THE AGRICULTURAL COLLEGE EXTENSION.

(With Stereopticon Views.)

Dean H. L. Russell, Madison, Wis.

Dr. Russell.

When I look into the faces of the hundreds of young people who are here tonight, I wish I might give my time to the continuation of Professor Larsen's address, for it is such addresses as this that mean much to this commonwealth, for the question of education along the lines he speaks of, is one of the most important things that we, as a commonwealth, have to consider.

The question I am to present to you tonight is that of educating the older boy and girl, the boys and girls who are of mature years, and who perhaps have not had in their earlier years these opportunities which the professor has spoken of as so desirable in our own state, and which unquestionably we are going to have within a comparatively short time.

Superintendent McKerrow has asked me to present tonight a phase of our college work which is comparatively new, so far as its field of organization is concerned. The Wisconsin College of Agriculture has always stood for getting as close to the people as possible in its work. The Short Course, the work in the Long Course, has been such as to command the attention of educators all over the country, and it has yielded rich fruitage indeed.

Much of the work of the College of Agriculture relates to the work of its Experiment Station. Many of you are more or less familiar with some of the work which has been done there. I need not say to a Wisconsin audience anything regarding the Babcock test, or relating to the very valuable work which has been done with reference to feeding and the working out of the principles as applied to scientific agriculture; many of you are familiar with this work. The difficulty we find, however, not only in Wisconsin, but in all parts of the union is that the Experiment Station has outrun the application of the principles discovered in the minds of the people. There have been established in every state these so-called Experiment Stations where phenomena of nature are studied with reference to determining the laws and principles which govern the same. It is often impossible for the man working in the laboratory to take the results of his work and carry them to the man who needs them on the farm. Very frequently the scien-
tific worker cannot do this work in a satisfactory way; to do it successfully requires a peculiar type of man to serve in this capacity. To fill this need we have begun to develop within the last few years, more extensively than ever before, the Agricultural Extension service, because we have seen the necessity of it become more and more urgent.

This Extension work is carried out along two general lines; (1) in the nature of demonstration work; (2) farmers' courses, farmers' schools and the like. You have had here this week a splendid example of what the teaching side of the work can be made to cover, because in the Farmers' Institute, we have in a sense a type of Extension work. The men who are carrying this Farmers' Institute work are propagandists, taking the results of scientific investigation to the man who needs them. As I said a moment ago, the results of scientific work had accumulated in this country but in a large measure were not utilized; they were like the dynamo whirling in the engine room, creating power which was not used, because there was no motor connected with the generator. The man on the farm is the motor power that is moving this commonwealth; the scientific truths which are being determined in the laboratory are the motive force to be applied; you have to have a connection—a live wire—joining the dynamo to the motor before these forces can do their work. This so-called Extension work is this type of work which carries the result of scientific inquiry to the man who needs it most.

I shall try to present in the little time I have at my disposal some lantern slides which I have with me that illustrate the various phases of the work which are incorporated under this Extension service.

As it is impossible to report a lecture of this character, and as it would be of but little service unless accompanied with the illustrations which were presented, the following circular is presented which describes the purpose of the Agricultural Extension Service and how aid may be secured in the various lines of work by the farmers of the state.

The Agricultural Extension Service.

The primary function of an agricultural experiment station consists in conducting original investigations and experiments bearing directly upon the agricultural industry of the state. Having determined the best methods to be pursued in various lines of agriculture as a result of such investigations, the next duty of the station is to give this information to the farmers of the state to be put to immediate beneficial use. In the past the major portion of the results of such investigations have been presented in station bulletins and the advice of members of the station staff has been given to many farmers through correspondence and addresses delivered at farmers' meetings. During recent years, however, a more direct and personal method has been developed at this Station which includes personal visitation and correspondence, co-operative demonstrations and experiments and the solutions of local problems by Station experts who visit the locality and study the problems on the farm.

A special appropriation by the State Legislature has made possible better organization and the expansion of this work in the College of Agriculture and Experiment Station along various lines of Extension Service. The purpose of this organization is to bring the benefits of this Station to a larger proportion of the two hundred thousand farmers of Wisconsin.

