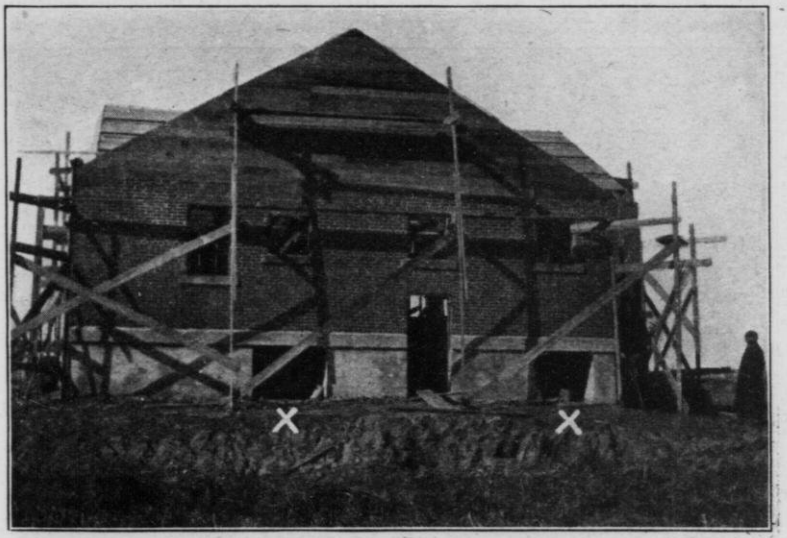
COUNTRY SCHOOL, STANLEY, WISCONSIN.

The place for one of the vaults is shown here. The other is just beyond the door casing. These vaults will be no deeper than the surface of the ground. Large doors will permit of easy cleaning of the vaults.

Flushing System

Many farmers in the state are putting in water works with toilet in their dwellings, with sewer and septic tank. I used to think such a system impractical in the rural school on account of freezing, but after giving the matter considerable thought I have concluded

that it can be made practical in many schools having basement heat by placing a large pneumatic tank in the basement with water forced through deeply laid pipes by a windmill. It is true there are days when the wind doesn't blow, but the windless period is usually during the summer vacation and in case of the exception the power could be anywhere from three hundred to five hundred dollars. Added to the cost of that school mentioned above of thirty-two hundred dollars, it doesn't seem very much and yet with all their other modern improvements, they are nearly as far behind the times with their toilets as was their "Little Red School House" fifty years ago.



COUNTRY SCHOOL, STANLEY, WISCONSIN.

Rear view of the new school showing the positions of the toilet vaults. The vaults will be concrete lined, they will be shallow, and large, secure doors will permit of easy cleaning of the vaults.

furnished by some of the athletic boys for short periods.

As to freezing, tank and traps could be drained for the Christmas vacation and a banked fire should keep the frost out of a well constructed basement through Saturday and Sunday.

Where the soil is sufficiently porous to take care of the effluent from the septic tank through a drainage system, I would prefer this system to any other and the whole system, excepting well and pump, should be put in at a cost

Dry Closets

I have never had personal experience with dry closets, but where they have been well constructed in connection with furnace heat, with a perfect ventilating system which works the right way, drying the contents of the closet and permitting it to be cremated at intervals, I am told that they are satisfactory and there are locations where they might be more practical than the flushing system. Poorly constructed,

they might be insanitary and dangerous, as is the case with any other system.

Chemical Toilets

I have seen chemical toilets used in several places and I do feel like recommending them.

A Common Sense System

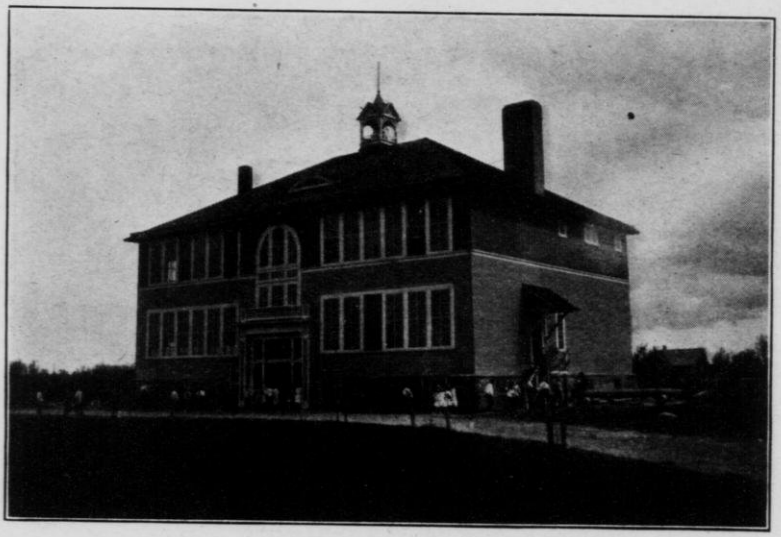
A plan has been suggested by a prominent educator of our state, who has worked it out in an adjoining state, which seems very practical for the greater number of our country schoolhouses and which has met the approval of all to whom I have explained the plan.

It is to build the wood shed upon the rear of the schoolhouse, with a narrow passage way on either side leading from the schoolroom to the toilet at the end, the wood occupying the center of the shed between the passage ways, as per accompanying diagram. The passages should be light and provided with windows on the outer side, which should be taken out and screened in the summertime.

The privy vault should be well built, of a good rich mixture of concrete and plastered with cement plaster. It should be built sufficiently high to prevent surface water running in and not deep enough to make it difficult to clean out at intervals. It should be fitted with a fly proof drop door.

The style suggested in Figure 2, I believe, is good, but would add a six-inch ventilator shaft running from the seat up through the roof, with cap raised six inches, to afford sufficient draft and protected with fly screen.

For the average one-room school this toilet need not be very large. I believe



TRI-COUNTY SCHOOL, TRIPOLI, WISCONSIN.

Note—The need of better outhouse accommodations in connection with our rural schools is evident on every hand. The people all over the state are erecting splendid new school buildings. We are constantly reminded of this by the pictures which we see in print. But back of most of these fine buildings you will see the same old fashioned outhouses which are a reproach. Here is the fine new consolidated school at Tripoli, Oneida county, Wisconsin. The toilets are in the basement of this school. Pupils are transported to this school in vans. With a consolidated school all of the better things are possible. If you desire to know more about the matter of better toilet accommodations for your school, write Mr. L. E. Scott, Stanley, or the superintendent of Farmers' Institutes, Madison.

that one seat in each is better than more, with urinal in the one assigned to the boys.

These toilets should be well finished and painted inside and furnished with toilet paper. The little extra expense incurred for these accessories will hardly be felt and will go far to encourage children to be neat and shun filth.

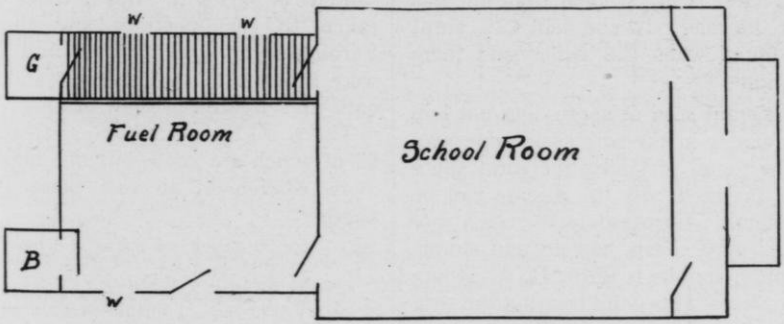
The roof of this part of the building might be sufficiently low to permit casement windows above it into the schoolroom if the light is needed therein, which would be very desirable if it is at the rear of the desks.

Objection has been raised to this plan for schoolhouses with basement as this is generally used for the fuel. This extra fuel room need not be expensive, would be a better place for curing the wood if that be the fuel used, and with a grade entrance into the basement would be convienent and would leave the basement for a play-room in winter, and it would also be a very desirable place for children to eat their dinners around the furnace fire.

It is for each school district to decide which plan is best for them or work out a plan of their own, but I would like to see the unsightly and insanitary outdoor toilet displaced with something better.

School Grounds

With better schoolhouses and more modern appointments, more attention should be given to the attractiveness of the grounds. Some attempt has been made at planting flower beds and lines of shrubbery, which is to be commended, but do not forget upon Arbor Day to plant trees that will grow for centuries to gladden the hearts of children yet unborn—grand old elms and oaks, in whose strong branches the children of future generations may hang their swings and under the shade of which they may play and laugh and grow and plan and love, just as we used to do.



G. Girls Toilet
B. Boys Toilet
W. Windows

TOILET FOR THE ORDINARY COUNTRY SCHOOL.

The ordinary country school outhouse accommodations may be improved very much by attaching the woodshed to the school house and then attaching the outhouses to the woodshed as in the above plan. The outhouses should be stood on shallow concrete pits capable of being cleaned readily. Good ventilators should be placed in the roof of each outhouse and windows in the woodshed. The door of the fuel room should have good strong hinges and locks and the teacher should have it in her contract to lock all outside doors securely before leaving the school. The present outhouses set back in the yard can not be controlled by any teacher. Much of the time during the school snow and severe cold prevents use. But none of these objections can be raised to the arrangements in the above plan which may be made at a very small expense to any district.

ERADICATION OF SMUT IN OATS.

A. H. Cole, Merrill.

Smut is a fungus disease of plants. There are many kinds, but this discussion will be confined to loose smut upon oats. The cause of the disease is a very small seed or spore, so small that it cannot be seen with the unaided eye. When the oat is placed in the ground the spore begins to grow as the oat grows. In the very early growth of the oat the smut grows into the oat plant. It then grows upon the juices inside of the oat stem until the oat flowers; then the smut takes the place of the oat grains and instead of oats we get a small oat head filled with black smut. The smut ripens a little after the oat blossoms; about two weeks before the oats ripen the wind blows the smut from the stem. The barren stem is shorter than the normal oat. So usually much more smut is in the field than appears from the road. In one field 12% smut was found when the owner said there was none.

The smut seed or spore does not live over winter in the soil, so if some way can be found of killing the smut spore upon the seed oats the disease can be eradicated. Fortunately there is a way that is very cheap, certain and simple to apply, thanks to Prof. R. A. Moore and others. This is by treating the seed with a formalin solution. This will kill the spores. Fields sown with treated seed seldom show over one-half of one per cent smut the next year.

The summer of 1915, while doing my regular work as County Representative, I took sixty-five samples from as many fields fairly uniformly distributed throughout the county. I would drive up to a field of oats, walk into it until I found a spot that appeared to be the average condition, then cut off two square feet with my pocket knife. The sample was then taken to the road, the straws counted, and the smut heads counted. The bundle was tied up with a slip bearing the results of the count and the farmer's name.

The average per cent of smut heads in the sixty-five samples taken was 18%. With fields yielding 40 bushels per acre and priced at 50 cents per bushel, it meant a loss of $4.50 per acre. If a farmer had 30 acres of oats it meant a loss of $135.00 or, in a county, 5,000 acres of oats, the loss was $22,500.00. The fine thing about it all is that it can be prevented at very little cost.

At the farmers' meetings during the winter, this subject was discussed. The samples of oats with smut in them were taken to the meetings and shown. Formaldehyde, pails, water and oats were brought to the meetings and the oats were treated in sight of all.

There are three methods of treating, all of which are good, but one may be more convenient in one place than another.

1st. Place 35 gallons of water in a barrel.
Pour into it 1 pint of 40% formaldehyde.
Place 17 gallons in a second barrel.
Put your oats, 1 bushel each, in gunny sacks.
Soak each sack of oats 10 minutes.
Hang over second barrel to drain.
Dip solution from barrel 2 into barrel 1 as it is needed.
Dry grain as soon as drained.

2nd. Place grain to be treated upon bare floor about 3 inches deep.
Sprinkle with formaldehyde solution same strength as above.
Put on another layer, sprinkle again.
Use about 1 gallon per bushel.
Shovel over into pile.
Cover with sacks or blankets for 12 hours.
Spread out and dry.

3rd. Place 30 gallons of water in barrel.
Pour into it 1 pint of formaldehyde.
Stir this up and fill the tank of a smut machine.
Run the grain through the machine as directed by manufacturers.
Then pour out to dry.

The seeder or drill should be opened to sow about one bushel more per acre than would be sowed with untreated seed. The machine will treat at the rate of one bushel per minute. I treated oats for seventy-one farmers this spring. At Irma they came through the rain and poor roads with their oats upon stoneboats, carts, go-devils, and one man even brought his upon his back to be treated.

In Scott at nine o'clock there were eight loads of oats in the yard and twelve men to run the machine. Some came in the forenoon to see what was going on and brought their oats to be treated in the afternoon.

I do not know how many oats have been treated in the county, but the County Representative has assisted in treating about 2,800 bushels this spring. This would sow about 1,200 acres. At the same basis as last year's crop, this would be a saving of $5,400.00 upon the 1916 crop.

IMPROVEMENT OF FARM WOODLOTS.

F. B. Moody, Wisconsin Conservation Commission.

In an effort to improve the farm woodlot, to utilize the waste lands on the farms in the state, and to stimulate an interest in the planting of forest trees, the Forestry branch of the Conservation Commission desires to cooperate with owners of woodlots, timber tracts or waste land, and is now prepared to give special attention to the different phases of forestry that are of interest to those who desire to improve their wooded or bare areas by planting trees or by introducing practical forestry methods. The woodlots on the farms of the state, in the great majority of instances, can be vastly improved by the application of the principles of correct forest practice. The thousands of acres of waste land, both on improved farms and on wild lands, which today bear little or no valuable growth, can be put to practical use and made to bear a valuable crop, by the planting of desirable forest trees.

The plan adopted by the Commission is as follows: on request to the Commission by the owner of a tract of land, who also agrees to bear the expenses of travel and maintenance of the examiner, a thorough examination of the property is made by an expert forester. The results of this examination are set forth in a practical working plan report. This plan embraces a practical system for the cutting and marketing of small tracts of timber such as farm woodlots, or in case of bare areas or those in need of planting, the report includes a practical planting plan, or where a combination of conditions exists, a combination of both a cutting and planting plan is considered. The ideas and desires of the owner of the property examined are always taken into consideration in the preparation of the report. In order to reduce the cost of such examinations to the individual, the requests to the Commission from one part

Protect the farm home by planting trees. A Norway spruce windbreak planted by Lewis J. Lee, on his farm in the town of Leeds, Columbia County, 24 years ago. Height 30 feet. Diameter 12 inches. Spacing, 8 feet apart. Two or three rows will give ample protection.

of the state are gathered together, and at a definite time an examiner is sent to complete all examinations in that region. In this way the work is made more systematic for the commission, and less expensive to the property owner.

In conjunction with this plan of land examinations, the Commission is growing forest trees on a large scale, which will be sold to land owners in the state at the approximate cost of raising them. Two large nurseries, one at Trout Lake and one at Tomahawk Lake, are operated by the Commission for the purpose of growing forest trees. These nurseries have a capacity of over 1,000,000 trees per year. These trees are used to replant the cut-over lands owned by the state, for replanting on the five state parks, or for distribution to the people of the state for the planting of bare, rocky or lean lands. The sales for 1916 to individuals amounted to 110,000 trees. Trees of the following species are available for distribution:

	Age	
White pine transplants	4 yr.	$4.00 per M.
White pine transplants	3 yr.	3.50 per M.

Norway spruce plantation 18 years old. This species is adapted to the heavier soils of southern Wisconsin. Wood useful for fuel, fence posts when treated with creosote, and lumber.

White pine seedlings	2 yr.	1.50 per M.
Scotch pine transplants	4 yr.	4.00 per M.
Scotch pine transplants	3 yr.	3.50 per M.
Scotch pine seedlings	2 yr.	1.50 per M.
Norway pine transplants	4 yr.	4.00 per M.
Norway pine transplants	3 yr.	3.50 per M.
Norway pine seedlings	2 yr.	1.50 per M.
Norway Spruce transplants	4 yr.	4.50 per M.
Norway Spruce transplants	3 yr.	3.50 per M.
Norway Spruce transplants	2 yr.	1.50 per M.
White Spruce transplants	5 yr.	4.50 per M.
Colorado Blue Spruce transplants	5 yr.	4.50 per M.

For the planting of a few hundred or a few thousand trees, an examination of the site is not essential to success, but

A 55 year old plantation of White pine. Many steep and rocky hillsides on farms in the state might well be planted to trees. Land of this character will support good forest growth, but will produce little or no income when used for any other purpose.

The wood lot as it should be. Notice dense undergrowth of natural reproduction, which insured the permanence of the forest. A stand of timber, to be in good condition, should have all age classes represented, from the youngest seedling to the mature tree.

if a number of trees to exceed 10,000 is to be planted, it is advisable to have the site looked over and, if possible, to have an experienced man look after the planting operations. With each shipment of trees from the state nurseries is sent a sheet of instructions concerning the proper care of forest trees and pointers regarding their planting.

The Commission is also glad to furnish a speaker for any organization wishing to arrange a lecture on Forestry. It is urged that wherever possible the meeting be preceded or followed by a field excursion, in which the lecturer can make definite suggestions, as a field trip greatly increases the helpfulness of a meeting. The expense connected with this lecture work will be the necessary traveling expenses and maintenance of the speaker.

The Commission has recently published a very practical bulletin on "Forest Planting in Wisconsin." This subject is treated in detail and it should prove of much value to those interested in, or contemplating, forest planting in Wisconsin.

For information regarding any of these points please communicate with the State Conservation Commission, Madison, Wisconsin.

EFFECT OF GRAZING.

Stock should not be permitted to graze the woodlot. A woodlot is neither good for wood crop production when grazed, nor a paying proposition when used as a pasture. If shade is needed for stock, a portion should be fenced off for this purpose.

FARM CURED MEATS.

Thos. Convey, Ridgeway.

In order to have nice home cured meat, there are several conditions necessary. First the animals should be reasonably young, six to eight months for hogs, weighing from 150 to about 250 pounds. They should also be fed on mixed foods. Ours have been fed on ground salvage wheat, grain that had been in a fire but not damaged much. They also get skim milk and buttermilk. I consider it necessary that they get some kind of animal food to stimulate rapid growth, as this is essential in getting tender, juicy meat. Of course pasture should be provided and as great a variety as possible. This not only makes cheaper meat, but a better flavored one, also, the exercise tending to develop more lean meat or muscle. Alfalfa makes the best of pasture, but it is quite difficult to keep in a hog pasture.

I consider it difficult or impossible to cure meat satisfactorily in farm practice except in cool weather. This does not mean that it should be frozen in cooling; a temperature of 32 or 34 degrees would be about right until thoroughly cool in 24 or 48 hours. Freezing later is not so dangerous.

In killing care should be taken to do it with the least excitement possible. Chasing or driving an animal of any kind immediately before killing is a serious mistake. If it has to be done, better let them cool off before butchering, they do not bleed right when worried and *rigor mortis* or the rigidity of the muscles sets in soon, ceases early and decay begins at once. If you expect meat to keep well it is very essential that all blood escape from the carcass. It is also necessary that the cleaning be well done. Meat is like milk, it is very susceptible to undesirable flavors, especially fresh meat. It should not be stored where there is an objectionable odor.

The ribs and backbone are removed from the body. A nicer job can be done where a cut is made through the ribs on both sides of the backbone. Care should be taken not to gash the meat, as the smoother the cut the nicer the meat looks, and it is easier to care for.

Leave all the lean meat possible on the sides. For convenience we cut the body in six pieces. Later on if you wish the sides can be cut in smaller pieces, making light and heavy bacon.

We first use sugar on the flesh side of meat. It is immaterial about quantity, a moderate amount will do. Let it stand 24 hours, then salt on flesh side, packing with skin side down. We use about 4 ounces of saltpetre to 100 pounds of salt. See that the meat is well covered with salt, especially the thicker pieces.

We pack on table, or in large box, where brine can drain away. We resalt in ten days or two weeks, especially the heavy pieces. Do not salt so heavy that it injures the flavor of the meat. Better test some by cooking. Too much meat is hurt by excessive salting. Use pepper if desired before putting on salt. Use red pepper on shanks.

Let stand about one month from first salting, then hang up and smoke and dry. Each of these has curative properties and when meat is firm and dry it can be stored better on a cool, dry day. Salt meat takes up moisture from the

atmosphere and if packed damp will mold. Some people say mold will not injure meat, but this is a mistake.

We clean oats and pack in it so no two pieces of meat touch, and have enough on top so moisture in damp weather will not reach it. Bran, cut hay or other clean material will do. Hanging in a smoke house will do if flies are shut out and smoke and heat used in damp weather. Using flour sacks and dipping in whitewash, or any system to keep insects out and moisture away, after it is thoroughly dry, will answer the purpose. Examine after damp hot weather to see that all is right. If mold starts, rub on some salt and hang up to dry over night. This only happens when first part is not properly done. Keep in as cool and dry a place as possible; most cellars are too damp.

FACTORS AFFECTING FARM INCOME.

H. D. Griswold, West Salem.

The Farmer

The first and most important factor affecting the farm income is the man himself. He should be a master of the farm and not a servant to the farm. In any other business, the man fits himself for his work before he begins and after that is constantly on the watch for new ideas and methods. He advertises his business and strives at all times to give to his customers a good article and an honest deal. He anticipates their wants. He keeps strict account of his business and takes time to read and to attend meetings of men in his line of work.

The successful farmer today does not depend so much on brawn and muscle as in former years; he is thinking more, studying more how he shall manage his soil to keep up its fertility, the crops to raise for the most profit, and he plans far ahead in the arrangement of crops to keep up a rotation and use his land to the best advantage. He is studying the breeding of stock to produce the best horses, the most productive cows, the most economical pork and hens that lay in the winter.

He must also be a man of skill and ability and resource; nor can he leave his work to hired help, but must be master of the farm himself. He must be in personal touch with the work to be done. Time is precious and every day's work should be planned ahead so there need be no delay. Changes of weather necessitate changes of plans, and many a time have I awakened in the night to hear it raining and at once commenced to change the program for the next day's work.

Nothing thrives without care. It is the business of the farmer to know when the mare is due to foal, or the cow to calve, or the sow to farrow, and see to it that they are properly cared for. Many animals die at birth and the cause is laid to luck when the real cause is sheer neglect. Indifference, ignorance and intemperance are the main reasons for poverty on our farms. Eternal vigilance is the price of success.

Every farmer should be in touch with our university and the work they are doing. They can test his soil and tell him what it needs, and help him in

many ways, and they are ready and anxious to help him if he will give them the chance.

If you have a county representative, use him. If you have an agricultural school, use it; make the most of these opportunities.

And have a simple system of bookkeeping so that you know your business. Every other business man does. Why not you?

The Farmer's Wife

A good wife is a necessity. A bachelor never amounts to much on a farm or anywhere else. The wife many times is the better farmer and thus many a good farmer has been made out of very poor material. She is the mistress of the house and can by wise management add greatly to the farm income, or she can be a burden that no farm can carry and prosper.

The Boys and Girls

Boys and girls should not be counted as factors in the farm income. Their business is to go to school. It is right and proper that they should help what they can, but do not let a few dollars stand in the way of their education. Teach them to work, but do not work them too hard.

Live Stock

Instead of buying more land or putting money in the bank, put a little more into working capital in the shape of better stock and equipment. Have good horses, mares if possible, of good type and breeding, and breed them to the best sires. They can do a large amount of work and at the same time raise valuable colts that will add materially to the income of the farm.

Keep good cows; belong to a test association and know your business. Cull out the poor, unprofitable cows, build up your herd by using a full blood sire of one of the recognized dairy breeds, stick to one line of breeding and have a herd that is good to look at, that brings you a margin of profit above the cost of feed, and brings a good price when you have one to sell. One of the most serious losses today is the feeding of crops to poor stock. There are farms in this state of one hundred acres or less where the sales of milk and cream are over two thousand dollars per year, and the sales of stock are as much more.

There is no excuse for farmers keeping poor hogs. Study to produce the most hogs with the least expense for feed. One farmer in the state this last winter, even with the poorest corn crop in the history of the state, raised and sold fifty sows that brought him at auction an average of over sixty dollars each, and an equal number of male pigs that brought him nearly as much.

Poultry can be made a source of considerable income. Give them a properly constructed house and feed and care for them right, so they will produce eggs in winter when the price is good, and they will bring good profit for the feed and small capital invested, but the way most farmers keep them there is little or no profit.

A Silo

A silo is a strong factor in the farm income. Last fall the man with the silo could save his corn crop and use it, although it was badly frosted, and immature, and get good feed out of it. With a silo the corn can be all saved from the field and we have for winter milk production a feed that comes the nearest to green grass of anything we can get. Also the summer silo is a great

help to tide over dry spells when the pasture is short. Where tillable land is used for pasture, there is much of the pasture grass trampled and soiled and wasted. If the same land were put in corn and that corn saved in the silo, very much more feed and milk could be secured from the same acreage.

raise the corn and if by saving out the best and fire drying it you get two or three dollars per bushel instead of fifty or seventy-five cents, you are surely getting big pay for the extra work. The same is true of oats or barley or potatoes. Sow and plant the best seeds, prepare the ground in the best possible

Alfalfa on the farm of C. A. Patterson, Plainfield, Wisconsin. Alfalfa will prove a great crop on the light soils of Central Wisconsin if put in rightly.

Alfalfa

Alfalfa, I am satisfied, can be grown in nearly all parts of the state. It will in most places need lime and inoculation, but it is well worth the time and expense required, because it will furnish the protein of our dairy feeds which we are now buying outside the state, and for which we are spending a large amount of money, therefore the raising of alfalfa means a large factor in the farm income.

Seed Grains

Seed grains can be made a source of special profit. It costs no more to shape, plant in season, and do not be satisfied with anything but the best, for therein lies the most profit.

Fruit

Good fruit is also a source of profit, but it is no use to set it out unless you are prepared to cultivate it and spray and trim tbe trees and raise first-class fruit. Lots of poor fruit rots every year. No one wants poor fruit.

Special Crops

Be careful about special crops. Agents of canning factories, sugar beet

factories, tobacco factories and many others, are only interested in their own profits. If a farmer has the help and suitable conditions and the crop can be handled without interfering with the other crops, a small acreage may be used at a profit. Remember, however, that special crops are soil robbers. Plenty of good live stock must be the basis of all permanent agriculture.

Hired Help

That farmer is fortunate who has help of his own. If he has a son who will stay with him, give that son so good a chance at home that no one else can tempt him away. If he must hire, then hire good men and give the men a good show. I have worked as a hired man and I have employed men; there are two sides to the question. A hired man today must be a different man than was employed when work was done more by hand. Today the man must be able to handle horses and machinery. If he is skillful with horses and in the proper care of machinery, he can do much more work in a day and do it better, and is consequently more profitable and worth more wages. If he takes an interest and does not have to be told everything: for instance, a farmer set his hired man to plowing while he went away for the afternoon on other business. The plow caught a root and a broke the beam. The man promptly took out the broken beam, used it for a pattern, hewed out a new beam from an oak fence post, fitted it in and was plowing again when the owner came home. Such a man is worth more than a man who sits down and waits for some one to fix it for him.

The best men are the cheapest in the end and a poor man is dear at any price. One man worked for me eight years and others for long terms. After a man is used to your ways and methods he is much more valuable, therefore pay him accordingly, treat him like a man and talk over the work with him; if he can give you some good ideas use them, and above all, give him enough to eat!

Farm Machinery

We are getting more and more machinery for farm work; some are of great help and some are good under certain conditions, therefore, the farmer should be careful in what he buys. A tractor may be all right on large level farms, but the small farmer on side-hill land had better stick to his horses. Be sure before you buy that the machine will pay you under your conditions. The farmers have spent large sums of money for machinery that they did not need or was not suited to their particular use. A machine that is used only one day in a year the farmer can hire much cheaper than to own it, but have those that you are sure you need, get the best and keep them in good repair, especially have plenty of small tools. Keep all machinery and tools under cover when not in use and cleaned up after using. Machinery is injured more by neglect than by actual use. I have a potato planter that has been in use every year for thirty years, with practically nothing spent for repairs, which is in good condition now because it has always been under cover when not in use and has never been lent. One farmer in crossing his neighbor's farm and meeting him said: "I found fifty dollars lying in the grass behind the straw stack." It was in the shape of a mowing machine.

