1908

Annual Report 1908, Part III

University of Rhode Island

EXPERIMENT STATION. LIPPITT HALL. DAVIS HALL.

TWENTIETH ANNUAL REPORT

OF THE

Corporation, Board of Managers

OF THE

Rhode Island College of Agriculture and Mechanic Arts,

MADE TO THE

General Assembly at its January Session, 1908.

PART III—CATALOGUE.

Part I—General Report—is printed under separate cover.

Part II—Experiment Station Report—is printed under separate cover.

Providence, R. I.
E. L. Freeman Company, State Printers.
1908.

Rhode Island College of Agriculture and Mechanic Arts.

Corporation.

HON. ROBERT S. BURLINGAME.....NEWPORT COUNTY.
HON. C. H. COGGESHALL.....BRISTOL COUNTY.
HON. CHARLES DEAN KIMBALL.....PROVIDENCE COUNTY.
HON. THOMAS G. MATHEWSON.....KENT COUNTY.
HON. J. V. B. WATSON.....WASHINGTON COUNTY.

Officers of the Corporation.

HON. CHAS. DEAN KIMBALL, President.....P. O., PROVIDENCE, R. I.
HON. C. H. COGGESHALL, Clerk.....P. O., BRISTOL, R. I.
HON. C. H. COGGESHALL, Treasurer.....P. O., BRISTOL, R. I.

Report.

To His Excellency James H. Higgins, Governor, and the Honorable General Assembly of the State of Rhode Island and Providence Plantations, at its January Session, 1908:

I have the honor to submit herewith Part Three of the Twentieth Annual Report of the Board of Managers of the Rhode Island College of Agriculture and Mechanic Arts, as required by law.

CHARLES DEAN KIMBALL,

President of the Board of Managers of the Rhode Island College of Agriculture and Mechanic Arts.

Faculty and Other Officers.

HOWARD EDWARDS, A. M., LL. D.,

PRESIDENT,

Professor of Political Economy and Social Science.

HOMER JAY WHEELER, PH. D.,

Professor of Geology and Agricultural Chemistry.

E. JOSEPHINE WATSON, A. M.,

Professor of Languages.

WILLIAM ELISHA DRAKE, B. S.,*

Professor of Mechanical Engineering.

HARRIET LATHROP MERROW, A. M.,

Professor of Botany and Secretary of the Faculty.

VIRGIL LOUIS LEIGHTON, PH. D.,

Professor of Chemistry.

JOHN BARLOW, A. M.,

Professor of Zoölogy.

GILBERT TOLMAN, A. M.,

Professor of Physics and Electrical Engineering.

MARSHALL HENRY TYLER, B. S.,

Professor of Mathematics.

GEORGE EDWARD ADAMS, B. S.,

Professor of Agriculture.

* Resigned. Resignation to take effect September 1.

SAMUEL HARVEY WEBSTER, B. S.,

Professor of Civil Engineering.

WARREN BROWN MADISON, B. S.,

Professor of Animal Husbandry.

HELEN LOUISE JOHNSON, B. S.,

Professor of Home Economics.

ANDREW EDWARD STENE, M. S.,

Superintendent of College Extension.

THOMAS CARROLL RODMAN,

Instructor in Woodwork.

MABEL DEWITT ELDRED, B. S.,

Instructor in Drawing.

HOWLAND BURDICK, B. S.,

Instructor in Dairying.

LILLIAN MABELLE GEORGE, A. B.,

Librarian.

WALTER SHELDON RODMAN, M. S.,

Instructor in Physics and Electrical Engineering.

LILLIAN EDNA TOLMAN,

Instructor in Stenography and Typewriting.

THOMAS ALFRED CHITTENDEN, B. S.,

Instructor in Ironwork.

JOSEPHINE OSBORNE BOSTWICK, A. B.

Instructor in Languages and History.

MAURICE HOWE COOK, PH. B.,

Instructor in Military Science and Tactics.

WILLIAM SAWYER SPENCER, B. D.,

Instructor in English.

HAROLD FREDERICK HUNTLEY, B. S.,

Instructor in Chemistry.

DANIEL JOSEPH LAMBERT,

Instructor in Poultry Keeping.

ERNEST K. THOMAS,

Instructor in Horticulture.

EMILE ARTHUR MALLETTE,

Florist.

LUCY COMINS TUCKER,

Head Clerk and Secretary to the President.

JENNIE ELIZABETH FRANCIS,

Bookkeeper.

Lecturers.

Poultry Course, 1908.

A. F. Hunter, Abington, Mass., Egg Production and Market Poultry. Four lectures.

E. C. Tefft, Wakefield, R. I., Poultry Houses and Poultry Plants. Two lectures.

H. D. Smith, Rockland, Mass., The Production of Broilers and Soft Roasters. Demonstration of Caponizing. Three lectures.

F. W. C. Almy, Tiverton Four Corners, R. I., The Colony System of Poultry Keeping. Two lectures.

Thomas Wright, Scarboro Beach, Me., Squab Raising. Four lectures.

C. S. Greene, New Brighton, N. Y., Poultry Keeping with Large Flocks. Advertising. Two lectures.

J. Alonzo Jocoy, Wakefield, R. I., Broilers and Egg Production. Two lectures.

J. H. Robinson, Boston, Mass., Poultry Breeding. One lecture.

J. E. Rice, Ithaca, N. Y., Poultry Education. One lecture.

C. K. Graham, Storrs, Conn., Causes of Failures in the Poultry Business. Two lectures.

V. L. Leighton, Kingston, R. I., Poultry Keeping. One lecture.

W. H. Card, Manchester, Conn., Standard Poultry, Judging, Scoring. Eight lectures.

THE EXPERIMENT STATION.

Experiment-Station Council.

HOWARD EDWARDS, M. A., LL. D.	President of the College. *Ex-officio* Member.
H. J. WHEELER, Ph. D	Director; Agronomy.
BURT L. HARTWELL,* Ph. D	Chemistry.
LEON J. COLE,† Ph. D	Animal Breeding and Pathology.
GEORGE E. ADAMS, B. Sc	Horticulture; Associate, Agronomy.
W. F. KIRKPATRICK,‡ B. Agr., B. E	Asst. Animal Breeding and Pathology.
W. F. SCHOPPE, B. Sc	Assistant, Animal Feeding.
P. H. WESSELS, B. Sc	Assistant, Chemistry.
F. R. PEMBER, B. Sc	Assistant, Plant Physiology.
S. C. DAMON, B. Sc	Assistant, Agronomy.

Other Members of the Station Staff.

J. FRANK MORGAN, M. A	Assistant, Chemistry.
L. F. WHIPPLE	Assistant, Chemistry.
WILHELM B. QUANTZ, Ph. D	Assistant, Chemistry.
E. A. MALLETTE	Assistant, Floriculture.
NATHANIEL HELME	Meteorology.
GRACE E. HOVEY, B. Sc	Stenographer and Accountant.
E. ELIZABETH MEEARS	Stenographer and Librarian.

The publications of the station will be mailed free, upon request, to all residents of Rhode Island to whom they are of interest. Suggestions as to how the station can aid the state are gladly received. Visitors are always welcome. Railway station, telegraph, express, and post-office—Kingston, Rhode Island. Long distance telephone, Narragansett Pier Exchange.

* In charge of experiments in Plant Physiology.

† Expert in the Bureau of Animal Industry, U. S. Department of Agriculture. Engaged in co-operative work between the bureau and station.

‡ Agent, Bureau of Animal Industry, U. S. Department of Agriculture. Engaged in co-operative work between the bureau and the station.

CALENDAR.

1908.

JAN.	S	M	T	W	T	F	S
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College Calendar.

Friday, June 19, 1908 ..... Entrance Examinations, 9 A. M.
Tuesday, September 8 ..... Chapel Exercises, 8:30 A. M.
Registration, examination of entering and conditioned students, 9 A. M.
Wednesday, September 9 ..... Recitations begin, 8:35 A. M.
Tuesday, November 3 ..... Election Day.
Wednesday, November 25, 12 M., } ..... Thanksgiving Recess.
Tuesday, December 1, 8:15 A. M., }
Wednesday, December 23, 4:15 P. M., } ..... Christmas Recess.
Tuesday, January 5, 1909, 8:15 A. M., }
Friday, January 29 ..... First Term closes.
Monday, February 1 ..... Entrance Examinations, 9 A. M.
Tuesday, February 2 ..... Second Term begins, 8:15 A. M.
Registration, 9 A. M. Recitations begin, 1:30 P. M.
Sunday, February 14 ..... Day of Prayer for Colleges.
Wednesday, April 7, 4:15 P. M., } ..... Spring Recess.
Wednesday, April 14, 8:15 A. M., }
Friday, May 14 ..... Arbor Day.
Sunday, June 13 ..... Baccalaureate Address.
Monday, June 14 ..... Class Day Exercises.
Tuesday, June 15 ..... Commencement Exercises.
Friday, June 18 ..... Entrance Examinations, 9 A. M.

Rhode Island College of Agriculture and Mechanic Arts.

Foundation.

The college is one of the so-called land-grant colleges. As such, its object is to "teach such branches of learning as are related to agriculture and the mechanic arts . . . in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." Further than this, it has a well-defined investigative purpose in its experiment station, organized as a department of the college and endowed by the general government.

The resources of the college are as follows:

(1) The interest on $50,000, which was the net amount received by the state from the sale of its scrip for 120,000 acres of land, granted by the general government in 1862. This fund came to the college in 1894.

(2) The annual appropriation of $15,000 from the general government, under what is known as the Hatch Act of 1887. This fund is exclusively for experimental purposes.

(3) The annual appropriation of $25,000 from the general government under the second Morrill Act of 1890. This fund is for teaching the subjects distinctly named and specified in the act, as follows: "to be applied only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural and economic science, with special reference to their applications in the industries of life, and to the facilities for such instruction."

(4) The funds coming from the general government to the state under the Adams Act of 1906, yielding $7,000 in 1906, and increasing each year by $2,000, until the whole shall amount, in 1910, to $15,000. This fund is exclusively for experimental purposes.

(5) The funds from the general government under the Nelson Amendment of 1907, amounting on July 1, 1907, to $5,000, and increasing yearly thereafter by $5,000 until the whole, in 1911, will

amount to $25,000. This amendment is simply an extension of the 1890 Morrill grant and carries the same restrictions.

(6) The annual maintenance fund from the state of $25,000, used for all the purposes for which the funds of the general government can not be used: *e. g.*, for extension work; for executive and administrative work; for heating, lighting and maintenance of buildings; for the teaching of modern languages other than English, of history and civics; for student labor, maintenance of grounds, roads, etc.

The college was founded in 1888 as an agricultural school. In 1892 it was incorporated as a college. The courses of study have been on a college basis since 1892; the requirements for a degree were raised in 1898; and the curriculum was again thoroughly revised during the years 1906–07 and 1907–08. The course in home economics for young women was introduced in 1908.

Object and Organization.

The function of the Rhode Island College of Agriculture and Mechanic Arts is to aid in fostering the industrial life of the state, at least in so far as pertains to agriculture, manufactures, transportation, and home-making. This it does in three ways: 1. By the investigation and discovery of new truth, more or less directly applicable in the industries. 2. By the direct distribution of industrial information to the people. 3. By the organization and administration of definite courses of instruction designed to fit young men and young women for effective work in the industrial pursuits.

The first of these duties is performed by the

Experiment Station

for a description of the work of which the reader is referred to the report of the director, constituting Part II of the Report of the Board of Managers for the current year. A statement of its staff organization may be found on page 9 of this catalogue.

The experiment station takes part, also, in the second phase of the college activities, by distributing its bulletins to all that desire and apply for them. In order, however, more fully and directly to bring the college and its work into touch with the people, a

College Extension Department

has been organized, and is in active operation.

The purpose of this department is to carry the instruction of the college to those who can not come to it for study. Whenever necessary and possible, visits will be made to any part of the state to examine farms, orchards, and gardens; to identify injurious insects or plant diseases, or give instruction in regard to methods of treatment; or to examine soils with a view to suggesting remedies for lack of fertility. General plans for laying out farms and for carrying out the details of any farm operations will be given the fullest consideration. The college is open for consultation at any time in regard to any problem of the farm, garden, or orchard. The fullest correspondence is invited, and conscientious consideration will be given to every letter received.

Whenever possible, arrangements will be made for lectures or demonstrations by members of the college faculty or experiment-station staff when called for at any agricultural meeting or neighborhood gathering. Coöperative experiments will be arranged to help the farmer solve the problems which are peculiar to his own farm or his portion of the state, and for the purpose of teaching some of the principles which have been worked out at the experiment stations of this and other states. As part of the work for the present season, such experiments will be outlined along the following lines: 1. Remedies for the San José scale and other injurious insects and plant diseases. 2. Treatment of greenhouse insects with hydrocyanic-acid gas.

From time to time, as funds will permit, special lecturers will be engaged to address granges, horticultural societies, and other organizations interested in agriculture, on various timely topics. Such lectures will generally be given free of charge. Members of the faculty have prepared lectures on various subjects which they are ready to deliver at any place in the state. These lectures are free, the only charge being the traveling expenses of the speaker.

An important part of this extension work is to be the encouragement of home study and the conducting of correspondence courses. For the present, time and funds will not permit the carrying out of this plan, but advice will be given to any person wishing to take up home study regarding courses of reading, books, and other literature which may be necessary in connection with such work.

Another important phase of nature study, which aims to interest the young people of the schools in things of nature and of the farm, is

The Nature Guard.

The Nature Guard is an organization of young people formed for the purpose of awakening in its members a livelier interest in the things of outdoor life. Its object is to stimulate the power of observation and to lay the foundation for a simple, rational education, which shall give the individual a love for nature and a sympathy with his environment, and furnish him with the means of making life more useful and more enjoyable, whether lived in the country or in the city.

The boys and girls in one school, or in one room, if the school is graded, form themselves into a band and elect officers, which are a spy and a guardian. This band fixes its own time for meeting and adopts its own methods of procedure. Enrollment cards to be signed and returned are furnished from the college. A charter will be sent to each band upon completing enrollment. Each member who sends in an enrollment card will receive an appropriate lapel button indicating that he belongs to the Nature Guard. At the end of the year, a neat certificate will be forwarded to all who have sent in reports during the year.

A printed leaflet is issued monthly during the school year, and a copy is sent to each member of the Nature Guard, and also, on request, to individuals who are interested. The purpose of the leaflet is to furnish a stimulus to nature study by making each month some suggestions bearing on the subject. Monthly reports, giving observations of their own, are requested from the members. Supplemental leaflets for teachers will be issued from time to time, the object of which will be to call attention to the latest views and methods in nature study.

In connection with nature-study work, advice and assistance will be given to schools, to children's organizations, and to individual boys and girls who wish to carry on work with children's gardens. Where a number of gardens are placed together, as in schools or in boys' clubs, the college will send an instructor to teach methods of preparing the ground, planting, cultivating, and harvesting garden crops. Individuals will be given advice by circulars and by correspondence. Application has been made to the Washington County Agricultural Society to grant premiums to children for seed and plant collections, and for exhibits of a few vegetables which can be easily grown, either in school or home gardens.

Further notes in regard to this work are given in leaflets and circulars issued by the Extension Department, and correspondence is solicited from any one who may be interested.

The College as an Educational Agency.

In its third form of activity, the purpose and work of the Rhode Island College of Agriculture and Mechanic Arts is to give college training and culture to young men and young women, not in spite of, but through and with vocational studies. Its courses are intended, first of all, to make the student a self-supporting unit in society, a positive force for social advancement, able and willing not only to maintain himself, but also to carry something of the common social burdens that always weigh upon the thoroughly efficient worker.

I. The Four-Year Courses.

To this end certain college courses, intended to fit men and women for efficiency and leadership in well-defined life-activities, have been prepared. These courses are all founded upon training in mathematics, pure and applied; the English language as a means of intercommunication; and the sciences that deal with matter, force, and life as applied more directly to agriculture, the mechanic arts, and home economics. In the pursuit of these vocational studies, the effort is to accumulate an array of knowledge that, in the activities of industrial life, must be always practically serviceable, and, at the same time, to gain a disciplinary training both of brain and of muscle and nerve that makes for practical effectiveness. These courses, moreover, recognizing that a college course should include not only intellectual training and the knowledge and skill requisite for bread-winning, but also preparation for citizenship, for moral and social life, have intertwined with the vocational work and study previously mentioned, the subjects that most directly make for culture and morality—history, economics, literature, languages, ethics, psychology, and sociology. These are ranked as of equal importance with the bread-winning studies.

The college courses just discussed are four years in length, and base themselves directly on the work of the four years of the high schools. They thus become an integral part of the school system of the state. Young men and young women, citizens of the state and having

requisite high-school training, are admitted to these courses without charge for tuition.

The four-year courses thus offered are the agricultural course, the engineering course, the teachers' course in applied science, and the course in home economics.

THE AGRICULTURAL COURSE.

The agricultural course is intended to give thorough preparation for taking charge of and operating a piece of landed property. Its work is centered around instruction and practice in horticulture, general farming, and animal husbandry (more especially as applied to dairying and the poultry industry). The course consists of practical work combined with thorough study of the sciences bearing directly on such work, viz.: botany, chemistry, geology, zoölogy, anatomy, physics, and entomology. In addition, it embraces the culture and mental discipline arising from the study of mathematics, English composition and rhetoric, history, drawing, modern languages, economics, and English literature. The course is planned to give the student a full and rounded development as worker, as citizen, and as man.