How Wisconsin Farmers May Secure This Service.

The lines of Extension Service offered to farmers of the state are un-
der the direction of the various departments of the Station, involving personal direction by the entire staff of the Station devoted to each particular subject.

Local demonstrations and experiments will be conducted, as in the past, at certain centers in various parts of the state in order to especially adapt the work of the Station to local conditions and to permit the maximum number of farmers to visit and inspect the experiments in progress. So far as possible the grouping system will be followed. A group of farmers of the same locality interested in the same business will be made the unit for these demonstrations, since the expense and scattered location of farmers prohibit personal attention in all cases. The demonstration or group method has proven in the past to be the most effective in giving farmers a good idea of a method of local improvement.

Where peculiar local problems arise, demanding investigation on the ground by Station experts, experiments will be outlined and conducted in co-operation with local farmers to determine the best methods of solving the problem. The locations and conditions of these co-operative experiments will be determined by the Station staff after studying the situation. The lines of co-operative work are mentioned in the following pages.

Farmers who have particular problems upon which they desire advice, may secure it by writing to the department of the Station in charge of that subject. They will receive carefully prepared answers to all questions, as well as such available publi-
cations as may give helpful information upon the subject. If the problem is of such nature that it warrants personal visits by the Station expert, such a visit may be arranged either at the expense of the Station or at the joint expense of the farmer and the Station.

The results of investigations conducted by the Station, which are of a nature which will be of immediate practical use to farmers, are described in the regular series of Bulletins and Circulars of Information which are issued at frequent intervals. These bulletins are sent free to residents of the state who are interested in agriculture and names are placed upon the regular mailing list upon receipt of a request stating the line of farming followed. Address, Director, Wisconsin Agricultural Experiment Station, Madison, Wis.

The Annual Reports include the annual report of the Director, which is also distributed as a regular bulletin, and the Research Bulletins, which include technical data resulting from investigations such as are not of general interest to farmers. Press notices of all investigations by the Station are issued regularly to the agricultural journals and newspapers of the state.

**Outline of Extension Service.**

Agricultural Engineering, including farm building and construction; Agricultural Economics, including cost of producing farm products and student employment bureau; Agronomy, including pure seed dissemination, county and state farm tests, young people's corn contests, seed inspection, weed control and sub-station work; Animal Husbandry, including dairy cattle breeders' associations, sheep and swine breeding associations, livestock judging; Bacteriology, including animal disease control, water supply control, tuberculosis post-mortem demonstrations; Chemistry, including feed inspection, fertilizer inspection, dairy cow tests; Dairying, including butter and cheese scoring exhibitions, milk and cream testing, starter distribution; Horse Breeding, including stallion licensing; Horticulture, including potato spraying demonstrations, orchard spraying demonstrations, tobacco seed distribution, landscape gardening, orchard and nursery inspection, sub-station work; Soils, including soil examinations, drainage service, co-operative fertilizer tests, sub-station work; General Lines of Extension Service, including stump removal investigations, cranberry investigations, agricultural lectures, rural and high school agriculture, extension farmers' courses.

**Agricultural Engineering.**

This department will furnish plans for barns, hoghouses, cow stalls, silos, cement construction, ventilation of schoolhouses and farm buildings free of cost to farmers residing in the state. Blue prints showing belt lacing, rope splicing, knot tying and the methods of making rope halters will also be sent on application to Agricultural Engineering department.

**Agricultural Economics.**

Selected farmers are co-operating with the Station by filling out blanks showing what has been done on the farm. This work requires but a few minutes of time each day. These reports are tabulated by the Agricultural Economics Department in co-operation with the United States Department of Agriculture, and at the end of the year a complete statement of the profits in each line of production is sent to the farmer. This is of value in showing what kind of farm products are most profitable.

A limited number of farmers will
be added to this list from time to time. This work is done without cost to the farmer other than the time necessary to fill out the blanks. Progressive farmers who desire this cooperation should make application early in the year to Agricultural Economics Department.