Drive the work and don't let the work drive you. One man can handle three or four horses just as well as two and do proportionately more work. Get the horses out early in the morning in the busy season, let others do the chores,

but the men that use the horses must get in full days.

Marketing

So far as possible, the farmer should market his own product. Advertising what he has to sell he must do if he wishes to bring his products before the public, then he must put on the market a first class article. The public today is demanding quality as never before. If we wish to succeed we must put up the very best; that brings the price. You cannot force any one to buy poor stuff. In all the co-operative companies that have made any marked success there has been a co-operative movement to produce better, cleaner, more uniform and more honest product.

Every farmer today is making his own reputation. My brother, what kind of a reputation are you making for yourself? Because upon it will depend one of the vital factors affecting your farm income.

LICENSING BUTTER AND CHEESE FACTORIES.

E. L. Aderhold, Asst. Commissioner, Wisconsin Dairy and Food Commission.

Lack of Standards

From the time we began to build butter and cheese factories in Wisconsin until recently, we had no standards as to what the factory building, equipment and arrangement should be, or as to the handling of by-products and the disposal of the liquid waste.

A very large percentage of our factories were thus established by parties who had no clear conception regarding the suitability of a factory building, equipment, etc. As a result, these factories were, to a greater or lesser extent, misfits as to site, size, construction, arrangement and so on.

Under the circumstances, that was a natural result for which no one can be blamed. But the misfit factories will remain such until the changes necessary to fit them to the needs of the present are made.

Factory Management

The maker is necessarily the general manager of the factory where he is employed. He has three great responsibilities, to wit: effective supervision of the raw material furnished by patrons; the skillful manufacture of the same into the finished product; and the proper care of the building, equipment and grounds.

Each of these three duties is of such importance as to render unprofitable the employment of a maker who fails in any one of them.

Effective supervision at the intake protects those patrons who furnish milk and cream of good quality and makes possible the manufacture of a finished product of high quality.

The value of skill in converting the raw into the finished product is obvious to everyone.

Proper care of the building, equipment, etc., is a big item in keeping operating expenses within due bounds and a necessity in keeping premises and utensils clean and orderly.

We have makers who are faithfully discharging their three duties. We

have many who fail in at least one of them and we have had specimens of so called makers who failed in all of them.

Thoughtful dairymen will realize that they can not afford to entrust their milk and cream, the chief product of their farms, in the hands of a maker who fails in the faithful performance of his duties.

Some of the Fruits

It has not been difficult to find makers who make a practice of accepting milk or cream of impaired quality, dirty or worse, or which is furnished in unclean cans.

It has not been difficult to find makers lacking in skill or makers whose finished product was anything but neat and attractive.

IN PEACEFUL, PROSPEROUS WISCONSIN.

Clean cows and licensed creameries and cheese factories keep Wisconsin at the head of the dairy procession.

The Maker's Training

The helper, who is the future maker, receives his training in the practical part of his work at the factory. His training is no better than the equipment and the management where he is employed, consequently the training received by most of our makers was faulty and, in some cases, entirely bad.

That, also, was a natural result of circumstances, for which no one is to blame, but the fruits of inadequate training are very much in evidence.

It has not been difficult to find makers who have destroyed concrete floors with whey, butter milk or sulphuric acid, or to find high priced factory apparatus in the junk pile, that, with proper care, would have been fit for much longer service.

It is not difficult to find cheese makers who have never used the Babcock test, and not impossible to find makers who are sufficiently dishonest to claim that a given quantity of low testing milk will

yield as much cheese as will a like quantity of high testing milk.

In the matter of factory sanitation, or the lack of it, the fruits of faulty training have also been apparent, manifesting themselves in various ways. After ten years of inspection, some of the inspection reports would indicate that unsuitable floors, fixtures or utensils were in use; that drains were untrapped; that liquid waste was causing foul odors about the factory; that foul odors were being created inside the factory; that the water supply was polluted and was used in washing factory utensils; that a foul smelling kitchen broom was employed in washing the vat used in whey cream production; that whey or buttermilk tanks were filthy; that the factory was infested with flies or with mice; that there was some unusual condition which made it impossible to have the factory clean; that the maker's personal appearance was unclean and that he was shiftless and untidy in his work.

Not the Rule

In calling attention to these faulty conditions, it must not be taken for granted that such were the rule, for they were not; yet they were found sufficiently frequent to indicate that laws, inspection, warnings and prosecution had fallen far short in securing reasonable sanitation at some of our factories. In fact, some of the worst offenders, after paying one or more fines, continued manufacturing cheese in violation of law.

Our Best Asset

The financial pointer of Wisconsin's dairy industry is playing around the one hundred million dollars per year mark. The industry is growing by leaps and bounds. We can double and treble our present production in time.

This industry is now and should be in the future our greatest asset; wherefore it is imperative that the state employ such safeguards as will tend to make all our factories suitable for high class work, and all our makers competent.

The legislature of 1915 wisely provided for the licensing of both factory and maker. Under that act it is the duty of the Dairy and Food Commissioner to prescribe reasonable rules and regulations under which factories may operate, and also regulations as to the qualifications of the maker, the commissioner having the power to deny or revoke a license for just cause.

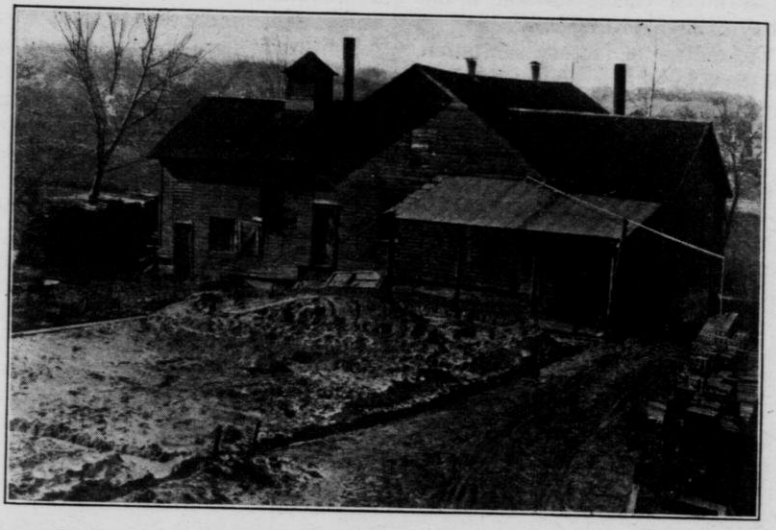
By that arrangement part of the state's burden of enforcing our dairy laws is placed on the shoulders of those who might be offenders.

Rules and Regulations

are comprehensive and divided into thirty-six parts. A pamphlet of "Suggestions Relating to Proper Methods of Operating Butter and Cheese Factories" is also furnished each maker which, with the rules and regulations, goes a long way towards establishing a standard as to the suitability of the factory building, equipment and management and, incidentally, a standard of training for the future maker.

Rules and Regulations Governing the Licensing of Butter Makers and Cheese Makers and Operators of Butter Factories and Cheese Factories.

Adopted by the Dairy and Food Commissioner of Wisconsin Under Authority of Chapter 597 of the Laws of 1915 (sections 4607*b*–1 and 4607*b*–2), for car



Creamery abandoned on account of the "License Law." Foundations are being laid for a new and up-to-date building.

Something like this will soon take its place. This is the creamery at Clear Lake, Polk County, Wisconsin.

rying into effect the provisions of that chapter.

Effective January 1, 1916

Rules and Regulations for Factory Operators

(Note. Rules Nos. 1, 2, 3, 4, 5, 6, 7, 8, 11, 12, 13, 14, 16 and 30 refer only to such factory rooms, fixtures, utensils and apparatus used in handling, storing, preparing or manufacturing dairy products intended as food for man.)

Under the provisions of Section 4607*b*–7 it is unlawful for any operator of a butter or cheese factory or for any employe of such operator to maintain his premises and utensils in an insanitary condition.

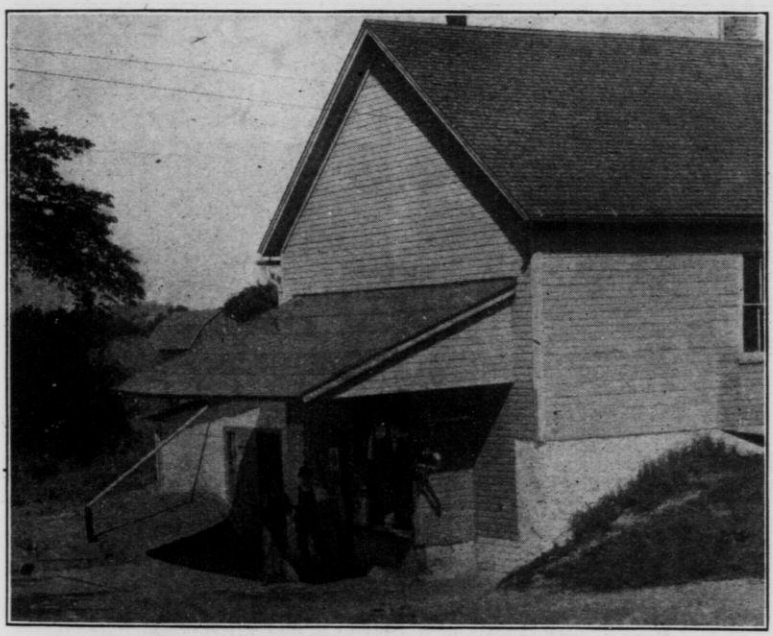
Factory Building and Equipment.

1. The factory building shall be well lighted and ventilated.

2. All floors, walls, ceilings and tables, benches, shelves and other fixtures shall be maintained in such condition that they may readily be made clean and sanitary. If not in such condition, they shall be promptly repaired, or replaced by suitable equipment. Floors shall be water-tight. Ceilings or other overhead covering shall be dust-proof.

3. All walls and parts of walls and all ceilings not finished with tile or glazed material shall be kept well painted or shall be whitewashed at least once each year and oftener if necessary.

4. All parts of walls, ceilings or other overhead covering, doors, windows,

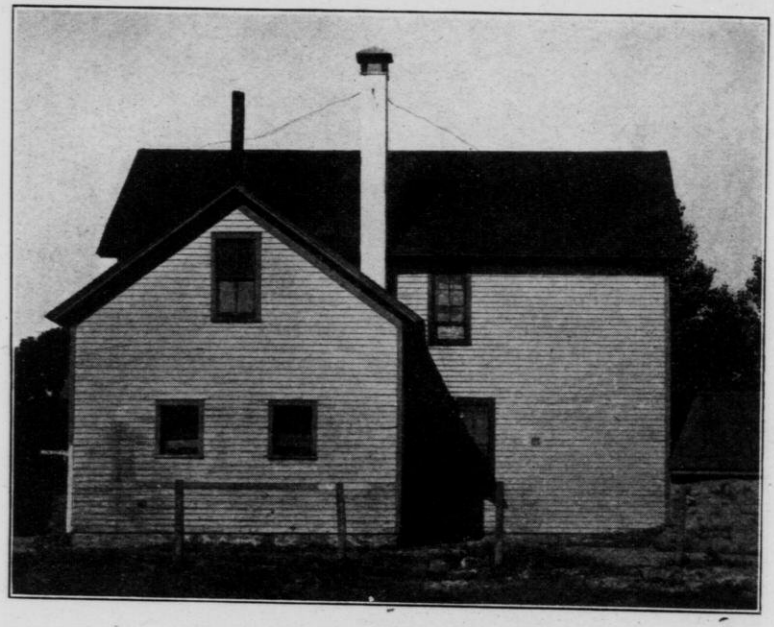


NORTH RUBICON, WISCONSIN, CHEESE FACTORY.

Sloping, concrete driveway, shelter from rain and plenty of light make this the right kind of intake.

window ledges, etc., shall be cleaned whenever they become soiled, dirty or sooty.

5. Factory floors, fixtures, utensils and other apparatus (except brine tanks, cheese shelves and churns) shall be cleaned at the close of each operation and shall be clean at the beginning of each operation.



THE ATWATER CHEESE FACTORY.
The building, equipment, product, and health of the employes are benefited by good ventilation.

6. Brine tanks shall not be maintained in an unclean or slimy condition.

7. Cheese shelves shall be cleaned soon after the cheeses have been removed therefrom or oftener if necessary.

8. Churns shall be cleaned at the close of each day's operation and shall be clean at the beginning of each day's operation.

9. There shall be no condition in, underneath or connected with the factory building or premises which may render it difficult or impossible to have the factory rooms clean and sanitary.

10. No cesspool, blind well or nuisance of any kind shall be in or underneath the factory building.

11. All factory utensils and apparatus used in handling, storing, preparing or manufacturing dairy products shall be of such construction and in such condition that they may readily be made clean and sanitary and so arranged that they are accessible for thorough cleaning. Common iron piping, common galvanized iron piping and rubber hose shall not be used.

12. All surfaces of factory utensils and apparatus with which dairy products come in contact shall be without open joints or open seams and shall be smooth, and free from rust or paint.

Gates and faucets which do not comply with this regulation may be continued in use only until January 1, 1917; those added to the equipment after January 1, 1916, shall comply with this regulation.

13. All wooden followers used in pressing cheese shall be sound and free from crevices.

All followers intended for use in pressing American cheese and added to the factory equipment after January 1, 1916, shall be of metal whenever the use of metal followers is practicable.

14. Exposed surfaces of pipes, shaftings, rods, castings and of metal parts of factory equipment which are liable to become rusty and with which surfaces dairy products do not necessarily come in contact shall whenever possible be kept coated with paint or other suitable covering.

15. All facilities and appliances necessary for the proper cleaning, care and protection of the factory building, equipment and factory grounds shall be provided.

16. All factory rooms, fixtures, utensils and apparatus used in handling, storing, preparing or manufacturing dairy products shall be protected from flies, rodents and vermin.

17. **Disposal of Sewage and Waste.** There shall be in every factory an efficient system in use for disposing of liquid waste, sewage and other refuse in such manner that no such liquid waste, sewage or other refuse shall be deposited underneath the factory building, or pollute, befoul or cause offensive odors in the factory building or on the factory grounds or pollute or contaminate the water supply of such factory.

18. No liquid waste, sewage or other refuse from the factory shall be deposited on any grounds or public highway adjoining the factory grounds in such manner as to cause foul or offensive odors about the factory premises.

19. All floor drains shall be trapped except such drains as are open from the starting point to a point outside of the building.

20. **By-Products.** Vats, tanks and other containers used in handling or storing factory by-products not intended as food for man, shall be so kept that they will not become filthy, foul or offensive.

21. Pipes and other apparatus used for conducting such by-products shall be so arranged and kept that they will not cause or discharge foul or offensive odors in the factory building.

22. When vats, tanks, containers, pipes, conductors or other apparatus used in handling or storing factory by-products not intended as food for man are stationed in factory rooms where dairy products intended as food for man are handled, stored, prepared or manufactured, they shall be cleaned at least once for each day that cheese or butter is manufactured.

23. **Salt and Brine.** Only a good grade of dairy salt shall be used in cheese or butter, and such salt shall at all times be protected from dust, dirt or other contamination.

Brine used for salting cheese shall be protected from dust, dirt and other contamination. When brine is not in suitable condition it shall not be used.

24. **Water and Ice Supply.** The water supply of the factory shall be free from pollution or contamination.

Ice obtained from any polluted source shall not be used.

25. **Dairy Products.** No insanitary milk or insanitary cream shall be used in the manufacture of any dairy product intended as food for man. (See sections 4607*b*–4, 4607*b*–6, of the statutes.)

26. No dairy product shall be prepared or manufactured as food for man unless it shall be securely protected from filth, flies, dust or other contamina-

tion or other unclean, unhealthful or insanitary condition. (See section 4601*h* of the statutes.)

27. **Cleanliness of Factory Operators and Employes.** Plenty of water and soap or other cleansing material and clean towels shall at all times be conveniently located for the use of operators and employes.

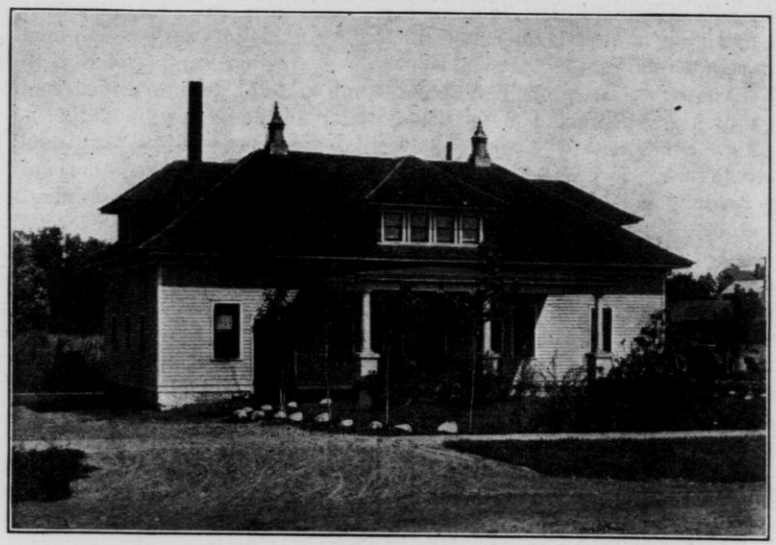
28. All persons engaged in handling, preparing or manufacturing dairy products shall be required to be cleanly in their work and to wear clean outer clothing.

29. All persons shall be required to wash their hands in clean water before handling dairy products and after each time they have made use of a toilet, and when for any cause their hands have become soiled or unclean, before again touching or handling dairy products intended as food for man.

30. Spitting on any floor, wall or furnishing of the factory shall not be permitted or tolerated.

31. Smoking in the factory shall not be permitted or tolerated at such time or place as may tend to affect the flavor of any dairy product.

32. **Operator and Employes to Aid Inspectors.** When requested by the dairy and food commissioner, his agent or inspector, the operator shall expose or cause to be exposed for inspection any dairy product or any part of the factory building or premises used in handling, storing, preparing or manufacturing any dairy product, and he shall, when possible without undue interference with the regular factory operations, expose or cause to be exposed for inspection all factory fixtures, utensils and apparatus or parts of the same; and, when so requested, shall so far as possible furnish or assist in furnishing any information regarding the



MAMMOTH SPRING CHEESE FACTORY, EDEN, WISCONSIN.

The most attractive cheese factory grounds in Wisconsin.

conducting of the factory in so far as the same may be pertinent to any of these regulations or to any dairy law of the state administered by the dairy and food commissioner.

33. The factory operator or any employe shall in no way interfere with or obstruct the dairy and food commissioner, his agent or inspector, in the inspection of the factory or premises or in the performance of any duty at such factory.

34. **Display of Permit or License, and Rules, Regulations, etc.** The operator's permit or license and at least one copy of these rules and regulations and of the printed suggestions relating to the proper methods of operating butter or cheese factories shall be conspicuously displayed at the factory.

35. **Violation of Dairy Laws, Rules and Regulations.** Failure to furnish information called for upon the application blank or any false statement therein may be cause for denial or revocation of license.

36. Violation of any rule or regulation adopted by the dairy and food commissioner relating to the licensing of operators of butter or cheese factories or violation of any law of this state relating to factory premises, utensils or equipment, or to the product or products there manufactured, will render the licensee liable to prosecution, revocation of his license, and the closing of his factory.

Rules and Regulations for Butter Makers and Cheese Makers

1. (a) A butter maker shall have experience equivalent to at least twenty-four months in a butter factory, covering the receiving, sampling and testing of milk and cream and the complete process of butter making.

(b) A cheese maker shall have expeperience equivalent to at least twelve months in a cheese factory, covering the receiving of milk and the complete process of cheese making.

2. A maker shall have a creditable record in operating and keeping in sanitary condition any factory or factories in which he may have been employed, and in any work which is considered an equivalent for the required experience or part thereof.

3. While engaged in handling, preparing or manufacturing any dairy product intended as food for man, the maker shall be cleanly in all details of his work; and shall wash his hands in clean water before handling dairy products and after each time he has made use of a toilet and when from any cause his hands become soiled or unclean, before again touching or handling dairy products intended as food for man.

4. Spitting on any floor, wall or furnishing of the factory is forbidden.

5. Smoking in the factory at such time and place as may tend to affect the flavor of any dairy product is forbidden.

6. No dairy product shall be manufactured from any insanitary milk or insanitary cream. (See sections 4607*b*–4, 4607*b*–6, of the statutes.)

7. No dairy product shall be handled, stored, prepared or manufactured as food for man unless it is securely protected from filth, flies, dust or other contamination, or other unclean or insanitary condition. (See sections 4601*h* and 4607*b*–7 of the statutes.)

8. When requested by the dairy and food commissioner, his agent or inspector, the maker shall expose or cause to be exposed for inspection any dairy product or any part of the factory building or premises used in handling, storing, preparing or manufacturing any dairy product; and he shall, when possible without undue interference with the regular factory operations, expose or cause to be exposed for inspection all factory fixtures, utensils and apparatus or parts of the same; and, when so requested, shall so far as possible furnish

or assist in furnishing any information regarding the conducting of the factory in so far as the same may be pertinent to any of these rules and regulations or to the dairy laws of this state administered by the dairy and food commissioner.

9. The maker shall in no way interfere with or obstruct the dairy and food commissioner, his agent or inspector, in the inspection of the factory or premises, or in the performance of any duty at such factory.

10. Failure to furnish information called for upon the application blank or any false statement therein may be cause for denial or revocation of license.

11. Violation of any rule or regulation adopted by the dairy and food commissioner relating to the licensing of butter makers or cheese makers or violation of any law of this state relating to factory premises, utensils or equipment, or to the product or products there manufactured will render the licensee liable to prosecution and revocation of his license.

Permits

Factory operators were each given a permit to operate, pending the making of an inspection at which, if the factory was found to be unsatisfactory in some respects, the needed improvements were pointed out and a reasonable amount of time given to make them. At the expiration of the time limit a second inspection was due.

Farmer Owned Creamery at Elk Mound, Wisconsin. Farmers who run their business as fine as this are the right examples to follow.

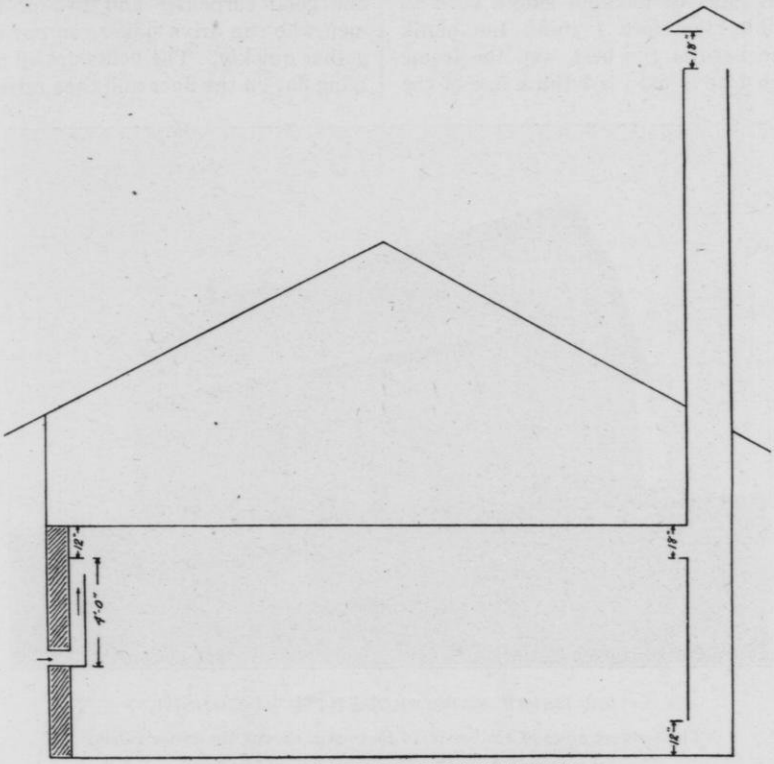
Responding Nobly

At this writing second inspection has been made of all factories in several counties, with the result that over ninety per cent of the factories therein were granted licenses. Improvements at the remaining factories had been delayed only because of sickness or inability to secure sufficient help, and extension of time was granted.

Proper Administration

The degree of success that will result from the licensing act will depend largely upon the manner in which this law is enforced. If administered with a weak, vacillating hand, if license be granted to everyone applying for it whether he deserves it or not, the law will fall short of expectations and prove a disappointment to the rank and file of factory operators and makers. If administered with a firm hand, consistent with reasonableness and a fair degree of patience, this law should prove an epoch-making instrument to the Wisconsin dairy industry.

Written August 1, 1916.



CHEESE FACTORY VENTILATION.
(E. L. Aderhold)

Outtake flue built of double boards with water proof paper between. Flue must be 30 ft. or more in length and reach at least 6 ft. higher than ridge. Size 18 to 24 inches square, inside measurement.

Stationed preferably in part of make room where most dampness is created. May be stationed on opposite side of a partition or against outer side of wall and connection made through wall or partition.

Intake flues constructed of lumber or galvanized metal. Inside measurement equal to 7 x 7 inches. There should be three or more such flues stationed near the corners of the room, entering the building from as many directions as possible. None should be stationed very near the outtake flue.

Interior openings of all flues must be provided with doors for the purpose of regulation.

This ventilating system is designed for use during the colder part of the year. Outtake flue so arranged as to remove vapors from near the ceiling or, when desired, air may be drawn only from the floor so that heat will not be removed.

Intake flues arranged as shown will not remove the warmest air or cause direct draft in lower part of room.

A BARN FROM 12-, 14- AND 16-FOOT STUFF.

David Imrie, Roberts.

With the scarcity of native timber of good lengths, it is more economical to build in such a way that we can use as much short or medium length stuff as possible, therefore I think the plank frame barn is the best, and the frame which I have used is I think one of the very best I have ever seen. It is a modification of the Thos. Convey plank frame barn published in the Farmers' Institute Bulletin some years ago. I built a barn of this kind last year and I find it the stiffest, most rigid and strongest frame I have ever used, and I have had a good deal of experience in building as I followed carpentry and millwright work for a number of years.

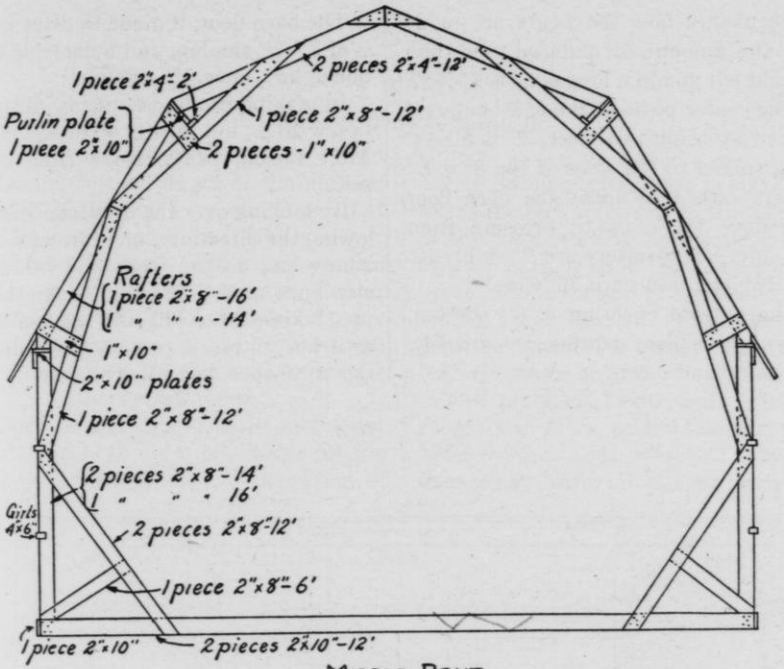
There is another advantage in this kind of a frame that a good deal of the work can be done by common labor, as one good carpenter and two or three men who can drive spikes can put it together quickly. The bents are all made lying flat on the floor and then raised by block and tackle, and the perline 2″ x 10″ put in.

THE IMRIE BARN, ROBERTS, WISCONSIN.

