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NEW YORK STATE COLLEGE OF AGRICULTURE ANNOUNCEMENT OF WINTER COURSES 1910 -11

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NEW YORK STATE COLLEGE OF AGRICULTURE

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Gilbert Arthur Renney, Superintendent of Mailing-Rooms.

THE WINTER COURSES.

The Winter-Courses are five in number.

1. General Agriculture (first given in 1893).
2. Dairy Industry (first given in 1894).
3. Poultry Husbandry (first given in 1905).
4. Horticulture (first given in 1906).
5. Home Economics (first given in 1906).

All of these courses will begin November 29, 1910, and will close February 24, 1911. Instruction will begin at 8 a. m., November 30. No work is to be given on Saturday, December 24; Monday, December 26; and Monday, January 2.

Correspondence concerning these courses and other work connected with the College of Agriculture, may be addressed to L. H. Bailey, Director; or, when pertaining specially to one of the Winter-Courses, to the person in charge of the course, as announced below.

It is advised that students plan to spend two winters at the College, the first winter taking the course in General Agriculture, and the second winter specializing in the subject in which they are particularly interested.

Expenses

Tuition is free to residents of New York state. Non-residents pay a tuition fee of \$25. There are a few small fees and incidental expenses which are detailed under the description of each course, but practically the only expense is the cost of living in Ithaca and the railroad fare to and from Ithaca. Satisfactory table-board can be secured in Ithaca, within five to fifteen minutes walk of the campus, for about \$3.50 to \$4.50 a week. Comfortable rooms near the place of boarding may be had at \$1 to \$2 a week when two persons occupy the room, and at \$2 to \$3 when one person occupies the room. The cost of books need not be more than \$5, but it has been the experience of Winter-Course students in the past that they wish to purchase a number of books to take home, and it would be well, if possible, to allow at least \$10 for them. The expenses of the students in the Winter-Courses of past years, as stated by them, have been from \$85 to \$125, the average now being probably about \$95. By careful management, this may be reduced somewhat, but it is best not to stint too much, as too great economy is likely to lessen the value of the course.

In the past, a few students have been obliged to earn money during the course and have worked at odd jobs about the University or on neighboring farms. This is never advisable unless absolutely necessary. It is much better to borrow the necessary money or to postpone the course of study until another year than thus to be handicapped during the limited time spent at the University. All the energies should be concentrated on the work of the course.

All the fees mentioned under each course must be paid to the Treasurer of the University (Morrill Hall) within two days after registration.

Infirmary fee.—Every registered student at Ithaca is charged an Infirmary fee of \$2.00 per term, payable at the beginning of each term. Students in the Winter-Courses are required to pay the Infirmary fee for one term. In return for the Infirmary fee, any sick student is, on his physician's certificate, admitted to the Infirmary, or in the case of those contagious diseases which under present rules cannot be there cared for, to the Ithaca City Hospital, if receivable under its rules, and is given without further charge a bed in a ward, board, and ordinary nursing for a period not exceeding two weeks in any one academic year. Extra charges are made for private rooms, special foods and special nurses. The Infirmary charge for a bed in a ward, board, and ordinary nursing in excess of the two weeks is \$1.00 per day. If a sick student who has not received two weeks service in the year is refused admittance to either the Infirmary or the City Hospital by reason of lack of accommodation, he is entitled to a refund of the fee paid.

Scholarships for Winter-Course Students.—At its 31st annual meeting, held at Cortland, February 4, 1904, the New York State Grange resolved to appropriate funds annually, to be given to members of the Order in the form of scholarships in any of the Winter-Courses in Agriculture in Cornell University. The scholarships (now twelve in number) are each \$50 in cash, to be awarded to men and women who attain the highest standing on competitive examination. Awards are made each summer. Candidates should apply to the Master of the Pomona Grange in their home counties, or to the Deputy in counties that have no Pomona.

Mr. H. L. Beatty has offered for the year 1910-11, a similar scholarship of a value of \$75, "open to any farmer who resides in Bainbridge, N. Y., or to any boy over 16 who shall have attended the Bainbridge High School for one full term".

Admission

The Winter-Courses are business and occupational courses, not academic; hence, there are no examinations for admission. However, in order that the student may be able to make the best use of the instruction, it is necessary that he should have a good common school education. Winter-Course students are sometimes seriously handicapped in their work by being deficient in arithmetic and English. Those who are planning to take a Winter-Course are advised to review these subjects before coming to Ithaca. Anyone who has graduated from the common schools of the State, or who has an eighth grade certificate, should be able to do the Winter-Course work satisfactorily. When making application, candidates for admission should give a description of their school training and, if possible, should send a certificate or statement from the teacher of the school last attended.

All the courses are open to both men and women of at least seventeen years of age. Not a few women have taken the work with results satisfactory to themselves and to their instructors. The average age of the students in the course in General Agriculture has been about twenty-one years. The dairy students have on the average been somewhat older. There is no limit to the age above seventeen; some of the best Winter-Course students have been mature men, owners of farms or managers of dairy concerns and of poultry plants.

This circular contains application blanks for admission to the Winter-Courses. These should be filled out and forwarded at once by any person that is planning, as yet even indefinitely, to attend any one of the Winter-Courses. The filing of an application for admission does not constitute an obligation to attend any one of the courses, and applications may be withdrawn at any time.

On account of the limited accommodations in the Dairy Course and in the Poultry Course, all candidates for admission must, on the acceptance of their applications, deposit an advance fee of five dollars. This deposit is returnable on request at any time before November 1st. In these courses, applicants for admission who are residents of New York State are given precedence.

Applicants for admission to the Winter-Courses should, by way of preparation, read carefully some of the best books, bulletins, etc., on the subject to which their attention will be chiefly directed

while at Cornell. The Supervisors of the Reading-Courses will, on request, suggest appropriate books for such reading.

Arrival at Ithaca.—Students that desire to secure rooming and boarding places are invited to come directly to the College of Agriculture on their arrival in Ithaca. Instructors will be on duty at the headquarters of the several Winter-Courses to assist all applicants in finding comfortable accommodations. It is desirable that all such arrangements should be completed before registration day.

Registration.—On Tuesday, November 29, beginning at 8:00 A.M., all students must report for registration at the office of the Secretary to the College of Agriculture, Main building, Room 122. After registering here and receiving study cards, the students will go at once to the headquarters of their particular Winter-Courses, as follows: General Agriculture Course, Main building, Room 193 (first floor); Dairy-Course, Dairy building, Room 102 (first floor); Poultry-Course, Dairy building, Room 119 (first floor); Horticulture-Course, Main building, Room 202 (second floor); Home Economics Course, Main building, Room 402 (fourth floor).