An employment bureau is maintained for the mutual benefit of the students and graduates of the College of Agriculture and those farmers who plants for the purpose of improving quality and yield per acre. Former students of the College, members of the Wisconsin Experiment Association, are the parties with whom these seed grain centers are established and who have agreed to sell these grains to farmers and seedsmen at reasonable prices. A list of these growers will be furnished on application to the Agronomy Department.

Co-operative demonstrations are

A spraying demonstration by the Horticultural Department of College of Agriculture.

may desire to employ student help. A large number of positions are filled for helpers, herdsman, foremen, managers and farm superintendents. Numerous requests are received from teachers and experimenters in agricultural colleges, experiment stations, government work and other agricultural or educational enterprises. Address, Office of Farm Management.

Agronomy.

This department is engaged in the breeding of grains and forage carried on with county and state farms for the purpose of illustrating the best methods of handling farm crops from seeding to maturity. The plan involves making these farms demonstration centers where the progress of the work may be conveniently observed at any time by farmers in the vicinity and where special meetings may be held at the time when crops are in the best condition for demonstration. The plan also includes special work with nearby farmers.

Seed is furnished by the Station to
county and state farms engaged in
the work for the purpose of making
them seed growing and distributing
centers. These farms agree in turn
to sell the seed grain grown from Sta-
tion seed to farmers at reasonable
prices. Farmers desiring special ad-
dvice regarding problems on their own
farms should leave their requests with
the superintendent of the farm be-
longing to the county in which they
reside. County farm superintendents
desiring this information should ap-
dly directly to the Agronomy Depart-
ment.

Young people's corn contests are
held in co-operation with county fair
associations and county superinten-
dents. The object of these contests is to
awaken in the boys and girls an inter-
est in agricultural pursuits and to
give pure bred seeds the widest pos-
sible dissemination. Assistance is al-
so given in judging the grain grown in
these contests.

Seed is furnished free for these con-
tests by the Agronomy Department of
the Station to county fair secretaries
and county superintendents. These
parties should apply for an outline of
the regulations governing these con-
tests and other necessary informa-
tion to the Agronomy Department.

The Wisconsin Seed Inspection law
provides that all grain and grass seed
offered for sale in this state must be
practically free from the seeds of nox-
ious and common weeds and other for-
eign matter. The law places the con-
trol of this work in the hands of the
Experiment Station. The inspector
is required to procure samples of
seeds sold in the open market and to
determine if the same meet the legal
requirements. The inspector is em-
powered to prosecute violations of
the law.

Any resident of the state may have
seeds examined by sending a sample
of the same (taken in accordance with
directions which will be furnished on
application) accompanied by the fee of
twenty-five cents to the State Seed In-
pector.

The Agronomy Department furn-
ishes full information with reference
to spraying solutions, spraying appara-
tus and the most approved methods
of weed eradication and control free
upon receipt of application. It also
identifies weeds and weed seeds free
for residents of the state. Specimens
for identification should be taken, if
possible, when the plant is in full
bloom and should include roots, stems
and leaves. These should be packed
in some substance to keep them moist
and each specimen should be plainly
marked or numbered. Each specimen
of weed seed should also be num-
bered. Address, State Seed Inspector.

Agronomic tests and experiments
are conducted on the sub-station
farms, which are located in various
portions of the state. The testing of
pure bred seed grains, the growing of
various forage crops, and the dissemi-
nation of these crops throughout the
locality where the sub-station is lo-
cated receive special attention. Rota-
tion and acclimatization of farm crops
are emphasized. For particulars
regarding the work address the Agron-
omy Department.

Animal Husbandry.

This department assists in the or-
ganization of Breeders' Associations
and aims to give practical assistance
through literature, lectures, demon-
strations and by personal letters in the
breeding, feeding and care of herds.
A tentative outline of a constitution
and by-laws is furnished free on ap-
plication and, to a limited extent,
speakers are provided to already exist-
ing associations. Make application to
the Animal Husbandry Department.

Sheep and Swine Breeders' Associa-
tions are organized on the same basis
for the same purposes and under the
same conditions as the Dairy Cattle Breeders' Associations. Applications for assistance should be made to the Animal Husbandry Department.