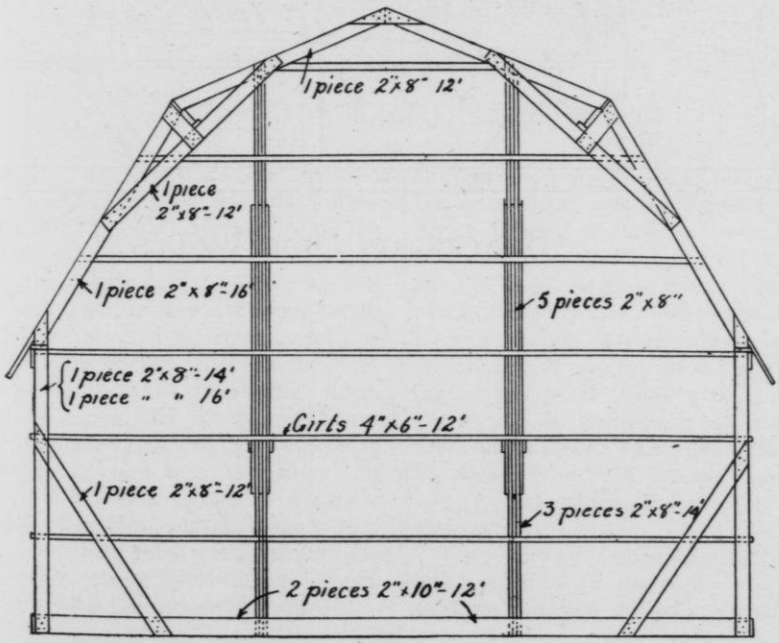
The longest piece of timber is 14 feet long, except the lower rafters.

The proper way is to make one bent, then make another on top of the first one, exactly like it, and move it over to its place and make the next and so on until all are made. The bents should be 12′, 14′ or 16′ apart, according to the length of the barn.

The following drawings will show you



MIDDLE BENT



END BENT

more plainly how the bents are made and the amount of material used than I could tell you in a long article.

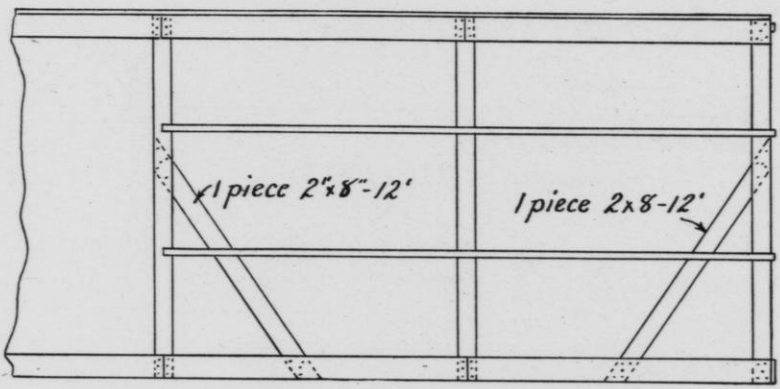
The center posts in the end bents are braced by using two pieces 2″ x 8″–14′ long, spiked to the sides of the 8″ x 8″ girders extending under the barn floor to relieve the outward pressure from hay, etc. The rafters are 2″ x 6″–12′ and 16′ long in a barn 36′ wide.

The outside covering is 8″ shiplap, either white pine, cypress, fir or cedar, put on up and down.

The barn floor, if made to drive in on, is of 8″–2″ shiplap, and balance of floor under hay mow 1″ shiplap.

In making frame, use plenty of spikes (a few 20 d., but mostly 40 d. and 60 d). After raising bents, spike from other side.

By looking over the drawings and following the directions, any farmer who is handy can do the work and build his own barn, and if done as I have shown you I know you will like the building, as it has no inside post or tie beams in the way when you fill with hay.



BRACING ON SIDE WALLS

HOGS SELF-FED.

John D. Imrie, Roberts.

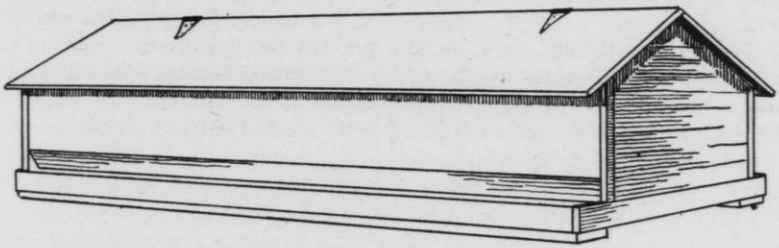
During certain stages of the life and growth of the pig, I am convinced that self-feeding is sure to gain in favor among hog raisers. His pigship starts out very early in life using a self-feeder I have never seen equalled; in fact, my pigs always grew and developed so well when being self-fed this way we always let the mothers wean the pig.

There is one time when it might not be advisable to use a self-feeder for the sows and that is during the period of gestation. During this time the feed of the sow should be controlled absolutely as to quality and quantity by the feeder.

In the growing of the shoat there is one objection to the stationary self-feeder in the yard for summer feeding and that is he fails to take sufficient exercise to make the muscle, lean meat, tendons, bones and the general frame grow as it should and to make the blood flow rapidly and healthily. For this reason I like the custom of sowing a couple of small fields of Canada field peas, one about three weeks earlier than the other, these fields being in connection with the clover pasture.

The hogging off of these fields of peas forces the pigs to go out to the field two or three times a day and work an hour or two each time to earn their daily bread. This amount of travel and work makes rapid growth. From the pea field they should be turned into a small field of corn to hog off.

The best gains I ever made in feeding shoats was made under this system of self-feeding. The exercise they get does away with all danger of having cripples or broken down hogs when marketing time comes. Quite a number of different kinds of self-feeders for hogs are on the market and most of them seem to be giving good results when the proper feeds are used. The home-made feeder is equally as good as far as results are concerned and can be made by any farmer somewhat handy with tools.



PERSPECTIVE OF SELF FEEDER FOR HOGS

Cut No. 1 represents one kind of home-made feeder which has been used by many Wisconsin farmers this past winter and which has proven very satisfactory.

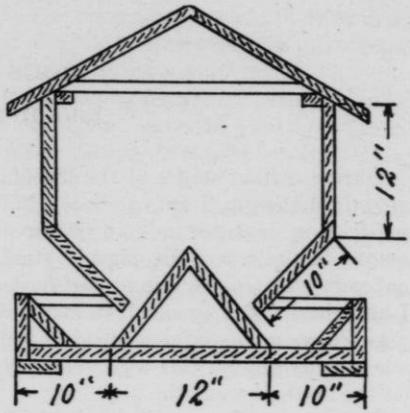
They work very well in feeding barley, either ground or unground, and oats, tankage and corn shelled or on the ear;

however, shelled corn feeds rather the best. Many of our hog men had to buy shelled corn and some barley this past season and found the self-feeder just the thing.

For winter feeding of fall pigs and for hogs, I believe the self-feeder is just the thing and has come to stay. Hogs do not take a great deal of exercise in cold weather at best, but for summer feeding there is no way in which pigs will take on growth and weight and size as rapidly as in the manner I have described above; that is, in using a clover pasture in connection with hogging off peas and then a corn field.

The experiment stations will find a wider difference between the two systems of feeding than the average farmer.

Cut No. 2 shows the end view of the same home-made self-feeder as above, showing the inverted trough which guides the feed to the trough on either side.



CROSS SECTION OF SELF-FEEDER

By staying this feeder to the fence with a two by four at either end, it will prevent the hogs from upsetting it.

For winter feeding it is better placed under cover to prevent snow from getting into the feed troughs.

TYING CITY AND COUNTRY TOGETHER.

B. F. Faast, Eau Claire.

Tying city and country together is a subject that could well be discussed at great length; however, I am going to be brief in my remarks and dwell upon only a few of the main points which I believe will help to bring the city and country closer together. My remarks will be confined to conditions as they exist in northern Wisconsin. As to their application to southern Wisconsin, you must draw your own conclusions.

An Age of Specialization

In this age of specialization, success in any line of endeavor calls for increased efficiency. To be more efficient we must specialize and then secure co-operation between the specialized units. Agriculture, the world's greatest industry, is perhaps the least specialized and the least organized of all the great lines of activities. A farmer's first interest is in his produce; later he sees the importance of the successful marketing of what he produces. A successful farmer must produce a high grade product. This means he must become a master of the science of agriculture, must become a practical, scientific farmer. As the quality of his product

becomes better, he must have higher prices for what he sells. He must build better barns, install more expensive equipment, get better stock, or put more land under the plow. In short, increased efficiency requires more money and a specialized market for the product of the farm. This brings him face to face with the financial and marketing problem of the farming business. The proper financing of a large and well managed farm, and the successful selling of the product at profitable prices require just as detailed and scientific knowledge as does the successful production of farm produce. The question is: how many men can be a successful producing farmer, a banker and a produce salesman all at the same time? Would not co-operation between a successful farmer, a trained banker and a good produce salesman bring better results and more profits for all?

Let us consider for a few minutes how other big businesses are handled. When the railroad manager submits his report and recommendations for new tracks, equipment, repairs, etc., to the Board of Directors, they carefully go over his plans, estimate the total cost, and then take the matter to their bankers, who arrange plans for furnishing the money. These bankers either suggest short time notes or a bond issue, which later they sell to financial houses in different parts of the country. People are glad to buy these bonds or notes because they feel sure that they are good on account of the recommendations and the reputation of the banking house that is handling the railroad loan. In general this is true with the methods of financing the large packing houses, the steel industry and the big lumber companies. These large industries have special retail departments for the marketing of their products with trained salesmen, or they wholesale their product to specialized marketing companies.

How is the individual farmer going to get the same service in finance and marketing as do the large corporations? The demands of the individual farmer and the product he has for disposal are so small that it will not warrant consideration by a large bank, or sale by a large sales organization. The farmer's money needs and his products do not receive the same attention that is given to business properly handled and backed by a scientific, well organized, business and sales organization.

The Commercial Club

In practically the same proportion that the farmers prosper, so do the business men. If the city man can assist the farmer in supplementing that business training which the farmer often lacks, it will be to the advantage of the farmer as well as of the business man. Co-operation between country and city along these lines will accomplish wonders.

Nearly every village and city in Wisconsin has a Commercial Club or Business Improvement Club of some sort. Each has a secretary whose business it is to work for the improvement of the city; clerks who specialize in the retail salesmanship so as to be of assistance to the retail merchants; some department to assist the manufacturer; in fact, there is complete co-operation among nearly all the business interests. They are working hand in hand to make their city grow and improve, to make real estate more valuable, to give the merchants more sales and to put more money in the banks, etc. These commercial clubs advertise for factories. Often they influence the city authorities to enter into agreements for refunding taxes for from 15 to 20 years

to new industries. Meetings of business men and bankers are called by commercial clubs to make plans for helping finance new organizations. Often business men take stock and bankers loan money to get many a new industry started. Advice and assistance are given; in fact, every possible help to insure the success of the new enterprise is offered the manufacturer or jobber. If any one of you should desire to locate a factory that employs from twenty to thirty people, the competition between different commercial clubs would almost result in a panic. Each one will try to outdo the other in offering special inducements to have you locate in his city.

I wonder how many commercial clubs have ever thought of attempting to locate twenty or thirty families of farmers close around their city? Are not twenty farmer families located around a city of just as great importance as twenty factory hands receiving $1.50 a day? To show the importance, in dollars and cents, let us take a few figures.

James J. Hill is credited with making the statement that each settler who located along the line of the Great Northern Railroad was worth $2,240.00 to his company. The Canadian Government and our Immigration Department have set the value of each new settler at $1,000.00. It is estimated that five thousand new families bought and settled on new farms each year. Taking $1,000.00 as a basis of value, these new farmers are worth $5,000,000.00 a year. Taking Mr. Hill's figures, these new farmers are worth $11,200,000.00. Then think of the new barns—houses; the new land being cleared—the increase and improvement of live stock. Why should not the business men help the new settler get located on his new farm, help and advise him after he is located, get him acquainted with the banks or loan companies and assist him in making a success of his new farm?

In this morning's mail I received a letter which had been written by a new farmer in northern Wisconsin. The letter reads in part as follows: "Last October I obtained and settled on eighty acres of land. There are about five acres cleared and free from stumps while there are about twenty acres more of which is cleared but not stumped. These stumps are mostly rotten and can easily be removed with a team of horses. It is a well laying piece of land.

"I am a hard working man and am quite anxious to make good on this land, although I am without means to go ahead and improve, so I wish to ask; can the State Department give aid in obtaining milch cows and paying for same monthly out of the earnings, allowing good interest? I will, in a few weeks, be able to go out to work a few miles from here, but at a wage that would give little aid in improving a farm. My time would be more valuable at home. I work from early until late and am assured that with such assistance as I have above asked, I can make good here, for I love the work and would take a special interest in scientific farming. I am particularly fond of cows.

"I trust this is worthy of consideration. Also kindly advise me as to where I may obtain good seeds. Other information will be much appreciated.

"Thanking you beforehand, I am,
Yours sincerely,"

This letter illustrates one of the problems that some of our new settlers have to face. I think I can safely say that in most communities in Wisconsin, a farmer desiring this kind of help will find no difficulty in securing assistance from the local banks or other business institutions. There are some communities, however, that are not so fortunate, and

it is in these communities that the commercial club can be of much help in assisting in solving these rural problems.

Perhaps there is no bank in the community where this man lives. If there is a good, live commercial club, this new settler could appeal to this club for assistance; it could make arrangements with either a group of business men in that community to give the needed assistance, or could take the matter up with the nearest banking institutions.

There should be special committees to help solve the farmer's problems just as there are special committees to look after the problems that pertain strictly to the city. There should be a department to help the farmers with their buildings. They should be able to go to this community club's office and discuss the plans of new buildings with the secretary, be shown different plans, the prices of different materials, what they can be bought for in that city or village and the advantages of each. Perhaps ten or fifteen or twenty farmers might in this way be encouraged under wise suggestion and helped to build new barns or put in new equipment. This will take considerable money. The local commercial club with its board of directors should be able to advise with the farmers and make arrangements for loaning them money for these improvements. Arrangements could very easily be made where a proposition could be submitted to the banks, and, when the bankers know that the matter has been carefully investigated and has been carefully supervised by the business men's association, they would be willing to make arrangements for extending long time credit.

Suppose, for instance, farmers felt the need of a creamery or cheese factory. Instead of going ahead and organizing a co-operative plant, as many of them do, and pay enormous prices and commissions to irresponsible promoters, they could take this matter up with their own city commercial club secretary. This commercial club could investigate the situation from the most scientific sources, secure the best prices, and the bankers could get together and plan the best way to finance this new farmers' industry. A cheese factory or creamery could be established, or one could be induced to locate there. Then the problem of how to get more cows would come up to the farmers. A committee could be selected to look after furnishing the credit if the farmers did not have the ready money. A committee of farmers, together with one or two business men, could go out and select a few carloads of cattle. There are many ways in which this kind of co-operation between business men and farmers could be carried on and greater results would be secured for both the farmer and the merchant. The cost to the business men would be much less than they are now paying to help locate new manufacturing plants in their city.

Whoever heard of a commercial club offering a farmer exemption from taxes for a number of years in a community if he opened up a new farm, or offering him a bonus if he bought land, if he built fine new barns and other buildings? Why should not the commercial clubs give the same co-operation—and I say greater co-operation—to the farming community than they do to the manufacturing industry? It is simply because this matter has not been brought to their attention. It is perhaps as much the farmer's fault as it is the business man's fault. I do not believe the initiative lies with either. I believe both farmers and business men must get together and work out the solution of this problem jointly. Every farmer here today, when he goes back home, should

talk this matter over with his business men; talk it over with the commercial club secretary; urge each one of them to see if you cannot start some joint system of co-operation that will mean much, both to the city in which you have an interest, and to the farming community in which the business man has an interest.

I am glad to say that there are many communities in Wisconsin where just such co-operation as I have outlined above is being worked out between commercial clubs and farmers. The real live commercial clubs are assisting and co-operating with the farmers, and the real live farmers are welcoming this assistance from the business men and co-operating in every possible manner with them. There should be many more communities working along these same lines. It is up to the farmers to start things moving. It will surprise you to find how quickly the business men will take to this joint co-operative plan if you will present the matter to them frankly. Get your neighbors together, if it be only a few, and call on your business men, bankers and commercial club; and get something started along these lines.

WHY FARMERS SHOULD EXHIBIT AT AGRICULTURAL SHOWS.

Noyes R. Raessler, Beloit.

The city resident who visits the agricultural fair returns year after year with untiring interest. He comes partly to be entertained, but particularly because he loves to associate with the products of our farms and he knows that without these products no life could exist.

The farmer who visits the fair does not come as a matter of entertainment alone, but usually considers it quite a business proposition. His education is improved through study and comparison of exhibits; his business is helped through the publicity he received (if he is an exhibitor), as a result of showing stock or products. Inspiration, so necessary to success, comes as a result of mingling with his fellow farmers and closer contact with the best agricultural products of the entire state or community.

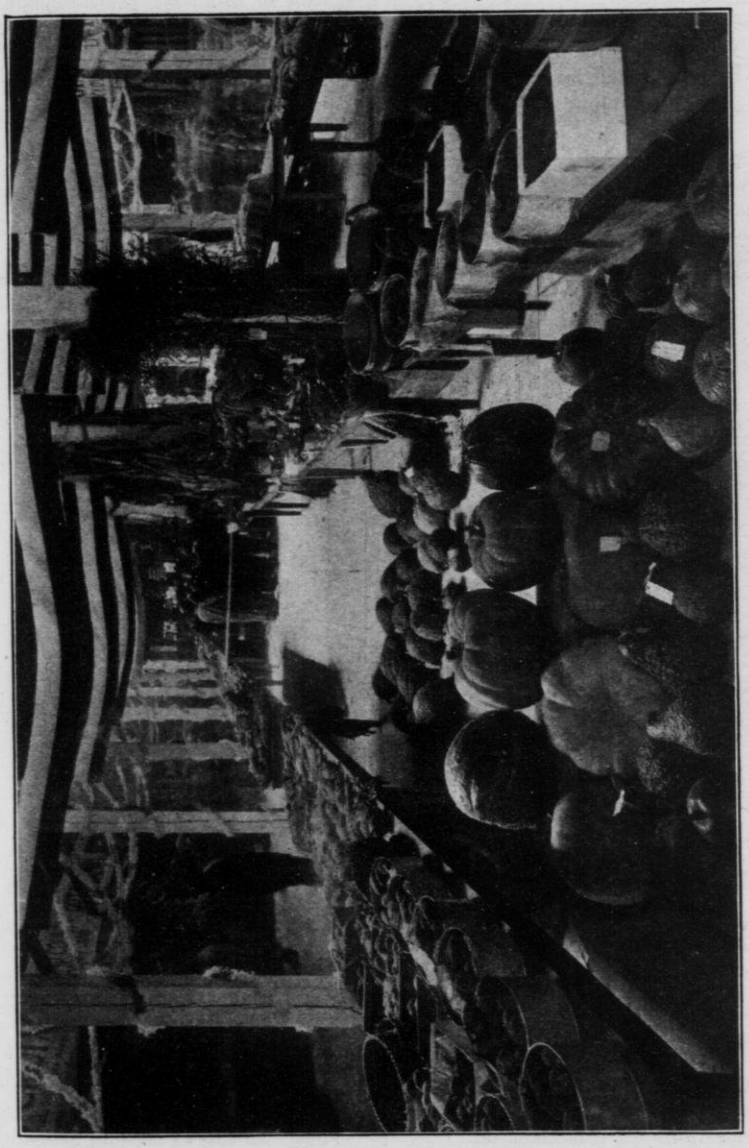
These are some of the features which the state authorities had in mind in making agricultural shows permanent institutions.

As hundreds of farmers seem to have overlooked the great advantages gained in becoming exhibitors as well as visitors at the fairs, I will try to offer a few helpful suggestions along that line.

Exhibiting Live Stock

The live stock men have long since learned that by comparing the results of their best efforts in breeding and feeding, then conferring with expert judges, many a mistake can be eliminated, thereby shortening the experimental stage of the breeding industry. Experiments are always costly and sometimes discouraging.

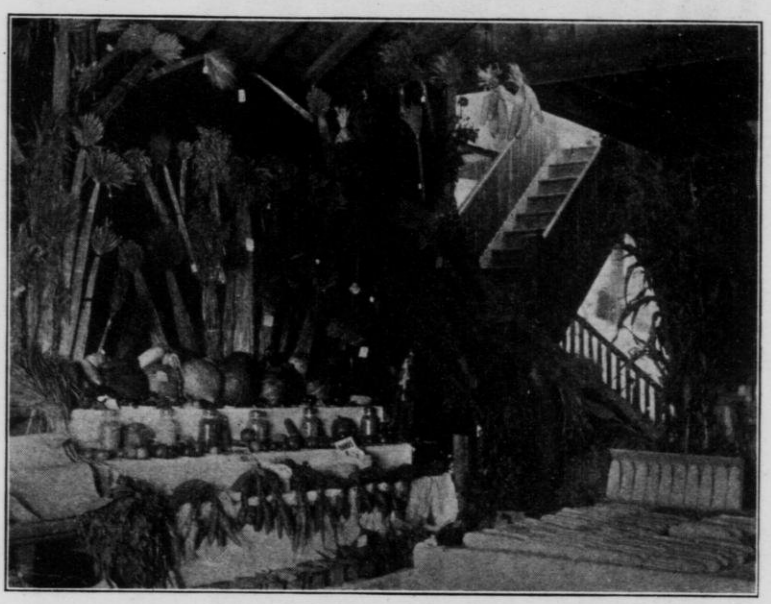
The advertising features are not overlooked, as thousands of visitors come to the fairs to look up or purchase pure bred live stock. Even when no direct sale is made, the mere acquaintance of



INDIVIDUAL FARMER EXHIBITS AT THE 1916 STATE FAIR

the breeder with those in the market for animals at some future time is a very decided advantage.

Since the demand for Wisconsin live stock is growing enormously, there ought to be a much larger showing in this department at our fairs.



BELOIT TOWNSHIP EXHIBIT.

Winner of First Prize at County Fair.

Exhibiting Farm Products

Unlike live stock, the articles in the Farm Produce Department do not require a large outlay of money, either in production, preparation or exhibition at the fair. In other words, it is possible for all farmers to contribute in this department. Of course it requires some work of preparation, and I will offer a few suggestions on this later on.

Perhaps one of the most common reasons for not showing is the fact that so many farmers feel that their products are not fit to show,—perhaps because they are not pure bred or are otherwise lacking in quality. Nothing could be further from the truth. In every county and State fair premium list there is a general class which includes articles not eligible in the pure bred list. If every farmer will take the best he has and then ask questions of the judge after awards are placed, he will soon learn what constitutes quality.

Many a new exhibitor is surprised to see how favorably his own display compares with the others, and not a few have been fortunate enough to carry home prizes the very first time.

Those who have seed to sell find the fair a great market place for their surplus. Especially is this true since the creation of organizations such as the

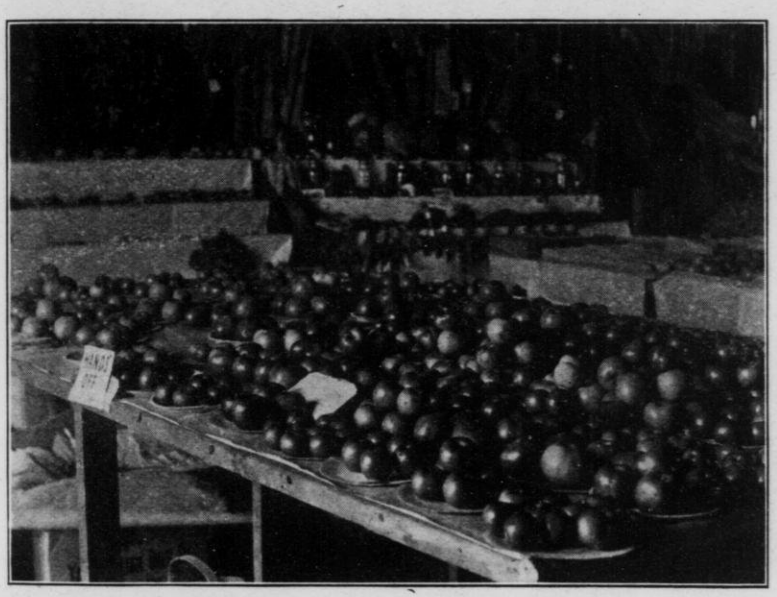
potato growers' association, the seed grain growers' and the fruit growers' associations. A greater demand for all kinds of improved seed has recently sprung up as a result of the activities of the United States Bureau of Agriculture with its staff of county agents in every state testing out new varieties.

Wisconsin grown seeds have shown up so well in these tests that an enormous demand for seed is now pouring in from other states, and is spreading to foreign nations. Especially is this true of corn, seed grains and potatoes.

Our rigid state seed laws, together with a very efficient system of inspection and the hearty response with which both have been met by the farmers of Wisconsin, have gone a long way toward establishing a market which appears to be almost unlimited.

It makes no difference what a farmer may have to sell, if it is produced on the farm he will find a place at the agricultural show for its exhibition, and it will attract the attention of some people who are interested in that particular article or display.

Good looking exhibits go a long way toward making sales. And now a few suggestions in preparation for the fair.



FARMERS' INDIVIDUAL FRUIT EXHIBIT.
County Fair.

Preparing Exhibits

Again referring to the live stock men, let me say, many months are sometimes spent in systematic feeding and fitting the animals for showing. The aim is to get them in the pink of condition and keep them there.

In preparing sheaf grains, select good, well developed plants just before the grain is ripe, and allow it to cure in a building so as to keep off dew and rain.

When dry, carefully remove all leaves and mould into bundles of the required size. Then pack away in mouse-proof boxes until wanted for show purposes. Threshed grain samples should be gathered when the grain is fully ripe and is very important. Discard all ears with mixed kernels or moldy spots.

Potatoes should be handled with care to avoid bruising. They may be cleaned with a brush, but never wash them, as that destroys the "bloom." Uniformity

MARATHON COUNTY EXHIBIT 1916 STATE FAIR.

Winner of First Prize Cup.

then cured in a building. Threshing by hand is advisable, although not altogether necessary. Several gradings through a good fanning mill will complete the job, but make sure to put up the amount per sample required in the premium list.

In selecting corn, pick out uniform ears, both in size and color. Maturity of size, trueness to type and maturity are important points to consider in potato displays.

Vegetables, except those intended for stock feeding, should be selected for table qualities rather than large size. They should be washed clean and kept as fresh as possible by packing in moist cloth or other material.

Honey, dairy products and other articles of manufactured nature, should be put up as attractively as possible in order to draw the attention of vistors.

Up until now I have been dealing with individual exhibits only. There is a still larger department of our State Fair made up of exhibits collectively. This makes it possible for farmers to receive practically the same advantages as in case of individual exhibits, but does not require any expense. This department of our State Fair is said by many to be the most attractive and interesting sight of the entire fair.

The County Exhibit at the State Fair

I refer to the county exhibits. These are all assembled under one roof. Products of each county are placed in individual booths with the name of the county across the top. One can see here at a glance just what the farmers in each county produce. The samples composing a county display are taken from farms throughout that county and have cards attached to them indicating by whom and where they were grown. Go through this building at any time and you will see dozens of people, note-book in hand, taking down names of parties who have certain seeds or other articles to sell. Time and again sales are made in this way, to the surprise and satisfaction of farmers living perhaps at a great distance from Milwaukee and who could not attend the fair in person.

Thus it may be truthfully said that the agricultural show is just one more angle in promoting the interests of our farmers; however, it cannot help those who are too modest to take part in it. There is plenty of room for all. When the present capacity is overflowing, more room will be available. If the farmer will select his best products and send them to the fair, he will not only benefit himself and his household, but will render a most valuable service to the state and the public at large.

ROAD MAINTENANCE.

J. T. Donaghey, Chief Inspector, Wisconsin Highway Commission.

Wisconsin has operated four years under the State Aid Highway Law, and has built over 4,000 miles of road at a cost of $11,000,000. A few counties have followed construction with the necessary maintenance, but I dare say that up to January 1, 1916, there was not to exceed $300,000 expended upon maintenance of the 4,000 miles of road built, which would be less than three per cent of the total construction cost and a sum which was entirely inadequate to meet the necessary maintenance, due to a great extent to the rapid increase in motor traffic.