All agricultural students will follow the same work in the first two years; but, at the beginning of the Junior year, with the required work for all students in the course, four optional lines of work are offered, one of which must be selected by the student and followed until graduation. The four lines offered are general farming, horticulture, general animal husbandry, and poultry work. In addition, two science subjects must be elected. No option and no subject will be given for which a number of students sufficient to warrant giving it has not applied. For tabulated course, see pages 34–37.

THE ENGINEERING COURSE.

The engineering course has the same requirements for entrance, the same duration, and the same general plan as the agricultural course. Students will follow the course as laid down until the beginning of the Junior year, at which time, as with the agricultural course, students must elect one of the four optional lines offered, viz., mechanical, electrical, civil, and chemical engineering. Any line of

work for which the number of applicants is insufficient to warrant giving it, the college reserves the right to withdraw.

The course is arranged to prepare young men for skilled and efficient work in the great manufacturing and commercial industries of the state; in the development of electricity as a motive force and in its thousand-fold other applications to the arts and to the life of society; in the activities of the new road-building era upon which we are entering; and in the applications of chemistry as now found in the great industrial establishments. At the same time, in this as in all other courses, it is not forgotten that the man is not a mere lever in his own machinery, and the effort after breadth and completeness of life is steadily maintained. For tabulated course, see pages 34–37.

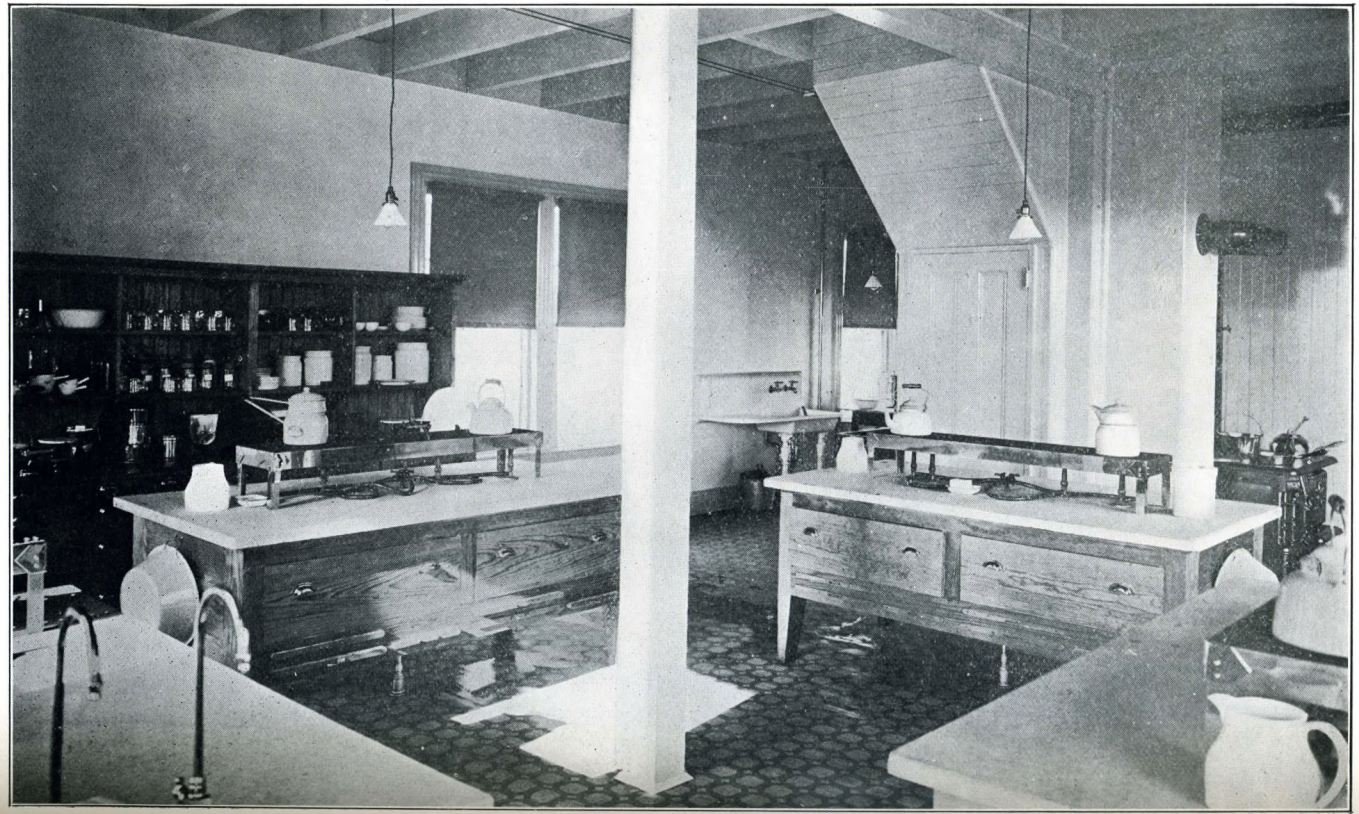
TEACHERS' COURSE IN APPLIED SCIENCE.

This course is intended to prepare persons to teach in industrial schools those branches of applied science that pertain especially to agriculture and the mechanic arts. In such schools it has been found of especial importance that the teachers be trained in an environment of current thought sympathetic with the industrial applications of science and intelligently appreciative of the methods and problems of such work. In response, therefore, to the need, and in accordance with an expressed purpose of the new fund from the United States Government, we have constructed this course. The effort has been to make the course effective for its purpose, while at the same time retaining for it that breadth and that cultural influence that are necessary to fit the whole man or woman for social life and are especially important in persons who, as teachers, will exercise large personal influence over immature youth.

The general plan of the course is the same as that of the other two courses just described. It opens to the student, at the beginning of the Junior year, three options, one of which he must select in conjunction with certain studies required of all. For tabulated course, see pages 34–37.

THE COURSE IN HOME ECONOMICS.

The aim of modern education is to develop character and efficiency. The efficient person is the one capable of self-support—the productive citizen. For efficiency the individual needs several things. He



HOME ECONOMICS LABORATORY.

must have health of body and mind; the control of materials and forces, which comes only from the knowledge of the things with which he must deal, and a power of separating as well as deducing cause from effect. He must have the ability to do, which involves reasoning power, perseverance and self-control. The recognition of the need for a direct teaching of these things is the basis of the universal democratic education of to-day for industry, agriculture, and the home.

It is now universally accepted that no other education is as important for the average man as the education which will teach him how to earn his own livelihood. Just so it needs to be accepted that no other learning is as important for the average woman as that which will make her efficient for her vocation, which for most women is the administration of household affairs. If in the training for citizenship and in the upbuilding of character, the home is the fundamental factor, it is inevitable that home economics must bear an organic part in the general scheme of education. For it is an understood fact that the welfare of a country is threatened when men and women are not trained and ready for the positions of trust and responsibility which fall to their share. This is the great force behind the onward march of so-called practical education, in which to-day the subjects grouped under the name of home economics bear so important a part.

In the various bills presented to Congress in behalf of national aid for such forms of education, these paragraphs appear:

"Our most important and racial institution—the home—can be developed along with other institutions only as we give to it the discoveries of science and build it up through education. It is not enough that America has homes averaging better than homes of other parts of the world; they should be very much better."

"Every city and town should offer opportunity to girls to gain a knowledge of the production and preparation of food and clothing, of lighting, heating, water supply, and sanitation, of household care and decoration, such as would mean a distinctly higher standard for our homes."

"There is the greatest fear that such schools be thought below the standard of our classical schools, and until we dare to take the stand that it is all a question of relative values, and that Latin and mathematics have not as much educational value for certain girls as house-

hold science and art have, these schools will probably not perform the greatest service of which they are capable. When we are wide awake to the fact that the solution of our domestic difficulties is dependent on a greater knowledge of production and its wise direction, perhaps we shall be ready to say that learning to do things and learning to understand the reason for doing things will have as great a cultural value as the study of Homer and solving original problems in geometry."

It is to meet the demands for such practical education that the home economics department has been established here. It is so planned as to give both men and women a general view of the household in society, and to provide such training as will lead to more healthy, happy, intelligent and economical administration of the home as a social unit. It is also designed to aid in fitting such students as desire to enter special fields of domestic activity in institutional and educational lines of work.

The courses of instruction are planned to meet the needs of two classes of students: (a) those who may be specializing in other lines of work but desire a general knowledge of the principles and facts of home economics; (b) those who wish to specialize in the various lines of this work.

The general course is designed to provide an education in those branches that especially serve the needs of women students, and to meet the demands of the day for training in social and sanitary science. Although the main work is scientific and technical, the importance of artistic and literary training for home life has not been neglected. It is recognized that all the knowledge of right living to be gained through all the avenues of learning is needed to assist the student to a broader conception of citizenship as well as in performing the manifold duties of daily life.

The courses include instruction in the planning, sanitation, decoration, and care of the house and its administration on the economic side; the preparation of food from the scientific and economic points of view; the study of nutrition; the discussion of problems of personal and public hygiene and instruction in the care of infants and young children.

The entrance requirements are the same as for the other college courses. Of the one hundred and sixty credits required for graduation, thirty-three are required in the home economics department.

Four groups of electives are offered. Students are expected to take the course as prescribed on pages 34–37, with choice of options; but when entered in other courses in the college, they may elect certain work in the home economics department, under direction of the head of the department.

REQUIRED WORK IN HOME ECONOMICS.

1.	House Construction, Sanitation and Cost	2½ credits.
2.	Principles of Selection and Preparation of Food	4 "
3.	Household Hygiene	1½ "
4.	Economic Uses of Food	5 "
5.	Personal Hygiene	2 "
6.	Dietetics	2 "
7.	Home Decoration	2 "
8.	Food Supplies and Dietaries	3 "
9.	Public Hygiene	1 "
10.	Textiles	2 "
11.	Child Hygiene	2 "
12.	Household Art	2 "
13.	Study of the Family	2 "
14.	Household Administration	3 "

OPTIONS.

Group A.	Education and Home Economics	14 credits.
" B.	Agriculture	14 "
" C.	Elective	14 "

II. Sub-Freshmen Classes.

For a number of years it has been found necessary to maintain at the college a preparatory school. Young people in whole or in part unprepared to enter our Freshman class, who do not have at their homes the advantages of high-school training, or who, without high-school advantages, have arrived at a certain maturity that renders it inadvisable for them to undertake the work at the home school, still continue to apply for admission. We are anxious to discontinue preparatory work, both in order that we may devote all our resources to our own legitimate field, and also that we may not seem to be in competition with the excellent high schools now scattered all over the state. Yet among these applicants, the exceptional cases just mentioned and others similar in nature seem to require that we still provide for them. We have, therefore, arranged the two Sub-Freshman years outlined on page 38. We wish it, however, clearly under-

stood that we do not encourage students to come here for purely preparatory work; on the contrary, we strongly urge all young people to get their college preparation at a regular high school.

III. Short Courses in Agriculture, in Engineering, and in Home Economics.

There is a large class of young men and women who, unlike the more fortunate young people that are able, after completing the high-school work, to go through a full four years' college course, find themselves compelled, sometimes with a high-school course as preparation, much more frequently, however, without such training, to plan for entrance into industrial life by the shortest and quickest preparation that will give them the elementary knowledge and skill requisite. For such persons we have arranged a short course in agriculture, one in engineering, and special work in home economics. These courses are each two years in length; they require for entrance only that degree of training represented by a common-school education; they are in no sense preparatory to the corresponding college courses, and they do not, either directly or indirectly, lead to an academic degree. A certificate, however, will be awarded on completion of one of these courses.

They are intended to be intensely and dogmatically practical, giving facts and processes without attempting to explain and correlate these by referring them to their basis in scientific theory or investigation. Moreover, each part of the course, and each subject, is in a way independent; so that the student who remains for any part of the course, say one year or even less, will be able to realize a definite acquisition, a certain distinct fitness, that he did not before possess. It is hoped that, after a little, the certificate may come to have, among farm owners and among the employers of labor in the factories and shops of the state, a certain well-defined value as commendatory of the persons holding it. For tabulated statement of courses, see page 38.

IV. Special Poultry Course.

For many years this college has offered a winter course in the poultry industry. In fact, the first poultry course to be offered in the United States was offered here eleven years ago. The college will continue to offer the twelve weeks' course during the winter term.

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The object of this course is to give the most direct and practical instruction to those who contemplate taking up the business, or to those already engaged in it, to enable them to proceed with greater certainty in their work and make the most of whatever they invest. All instruction bears immediately on the science and art of caring for fowls by the latest and best methods in practice. Practical poultry men, prospective judges, and college graduates who desire to equip themselves as instructors and experimenters will find in this course much that they need. Special circulars will be sent on request.

V. Selected Courses.

Whenever possible, students are urged to enter one of the courses leading to a degree. The arrangement of these courses is the result of careful thought and long experience as to the best combination of studies to fit one for the various occupations in which a technical education is required; and it is believed that no such thorough preparation can be obtained from special courses selected by the students.

However, any subjects described in this catalogue may be taken by special students of maturity, who can satisfy the professor in charge of the subject chosen that they are prepared to derive benefit from such work.

Requirements for Admission to the College, 1908.

Graduates from high schools, and other schools of similar grade, are admitted without examination, on certificates which are filled out by their principals. The candidate must apply to the college for the certificate, giving the address of his principal who is to certify him. The college will correspond with the principal, furnishing blanks for him to fill. Satisfactory evidence as to good moral character must be presented to the committee on entrance examinations.

Candidates for admission who are not graduates of high schools must in all cases supply a statement of such school records as they may have made, and also a certificate or testimonial of good moral character. The latter may be from some recent teacher, from a pastor, or from other responsible persons.

Candidates not entering the Freshman class on certificate will be examined in arithmetic; algebra; plane geometry; English grammar; advanced English; one year of German, French, or Latin; one year of science and one year of history, or their equivalents.

Candidates may enter any of the higher classes for which by examination they show themselves prepared.

In the arithmetic examination, especial attention will be paid to fractions, the metric system, simple and compound proportion, and square root; thorough drill in mental arithmetic will be necessary. The applicant should have mastered all of Wentworth's School Algebra as far as page 335, and Wells's Plane Geometry, or their equivalents.

The English requirements are those prescribed for entrance to the New-England colleges. The student will be expected to show familiarity with the works named below. These are divided into two classes. Those marked (A) are to be read, and the candidate will be required to show a general knowledge of their subject-matter and of the lives of the authors. Those marked (B) are to be thoroughly studied, so that the candidate will be able to pass an examination upon their subject-matter and structure. To be acceptable, the candidate's paper must show a good knowledge of spelling, capitalization, punctuation, sentence and paragraph structure. The books prescribed for 1909–1911 are as follows:

A. For Reading.

GROUP I.—*Two books to be selected.*

Shakspere's As You Like It; Julius Cæsar; The Merchant of Venice; Twelfth Night; Henry V.

GROUP II.—*One book to be selected.*

Bunyan's The Pilgrim's Progress, Part I; Bacon's Essays; Addison's The Sir Roger DeCoverley Papers; Franklin's Autobiography.

GROUP III.—*One book to be selected.*

Chaucer's Prologue; Selections from Spenser's Faerie Queene; Pope's The Rape of the Lock; Goldsmith's The Deserted Village; Palgrave's Golden Treasury (First Series), Books II and III, with special attention to Dryden, Collins, Gray, Cowper, and Burns.

GROUP IV.—*Two books to be selected.*

Hawthorne's The House of the Seven Gables; Thackeray's Henry Esmond; George Eliot's Silas Marner; Dickens's A Tale of Two Cities; Scott's Ivanhoe; Scott's Quentin Durward; Goldsmith's The Vicar of Wakefield; Mrs. Gaskell's Cranford; Blackmore's Lorna Doone.

GROUP V.—*Two books to be selected.*

Emerson's Essays (Selected); Ruskin's Sesame and Lilies; Irving's Sketch Book; Carlyle's Heroes and Hero-Worship; De Quincey's Joan of Arc and The English Mail Coach; Lamb's Essays of Elia.

GROUP VI.—*Two books to be selected.*

Palgrave's Golden Treasury (First Series), Book IV, with special attention to Wordsworth, Keats, and Shelley; Coleridge's The Ancient Mariner; Lowell's The Vision of Sir Launfal; Scott's The Lady of the Lake; Poe's Poems; Tennyson's Gareth and Lynette, Lancelot and Elaine, and The Passing of Arthur; Arnold's Sohrab and Rustum; Browning's Cavalier Tunes, The Lost Leader, How They Brought the Good News from Ghent to Aix, Evelyn Hope, Home Thoughts from Abroad, Home Thoughts from the Sea, Incident of the French Camp, The Boy and the Angel, One Word More, Hervé Riel, Pheidippides; Macaulay's Lays of Ancient Rome.

B. For Study.

Shakspere's Macbeth; Milton's Lycidas, Comus, L'Allegro and Il Penseroso; Burke's Speech on Conciliation with America, or Washington's Farewell Address and Webster's First Bunker Hill Oration; Macaulay's Life of Johnson, or Carlyle's Essay on Burns.

Degrees.

The college confers two degrees. The degree of Bachelor of Science is conferred upon a student who has completed one of the four-year courses outlined on pages 33–37. The degree of Master of Science is conferred upon those holding a Bachelor's degree from this institution, in regular order, or from other institutions having equal requirements, upon the completion of one year of resident study, the presentation of a satisfactory thesis in applied or economic science, and upon passing examinations in the subjects pursued. Persons wishing to apply for the Master's degree should write to the Committee on Graduate Study for further details.

Teachers' Certificates.

The following resolution recently adopted by the Board of Education of this state is self-explanatory: "The certification of the president (of this college) that an applicant for a teacher's certificate has pursued a secondary school course of four years, subject to the

approval of the committee on qualifications, and in addition thereto has pursued a four years' collegiate course in the Rhode Island College will be received as evidence of the required qualifications in scholastic subjects for a teacher's certificate of the first grade."