After the student has filled out and returned his study card showing the subjects he wishes to register for, he may not change his registration in any respect except on the recommendation of the head of the Winter-Course concerned and with the approval of the Secretary.

Women who desire to pursue the Winter-Course in Home Economics should correspond with Miss Martha Van Rensselaer, Ithaca, N. Y., in regard to rooms and accommodations.

Methods of Instruction

Instruction in the Winter-Courses is given by lectures, by such practical work in the various agricultural operations as can be conducted at this time of the year (laboratory practice), and sometimes by trips or excursions to points of special interest.

The lectures are given in large part by the regular professors and instructors in the College of Agriculture. These lectures are plain and practical, in the style of farmers' institute talks. As far as possible, collected material is used to illustrate the subjects. When this is impossible, lantern-slide views are often used. A free discussion by the students of the subject under consideration is

encouraged. Further opportunity for these general discussions is afforded in the meetings of the Winter-Course clubs.

Other lectures are given to the students by successful practical men, in large part from New York State, who are directly engaged in agriculture as a business. They present to the students the results of their experience and observation.

There may also be special lectures by various members of the University Faculty, not members of the Faculty of Agriculture. The Winter-Course students are welcomed at the various addresses given by eminent men before the University in general.

Practical work is made a special feature in the Winter-Courses. The student is expected to perform all the various operations as carefully as if he were working at home on a farm-practice basis. In the Dairy and Poultry Courses, the instruction is largely practical, and the students have an opportunity of becoming familiar with all of the essential operations in these enterprises. In the General Agriculture and Horticulture Courses, there is necessarily a smaller amount of practical work; advantage is however taken of the greenhouses, barns, and laboratories to demonstrate to the students some of the operations which would normally be conducted in the summer season. Whenever possible, the aim is to make the practical work take up as large a part of the student's time as the lectures.

Excursions to nearby points of special interest have been made a feature of the Poultry-Course. They are also conducted in other courses whenever practicable.

By "hour" in the following schedules is meant one lecture of one hour each week for twelve weeks, or one period (of two hours and one-half) of laboratory or practice a week for twelve weeks.

Certificates

Certificates are granted to those who, in any one of the Winter Courses, complete fifteen hours, including all the required work, and who subsequently complete one year of satisfactory practical work on a farm or in a creamery, poultry establishment, or other agricultural enterprise.

The City and the University

Ithaca is situated in Tompkins county at the head of Cayuga Lake. It is a city of about fifteen thousand inhabitants. It is reached by the Lehigh Valley and the Delaware, Lackawanna and Western Railroads, also by steamer on the Lake in the summer. The University stands on a plateau about four hundred feet above the Lake. The officers of instruction and administration of Cornell University number 675. The campus and grounds covers 1095 acres.

The main buildings of the University are over thirty in number, providing quarters for the several colleges of the University. These are Arts and Sciences, Law, Medicine, Agriculture, Veterinary, Medicine, Architecture, Civil Engineering, and Mechanical Engineering.

The New York State College of Agriculture at Cornell University is now occupying the new buildings erected by the State. These buildings are large and well equipped, and afford an attractive and comfortable home for the College.

Social and Religious Advantages

Each year the students in the several Winter-Courses have formed clubs, in each course. These societies meet once a week and debate subjects of special interest, discuss various problems, sing college songs, and indulge in other forms of social entertainment. Every Winter-Course student is urged to attend these meetings.

The Winter-Course students are welcomed at the meetings of the Agricultural Association, the Horticulturists' Lazy-Club, the Poultry Association, the Round-Up Club, and the other organizations of students in the College. The meetings of these societies are devoted to discussions of live agricultural subjects and to the promotion of a fraternal feeling among the students. On the first Thursday evening of each month the Director of the College meets the agricultural faculty and students in the "Agricultural Assembly". At this meeting the Director gives a talk on matters of especial importance to those interested in agriculture and country life, or a reading, which is followed by singing and social intercourse.

Each winter the students in the various Winter-Courses compete for the Morrison Winter-Course Trophy Cup. Last year the contest

was a series of debates, as a result of which the cup was awarded for one year to the Winter-Course in Poultry Husbandry.

The Farmers' Week will be held this year in the week of Washington's birthday, Feb. 20th to 25th, inclusive. At this convention, discussions are held from the college man's point of view on all the leading agricultural topics. All farmers of the State are invited to attend.

The Agricultural Experimenters' League meets at the University at the time of Farmers' Week. It is designed to develop the investigational spirit among New York farmers and to promote a closer friendship among the farmers of the state. All students in the Winter-Courses are eligible to membership in this League, and should attend the meeting. During this week, also, there is held the annual meeting of the Students' Association of the New York State College of Agriculture, an organization of present and former students for social purposes and to promote the interests of the College and of country life affairs at large. Winter-Course students have equal privileges with others in this Association.

Religious services, provided for by the Dean Sage Preachership Endowment, are conducted in Sage Chapel throughout the college year by eminent clergymen selected from the various religious denominations. These services are supplemented by the Cornell University Christian Association, a voluntary organization of students and professors formed for their own religious culture and the promotion of Christian living in the University. The Christian Association has its home in Barnes Hall; it has a permanent secretary and a carefully selected biblical library, also comfortable reading and recreation rooms. Bible study courses are carried on throughout the year, and special courses are provided for the students in the Winter-Courses.

There is in addition to the Men's Christian Association, a flourishing Young Women's Association, with quarters in Barnes Hall.

The students of the University are welcomed by the numerous churches in the city of Ithaca at all their services.

DESCRIPTION OF THE WINTER COURSES

I. GENERAL AGRICULTURE

A large proportion of the young men who come for a Winter-Course expect to engage in general farming or hope to secure positions as superintendents of farms where diversified agriculture is practiced. It is for these that the General Agricultural Course is especially designed. The other courses meet the needs of those who plan to specialize.

On the other hand, the General Agriculture Course can be taken with advantage also by those who plan to do special work in agriculture later. It thus gives an opportunity of laying a broad foundation of general knowledge as a basis for subsequent specialization. This course gives a general survey of agriculture in practically all its phases. It is strongly advised that those who desire to pursue one of the special Winter-Courses, should first take the General Agriculture Course and postpone to the following winter their special work.

Students register at 8:30 A. M., November 29, in Room 193, first floor of the Main building, after registering with the Secretary (page 9.)

Special Expenses

General fee.....	\$5.00
Work-suit, about	1.50
Those who elect Plant Diseases add	2.50
Those who elect Farm Dairying, add laboratory deposit (part of it returnable)	4.00
Those who elect Farm Mechanics add	2.00

For laboratory and other fees in the different courses, see the descriptions of those courses on the following pages.