The county boards of nearly all counties in the state have begun to realize the importance of necessary maintenance, and at their annual session in 1915 provided reasonable funds for such purpose to be expended during the season of 1916, varying from $1,000 to $30,000 per county, plus their share of the auto license fees, which in all will

provide a maintenance fund of $750,000. If intelligently expended, this fund should place the state aid roads in each county in a fairly good state of repair.

The statement is frequently made that road maintenance should begin immediately after the road is completed, but I believe in going back considerably farther and planning for future maintenance before the road is built, (1) by properly locating the road; (2) by giving it proper drainage; (3) by selecting the proper type of surfacing to fit traffic conditions; and (4) by properly building the type of surfacing selected.

Relocation of the Richland Center—Muscoda road, Town of Richland County. This view shows the proper location of a road to get the best possible grade and provide for the minimum future maintenance cost. The relocation is a seven per cent grade, and the old road directly opposite this point is a fifteen per cent grade. Note the culverts with breaker walls to turn water from the upper ditch and discharge it well away from the road on the lower side. Also note ditch along fence above the upper bank slopes to carry water to culvert rather than down over the slopes.

Proper Location

To reduce future maintenance, the proper location of a road is of prime importance. Plan the road to go around the hills rather than over them. It is next to impossible to carry water down a long, steep hill for its entire length without soon ruining the road; while if it is planned to go around or along the side of the hill the water can be easily transferred from the upper road ditch to the lower one by the use of necessary concrete culverts, and immediately diverted from the road into its natural channel where it can do no damage. Also plan to go around rather than through some of the worst swamps, especially the bottomless ones, thereby saving future maintenance.

Proper Drainage

Drainage is the next matter to be considered in the proper planning of the road. A road built without proper drainage will soon require maintenance. On the heavy clay soils, plan for good open ditches with side banks properly sloped to insure against caving and filling up, ditches that will carry water and not hold it. In addition provide

for tile under drainage where there is the slightest doubt of the open ditches not properly draining the road. Every dollar properly expended in placing tile drain will save ten dollars or more in future maintenance.

Type of Surfacing

Where there is enough traffic to warrant surfacing a road, select the type of surfacing that will meet the traffic conditions with the minimum amount of maintenance. Certain roads may be surfaced with crushed stone or gravel and then maintained at reasonable cost, while others must have a concrete or brick surfacing in order to keep the maintenance cost within a reasonable limit.

Proper Construction

To avoid future maintenance costs, the surface must be properly constructed. If crushed stone or gravel is used, care must be taken in preparing the sub-grade, and good shoulders are required to hold the material in place. It must be well rolled, well bonded, and the surface must be free from ruts or depressions.

If a concrete surface, good, hard, clean, washed sand and gravel or crushed stone must be used, together with good Portland cement. Care must be taken to get the proper mix and finish; also to protect the surface properly while curing.

If proper attention is paid to these small details of construction, and more attention given the location and drainage, it will surely result in less future maintenance cost.

Pleasant Ridge road, Town of Grant, Clark county. Heavy clay soil. Note the proper drainage; good deep ditches; well crowned surface and properly maintained by dragging.

Earth Roads

An earth road must first be graded properly before attempting any method of maintenance. On heavy clay soil the road should be graded to a width between ditches of not less than 28 feet or more than 36 feet, except on swampy sections, where extra width may be necessary to obtain sufficient material to get the road surface well above the water level. The surface should have a

uniform crown and the center of the road should be raised from 24 to 30 inches above the bottom of the ditches.

All sod or vegetable matter must be removed entirely from the road surface, if good results are expected. Probably the best and cheapest method is to use a road grader with a very sharp blade, cutting just below the crown of the grass roots, not to exceed two inches in depth, moving the grass and sod to the edge of the traveled road, then remove it from the road surface. This will cause a small expenditure but the sod will be entirely gotten rid of and the extra expense will be returned many times in lessening the future maintenance cost, as every place a sod is covered up in a road surface a mud hole will develop as soon as the sod decays. It is now an easy task to properly grade the road. When completed, in order to get traffic started where it should go, drive a wide tired wagon over it, taking care to follow the exact center line.

Follow up with a road drag or road plane at the proper time after each rain, beginning at the shoulder of the road about ten feet from the center line, moving a small amount of earth towards the center at each dragging, thereby maintaining the original crown. Dragging should be done before the road surface begins to dry out to get the best results. Do not drag when the road is too dry or when there is water on the surface. The road plane may be used on a somewhat drier road surface with excellent results. Driving in opposite directions each alternate dragging will tend to remove the wavy appearance sometimes caused by dragging. A light grader should be used once or twice a year to clean out the ditches and remove the grass and weeds that have started to grow along the ditches and road shoulders. Be sure all culverts have a good open outlet.

On light clay or loamy soil the road should be graded with less crown and

Cedarburg Plank road, Town of Mequon, Ozaukee county. 15-foot gravel base with crushed limestone top. Built in 1914; surface treated in 1915 and again in 1916; showing the effect of persistent maintenance. This road is subject to very heavy traffic, as it joins one of the Milwaukee county's main concrete highways, and is standing up exceedingly well.

dragged after each rain immediately after the water has left the road surface.

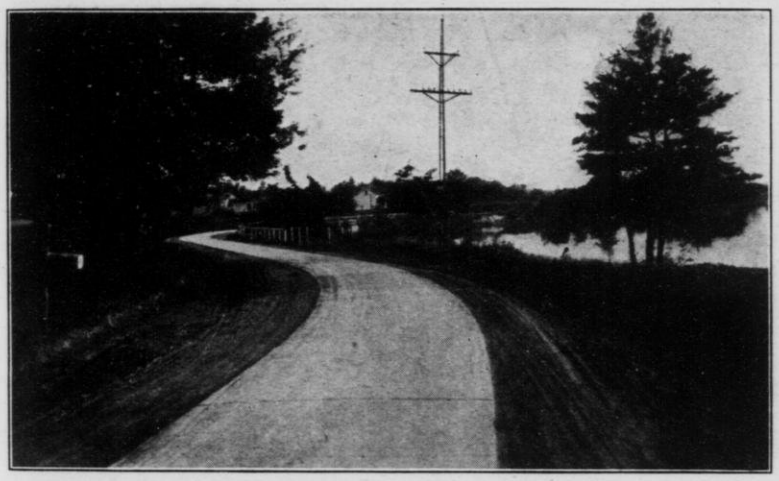
On sandy soil a light application of clay should be worked into the road surface by the use of a disc or other heavy harrow before attempting to use a road drag. Do not use too much clay; just enough to fill the voids in the sand to a depth of about six inches, which would require about two inches of clay if thoroughly mixed. Follow up with the road drag after each rain and soon the surface will be hard and water proof, giving excellent results.

The maintenance of a heavy clay surface can be reduced to a considerable extent by mixing sharp sand with the top six inches of the road surface in the manner above described for clay on sand.

Stone and Gravel Roads

With the rapidly increasing motor traffic on our main thoroughfares, it is useless to continue building stone and gravel macadam roads unless we plan for their maintenance by a surface treatment with some good asphaltic oil or refined tar. This surface treatment should be applied just as soon as the road surface has become cured or set to a point where sweeping with a power sweeper will remove all dust and vegetable matter without disturbing the wearing surface. If a road has been properly built and frequent showers are had following its being opened to traffic, it may be in condition to oil within a month after completion, but ordinarily it requires a much longer time for the surface to cure.

Sweep the surface of the road with a power sweeper until all dust is entirely removed from the stone or gravel surface. If there be any spots of vegetable matter remaining on the surface, remove them by the use of a hand broom or shovel. Be sure to have the surface clean before starting your



Grand Rapids—Biron road, Village of Biron, Wood county. A 9-foot concrete road with 3-foot disintegrated granite shoulders, making in all a 15-foot road. In the construction of this type of road, the bulk of the maintenance is put in the construction, as it will require but little future maintenance.

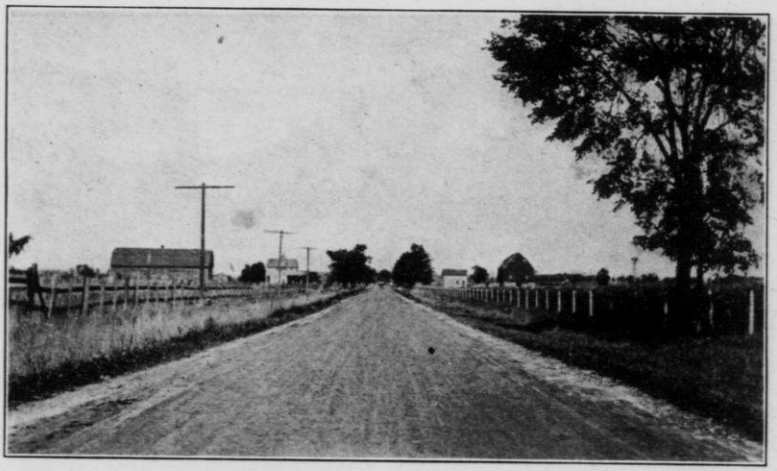
oiler for if there are any spots not thoroughly cleaned, the oil will not penetrate to the road metal, leaving a blanket of dirt between the oil and the stone which will eventually pit out, causing very disagreeable holes in the road surface.

Use a pressure distributor and have power enough before it to move along at a speed which will develop the necessary pressure to insure an even distribution of the oil. Four horses or a motor truck supplies the best power for the majority of distributors.

Use material that can be applied easily without heating. It is much more convenient, less expensive, and gives equally good results.

The amount required will vary with the condition of the surface. A new road will require a full half gallon to the square yard, and possibly more, while a road that has been previously treated will require less than that amount.

Immediately following the application of the oil a covering of sharp, clean torpedo sand or stone chips (not to exceed one-half inch in size) should be applied. This covering will absorb all excess oil, fill the holes in the road surface, and form a carpet which will protect the surface from wear. The best method of applying the sand or stone chips is to deposit it in small piles along the shoulders of the road and apply by hand with square pointed shovels as needed. One cubic yard will properly cover about 110 square yards of surface.



Menasha—Appleton road, Town of Menasha, Winnebago county. 15-foot limestone macadam built in 1914, surface treated in 1915 and in 1916. Very heavy traffic and road surface is improving each year, due to proper maintenance.

Keep the travel off the oiled surface for at least 48 hours. This should be followed up by a weekly patrol system of maintenance, and whenever a hole develops in the surface, fill it with the same kind of oil and covering material used in the surface treatment. If this method is pursued a stone or gravel road can be kept in first class condition for travel almost indefinitely.

Concrete Roads

Concrete roads, if properly built, require but little maintenance. Ex-

pansion joints are placed every 35 to 50 feet and these require the greater portion of the maintenance necessary. The joints should be thoroughly cleaned out each year and filled with asphalt or tar, then covered with torpedo sand. Cracks will appear occasionally and should be treated in a like manner. The shoulders need more attention than other types of road, as the shoulder material is apt to be pushed away from the edge of the concrete and should be reshaped occasionally during the first year's use after which they will need but little attention.

Patrol System of Maintenance

Many of our counties have now a sufficient number of miles of surfaced roads built that would warrant their establishing a patrol system of maintenance.

One man with a small motor truck could easily take care of 20 miles of road. Fine crushed stone or gravel could be placed along the road during the winter months at convenient points for the patrolman's use. The patrolman could cover 20 miles at least twice a week, carrying with him a small supply of necessary materials to fill all holes just as soon as they are noticeable. A few counties are trying out the patrol system in a small way this season, and we believe it will be but a short time until all will have learned that the old adage of "a stitch in time saves nine" is especially applicable to road maintenance.

A Few Reminders

Keep the road ditches clear of grass, weeds and rubbish, so the water may get away from the road quickly.

Do not attempt to grade a road with a road drag. It is entirely too slow a process and is very expensive.

Remember the road drag will be of no benefit to your road if allowed to remain leaning against a neighbor's fence, with the weeds growing over it.

Pay your local highway taxes in cash. Select the best road builder in your town to have charge of the work, and pay him a good salary. It will be a good investment.

Make provisions for dragging all dirt roads and get the boys interested by offering prizes for the best mile of dragged road in your town. Dragging is the best and cheapest method of maintaining earth roads.

It is much cheaper to carry water under the road by use of good concrete culverts than over the road without culverts.

Do not allow ruts or holes to remain in a stone or gravel road surface. They will soon ruin the road. Have them taken care of immediately.

Do not forget to thoroughly clean the surface of a stone or gravel macadam road before a surface treatment is applied.

It is poor business to spend $200 per mile on surface treatment and fail to protect it with a covering of sand or stone chips.

Keep the travel off the oiled surface for 48 hours after treatment is applied. This may cause some inconvenience, but will meet the approval of all thinking people.

"*Avoid the ruts*" when driving, thereby reducing maintenance cost.

In maintenance, even more than in construction, what is worth doing at all is worth doing well, and attention to the little details which seem hardly worth while makes the whole difference between complete success and at least partial failure.

FEEDING FOR WINTER EGGS

Geo. W. Hackett, North Freedom.

The first consideration for profitable production of winter eggs would be the selection of stock that has been carefully bred for that purpose. Some hens will lay well in winter when properly cared for, while others will lay but few eggs at any time of the year regardless of the very best of care. Unfortunately, the farmer as a rule has given but little attention to the importance of producing winter eggs, and many of them will declare it cannot be done. Those who make a living from poultry know it can be done properly if the system of feeding is correct.

There are some important factors that must precede the adoption of a "feeding system" if we are to succeed, in addition to the selection of stock before mentioned. The period of greatest egg production in the life of a hen, if she is handled right, is from the time she begins to lay, at the age of five or six months, and ten or twelve months later when she goes into her first molt. Successful egg farmers aim to bring their pullets into laying in October and November, when prices for new laid eggs are highest on account of their natural scarcity, and they strive to keep them laying at the rate of forty to fifty eggs per day for each one hundred hens up to February first, and at the rate of from sixty to seventy-five eggs per day up until late summer when the molting begins. Such results are frequently obtained on regular egg farms and it is not difficult to estimate the profits at that rate of production, but it does require very careful, and we might say expert work to obtain these results; however, a considerable less rate of production will return good profits. It will therefore be seen that the pullets intended for winter layers should be hatched in March, April and May, depending upon the variety.

Among the many excellent lessons taught by the American Egg Laying contests is the fact that no one breed or variety can lay claim to unquestioned superiority as heavy layers, in fact, they prove quite the reverse, and that there are good and poor layers in all breeds, depending upon the purpose for and the care with which they have been bred. Careful observation of the records do not seem to indicate that the heavier breeds do lay more eggs during the winter months than do the smaller breeds. It is a safe plan, however, for the farmer to select the variety he likes best, but use care in getting them from a laying strain.

The pullets can best be developed on free range and with access to open feed hoppers supplied with a good developing mash, and get them into the winter laying house before the cold fall storms come on, and they should never be let out on bad days or after the snow comes. Not more than fifty to one hundred should be allowed to run together for best results unless special care can be given them, and do not overcrowd them. The house must be kept clean and in a sanitary condition and must admit an abundance of fresh air without draft. Good feeding will avail nothing if the poultry house is dark, damp and poorly ventilated.

Balanced Ration

The hen must have a balanced ration to do her best. The chemist can determine the amount of the different

food elements contained in grains and other foods, but the digestibility of the different foods must be determined before their relative feeding value can be known. In the case of poultry, the digestibility of foods has never, to our knowledge, been determined, but if the feeder will exercise good judgment in the selection of feeds and supply it in variety he can safely leave it to the hen to balance her own ration, but the more variety the better the results.

Grain Foods

Wheat is probably more largely used for poultry, taking the country over, than any other cereal. It is safer than other grains, fed in quantity, and is best relished by fowls, with the possible exception of corn, which is a near competitor both as regards the hen's likes and its value as a feed, and whether the one or the other should be used in the combination of feeds should be determined largely by the prices of the two. If but one kind of grain was to be given in the ration, wheat would give better results than corn as it contains slightly more protein and less fat.

It should not, however, be a question of feeding one kind of grain only. This has been too often the cause of failure to get winter eggs on most farms. No one should expect profits from fowls fed on one kind of food, no matter what that food may be. When fed in combination with other feeds, it is an open question whether wheat or corn is the more economical to feed at the same price per pound. Slightly frosted or shrunken wheat is of equal or greater value per pound for poultry food, providing it is not musty. Moldy foods of any kind are very injurious to fowls. Good heavy oats make excellent poultry food, both for the growing stock and the laying hens, but cannot be fed to excess as the heavy hulls may cause trouble. Whole barley should be fed sparingly as it has been found to injure the digestive organs of fowls, often causing severe losses which could not be accounted for by the owner. Both barley and oats, when finely ground, make valuable additions to the mash feed.

The Mash

The importance of feeding a mash of ground grains in addition to the whole grains can hardly be over-estimated, for the production of eggs. As to the best method of feeding the mash, there is a difference of opinion, but all agree as to its value. The mash can be prepared at home at a much lower cost than to purchase the commercial brands offered on the market. There is no secret, mystery or magic about these prepared feeds. A good mash may be prepared as follows: 100 pounds of bran, 100 pounds of ground oats or barley, 50 pounds of middlings and 35 pounds of oil meal. In the case of forcing pullets to development, 50 pounds of corn meal should be added.

Animal Food

A knowledge of the importance of supplying a portion of the required protein in the shape of animal matter has done more to increase the poultryman's profit by supplying winter eggs than any other one thing in poultry feeding. The scarcity of eggs in winter is largely due to a lack of animal food which the hen finds in summer on the range. The heavy layer needs this kind of food in considerable quantity and it can be most conveniently supplied in the shape of commercial beef scraps or green cut bone. Skim milk is also good for this purpose, but a small amount of the beef scrap fed in addition to the milk is an improvement.

Green Food

Laying hens will consume large amounts of green food when available and it is an absolute necessity to profitable egg production. It furnishes bulk, succulence, protein and ash, important elements that are generally lacking in grain foods. There is quite a range for selection of these foods, but an assortment of them is to be preferred. Cabbage, mangels, sugar beets, turnips and potatoes can all be readily stored for winter use. Sprouted oats is one of the very best of green feeds and good quality alfalfa and clover cannot be excelled.

Feeding the Layers

The list of feeds I have given is sufficient and should be raised on any farm, excepting the beef scrap, which is generally kept by feed dealers everywhere, but the best of feeds will fail if the method of feeding is not correct. The grains mentioned, mixed in the proportion of 100 pounds of wheat, 100 pounds of corn (cracked preferred) to fifty pounds of oats. This should always be fed in deep loose litter at the rate of about ten pounds, morning and night, for one hundred hens. This amount will need to be varied to suit the needs of different flocks and is fed in the litter to induce exercise. During the season of long nights and short days it will be well to scatter the morning feed the evening before. This custom induces the fowls to leave the roosts with the earliest rays of light and the longer days they put in the better it will be for them.

The mash, as before mentioned, should be fed in hoppers open to access by the hens at all times. Hoppers should be large enough so they should need filling only about once a week.

For the noon feed the same mash should be used, but add about one-third steamed short cut clover or alfalfa and mix to a crumbly mash. Use milk for this purpose if you have it. A small amount of salt will aid digestion. The beef scrap may also be added to this mash at the rate of from one pint to one quart for one hundred hens, the amount of milk used and the condition of the hens determining the amount, or the beef scrap may be safely fed in open hoppers after the hens have become gradually used to it. Clover and alfalfa give a rich color to the yolk of eggs and improve their flavor. Mangels, beets and cabbage can be suspended from the ceiling, placed on spikes in partitions or shredded and mixed in the mash, but should not be thrown on the floor to become covered with dirt. The amount of mash to be fed should be determined by the amount the hens will clean up, in fifteen minutes. Then the troughs should be hung up out of the way.

Grit, Shell and Charcoal

A small three-section hopper or box should be provided for each laying pen in which to keep grit, shell and charcoal, all of which are necessary to the health of the flock. For without health we cannot secure satisfactory results.

The Water Supply

Just as the cow needs to consume a large quantity of water to make a good milk yield, just so with the hen that lays many eggs.

Experiments have proven that hens will lay best if given warm water during cold weather. In the curtain or open front houses generally used, water will freeze if left in dishes for a long time. It is the best plan to give warm water three times a day and empty the dishes

after the hens have satisfied themselves. Have the drinking dishes up eighteen or twenty inches from the floor, out of the dirt and where they are handy for the attendant, and it will not be much trouble to empty them. This will need be done only in the coldest weather, when eggs should be gathered often.

Separate the Males

No males should be allowed to run with the flock that is being kept for a heavy production of market eggs. Not only will the eggs keep better in storage, but the hens will actually lay more eggs without the presence of the males to harass them. On well managed poultry farms the males are separated at from eight to twelve weeks of age, as the pullets develop more rapidly when thus managed. Pullets forced heavily for winter egg production will not, as a rule, make good breeders the spring following.

The Attendant

Plans, methods and suggestions can be given without number, but the most important factor of all is found in the attendant. If he or she fails to discern the needs of the flock promptly or is unable to supply their wants, the profits will be cut short of what they should be and the health of the flock greatly impaired. There are "drones" in every flock that subsist upon the profits made by others and these should be detected and disposed of.

There is also the annoyance and loss occasioned by the acquiring of bad habits by individuals in the flock, which habits will be followed by others if not looked after promptly. The same is true regarding the contracting of disease and it is all up to the attendant to keep these irregularities in check, but with conveniently arranged houses and regularity in the system of feeding and care, he can easily care for several hundred hens.

A CELLAR GARDEN FOR WINTER.

N. A. Rasmussen, Oshkosh.

While we are planning our summer garden, let us also give a thought or two to our next winter's cellar garden, as we may need now to prepare a trifle. Have we any good rhubarb roots? If not, let us get some at once. A few roots and a barrel of sawdust is all that is necessary for the winter garden.

Take three-year old plants, or as much older as you may have them, and dig these plants late in the fall just before it freezes up. Sink your spade full length of blade, cutting a circle close to the hill, then by carefully prying you can lift the hill in a solid clump without loosening the dirt or breaking the roots to any extent. Place these roots on the north side of a building or bush (out of the sun) and let them freeze for about four weeks. This is very essential, for if they are not thoroughly frozen the crop will be a failure.

Now take an old barrel of any kind, put in about four inches of sawdust or garden soil, even coal ashes will do, but sawdust is light and clean and holds moisture well. Next place the frozen clump in and pack sawdust or other

material around roots and cover to the depth of about three inches. If you leave the crown exposed, you will get too many small stalks. See that the filling is two or three inches higher around the outside of the barrel than in the center, thus preventing the water from running down the outside of the barrel onto the floor. Place in the cellar, water well and cover with carpet, burlap or anything convenient that will entirely exclude the light. Light would develop leaf at the expense of the stalk, thereby lessening the crop; light would also rob the stalk of its rich red color, delicate flavor and tenderness.

Don't cut your barrel down. This barrel was cut down to get the picture. Would such a crop not look nice in your cellar along about February or March?

Now all you have to do is to keep it watered and watch it grow. The temperature of your cellars may vary from 35 to 70 degrees Fahrenheit. The higher the temperature the faster it will grow, but any cellar will grow rhubarb. A hill of rhubarb handled in this way will produce more pounds of edible fruit than if left in the ground, as its food has all been stored in the root for the coming season and is all transformed into stalk instead of leaf.

Asparagus may be grown in the same way, except that it must be kept warmer and must be given some light and it will be found more delicate to handle. Green onions may be grown from sets in flat boxes and may be given plenty of light. If one has plenty of room, and a little time, beet green might also be added to the list, planting the old beets same as onions.

CO-OPERATIVE COW TESTING.

E. E. Wyatt, Tomah, Wisconsin.

The method of cow testing has been agitating the minds of some men for a long time. Experimenting in methods of testing milk was one of the steps that led up to the invention of the modern cream separator. So we can not look upon this as a new fad.

One of the earlier methods was the setting samples of the milk and measuring the depth of the cream rising either by gravity or centrifugal force. Another step was to melt the oil in the cream by applying heat. Later each cow's milk was churned to butter individually, which at first would appear to be the most efficient method possible, but expense, fraud and inaccuracy brought out the necessity for something better. About twenty-five years ago, Dr. Babcock invented the present used test, which is called the Babcock milk test. The great good this test has done in the development of the dairy cows of the several dairy breeds is by leaps and bounds, from those capable of making 400 pounds of fat in one year to the 600 and 800 and even 1,000 pounds of fat in one year. When during the past year the world's record was exceeded four times in less than twelve months and finally a production of over 1,205 pounds of fat was obtained, it was accepted without suspicion. These are achievements that could not have been made without continual testing of both of these cows and their dams for several generations. Breeders of pure bred cattle have most rapidly adopted cow testing as a principle and practice to improve their stock strains and make them more valuable in the sale ring and dairy farmers using grade stock, while adopting the test more slowly, are coming to recognize its importance in more profitable production of milk and butter fat.

With its first appearance to the public, a few men appreciated the value of the systematic testing of their herds and its ability to weed out the poor cows and keep the good ones, to increase the efficiency of each cow, to aid one to feed judiciously, to be able to keep heifers from the best producers and thus increase the ability of the growing-up herd, to get the prices good cows are worth when selling, to increase the production of the herd, to keep high producing cows, to improve the prices received for their farm products, to eliminate drudgery from the farm and dairy, and to bring in such recompense as makes living on the farm pleasant and profitable.

A few men who made the early use of this testing did so by weighing and testing the milk of each cow monthly and then computing the results to find out their actual production by the year. They did not stop with one year's work, but followed it up one year after another to keep an account with each cow every year. Their ambition was not only to excel their neighbors, but to make each year's work better than the last. Now, this requires a great deal of stick-to-it-iveness and but few farmers who attempted this were able to finish up even the first year's work, for the dairy farmer is a very busy man during most of the year and every one of these tasks is an added burden to his already over-taxed condition.

But how is he to get out from under this burden? Only by making fewer

cows do the work of the many and getting better results from the efforts put forth. Now Wisconsin farmers have been working to make dairying a profitable occupation for a good many years. They have brought the incomes of farmers of the state, as a whole, to exceed $100,000,000 from dairy products annually, but in so doing have only raised the average production of butter fat per cow from 150 pounds to 175 pounds per year, in spite of the fact that those who have tested their cows have raised their herd averages to 350 pounds per cow and even 450 pounds per cow per year. These results have been secured generally by the use of the co-operative cow testing associations.

In the year 1885, at Vegin, Denmark, a cow testing association was organized, the first in the world, where a man was hired to test the herds of several farmers, making this his exclusive business. In the year 1895, Mr. Rabild, from Denmark, organized the first association in the United States, at Fremont, Michigan, and at the close of the year 1915, Mr. Rabild, who is now connected with the United States Department of Agriculture, reported that 220 such testing associations were in operation, and of these our own state of Wisconsin can claim one-fourth, for then 47 were operating in the state and since several more have been put in force. So now nearly 60 are at work, testing over 25,000 cows. If these farmers will keep at this work and take advantage of the results possible, it will mean the increasing of the revenues of their farms by many thousands of dollars annually. One association increased the production from an average of 175 pounds fat per cow the first year to 256 pounds per cow the second year, or 81 pounds of butter fat per cow, which at the average sale price of butter fat at one creamery last year would mean an added revenue of $1,776.00 for 300 cows in one association. Another association has reached the high average production of 360 pounds of fat per cow per year, an increase of 188 pounds per cow over the average production, which at the same market value would be $23,680 for an association of 400 cows. Such an increase for all of these associations organized would add another million and a half to our farm incomes, besides an equal amount would be added by our sales of other dairy products. If this could be extended to all the dairies kept in the state, our present gross revenue of $100,000,000 would be trebled.

Land values in Wisconsin are now advancing and we can not make a profit on the increased values by the old time hit-or-miss, all-the-while-in-the-dark methods. The farmer in Wisconsin must improve his methods. He can not remain on high priced land and follow back-number methods. If land values remain where they are or continue to advance, the farmer who continues to use "boarder" dairy cows will have to get off the land. The country will be depleted of its population and Wisconsin will approach the condition of some eastern states. But if farmers will adopt advanced and progressive methods like cow testing associations, they may continue to live on high priced Wisconsin land and enjoy prosperity in a great state.