Opportunities Offered to Women.

The course in home economics is especially designed for women, although all other courses are open to them. Special waiting and study rooms are provided for the women who are day students. For boarders commodious quarters have been provided in the village, two minutes' walk from the college grounds.

Expenses.

Tuition is free to residents of Rhode Island. To non-residents of the state, tuition is $15 a term or $30 a year.

The regular college expenses are tabulated as follows:

Board, $3.50 per week	$126 00
Room-rent, including heat and light	30 00
Incidental fee, $4.50 per term	9 00
Laboratory deposit, $5 per term	10 00
Uniform for military drill	16 00
	$191 00

The first four items must be paid quarterly in advance; that is to say, $43.75 will be required at the opening of the year, September 9, 1908, and also at each of the following dates: November 11, 1908; February 3, 1909; and April 7, 1909. Non-residents of the state should add to this sum $7.50 for tuition. In order to secure dormitory accommodations, the student is required to deposit one dollar with the application; the dollar to be credited on the fall-term room-rent. If the student fails to take the room, the dollar is forfeited. The uniform also must be paid for at the opening of the college year in advance. Against the laboratory deposit will be charged all material used in the various laboratories, and the destruction, breakage, or marring of apparatus and tools. If anything remains after such deductions have been made, the said remainder will be refunded. If, on the other hand, the charges shall at any time exceed the deposit, the student will be required to cover the excess by a further deposit.

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Nothing has been said concerning books. The probable cost of these will be from $15.00 to $30.00 per year. For miscellaneous expenses connected with college life, students should add a sum varying from $10.00 to $25.00. A fee of 50 cents will be charged for each examination to make up a condition. Graduates pay the cost of diplomas, $5.00. *No diplomas will be issued until all term bills have been paid.* Room-rent and incidental deposit will not be refunded on withdrawal during the quarter. Students not taking any laboratory work will not be required to make a laboratory deposit.

UNIFORM.—Every able-bodied male student is required to drill and to wear a uniform. The uniform must be paid for immediately on entering the college, when the students are measured for the suits. When worn only on drill and properly cared for, one uniform may last two or more years. The student may, however, wear his uniform all the time.

TRANSPORTATION.—The college conveys students daily to and from the railroad station free of charge. Once at the beginning and end of each term, a team conveys trunks to and from the station.

BOARDING STUDENTS.—The price of board for 1908–9 will be $3.50 per week. Students who *leave regularly every week* on Friday afternoon and return Monday morning will pay $2.50 per week. No other reduction on board is made for less than two whole days' absence at one time, and then only when written notice is given in advance. No person will be admitted to the dining-room until he has secured from the bursar a meal ticket, on the back of which will be found the rules governing the holder of such ticket. After this ticket is issued, all charges for board will be made in accordance therewith unless the student has the ticket changed by the bursar. Arrangement of charges for meals sent to students' rooms for any cause must be made in advance.

FURNITURE.—The rooms in the women's dormitory are provided with necessary furniture, including mattresses, but no other bedding material. *All students in the men's dormitory are required to supply their own furniture and bedding.* The necessary furniture may be obtained at the college when desired. A room may be furnished for from $8.00 to $10.00. Iron bedsteads three feet wide are included under room-rent. The furniture, if properly kept, may be sold, when the student leaves, for one-half to three-fourths the original price.

ROOMS IN THE VILLAGE.—At present the dormitory facilities for young men are taxed beyond their capacity. Students especially desirous of rooming in the dormitory are advised to make their applications at once. It is probable that most of the dormitory rooms will be occupied by the older students. Arrangements have been made for rooms, however, in the village of Kingston, some of these being under college management and others in private houses. In the case of the former, room-rent will vary from 60 cents to $1.00 per week, with stoves and bedsteads furnished, the student to provide other furnishings and fuel himself. Furnished rooms in private houses for students who occupy them throughout the college year range from $1.25 to $2.00 per week.

COLLEGE STORE.—Students will be required to pay cash at the store for all books and other supplies.

DAMAGE FUND.—All damage not due to ordinary wear shall be assessed to students as follows:

1. Students at once acknowledging damage and agreeing to pay for same will be assessed actual cost of repair, including labor.

2. Students found guilty of such damage but not acknowledging and settling for the damage will be charged double the cost of repair.

3. Students will be responsible for damage in their own rooms.

4. Damage that is not settled as above may be assessed to all the students or to a group of students, pro rata. Each case and the amount of assessment will be considered on its merits.

Employment at the College.

There is a certain amount of labor about the college buildings, on the farm, at the experiment station, and in the offices and laboratories, for which students will be employed whenever it is feasible to do so. Industrious students frequently earn an amount which aids considerably in paying their expenses, a sum varying from $25.00 to $125.00 per year.

In view of the fact, however, that the amount of this work is strictly limited and that it is not the policy of the college to create such work, and, furthermore, because of the increasing number of students and the more frequent applications for student labor, it seems desirable

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to state the conditions under which this work will hereafter be assigned.

1. Application for work must be made on a blank which will be issued to the student on request. *Persons desiring such work must, if under age, bring a statement from parent or guardian certifying to what extent the student must depend upon himself for support.* It must be borne in mind that the student can not make this certification for himself. Application for work, however, under no circumstances creates a claim on the college that work shall be assigned the applicant.

2. At a certain time before the opening of the fall term all applications for work will be considered, and appointments will be made after due consideration of

(a) Capability for the work.
(b) Trustworthiness.
(c) Good record as a student.
(d) Need for financial aid.

[NOTE: Other things being equal, preference will be given to residents of the state, to upper class students, and to those who room and board at the college.]

3. Such appointments are subject to revocation at any time, for
(a) Incompetency.
(b) Unfaithfulness in discharge of duty.
(c) Misconduct or disloyalty to the institution.
(d) Bad record in studies.

4. Such appointments must be recognized as
(a) A mark of trust and responsibility.
(b) A real and vital part of one's training for promptness, for initiative, and for leadership.
(c) One of the very best criteria the teacher has in determining his estimate of the student's character, both for his own guidance and for recommendation to employers.

5. Payment for services will vary from ten to fifteen cents per hour, according to the grade and difficulty of the work and the experience of the student. In general, students should not expect more than ten cents an hour for the first year. It is a rule of the college that any student desiring to perform more than twenty hours of student labor per week must secure permission from the faculty council. In the future, it may be necessary to limit the amount which any one student may receive for student labor.

Some young people have the impression that the college offers such opportunities for self-help that it is safe to enter with practically no funds, relying solely on money earned while here. In exceptional cases this may be done, but prospective students are strongly advised not to enter until they have at least $100.00 at their disposal. A student who has to make his own way must also plan to work steadily during both the short and long vacations. Occasional vacation work at the college can be furnished to students, but as a rule they should look elsewhere for this class of work.

Religious Influences.

This college is a state institution, and, consequently, the widest latitude is given to all creeds and forms of religious belief. Simple chapel exercises are held every school-day morning, and are conducted by the president or some other member of the faculty. While attendance is not compulsory, it is desired and expected that all students will attend chapel.

A branch of the Intercollegiate Young Men's Christian Association is doing active work among the men students, holding a meeting every Sunday throughout the year. This association conducts courses in bible study and is taking the lead in endeavoring to establish sound and high ideas of college life.

The Young Women's Christian Union is doing a similar work for the young women.

The village church cordially invites all students to attend its services and, if possible, to join its membership. Every effort is made by the college to minister to the higher life of the students and to bring before them the noblest ideals, without in any way attempting to coerce them to particular beliefs.

Scientific and Engineering Lectures.

Under the auspices of the science and engineering clubs evening lectures have been given during the year, as follows:

Oct. 25. Prof. W. E. Castle, RECENT STUDIES IN HEREDITY AND THEIR BEARING UPON THE PROBLEMS OF BREEDING.

Nov. 2. Dr. Alfred M. Tozzer, CENTRAL AMERICA: ITS PEOPLE AND ITS MONUMENTS.

Nov. 8. Prof. Frederic P. Gorham, SEA FARMING.
16. Prof. H. E. Walter, THE THEORIES OF BIRD MIGRATION.
23. Prof. Charles W. Brown, THE EVOLUTION OF THE EARTH.
Dec. 6. Prof. A. D. Mead, SOME PRINCIPLES OF ORGANIC EVOLUTION.
Jan. 11. Dr. Leon J. Cole, THE QUESTION OF THE ORIGIN AND ARTIFICIAL PRODUCTION OF LIFE.
April 13. Mr. C. J. Hogue, REINFORCED CONCRETE.
May 4. Prof. Howard C. Ives, ST. GOTHARD RAILWAY.

The Rhode Island College Lecture Association.

Faculty and students, uniting with residents of the vicinity, conduct a winter lecture course, the aim of which is to introduce talented speakers upon subjects both entertaining and instructive. The association may be looked upon as a permanent and important factor in college activities. For the season of 1907–1908 the following program was secured:

Dec. 10. Mr. S. A. Long, HUNGRY PEOPLE.
Jan. 10. Rev. Henry R. Rose, PARSIFAL AND THE HOLY GRAIL. Illustrated with colored slides.
Feb. 5. Tufts College Glee and Mandolin Clubs.
Mar. 6. E. Charlton Black, LL.D., STEVENSON AND BARRIE, A STUDY IN PERSONALITY.
Mar. 19. Miss Nellie Dean and Miss Florence Purrington, Piano and Violin Recital.

The Kingston Prize.

For two years past the sum of sixty dollars has been offered by a friend of the college to encourage students to competitive work in essay writing or debate. In 1907 two prizes, of fifteen and five dollars, respectively, were awarded for the best essays in each of the three departments—agriculture, engineering, and science. In agriculture, Fred Kenyon Crandall, '09, received the first prize; Harry Reynolds Lewis, '07, the second. In engineering, the successful contestants were John Kenyon Lamond, '07, and Clesson Herbert Field, '08; and in science, Ruby Belle Rockwell, '09, and Rhobie Lucelia Cargill, '09.

The Library.

The library occupies a large room in Lippitt Hall, and numbers over fifteen thousand volumes. The books are arranged in stacks, to which the students have free access. The Dewey system of classification is used; and a dictionary catalogue gives author, subject, and title. As the library has been from the first intended for reference work, the various departments of instruction have made their selections with the greatest care. Combined with the library is the reading-room, where over one hundred of the leading periodicals—of literary, scientific, and general interest—are on file. From time to time these are bound, and prove of great value in reference work.

The library has recently been made a government depository; that is, will henceforth receive a copy of each work published by the government. It will, therefore, offer excellent opportunities for scientific investigation and research.

The library is open every week day from 7:30 A. M. to 6:00 P. M., with the exception of a half-hour at noon. The librarian or her representative is in constant attendance to aid any one in search of information. As the college is an institution designed to further the educational interests of Rhode Island, all residents of the state are at liberty to use its library.

Location.

The college campus is one and a half miles from Kingston station, which is at the junction of the main line of the N. Y., N. H. & H. R. R. with the Narragansett Pier branch, thus insuring excellent railroad accommodations. The buildings are on a hill which commands an extended view of the surrounding country—a location both healthful and beautiful. Sixteen trains stop daily at the station, so that the college is accessible from Providence or from New York city at almost any hour in the day. The ride from Providence is about forty to forty-five minutes in length. From New York the time is some four hours.

The Courses of Study Leading to a Degree.

EXPLANATORY.—The Roman numeral following a subject refers to the subject number; the Arabic figures next following indicate the page of the catalogue on which the subject is described. The last Arabic figure indicates the number of hours credit for the subject. A credit is given for one recitation; or for one exercise of two hours in laboratory, field, or shop. All women students throughout the four years are required to take physical exercise and hygiene in place of military drill and tactics. Consulting with the committee on courses of study, the student chooses his electives from the subjects described on pages 39–72. For requirements of admission to these courses, see pages 24–26.

Freshman Year.

Agriculture.

First Term.		Second Term.
Subjects.	Credits.	Credits.
English I (64)	1	1
Oral Expression I (65)	1	1
Modern Language I (65)	4	4
Mathematics IIIa (66)	5	.....
Chemistry I, II (48)	3½	3½
Botany I (46)	3	3
Agronomy I (40)	2	.....
Horticulture I (44)	.....	2
Animal Husbandry I, III (42)	.....	4
Freehand Drawing II (50)	1	.....
Mechanical Engineering I (55)	.....	1½
Military Drill and Tactics (67)	2	2

Engineering.

First Term.		Second Term.
Subjects.	Credits.	Credits.
English I (64)	1	1
Oral Expression I (65)	1	1
Modern Language I (65)	4	4
Mathematics IIIa, IVa (66)	5	5
Chemistry I, II (48)	3½	3½
Mechanical Engineering VIII (56)	3	.....
Mechanical Engineering IX, XI (56)	.....	3
Mechanical Engineering I (55)	.....	3
Freehand Drawing I (50)	2	.....
Military Drill and Tactics (67)	2	2

Teachers' Course in Applied Science.

First Term.		Second Term.
Subjects.	Credits.	Credits.
English I (64)	1	1
Oral Expression I (65)	1	1
Modern Language I (65)	4	4
Mathematics IIIa, IVa (66)	5	5
Chemistry I, II (48)	3½	3½
Botany I (46)	3	3
Mechanical Engineering VIII (56)		2
or		
Freehand Drawing II (50)		2
Freehand Drawing II (50)	2	.....
Military Drill and Tactics (67)	2	2
or		
Physical Training	1	1
Home Economics V (52)	1	1

Home Economics.

First Term.		Second Term.
Subjects.	Credits.	Credits.
English I (64)	1	1
Oral Expression I (65)	1	1
Modern Language I (65)	4	4
Mathematics IIIa (66)	5	.....
Chemistry I, II (48)	3½	3½
Botany I (46)	3	3
Freehand Drawing II (50)	1	1
Physical Training	1	1
Home Economics:		
Subject I (51)	2½	.....
Subject II (52)	.....	4
Subject III (52)	.....	1½

Sophomore Year.

Agriculture.

First Term.		Second Term.
Subjects.	Credits.	Credits.
English II (64)	1	1
Oral Expression II (65)	1	1
Modern Language II (65)	3	3
Chemistry III (48)	3	.....
Physics I (69)	.....	5
Botany II (46)	3	.....
Zoölogy I (71)	3	.....
Zoölogy III (71)	4	
Animal Husbandry XII (43)	1	.....
Agronomy II (40)VII (41)	2	2
Horticulture II (44)		2
Civil Engineering I (61)	3	.....
Mechanical Engineering VIII (56)		2
Military Drill (67)	1	1

Engineering.

First Term.		Second Term.
Subjects.	Credits.	Credits.
English II (64)	1	1
Oral Expression II (65)	1	1
Chemistry III (48)	3	.....
Physics II (69)	4	4
Physics III (69)	1½	1½
Mathematics V, VI (66)	5	5
Mechanical Engineering II (55)	2½	.....
Mechanical Engineering III (55)		3
Military Drill (67)	1	1
Options: A, B, C, D. One of these must be chosen.		
A. Mechanical Engineering: Subjects X, XIII (56)		5
Subject XIXa (57)		2
Civil Engineering I (61)	3	.....
B. Electrical Engineering: Mechanical Engineering XIII (56)		3
Mechanical Engineering XIXa (57)		2
Civil Engineering I (61)	3	.....
C. Civil Engineering: Subjects I, II (61)	3	3
Mechanical Engineering XIXa (57)		2
D. Chemical Engineering: Subject IV (48)		4
Modern Language II (65)	3	3

Teachers' Course in Applied Science.

First Term.		Second Term.
Subjects.	Credits.	Credits.
English II (64)	1	1
Oral Expression II (65)	1	1
Modern Language II (65)	3	3
Chemistry III (48)	3	4
Chemistry IV (48)		4
Physics II (69)	4	4
Physics III (69)	1½	1½
Botany II (46)	3	.....
Zoölogy I, II (71)	3	3
Zoölogy IX (72)		3
Military Drill (67) or Physical Training	1	1

Home Economics.

First Term.		Second Term.
Subjects.	Credits.	Credits.
English II (64)	1	1
Oral Expression II (65)	1	1
Modern Language II (65)	3	3
Chemistry III (48)	3	.....
Chemistry IV (48)		4
Zoölogy I, III (71)	3	3
Freehand Drawing III (50)	2	1
Freehand Drawing IV (50)		1
Physical Training	1	1
Home Economics: Subject IV (52)	5	.....
Subject V (52)	1	1
Subject VI (52)		2
Subject VII (52)		2

Junior Year.

Agriculture.

First Term.		Second Term.
Subjects.	Credits.	Credits.
English III, IV (64)	2	2
Oral Expression III (65)	1	.....
History I (63)	2	3
Military Drill (67)	1	1
Botany IV (46)		2
Chemistry XIV (48)	4	.....
Zoölogy IV (71)		4
Agronomy III (40)	4	.....
Agronomy IV (40)		4
Animal Husbandry VII (43)	2½	.....
Horticulture III (44)	2	.....
Horticulture IV (44)		1
Mechanical Engineering XII (56)		1
Mechanical Engineering XIIIa (56)	1½	.....
Options: A, B, C. One of these must be chosen.		
A. Agronomy: Subjects V, VI (41)		5
B. Horticulture: Subjects V (44) VII (45)		5
C Animal Husbandry: Subjects IV (42) XI (43)		5

Engineering.