Required Subjects

All students in the General Agriculture Course are required to take the following four subjects:

1. **Fertility of the Land.**—A study of soils from the chemical and the physical point of view, with discussions on fertilizers, manures, and the principles of plant growth. Lectures, two hours a week. Professor CAVANAUGH.

2. **Agronomy.**—A study of field crops and farm management. As much time as possible is devoted to soil management and the culture of special crops, as corn, potatoes, wheat, oats, pastures, and forage. Lectures and practice, four hours a week. Professor STONE and Mr. MINNS.

3. **Animal Husbandry.**—The student is required to take one of the following two courses, and may elect the other:

(a) **Breeds and Breeding.**—The principles of breeding farm animals; the history of breeds; the adaptation of different breeds for certain purposes; the care of farm animals. Three hours a week, two hours of lectures and one practice period. Professor WING and Assistant Professor HARPER.

(b) **Feeds and Feeding.**—The principles and practice of compounding rations and feeding farm animals. Three hours a week, two hours of lectures and one practice period. Professor WING and Assistant Professor SAVAGE.

4. **Horticulture.**—The principles of fruit-growing and vegetable-gardening; propagation of fruits, with practice in budding and grafting; orchard tillage and fertilizers, pruning, and spraying; harvesting, marketing, and storing of fruit; planning and planting the vegetable garden; fertilizers, tillage, and control of pests and diseases. Representative truck crops treated in detail. Lectures, three hours a week. Professor CRAIG.

A series of special lectures will be given by various members of the University Faculty, and by prominent men from elsewhere who are authorities on certain lines of agriculture and horticulture. Students in the General Agriculture Course are required to attend these lectures.

In the General Agriculture Course there are thus 12 hours a week of required work. Six hours of elective work may be chosen from the subjects described below. No student may take more than 18 hours of work, except by special permission of the Faculty, and 16 hours is as much as the average student can carry satisfactorily.

Elective Subjects

61. **Vegetable Culture.**—A study of the growing and marketing of vegetables for special and general market. Lectures and exercises, three hours a week. Mr. WORK.

6. **Rural Improvement.**—A course of six lectures, commencing after the Christmas Recess, dealing with questions of rural improvement and intended to give the farm boy a general view of rural art together with specific hints for working out some of his home problems. Assistant Professor FLEMING.

7. **Farm Mechanics.** A study of gasoline and steam engines, steam boilers, power transmission and shafting, pumps, and hydraulic rams. Laboratory fee \$2.00. The number of students will be limited. Three hours a week, two hours of lectures and one practice period. Assistant Professor H. W. RILEY.

8. Farm Dairying.—The care of milk, butter-making, and milk testing. Those who elect this course deposit an additional laboratory fee of \$4.00 to cover breakage and white suits. Part of this is returnable. One lecture a week and two afternoons of practice.

3a and 3b. Animal Husbandry.—The student who desires as much work as possible in Animal Husbandry may take both 3a and 3b in that subject, as described on page 14.

9. Farm Poultry.—A discussion of the domestic breeds of poultry; hatching and rearing; the principles of feeding and management; the building of poultry structures. Lectures and demonstrations, two hours a week in Poultry Laboratory. Professor RICE and Mr. KRUM.

10. Economic Entomology.—A study of insect pests of farm, orchard, and garden, and remedies for them. Lectures, one hour a week. Assistant Professor HERRICK.

11. Plant Diseases.—A study of a few of the common diseases of cultivated crops, caused by bacteria and fungi. Laboratory fee \$2.50. Three hours a week, one hour lecture and two hours laboratory practice. Professor WHETZEL and Mr. BARRUS.

12. Diseases of Dairy Cattle, and Veterinary Hygiene.—(For description of this course, see page 22.) Lectures. Dr. UDALL and others.

13. Farm Structures.—A discussion of the principles involved in the construction of farm barns, stables, silos, and other buildings. The practices of fencing, farm road-making, and the use of concrete on the farm will be studied. Open to all students in the Winter-Courses. Lectures, demonstrations, and practice in preparing working plans, two hours per week. Mr. MINNS.

3. Extension Work.—A study of the problems of university extension in agriculture. Practice in oral and written presentation of topics in agriculture, with criticism and individual appointments on the technique of public speech. Designed to acquaint students with parliamentary practice, to encourage interest in public affairs, and to train for effective self-expression in public. Open to all students in the Winter-Courses. Lectures and discussions, one hour a week. Professor TUCK.

For further information regarding instruction in General Agriculture, address

J. L. STONE,
Professor of Farm Practice

II. DAIRY INDUSTRY

This course is intended especially for persons who make a business of manufacturing butter or cheese or of handling milk for the market. Anyone wishing instruction in "Farm Dairying" should consult the description of that course in the announcement of the Winter-Course in General Agriculture, No. 8 above.

NEW YORK STATE COLLEGE OF AGRICULTURE AT CORNELL UNIVERSITY

I. WINTER-COURSE IN GENERAL AGRICULTURE

APPLICATION FOR ADMISSION

Name of applicant.....Date of Birth.....
P. O.....County.....State.....
Name and address of parent or guardian, or person to be notified in case of serious illness or accident.....
.....

PREVIOUS SCHOOL TRAINING

Name of school last attended.....No. of terms in attendance.....
AMOUNT OF WORK DONE IN THE COMMON BRANCHES

REFERENCES.*—*I am personally acquainted with the above applicant and believe.....to be of good moral character, industrious, studious, and physically and otherwise capable.*

Name.....Name.....
Position.....Position.....
Address.....Address.....

*References: Two are necessary and should be preferably by your teacher, pastor, or some public official. This blank must not be used for enrollment in the *Reading-Course*. A card for that purpose will be sent on application.

This application should be mailed to Professor J. L. Stone, Cornell University, Ithaca, New York

NEW YORK STATE COLLEGE OF AGRICULTURE AT CORNELL UNIVERSITY

II. WINTER-COURSE IN DAIRY INDUSTRY

APPLICATION FOR ADMISSION

Name of applicant.....Date of birth.....
P. O.....County.....State.....
Name and address of parent or guardian, or person to be notified in case of serious illness or accident.....
.....

PREVIOUS SCHOOL TRAINING

Name of school last attended.....No. of terms in attendance.....

AMOUNT OF WORK DONE IN THE COMMON BRANCHES

.....
Give experience, if any, in dairy work.....

REFERENCES: *—I am personally acquainted with the above applicant and believe.....to be of good moral character, industrious, studious, and physically and otherwise capable.

Name.....Name.....
Position.....Position.....
Address.....Address.....

*References: Two are necessary and should be preferably by your teacher, pastor, or some public official. This blank must not be used for enrollment in the *Reading-Course*. A card for that purpose will be sent on application.