The Station maintains lists of competent judges which will be sent on application to county fair secretaries and others desiring to secure judges. Address, Animal Husbandry Department.

Agricultural Bacteriology.

In co-operation with the State Live Stock Sanitary Board and the State Veterinarian, this department is prepared to investigate serious outbreaks of animal diseases throughout the state. Address, Bacteriological Department.

Tuberculosis post-mortem demonstrations are conducted in co-operation with the State Veterinarian and the State Live Stock Sanitary Board for county fair associations and other organizations, under prescribed rules. Address, Bacteriological Department.

The Experiment Station cannot undertake to analyze water samples for sanitary or mineral purposes. The State Hygienic Laboratory investigates water supplies of cities and villages free of charge. For any information concerning such work address State Hygienic Laboratory.

Agricultural Chemistry.

The Wisconsin Feeding Stuff Law requires that concentrated feeds, except whole seeds and unmixed meals made from whole seeds, be sold under a license and each sack must bear a label showing minimum fat and protein and maximum fiber content. Mill feeds and malt sprouts sold locally by the manufacturer, are exempt from the operation of this law. Samples are collected in feed stores by agents of the Experiment Station and analyzed, and the results are reported directly to the manufacturers and dealers and annually to the people of the state in the bulletins of the Station.

Samples of commercial feeding stuffs (taken in accordance with directions furnished by the Station) will be analyzed free of charge for farmers, and results reported directly to them with the least possible delay. Address, Feed and Fertilizer Department.

A similar law governs the sale of commercial fertilizers in the state. These must be sold under a license and each sack must show the manufacturers' guarantees for minimum nitrogen, total and available phosphoric acid and soluble potash content of the fertilizer. Analyses of samples are made under similar conditions to those governing the analyses of commercial feeding stuffs. Address, Feed and Fertilizer Department.

Owners of pure bred dairy cattle may have tests of these animals made and certified by the Experiment Station. The official tests are conducted for a period of from one to thirty or more consecutive days and cost the breeder as follows:

- 1-day test ................ $ 6.00
- 2-day test ................ 8.00
- 7-day test ................ 25.00
- 30-day test ................ 80.00

Additional days, beyond two, seven or thirty days, three dollars per day.

Semi-official yearly tests are also conducted under direction of the Station. Address, Superintendent of Dairy Tests.

Dairying.

Butter and cheese scoring exhibitions were established for the purpose of improving the quality of dairy products in the state and are especially intended to be of assistance to butter and cheese makers whose products are below market standard in quality. They also aid in keeping the product from any factory up to the market standard throughout the entire year.

Packages of either farm or cream-
ery butter and of American, Swiss, Brick or Limberger cheese may be sent to the Dairy Department for expert inspection and advice, which is furnished free to all exhibitors. Write for entry blanks, addressing Dairy Department.

Samples of milk and cream are tested free for farmers and factory owners throughout the state, on conditions outlined in a circular to be had on application. Sample should be sent by mail or express and must be accompanied by a statement signed by all interested parties that the sample has been taken in accordance with directions furnished by the Dairy Department. On account of the dissatisfaction always caused by inaccurate sampling, no test of milk or cream will be made unless this signed statement accompanies the sample. Address, Dairy Department.

Another method used to improve the product of butter and cheese factories is the use of pure culture starters. To that end the Dairy Department will send, free of charge, on application, to any butter or cheese maker in the state, pure culture starters prepared at the station. Directions for use accompany each bottle. Apply to Dairy Department.

Horse Breeding.

The Wisconsin Stallion Law requires that before any person, firm or company shall use or offer for use for public service in the state any stallion or jack, he shall have caused the name, description and pedigree of the animal to be enrolled by the Department of Horse Breeding of this College, and shall have procured a certificate of such enrollment from this department and recorded the same with the register of deeds of the county in which the animal is to be used for service. To obtain the license-certificate the owner must submit his personal affidavit, or that of a legally authorized veterinarian, certifying that the stallion or jack is free from certain diseases specified in the law, together with the pedigree registry certificate of the horse and any other papers necessary to decide his exact breeding.