First Term.		Second Term.
Subjects.	Credits.	Credits.
English III, IV (64)	2	2
Oral Expression III (65)	1	.....
History I (63)	2	3
Mechanical Engineering XVII (56)		3
Military Drill (67)	1	1
Options: A, B, C, D. One of these must be chosen.		
A. Mechanical Engineering: Subject XIII (56)	3	3
Subjects XV, XVI (56)	3	.....
Subjects XVIIa (56) XX (57) XXII (57)	3	3
Subjects XVIII, XIX, XXI (57)	5	5
Chemistry XIII (48)	2	.....
Electrical Engineering IV (59)		3
B. Electrical Engineering: Subjects I, III (59)	3	3
Subject II (59)		3
Physics IV, V (69)		.....
Physics VI (69)		2
Chemistry XIII (48)	2	.....
Mechanical Engineering XV, XVI (56)	3	.....
C. Civil Engineering: Subjects III, IV (61)	7	.....
Subject V (61)		4
Mechanical Engineering XV, XVI (56)	3	.....
Mechanical Engineering XVIII, XIX, XXI (57)	5	5
Electrical Engineering IV (59)		3
Chemistry XIII (48)	2	.....
Geology I (63)		2
D. Chemical Engineering: Subjects V, VI (48)	3	4
Subject VII (48)	6	6
Subject XI (48)		1½
Mechanical Engineering XIX (57)	3½	.....
Mechanical Engineering XV (56) XX (57)	3	.....

Teachers' Course in Applied Science.

First Term.		Second Term.
Subjects.	Credits.	Credits.
English III, IV (64)	2	2
Oral Expression III (65)	1	.....
History I (63)	2	3
Psychology (70)	3	.....
Military Drill (67) or Physical Training	1	1
Elective	5	5
Subjects not selected for the option to be chosen. Options: A, B, C. One of these must be chosen.		
A. Chemistry: Subject V (48)	3	.....
Subject VI (48)		4
Subject VIII (48)	4	4½
Subject XI (48)		1½
B. Biology	7	10
[Botany (46) and Zoölogy (71)]		
C. Agriculture (39)	7	10
Mechanical Engineering XVIII, XIX, XXI (57)	5	5

Home Economics.

First Term.		Second Term.
Subjects.	Credits.	Credits.
English III, IV (64)	2	2
Oral Expression III (65)	1	.....
History I (63)	2	3
Psychology (70)	3	.....
Chemistry XIX (49)	3	3
Zoölogy VII, VIII (72)	3	3
Physical Education	1	1
Home Economics: Subject VIII (52)	3	.....
Subject IX (52)	1	.....
Subject X ((52)		2
Subject XI (53)		2
Options: A, B, C. One of these must be chosen.		
Teachers' Option:		
A. Education I (54)	3	.....
Education II (54)		2
Home Economics XV (53)		2
B. Agriculture: Agronomy VII (41)		2
Animal Husbandry VII (43)	2½	.....
Horticulture II (44)		2
C. Elective	3	4

Senior Year.

Agriculture.

First Term. Subjects.	Credits.	Second Term. Credits.
Economics I (51)		
History II (63).		
English V (64).		
Oral Expression IV (65)	5	5
Agronomy X (41)	3	.....
Agronomy XI (41)	5	..
Animal Husbandry VI (43)	3	.....
Military Drill (67)	1	1
Thesis	3	3
Options: A, B, C.		
One of these must be chosen.		
A. Agronomy:		
Subject VIII (41)	2	
Botany V (46)	3½	.....
Mechanical Engineering VII (56)	2	.....
Subject IX (41)		2
Botany VI (46)		3½
B. Horticulture:		
Subjects X, XI (45)	4	.....
Botany V (46)	3½	.....
Subject VI or VIII (45)		2
Botany VI (46)		3½
Subject XIII (45)	4	4
Botany III (46)	1	1
C. Animal Husbandry:		
Subjects II, IX (43)	5	.....
Agronomy VIII (41)	2	.....
Subjects VIII, X, XIII (43) or V (43)		7

Engineering.

First Term. Subjects.	Credits.	Second Term. Credits
Economics I (51)		
History II (63)		
English V (64)		
Oral Expression IV (65)	5	5
Military Drill (67)	1	1
Thesis	3	3
Options: A, B, C, D.		
One of these must be chosen.		
A. Mechanical Engineering:		
Subject IV (55)	3	3
Subjects XXIII, XXIIIa XXIV, XXV (57)	3	3
Subject XXVI (58)	5	5
B. Electrical Engineering:		
Subject V (59)	3	3
Subject VI (59)	3	3
Subject VII (59)	1½	1½
Subject VIII (60)	2	.....
Subject IX (60)	2	.....
Subject X (60)		2
Subject XI (60)		2
Physics VII (70)	1	.....
C. Civil Engineering:		
Subjects VI, VII (61)	4	.....
Subject VIII (62)		3
Subject IX (62)	5	.....
Subject X (62)		2
Subject XI (62)	2	.....
Subject XII (62)		3
Subjects XIII, XIV (62)		3
D. Chemical Engineering:		
Subject IX (48)	4	.....
Subject XII (48)	4	.....
Subject XIII (48)	2	.....
Subject XV (49)		1½
Subject XVI (49)		4
Subject XVII (49)		3
Subject XVIII (49)		3

Teachers' Course in Applied Science.

First Term. Subjects.	Credits.	Second Term. Credits.
Economics I (51)		
History II (63)		
English V (64)		
Oral Expression IV (65)	5	5
Military Drill (67)	1	1
Thesis	3	3
Education I, II (54)	3	2
Education III (54)	2	.....
Options: A, B, C.		
One of these must be chosen.		
A. Chemistry:		
Subject IX (48)	4	.....
Subject XII (48)	4	.....
Subject XV (49)		1½
Subject XVI (49)		4
Subject XVII (49)		3
B. Biology:		
[Botany (46), Zoölogy (41)]	7	9
C. Agriculture (39)	7	9

Home Economics.

First Term. Subjects.	Credits.	Second Term. Credits.
Economics I (51)		
History II (63)		
English V (64)		
Oral Expression IV (65)	5	5
Thesis	3	3
Chemistry X (48)	2	2
Physical Education	1	1
Home Economics:		
Subject XII (53)	2	.....
Subject XIII (53)	2	.....
Subject XIV (53)		3
Options: A, B, C.		
One of these must be chosen.		
A. Teachers' Option:		
Education III (54)	2	.....
Education IV (54)		4
Home Economics XVI (53)	1	.....
B. Agriculture:		
Animal Husbandry XII (43)	1	.....
Horticulture III (44)	2	.....
Horticulture VI (45)		2
Landscape Gardening (45)		2
C. Elective	3	4

AN APPROACH TO THE COLLEGE.

The Courses of Study Leading to a Certificate.

The requirements for admission to the Sub-Freshman course are arithmetic, English grammar, geography, and United States history. The only scholarship requirement for admission to the Short Courses in Agriculture, Engineering, and Domestic Science is a common-school education. The age for admission to all four courses must be at least sixteen years. The courses lead to a certificate.

Sub-Freshman.

FIRST YEAR.

First Term.		Second Term.
Subjects.	Credits.	Credits.
English C (64)	5	5
History A (63)	4	2
Mathematics A (66)	5½	5
Physics A (70)		3
Botany A (46)	3	3
Freehand Drawing II, III(50)	1	1
or		
Mechanical Engineering A(58)	1	1
Military Drill (67)	1	1

SECOND YEAR.

English D (64)	3	3
German A (65)	5	5
Mathematics B (66)	3	3
Mathematics E (66)	4	4
Physics B (70)	2½	2½
Mechanical Engineering G(58)	1	1
or		
Mechanical Engineering A(58)	1	1
Military Drill (67)	1	1

Short Course in Agriculture.

FIRST YEAR.

First Term.		Second Term.
Subjects.	Credits.	Credits.
English A (64)	4	4
Mathematics C, D (66)	4	4
Botany A (46)	3	3
Zoölogy A (72)	4½	.....
Agronomy C (41)		3
Horticulture A (45)		3
Animal Husbandry A, B (43)	4	.....
Mechanical Engineering H (58)	1	1½
Mechanical Engineering I(58)	1½	1½
Military Drill (67)	1	1

SECOND YEAR.

English B (64)	3	3
Mathematics F (66)	4	4
Chemistry A (49)	4	4
Agronomy A (41)	4	.....
Agronomy B (41)	3	.....
Animal Husbandry C, D (43)		3
Animal Husbandry E (43) F (44)		3
Horticulture B (45)	2	2
Mechanical Engineering J (58)		.....
Agronomy D (41)	2	2
Military Drill (67)	1	1

Short Course in Engineering.

FIRST YEAR.

First Term.		Second Term.
Subjects.	Credits.	Credits.
English A (64)	4	4
Mathematics C, D (66)	4	4
Mechanical Engineering A(58)	3	3
Mechanical Engineering B(58)	4½	3
Mechanical Engineering D(58)	3	3
Freehand Drawing I (50)	2	.....
Physics A (70)		3
Military Drill (67)	1	1

SECOND YEAR.

English B (64)	3	3
Mathematics F (66)	4	4
Mechanical Engineering C(58)	4½	4½
Mechanical Engineering E(58)	5	5
Physics B (70)	2½	2½
Military Drill (67)	1	1

Short Course in Domestic Science.

FIRST YEAR.

First Term.		Second Term.
Subjects.	Credits.	Credits.
English A (64)	4	4
Mathematics C, D (66)	4	4
Botany A (46)	3	3
Zoölogy A (72)	4½	.....
Physical Training	1	1
Domestic Science A (53)	3½	3½
Domestic Science B (53)		2½
Domestic Science C (53)		2

SECOND YEAR.

English B (64)	3	3
Mathematics F (66)	4	4
Chemistry A (49)	4	4
Physical Training	1	1
Mechanical Engineering G (58)	1	1
Domestic Science D (54)	2	2
Domestic Science E (54)	3	3
Domestic Science F (54)	2	2

Department of Instruction.

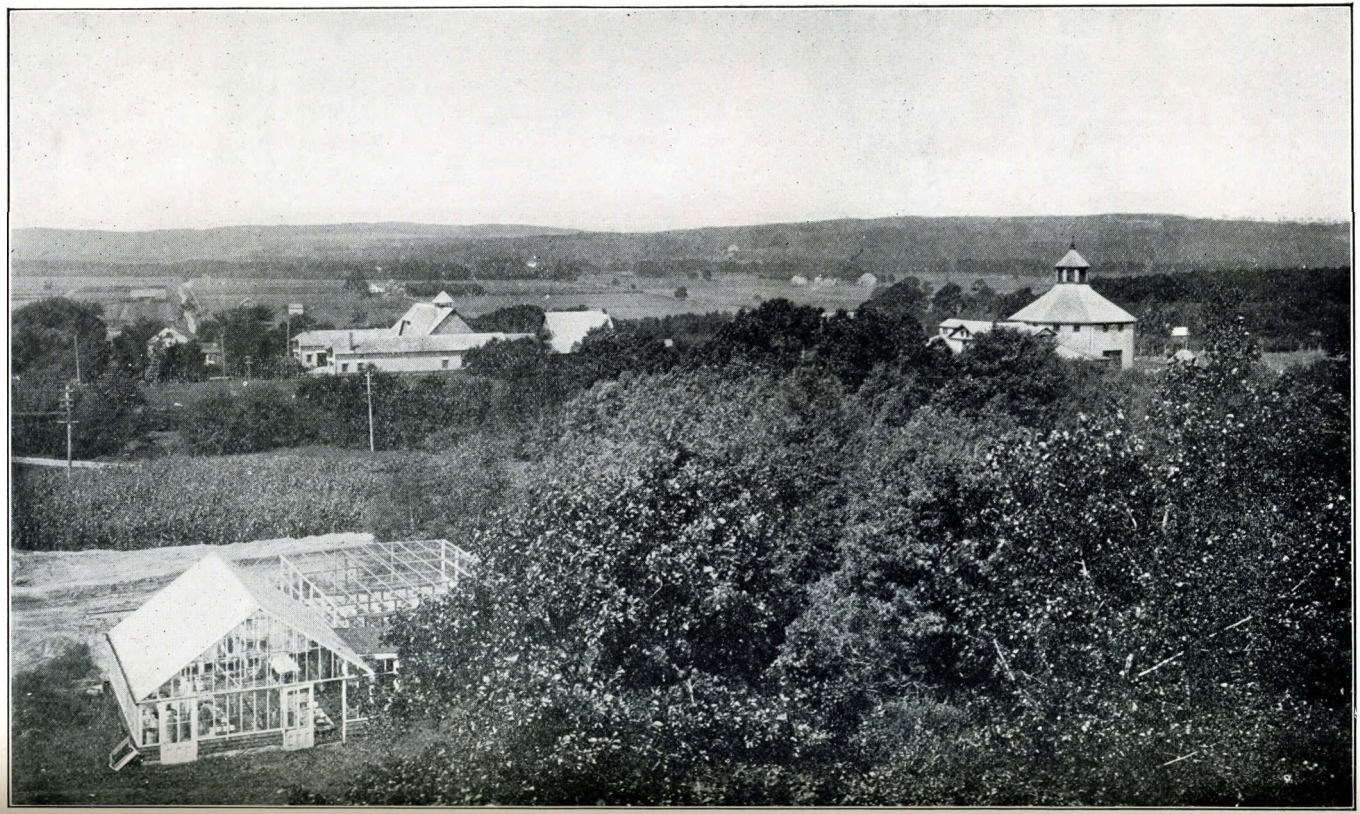
The following subjects are offered in the different departments. All subjects in the department of instruction preceded by a Roman numeral count towards the degree of B. S. All subjects preceded by a capital letter lead to a certificate.

Agriculture.

PROFESSOR ADAMS, PROFESSOR MADISON, MR. BURDICK, MR. MALLETTE, MR. LAMBERT.

The instruction given in this subject is grouped under the three heads—agronomy, animal husbandry, and horticulture. The aim of these departments is to give such theoretical and practical training in the fundamentals of agriculture as will enable those who take this work to fill positions of trust and responsibility, either as owners of their own farms, managers of estates, or along other lines of agricultural activity.

That the graduates from this department may be fitted to take up the work as outlined above, all students registering for a degree in agriculture will be required to show a certain familiarity with the ordinary operations of the farm before such degree is given. In order that those students who come from the cities and towns, and are not familiar with the practical operations of the farms, may receive training in this work, opportunity for such instruction will be offered by the different departments during the college year. No college credits will be given for such work. As a rule, however, it will be much better for the students to spend one or two summers upon farms in order to get this training than to attempt to obtain the proficiency necessary by working only at the college during the college year. Persons taking practical work upon farms during the summer vacations will be required to furnish a certificate from their employers stating the time spent on the farm and the kind



A VIEW TOWARD THE NORTHWEST.

and amount of work accomplished. Special attention must be given to that branch of agriculture which the student is electing in the regular course.

AGRONOMY.

The instruction in agronomy begins in the first term of the Freshman year, when the fundamental operations which are conducted upon every farm are considered. Following this work, are subjects dealing with the various field crops and their uses as food for man and beast. The business side of farm life is given attention in the subjects treating of farm equipment and management. Work with farm machinery is a laboratory course, in which the students are taught how to care for, repair, and operate modern farm machinery. In the Senior year there is instruction in plant breeding, a subject which is of the utmost importance to one who would make the most of the opportunities in crop production. Instruction in agricultural experimentation deals largely with the application of the results which have been obtained by the experiment stations, to the practical problems of the farm.

The equipment of the department includes the college farm and barns; also the farm machinery, consisting of a good line of tillage implements, fertilizer distributors, grain drill, and harvesting machinery. A well-equipped blacksmith shop is also provided.

Students have the advantage of the field experiments which are being conducted by the experiment station upon fertilizer problems and with various rotations.

Subjects.

I. Principles of Agriculture.—History of agriculture. Discussion of the general underlying principles which govern farm operations. *Two recitation credits per week, first term. Required of Freshmen in Agriculture.*

II. Forage Crops.—History and development of the plants used for forage; silage, methods of construction of silos. *Two recitation credits per week, first term. Required of Sophomores in Agriculture.*

III. Soils and Fertilizers.—Origin and constituents of soils; texture, moisture, drainage, methods of tillage. Farm manures, artificial manures, composition and use; formulas for various crops. *Three recitation and one laboratory credits per week, first term. Required of Juniors in Agriculture.*

IV. Farm Crops.—Origin and history; production and place in the rotation of clovers, grasses, and root crops. *Three recitation and one laboratory credits per week, second term. Required of Juniors in Agriculture.*

V. Farm Equipment.—Selection and equipment of farms, buildings, fences, roads, water supply, farm power, machinery. *Two recitation credits per week, second term. Agronomy option for Juniors in Agriculture.*

VI. Farm Machinery.—Development of farm machinery, methods of construction, function, and operation. *Two recitation and one laboratory credits per week, second term. Agronomy option for Juniors in Agriculture.*

VII. Farm Management.—Discussion of agricultural methods, choice of a farm, capital, marketing, types of farming, accounts. *Two recitation credits per week, second term. Required of Sophomores in Agriculture.*

VIII. Farm Management (advanced).—Individual problems of farm management are assigned. Abandoned farms will be visited and a critical study made of the existing conditions. *Two recitation credits per week, first term. Agronomy option for Seniors in Agriculture.*

IX. Literature.—History of agricultural and horticultural literature; a study of the different types of agricultural literature as illustrated by ancient and modern authors. Reports upon special topics. *Two recitation credits per week, second term. Agronomy option for Seniors in Agriculture.*

X. Agricultural Experimentation.—Objects, methods, and results of agricultural experimentation. A study of federal and state aid to agriculture as shown in the work of the United States Department of Agriculture and the Experiment Stations. *Three recitation credits per week, first term. Required of Seniors in Agriculture.*

XI. Plant Breeding.—A discussion of the development of plants under cultivation; with reference to heredity, environment, variation, and selection. *Five recitation credits per week, second term. Required of Seniors in Agriculture.*

XII. Thesis. *Three credits per week throughout the year. Required of Seniors in Agriculture.*

A. Soils and Fertilizers.—An elementary course upon the origin and nature of soils. Fertilizers; natural and artificial manures; preparation and use; fertilizer arithmetic. *Three recitation and one laboratory credits per week, first term. Required of Short-Course students in Agriculture, second year.*

B. Crops and Rotations.—Methods of culture and uses of the grasses, clovers, cereals, and root crops. Rotation for the various types of farms. *Three recitation credits per week, first term. Required of Short-Course students in Agriculture, second year.*

C. Farm Management and Accounts.—An elementary course upon the principles of farm management, equipment, and farm bookkeeping. *Three recitation credits per week, second term. Required of Short-Course students in Agriculture, first year.*

D. Farm Machinery.—Care and repair of farm implements. *Two laboratory credits for twelve weeks. Required of Short-Course students in Agriculture, second year.*

ANIMAL HUSBANDRY.