This application should be mailed to Professor W. A. Stocking, Jr., Cornell University, Ithaca, New York

NEW YORK STATE COLLEGE OF AGRICULTURE AT CORNELL UNIVERSITY

III. WINTER-COURSE IN POULTRY HUSBANDRY

APPLICATION FOR ADMISSION

Name of applicant.....Date of Birth.....
P. O.....County.....State.....
Name and address of parent or guardian, or person to be notified in case of serious illness or accident.....
.....

PREVIOUS SCHOOL TRAINING

Name of school last attended.....No. of terms in attendance.....
AMOUNT OF WORK DONE IN THE COMMON BRANCHES
.....
.....

REFERENCES.*—I am personally acquainted with the above applicant and believe.....to be of good moral character, industrious, studious, and physically and otherwise capable.

Name.....Name.....
Position.....Position.....
Address.....Address.....

*References: Two are necessary and should be preferably by your teacher, pastor, or some public official. This blank must not be used for enrollment in the Reading-Course. A card for that purpose will be sent on application.

This application should be mailed to Professor James E. Rice, Cornell University, Ithaca, New York

NEW YORK STATE COLLEGE OF AGRICULTURE AT CORNELL UNIVERSITY

IV. WINTER-COURSE IN HORTICULTURE

APPLICATION FOR ADMISSION

Name of applicant.....Date of birth

P. O.....County.....State.....

Name and address of parent or guardian, or person to be notified in case of serious illness or accident.....

PREVIOUS SCHOOL TRAINING

Name of school last attended.....No. of terms in attendance.....

AMOUNT OF WORK DONE IN THE COMMON BRANCHES

REFERENCES: *—I am personally acquainted with the above applicant and believe.....to be of good moral character, industrious, studious, and physically and otherwise capable.

Name.....Name.....

Position.....Position.....

Address.....Address.....

*References: Two are necessary and should be preferably by your teacher, pastor, or some public official. This blank must not be used for enrollment in the *Reading-Course*. A card for that purpose will be sent on application.

This application should be mailed to Professor John Craig, Cornell University, Ithaca, New York

V. WINTER-COURSE IN HOME ECONOMICS

APPLICATION FOR ADMISSION

Name of applicant.....Date of Birth.....
P. O.....County.....State.....
Name and address of parent or guardian, or person to be notified in case of serious illness or accident.....
.....

PREVIOUS SCHOOL TRAINING

Name of school last attended.....No. of terms in attendance.....
AMOUNT OF WORK DONE IN THE COMMON BRANCHES

REFERENCES:—*I am personally acquainted with the above applicant and believe.....to be of good moral character, industrious, studious, and physically and otherwise capable.*

Name.....Name.....
Position.....Position.....
Address.....Address.....

*References: Two are necessary and should be preferably by your teacher, pastor, or some public official. This blank must not be used for enrollment in the *Reading-Course*. A card for that purpose will be sent on application.

This application should be mailed to Department of Home Economics, Cornell University, Ithaca, New York

Students will be received in this course between 8:30 A.M. and 12M., or 2 and 5 P. M., Tuesday, November 29th, in Room 102, first floor of the Dairy building. They should report at once after registering with the Secretary (page 9). At 5 P. M., there will be a meeting of students and teachers in the lecture-room of the Dairy building.

Instruction begins at 8 A. M., Wednesday, November 30th. Instruction ends Friday afternoon, February 24, 1911.

General fee (to pay partially for materials used)	\$15.00
Laboratory deposit (part of it returnable)	4.00
Books, about	5.00
Use of two white suits with caps and aprons	1.50
One suit blue overalls, about	1.00

Special Expenses

Five dollars of the general fee must be paid as soon as the application is accepted, see p. 8. Names of students will be entered in the order of these payments.

Books, note-books, and blue overall suits can be purchased at reasonable prices in Ithaca. The white suits for use in the creamery are furnished by the Department.

Methods of Instruction

Instruction is partly by lectures and recitations, but largely by actual practice in the different kinds of dairy work. The class assembles daily at 8 A. M., and the class-room work continues two hours. The students are then assigned by sections or squads to different kinds of practice for the remainder of the day. These assignments are so made that in the course of the term each student will have a due proportion of work in the different departments.

Lectures and Recitations

These are given in one-hour periods. Frequently they are replaced by examinations and often a part of the hour is occupied by informal discussions of previous lectures or topics previously assigned for study. The subjects of the required lecture courses and the approximate number of hours given to each are as follows:

20. Milk and Its Products.—This course is given from 8 to 9 A. M. daily from Monday to Friday each week. It includes a full description of the

secretion or formation of milk, its nature, composition, and methods of testing, its care and preservation, the manufacture of different dairy products, conditions affecting their quality, methods of marketing, the business side of dairying, the construction of dairy buildings, and the legal requirements applying to dairy products. Special attention is given to dairy bacteriology and dairy sanitation. The lectures are supplemented by references to dairy literature,—current periodicals, experiment station publications, and books. Lectures, five hours a week. Professor STOCKING, Assistant Professors — and ROSS, and Mr. GRIFFITH.

3b. Animal Husbandry—Feeds and Feeding.—This subject includes the principles and practice of compounding and feeding the most economical rations. Three hours a week, two hours of lectures and one hour of practice. Professor WING and Assistant Professor SAVAGE.

21. Dairy Mechanics.—The care of the boiler and engine, construction of separators, installation of shafts and pulleys, pipe-fitting, belt-lacing, soldering, etc. Lectures, one hour a week. Mr. H. L. AYRES.

22. Dairy Chemistry.—The elementary principles of chemistry are explained with a view to enable the student better to understand the composition of dairy products and the chemical changes connected with and influencing certain dairy operations. Lectures, three hours a week, the first three weeks of the term. Mr. TROY.

23. General Agriculture.—Under this heading are included several brief courses of lectures upon subjects intimately related to dairy industry, such as farm manures, commercial fertilizers, and the improvement of the land by judicious cropping. Lectures, three hours a week, the last nine weeks of the term. Professors STONE, CAVANAUGH, WARREN and others.

12. Diseases of Dairy Cattle, and Veterinary Hygiene.—This course will include a discussion of the most common diseases of dairy cattle, their prevention and remedies, stable ventilation, and general questions of animal hygiene. Lectures. Dr. UDALL, and special lectures by Dean MOORE and Dr. WILLIAMS.

Practice

All class-room work is supplemented by laboratory or practical exercises as follows:

30. Butter.—The creamery contains numerous styles of the apparatus found in a well-equipped commercial plant. The milk is received, weighed, sampled, and separated, and the entire processes of cream ripening and churning are carried through in the most approved manner. Special attention is given to pasteurization and the use of starters. Every step of the work is performed by students under the close supervision of the instructor. Mr. GRIFFITH and Mr. W. E. AYRES.