The testing associations in the past have demonstrated the great value of the silo, summer soiling, grain feeding, feeding to the capacity of the cow, and keeping cows of large capacity, value of improved breeding in dairy blood, keeping pure bred sires, developing the dairy heifer, value of buying supplementary feeds to the farm grown grains, and later of growing leguminous crops, especially clover and alfalfa, to take the place of the high priced protein feeds,

the value of proper housing, good ventilation and good care in general.

The testing has proven that most of our poor producers and unprofitable cows are so not from their own fault but from ours in not proper development, feed and care. This testing has done much to educate and develop the men who have their herds tested as to the science of dairying and the intricacies of the dairy cow and make dairymen of them.

These best results can not be secured from just one year's work, but by continual testing year in and year out it should be made as much a portion of our regular work as the milking and selling of the product.

Keep a pair of good milk scales in the barn. Weigh and keep a record of every milking and then have the milk of every cow tested once per month by a tester from one of these testing associations; have her feed charged to her so as to get her on her financial condition each month and year, and a long step will be taken to improve the Wisconsin dairies. For I do not think many will care to keep cows to simply consume their feed and make them company, and more boys will like the farm for they usually like some other company better, and fewer poor cows and more good ones will make better company all the time and more time for other company.

Discussion

Question—How many cows does it take to make up a good association?

Answer—From 400 to 450 cows will make a good association. At a charge of $1.25 per cow this will make a fund sufficiently large to permit the hiring of a well prepared and competent tester. A membership fee of 25 to 50 cents is usually charged to pay for the acid and little incidentals.

Question—How many members ought an association to have?

Answer—An association of 26 farmers each having from 15 to 20 cows, makes an association just about right. Then the tester can be at a farm a day. Where it can be arranged, in cases where farmers reside near enough to each other, two farmers, with from 8 to 10 cows apiece, can have the services of the tester one day each month between them, and he will be with one farmer one month to room and board that day and be carried on and with the other farmer the day the next month.

Question—Does the tester do anything besides test milk?

Answer—Indeed, he does, or should. A well prepared and efficient tester will assist the members of the association with improving the rations which they feed and he will figure out what each cow should receive on the basis of her production. In this way the members are helped, as a rule, to feed more economically. In one instance one member said that he saved about $300 in one year by the assistance which he received in arranging a more economical ration and feeding it on the basis of production.

Question—Will cows give any more if they are tested?

Answer—When a farmer begins to test his cows he usually commences to take a little better care of them and do his work a little better. The tester helps him to feed a better ration and to feed it in proportion to what a cow gives, and almost invariably the cow gives more milk. In five months a cow belonging to a member of a cow testing association in Wisconsin gave as much milk and butter fat as she did in the whole previous year when she was owned by a farmer who would not belong to an association. That's about the way it goes. In two years the

members of one association in Wisconsin increased the average butter fat production per cow from 178 pounds to 256 pounds or 43 per cent, which meant that $9,000 more of actual money was divided up among the members of the association. Had they gone along the old way they would not have got this extra $9,000.

Question—Is it true that farmers have been saved from selling their best cows by belonging to associations?

Answer—That is probably true. Cows have been purchased at $75 and $80 and put under test in associations and found to be worth from $125 to $150 to the new owners. So it is probable that farmers who do not belong to testing associations, or who will not belong to them, have sold and do sell cows at much less than they are really worth. Farmers who do not test their cows are ignorant of the true worth of their cows as a rule.

Question—Do cow testing associations show that farmers are milking as many "boarder" cows as agricultural lecturers tell about?

Answer—Last year the farmers of Wisconsin who were in testing associations turned off 3,375 cows which were found to be poor producers and losing money for them. This is one great saving which a cow testing association makes for its members. It finds out the poor producing cows. When a farmer really comes to know that a cow is losing him money he usually gets rid of her for beef, just as he turns off a hired man who shirks and does not earn his money. Last year only one one-hundreth of the cows of Wisconsin were under test. About one-fifth of those under test were sold as unprofitable. Judging from this at least one-fifth and probably more nearly one-fourth of the ninety-nine one-hundredths of the cows which are not under test, or from 300,000 to 400,000 cows in Wisconsin are losing their owners money every day. Farmers who test their cows sell the poor ones and keep the good ones. Farmers who do not test are keeping a lot of unprofitable cows and many times sell their best cows for much less than they are really worth. It pays well to belong to a cow testing association.

Note—If there are farmers in any communities in Wisconsin who desire special cow testing institutes conducted to assist them in organizing cow testing associations and will sign applications for such institutes the institutes will be held and the endeavor made to organize the associations. Last year the Farmers' Institutes were directly responsible for at least four cow testing associations and for good starts in at least eleven other communities. Write the superintendent of Farmers' Institutes for special cow testing association institute application blanks for a one-day cow testing institute if you are interested in getting an association in your community.

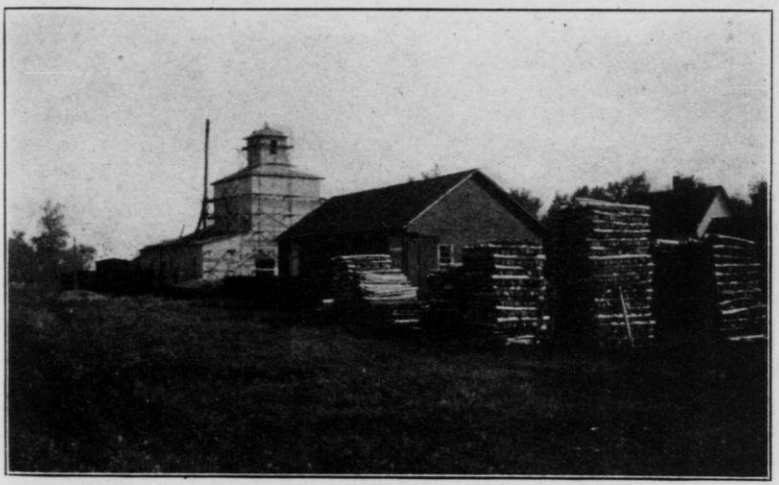
(Superintendent.)

AN EXAMPLE OF SUCCESSFUL CO-OPERATION

Geo. F. Comings, Eau Claire.

In quite the extreme northern part of Wood county is situated the thriving city of Marshfield. Surrounding this city is some of Wisconsin's best farm lands. On these good farm lands during the last fifteen years almost a magical transformation has taken place. Fine large barns, silos, modern dwellings and nice herds of cattle are in evidence. Good roads, up-to-date school buildings and tidily kept country churches indicate a progressive social life.

In 1912 the farmers living near Marshfield organized a local of the American Society of Equity and in July of that year incorporated the Farmers' Co-operative Produce Co., with an authorized capitalization of $25,000.00, divided in shares of $10.00 each. The statute under which this association was incorporated provides for one vote for each stockholder. Out of the earnings, not over six per cent goes to the Paid Up Capital Stock. Ten per cent is put in a Reserve Fund, five per cent is given to an educational fund, the remainder of earnings is returned to the persons who furnish the business of the association; however, to stockholders is returned twice the per cent on purchases that is given to non-stockholders.



PROPERTY OF THE FARMERS' COOPERATIVE PRODUCE COMPANY. MARSHFIELD, WISCONSIN, 1916.

Note that the plant is being enlarged and that these farmers sell fence posts to themselves.

The first year's business amounted to $10,000.00. The second year it increased to over $32,000.00, the third to $48,000.00 and over, and the fourth to $56,000.00, and so far the indications are that another year of healthful growth is in store for the association.

The gross profits for 1914 were over $6,000.00, which left, after the reserve fund, the educational fund, dividends on share capital were provided for and fixed charges were met, a dividend of four per cent on the stockholders' business and two per cent on non-stockholders' business. That is, if a stockholder had done $500.00 of business with the association, he would receive a cash refund of $20.00 at the end of the year, and six per cent on his share capital. A non-stockholder who had traded to the same amount with the association would get a refund of $10.00 on his patronage.

The Association has some two hundred stockholders, and over one thousand persons who do business of buying or selling, or both, at the warehouse. In addition it owns an elevator of ten thousand bushel capacity and a mill for custom grinding, while from its warehouse is distributed flour, feed of all kinds, salt, coal, twine. A full line of the best farm machinery is handled for the members of the association.

Mr. Fred Pamperin, who has been its manager for nearly four years, assures one that the association has been of great service in the community, insuring the full market price for grain and stock marketed and in supplying feeds, implements, etc., of the best quality at the least cost for service possible. The manager reports some patrons as becoming dissatisfied and quitting, but almost always to return and stay as regular patrons. A better grading of grain is noticeable and more interest and loyalty to their own business venture is seen.

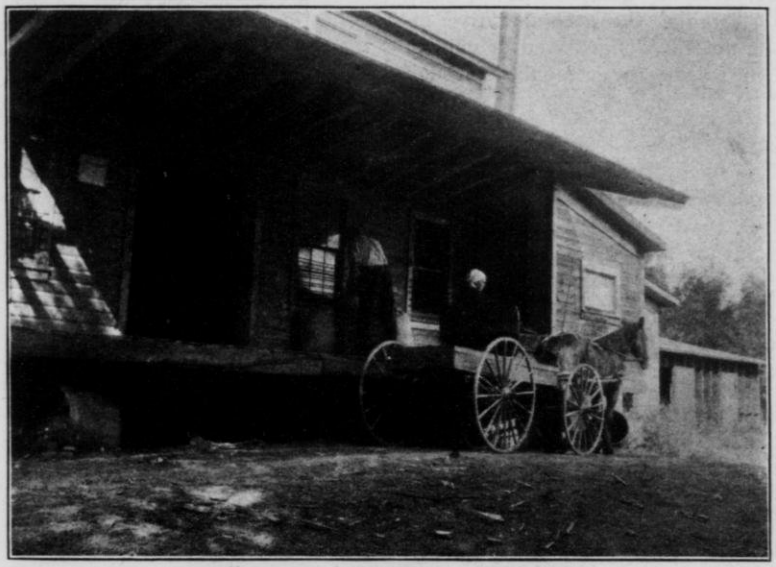
Machinery Warehouse of the Farmers' Cooperative Produce Company, Marshfield, Wisconsin.

About a year after the incorporation of the association, a Stock Shipping Association was formed with Ben Lang as its manager. This adjunct to the business has enjoyed a steady growth, until now about all the stock sent from

Marshfield is handled through the farmers' own organization. It is a very simple thing to organize a shipping association, as it requires no capital. Those having stock to market get together, elect a board of directors, who engage a manager who gives bonds, and there you are ready for business.

During the year 1915, 109 cars of stock were marketed, consisting of 4,199 calves, 1,080 head of cattle, 2,306 hogs and 475 sheep. There was paid to members and for labor $121,508.54. For salaries, $1,024.00, for the sinking fund, $602.90, for losses, $228.53, balance in the treasury, $375.80.

The gains that come through the association are obvious. The farmer is enabled to market his stock when it is ready; shipping expenses are reduced to the minimum; he gets the market price less the necessary expenses. Thin stock, calves and lambs sold on the local market usually sell at low prices. Here is where coöperative efforts save the members the greatest amount of money. Animals should be plainly marked to avoid misunderstandings. It prevents disputes and makes the settlement easier. Mr. Lang estimates an actual gain to the members of from 15 to 25 per cent on their returns for this stock marketed. At any rate the farmers are so well satisfied with their own management that there is little or no stock sold except that handled by the association.



FARMERS' COOPERATIVE PRODUCE COMPANY, MARSHFIELD, WISCONSIN.

A farmer buying some feed. Many farmers market all of their crops here.

The association plan discourages the stuffing of stock, as the shrink comes back on the one practicing it. The gambling element is eliminated and a system of justice and fair play is developed. The plan is simple, effective,

correct in principle and brings the best of results.

The writer believes standardizing and marketing should be done under co-operative supervision, through a management responsible to the producers, that a systematic method is needed in place of the hit-or-miss system common in Wisconsin.

The greatest gain, however, that comes through these co-operative efforts is not the dollar saved or gained, but the democracy taught through these associations for mutual benefit. The lessons learned take us a long hike toward the realization of the dream of Sir Thomas Hughes, the English statesman who fifty years ago said, "Human society is a brotherhood, not a collection of warring atoms. True workers should be fellow workers, not rivals, and a principle of justice, not selfishness should regulate exchanges."

Let us keep constantly in mind that the Golden Age is before us and not behind!

"THE MAN BEHIND"

Fred Pamperin manages the Farmers' Cooperative Produce Company at Marshfield, Wisconsin. Farmers'cooperative companies must be careful to select leaders who will be loyal to the business. Fred Pamperin is loyal to this business.

HOW WE MARKET POTATOES: AN EXAMPLE OF SUCCESSFUL CO-OPERATION

W. V. Silverthorne, Seeley.

The Seeley Produce Association was organized primarily to assist the farmers of a small community to market potatoes at a minimum of expense. Tributary to Seeley, in Sawyer county, there live thirty-three farmers who devote something like three hundred acres to potato culture, and according to the records of the association they produced for market in 1914 eighteen thousand bushels. To dispose of this produce without capital with which to build a warehouse and independent of the intermediate buying and selling agencies, was the problem these growers set themselves to solve. Prices at the local buying stations varied from twenty to thirty cents under the Chicago quotations. The freight from Seeley at that time was only eleven cents. It was evident that a large part of the value of their product was lost through their inability to carry their product farther than Seeley. From that point the crop must move, not an individual haul but in the aggregate. The local warehouse had methods which it was not particular to explain, for assembling the stock, grading, sorting and forwarding to the big buyers. Ignorance of this next step to market lost to the growers something like fifteen cents per bushel of the eighteen thousand bushel crop.

How the Association was Started

The previous winter a few neighboring farmers had joined forces, ordered a car on a sidetrack and selected one of their number to weigh and inspect the stock for them as it was loaded. This took place in the dead of winter under very strenuous weather conditions. The weighing was done in the car by the sack upon an inadequate platform scale and a brief memoranda thereof given each individual. Those interested in the shipment assisted in lining the car and fitting it to comply with the railroad specifications and shipping regulations. On the shipments made that winter in this crude fashion, the shippers realized from sixty to eighty dollars per car over the amount they would have realized had the stock been sold to the local warehouse. That season they shipped ten cars. They had learned their first lesson in co-operation.

Profiting from this bit of experience, they raised among themselves a hundred dollars and installed a wagon scale at the railway station. To provide suitable organization for their operation the usual staff of officers was elected, but the management of their affairs was entrusted to the secretary-treasurer. He might better be termed a general manager. Upon him rests the duty of superintending shipments, from the ordering of the car to the final act of paying out the proceeds to each shipper. It was necessary for the association to elect a capable member to this position and in this respect it was fortunate and to him in a great measure owes its success. This official perfected himself in grading potatoes to meet every exacting condition of the market. He possessed himself with a thorough knowledge of freight regulations and routings. To the market he must give constant and careful attention. In him the members must have full confidence and trust, give thoughtful heed to his

suggestions and comply with his conditions in sorting their stock. He is compensated one cent per bushel for his labor.

Upon arrival at the car, he weighs the load and issues to the shipper a scale certificate showing the car number, gross and net weights, and retaining for his records the stub certificate. The shippers lend their assistance in handling, while the secretary conducts a thorough and careful inspection of the stock offered as it is unloaded by sack or crate. By this method many different shippers load into the same car and a standard market uniformity is secured. No quantity is too large and none is too small. Any member may offer a bushel or he may haul in a carload. The cars are billed out in the name of the association and arrive on the market as the Seeley Produce Association stock. So well have the requirements of the trade been observed that in this, the second year of its existence, the association's shipments have been passed on the Chicago market without further weighing and grading. They also command the highest prices. The association is also developing a line of customers who purchase carlots f. o. b. Seeley upon the association's weights and grades.

Some of the Advantages of This Venture

Of what profit has this first venture in co-operation been to these farmers? From the secretary-treasurer's records, it appears that during the winter of 1914–1915 the association marketed twenty-six cars, in all eighteen thousand, four hundred and twenty-eight bushels. The net to the farmers was $5,528.00. The average net price was 30 cents. During the winter the highest price offered at the local warehouse was 28 cents and that quotation held for only a few days. The prevailing quotations were from 18 to 22 cents. At the present writing, the complete return from last summer's crop cannot be obtained, as the bulk of it is now being moved. The season was decidedly unfavorable to the potato yield and in many sections quite disastrous. Thus far the association has shipped only fourteen cars in all. Several of these went early upon the market when the prices were considerably lower, but at that the average net realized is 60 cents as against 20 to 60 cents at the local stations. It does not require extended mathematical calculation to demonstrate the actual commercial value from this method of organized marketing.

There is also an important educational profit derived through the association. The growers have learned the value and importance of adopting a uniform variety and they are advancing to establish a common standard. Attention is now turned to the advisability of establishing organized effort to produce a clean and superior seed stock. Such details as intelligently sorting potatoes for the best market prices have been learned through the association discussions, and a much clearer idea of the true types of the different varieties is now in the community mind. Members who attend the institutes and conventions report at the meetings and the stay-at-home growers gain a much clearer knowledge of what is going on in their industry. As discussions of the best cultural methods and of the various operations of the association can be had, it holds an important educational position in the community.

Without the shelter of a warehouse the loading of potatoes in the dead of winter is a hazardous undertaking. The association successfully accomplishes this difficult work. The bulk of

the stock has been removed from the home cellars, hauled, weighed and graded under most trying weather conditions and without loss to the shipper. This is secured by a thorough system of co-operative handling. The individual understands how to properly sort his stock in the shelter of his bins. He realizes that it will be accurately inspected at the car. He is apt to be more conscientious about it because he realizes that this stock will be mixed with that of his neighbors and they will be opposed to any offering which will bring down the grade of the whole shipment. Resultant from this, cleaner stock appears at the car and grading there is a quick proceeding. The scales are located conveniently at the track and weighing and back weighing requires a minimum of time. The assembled drivers turn in and assist in unloading. The speed in making shipments is about one car per day. This has been maintained in one instance for two consecutive weeks. In winter when cars have to be lined a little more time is required.

For lining cars the association owns its own fixtures. This lining is built from a good grade of cheap lumber. It is constructed in sections, so that it can be removed from the car without injury, and is always in condition to be used in the next car without waste of time or material. Each separate section is stenciled in bold letters with the association name and address to insure its return and to locate it if it does not come back. This equipment was paid for and is kept in repair by a fee of one-half cent per bushel on shipments where it is used.

The cost of maintaining the association comes almost entirely from the proceeds of its shipments. Aside from the initiatory membership fee of five dollars, the members have never had to donate a dollar. There are now thirty-three members comprising all the farmers tributary to Seeley. The method of accounting is quite simple. As already indicated, the secretary-treasurer keeps a stub certificate of each quantity delivered by the individual, together with the car number. When the car is sold, the proceeds are remitted to him. He charges against the car the freight, the one cent charge for grading, one-half cent if a car is lined, the travel expenses if the car is accompanied by a caretaker, cost of fuel and any other items of necessary expense, and computes each individual's share of the net proceeds, which is paid with the association's check. Last autumn the association arranged through a loan at the bank to accommodate any shipper with a cash advance of fifty per cent based upon existing market conditions, should he call for it.

This co-operative institution is purely local. It has no outside affiliations. It is managed by its members collectively and in their own independent way. It must not be understood, however, that the marketing of potatoes is the only activity of the association. This article deals only with that department of its operations. It enters quite extensively into all the affairs of the community and markets live stock and any other produce grown by its members. In the spring it inquires into the seed requirements of its members and buys the total of all seeds, thus securing the most favorable prices, and turns over to the individual the amount ordered by him, accepting his note for six months if he is in need of time for payment. Any matter of public importance is acceptable to the association; however, it is conservative and promptly refuses to depart from a plain, simple course in the conduct of its business. It does not engage in the buying and selling of

merchandise from a stock of its own. It does not carry stock of any description. Each transaction is carefully considered in meetings of its membership and definitely concluded upon, and action is only taken after it is found that there is a thorough accord in opinion.

POTATO SEED CERTIFICATION.

W. D. Juday, Rhinelander, Wis.

Certification should be considered both from the buyer's and from the producer's standpoint.

The Buyer's Standpoint

The buyer wants his seed potato stock to be variety pure, free from serious disease, fairly true to type and reasonably uniform in shape. He is generally buying from men concerning whom he knows little or nothing, men who do not always give him the quality of seed he rightly expects. For this reason he welcomes a system which will reasonably assure him that he is getting what he pays for; and for this assurance he is willing to pay a little premium.

The Producer's Standpoint

In viewing certification from the farmer's standpoint, we can readily see that all potato growers do not want to grow certified seed and should not try to do so. Certification is for the man who is willing to treat his seed, spray with Bordeaux mixture, pull diseased and mixed hills from his field, exhibit at fairs and potato shows and sell only well graded stock of his own growing. A grower with a lower ideal should not attempt it.

Some of the Benefits of Certification

The next question is, "How much of a premium is the farmer to get for all this trouble?" A reasonable charge is 50 cents per bushel above market price for the well sorted stock. Charging exorbitant prices will tend to make certification unpopular with the prospective buyer and discouraging to the grower.

A farmer should consider, too, that part of the benefit derived from certification which comes in the form of increased yield and added ability to grow a better potato crop. The practices desirable for certification are practices which will always give more bushels of better potatoes to the acre. Even for table stock, a better price can be obtained for this grade than for the average sort.

Farmers receiving certification also get valuable information concerning the different phases of the potato game. They are shown diseases they did not know were in their fields and at the same time given methods of control. The best cultural practices are taken up with the inspector, new potato problems discussed, and plans for grading, exhibiting and advertising talked over. In short, the services of an expert are possible for every applicant. All the farmer has to do is to show his willingness to learn.

The scope of certification is limited. It carries with it a personal responsibility and must therefore be an individual rather than a community affair. It is now established on a sound basis in

Wisconsin and each farmer should strive to keep it so, by having field conditions right, by practicing a strict grading on the field or in the bin, and by offering his product at a reasonable quotation. The measure of its success will depend upon the number of satisfied customers. The ideal should be to carry on the work so that it will be a profitable protection, both to the buyer and to the seller.

DISCUSSION

Question. What are the definite objects of seed potato certification in Wisconsin?

Answer. There are two important objects. The first is that the plan will assist in making available a certain amount of standard seed stock which can be used for community potato development in Wisconsin. Each year a large amount of seed is interchanged between counties and between different sections of the state and it is highly desirable that this stock shall be adaptable to the particular region for which it is intended. The second object of the plan is to develop the pure seed potato trade in Wisconsin. Many outside sources are looking to Wisconsin for seed stock and they are very glad to take advantage of any plan which will furnish them information on the standard of the stock offered for sale.

Question. What are the advantages in the plan of seed certification over the old or common method of buying seed potatoes?

Answer. Under this plan a complete record is furnished relative to the condition of the field, disease freedom, variety, purity, yields, quality, etc. Although mistakes are liable to be made, the description or record furnished by the inspector is usually accurate. Although even good seed is liable to prove unsatisfactory under undesirable conditions, it is, however, of considerable satisfaction to the purchaser of seed stock to be able to secure the above record.

Question. How is this work associated with the general plan and purposes of field extension work?

Answer. Through the seed potato inspection service the potato inspector is able to reach many potato growers who do not receive inspection for certification. An interest is aroused in such matters as securing straight seed stock and in a practical plan of farm selection of seed. One of the chief advantages of seed potato certification is that it arouses a special interest in better seed stock on the farm and many men who have undertaken this work have begun for the first time better methods of growing and selecting their own seed stock.

Question. How many farmers get their potatoes certified?

Answer. In 1915 about 105 farmers received certificates. 172 made application.

Question. What are the common causes for rejections or refusal to issue certificates?

Answer. Very often undesirable cultural conditions such as poor stands, general weak vine growth, potato beetle injury, arsenic burning, etc., and a combination of these troubles cause rejection. Other causes are mixed fields, specific diseases, such as rhizoctonia (black scurf), common scab, late potato blight and rot, etc.

Question. Who is responsible for the final grade of stock turned out and who is responsible in cases of dissatisfaction?

Answer. It is apparent that after inspection has been given and definite instructions given to the grower that the grower must be finally responsible for the quality of stock sold. The in-

spection service makes every effort possible to give definite instructions and to examine all stock thoroughly. However, such troubles as tuber rots or damage from freezing may occur after the inspection is made and the potato grower must remove these troubles whether they showed in the inspection or not. It is often necessary also to leave certain definite instructions with the grower relative to sorting according to size. The grower is responsible that these instructions shall be carried out.

Question. Is there a misunderstanding on the part of both the grower and the buyer of certified seed relative to the standard allowed under the plan?

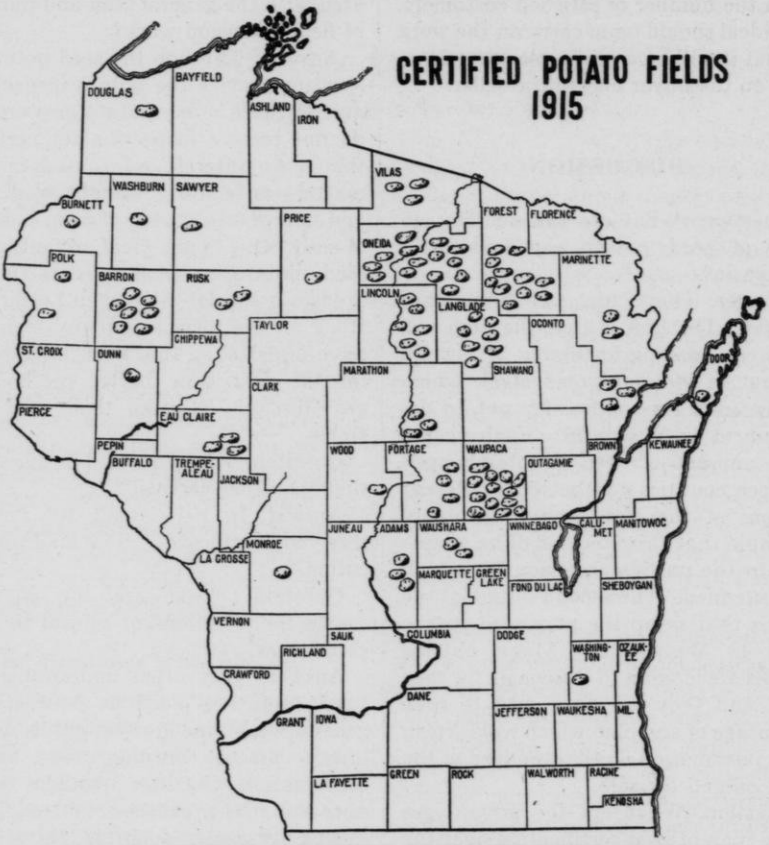


FIG. 29.—WHERE CERTIFIED POTATOES WERE GROWN

In 1915, 110 growers raised 57,000 bushels of certified potatoes, an increase of 63 growers and 34,000 bushels of potatoes over the preceding year.

Answer. Yes, there is very often a misunderstanding. Some buyers of seed stock make an unreasonable demand relative to size and quality. The inspection service is obliged to adopt a standard which is consistent with field conditions. Obviously, perfection can-

not be reached. Growers of certified seed stock cannot be expected to furnish select exhibit stock as certified seed.

Question. Do many of the growers of certified seed fail to live up to the standard?

Answer. As a rule the standard of certified seed is far above the average seed stock which is offered for sale. Some growers, however, do not sort as carefully as they should and in some cases the stock has shown too large a percentage of common scab and black scurf. The inspection service is constantly warning the holders of certificates against these troubles.

Question. About what price per bushel does certified seed bring?

Answer. This will vary somewhat with market conditions and will also vary with different growers. Well sorted stock under average season conditions should bring from one dollar to one dollar and a quarter per bushel in car lots. Some growers of certified seed have sold their stock field run, simply sorting out under sized and coarse stock, at eighty cents per bushel when the average market price ranged around forty cents. Small amounts of carefully selected seed must bring a price to warrant the extra care given in sorting and packing.

Question. Will it pay the average farmer to get his potatoes certified?

Answer. The plan is not adapted to the man who will not give the very best of attention to every cultural detail and who is not interested in seeking out the best markets for his stock.