Unsound horses cannot be licensed. Stallions or jacks to be entitled to a license as "pure-bred" must be recorded in a stud book recognized by the Department of Agriculture, Washington, D. C. Horses not so recorded are given license as "cross-bred," "non-standard bred," "grade," or "margrel or scrub," according to the exact character of the breeding of each. Exact copies of the license certificate must be printed and posted up in conspicuous places wherever the stallion or jack is used for public service, whether for a fee or without charge for service. The purpose of this law is to give farmers accurate information relative to the breeding of public service stallions to the end that better methods of horse breeding may obtain. The publications of the Station on the subject of horse breeding are to be had on application. Address, Horse Breeding Department.

Horticulture.

Potato spraying demonstrations are given in the potato districts to illustrate methods of controlling potato blight and other fungus diseases and insect pests. The Experiment Station furnishes the machine and necessary materials and a representative to supervise the work. The farmer who secures this co-operation furnishes team and other necessary assistance. No charge is made by the Station.

Owing to the length of time required to complete one of these tests and the limited facilities for this work, only a few demonstrations can be made each year. Such demonstrations
will be located where, in the opinion of those in charge, they will reach the greatest number of farmers. Address, Horticultural Department.

Orchard spraying demonstrations are given to illustrate the methods of controlling diseases and insect pests which infest the orchard, under the same conditions that govern potato spraying work. Address, Horticultural Department.

The Station has developed an improved variety of tobacco, and is now growing a considerable quantity of seed which will be distributed in small lots to the tobacco growers of the state as long as the supply lasts, on condition that those receiving it agree to make a report requested by the Horticultural Department. Growers to whom this seed is furnished are urged to grow their own seed for future supply. Address, Horticultural Department.

This department answers queries regarding the selection of plants, trees and ornamental shrubs used for shade or decorative purposes. In the case of public schools, planting plans will be furnished free of cost to two schools in each county. Expenses incurred in securing data for these plans must be borne by the school. This Station cannot furnish nursery stock for decorative purposes. All questions with reference to cultural methods, varieties to be grown, treatment of pests and other questions of a similar nature regarding fruits and vegetables grown in the state are answered free for residents of Wisconsin. Address, Horticultural Department.

The Wisconsin Nursery and Orchard Inspection Law requires that all nursery stock grown and offered for sale in this state must be inspected by an authorized official inspector, appointed by the Director of the Experiment Station. All shipments of nursery stock must bear official inspection tag. All agents canvassing for nursery stock must have agent's duplicate licenses. Nursery inspection fee is ten dollars and agent's fee is one dollar. Address, State Nursery and Orchard Inspector.

The Horticultural Department is carrying on trials in fruit growing in various places in the northern part of the state, and the testing of varieties for these several sections. This work is carried on in connection with the experimental work of the department at the northern Sub-stations. At the present time various fruits are being grown at the following places: Superior, Iron River, Ashland, Bayfield, and on Madeline Island. Address, Horticultural Department.

Soils.

Examinations are made of individual farms by personal visitation to determine best methods of managing special types of soils, as marsh, sandy and heavy clay lands, proper fertilizers, crop rotations for same and drainage possibilities. It is desired that individuals requesting such examinations secure the co-operation of others in the vicinity so that the service of the department may be extended to as many farmers as possible. Address, Soils Department.

Drainage service is planned to aid in the organization of drainage districts and to promote the reclamation of swamp lands. Plans are made for drainage systems and, when required, aid is given in the organization of drainage districts. Plans and specifications for either tile or open ditch drainage are also furnished, but individual assistance is given only in localities where little drainage has been done and only for the purpose of demonstrating its value to that locality. No charge is made for time or traveling expenses. Instruments are loaned to competent and reliable
parties for nominal fees. Address, Soils Department.

A limited number of co-operative fertilizer tests are made annually on three types of soils as follows:
1. To demonstrate the effect of phosphates on clay soils.
2. To demonstrate the value of certain fertilizers, through cultivation and legumes on sandy soils.
3. To show the effect of special fertilizers, drainage and crop adaptation on marsh soils.