31. Cheese.—The cheese-room is equipped with all necessary apparatus for making cheddar cheese such as is used in large factories. All the work is performed by students and every step is carefully observed and reported by

them on blank forms provided for the purpose. Special attention is given to judging the quality of milk for cheese-making and the cheese when ready for market. Assistant Professor ——— and Mr. DUTTON.

32. Fancy Cheese.—A study of a few varieties of fancy cheese. Assistant Professor ———.

33. Market Milk.—The University operates a milk route and students are given practice in preparing and bottling milk and cream for retail trade. Quick and accurate methods for standardizing milk and cream are taught. Assistant Professor Ross.

34. Testing.—The testing laboratory is fitted with all appliances necessary for making the usual quick tests of milk and its products, including lactometers and a variety of Babcock testers. Each student is expected to become familiar with the Babcock method of determining fat, the calculation of total solids, and the more simple tests for preservatives and adulterations. Mr. TROY.

35. Dairy Mechanics.—The student is given opportunity to learn the construction of the boiler and engine, to care for them, to take separators entirely apart and to set them up again, to repair pipes, solder, lace belts, etc. Mr. H. L. AYRES.

36. Arithmetic and Bookkeeping.—A thorough drill is provided in simple problems, such as are constantly arising in all kinds of dairy work; and in the keeping of factory accounts. Assistant Professor Ross.

37. Dairy Bacteriology.—Elementary laboratory work will be given during the term. Professor STOCKING and Mr. COOK.

Certificate of Proficiency

Upon the successful completion of the Dairy-Course, a student may become an applicant for a Certificate of Proficiency under the following general terms and conditions:

"A person who has passed one full term in attendance upon the Dairy-Course and has satisfactorily passed all of the examinations required of him, may become a candidate for a Certificate of Proficiency in the kind of work in which he is engaged.

"Such a candidate must spend one full year, as manager or first man, in work at an approved creamery, cheese factory, market-milk plant, or farm dairy. He must report regularly, upon blanks furnished for the purpose, such information in regard to his work as may be required, and he must have his work in readiness for inspection at any time.

"On satisfactorily completing these requirements, a certificate will be granted. Under certain conditions a longer period than one year's work may be required."

Positions

The College does not agree to find positions for all students registered in this course, but it has opportunity to recommend students for a large number of positions. Thus far it has been difficult to supply all the places that the College has been asked to fill.

Previous experience in a well-conducted dairy is strongly advised for those who come to the College expecting to be recommended for positions. Many students who have taken the Dairy-Course have secured an increase in their salary during the following season sufficient to pay the entire cost of the course. Such results are not guaranteed, but they are not uncommon, and they prove that there are excellent opportunities in the field of dairy industry.

A SPECIAL ONE-WEEK COURSE FOR FACTORY AND CREAMERY MANAGERS

Beginning Wednesday, March 1, 1911, and closing Wednesday, March 8, 1911

This course is intended for managers of creameries and factories who cannot be absent from their business for any considerable time, but who wish to come back to the College to get the latest knowledge in their special line of work. All the regular branches of cheese-making and butter-making will be taught and special attention will be given to the use of the moisture and Babcock tests, creamery over-run, construction of factory and creamery buildings, drainage and water supply, commercial starters, relation of bacteria to dairy products, market milk, dairy inspection, judging dairy products, keeping factory accounts, etc.

Requirements for Admission, and Expenses

The only requirement for admission to this one-week course is that the applicant shall have had at least one year of experience as manager of a factory or creamery.

The only fee will be five dollars, payable at the time of registration. This covers the use of white suits, apparatus, and materials required in connection with the laboratory and practice work.

For cost of board and other expenses, see page 6.

For further information regarding instruction in Dairy Industry, address

W. A. STOCKING, JR.,
Professor of Dairy Industry

III. POULTRY HUSBANDRY

The Winter-Course in Poultry Husbandry is one of the means by which the College of Agriculture endeavors to meet the needs of the young farmers of the State. It is intended also to supply the large and growing demand for trained poultrymen to take charge of poultry plants owned by others. While it is manifestly impossible to give, in twelve weeks, full preparation for so exacting a business as poultry-keeping, this course will give the student a good start in the right direction, enable him to avoid many mistakes, give him facts and principles of value gleaned from the life-long experience, study, and observation of others, and fill him with enthusiasm for his life work and a determination to make the best use of his natural abilities and opportunities.

After registering with the Secretary (page 9), students should report at once at the office of the department in the Dairy building (Room 119, first floor) where they will receive their assignments at 8:30 A. M., and 2 P. M., Tuesday, November 29, 1910. A meeting of all Poultry-Course students and the staff of the Department will be held at 5 P. M., Tuesday, November 29. Instruction will begin at 8 A. M., Wednesday, November 30 and will end Friday night, February 24, 1911.

Special Expenses

Laboratory fee (partially to cover cost of materials used)	\$7.50
Laboratory deposit (part of it returnable)	2.50
Books (to be retained by the student)	5.00
Suit of work-clothes (to be purchased in Ithaca) ...	1.25

The estimated expenses, aside from above, are: Board, about \$50.00; room (two rooming together), about \$18.00; excursions, about \$10.00.

Required Subjects

37. General Poultry Lectures.—These lectures include discussions of subjects of special interest to poultrymen; opportunities in poultry husbandry; advantages and disadvantages of various kinds of poultry-keeping; laying out and estimating the cost of poultry plants; poultry farm management; history and characteristics of the breeds; feeding for egg production and for flesh; incubating; brooding; feeding chickens; caponizing; mating and breeding; planning and building poultry houses. Lectures, text-book,

and recitation, five hours a week. Poultry laboratory in Dairy building, 11 to 12. Professor RICE and Assistant Professor ROGERS.

37a. Special Non-Resident Lecturers.—From time to time special lectures are given to the Winter-Course students by experts from other colleges and experienced poultrymen who have made a marked success of some special line of poultry husbandry.

37b. Special Resident Lecturers.—The Poultry Department is fortunate in being able, through the courtesy of the New York State Veterinary College, to avail itself of the expert services of several eminent teachers. Their lectures, together with those of several other experts from other departments in the College of Agriculture, furnish a course of one lecture a week during the entire twelve weeks.

38. Afternoon Practice.—This course consists in planning and studying poultry buildings and colony houses; laying out poultry plants; making egg crates, shipping coops, and trap nests; selecting fowls for mating; killing, dressing, packing, and marketing poultry; caponizing; study of the egg; anatomy of poultry; study of poultry feeds; fitting fowls for exhibition. Professor RICE, Assistant Professor ROGERS and Mr. HURD.