Instruction in animal husbandry is so arranged as to furnish practical as well as theoretical training in the selection, care, and management of the live stock on the farm. Instruction commences with elementary stock judging, breeds, and care in the second term of the Freshman year. During the Sophomore year, instruction is given in poultry craft and dairy practice. These two subjects aim to provide a large amount of practical work in combination with the theoretical. In the Junior year, attention is directed to the breeding and feeding of animals; and in the Senior year the work includes judging, care of animals, and veterinary practice. In veterinary practice, the student is taught to diagnose and prescribe for the common ailments of farm animals.

The equipment is particularly strong on the poultry side. The college poultry plant enables one to obtain a large amount of practical experience in incubation, brooding, and management. In addition to the poultry in the college yards, the students have opportunity to follow the investigations with turkeys which are now being conducted by the experiment station.

In addition to the subjects mentioned below, there is a twelve weeks' course in poultry keeping during the winter months, full information concerning which may be obtained by addressing the president of the college.

Subjects.

I. Stock Judging.—Scoring and comparison judging of the various types of horses, cattle, sheep, and swine. *Two laboratory credits per week, second term. Required of Freshmen in Agriculture.*

II. Advanced Judging.—Practice in judging and a detail study of animal conformation. *Two laboratory credits per week, first term. Required of Seniors in Animal Husbandry.*

III. Breeds.—History and characteristics of the principal breeds of farm animals. *Two recitation credits per week, second term. Required of Freshmen in Agriculture.*

IV. Principles of Breeding.—A study of the science and art of animal breeding. *Three recitation credits per week, second term. Required of Juniors electing Animal Husbandry.*

V. Management of Pure-Bred Herds, Flocks, and Studs.—Housing, feed, and management. Fitting animals for sale and for the show ring. *Two recitation credits per week, second term. Elective for Seniors in Animal Husbandry.*

VI. Feeding.—Principles of animal nutrition. Feeding standards. Rations. *Three recitation credits per week, first term. Required of Seniors in Agriculture.*

VII. Dairy Practice.—Lectures and laboratory practice with Babcock Test and in handling milk and making butter on the farm. *One recitation and one and one-half laboratory credits per week, first term. Required of Juniors in Agriculture.*

VIII. Dairy Practice.—Advanced work. Pasteurization. Starters. Testing for adulteration. Acidity. Moisture. *One recitation and one laboratory credit per week, second term. Required of Seniors electing Animal Husbandry.*

IX. Research and Literature.—A study of important results in live-stock research. Herd-book study. *Three recitation credits per week, first term. Required of Seniors electing Animal Husbandry.*

X. Veterinary Medicine.—Combating disease from the farmer's standpoint. Obstetrics. Injuries. *Three recitation credits per week, second term. Required of Seniors electing Animal Husbandry.*

XI. Farm Buildings.—Plans, location, and estimate on the various farm buildings. (See Mechanical Engineering, VII.) *Two laboratory credits per week, second term. Required of Juniors electing Animal Husbandry.*

XII. Poultry Craft.—A brief study of breeds, care, and management of all classes of fowls. *One laboratory credit per week, first term. Required of Sophomores in Agriculture.*

XIII. Judging Poultry.—Practice in scoring and judging all classes of fowls. *Two laboratory credits per week, second term. Elective for Seniors in Animal Husbandry.*

XIV. Thesis.—Original Investigation. *Three laboratory credits, both terms. Required of Seniors electing Animal Husbandry.*

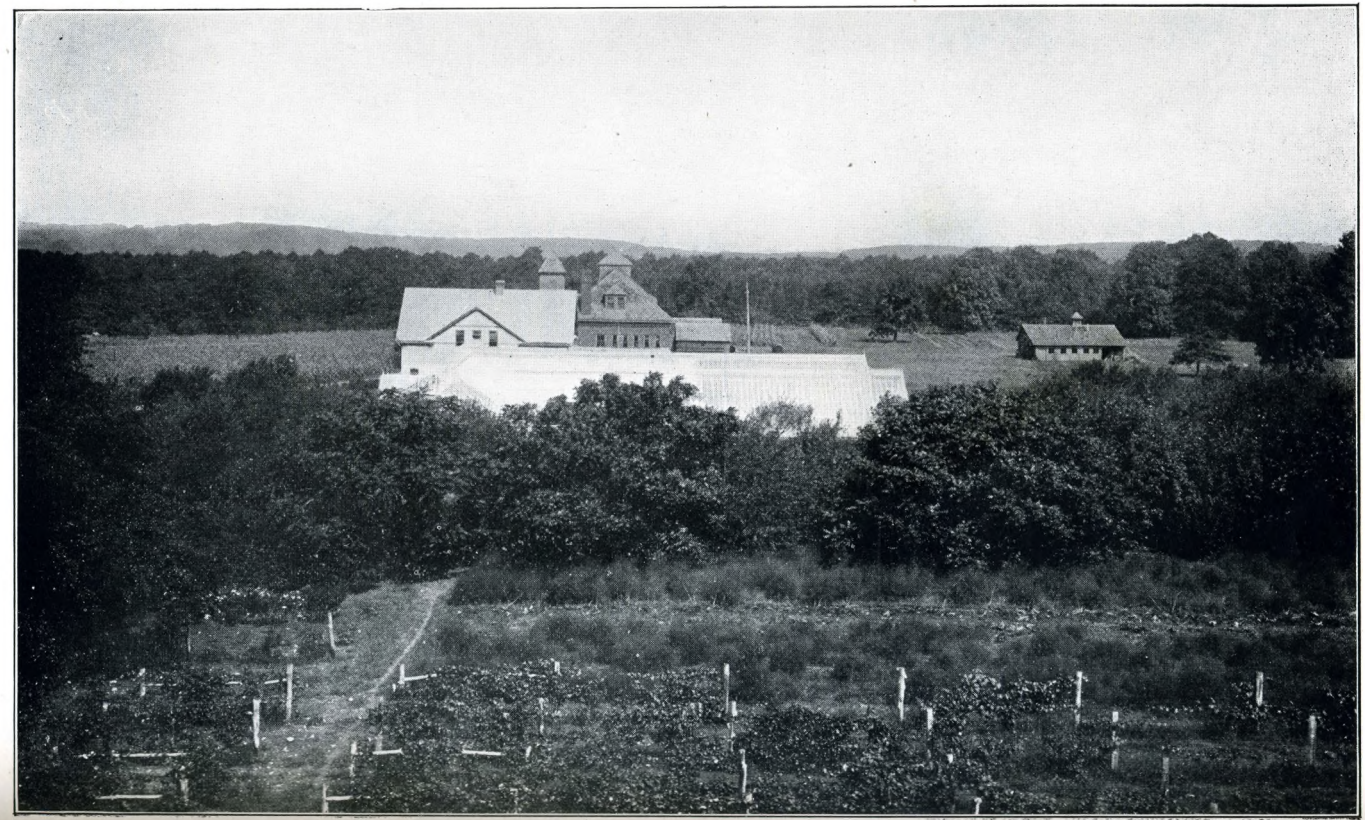
A. Breeds and Care.—Breeds of horses, cattle, sheep, and swine. Housing, care, and management of farm animals. *Two recitation credits per week, first term. Required of Short-Course students in Agriculture, first year.*

B. Stock Judging.—Judging of the various classes of animals, and their adaptability for different purposes; as cattle for milk or beef production, horses for driving or draft. *Two laboratory credits per week, first term. Required of Short-Course students in Agriculture, first year.*

C. Dairy Practice.—Babcock Test for dairy products, production of sanitary milk and butter making. *One laboratory credit per week, second term. Required of Short-Course students in Agriculture, second year.*

D. Stock Feeding.—Principles of nutrition, compounding of rations. *Two recitation credits per week, second term. Required of Short-Course students in Agriculture, second year.*

E. Breeding and Veterinary Practice.—A study of the principles of breeding, selection, heredity, and variation. Methods of treating common diseases of farm animals. *Two recitation credits per week, second term. Required of Short-Course students in Agriculture, second year.*



HORTICULTURAL DEPARTMENT.

F. Poultry Breeds and Care.—A study and comparison of the different breeds of poultry, care of incubators and brooders, methods of feeding for the production of meat and eggs. *One laboratory credit per week, second term. Required of Short-Course students in Agriculture, second year.*

HORTICULTURE.

The aim of the instruction in horticulture is to help the student to understand the practical and scientific problems which arise in the various lines of work included under this subject.

The headquarters of the department are in the new horticultural building which was erected in 1906. The main building contains the office and recitation rooms, together with photographic rooms. Attached to this building are greenhouses of modern construction, containing over 8,000 square feet under glass, 3,000 square feet of which is used by the experiment station for fertilizer experiments. The remainder is devoted to college work, and thus affords an excellent opportunity to become familiar with the growth of plants under glass. The land devoted to the department comprises the college gardens; and the fruit orchards, containing over 150 varieties of fruit, which afford an excellent opportunity for the study of apples and pears especially. There is also a small vineyard. A collection of flowering shrubs enables the student in landscape gardening to study, in the natural state, the material used in this work.

Subjects.

I. Propagation of Plants.—Seedage, methods of seed testing; cuttage, hard and soft wood cuttings; layerage and graftage. *One recitation and one laboratory credit per week, second term. Required of Freshmen in Agriculture.*

II. Vegetable Gardening.—Methods of growing and marketing vegetables. *Two recitation credits per week, second term. Required of Sophomores in Agriculture.*

III. Fruit Culture.—Principles and practice of orcharding and growing of bush fruits. *Two recitation credits per week, first term. Required of Juniors in Agriculture.*

IV. Spraying and Pruning.—Spray mixtures, preparation and use; fungicides; insecticides; spraying machinery; methods of pruning different classes of trees and shrubs. *One laboratory credit per week, second term. Required of Juniors in Agriculture.*

V. Greenhouse Construction and Management.—Construction and heating of greenhouses, preparation of plans, watering, ventilating. *One recitation and two laboratory credits per week, second term. Horticultural option for Juniors in Agriculture.*

VI. Floriculture.—A study of greenhouse plants; annuals; herbaceous perennials; bulbs for bedding and forcing. *One recitation and one laboratory credit per week, second term. Horticultural option for Seniors in Agriculture.*

VII. Vegetable Forcing.—Methods of growing vegetables under glass; in houses, hotbeds, and cold-frames. *Two recitation credits per week, second term. Horticultural option for Juniors in Agriculture.*

VIII. Literature of Horticulture.—See Agronomy IX.

IX. Investigation.—Special problems upon subjects in which the student is particularly interested. *Horticultural option for Seniors in Agriculture.*

X. Varieties of Cultivated Fruits.—Classification and description of orchard fruits. *Two recitation and one laboratory credits per week, first term. Horticultural option for Seniors in Agriculture.*

XI. Advanced Vegetable Gardening.—Study of varieties for special purposes; market-garden rotations and equipment. *One recitation credit per week, first term. Horticultural option for Seniors in Agriculture.*

XII. Plant Breeding.—See Agronomy X.

XIII. Landscape Gardening.—The principles underlying landscape gardening as applied to the development of home grounds, school grounds, parks, cemeteries, and estates. *Four recitation credits per week, throughout the year. Horticultural option for Seniors in Agriculture.*

A. Vegetable Gardening.—Methods of growing vegetables; hotbed and cold-frame management; garden rotations. *Three recitation credits per week, second term. Required of Short-Course students in Agriculture, first year.*

B. Fruit Culture.—The location of orchards and fruit plantations; methods of tillage, pruning, spraying for insects and fungous diseases. Varieties for home and market. *Two recitation credits per week, throughout the year. Required of Short-Course students in Agriculture, second year.*

Botany.

PROFESSOR MERROW.

The aim of the department is to give a general knowledge of plant life, followed by subjects of an economic nature. The college is well located for carrying on this line of work. The native flora is extensive, and an abundance of material is furnished by the cultivated plants of the gardens and fields of the college farm. The greenhouses supply fresh material for winter use, and the herbarium of 4,000 specimens is a useful reference collection. The laboratory is equipped with dissecting and compound microscopes, a microtome,

paraffin bath, and simple physiological apparatus. Charts and models are provided for lecture demonstrations. A good working library, including several American and foreign periodicals, is an important factor in the outfit for botanical instruction.

Subjects.

I. General Botany.—A study of common plants, their structure, physiology, evolution, and adaptation to environment. The work includes a brief study of molds, yeasts, and bacteria, designed as an introduction to problems in which these organisms play a part. *Two laboratory credits and one recitation credit per week, throughout the year. Required of Freshmen in Agriculture, Applied Science, and Home Economics.*

II. Economic Botany.—The systematic botany of crops and weeds. *Two laboratory credits and one recitation credit per week, first term. Required of Sophomores in Agriculture, and Applied Science.*

III. Trees and Shrubs.—The determination of native and introduced trees and shrubs in summer and winter condition. *One laboratory or field credit per week, throughout the year. Required in a Horticultural option in the Agricultural course.* May be elected by other students having a minimum of six credits in Botany.

IV. Forestry.—*Two recitation credits per week, second term. Required of Juniors in Agriculture. Elective in Applied Science.*

V. Histology.—Seed plants are studied by the usual histological methods of imbedding, sectioning, and staining. *Two and one-half laboratory credits and one recitation credit per week, first term. Required in the options A and B, Senior year, course in Agriculture.*

VI. Pathology.—Diseases caused by parasitic fungi and the remedies for them. *Two and one-half laboratory credits and one recitation credit per week, second term. Required in the options A and B, Senior year, course in Agriculture.*

VII. Botanical Literature.—Current literature of periodicals, and bulletins of the U. S. Department of Agriculture and Experiment Stations. *One recitation credit per week, throughout the year. Elective for students with a minimum of nine credits in Botany.* This subject may be elected more than once.

VIII. Special Botany.—Advanced Histology or Pathology may sometimes be given, if applied for.

A. Plant Life.—Elementary Agricultural Botany. *Two laboratory credits and one recitation credit per week throughout the year.* These credits count for entrance to the college courses, and for a certificate in the Short-Course in Agriculture. *Required in the first year of the Sub-Freshman Course, and of the Short-Course in Agriculture.*

Chemistry.

DR. LEIGHTON, MR. HUNTLEY.

Instruction in this department begins in the Freshman year with experimental lectures, recitations, and laboratory practice in general and descriptive chemistry. As much attention as is practicable in a general course is given to the applications of the science to the problems of life. Qualitative analysis extends through one term of the Sophomore year, a portion of the time being devoted to lectures and recitations, but the greater part to practical work in the laboratory. The above subjects are required of all candidates for a degree, as essential to a liberal education, and are preparatory to the subsequent subjects which are designed for students desiring to make chemical engineering their profession.

An elementary course in organic chemistry is required during the second term of the Sophomore year of students in chemical engineering, home economics, and the teachers' course in applied science. The department also affords opportunity for further work in organic chemistry, quantitative analysis, industrial chemistry, gas analysis, assaying, agricultural chemistry, mineralogy, blowpipe analysis, and metallurgy.

The laboratory is supplied with water, gas, and compressed air at each desk; it is also thoroughly equipped with apparatus for the subjects mentioned below. Among the more important pieces of apparatus are a polariscope, microscope, sodium press, hot-air engine, five analytical balances, one assay balance, filter press, Wheatstone bridge, combustion furnace, bomb furnace, assay muffle, crucible and roasting furnaces, ore crusher and grinder. The chemical reference library contains a complete set of the Journal of the Chemical Society, Zeitschrift für Physikalische Chemie, Zeitschrift für Anorganische Chemie, Berichte der deutschen chemischen Gesellschaft, Chemisches Centralblatt, the Metallogrophist and Iron and Steel Magazine, Watt's and Thorpe's dictionaries, Beilstein's Handbuch der Organischen Chemie, O. Dammer's Handbuch der Anorganischen Chemie, Richter's Lexikon der Kohlenstoff-Verbindungen, Allen's Commercial Organic Analysis, and over one hundred and sixty volumes of smaller works covering general analytical, organic, physical, and physiological chemistry.

THE STUDIO.

Subjects.