Question. What must a potato grower do to secure certification? What is the regular method of application?

Answer. All applications for inspection must be filed at the Horticultural Department, Wisconsin Experiment Station, Madison, Wisconsin, by July 1. In 1916 the inspection fee required for four acres or less was $6.00; over four acres, up to and including eight acres, $9.00; and one dollar per acre additional for every acre above eight. The application fee which must accompany the application is one-half of the regular fee.

COMMUNITY POTATO GROWERS' ASSOCIATIONS IN BARRON COUNTY

R. L. Cuff, Barron.

In the spring of 1914 the conditions relative to potatoes in Barron county were about as they were in most of the other localities in Wisconsin. The potato growers, as a whole, were growing too many varieties in the same field, were not sorting closely enough and paid little attention to disease. A few of them were trying to grade up their potatoes. There were only about two men in the county who did any certification work.

The county produces on an average about one million and a half bushels per year, so it was thought that a little work on potatoes might be of as much benefit as any other line of work that could be taken up. Under the leadership and direction of the agricultural committee of the county board, the agricultural representative and state supervisor went through the cities, villages and country places throughout the county and organized in all twenty

community potato growers' associations. Each of these associations chose a leader and secretary whose duty it was to transact the business and call meetings. In the twenty associations there are about seven hundred members.

The plan was to hold a meeting to organize an association. Then to hold another meeting to talk over the cultural methods that were to be followed out during the year. These were held in every instance.

Each member of the different organizations took from one to fifty bushels of certified seed. In all five carloads of these potatoes were shipped into the county. Most of the associations adopted the Green Mountain as a standard, while one of them chose the Rural New Yorker. These potatoes were planted beside the common potatoes to get an idea as to their adaptability and yield in this county.

While growing potatoes was the primary cause for which these associations were organized, it was found that when we were fortunate enough t, get a speaker, or an institute in the country, there was no trouble at all in advertising and getting a crowd together. Most of the farmers in this county have telephones. All that we had to do was to call up the leader and secretary of an association and they would do the advertising. In this way there was no trouble at all in locating and conducting the meetings. Some of the associations try to meet about once a month. Different subjects are taken up as the season progresses.

All of the associations have reorganized for the second year. A few of these organizations have grown into commercial clubs with the town people in conjunction with the farmers. Two of the associations have bought platform scales. The leader of one association said that although they had not weighed a potato over their scales, the scales had paid for themselves, because the local buyers knew that the growers could ship their potatoes themselves if they did not get what duly belonged to them. By charging 10 cents per load for stone, hay, feed, cattle, etc., which has been weighed over these scales, the scales have nearly paid the association for themselves in a year.

In a number of the associations the members have gotten together and ordered ground limestone for alfalfa plots. Others have bought lead arsenate, copper sulphate and seed corn.

In nearly every association some of the members carried out spraying demonstrations. Where the spraying was done properly the results were very satisfactory. One man who believed it all a humbug and sprayed only as a last resort, said that although he did not do the work properly he saved at least $500.00 by spraying for late blight. We have had several other good demonstrations in the county. Many of the members in the several localities are getting together and buying high power sprayers to be used this year.

Another line which the members of these associations followed was that of seed certification. Twelve growers were successful in obtaining certificates. These men sold about four carloads of seed at an average price of 50 cents per bushel over the local market. Some of the growers who had Green Mountains and did not have them certified sold them from 20 cents to 35 cents per bushel over the market. All of the Green Mountains, certified and uncertified, that were for sale in the county were gone by May 10th. From the present indications, it is expected that there will be about twice as much certified seed in the county this year as last.

At digging time the men who had certified seed had a good chance to see

what this seed would do under actual field conditions. It was found in most localities that Green Mountains proved satisfactory, while in some localities they were found to be affected more or less with late blight. But, as a whole, most of the men who grew them last year are growing them again this year.

Each association makes it a point to exhibit at the county fair. A silver cup is presented by some of the associations to the member who has the best exhibit of potatoes at the fair. The plan of the associations is to have a local county potato show in the early part of November and then band together to go down to the state potato show.

HILL SELECTION OF SEED POTATOES.

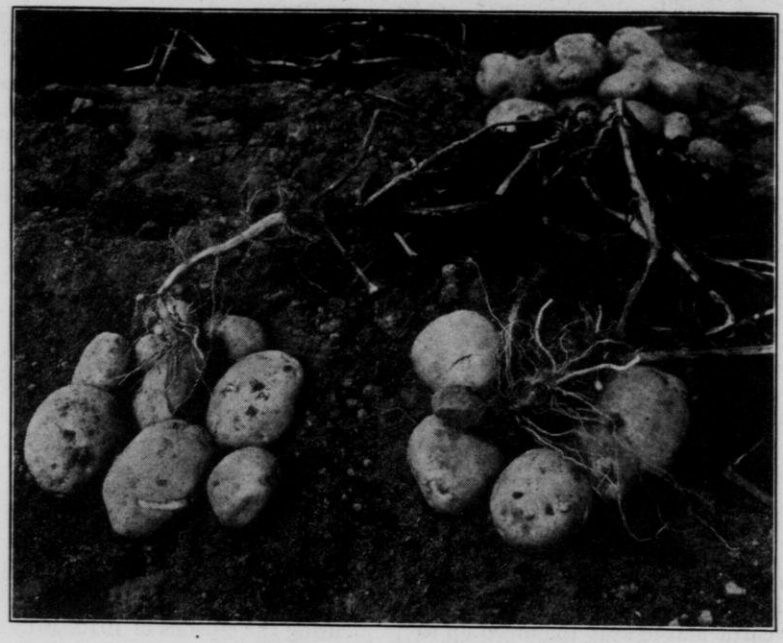
Supt. E. L. Luther, Madison.

For a long time farmers have known that in order to secure certain kinds of dairy cattle and to keep the breed up to a high standard of production, it is necessary to use the most typical and highest producing animals of the breed for breeding purposes. This has been found equally true of other classes of farm animals. More and more it is sinking into the inner consciousness of farmers that to secure better strains of corn and grains and to maintain them, it is necessary to secure good crops of these grains and to care for and prepare the seed of the next crop. But only a very small minority of farmers have ever conceived that anything of the kind pertains to potatoes, so the great mass of potato growers have continued to plant scrub and mixed seed potatoes. They have saved the little potatoes and the great, big, knobby stuff for seed. The seed has not been properly cared for and this has resulted in weak stands. The total result has been that the farmers have complained that their seed has "run out."

The writer is of the opinion, based upon the experience of four years, that there is just as much in selecting and caring for potato seed as there is in selecting and caring for breeding stock or seed grains.

During the seasons of 1912, 1913 and 1914, the writer, in connection with the Agricultural Representative work in Oneida County, Wisconsin, made the matter of potato seed selection one of the features of his trial plots on the fair grounds at Rhinelander, Wisconsin, and the results are set forth below. From these results it will appear that there is justification for the statement that the potato conforms to the usual rules for bettering the crop by proper seed selection.

In 1912 a bushel of potatoes containing what proved to be for the most part Green Mountains, with a few Rural New Yorkers and Irish Cobblers, was purchased and planted. Pure varieties at that time were scarce in Wisconsin. In the fall the crop was dug and as much care as possible exercised to select only Green Mountain potatoes from the largest producing hills in which the potatoes were most uniform for seed for 1913. Picture No. 1 shows a couple of such hills. The yield was around 200 bushels to the acre. This seed was carefully stored and planted in 1913.



PICTURE NO. 1.—1912
Hills selected for seed the first year.

PICTURE NO. 2.—1913
Hills selected for seed the second year are piled in neat piles

A portion of the crop as dug in 1913 is shown in picture No. 2, with selected, high producing hills of even sized, disease free tubers set out in little piles. Pictures No. 3 and No. 4 show some of the select hills at closer range. It is easily noticeable how clean and even sized the tubers were. The yield was around 250 bushels to the acre.

PICTURE NO. 3.—1913

Notice the big vines showing thrifty condition. Ten potatoes all alike. Such hills and such potatoes tend to reproduce themselves.

Picture No. 5 shows the crop growing in 1914. A portion of the 1914 crop as dug is shown in picture No. 6, with the high producing, disease free hills selected for seed. By comparing picture No. 2 of the 1913 crop with picture No. 5 of the 1914 crop, it is easily seen how much greater proportion of seed hills there was in the 1914 crop than in the 1913 crop. The soil in the two cases was as nearly the same as could be and the 1913 season was a little better season for potatoes. The yield was 340 bushels to the acre. The seed from the 1914 crop was stored carefully and planted in 1915.

Picture No. 7 shows the crop growing in 1915. The vines were almost hip high and though the hills were in rows three feet apart and eighteen inches apart in the rows, the foliage covered the field like a clover or alfalfa crop. It would be difficult to find more vigorous vines. A great many stalks were as large in diameter as a man's thumb.

Picture No. 8 shows a portion of the field as dug. Only four hills out of 117

PICTURE NO. 4.—1913
Hills like these furnish high yielding seed.

PICTURE NO. 5.—1914
These rows are three feet apart. Note strong vines. There was a 100 per cent stand in this field. Not a hill failed to come up.

hills of this portion of the field were discarded as too poor for seed. These 117 hills yielded 8 bushels. Another digging of 50 consecutive hills yielded 3 bushels. The total yield on the quarter acre was 100 bushels. Had there not been a couple of gravel streaks across the field, the yield would have been with each season's selection. Thus we may suppose that that hill selection of seed tubers will make a seed that will tend to reproduce itself and that the progeny will look typical of the kind of potatoes planted and that potatoes from seed selected in this way will not "run out."

PICTURE No. 6.—1914

The great majority of the hills were seed hills.

around 150 bushels, or 600 bushels to the acre.

The hills shown in picture No. 8 averaged 4 pounds to the hill. The large hill in the foreground had 9½ pounds of tubers. A large number of hills produced 5 and 6 pounds. Reference to the picture again will show fair uniformity in the tubers and no extra large and coarse tubers.

By looking over the pictures again, the reader will notice that the tubers continue looking more and more alike

Again, there is reason to suppose that within reasonable limits, the yield will be increased by planting seed from high producing hills. For it will be more vigorous. On these trial plots the yield steadily increased. Of course other factors essential to successful potato growing must not be neglected. Good seed requires good field preparation and careful cultivation must be given during the growing season. Farmers to whom seed from these high producing hills has been given invariably report yields

larger than from common seed stock. In 1914 fifty potatoes from high producing hills from the plots were given to each of twenty-five rural school boys scattered about Oneida county, and they reported yields of from seven to ten bushels from the fifty potatoes. This would mean from 300 to 400 bushels to the acre. The fathers of these boys were so well impressed with the yields that they ordinarily kept the crop for seed.

In this work it was observed that the high producing hills had a tendency to be freer from disease than the low producing hills. It would appear from these trials that hill selection of seed would help to eliminate some of the potato diseases which have a tendency to weaken the potato plant. A more vigorous seed stock will have a tendency to be more disease resistant.

PICTURE No. 7.—1915

Planted in drills 3 feet apart. Vines almost hip high with no rows visible. Remember that the tubers are manufactured in the vines.

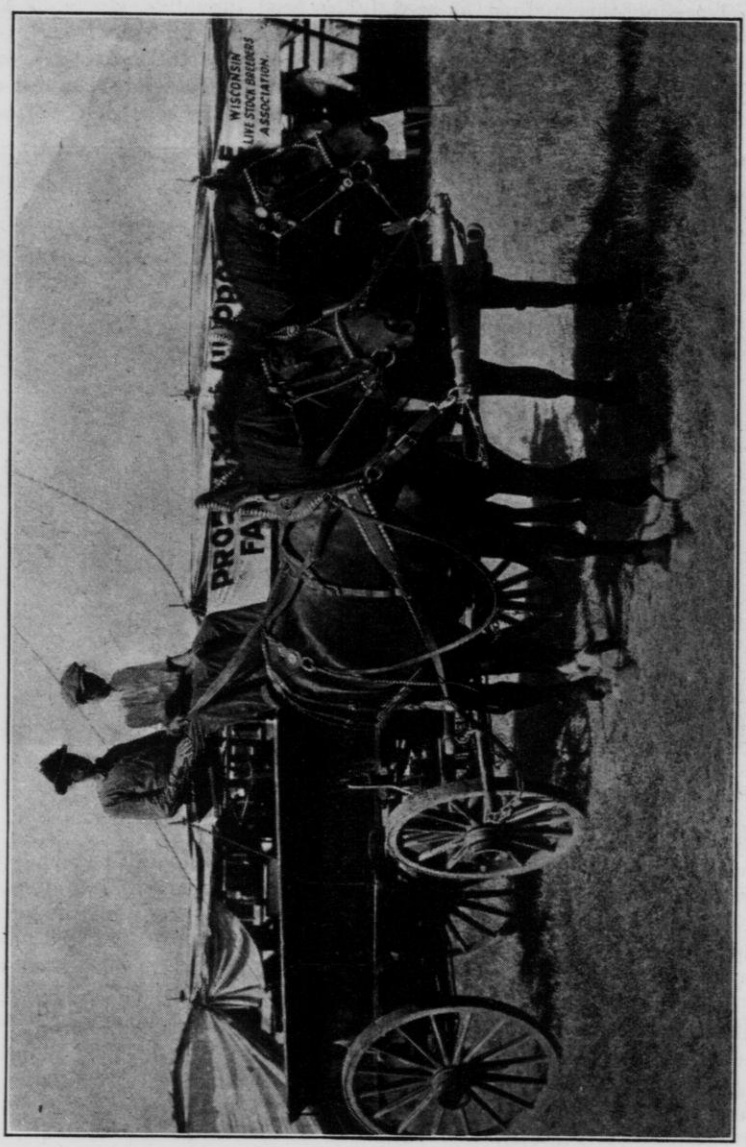
Finally, under proper cultural conditions, a larger proportion of the potato crop will be of even size and typical tubers, free from the great coarse stuff, the little stuff, and the knobby, scrubby stuff. A potato will be produced that will meet a much better market demand. The assertion is ventured that the market is not much longer going to tolerate the fearful stuff that is now put

onto the market in the name of potatoes.

By suggesting this method of seed potato selection, it is not meant that farmers should dig whole fields by hand and lay the hills out separately, but the suggestion is made that farmers may well select a quarter or half acre in the best part of their potato field for the seed plot. This plot should be planted with hill selected seed. The soil and all connected with this plot should be taken care of in a manner that will best contribute to the production of vigorous, healthy tubers. This plot should be dug by hand and each hill laid out by itself and allowed to dry off. The farmer should then go through and select such hills as commend themselves to him. This seed should be stored in a cool, dark place and kept safe from invasion. The seed plot the next year will be planted from this seed. The rest of the tubers from the seed plot will be put away in a cool, dark place and the big field will be planted from this stock. Thus it will be seen that the very best seed will be used for the seed plot each year and that extra good seed will be had for the big field. A quarter of an acre should yield enough high producing hills for the seed plot and enough seed for five acres.

PICTURE No. 8.—1915

"The proof of the pudding."


WISCONSIN
LIVE STOCK BREEDERS
ASSOCIATION.

THE UTILITY STOCK EXHIBIT.

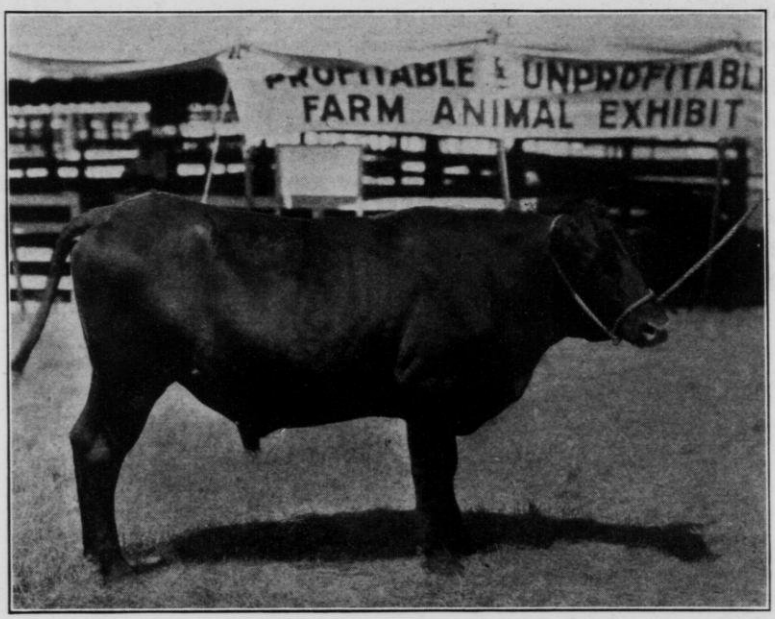
The Wisconsin Live Stock Breeders' Association made the rounds of several county fairs and the Wisconsin State Fair this season with a utility exhibit of live stock. The beef cattle exhibit, the hog exhibit and the sheep exhibit were purchased on the Chicago market. Remember this. The horses were a span of Percheron fillies grown on the University farm and the dairy cows were a couple of grade Holsteins. Here are some of the lessons which this exhibit sets forth:

Horses.—Look at the cut on another page of two pure bred two-year-old Percheron fillies weighing 1,650 and 1,550 pounds respectively. These were the horses shown in this exhibit. This kind of horses may be approached by an farmer in Wisconsin who will consistently make use of a good pure bred stallion. There are now registered for service in Wisconsin 1,814 pure bred stallions, 931 grade stallions and 317 scrub stallions. Farmers, let's do away with the 317 scrubs this year.

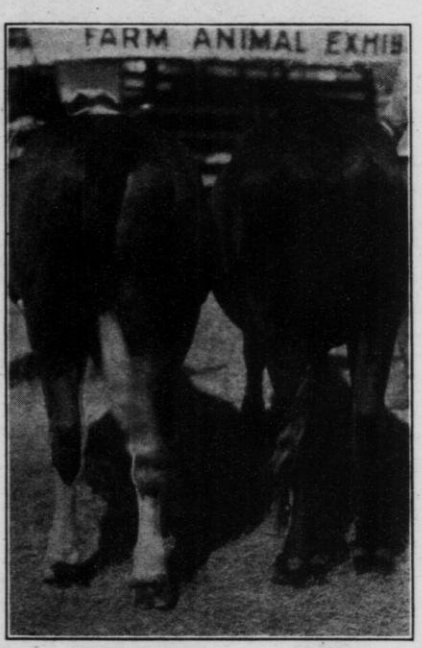
Hogs were shown in this exhibit. Common "skips," the result of scrub breeding, were purchased on the open market at the Chicago Stock Yards at $10 apiece. But $25.13 had to be paid on the same market for the "prime butcher" hogs, the result of a pure bred sire. No farmer gets a very good price for the skim milk of his dairy farm if he feeds it to the offspring of scrub boars.

Sheep.—The sheep shown in this exhibit were purchased on the open market at the Chicago Stock Yards and illustrate three things: the value of breeding, the work of the good shepherd and that the good shepherd is usually the man who uses the better breeding stock. The better lambs were well bred, docked and showed good care. The "cull" lambs were scrub bred, undocked and showed evidence of poor care. The difference in cost per lamb was about $1.00 in favor of the well bred lambs. Scrub sheep and poor shepherds usually go together.

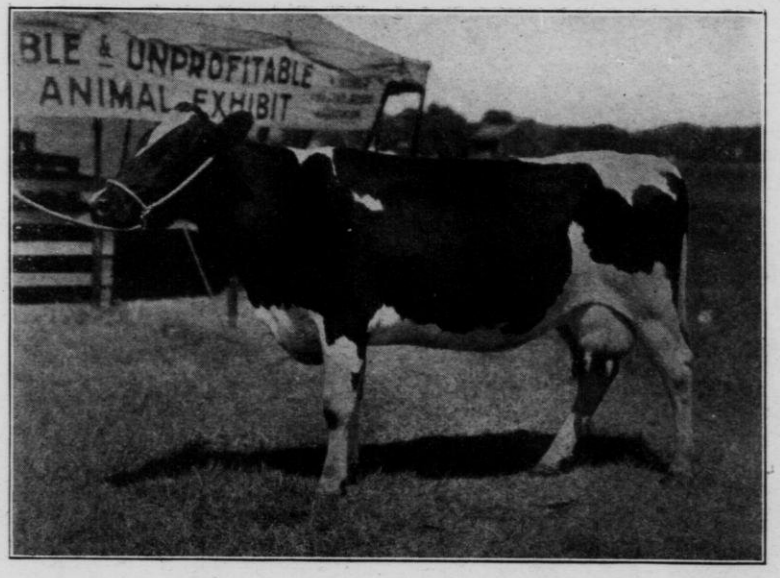
A 16-months-old "baby beef" weighing 1,040 pounds for which $109.20 was paid on the open market at the Chicago Stock Yards at $10.50 per hundredweight. This steer dressed out 63 per cent of high priced meat.



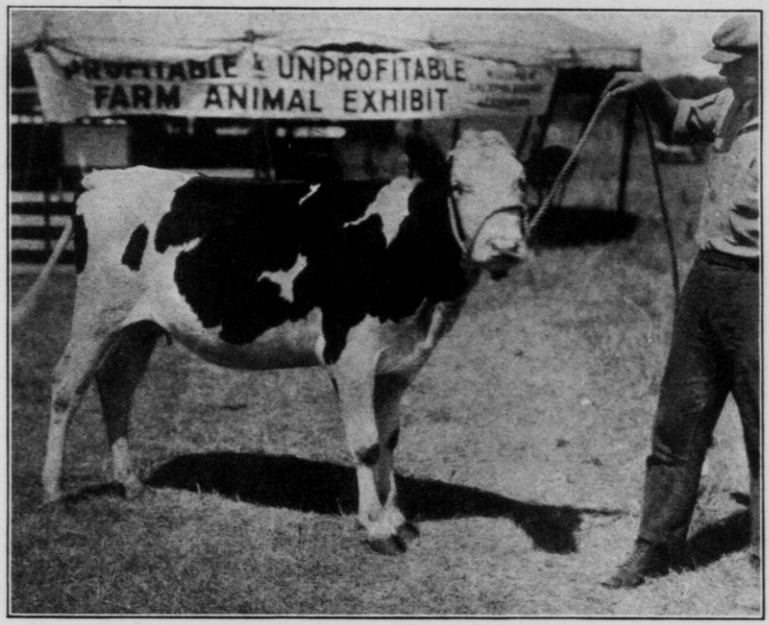
A three-year-old "rough steer" weighing 920 pounds for which $59.80 was paid on the open market at the Chicago Stock Yards at $9.50 per hundredweight. This steer dressed out 49 per cent of tough stuff.



Compare these two steers; the "baby beef" has a short face, wide forehead; broad back and loin: thick, low-down body; full twist—well developed where the high priced cuts of meat are found. The "common rough steer" has a long face, narrow forehead; "fish-back," light loin, body bare of flesh, no development where the high priced cuts of meat are found. It took the "baby beef" sixteen months to produce meat worth $109.20. It took the rough steer 20 months longer to produce meat worth $49.40 less. The "baby beef" was the work of a farmer who believed in pure bred sires and proper feeding. The common rough steer was the work of a farmer who believed in scrub sires and scrub feeding. As steers are so are farmers.



A real dairy cow, a grade Holstein, which made a record of 461.8 pounds of butter fat in a year and a net profit above all feed costs of $89.93.



A "boarder" dairy cow, a grade Holstein, which made 136.5 pounds of butter fat in a year and a net profit above all feed costs of $3.90. It would take 22 cows like this "boarder" cow to produce the same net profit as the real dairy cow.

These two cows were discovered by a cow testing association. Moral: Belong to a cow testing association and use a GOOD pure bred sire. Simply "black and white" will not do.

THE FARMER'S FAMILY AND THEIR READING.

W. C. Bradley, Hudson.

The farmer's family, like the families of men of other occupations, are entitled to the best education the father can afford to give them, and the farmer's family, as well as others, should understand that they may get a very broad and liberal education by forming the habit early in life of reading good literature; training the mind that the eye may see the beautiful thing in nature, the ears hear and mind retain the things that are said by educated men. With the exception of hearing good lectures, which the city and village family can attend with much less effort than the farmer, owing to the distance, drifted roads and severe cold, the farmer's family may have, should have and many do have the same opportunity for spending delightful evenings at the home fireside, with music, song and story. I see no reason why the farmer's library should not be equipped with the same books and magazines, the same sheet music and songs, or the same high class records for the Victrola you would find in the homes of well-to-do city people.

It is true there should be papers and books that treat specifically with farm problems, but two or three papers, like "Hoard's Dairyman", "Wallace's Farmer", or "Wisconsin Agriculturist", will be all the farmer will care to read each week; a few good books like King's "Farming for Forty Centuries", Henry's "Feeds and Feeding", Haecker's "Feeding Table", the United States Department of Agriculture "Veterinary Book on Horses", Green's "Fruit Culture", Bosfield's "Making the Farm Pay", with the Farm Institute Bulletin and other bulletins from the Agricultural College, will furnish all the specific information he will need on farm topics.

We form our taste for good or bad reading in childhood and the greatest care should be given to the books our children have about them, in their homes and in the country schools. The future generation rests with the girls and boys of the present day and by surrounding them in the home with books which tend to the best development, mentally and morally, we will be laying the foundation on which the success of their lives and the greatness of the farming industries depend. Years ago the general belief was that anybody could be a farmer; you did not have to have much education to sow the grain and reap the harvest, but times have changed. It is true there are some ignorant farmers and some homes almost destitute of books and papers, but they are mostly in the sections where the fathers spend the evenings in the saloons playing cards and drinking beer. The only way to better this condition is to get the women and children interested in good reading; the State traveling library will furnish the way in many such sections, but let us have our own magazines and books as far as possible, and the scope and variety should be wide enough to meet the requirements of every member of the family.

We can surely select from the following list some that will be of interest to all: Youth's Companion, Ladies Home Journal, The Saturday Evening Post, American, Outlook, Woman's Home Companion, American Boy, Delineator, McClure's, Harper's, Geographical Magazine, etc.

Books

These books are always welcome gifts that can be enjoyed by the children and passed on to their companions, stories by Laurie E. Richards, Kate Douglas Wiggin, Louisa M. Alcott, Jane Andrews, Mary Johnston, Margaret Sidney, Frances Hodgson Burnett, or the Little Cousin Series for the girls. Charles A. Stevens' "Boy Stories of Adventure", Ernest Thompson's Seton "Animal Stories", and Ouida's "Dog of Flanders" will stimulate a love for animal pets among the boys and give them an understanding of the devotion animals give to kind masters. In addition to these, for general reading there are Histories, Books on Travel, fiction by the old authors, Dickens, Scott, Hugo and many others who were wonderful students of human character and gave us much to inspire our lives to higher ideals.

Then the fiction writers of our own time, Grace Richmond's beautiful stories of home life, such as her "Star in the Country Sky", Maud Radford Warren's "Prairie Wife", a story that deals with the hardships a city girl underwent in the Canadian northwest, which stimulates its readers by the courage, strength and perseverance of the heroine. Gene Stratton Porter, in her "Girl of the Limberlost", gives a vivid example of how toil and turmoil of life so harden a character that they are unable to see the beauties of nature around them. Who but the farmer has a chance to study nature and its wonders, yet in his struggle for material things never sees them but longs for the dirt and noise of our great cities. Edna Ferber, John Fox, Harold Bell Wright, Myrtle Reed, Henry Van Dyke, and many others have given us wonderful stories for character building that train us to see our duty to our fellow men.

Then the poets. Do not forget the poetry. In our hurried life and the longing for worldly pleasure, we are fast losing sight of the fine sentiment that our fathers and mothers held dear, we have almost forgotten the art of committing poetry to memory, but if our children are to get the most real enjoyment out of life they will read poetry,—Shakespeare, Burns, Whittier, Kipling, Longfellow, Dunbar, with Field and Riley for the little ones. If fathers and mothers could unlock their hearts and let the children come in as Eugene Field could do, or see the happiness in brooks and birds and flowers and show it in their lives as Riley's Rhymes can do, what a happy world this would be.