39. Feeding and Management Practice.—Each student is assigned a flock of 25 or 30 fowls, and performs all of the daily operations in caring for it, keeping accurate accounts of the cost of food, gain or loss in weight, temperature of houses, time required to do the work, and the profit or loss. Practice is also given in crate fattening. In addition to this, he takes his turn in doing all of the different kinds of work about the poultry plant, including the handling of gasoline engines, power bone-cutters, feed-mills, corn-sheller, etc. Practice, one and one-half hours each day, morning, noon, and afternoon, for six weeks. Mr. KRUM and Mr. HURD.

40. Incubator and Brooder Practice.—The student operates an incubator and gives a complete record of his work and of the results secured. At the conclusion of each hatch, the results of the hatch from each of the incubators are tabulated so that the various machines can be compared, and the fertility, hatching power of the eggs, and the vigor of the chicks from the different pens can be observed.

The season of the year makes it impracticable to give systematic practice in brooding chickens. Whenever the student cannot be assigned a brooder with chickens, demonstration work is given. The brooder work includes the operation of the New York State gasoline-heated colony house, where 200 to 300 chickens are kept in one flock; also a pipe-system brooder-house and several types of outdoor brooders.

Practice, one and one-half hours each day, morning, noon, and afternoon. Mr. FINCH and Mr. ———.

42. Systematic Reading.—This is intended to supplement the lectures. One forenoon each week is set apart in which the students can devote themselves to special reading along the lines in which they are interested. Miss NIXON.

43.—Drawing.—Two hours each week are spent in drawing plans of poultry houses, incubators, and brooders. Assistant Professor ROGERS and Mr. BENJAMIN.

Excursions.—One or more excursions will be taken to near-by poultry farms and to a large poultry show where student contests will probably be held. These excursions are not required but every student is urged to take them.

Observations.—The students have the added advantage, while taking the Poultry-Course, of observing the results of the large number of investigations with poultry which are being conducted at the University poultry plant. These include a comparison of types of houses, methods of feeding, breeding, trap-nesting, incubating, brooding, etc.

Examinations

Examinations, both written and oral, are held frequently during the term. Drawings of poultry buildings, incubators, trap nests, etc., are made. Several themes are written on poultry topics. Written reports of observations made during excursions and of the daily practice work are required of each student. On these and the student's general conduct, his sincerity, accuracy, honesty, promptness, and ability to work, is based his final standing.

Prizes

Through the kindness of former students in poultry husbandry and friends of the College, a long list of prizes is provided each year for students in this course. They are awarded for excellence in some phase of the work, as for best judging, scoring, picking, fitting, drawing poultry houses and farm plans, class record, and the like. These prizes have created valuable friendly competition among the students.

Certificate of Proficiency

Upon the completion of the required course, 15 hours, a student in poultry husbandry may become an applicant for a certificate signed by the Director of the College and the Professor of Poultry Husbandry, under the following terms and conditions:

"A person who has completed one full term in attendance on the Poultry-Course, and has satisfactorily passed all of the examinations required of him, may become a candidate for a certificate in Poultry Husbandry.

"Such a candidate must spend one full year in successful work at an approved poultry plant. He must report regularly, upon blanks furnished for the purpose, such information in regard to his work as may be required, and he must hold his plant in readiness for inspection at any time.

"Upon satisfactorily completing these requirements, a certificate will be granted. Under certain conditions a longer period than one year of practical work may be required."

Positions

While the College of Agriculture does not guarantee to secure positions for students who complete the Poultry-Course, every effort is made to help capable and worthy students to secure places of responsibility best suited to their respective qualifications. Usually the demand for young men who have completed the Poultry-Course has been greater than the supply. This is particularly true of the better positions, in which managers or superintendents are wanted to take charge of poultry farms. The salaries obtained by students, after completing the course, range from \$25 to \$75 per month with board and room, the average being about \$40. Students who have not previously had considerable farm or poultry experience cannot, as a rule, be recommended to positions of responsibility until they have spent a season on an approved poultry farm.

For further information regarding the Poultry-Course, address

JAMES E. RICE,

Professor of Poultry Husbandry

IV. HORTICULTURE

Each year since the establishment of the Winter-Courses, the demand for special instruction in fruit-growing and gardening has increased. The opportunities for profitable fruit and vegetable-growing on the comparatively cheap lands of the East and within easy reach of the great markets, are attracting capital and energy. It is in response to this general demand and these opportune conditions that a Winter-Course in Horticulture is offered. The various studies included in this course are intended to help the fruit-grower and gardener to manage his orchards and gardens better than in the past; to fit those who have had some experience for positions of responsibility; to give the beginner the salient principles and

acquaint him as far as possible with the best practices of commercial and amateur fruit-growers and gardeners the country over.

Equipment

Practically the same facilities are available to the Winter-Course student as to the student in the regular course. The well selected library, and the equipment of the forcing-houses, including plants, work-rooms, spray pumps, and implements, are used in conducting the work of instruction.

The course is made up of lectures, recitations, and practice. Special stress is laid on the practice.

Registration

All students register in Room 202, second floor of Main building, at 8:30 A. M., November 29, 1910. They should report at once after registering with the Secretary (page 9).

Special Expenses

General laboratory fee	\$7.50
Books, about	5.00
Work-suit	1.50

Required Subjects

All students in this course, except those who have previously completed satisfactorily the Winter-Course in General Agriculture, are required to take the subjects that follow. Those who have completed the Winter-Course in General Agriculture will not be required to take again subjects in which they have already passed. They should consult the professor in charge concerning substitutes for any of the subjects.

60. Commercial Fruit-Growing.—A survey of the principles and practices of fruit-growing with reference to orchard management, handling, packing, storing, transplanting, and marketing of orchard products. Seven hours. Five hours a week of lectures and two afternoons a week of practice. Professor WILSON and Mr. ANTHONY.

61. Vegetable Culture.—A study of the growing and marketing of vegetables for special and general market. Lectures and exercises, three hours a week. Mr. WORK.

62. Principles of Plant Culture.—This course is designed to give the student an elementary understanding of the structure and function of plants, with special reference to growth and reproduction. Two hours a week, one hour lecture and one hour laboratory. Professor CRAIG and Mr. FROST.

1. Fertility of the Land.—(For description of this course, see page 13). Lectures, two hours a week. Professor CAVANAUGH.

There are thus fourteen hours a week of required work in this course. Students may elect, with permission of the instructor concerned, four hours a week additional, by taking some of the following courses or choosing from those given on pages 14 and 15.

Elective Subjects

10. Economic Entomology.—For description of this course, see page 15. Lectures, one hour a week. Assistant Professor HERRICK.

11. Plant Diseases.—For description of this course, see page 15. Three hours a week, one hour lecture and two hours laboratory practice. Professor WHETZEL and Mr. BARRUS.