I. General Chemistry.—*Two recitation and one and one-half laboratory credits per week, first term. Required of Freshmen in all courses.*

II. General Chemistry.—*Two recitation and one and one-half laboratory credits per week, second term. Required of Freshmen in all courses.*

III. Qualitative Analysis.—Basic and acid analysis; analysis of salts, industrial and natural products. *Three laboratory credits per week, first term. Required of Sophomores in all courses.*

IV. Organic Chemistry.—*Three recitation and one laboratory credits per week, second term. Required of Sophomores in Chemical Engineering, Home Economics, and Applied Science. Elective for others who have completed Chemistry III.*

V. Organic Chemistry (advanced).—*Three recitation credits per week, first term. Required of Juniors in Chemical Engineering. Elective for others who have completed Chemistry IV.*

VI. Organic Chemical Laboratory.—*Four laboratory credits per week, second term. Required of Juniors in Chemical Engineering. Elective for others who have completed Chemistry V.*

VII. Quantitative Analysis.—Gravimetric and Volumetric Analysis. Analysis of minerals, ores, alloys, and industrial products. *Six laboratory credits per week, first term; six laboratory credits per week, second term. Required of Juniors in Chemical Engineering. Elective for others who have completed Chemistry III.*

VIII. Quantitative Analysis.—Like VII, but requires less time. *Four laboratory credits per week, first term; four and one-half laboratory credits per week, second term. Elective for those who have completed Chemistry III.*

IX. Quantitative Analysis.—Continuation of course VII. *Four laboratory credits per week, first term. Required of Seniors in Chemical Engineering. Elective for others who have completed Chemistry VII or VIII.*

X. Quantitative Analysis.—Food Analysis. *Two laboratory credits throughout the year. Required of Seniors in Home Economics. Elective for others who have completed Chemistry IV.*

XI. Determinative Mineralogy.—*One and one-half laboratory credits per week, second term. Required of Juniors in Chemical Engineering. Elective for others who have completed Chemistry III.*

XII. Physical Chemistry.—*Three recitation and one laboratory credits per week, first term. Required of Seniors in Chemical Engineering. Elective for others who have completed Chemistry III.*

XIII. Metallurgy.—*Two recitation credits per week, first term. Required of Juniors in Electrical, Civil, and Mechanical Engineering, and Seniors in Chemical Engineering. Elective for others who have completed Chemistry II.*

XIV. Agricultural Chemistry.—*Three recitation and one laboratory credits, first term. Required of Juniors in Agriculture.*

XV. Gas Analysis.—*One and one-half laboratory credits per week, second term. Required of Seniors in Chemical Engineering. Elective for others who have completed Chemistry III.*

XVI. Industrial Chemistry.—*Four recitation credits per week, second term. Required of Seniors in Chemical Engineering. Elective for others who have completed Chemistry IV.*

XVII. Industrial Chemistry.—The work under this subject may be varied to suit the needs of individual students; including such subjects as technical analysis and textile coloring. *Three laboratory credits per week, second term. Required of Seniors in Chemical Engineering. Elective for those who take Chemistry XVI.*

XVIII. Assaying.—*Three laboratory credits per week, second term. Required of Seniors in Chemical Engineering.*

XIX. Physiological Chemistry.—*Two exercises per week throughout the year. Required of Juniors in Home Economics.*

XX. Thesis.—*Required of Seniors in Chemical Engineering and those who take the Chemical option in Applied Science.*

A. Chemistry of Plant and Animal Life.—*Three recitation and one laboratory credits per week. Required of Short-Course students in Agriculture, second year.*

Freehand Drawing.

MISS ELDRED.

The aim of the subjects described below is to supply the practice in drawing necessary for subsequent work in the drafting-room and the science laboratories, and to give some knowledge of the elements of art and some appreciation of the beautiful in art and nature. The work for the first term of the Freshman year is designed to meet the later requirements of mechanical and scientific drawing. The engineering students, after short practice in freehand lettering, spend the remainder of the term in pencil outline drawing, paying especial attention to the subject of freehand perspective, as illustrated by geometrical models and other objects. In the agriculture and science courses, the work of the first term comprises outline drawing in pencil from plant and animal forms. The work of the second term in the science courses is planned upon broader lines, and includes, especially for the course in home economics, some attention to the principles of design. In the following year the students in this course take up during the second term the consideration of color,—the principle of color harmony and the use of color in design and decoration.

The object of this work is to develop appreciation of color and to enable the student to exercise a more intelligent and sensitive discrimination in its use. The subject, history of art, aims to give some familiarity with the greatest achievements of past and present in architecture, sculpture, and painting. Following this general survey, the students in home economics give special consideration to the history of domestic architecture, where it is hoped they may find standards of dignity, simplicity, and fitness to which many of the problems of to-day in the same field may well be referred. These latter subjects are given mainly by means of lectures and the study of casts and photographs. The department has a considerable equipment of illustrative material of this kind, including a collection of about one hundred and fifty casts and over three hundred photographs of folio or larger size, with many smaller prints, among them the five hundred University Prints of Greek and Roman sculpture.

Subjects.

I. Freehand Lettering: Pencil Drawing from Objects. — *Two laboratory credits per week, first term. Required of Freshmen in Engineering and of Short-Course Engineers.*

II. Pencil Drawing from Objects.—*One laboratory credit per week, first term. Required of Freshmen in Agriculture. Two laboratory credits per week, first term. Required of Freshmen in Applied Science. One laboratory credit throughout the year. Required of Freshmen in Home Economics. Two laboratory credits per week, second term. An option for Freshmen in Applied Science. An option for Sub-Freshmen; one laboratory credit throughout the year.*

III. History of Art.—*Two credits per week, first term, one credit per week second term. Required of Sophomores in Home Economics.*

IV. Color Problems.—*One laboratory credit per week, second term. Required of Sophomores in Home Economics.*

V. Drawing in Charcoal from Still Life and the Cast.—*Two laboratory credits per week, second term. Elective.*

VI. Pen-and-Ink Drawing, Water-Color, or Pastel.—*Two laboratory credits per week, second term. Elective.*

VII. Modeling.—*Two laboratory credits per week, second term. Elective.*

Economic and Social Science.

PRESIDENT EDWARDS.

Subjects.

I. Political Economy.—Text-book, supplemented by lectures, readings, and essays. The first term is devoted to the general principles of the subject; second term, to consideration of present-day problems. *Five recitation credits per week, first term, first twelve weeks. Required of Seniors in all courses.*

II. Agricultural Economics.—The study of agriculture as an industry, from the point of view of political economy. Includes a study of the agricultural market; transportation of agricultural products; agricultural labor; farm ownership and tenancy; mortgages, etc. *Elective.* President Edwards.

III. Rural Sociology.—Movements of the farm population—causes and results; general social conditions of farmer, such as illiteracy, health, crime, etc.; personal and social traits developed by rural life; means of communication in rural communities; the rural school; agricultural education; the country church; farmers' organizations, federation of rural social forces. *Elective.* President Edwards.

Home Economics.

PROFESSOR JOHNSON.

The aim of this department is to give both theoretical and practical training in the economic administration of the home. The laboratory is situated in a building by itself, which is finished and furnished in such a manner as to demonstrate the sanitary principles involved in proper kitchen arrangements. It is amply equipped with the most recent scientific cooking-apparatus, inclusive of thermometers, metric scales, different kinds of stoves, and individual utensils. The work in chemistry, biology, etc., is, however, carried on in the laboratories of those departments. There is a good home-economics library, and students are expected to make intelligent use of the main library in reference work, as well as to study those bulletins of the Department of Agriculture and such state reports as deal particularly with the subjects of food and nutrition.

Subjects.

I. House Construction, Sanitation, and Cost.—A study of the house, its construction, situation, and surroundings; heating, lighting, ventilation, water supply, and drainage. *Two recitation and one-half laboratory credits, first term. Required of Freshmen in Home Economics. Open to all college students.*

II. Principles of Selection and Preparation of Food.—The nature and uses of food; its chemical composition, and the changes effected by heat, cold, and fermentation. Methods by which heat is applied to food; study of fuels and cooking-apparatus. *Two laboratory and two recitation credits per week, second term. Required of Freshmen in Home Economics. Prerequisite; Chemistry I.*

III. Household Hygiene.—Cleansing processes; cleaning and care of house, food, and food supplies. Application of bacteriology to care of house and food. *One recitation and one-half laboratory credits per week, second term. Required of Freshmen in Home Economics. Prerequisite; first term Biology I.*

IV. Economic Uses of Food.—Continuation of Subject II, with emphasis on the economic side of the food question. Production, manufacture, and preparation of staple foods; factors affecting cost. *Three laboratory and two recitation credits per week, first term. Required of Sophomores in Home Economics. Prerequisites; Chemistry I, Biology I.*

V. Personal Hygiene.—This course considers the aim of personal hygiene as the maintaining of the most efficient human machine for the life needs of the individual. It endeavors to give and establish ideals of health and efficiency. Includes instruction in first aid to the injured. *One recitation credit per week, throughout the year. Required of Sophomores in Home Economics and of all women Freshmen in other courses.*

VI. Home Decoration.—Continuation of Subject I. A study of the evolution of the house; its adaptation to modern conditions; takes up the principles to be followed in planning, furnishing, and decorating the house from a sanitary and artistic standpoint. *Two recitation credits per week, second term. Required of Sophomores in Home Economics.*

VII. Dietetics.—Principles of diet; relation of food to health; adaptation of food to age, sex, and occupation. *Two laboratory credits per week, second term. Required of Sophomores in Home Economics. Prerequisite; Home Economics II and IV.*

VIII. Food Supplies and Dietaries.—Nutritive and money values of food stuffs; construction of dietaries; adulterations; methods of preservation, etc. *One laboratory and two recitation credits per week, first term. Required of Juniors in Home Economics. Prerequisites; Home Economics VI, Chemistry III and IV.*

IX. Public Hygiene.—Takes up such phases of the subject as have a direct practical bearing on public health and principles of individual and social hygiene. An application of bacteriology to municipal hygiene, water, and food supplies, sewage disposal, etc. *One recitation credit per week, first term. Required of Juniors in Home Economics. Prerequisite; Biology I. Open to all Juniors and Seniors.*

X. Textiles.—A study of fabrics; processes and appliances studied with reference to their historic development; primitive industries; modern processes of manufacture; experimental and laboratory work; dyeing, spinning, and weaving. *Two recitation credits per week, second term. Required of Juniors in Home Economics. Prerequisite; first term of History I.*

XI. Child Hygiene.—A study of the physical development of children; care of infants and young children; school hygiene. *Two recitation credits per week, second term. Required of Juniors in Home Economics. Prerequisite; Psychology. Open to Juniors and Seniors in other courses.*

XII. Household Art.—Theory of color and its use in the home; effect of different textiles and their economic use; materials suitable for various uses in the home, and their hygienic properties. *Two recitation credits per week, first term. Required of Seniors in Home Economics. Prerequisites; Freehand Drawing IV, Home Economics I, VI.*

XIII. A Study of the Family.—Development of the domestic institutions; social ethics of the family; legal, industrial, and educational problems of the household. *Two recitation credits per week, first term. Required of Juniors in Home Economics. Open to Juniors and Seniors in other courses.*

XIV. Household Administration.—A study of the administration of the home inclusive of proper apportionment of income and maintenance of suitable standards. *Three recitation credits per week, second term. Required of Seniors in Home Economics. Prerequisite; Economics I.*

XV. History of Home Economics.—Development of home-economics movement; a study of the work as presented in different types of institutions, and its industrial, educational, and sociologic aspects. *Two recitation credits per week, second term. Required of Juniors in Home Economics. Option A. Open to special students.*

XVI. Teaching of Home Economics.—Purpose and method of the work; courses of study, equipment, etc. *One recitation credit per week, first term. Required of Seniors in Home Economics. Option A.*

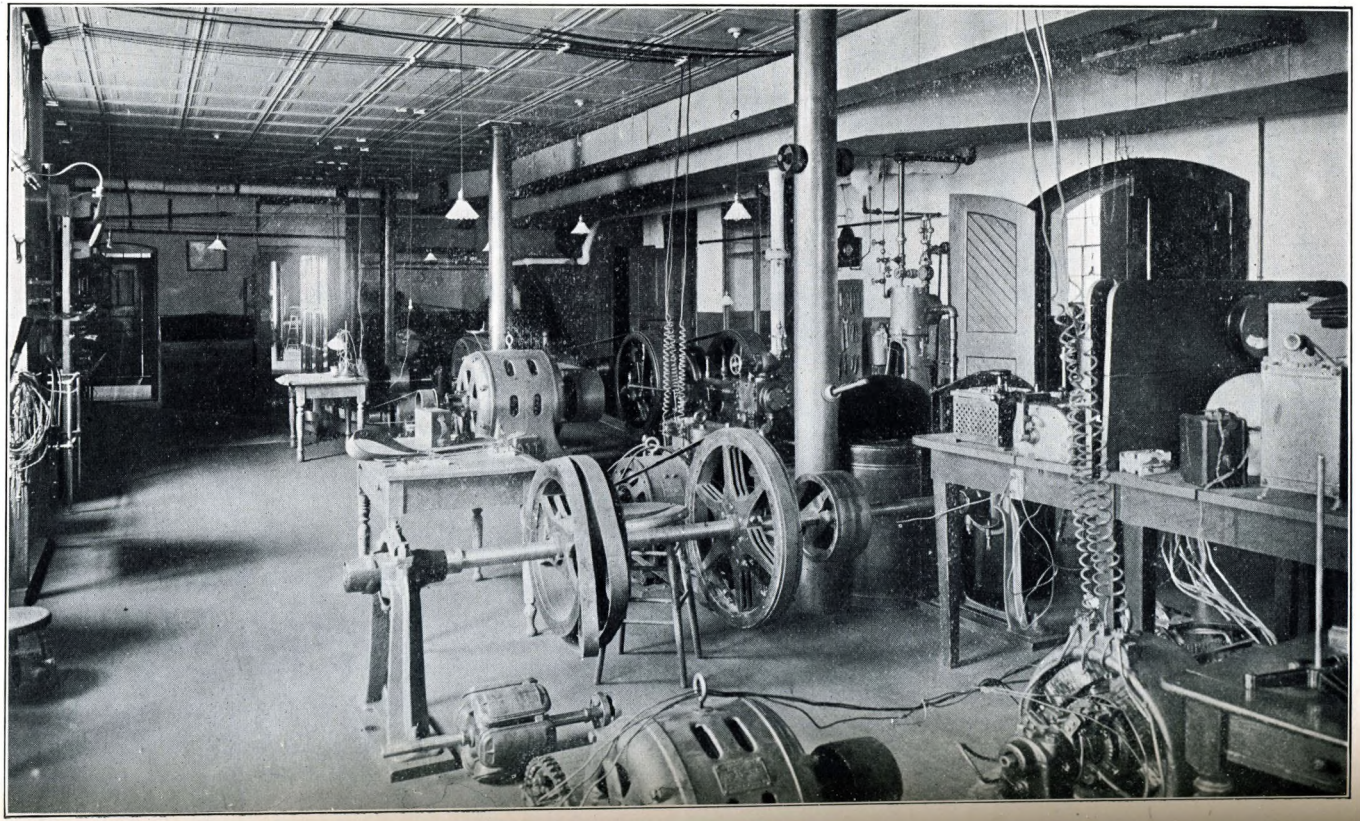
XVII. Thesis.—This may be a problem in the biological, chemical, physiological or economic aspect of the work in Home Economics. *Three credits throughout the year. Required of Seniors in Home Economics.*

DOMESTIC SCIENCE.

A. Household Technique.—This course is planned to give a knowledge of the processes involved in household work. It deals with the handwork of cooking and cleaning; care of rooms; table setting and serving, etc. *Two and one-half laboratory and one recitation credits per week, throughout the year. Required of Short-Course students.*

B. Care of the House.—Principles of housework; labor-saving appliances; how to clean the house and its furnishings; repairing—the use of varnishes, paints, etc., and how to care for finished surfaces. *One laboratory and two recitation credits per week, second term. Required of Short-Course students.*

C. A Study of the Modern American Home.—Its development, the development of its industries; how its comfort, beauty, and surroundings may be improved. *Two recitation credits per week, second term. Required of Short-Course students.*



ELECTRICAL LABORATORY.

D. Foods.—Provides instruction in advanced cooking; special cooking for sick and convalescent; planning of meals; discusses food for different ages and conditions. *Two laboratory credits per week, throughout the year. Required of Short-Course students.*

E. Management of the House.—Considers the materials, qualities, amounts, and cost of house furnishing and supplies; lessons in marketing. *Three recitation credits, throughout the year. Required of Short-Course students.*

F. Hygiene.—Study of the living machine, its mechanism and functions; the right use and proper care of the human mechanism; home nursing and emergencies. *Two recitation credits per week, throughout the year. Required of Short-Course students.*

EDUCATION.

I. History of Education.—Study of the educational ideas and practices of the historical periods as a basis for the interpretation and appreciation of the essential features of modern education. *Three recitation credits per week, first term. Required of Juniors in Home Economics. Option A.*

II. Principles of Education.—The meaning and aim of education; modern educational theories; the biological, physiological, and psychological aspects of education. *Two recitation credits per week, second term. Required of Juniors in Home Economics. Option A.*

III. Methods in Education.—Discussion of the organization and problems of the school; influence of personality of teachers; methods of teaching and study; considerations of subjects of study. *Two recitation credits per week, first term. Required of Seniors in Home Economics. Option A.*

IV. Practicum.—Applied methods of teaching based on actual operations of class and observation work. Practice teaching in different classes. Hours arranged. *Four credits, second term. Required of Seniors in Home Economics. Option A.*

Mechanical Engineering.

PROFESSOR DRAKE, MR. T. C. RODMAN, MR. CHITTENDEN.