These tests are made only after personal examination by a representative of the department. The farmer on whose land the experiment is made must agree to care for and harvest the crop in accordance with directions furnished by the Soils Department. The farmer furnishes the necessary labor. The Station furnishes the fertilizer and other material necessary for the experiment and supervises the work free of cost. Address, Soils Department.

Demonstrations and experiments are made on the soils of lands controlled by the state in several widely separated localities. At present these demonstrations are being made on clay soils at Superior and Ashland, on sand at Sparta and Iron River, on marshes at Marinette, Mather and Phillips. Address, Soils Department.

General Lines of Extension Service.

This Station in co-operation with the Minnesota Agricultural Experiment Station and the Office of Farm Management of the U. S. Department of Agriculture, is conducting a series of tests to determine the most efficient and economical methods of removing stumps from cut-over lands in the northern section of the state. Farmers and others interested in this special line of work may get valuable aid from the expert in charge, or may render aid by describing methods now used. Address, Director, Experiment Station.

This Station is carrying on five special lines of cranberry improvement—
1. Tests of culture methods.
2. Co-operative tests with insecticides.
3. Co-operative tests with fertilizers.
4. Giving advice and assistance in laying out and management of cranberry bogs.
5. Tests of varieties and methods of propagation.

The Station furnishes the necessary material and superintends the work, the cranberry grower furnishing necessary help and carrying out investigation as directed by the Station's representative. When assistance is furnished in making preliminary surveys of marsh areas, the traveling expenses of the representative are paid by the party aided. Address, Superintendent Cranberry Sub-station, Grand Rapids, Wis.

The Station receives many calls from schools, agricultural societies and breeders' associations for men to give lectures on special phases of agriculture.

While it cannot undertake to send out its men indiscriminately it does aim to comply with these requests where a goodly number of farmers are certain to be reached through the lecture. To secure this service, application should be made several weeks in advance to Agricultural Extension Service.

There is a constantly increasing demand for Station publications to be used in the rural and high schools of the state. Certain numbers of the regular series of bulletins and circulars are particularly adapted to the needs of these schools. These will be mailed free to all rural school teachers on application of the County Superintendent accompanied by a list of teachers in the county. These bulle-
tins and circulars are also available for the use of high schools, county training schools and other educational institutions in the state.

The College is prepared to furnish, to a limited number of county superintendents, special lecturers for short term institutes, free of charge. Applications should be made at least sixty days in advance of the time when the institute is to be held.

The Station will loan to schools and colleges enlarged photographs and a traveling library of slides to accompany special literature on agricultural subjects. Application for this material will be received and filed and the material supplied as rapidly as possible in the order in which applications are received.

Other means of assisting rural and high schools in improving the teaching of agriculture are being developed. County and city superintendents and graded, high and training school principals may secure these aids by applying to Agricultural Extension service.

Extension Farmers’ Courses are given in co-operation with county schools of agriculture at the sites of these schools and in a few other particularly favorable locations. Home makers’ Conferences are held in connection with these courses in charge of the Home Economics Department of this college. Lectures and demonstrations on such subjects as home management, foods and cooking, home decoration, nursing, etc., are given.

County school authorities and others desiring to secure these courses should make application early in order to secure favorable dates, as only a limited number of these courses can be given each season. Address, Agricultural Extension Service.

RESOLUTIONS.

The report of the committee on resolutions was presented by Mr. Bradley and unanimously accepted, as follows:

Resolved, that we tender our sincere thanks to the committee of arrangements for the kindly and hearty way in which they have helped to make this Round-up Institute a success, and be it further

Resolved, That we also heartily thank the band boys for the way in which they have responded to the calls on their patience and kindness. There is an old saying, “Be just a little more kindly than is absolutely required of you,” and the boys have certainly carried out this sentiment to the letter. They have not shown that they were merely playing for hire, but have entered into the spirit of the occasion with a hearty good will.

Resolved, That we respectfully ask our representatives in congress to use all honorable means to maintain the present tax on oleomargarine for the protection of the farmers and a safeguard to the public.

Resolved, That we command the place given to Nature study in the public schools, and look forward to a more prominent place being given to the same, which shall include the protection of our birds.