63. Horticultural Reading.—Assignment of topics for abstracts and reports in standard works, bulletins, and current periodicals. Two hours a week. Mr. BEAL.

64. Floriculture and Greenhouse Practice.—A study of the growing and marketing of greenhouse crops. Designed to familiarize the student with the ordinary greenhouse operations. Lectures and exercises three hours a week, two lectures and one laboratory period. Mr. BEAL and Mr. COSH.

6. Rural Improvement.—A course of six lectures, commencing after the Christmas recess, dealing with questions of rural improvement, such as will enable the farm boy to get a point of view in rural art in general, together with specific hints for working out some of his home problems. Assistant Professor FLEMING.

3. Extension Work. For description of this course, see p. 15. Lectures and discussions, one hour a week. Professor TUCK.

Prizes

Attention is called to the fruit-judging contest at Rochester under the auspices of the Western New York Horticultural Society. The following prizes were offered last year by the society: first prize, ten dollars (\$10); second prize, five dollars (\$5). (See Report Western New York Horticultural Society for 1910, page 202.)

Certificates

These are available to those who complete in a satisfactory manner, the required courses, as previously outlined, and who subse-

quently spend one full summer season in active work upon a fruit farm. A statement of the season's work, approved by the proprietor of the establishment, and satisfactory to the Professor of Horticulture, is required.

Positions

The Department of Horticulture does not agree to find positions for all students in the Winter-Course in Horticulture. The Department takes pleasure, however, in recommending men for positions of responsibility on the following conditions: (1) The student must be of good moral character; (2) his previous record must be good; (3) his work in the Winter-Course must be satisfactory; (4) his college courses must be supplemented by practical experience.

Those who desire additional information should apply to

JOHN CRAIG,
Professor of Horticulture.

V. HOME ECONOMICS

A Winter-Course in Home Economics has been established in the New York State College of Agriculture, the main object of which is to furnish scientific training in the subjects pertaining to the home.

Special attention will be given to household sanitation, the selection and preparation of foods, problems of nutrition, house construction and decoration, and household management. The instruction is of interest to both men and women in so far as both are concerned with the problems of the right maintenance of the home. The aim of the course is to increase efficiency in household administration, to give the breadth of view and interest which come with intelligent labor, to teach not only how to do the work, but also why it should be done. It is believed that with a scientific knowledge of housekeeping, no occupation affords a larger field for interesting effort.

For three years past, some of the students in the course have been women who found it possible to accompany another member of the family who had come to attend one of the other Winter-Courses. Some have combined with the Home Economics Course, instruction in another of the Winter-Courses.

In order to keep a proper social balance in a community, farm girls should be given social and educational opportunities equal to those given the boys. Their household problems are as scientific

as the outside problems of the farm. The farm home rises no higher than its women, hence one of the Winter-Courses offered at the College is intended to prepare women for their task in life. The equipment for instruction in this course is the same as that for the longer courses in Home Economics. A well-equipped laboratory is provided for practical instruction in foods. Library privileges are extended to the members of the class.

Persons over seventeen years of age are admitted to the Winter-Course in Home Economics. No entrance examinations are required.

Registration is at 10 A. M., November 29, in Room 402, fourth floor of the Main building. Students must first present themselves at the office of the Secretary for registration, (page 9).

Special Expenses

A food laboratory fee of \$5.00 is required to cover the cost of materials used. Those taking the Domestic Art course will be charged a fee of \$1.00, and \$1.50 additional for chart. From \$3 to \$5 should be allowed for the purchase of books and thermometer.

Required Subjects

1. **Foods.**—This course will include a study of food composition, food values, methods of selection, preparation and preservation of food materials, principles of nutrition, dietaries, care and feeding of children. Laboratory work will be given for application of the above principles and will include practice in preparation of food and in serving. Lectures, four hours a week, and two three-hour laboratory periods a week. Miss ROSE and Miss BAILEY.

2. **Household Sanitation.**—The lectures in this course include a discussion of the sanitary conditions of the house and site; conditions for health and care of sick; the relation of bacteriology to the household in cleaning, in the preservation of foods, in disease, in disinfection. Lectures, five hours a week. First half of term. Miss VAN RENSSELAER.

3. **Household Management.**—This course includes a study of the family income, cost of living, household accounts, problems of domestic service, methods of housekeeping, equipment, marketing. Lectures, five hours a week. Second half of term. Miss VAN RENSSELAER.

4. **House Planning and Decoration.**—An elementary course for the developing of economic house plans in accordance with architectural principles. Besides the work of drawing plans, the course includes discussions of the building site, building materials, elements of construction, laying out of the grounds, and criticisms of interior design. The lectures of this course will apply principles of color and design to questions of interior decoration and

furnishing. Students experiment with color combinations for decorative schemes, and with textile combinations for curtain-stuffs, wearing apparel, etc. Lectures, three hours per week. Mrs. YOUNG.

5. Sewing and Drafting.—This course includes several laboratory classes each week with instruction in sewing, cutting, and fitting garments.

