

THE VISITOR

Devoted to the Interests of Agriculture and Manual Training
in Minnesota High Schools

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SUMMER TRAINING FOR

TEACHERS ANNOUNCED

Teachers of agriculture and home economics in high schools receiving federal aid under the Smith-Hughes act must be graduates of accredited colleges. In Minnesota the College of Agriculture of the University has been designated as the official institution for the training of such teachers. A six-weeks' course from June 23 to August 1 offers men and women, beginners and advanced students, the opportunity to prepare as vocational teachers. This institution is the center of the agricultural activities of the state. As a federal experiment station it has available the latest information on recent developments in agriculture. The large well-equipped farm with tracts devoted to gardening, orchards, field crops, animal husbandry, and apiculture are admirably suited, especially in summer, to supply material for study. In home economics, the summer session under the regular staff, together with teachers from other colleges, will offer numerous elementary and advanced courses. These will consist of new courses designed for teachers, courses in foods, clothing, art, institutional management, and nursing. The home management houses will be open for those desiring practical training.

The expenses of the summer session are light. Credits earned will count towards a degree for those properly qualified to enter the college.

A two-weeks intensive training course designed particularly for men now teaching vocational agriculture will be offered, July 21 to August 1. Part of the time will be devoted to regular class-room work in methods of teaching high school agriculture, rural sociology, and farm machinery. Special lectures and laboratory work will be given in animal husbandry, horticulture, entomology, farm management, bees, plant diseases, and animal diseases. A part of each afternoon will be devoted to conferences where the problems of the agricul-

tural teacher will be thoroughly discussed.

Opportunity will be given the men to become acquainted with the new professors at the agricultural college as well as with the latest developments in the various fields of agriculture. For further information write to the Secretary, College of Agriculture, St. Paul, Minnesota.

NEW LANTERN SLIDES

The following sets of lantern slides can be borrowed from the United States Department of Agriculture, Forest Service.

Of general interest:

Conservation of the Forest
Forestry in the United States
The Work of the Forest Service
Recreation on National Forests
Agriculture and Forestry
Tree Windbreaks
Street Trees

For use in schools:

Nature Study and Forestry
Botany and Forestry
Manual Training and Forestry
Geography and Forestry
Life of a Tree
Farm Forestry in the South
Agriculture and Forestry

NEWS NOTES

Miss Blanche Corwin, agriculture teacher at Northfield, cooperates with the art teacher by furnishing photographs of poultry which the pupils in the art class reproduce in colors. The best pictures are then used in the poultry class. A similar plan might be followed with the other farm animals as well as with fruits, grains and the like.

Max Treu, the agriculture teacher at Redwood Falls, had 84 men and 30 women who took poultry work in evening classes last winter.

One of the boys at Renville, Minn., has a litter of pure bred Poland China pigs which he is raising as a part of his practical work on the farm. A sister of the mother of the pigs sold at auction last winter for \$700.

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VISUAL PRESENTATION

Many of the agriculture men have stereopticons which are equipped with arc lights. In most cases they will find it desirable to change to the nitrogen filled Mazda C bulb. The attachment and bulb can be obtained for less than \$15 and will soon save its cost in current consumption, not considering the extreme simplicity of operation and increased steadiness of light. If you have a lantern that is not working and want to know how to make it work, or if you have some question as to attachments for the lantern, kind of screen to buy, or anything of that nature, do not hesitate to write the Division of Agricultural Education, University Farm.

All persons who contemplate the installation or operation of a motion picture projector should obtain a copy of "Laws to Regulate Theaters—The Construction, Use and Operation of Moving Picture Machines and Booths of Places Showing Motion Pictures." This can be obtained free by addressing the State Fire Marshal, St. Paul.

Mimeographed lists giving some of the sources of projection machinery, lantern slides, films, pictures, charts, display fixtures and visual aid supplies may be had by addressing the Division of Agricultural Education, Visual Instruction, University Farm, St. Paul.

The Visitor will be glad to receive from time to time photographs or negatives of agricultural classes at work, work done by agricultural classes, well arranged agricultural rooms, pieces of apparatus, etc., that might be used for lantern slides or display to acquaint other men in the field with live work that is being done elsewhere. When requested to do so, we will return these prints or negatives when through using them.

Some very valuable practice in accurate description, both oral and written, may be acquired by attempting to describe accurately the various breeds of livestock. Writing of an accurate description of an individual, for example, for registry purposes, makes a good problem.

BOOKS RECEIVED

Garden Crops—Production and Preservation, Lester M. Ivins. This book is designed primarily as a text in gardening for use below the tenth grade. It deals with the production and preservation of vegetables and includes a section of suggestions to teachers. Rand & McNally Co., Chicago. Price...., 1918.

Sewing-Handicraft for Girls, Isabella McGlauffin. A five-year graded course in sewing for city and rural schools. The Manual Arts Press, Peoria, Ill. Price \$1.35, 1918.

Vegetable Growing, Jesse G. Boyle. This book was designed by the author to meet the needs of collegiate undergraduate students. It treats: 1. The problems involved in the production of a supply of vegetables for the home table. 2. The production on a field scale of those vegetables commonly grown as such. The vegetables are classified as to seasonal requirements. Lea & Febiger. Price \$2.25, 1917.

Farm Horticulture, George S. Hood. An elementary text covering gardening, plant propagation, plant pests and their control, pruning, harvesting, marketing, fruits, and beautifying home grounds. Lea & Febiger. Price \$2.50, 1919.

Agricultural Entomology, Herbert Osborn. Insect life in relation to farm crops and livestock. Lea & Febiger. Price \$2.00, 1916.

A CUBIC FOOT OF SOIL

The following is an outline of a talk and demonstration given at the recent meeting of the agricultural section of the Minnesota Educational Association.