Wisconsin's Poets

Ella Wheeler Wilcox, Mrs. Elizabeth Clarke Hardy and Mrs. Lowater have written many beautiful things that Wisconsin farmers should cherish. And our song writers. Years ago I met Mr. Monahan, a man with music in his heart and poetry in his soul, and it is no wonder that he wrote the song that every boy and girl should know,—"Wisconsin, Land of Beauty, How I Love Thee So," for his home on the winding Pecatonica is one of the beauty spots in Wisconsin. Then there is Eben E. Rexford, that grand old man whose songs have been written among the flowers he loved so well, and "Silver Threads Among the Gold" will be sung long after he has gone. "So we may forget the singer, but we'll not forget the song."

Oh, give us books that we may get a clearer vision of the beauties that surround us, a keener vision of the duties that surround us, then we will say, "Blessings on the head of Cadmus, the Phoenicians, or whoever it was that invented books."

HOMEMAKING AS A BUSINESS.

Miss Nellie Maxwell, Neenah, Wisconsin.

Stay, stay at home, my heart, and rest;
Home-keeping hearts are happiest,
For those that wander they know not where
Are full of trouble and full of care;
To stay at home is best.
—Longfellow.

Housekeeping and homemaking are two widely different terms. A house is built; a home is made. A house is too often simply a place for meals and lodging, with no thought of its higher and deeper meaning, mainly because material things are given the first attention in many minds. When we learn to put right values on things, many of the great problems of the day will be solved. In the struggle for existence that is going on among the poor, who must put material things in the important place to keep the family fed and clothed, there may be some excuse for this lack of appreciation. Yet how often a beautiful homelike spirit exists in even a single room cabin, which is lacking in the marble halls of the rich.

As homemaking is the highest profession in the world and the most important, it is well that the man and woman in that home consider some of the vital things that pertain to it.

The building of a home is too serious an undertaking to enter into without deep thought and many plans. In the house we build, we express ourselves if we are so privileged, and when we furnish it, we also express our individuality, or some one else expresses his.

When our young women undertake homemaking, not expecting to enter a partnership with no equipment or experience, or trusting that intuition will be sufficient to guide them in the management of a household, but treating it in the manner one would who manages a successful business, with serious thought and a deep feeling of the responsibilities which they assume, it will be a glad day in the progress of the world.

After the house is built, one of the first requirements in the business of homemaking is a well organized plan and system to be followed. Of course it is true that it is not always possible to keep the machinery running without some stops, for the unexpected happens, unbidden guests descend, and accident and illness occur, which disrupt and disarrange the best daily routine. These things must be expected and the trained head of the business will be equal to the occasion.

When it is possible to buy staples in large amounts and a good place of storage is provided, it is without doubt cheaper to buy in wholesale lots, if one is not tempted to exceed the allowance by buying foods too expensive or perishable. Judgment must be used, or the amount consumed may so far exceed that ordinarily used as to eat up the profits; for too often, because of an abundance of supplies, there is a careless waste, so that it often leads to extravagance. Such articles as soap, starch, matches, brooms and canned goods kept in the storeroom at home are as good as if kept in the store, but flour, corn meal, breakfast foods and dried fruit require some care in keeping.

One dollar saved on an order amounting to twenty dollars may not seem much, but it is five per cent and when it is remembered that this money is

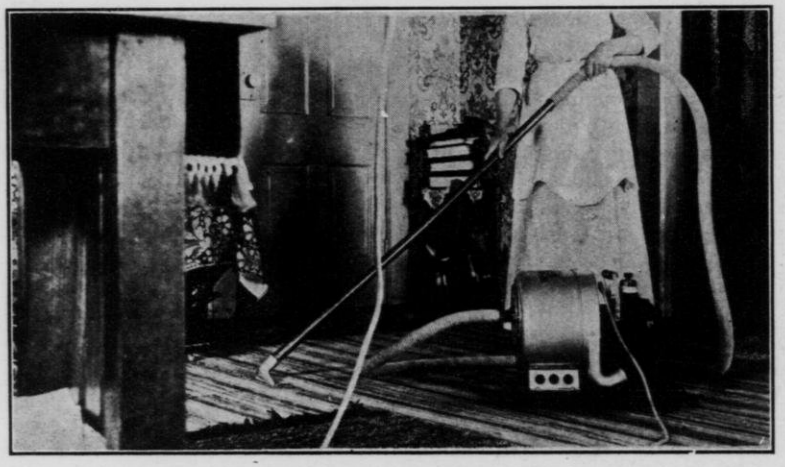
invested from four to six months in advance of its otherwise inevitable expenditure, the percentage gained may be considered fifteen or twenty per cent a year.

In marketing, one must keep in mind that the highest priced foods are not always the best. The cheapest cuts of meat properly cooked may take the place of the more expensive cuts. Every housewife should learn the cuts of meat, not only by name, but should be able to recognize them on the kitchen table as well as on the butcher's block.

The housekeeper should have, first, some knowledge of foods aside from knowing whether they are tempting to the palate or not and their market value. A food may taste good, cost little, but possess so little nourishment as to make it really expensive; as very fat meats, unless fat is utilized.

Too great a variety causes unnecessary labor and expense and it is far better for the digestion as well as the purse to have the variety appear in change from meal to meal.

The housekeeper who is businesslike in conducting her household must study the composition of foods as well as the market reports. Few women give the proper attention to the diet of the family aside from furnishing food enough to satisfy hunger. Some make an attempt to see that the food is well cooked and reasonably digestible, but it is the exceptional woman who places the proper attention upon the nutritive value of the food of her family and realizes the importance of a knowledge of food materials.



MAKING THE FARM HOME ATTRACTIVE.

Every household can now have a vacuum cleaner.

Aside from the knowledge of the actual constituents of foods, the methods of preparation and cooking should be considered; also how the food can be cooked so that it is the most tempting, most digestible, and at the same time lose as little as possible of its nourishment. Foods soaked in fat are indigestible as well as wasteful, yet

there are tens of thousands daily using physical and mental energy trying to make the digestive system do the work that should have been done in the kitchen; and the worst feature of this state of things is that helpless children and men of the family suffer because of the lack of efficiency of the cook, with little hope of remedy. The perverted taste of the man is often the occasion of bad cookery as the wife desires to please his taste. When the cook is a paid one it is easy to pass her on to deepen more sad experiences in other homes, but the cook who is wife and mother cannot be thus summarily dealt with.

It is a most unfortunate baby whose mother knows nothing about the laws that govern food. I have seen a two months old baby trying to swallow a slippery banana, drinking coffee from the mother's cup; and one tiny yearling have an entire meal from sauer kraut. Rashes, fevers, nerves and fits of temper are the result of such methods and the young mother wonders where the child gets its dreadful disposition. Experience teaches most mothers that an orgy of candy will result in a peevish, fretful, unhappy child for the whole of the next day, if no worse result obtains.

The mother who is studying the right kind of food for her family, knows that many physicians eliminate meat entirely from the diet until the child is six or seven years old and then it should be given but once a day in very small quantities. A friend told me very recently of a baby less than a year old who had died of convulsions due to eating sausage at the family table. It is true we have muddled along fairly well without much attention to this subject but the mother who has saved the life of her child by a proper knowledge of dietetics will no doubt think it quite worth while.

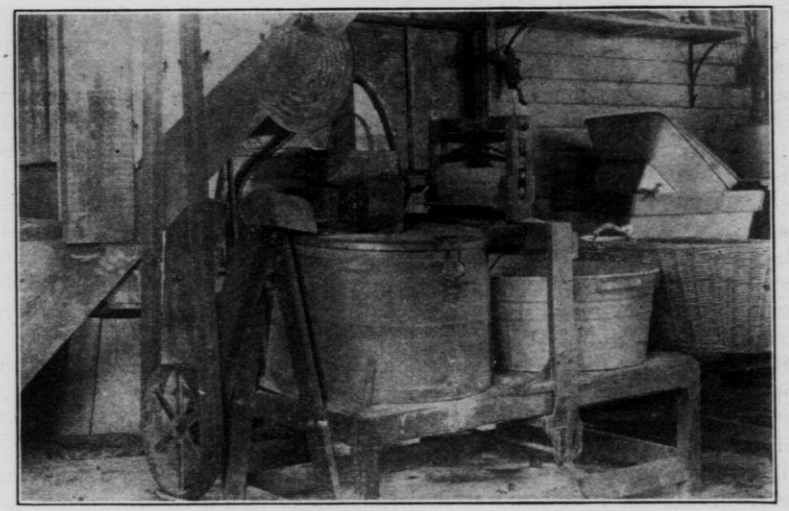
If the average woman would bring as much thought and preparation to bear on her housework as the average man does in his business, we would hear less about household problems that are keeping our reformers busy trying to solve. If the average business were run by the same methods there would not be many to continue for even a year.

Mrs. Van Rensselaer of New York, speaking before a farmers' meeting, said: "If the woman is not satisfied, and if no effort is made for her comfort, the farmer might as well give up his aspirations to become successful; for the family cannot remain on the farm if the wife and mother rebels. On thousands of farms in this country there is every reason for rebellion, for absolutely nothing is done to give the woman the aid she needs in housekeeping, in the bringing up of her children and the performance of her share of the farm duties. How many men who have reapers and binders think of the washing machine and the ironing machine for their wives?

"In how many cases would the woman think this was a needless expense, simply because she has been trained to believe that her health and her happiness and conservation are inferior matters and do not measure up to the needs of the live stock and the farm? The farmer's wife should be taught how to conserve her time and energy, how to get the latest labor-saving devices, how to do her work scientifically and intelligently and how to combine pleasure with duty. She should have some idea of art, so that her home may be beautiful, and she should not be given to believe that there is nothing in life beyond the dreary routine of daily toil."

The majority of households are years behind the times, due to the conser-

vatism of women who blindly follow in the beaten path that their mothers made before them. This is largely the reason that women take less kindly to modern machinery and up-to-date conveniences than men. The home has not kept pace in the great march of progress. There are many women among the more enlightened who pride themselves upon being practical who



MAKING THE FARM HOME ATTRACTIVE

A power washing machine such as every farm wife should have. It is more necessary than a cornsheller, or milking machine.

slightingly regard scientific cookery. If only these practical cooks could be made to realize that they would be more practical if they possessed a little scientific knowledge as well. Many practical cooks possess the scientific knowledge though they have not learned it from books.

One of the least considered, yet one of the greatest losses in the home management, is the waste of physical energy, due to unnecessary labor. This may be the result of lack of system or it may be a lack of working equipment. A kitchen so large that miles of extra walking must be done during the year is a great drain upon the strength of the housewife. The kitchen of today is a workshop, small enough to hold all necessary equipment, which is so placed as to minimize walking, and of the right height to make working at them comfortable, with plenty of built-in cupboards to hold cooking supplies and dishes, and with walls and floors of such material as is easily kept clean.

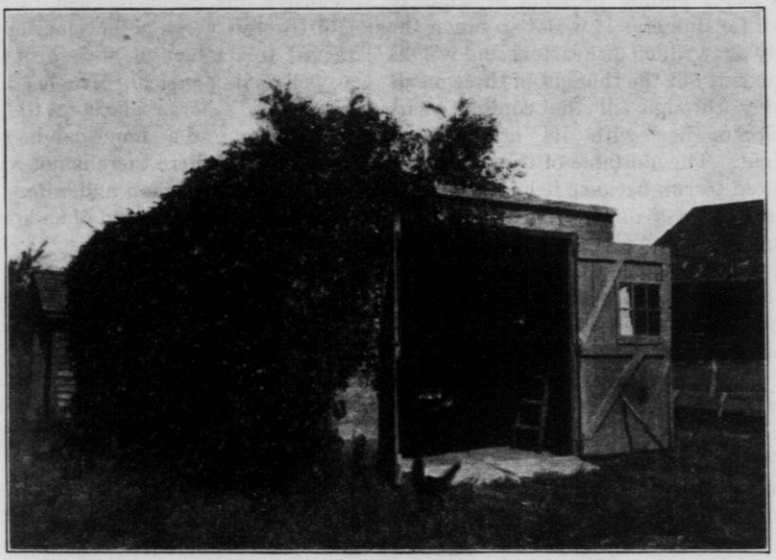
The kitchen being the workshop of the house, should be a comfortable room, in any season. A small kitchen with doors and windows so placed that a draft may pull through it, is most desirable for both comfort and ventilation.

The floors and walls should be of material that may be easily kept clean. A pine floor covered with linoleum of good color, is easy for the feet and will wear for years if it be treated to a coat

of varnish twice a year. A few of the modern conveniences, such as the bread mixer, meat grinder, vegetable ricer, fireless cooker and sink strainer should be found in this kitchen.

In the laundry, a power washing machine and mangle; and a vacuum cleaner and dustless mops for the floors and rugs; a wheel tray to take food and dishes to and from the kitchen and dining room, is an investment to be used three times a day, the year round.

We are told that in a family of five, there are three and a half acres of dishes to wash every year, and as yet there is no painless method of dishwashing; if there is running water, a sewage system, good sink and draining boards, this work is easily and quickly done. Modern conveniences of heat, water and light in the home, we are told, save the housewife two hours of work each day. In many homes the wood and water must be brought from outside or carried up a step or two into the kitchen, when by a little thought and expense a shed for wood, built on a level with the kitchen, could be provided, where the wood might be piled to dry; and the water could be piped into the house as well as to the barnyard. Some one who has studied the fuel value in different wood piles, tells us that wood dried under cover saves one-third of its fuel value. It is certainly worth while as a woodshed with the sky for a roof is wasteful as well as inconvenient.



MAKING THE FARM HOME ATTRACTIVE

Concrete garage on the farm of E. C. Jacobs, Elk Mound, Wisconsin. Durable, fire-proof and susceptible of adornment with climbing plants.

Another important requirement is the keeping of accounts, knowing how much may be spent, what is spent, what for and when. As a large proportion of the income must of necessity be spent for food, it is of the utmost importance that the housekeeper have

a full understanding of food values. She must feed her family so that health is maintained, spending her food allowance wisely.

It is not surprising that the woman who has all the work of the family, with but one pair of hands to depend upon, should often be too tired to think. Three meals a day is the endless chain that encircles the housekeeper, with the never ending problem of what to have for dinner. It is not so much the daily duty which disheartens and weighs upon her, but the thought of three meals a day through all the coming years smothers her with its accumulated weight. The old fable of the clock that refused to run because it had to tick so many times a day, teaches us a deep lesson; the clock was required to tick but one tick at a time and it was able to do that, well. So we live but a moment at a time and if we live that moment wisely, without losing our grip, we need not bear the burdens of the future nor give anxious thought for the days to come.

In the routine of the day the busy housewife should take a few minutes, even five or ten, to go to a quiet room for rest and complete relaxation. This practice has saved many a woman from frazzled nerves and ruffled temper. The most valuable asset to the household is a sweet tempered mother with good health. Many a woman is called disagreeable and ill tempered, when she is simply over worked and discouraged.

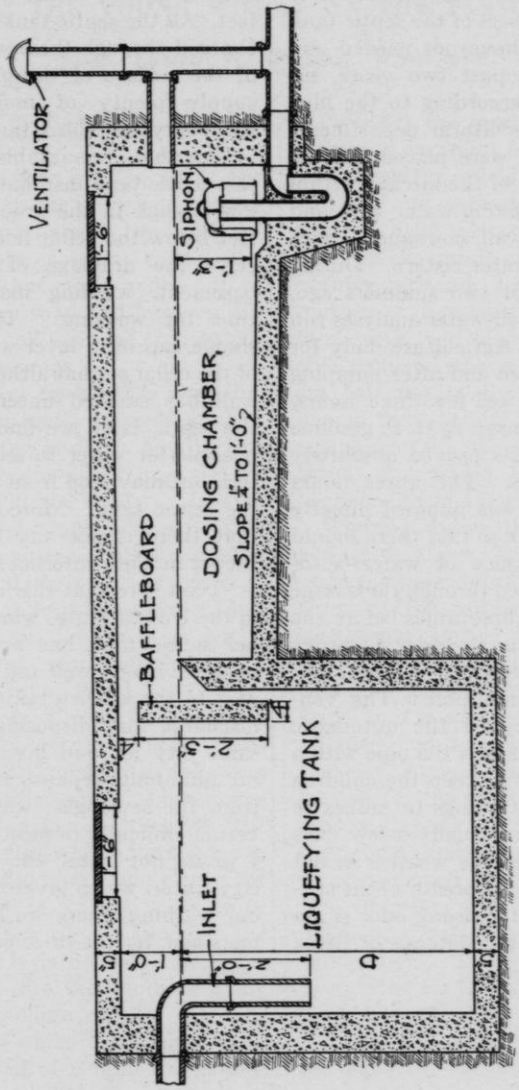
The business of homemaking is an all inclusive one. The housemother must look to the ways of her household in regard to its mental and spiritual life as well as its physical. The head of the house has a large place in the home government and no home can be beautiful in its life where there is not unity of purpose between man and wife.

A general in command of an army has no such important post as the mother in the home. She too is sending forth soldiers into the great battlefield of life and what these soldiers become is largely due to the influence of the home in which they were reared; for the prime object of a home is the development of future citizens and the improvement of the race.

A SUCCESSFUL EXPERIENCE WITH A SEPTIC TANK.

The following is a copy of a letter from A. C. Burrill, instructor in entomology in the Wisconsin College of Agriculture, written in reply to request for his experience with a septic tank. This experience ought to be enough to convince most anyone of the desirability of installing this necessary convenience for assuring better health conditions around farm homes.

"Mr. White is correct about my septic tank having been installed by Professor Ocock, the former head of the engineering department. The engineering blue prints were furnished by him for a double chamber, the second being called the dosage chamber with an automatic siphon which cost me $25 and has never required any attention. Dr. W. H. Wright, the agricultural bacteriologist, personally tested both chambers and found only a half inch of sediment in the bottom of the tank after three years continuous use. The sludge



A Two-Compartment Concrete Septic Tank

cap was about 6 inches thick and made an impervious layer to the air.

"The remarkable thing about these two cement chambers of the septic tank is not that they have not needed any attention for the past two years, for they were made according to the blue prints of the agricultural department; but because they were placed next to the basement wall of the kitchen within 6 feet of our drinking-water well and with the other wall contiguous with that of the rain-water cistern. During the longer drought two summers ago, I had a series of well-water analyses run by the College of Agriculture daily for a week, both before and after pumping the 76-foot cased well for three hours, using a Fuller-Johnson 1½ H. P. gasoline engine. These tests proved absolutely no contamination. The three hours amount of water was pumped directly into the septic tank so that there should be a superabundance of water automatically discharged through the dosage chamber at least three times before the analysis was taken, in order to prove that there was absolutely no possibility of seepage contamination. The ventilator is just beyond the automatic siphon and consists of a tile pipe with a wire screen cover, to keep the children from throwing playthings or stones in the tile. There are usually a few days each summer when the weather is hot and humid without a breath of air stirring, when a slight dish-rag odor is detected. There are four laterals of 1-foot tile, according to the blue print specifications, laid in 2 feet of university cinders in my lot, which is 98 feet by 120 feet. All the septic tank overflow is discharged through these within 18 inches of the surface of the ground so as to supply plenty of moisture for my shrubbery and bird tangle.

"Another remarkable point about this septic tank installation is that it is low enough in the ground—about five feet below the cellar floor—so as to receive the drainage of our cemented basement, washing machine and set tubs for washing. This brings the sludge cap on a level with the bottom of the cellar so that although my cistern wall has cracked unceremoniously on the septic tank, we find that it is not possible for water to seep into the cistern but may seep from the cistern into the septic tank. Moreover, I am sure that there is not any water-gas from the septic tank entering into the cistern.

"I am sure that this is the only case in the United States where a two chamber septic tank has been successfully installed over a well and under a cistern next to the kitchen taking all the usual discharge and disposing of it in the same city lot and giving the inmates no plumbing repairs and no trouble from the sewer-gas, which is the proverbial difficulty in most city plumbing. I would not install the city sewer and city water, which gives a rusty color to our washing where we lived two summers ago, for the price of my house."

THE YOUNG WOMAN ON THE FARM.

Miss Laura B. Breese, Waukesha.

"Where the wide earth yields
Her beauties of fruits and grains."

"A book has been written about the spirit of youth in the city street; someone should write about the spirit of youth along the country road. We should awake that spirit and set it to singing on every road and lane, up hill and down dale, all over the prairies and all along the canyons."

Country life or back to the farm discussion has been endeavoring to awaken the spirit of the country boy by interesting him in the possibilities out on the farm and in the modern ways of developing these possibilities. This movement is unquestionably a needed and fruitful activity and it is hoped it may receive continued inspiration and stimulus, yet we find there is not a parallel interest manifested for the welfare of the country girl.

Martha Foote Crowe in her most interesting book entitled "The American Country Girl" makes the following introductory statement: "There have been tons of paper devoted to the farmer; reams filled on the farm woman; not a line for the girl," and claims her book, published in August, 1915, to be the first written about and for the country girl. It is my hope that this book may fall into the hands of many of the seven million country life girls of America, to whom the book is dedicated. It is full of helpful suggestions to the country girl, the part she may play in the new country life era which is upon us. Every reader will receive fresh optimism and will be truly inspired by the thoughts expressed upon the privileges open to the rural girls.

Probably the most interesting, most promising and most misunderstood subject before the public today is the modern girl, and perhaps the country girl suffers a little the more misunderstanding. In thousands of farmsteads these country girls are helping in the daily routine of housework and oftentimes farm work, and many of them are not able to dispel the monotony of it and are listening to the lure of the city, hoping there to find the recreation, the companionship, the independence they crave, and which too often are not forthcoming in the country.

Washing dishes three times a day, and three times 365 days in a year, when the water must be carried into the house by the pail and dishpans full of wastewater carried out, regardless of the strain upon the back, is not conducive to contentment, when running water and a well drained sink can be afforded and as easily installed as in the city home. Two of the primary reasons for the great exodus of country girls to the city are the desire for earning money and for recreational opportunities denied them in the country. Is it necessary that these most natural longings should look to the city for satisfaction? There are industrial opportunities for the farm girl right at her door, any of which she may be fitted to control. Some young farm women are equal to the big business of agriculture and are now running their own farms; they are developing claims in Montana, Wyoming, Idaho and Dakota; many have become successful co-partners in the management of the farm with their fathers or brothers.

Besides, there are other activities open to the country girl for her successful achievement. Some girls have succeeded who have tried them, why cannot many others succeed too?

1. The vegetable garden may prove a lucrative business for some girls; many have earned enough to educate themselves by means of their own earnings from the selling of the vegetables and fruits in their season and then canning and selling the surplus. The United States Department of Agriculture will supply any girl with standard recipes and methods for canning this produce and will furnish her special labels for her goods which will aid her in marketing them.

2. The bee culture is another source for making money. Many girls are managing large and successful apiaries today.

3. Poultry offers another opportunity for a business for a young girl.

4. Cultivating and selling horse radish.

5. Cultivating plants and shrubs and flowers.

The above suggestions are merely given as possibilities for the girl who desires some specific business to develop and control. She will need the help of advice from her parents and of good bulletins upon her problems, but she will achieve success if she thinks, hopes, believes and works for success and will develop resourcefulness and judgment by her experience.

It may be that the daughter's time is all needed in the home and that she and her mother have arranged a system of work for each, and that the daughter is paid for the services she renders. Such a scheme seems ideal and I am sure would tend to promote greater interest, contentment and happiness in the daughter. Too often parents think the daughter earns no more than her board and clothes and the desire for an independent income by the daughter is not satisfied by this system.

A Convenient and Attractive Home is a Magnet for Girls

In this day of "efficiency" and progress, the young woman on the farm would have her home more convenient than many of the farm homes of the past, so that she might reduce the drudgery and hard work there, saving her strength, time and nerves for other work than the routine of housework. When she sees the modern labor saving devices come into the city homes, and now into many of the country homes, and also sees the improved machinery installed in the barn and upon the farm, she desires the same consideration of her energies and time. The modernizing of the country home is a problem that would interest her and she will study the problem and be of great help to her parents in working out a "new" home for the "old".

Bulletins upon modern labor savers, on running water and sewage disposal or modern heating and lighting can be obtained from the United States Department of Agriculture and often from the State Agricultural College.

The young woman will also be desirous of having a pretty home and will be interested in the bulletins and books on house furnishings and decorating. She will very soon discover that it doesn't take wealth to make a home pretty, that it is the application of a few principles of color and design only that produces the harmonious effect. She will be desirous of having a pretty front and back yard and again will find many helpful suggestions in the agricultural bulletins to be obtained upon that problem. Does it not seem as if there was a great calling for the young

country girl? She may rightly be known as "Assistant Home Engineer." "Efficient housekeeping is the beginning of good citizenship."

Various plans have been made for supplying one of the greatest needs of girls in country life: viz, good times. It is natural for the young to want recreation and they cannot develop into well rounded, happy and sympathetic individuals without it. If health, pure morals and home comfort, are desired, as well as a wish to have the young girls stay on the farm contentedly, an effort should be made to develop their play instinct. She need not leave the country home for this satisfaction. The opportunities for play and pleasure there are not only numerous and varied, but of the wholesome, healthful, ennobling character. They are often not a part of her life because no one has directed her interest in them, or because time has been denied her for them. In the country there is the chance for such games right upon the home yard as tennis, croquet, quoits, base ball, basket ball, and such refreshing outings as walks over the newly mown meadows, through the woods, in little picnic parties, perhaps for the swim in a nearby river, stream or pond, the horseback riding, the hours of sweet companionship with Nature's wonderful teachers, the happy times with the domestic animal pets, as the colt, the calf, the lamb or the dog, the romp through the orchard in apple time,—these and many more are the incomparable joys open to the country youth. She should be allowed this sweet part of the country charm and parents should encourage her bringing her friends to share and add to their daughter's enjoyment of these recreative sports.

Community Organization

To make the country still more attractive to the young girl, the community should be organized for recreative and constructive purposes, just as the home must be. We realize that by having ideas together and working and playing together, we reach not only the highest ideals for a community but for each individual. Some recognized center, as the schoolhouse or alternate homes, should be chosen as the meeting place and all in the community interested, if possible, in joining a social and literary club. Officers and committees should be appointed for managing the meetings and they should be carried through upon sound business principles. If planned rightly, they can be made self-supporting, at least, and may be even more lucrative. Lectures, plays, educational movies, musical entertainments, debates, social functions are all possible for these programs. There are great educational possibilities in rural social centers.

1. They may serve to bring school and community together, making teachers and parents acquainted. Many of these meetings should be exhibitional in character; the Manual Training, the Domestic Science, Agriculture, Corn and Canning Club work, etc., may be exhibited to stimulate the interest, cooperation and appreciation of the parents in these problems carried by their children.

2. Extension courses in Agriculture and Domestic Science may be conducted during these meetings,—some leader appointed to receive the assignments, give them at the meetings for discussion and study, and to take charge of the correspondence with the department submitting the courses.

3. Public lectures may be obtained from the State University, the cities, or

from other sources, to lecture upon some subjects of general interest.

4. Institutes of two days or of one week may be arranged for when special home and farm problems may be discussed and demonstrated by Home Economic and Agricultural specialists.

5. The Civic Debate, arranged for and participated in by the members of the club. The following subjects are suggestive of some that would be of interest and value discussed:

(1) Resolved we should combine to buy farm implements.

(2) Resolved our schools should be consolidated.

(3) Resolved churches in a township should be consolidated.

(4) Resolved we purchase a moving picture machine.

(5) Resolved we vote for a road appropriation.

(6) Resolved we employ a visiting nurse for our township.

6. The Social Center can stimulate the use of a library. More general reading may thus be brought about. A library may be purchased by the community or the traveling libraries sent out by the state may be applied for. The latter can be kept some months, then exchanged for another set of books and the books most desired by the community can be specified in the application.

It seems that there is no end to the great opportunity for constructive work everywhere for women and the problems in the country are particularly calling to the women for their solution. Prof. Fiske has said "that the great problems in the country can never be solved without the help of women." This statement seems to ring out as a challenge to the young woman of the present day, for upon her shoulders rests the immediate opportunity for working out a better future for rural life. The optimism, strength, abounding life of the country girl, is needed to help make the country home a more efficient one, to help make the home radiate health, happiness and high ideals, for a leader or supporter of the great educational and civic work done under community organization and to yield comfort and receive comfort in return in sharing the burdens and cares falling upon her parents. "Woman may bless and brighten every place she enters" and the country girl may be a veritable little beam of sunshine and with her high gear of speed may be as modern as an electric motor in making housework easier. Let her hands be freed and her thoughts unfettered and not embittered by too sordid cares or too little recreation, or by the lack of cultural stimulation, and she may fulfill a great and noble mission. Frances Willard has said: "The mission of the ideal woman is to make the whole world home-like." Does this not appeal to the country girl as beautiful work for her?