Elective Subjects

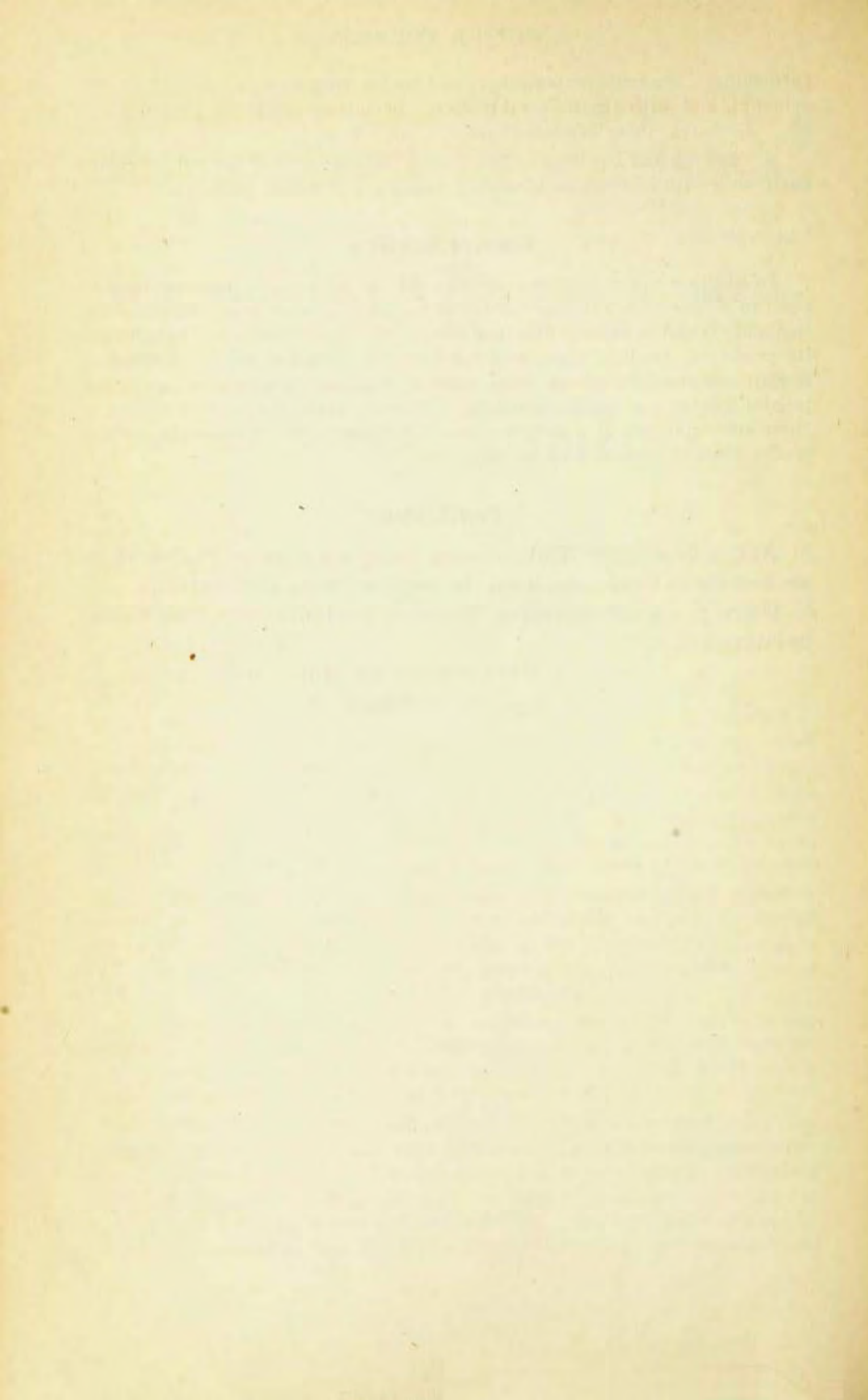
In addition to the courses outlined in Home Economics, opportunities are open to women to receive instruction in dairying, poultry husbandry, gardening, and extension work. Practical instruction may thus be had in milk and its products; feeding, care, and marketing of eggs and fowls; diseases of fowls; commercial fruit-growing, vegetable-culture, floriculture, and ornamental gardening; public speaking. Women enter the regular classes in these subjects; but if a sufficient number desire work in home dairying, a special class or section may be organized.

Certificates

At the close of the Winter-Course, certificates are granted to those students who have completed the required work satisfactorily.

Correspondence regarding the course in Home Economics should be addressed to

DEPARTMENT OF HOME ECONOMICS,
Ithaca, N. Y.



OTHER WORK OF THE COLLEGE OF AGRICULTURE

In addition to offering the Winter-Courses, the New York State College of Agriculture at Cornell University is endeavoring to serve the agricultural interests of the State by the following and by other means:

The Four-Year Course in Agriculture.—This course is of equal academic rank with other courses in the University. It offers a thorough theoretical and practical training in agricultural and country-life subjects. The equivalent of a high school training is necessary for admission. A program will be sent on application to the Secretary, College of Agriculture.

Rural Art Course, comprising the junior and senior years in the four-year course, providing instruction in landscape gardening and related subjects.

Home Economics Course, for women, comprising the last two years of the four-year course.

Special Work in Agriculture.—Special students take whatever studies will be most valuable to them in the various departments, as far as they are qualified to pursue them. This opportunity to pursue special work is provided especially for those who wish to fit themselves for practical farming but cannot take a four-year course. About two years can be spent profitably in such work. In the admission of special students, each case is judged on its own merits. Persons desiring to enter as specials must be at least 18 years of age, and must submit a full statement of school and other experience, together with references. No non-resident of New York State under the age of twenty-three, is admitted as a special student unless he can meet in full the requirements for entrance to the regular course.

Nature-Study Special Course.—A two years' course for those who desire to prepare themselves to teach elementary agriculture and nature-study. Open to teachers or to students in the University who are preparing to teach.

Farmers' Reading-Course.—For those who are unable to leave their work but desire to learn. Practical bulletins on agricultural subjects are sent to the reader and correspondence is encouraged. Free to persons residing in New York. Address, Farmers' Reading-Course, College of Agriculture.

Farmers' Wives' Reading-Course.—Similar to the above, but the bulletins discuss household economy, cooking, home furnishing, etc. Address, Farmers' Wives' Reading-Course, College of Agriculture.

Nature-Study Agriculture.—Extension work for teachers and pupils, particularly in the rural schools. Two publications are issued in the interest of this work: Home Nature-Study Course, quarterly, Cornell Rural School Leaflet, monthly, for pupils, with a Supplement for teachers. Address, Bureau of Nature-Study, College of Agriculture.

The Agricultural Experiment Station issues bulletins on agricultural subjects which are sent free to residents of New York. Back numbers of some issues are available. Address, Superintendent of Mailing Rooms, College of Agriculture.

Co-operative Experiments in Agriculture.—The college co-operates with farmers in making demonstrations on their land that will be of direct practical value to them.

Correspondence and co-operation are solicited on any of these various enterprises. For information, address

L. H. BAILEY,
Director of the College of Agriculture,
Ithaca, N. Y.

OFFICIAL PUBLICATIONS OF CORNELL UNIVERSITY

Issued at Ithaca, N. Y., monthly from July to November inclusive, and semi-monthly from December to June inclusive.

(Application for entry as second class matter at the post office at Ithaca, N. Y., pending.)

These publications include the annual Register, for which a charge of twenty-five cents a copy is made, and the following publications, any one of which will be sent gratis and post-free on request:

General Circular of Information for prospective students,
Announcement of the College of Arts and Sciences,
Courses of Instruction in the College of Arts and Sciences,
Announcement of Sibley College of Mechanical Engineering and the Mechanic Arts,
Announcement of the College of Civil Engineering,
Announcement of the College of Law,
Announcement of the College of Architecture,
Announcement of the Medical College,
Announcement of the New York State College of Agriculture,
Announcement of the Winter Courses in the College of Agriculture,
Announcement of the New York State Veterinary College,
Announcement of the Graduate School,
Announcement of the Summer Session,
The President's Annual Report,
Pamphlet on prizes, samples of entrance and scholarship examination papers, special departmental announcements, etc.

Correspondence concerning the publications of the University should be addressed to
The Registrar of Cornell University,
Ithaca, N. Y.