Introduction.

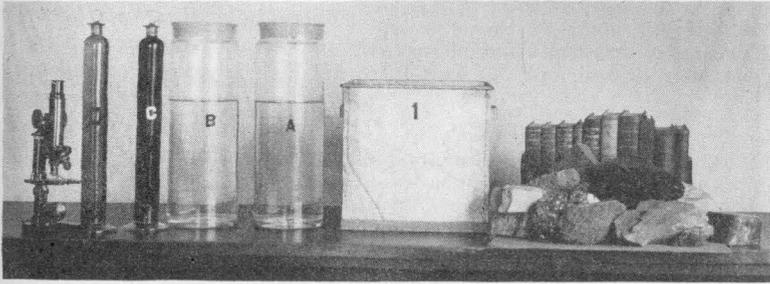
1. "The energy of the soils is the life of the people." (Soil is a wonderful substance.)
2. The farmer's interests are largely in the proper management of his soils.
3. Every plant is an expression of the combination and interaction of three groups of forces, namely, **the seed, the climate, the soil.**

a very important consideration, since crop productions depend upon the plant food contained therein.

7. The plant has the power of changing rocks and minerals and other ingredients into wheat, etc.

II. A small portion of productive surface soils is composed of organic matter.

1. Organic matter, humus, nitrogen, are the most immediate considerations in crop production.
2. Organic matter content is a very important matter in crop production.



From left to right.

Compound Microscope; (D) Precipitated Humus; (C) Humus in solution; (B and A) Total water in cubic foot of silt loam; (A) Water that plant can not get in cubic foot of silt loam; (1) One cubic foot of soil; Rocks from which soil is made; Some books on soils.

4. The six essential positive factors in crop production are: the seed, a home for the plant, the food of which the plant is made, moisture, heat and light.
- I. The soils of Minnesota are largely composed of rocks and minerals.
 1. Every farm student should have the privilege of viewing the soils under the microscope.
 2. Functions of the rocks and minerals of which the soil particles are composed.
 3. The ten essential plant food elements.
 4. Six of the essential plant food elements are derived from the rocks and minerals of the soil.
 5. The four essential plant food elements which are most apt to be deficient in soil are: nitrogen, phosphorus, potassium and calcium.
 6. The minerals and rocks of which soils are composed are

3. Color of surface soils is largely due to the presence of organic matter.
4. Organic matter and humus.

III. Productive surface soils are beaming with life.

1. There are many microorganisms in productive soils.
2. The microorganisms in the soils are important factors in crop production.
3. The functions of life in the soils should be carefully considered by all who expect to handle the land most advantageously.
4. Possibly the best reference book treating this phase of the subject of soil fertility is the one entitled "Bacteria in Relation to Country Life," by Lipman.

IV. The upper four feet of silt-loam soils contain 14 to 16 inches of
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water when in optimum condition for crop production. This means about two and one-half gallons of water per cubic foot, of which about one and one-fourth gallons are unavailable for crops.

1. Soil water is one of the most important factors in crop production.
2. Methods of conserving the soil moisture should be studied by all who expect to farm most efficiently.

V. The nature of soils as a mass influences the growth of plants growing thereon. The physical characteristics of soils are more often the limiting factors in crop yields than any other factors.

1. The space actually occupied by particles of soil and the function of these particles.
2. Pore space and its function.
3. There are many experiments to ascertain the physical characteristics of soils.
4. Laboratory manuals concerning soils physics contain many practical experiments.

NEWS NOTES

(Continued from page 1)

Professor A. V. Storm, chief of the Division of Agricultural Education, who is on Sabbatical leave, visited the College of Agriculture recently.

George Girrback, who graduated from the College of Agriculture, University of Minnesota in 1918, is now teaching rehabilitation classes in agriculture at Fort Snelling.

Charles Partridge, graduate of 1917, and teacher of agriculture at Buffalo, 1917-18, has recently returned from France and is now at his home in Owatonna.

The following account from a local paper gives a good idea of the work that the Smith-Hughes Agriculture department of Alexandria is doing. K. A. Norsen is the teacher of agriculture.

"A short program was given by the Smith-Hughes classes in agriculture last Friday afternoon in the agricultural room in the high school. Talks and demonstrations were given by the following members of the classes:

Growing Alfalfa—Leander Titus.

Testing Seed Corn—Demonstrated by Henry Collins and Bernie Gahlon.

Culling Chickens—Henry Sangren.

Judging Dairy Cows—Raymond Mattson.

Milk Testing—Demonstration by Walter Proehl and Emmett Strandberg.

"A short talk was given by the agricultural instructor explaining the work in agriculture under the Smith-Hughes act. Miss Weigley, the state supervisor of vocational work in home training, gave a talk, explaining the work in vocational home training for girls. After the program a lunch was served to the boys and their parents.

"These boys have now completed their work and are going on the farm to finish their year's work by carrying out a project during the summer. This project may be to grow a crop of some kind or raise some kind of livestock. This project is thus a continuation or practical application of the boys' particular studies during the winter months. With the parents' consent and coöperation the boy is made responsible for the carrying out of his project and is expected to keep full account of all work, expenditures and incomes from his project.

"These boys are not expected to be back in school before October 1. Thus we have six months in class room and then from April 1 to October 1 they can be home on the farm. This ought to appeal strongly to parents who want their boys to get more schooling, but who can't spare the help during the busy spring and fall season. There are similar courses in vocational home training, and the boys and girls 14 years or older are urged to write to Superintendent F. M. Yockey, Alexandria, Minn., for further information."

Do You Have Them?

"Home canning and drying of vegetables and fruits" and "War gardening and home storage of vegetables" are the titles of the Victory editions of two bulletins which may be obtained by addressing the National War Garden Commission, Washington, D. C.