Instruction in the fundamental theories of engineering is given by means of text-books, lectures, and reference reading. Laboratory work is required in mechanical drawing, woodworking, forging, machine shop, strength of materials, steam engineering, and engineering tests. The shops are exceptionally well equipped, and the nature of the work done is such as to give the student a fair degree of manual skill and to illustrate the operations of present-day shop practice. The production of power by use of the steam

or gas engine receives marked attention, the power plants and the college pumping-station furnishing opportunities for practical tests.

Features of the equipment for the instruction outlined are as follows. The mechanical-drawing room contains twenty individual benches with drawers and cupboard for instruments and drawing boards. There are also the usual facilities for blue printing. The carpenter shop is provided with benches for twenty students. Each bench is furnished with a set of bench tools. For more extended work, a well-stocked toolroom provides extra tools as may be required. The wood-machinery shop contains twelve wood-turning lathes, circular saw, band-saw, jig-saw, surface and buzz planers. The pattern-making section will accommodate from six to ten students at one time. The forge shop contains twelve forges with anvils, hammers, tongs, stock cutter, and other tools. The machine shop is equipped with six metal lathes, speed lathes, planer, 16″ shaper, two drills, two tool grinders, drill grinder, universal grinder, milling machine, punching press, vertical boring and turning mill, vises, benches, etc. The toolroom is supplied with a large stock of drills, reamers, taps, files, calipers, wrenches, and other small tools. For experimental engineering the department has in use a 50,000-pound Olsen tension and compression machine, a 600-pound cement tester, steam-engine valve model, steam-gauge tester, carpenter calorimeter, hot-air engine, gauges, thermometers, indicators, planimeters, water meters, and other apparatus.

Subjects.

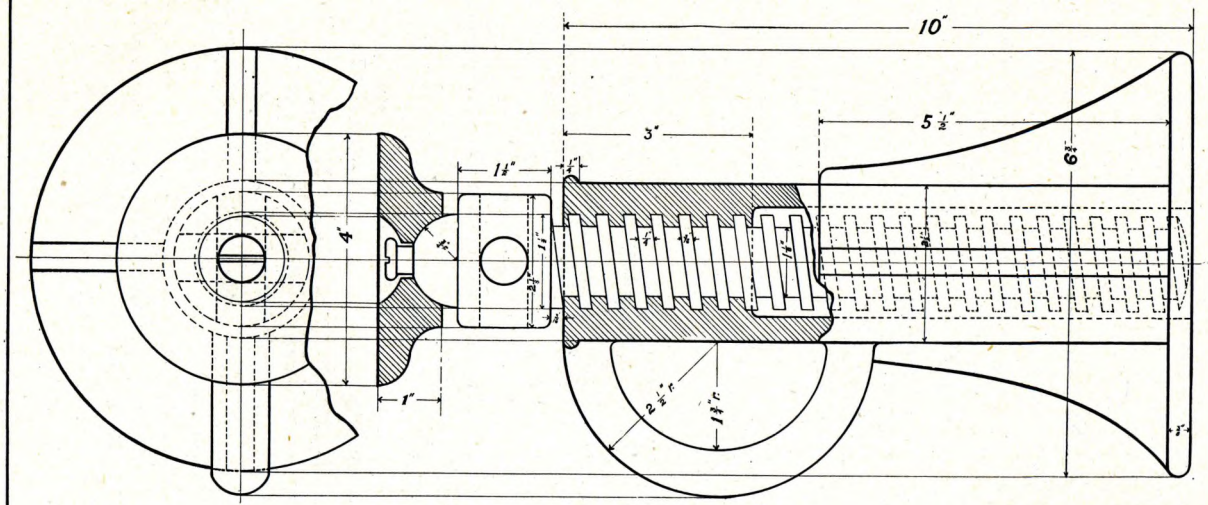
I. Mechanical Drawing.—Elementary principles, use of tools, geometrical problems, projections, screw threads, bolts and nuts, machine parts. *Three laboratory credits, second term. Required of Freshmen in Engineering. One and one-half laboratory credits, second term. Required of Freshmen in Agriculture.*

II. Mechanical Drawing.—Machine details, tracing, blue printing. *Two and one-half laboratory credits, first term. Required of Sophomores in Engineering.*

III. Mechanical Drawing.—Descriptive Geometry of the point, line, plane, and geometrical solids. Intersection of solids, development of surfaces, oblique projection, isometric projection. *Three recitation credits, second term. Required of Sophomores in Engineering.*

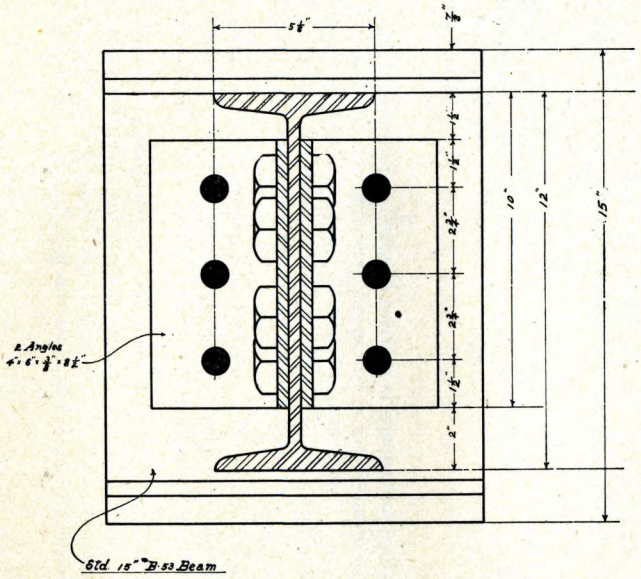
IV. Mechanical Drawing.—Machinery design. *Three laboratory credits, throughout the year. Required of Seniors in Mechanical Engineering.*

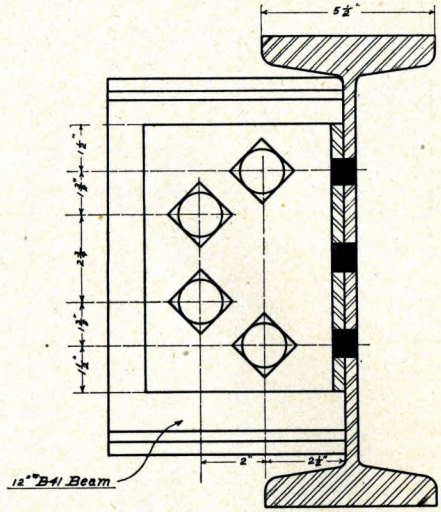
V. Architectural Drawing.—Plans for dwellings. Lectures on the design and construction of the modern American home. *Two laboratory credits, first term. Elective in Home Economics.*



→5 Ton Jack Screw← Full Size.

Harry B. Albro, May 20, 1908.





BEAM CONNECTIONS

VI. Poultry House Construction.—Practical work in designing the various buildings for a poultry plant. Estimates of materials, fixtures, and costs. *Elective for Seniors in Agriculture.*

VII. Farm Buildings.—Plans, estimates, bills of material, specifications, costs. *Two credits, first term. Elective for Seniors in Agriculture.*

VIII. Shop Practice.—Woodworking, benchwork, use of tools, carpentering. *Three shop credits, first term. Required of Freshmen in Engineering. Two shop credits, second term. Required of Sophomores in Agriculture and Freshmen in Applied Sciences.*

IX. Shop Practice. — Woodturning in soft and hard woods. *Three shop credits, eight weeks, second term. Required of Freshmen in Engineering.*

X. Shop Practice.—Pattern-making and principles of molding. Patterns are made for some machine designed in the drafting room. *Five shop credits for nine weeks, second term. Required of Sophomores in Mechanical Engineering.*

XI. Shop Practice.—Forging, drawing, bending, welding, and tool dressing. *Three shop credits, ten weeks, second term. Required of Freshmen in Engineering.*

XII. Shop Practice.—Forging for students in agriculture. Iron work for farm requirements. Repairing of farm machinery. *One shop credit, second term. Required of Juniors in Agriculture.*

XIII. Shop Practice.—Machine Shop. Hand work in chipping, filing, scraping, and finishing. Use of machine tools. Machine construction. *Two recitation and three shop credits for nine weeks, second term. Required of Sophomores in Mechanical Engineering. Three shop credits, second term. Required of Sophomores in Electrical Engineering. Three shop credits, throughout the year. Required of Juniors in Mechanical Engineering.*

XIII a. Shop Practice.—Machine-shop work for students in agriculture. Chipping and filing, tapping and cutting threads, drilling, machine work, and pipe fitting. *One and one-half shop credits, first term. Required of Juniors in Agriculture.*

XIV. Woodcarving.—Care and use of tools, geometrical motives, diaper patterns, incised carving, flat and curved surfaces, historic ornament, low and high relief. *Elective for students in Home Economics and Applied Science.*

XV. Steam Boilers.—Types, construction, strength, uses, and management. *Three recitation credits, six weeks, first term. Required of all Juniors in Engineering.*

XVI. Thermodynamics.—Fundamental principles and formulæ. Direct applications to steam and gas engines. *Three recitation credits, twelve weeks, first term. Required of Juniors in Mechanical, Electrical, and Civil Engineering.*

XVII. Steam Engines.—Types, valve gears, regulators, turbines, power plants, tests. *Three recitation credits, second term. Required of all Juniors in Engineering.*

XVII a. Gas Engines.—Internal combustion motors for gas, gasoline, alcohol, and oils; gas producers, ignition, and governors. *Three recitation credits, second term. Required of Juniors in Mechanical Engineering.*

XVIII. Strength of Materials.—Text-book study of the theory of the strength of rods, pipes, cylinders, beams, columns, shafts, and simple framed structures. Laboratory tests of wood, iron, steel, alloys, brick, stone, and cements. *Three recitation and two laboratory credits, last six weeks of first term and first six weeks of second term. Required of Seniors in Mechanical, Highway, and Chemical Engineering.*

XIX. Theoretical Mechanics.—The mechanics of bodies at rest and in motion. Friction of rest and of motion. Energy, work, and power. Elements of graphic statics. Illustrations are made by the use of many common problems from engineering practice. *Five recitation credits, first twelve weeks, first term. Required of all Juniors in Engineering.*

XIX a. Elementary Mechanics.—Introductory to advanced courses. *Two recitation credits, second term. Required of Sophomores in Mechanical, Electrical, and Civil Engineering.*

XX. Mechanism.—Analysis of motions in machines. Practical mechanism of gears, cams, bearings, shafting, pulleys, belts, ropes, and chain drives. *Three recitation credits, twelve weeks, first term. Required of Juniors in Mechanical Engineering.*

XXI. Hydraulics.—Flow of water through pipes and orifices, and over weirs. Discharge of sewers, rivers, and streams. Water wheels and water power. *Five recitation credits, last twelve weeks, second term. Required of all Juniors in Engineering.*

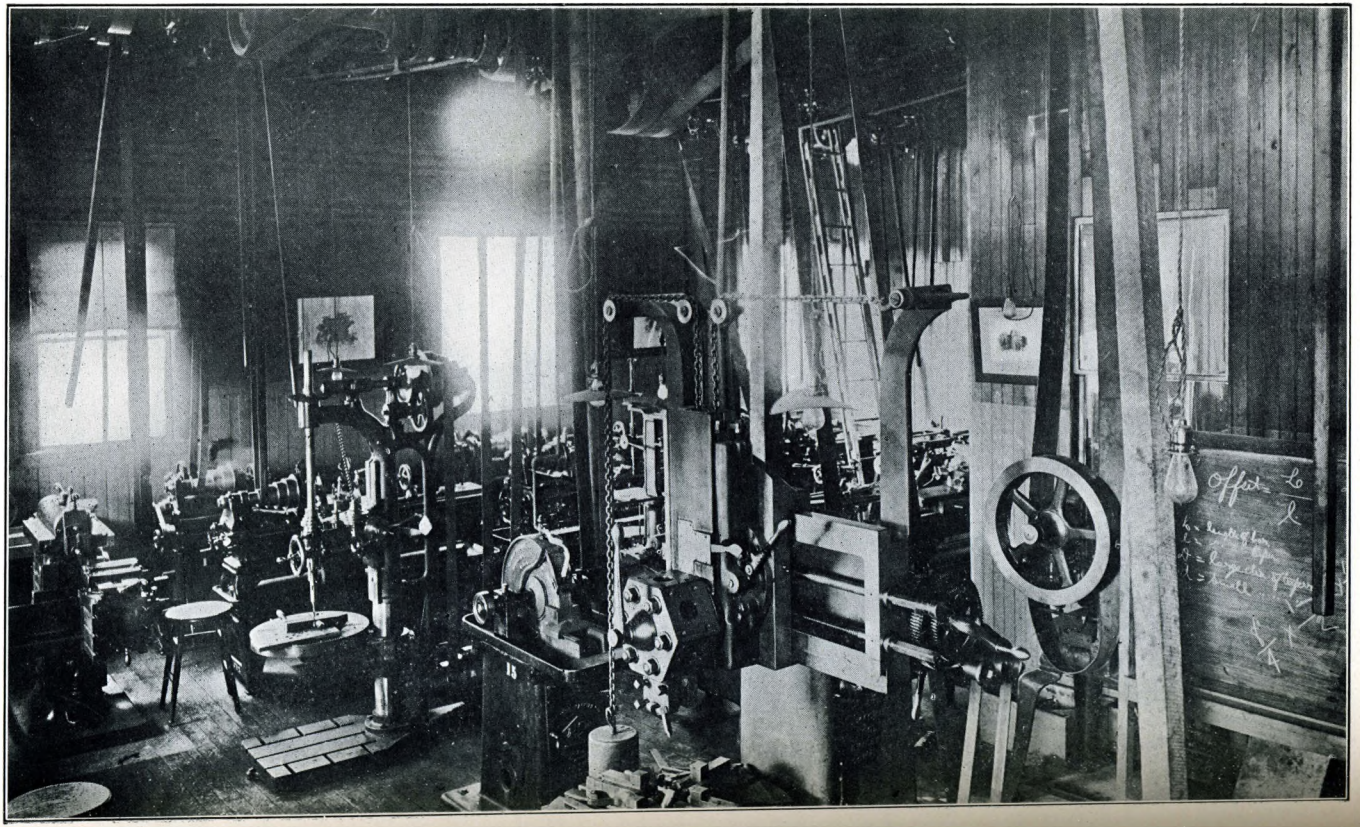
XXII. Heating and Ventilation.—General principles of heating by means of steam, hot air, and hot water. Computations of heating surface. Heating systems for shops and mills. *Three recitation credits, six weeks, first term. Required of Juniors in Mechanical Engineering.*

XXIII. Mill Construction.—Lectures upon the structural development of industrial buildings. The subjects of foundations, walls, floors, roofs, lighting, fire protection, and sanitary features are taken up and thoroughly discussed. *Three recitation credits, ten weeks, first term. Required of Seniors in Mechanical Engineering.*

XXIII a. Mill Equipment.—Lectures treating of the general equipment of a manufacturing plant with the necessary power and power transmission machinery, repair shops, and machine tools. A course can be given, if required, pertaining to the installing of textile machinery. *Three recitation credits, eight weeks, first term. Required of Seniors in Mechanical Engineering.*

XXIV. Contracts, Specifications and Business Law.—Lectures intended to present the subject as an aid to the constructive engineer. *Three recitation credits, two weeks, second term. Required of Seniors in Mechanical Engineering.*

XXV. Industrial Economics. — Management of shops, drafting-room methods, tool-room systems, card records for time keeping, stock, and cost of manufacturing, advertising and sales department. *Three recitation credits, sixteen weeks, second term. Required of Seniors in Mechanical Engineering.*



MACHINE SHOP.

XXVI. Engineering Tests.—Practical testing of engines, boilers, pumps, machinery, fuels, and materials used in engineering work. *Two recitation and three laboratory credits, throughout the year. Required of Seniors in Mechanical Engineering.*

A. Drawing.—Freehand sketching of machine parts, projections, lettering, use of instruments, geometrical problems, machine-drawing tracing, and blue printing. *Three laboratory credits per week, throughout the year. Required of Short-Course students in Engineering, first year. One laboratory credit per week, throughout the year. Required of young men in Sub-Freshman course, first year.*

B. Shop Practice.—The Short-Course Engineering student elects work in carpentering, machine shop, or machine drafting. *Four and one-half shop credits per week, first term; three shop credits per week, second term. Required of Short-Course students in Engineering, first year.*

C. Shop Practice.—Carpentry, machine shop, machine drafting, or steam engineering. The student continues in the same line of work as was chosen the first year, except that those who are to take steam engineering, now substitute it in place of the machine shop. *Four and one-half shop credits per week, throughout the year. Required of Short-Course students in Engineering, second year.*

D. Machine Tools.—A study of the types and principles of operations of the machine tools to be found in a machine shop. Text-books, lectures, and reference reading. *Three recitation credits per week, throughout the year. Required of Short-Course students in Engineering, first year.*

E. Engineering Theory.—Properties of material, fuel, lubricants, steam engines, boilers, gas engines, mechanism, practical electricity, shop methods. *Five recitation credits per week, throughout the year. Required of Short-Course students in Engineering, second year.*

F. Carpentry.—A brief course in use of tools and joinery. *One shop credit per week throughout the year. Required of young men in Sub-Freshman course, second year.*

G. Woodcarving.—*One laboratory credit per week, throughout the year. Required of young women in Sub-Freshman course, second year.*

H. Farm Buildings.—A practical course in the planning of farm structures, estimating quantities of material required, and costs. *One shop credit per week, first term; one and one-half shop credits, second term. Required of Short-Course students in Agriculture, first year.*

I. Shopwork.—Woodworking at the bench and lathe. *One and one-half shop credits per week, throughout the year. Required of Short-Course students in Agriculture, first year.*

J. Forging and Machine Shop.—*Two shop credits per week for twenty-four weeks. Required of Short-Course students in Agriculture, second year.*

Electrical Engineering.