It is undoubtedly true that all country girls will not and cannot stay on the farm. Other professions are calling them and I hope that each girl may be given every opportunity for equipping herself well for the profession she may choose, but this great departure of country girls for the cities to take work which barely pays a living wage seems deplorable and to a certain extent preventable. A readjustment of conditions that have prevailed in the country homes is one preventive measure.

GIVE THE BOY A CHANCE, OR KEEPING THE BOY ON THE FARM.

Walter Oby, Stratford.

It is true that the law gives a father the unpaid-for services of his son until he becomes of age, but is it a good policy to be guided and live merely according to the cold precepts of law rather than to have humane regard for the welfare of the boy? When a bright and ambitious boy reaches the latter part of his "teens," he begins to think of the whats and whys of the future; every boy has a desire to enter some line; he has a desire to be a farmer, blacksmith, store-keeper, lawyer, doctor, cheese-maker, or even chambermaid in a livery stable. Some will do better in one line than another and you should watch natural inclinations of your boy. Study him and try to determine to what line of work or vocation he is best adapted. Many boys during this period of life are too much restricted; they are kept close at home year in and year out, many grow up on an isolated farm, obtain but a scant district school education and so have an insufficient knowledge of the world as it is today.

I believe in keeping the boy on the farm; the biggest and best opportunities today are right there, but to do this depends somewhat on the parents. As soon as the boy is able to render service of money valu to his father on the farm, he ought to be given something for his work. He need not necessarily be given cash wages as a hired man, he very properly does not expect to be treated like some farm hands, but give him a chance. It encourages him if you give him that scrub pig out in the pen which if no special attention is given is liable to die. Give him one of those twin calves—he will feel like a spring rooster on a bright board fence. Give him something to care for, something about your farm he can call his own. Get him to raise an acre of contest corn or grain; permit him to sell and realize some cash out of his pig, calf or few chickens. Out of your biggest cream check, out of your grain crop, hogs, cattle, or whatever you may sell, give the youth something so he may feel that his assistance is worth something.

Apply these methods judiciously and watch results. Guide him so that when his shoulders equal his father's in height he may have a keen interest in doings on the farm. A good boy is worth raising and good farmer boys are respected the country over.

Supply your home with some amusement for the youth; good books, music or other means of entertainment during leisure hours.

Naturally the boy is not aware how much depends upon the manner of his bringing up. Give him a good education in the public or parochial school, send him to high school whenever possible, and be sure to treat him fairly in the matter of compensation. As the boy grows older, add responsibilities and increase his own personal reward, and permit him to know the business side of his efforts. If it is possible for you, give the boy an agricultural training (we have an agricultural school at Wausau). It will broaden him wonderfully and enable him to measure up to the possibilities of the farm and his community. Such a training will interest him to attend farmers' meetings. It will induce him to raise more and better live stock, to grow pure bred grains, grow such

crops as prove most profitable and learn to market his products to the best advantage. But, best of all, his views become so broadened that he sees the advantage of farm life over working under a city boss and when he is old to be replaced by young blood.

The best way possible for a boy to learn money values is to give him sums, however small, when he reaches the age of twelve or sixteen, and let him make his own purchases of small necessities. Naturally a boy at that age needs direction and guidance, but in two or three years' time he learns how to shop and how to market to the best advantage on a small income.

There is no better occupation, none more sure of success than farming. There can be absolutely no reason why a young man should not become a farmer, unless he has a positive calling for some other vocation. The tendency of which we hear and read so many complaints that so many young men dislike farm life and drift to the cities is absolutely wrong and should be discouraged and opposed wherever possible. One of the chief reasons why so many boys do not like to remain on the farm, and girls perhaps more so, is because they are misled by the outward appearance of city life.

How many boys and girls that left their nice homes on the farm but a few years ago and who are now fathers and mothers of families leading a life of want and misery in the city, would gladly prefer life on the farm now if they could only go back?

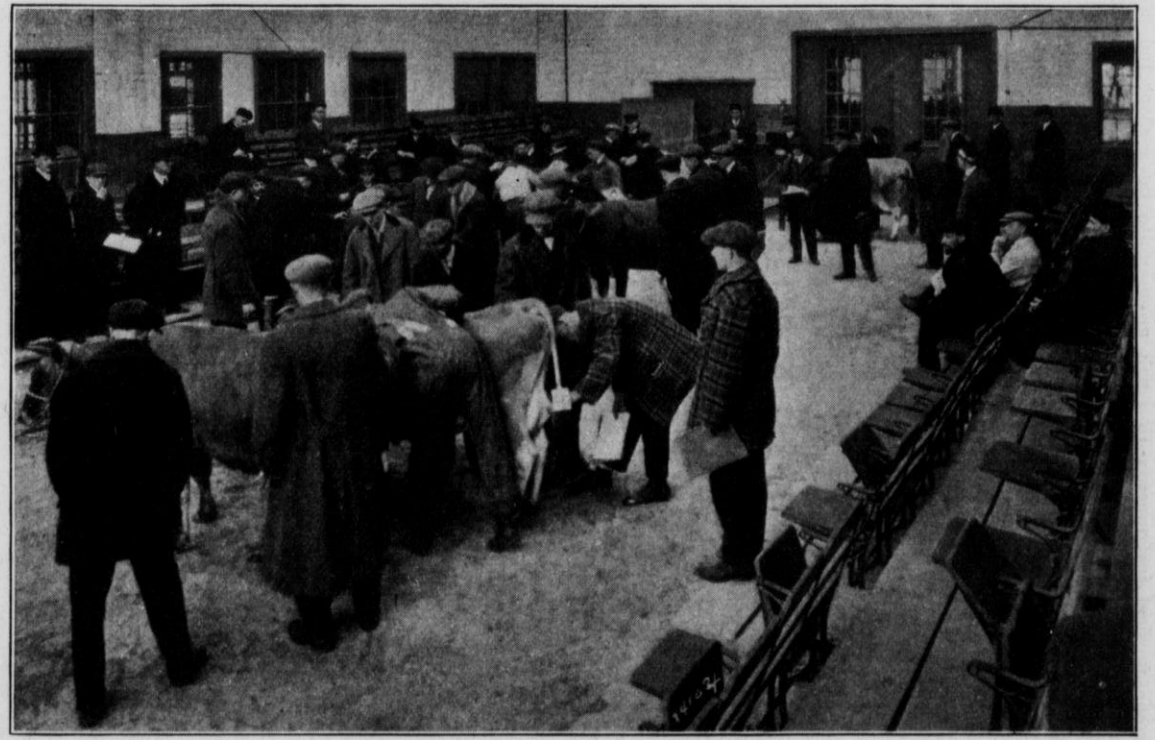
Certainly a few there are who will become successful in business or in a professional career in the city, but the number of men who fail in business or in the professions is ever so much greater than the number of men that make a failure of farming. Although the farmer may not become a millionaire, yet as a rule, every industrious and intelligent farmer cannot but help acquire wealth and prosperity enough to enable him to live in comparative ease and luxury as compared with his cousin in the city.

Let me tell you young men that in a business career when you get to the inner view there is very little sunshine. There is keen competition in all lines and no man is as independent as the farmer. You enter the grocery store, the drug store, the clothing store, bank or restaurant and see young men at your age holding a job that perhaps you envy, but bear this in mind, that white collars, creased trousers and plug hats are no indication of prosperity, and you can take it from me, boys, that if you feel envious toward this, that or other "job," that it is not all gold that glitters.

Beginning perhaps as a poor pioneer, the farmer profits by the growth and development of his community in the increased value of his land and produce, and farming is not the synonym for hard work and drudgery that some imagine it to be. With our modern improvements the farm is brought more and more into touch with the life in the village or city. On an up-to-date farm, one can nowadays almost enjoy all of the benefits of the city, combined with the blessing of living in the country. The mail carrier delivers your mail daily at your door, the telephone gives you connection with your neighbors and the business man in town; good roads, autos, etc., are at your service. And an up-to-date farmer will make home life attractive and pleasant for his children. Above all things, he will do his utmost to give his children the best education that he can secure for them, for this must be conceded by every farmer that nowadays an education is just as necessary for the farmer as for anybody else. You find therefore in the home of every intelligent

farmer a nice little library of good books, papers and magazines, and if possible some musical instruments to pass away the leisure hours. Who, then, in the face of these facts would assert that the occupation of farming was nothing but drudgery and unworthy of a young man's choice. No surer road to success can be pointed out to a young man than farming, and the farmer still and always will form the backbone of the country.

So give your boy a chance on the farm. With proper guidance your son will grow up to be a respected man. He will have learned to be economical, he will possess good common sense, be kind to his fellowmen, be square in all his dealings, will have real affection for his parents, his home, and things about the farm and finally he will put his shoulders to the wheel when his aged father may no longer be able to turn it alone.



High School Boys judging stock at the College of Agriculture during Farmers' Week in February, 1916. Better get into this game. It's great fun and profitable to boys.

JUNIOR INSTITUTERS

Here is something for you and your bright eyes must not miss it. It may be that for the first time in this world you are to have a part in the Bulletin and a real institute all of your own. You and your teachers should study the Junior Bulletin and then you must get your folks to let you get into a lot of the things which the boys and girls of Wisconsin are doing. Be sure to read in the following pages about the Boys' and Girls' Club Work and about the Junior Institute. You can take some good prizes, you can bring some fine new seed to your home farm, you can grow up some fine stock and you can make some nice pocket money. All of these things will help you to become deeply interested in farming, the best work in the world, and you will soon become leading and influential farmers. Maybe some day you will become such good farmers that you will get to be Institute conductors. If there is anything in the Junior Bulletin or anything about Boys' and Girls' Club Work or about the Junior Institute that you want to know about, just write to the Superintendent of Farmers' Institutes, Madison, Wisconsin.

EDDIE SHIMNOIK AND HIS HOME MADE DRAG.

BOYS' ROAD DRAGGING CONTEST, SAUK COUNTY.

J. T. Donaghey, State Highway Commission, Madison.

Mr. W. H. Babcock, County Y. M. C. A. Secretary, was requested to explain to the County Board of Supervisors at their January, 1916, session the Rock County plan for a boys' dragging contest.

This resulted in the organizing of dragging contests in eight towns, with sixty boys from twelve to nineteen years of age participating. Each boy is given a mile of road to drag when necessary and to remove stone from the surface after each dragging. They are paid the usual rates per hour for man and team in their locality.

Automobile owners donated a fund amounting to two dollars per boy as a prize in order to stimulate interest in the work. The prizes are awarded by towns with the exception of a grand

prize consisting of a gold watch donated by the *Reedsburg Times*, the watch to be awarded to the boy who has done the best and most persistent work. Not to the boy who has the best looking road on the day of awarding prizes, but the one who has kept his road in the best condition the entire season and who has done the most in making a "good road out of a bad one."

Few of these roads are on the state highway system, most of them being secondary roads which have been receiving but little local attention and no state or county aid.

Every mile of road dragged by the boys has been 200 per cent better than any previous season, and aside from the value to traffic the boys have learned lessons in road construction and maintenance that places them well ahead of many members of the town boards under which they have been working, which will be of untold value to their community in future years.

Great credit must be given the County Dragging Committee, of which Mr. William Schenck of the town of Washington is chairman, and to Mr. Babcock for their efforts in making the contest a success.

One of Sauk county's 23 miles of dragged roads. Note the sign with which each boy's road is marked.

BOYS' COW TESTING ASSOCIATION.

F. G. Swoboda, Antigo, Wisconsin.

Getting the boys in line to help solve the dairy problems of the farm is being worked out with splendid success in the town of Peck, Langlade county. There at a cross roads school house, some of the older boys of the district meet once a month with the County Representative to test the milk from the cows in the home herds.

Results have been accomplished. The first year a dozen cows out of the seventy-five under test were consigned to the butcher because the tally sheets kept in the several barns and the Babcock test showed them to be "boarders" or small profit producers. Better methods of feeding were put into practice on most of the farms and all in all a more wholesome interest in better dairying was signified.

The enthusiasm for better dairying became infectious. Neighboring districts caught the fever. Two new clubs with better than a dozen members and over a hundred cows were organized in two adjacent districts. Men who because of advancing age put themselves in the class "too old to learn new ways" caught the inspiration and now in their barns hang milk scales and as regularly as the months go by the samples are brought to the school house to be tested. The discussion of Molly's milk record or Susie's high test is now a topic for conversation when neighbors meet.

Interest in better methods of breeding is being aroused. Over half the members of the original club now use pure bred sires and others aim to make a start. The mongrel has not entirely been banished from the community but his future lies dark before him.

The milk scales and the Babcock test areas are effective in battering down the scrub sentiment as the 42 centimeter guns in battering "European breastworks."

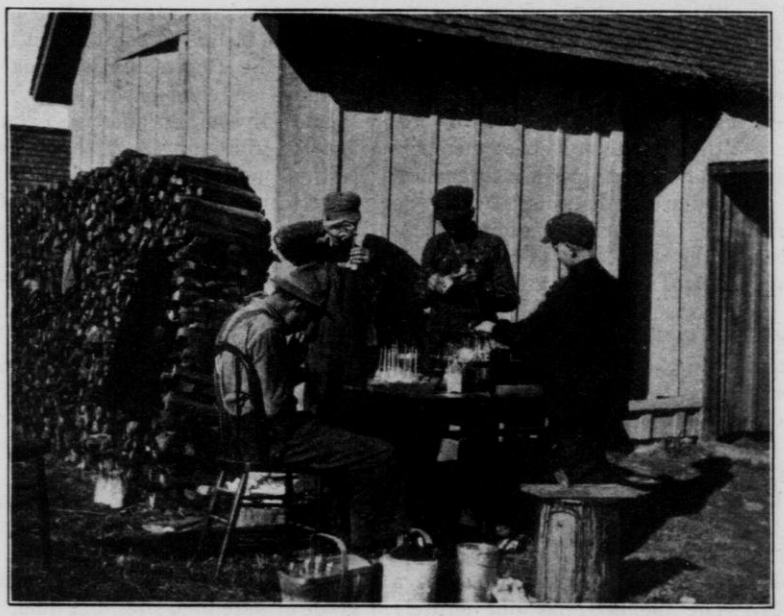
How the Club Operates

Weighing the milk and taking the monthly samples is left to each farmer. The desire for a knowledge of actual production forestalls any tendency to manipulate for large records. The boys of the family bring the samples down to the school house. The County Representative is on hand with a liberal supply of testing glass ware. He draws off the sample, one of the boys adds the acid, a second shakes the bottles, a third turns the tester. When the test is completed, the Representative makes the readings and one of the boys records them. Division of labor is so complete and the work so well adjusted that one testing morning seventy-two samples were tested between the hours of nine and twelve with a twelve bottle machine. A report of the test is sent home on a blank prepared for the purpose. From the totals of milk for the month butter fat production is computed.

The secretary of the club keeps a complete milk test and butter fat record of each cow in the herd. A charge of five cents per cow per year is made to pay for the acid used.

Value of this work is seen in the increased interest in better dairy methods throughout the whole community. With many it is no longer just a question of grade or pure bred sires, but quality and record in the pure bred. Still in its infancy, the results of the community

An evening meeting at the Week's Institute and school where the Boys' Cow Testing Association was started. A fine community tucked away in the woods of the great north of Wisconsin.



The Boys' Cow Testing Association at it. You can't see the County Representative. He's taking the picture.

testing movement can only be partially foreseen, in addition to its immediate effect in raising the standards in the several herds of the community. The following of better practices of breeding and the better raising of calves, the maintaining of interest of the boys and young men is the big thing. As monthly they meet with the County Representative, better dairy practices are discussed. A higher ideal can not fail to be established.

(Note): This boys' cow testing association resulted from a week's school and institute conducted by Mr. Swoboda in the spring of 1914 at the Friebel school, town of Peck, Langlade county. The first three days of the week were given entirely to instructing the boys in agriculture. Then came two days in which the fathers and mothers and other members of the families gathered at the institute. Then effective "follow-up" work kept the interest aroused by this school and institute from dying out. Counties having Agricultural Representatives have this advantage over counties not having them, in that interest aroused by Farmers' Institutes, stock trains and so on is effectively followed up and definite and more or less immediate results are secured.

—Superintendent.

OUTLINE OF BOYS' AND GIRLS' CLUB WORK

T. L. Bewick.

I. Twenty-five thousand (25,000) boys and girls in state doing some phase of Agricultural or Home Ec. work.

II. Work established in forty-eight (48) counties of Wisconsin.

III. Agencies promoting the work.

(a) County Superintendents of Schools
(b) High School and Rural School Teachers
(c) Wisconsin Bankers' Association
(d) Wisconsin Live Stock Breeders' Ass'n
(e) Wisconsin Potato Growers' Ass'n
(f) Wisconsin Horticultural Society
(g) State Fair Managers
(h) State Department of Education
(i) County Y. M. C. A. Workers
(j) Newspaper—publishers
(k) Enterprising individuals

} In cooperation with the College of Agric. and U. S. Dept. of Agric.

IV. Forms of Club Work promoted.

Corn Clubs
Potato Clubs
Small Grain Plots
Alfalfa Plots
Calf Clubs
Pig Clubs
Poultry Clubs
Baby Beef
Strawberry and Fruit
Garden Clubs
Canning Clubs
Sewing Clubs
Baking Clubs
Road Drag Clubs

V. General Plan of work.

(1) Organize boys and girls of a community under a capable local leader.
(2) Establish their own rules and by-laws.
(3) Enter at least one but not more than two Agricultural projects, i. e., corn and poultry.
(4) Agree to rules laid down by Local or State Leader.
(5) Keep an accurate record and make reports.
(6) Exhibit at some Local or State round up.
(7) Hold monthly meetings.

VI. Aims of Club Work.
(1) To interest boys and girls in agriculture and home life.
(2) To offer a means of earning money.
(3) To promote the interests of Agriculture of Wisconsin by instructing the future farmers and farmers' wives.
(4) To offer a means of industrial education easily applied in rural schools.
(5) To provide social entertainment for young people.

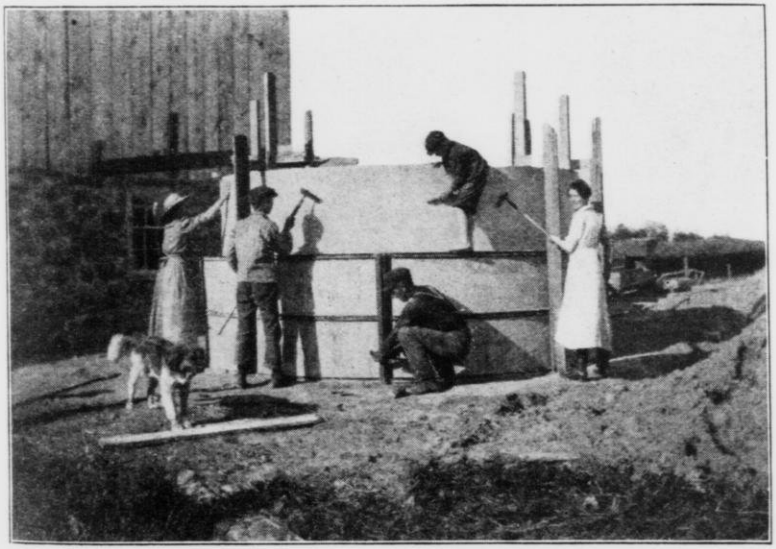
VII. Four big annual Young People's meetings.
(1) Annual High School Stock Judging Contest held at Madison during Farmers' Week in February. Open only to Agricultural High School students and students of the County Agricultural Schools.
(2) Young People's One Week Course.
Held at College of Agriculture in June. Open to those having won a scholarship in contest work.
(3) State Fair Round Up.
Held in Milwaukee. Open to all between ages of 10 and 18 years. This offers Judging Contests—exhibiting privileges—instruction and pleasure.
(4) Young People's Potato Growers Meeting.
Held in connection with the annual meeting of the Wisconsin Potato Growers' Association. Open only to boys and girls growing potatoes and prospective growers.

VIII. Plans for the Future.
(1) Better club organizations.
(2) More accurate results and bigger yields.
(3) Better community meetings.
(4) Junior Farmers' Advancement Organization.
(5) Junior Farmers' Institute.

THESE BOYS WILL WIN

Elmer and Hiram Nelson attended The Boys' Short Course given by the Agricultural Representative at the Lincoln County Training School. They attended every other day. They cut logs one day, drew them in eight miles the next day, unloaded them, went to th Short Course and then drove home. They did this for seven weeks last winter.

Boys judging horses at the Week's Institute and School at the Friebel School, Town of Peck, Langlade County.



Junior Instituters helping father and mother build a concrete silo up in Langlade County. Boys and girls become men and women on the farm.

FOUR GREAT EVENTS FOR JUNIOR INSTITUTERS

I. State Stock Judging Contest at the College of Agriculture
State divided into eighteen (18) districts each containing four (4) to six (6) Agricultural High Schools.
Winner of Local Contest to go to State Contest.
Seventeen teams were represented at Madison. Three boys constitute a team.
Winners last year were—1st Milton High School
2d Athens High School
3d Milltown High School

II. Boys' and Girls' Club Work at the State Fair, 1916.
Five hundred sixteen (516) people entered exhibits.
Two hundred twenty-six (226) people in camp.
$4000 given in prizes.
Frank Wilmarth, Sun Prairie, Wis., State Champion boy.
Helen M. Hatch, Lake Geneva, Wis., State Champion girl.

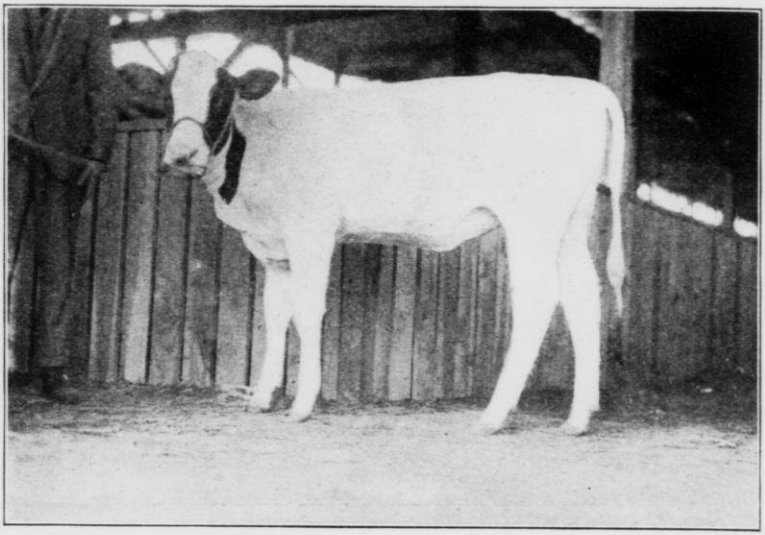
III. One Week's Course at the College of Agriculture.
Look at the pictures and if you are interested, write Professor T. L. Bewick, College of Agriculture, Madison, Wisconsin, about this course.

IV. Potato Exhibit at the Wisconsin Potato Growers' Association at Eau Claire, November 21–24, 1916.

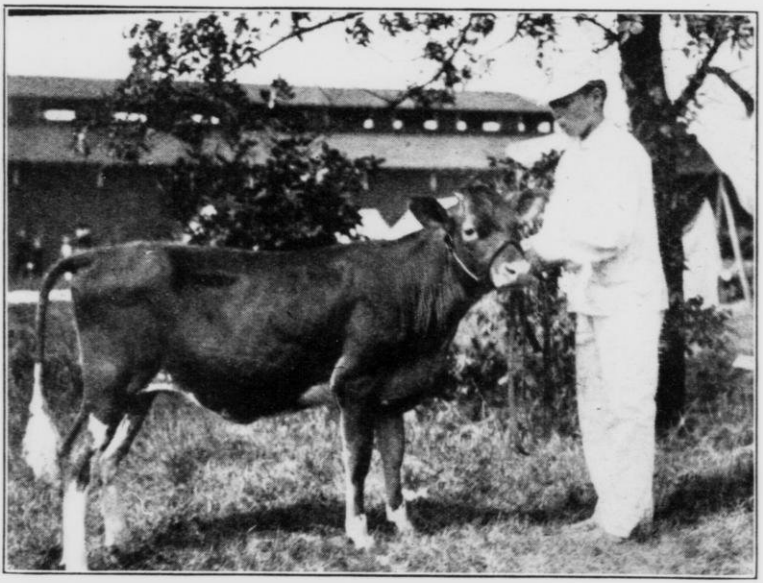
One of the lessons in Agronomy in the Young Peoples' Course, at the College of Agriculture, June, 1915. Why don't you try it?

CANNING ON THE COLLEGE LAWN

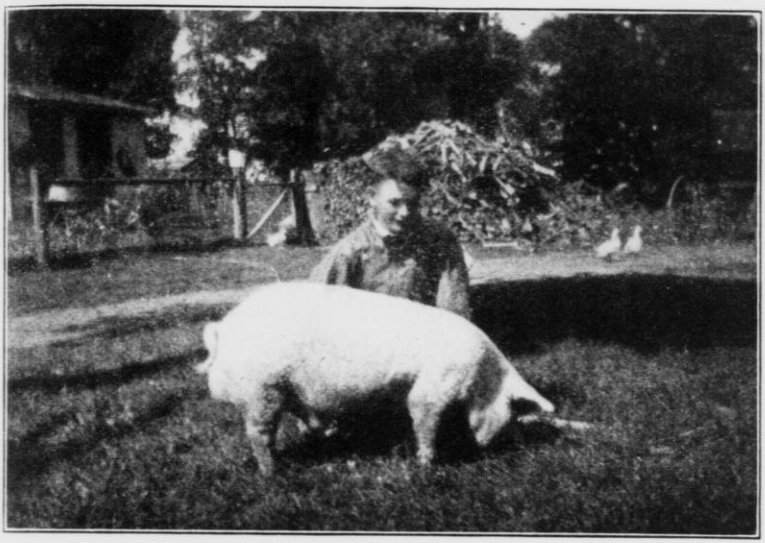
An Home Economics Class at the Young Peoples' Course at the College of Agriculture, June, 1915. Girls, you ought to attend this course next year.



Winning calf grown by Carl Swenson, Amherst, Portage county, in the Boys' Calf Club Contest. Exhibited at the Boys' Club Contest at the State Fair, 1916. It took first in its class and the grand sweepstakes prize.



Delbert Kingston of Waukesha and his Guernsey calf which won first in its class at the Boys' Club Contest at the State Fair, 1916.



Frank Wilmarth, high school boy of Sun Prairie, Dane County, and his champion pig at the Boys' Club Contest at the State Fair, 1916.

The splendid Holstein heifer which Frank Wilmarth, high school boy of Sun Prairie, Dane County, received as the prize for his champion pig at the Boys' Club Contest at the State Fair, 1916.

JUNIOR BABY BEEF AT THE INTERNATIONAL

Not long ago the Superintendent was reading one of the great daily papers and ran upon the following very interesting item which made his heart leap with joy. No Junior Instituter can read the item without feeling much pride in our Wisconsin boy, Alvin Morley of Baraboo. The International Live Stock Exposition at Chicago is one of the greatest live stock shows in the world. To capture such a prize there is a great honor. Lots more Junior Instituters could do as well if they and their parents would get into this fine game.

Sauk County Baby Beef Wins at International

Chicago—First prize and reserve championship honors at the International Live Stock exposition was accorded the shorthorn steer which won first place in the Wisconsin baby beef contest. He was fed by Alvin Morley, Baraboo.

This steer, which weighed 1,050 pounds at less than 15 months, entered the International fresh from the state baby beef championship contest held at Madison recently by the Wisconsin Livestock Breeders' association.

This is the first time that a Wisconsin boy has been responsible for feeding the winning beef yearling at the International, and sets a new mark in the livestock achievement records of the Badger state, which has hitherto been most noted for its dairy cattle.