PROFESSOR TOLMAN, MR. W. S. RODMAN.

The aim of the course in electrical engineering is to give to a student pursuing it a satisfactory knowledge of the fundamental principles of the subject, and, building upon these, to acquaint him with the practical application of them to electrical machinery and to the distribution of electricity for lighting, railroads, and power purposes.

The department is prepared to make laboratory tests of electrical machinery, and the time given to practical work is a large part of that required in the course.

Subjects.

I. Theory of Direct Current Machinery.—A detailed study of the theory of direct current apparatus. The theory, use, care of the dynamo. *Three recitation credits per week for thirty weeks. Required of all Juniors in Electrical Engineering.*

II. Direct Current Laboratory.—A course following Physics V and consisting of tests of various types of direct current apparatus. These include magnetization and characteristic curves of different types of machines. Efficiency, regulation, temperature, and other tests are included in this course. *Three laboratory credits per week for twenty-one weeks. Required of Juniors in Electrical Engineering.*

III. Storage Batteries.—A course of lectures on the theory, care, and operation of storage batteries. *Three recitation credits per week for six weeks, second term. Required of Juniors in Electrical Engineering.*

IV. General Electricity.—A course covering briefly the care and use of electrical generators, motors, batteries, switchboards, and measuring devices. *Three recitation credits per week, second term. Required of Juniors in Mechanical and Civil Engineering.*

V. Theory of Alternating Currents.—Recitations and Lectures. Alternating current theory and practice dealing with alternating current machinery, such as the A. C. dynamos, synchronous and induction motors, converters, and transformers. *Three recitation credits per week, throughout the year. Required of Seniors in Electrical Engineering.*

VI. Alternating Current Laboratory.—A course following Physics VIII and consisting of tests of different types of alternating current apparatus. Single and poly-phase generators and motors, synchronous and induction motors, converters, and transformers. *Three laboratory credits per week, throughout the year. Required of Seniors in Electrical Engineering.*

VII. Dynamo Design.—General principles of design of electrical apparatus, including the design of a direct and alternating current generator. *One and*

one-half laboratory credits per week, throughout the year. Required of Juniors in Electrical Engineering.

VIII. Telephone Engineering.—Discussion of the development of the telephone and modern telephone practice. *Two recitation credits per week, first term. Required of Seniors in Electrical Engineering.*

IX. Electric Lighting.—Generation and distribution of electric power for lighting purposes. *Two recitation credits per week, first term. Required of Seniors in Electrical Engineering.*

X. Electric Power Transmission.—A study of systems of high tension distribution, including the construction of the lines, insulation, protection, and troubles developing in high tension work. *Two recitation credits per week, second term. Required of Seniors in Electrical Engineering.*

XI. Electric Railways. — Discussion of economic considerations in the development of an electric railway, the construction, location of generating station, the design of the distributing system, types of motors and systems of control. *Two recitation credits per week, second term. Required of Seniors in Electrical Engineering.*

Civil Engineering.

It is the purpose of this course to give the student such training in the fundamental principles of engineering as to prepare him for the duties and opportunities that may be offered in the various fields of civil engineering. With this object in view, application of the theories and principles learned in the classroom is made in the field, laboratory, and drafting-room. An effort is also made to give the student as liberal a training in the sciences and arts as his limited time will permit, but the primary purpose is to prepare him for one definite line of work.

In order to widen the scope of the student's opportunities, the name of the department has been changed from Highway Engineering to Civil Engineering, and corresponding changes have been made in the course of study. However, owing to the growing importance of highway engineering in this state and throughout the country in general, considerable emphasis is still placed on this phase of engineering work. The state appropriates annually a sum of money which is expended under the direction of the instructor and students of the department in the construction and maintenance of roads on the college property. In this way practical experience is obtained in highway engineering.

The equipment of the department consists of levels, transits, compasses, rods, tapes, chains, drafting instruments, etc., and test-

ing machines, to which the student has access. He also has free use of the library, in which are found the leading engineering journals, and many of the principal works on various engineering subjects.

Subjects.

I. Surveying.—Instruction is given by means of recitations, field and laboratory work, in the theory, use, and adjustments of the compass, level, and transit. The field work includes the prolongation of straight lines, determination of distances, angles, areas, boundaries, corners, and exercises in leveling, etc. Maps are made from the field notes. *One recitation and two field credits per week, first term. Required of Sophomores in Mechanical, Electrical, and Civil Engineering.*

II. Topographic Surveying.—A study is made of the theory and use of the plane table, and of the transit and stadia in making topographic surveys. A complete topographic survey based on a system of triangulation is made, including the completion of a map. *One recitation and two field credits per week, second term. Required of Sophomores in Civil Engineering.*

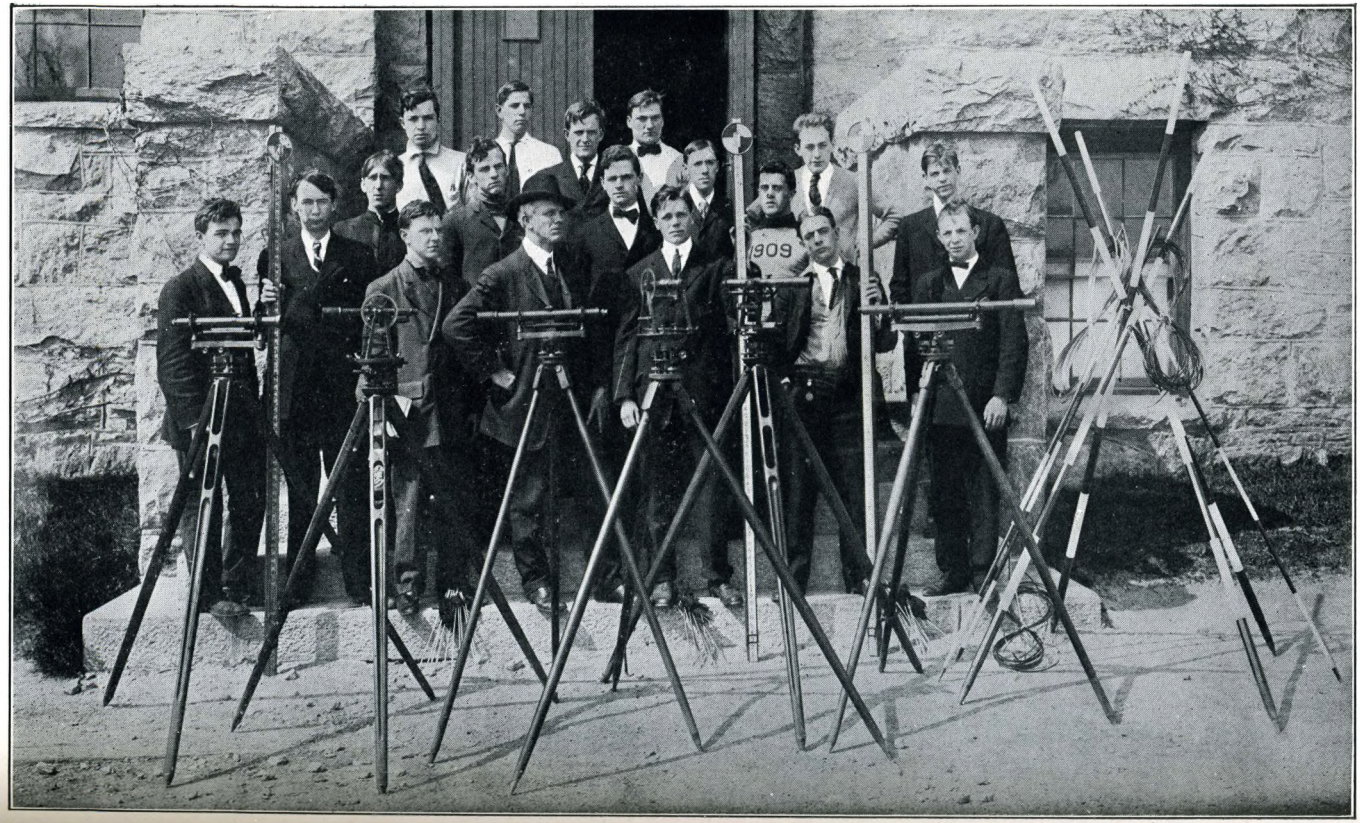
III. Railroad Engineering.—The work consists of a reconnoissance, a preliminary, and a location survey of a short line of railroad, for the purpose of giving the student sufficient work to familiarize him with the methods in actual practice. A set of notes is kept by each student, from which a map, a profile, and estimates are made. A study is also made of the properties of curves, switches, frogs, turnouts, and the spiral, and the methods of locating these in the field. *Four credits per week, divided between field and recitation as would seem advisable, first term. Required of Juniors in Civil Engineering.*

IV. Graphic Statics.—Instruction is given in graphic statics and its application in the design of simple framed structures. *Three recitation credits per week, first semester. Required of Juniors in Civil Engineering.*

V. Roads and Pavements.—The theoretical work of this course consists of a discussion of the principles and details involved in the location, construction, and maintenance of earth, gravel, and macadam roads, together with a discussion of the methods of construction, durability, maintenance, and assessment of cost of the various kinds of pavements used on city streets. The field work consists in the construction of a gravel or macadam road on the college grounds. *Three recitation and one field credits per week, second term. Required of Juniors in Civil Engineering.*

VI. Bridge Details.—The work in this course consists in making a tracing of a shop drawing, estimating the weight and determining the efficiency of the various members of a highway bridge. *Two laboratory credits per week, first semester. Required of Seniors in Civil Engineering.*

VII. Bridge Analysis.—Instruction is given in the computation of stresses in the various types of bridges by graphical and algebraic methods under different conditions of loading. *Two recitation credits per week, first term. Required of Seniors in Civil Engineering.*



READY FOR FIELD WORK.

VIII. Bridge Design.—The student designs a plate girder and a bridge, makes the shop details, and a set of working drawings. *Three laboratory credits per week, second semester. Required of Seniors in Civil Engineering.*

IX. Masonry Construction.—This course deals with the materials of masonry, including brick, stone, lime, and cement; the theory of masonry structures, including foundations for buildings, bridges, and piers; the construction of retaining walls, culverts, bridge abutments; masonry dams and arches. The student is directed to important articles in the current literature of the subject, and systematic and thorough laboratory course on cement testing is given. *Four recitation and one laboratory credits per week, first term. Required of Seniors in Civil Engineering.*

X. Reinforced Concrete.—A study is made of the principles of mechanics underlying the design of reinforced concrete. Working stresses and economical proportions are considered, also the application of reinforced concrete construction to building construction, arches, retaining walls, dams, and miscellaneous structures. *Two recitation credits per week, second term. Required of Seniors in Civil Engineering.*

XI. Sewerage.—A discussion of the separate and combined systems of sewers; relation of rainfall to storm-water flow; hydraulics of sewers; removal of house sewage; the design and construction of sewers and methods of sewage disposal. *Two recitation credits per week, first term. Required of Seniors in Civil Engineering.*

XII. Water Supply.—A discussion of the quantity of water required, sources of supply, flow of streams, and of ground water. Instruction is also given in the general arrangement of water works, loss of head in flow of water through pipes, stresses in dams and water towers. Works for the purification and distribution of water are discussed, including reservoirs, settling basins, pumping machinery, etc. *Three recitations per week, second term. Required of Seniors in Civil Engineering.*

XIII. Tunnelling.—A study of the methods of making tunnel surveys and of the modern methods employed in tunnel construction. *One recitation credit per week, second term. Required of Seniors in Civil Engineering.*

XIV. Contracts and Specifications.—A study of the fundamental principles of the law of contracts, and their application to engineering work. *Two recitation credits per week, second term. Required of Seniors in Civil Engineering.*

XVI. Vacation Reading.—Systematic reading during vacations on some topic assigned by the head of this department.

XV. Thesis.—The preparation of a thesis on some subject connected with the work of this department, involving original investigation or experiment. *Three credits per week, throughout the year. Required of Seniors in Civil Engineering.*

Geology and Mineralogy.

DR. WHEELER, DR. LEIGHTON, MR. HUNTLEY.

GEOLOGY.—Under this subject historical geology is considered in outline, attention being given, also, to those phases of dynamical and structural geology which are particularly important. Special attention is given to rock weathering and soil formation, and to those characteristics of rocks which are of chief importance in connection with road construction.

DETERMINATIVE MINERALOGY.—A short course dealing with the elements of crystallography is given, together with the physical and chemical characteristics of minerals, especially of the rock-making minerals composing our soils. Laboratory work in blowpipe analysis and physical determination of minerals follows the crystallography.

Subjects.

I. Geology.—*Two recitation credits per week, second term. Required of Juniors in Highway Engineering.*

II. Mineralogy.—See Chemistry XI.

History.

MISS BOSTWICK.

Subjects.

I. Social, Economic, and Industrial History of the United States.—*Two recitation credits per week, first term; and three recitation credits per week, second term. Required of Juniors in all courses.*

II. Government and Politics in the United States.—*Five recitation credits per week; first term, last six weeks; and second term, first six weeks. Required of Seniors in all courses.*

A. English History.—*Four recitation credits per week, first term; and two recitation credits, second term. Required of all Sub-Freshmen, first year.*

Languages.

PROFESSOR WATSON, MISS BOSTWICK, MR. SPENCER.

The subjects grouped under this head are English, German, and French.

In all the college courses leading to a degree, English is required throughout the first three years and during twelve weeks of the Senior year. Much practice is given in written and oral expression, and literature is also studied in representative masterpieces. Two years of foreign language work are required in all college courses leading to a degree except mechanical, electrical, and civil engineering, where the requirement is one year. Preference is given to German, but French will be taught if there is sufficient demand for it.

The library is a most important factor in the work of the department, as the English language and literature are represented in it by some twelve hundred carefully selected volumes, and the French and German literatures by about six hundred.

ENGLISH.

I. Rhetoric.—Text-book study and practical application of rhetorical principles in written work. *One recitation credit per week, throughout the year. Required of Freshmen in all courses.*

II. Critical study of certain English dramas.—*One recitation credit per week, throughout the year. Required of Sophomores in all courses.*

III. Argumentation.—A study of fundamental principles. Practice in brief-making and essay writing. *Two recitation credits per week, first term. Required of Juniors in all courses.*

IV. Modern English Prose.—*Two recitation credits per week, second term. Required of Juniors in all courses.*

V. Modern English Poetry.—*Four recitation credits per week, second term, last twelve weeks. Required of Seniors in all courses.*

A. Elementary English.—Grammar, dictation, composition, and reading of masterpieces. Constant practice in writing and oral expression. *Four recitation credits throughout the year. Required of Short-Course students in Agriculture and Engineering, first year.*

B. Elementary English.—A continuation of A, including, also, some instruction in civics and economics. *Three recitation credits, throughout the year. Required of Short-Course students in Agriculture and Engineering, second year.*

C. College Entrance Requirements in English. — With composition work. *Five recitation credits per week, throughout the year. Required of Sub-Freshmen, first year.*

D. Continuation of C.—*Three recitation credits per week, throughout the year. Required of Sub-Freshmen, second year.*

ORAL EXPRESSION.

I. Interpretive Reading.—The fundamentals of expression, pronunciation, articulation, the training of the voice. The intellectual element in expression: emphasis, inflection, phrasing—the reading of prose. The emotional element in expression: quality, force, pitch, rhythm—the reading of poetry. *One recitation credit per week, throughout the year. Required of all Freshmen.*

II. Dramatic Expression.—Standard plays will be studied in class and presented in public from time to time. *One recitation credit per week, throughout the year. Required of all Sophomores.*

III. Debating.—Instruction and practice in the art of debate. Two public debates will be given by the students. *One recitation credit per week, first term. Required of all Juniors.*

IV. Oratory and Extempore Speaking.—Theory and practice. *One recitation credit per week, second term, last twelve weeks. Required of all Seniors.*

GERMAN.

I. Elementary German.—Grammar, dictation, conversation, reading of easy prose and poetry. *Four recitation credits per week, throughout the year. Required of Freshmen who do not offer German for entrance.*

II. Reading of intermediate texts, composition, conversation, study of one of Schiller's masterpieces or similar work. *Three recitation credits per week, throughout the year. Required of Sophomores in Agriculture, Applied Science, and Home Economics.*

III. Scientific and Classical German.—*Three recitation credits per week, throughout the year. Elective for students who have taken I and II or their equivalents.*

A. Elementary German.—Grammar, dictation, conversation, reading of easy prose and poetry. *Five recitation credits per week, throughout the year. Required of Sub-Freshmen.*

FRENCH.

Classes in French will be formed if there is sufficient demand for them, as previously stated on page 64.

Mathematics.

PROFESSOR TYLER.

The work in this department covers three distinct phases of mathematical training: the College, the Sub-Freshman, and the Short-Course instruction. Throughout the regular college work, emphasis is laid both on the theory and direct application of the different sub-

jects to problems that arise in agriculture and the various branches of engineering. It is the aim to prepare the Sub-Freshmen as thoroughly for college mathematics as is done in the better high schools of the state. An attempt is made to present a working knowledge of arithmetic, algebra, geometry, trigonometry and their practical use to Short-Course students without requiring them to prove the principles involved.

Subjects.

III a Higher Algebra and Trigonometry.—*Five recitation credits per week, first term. Required of all Freshmen.*

IV a. Solid Geometry and Analytics.—*Five recitation credits per week, second term. Required of Freshmen in Engineering and Applied Science.*

V. Analytics and Calculus.—*Five recitation credits per week, first term. Required of Sophomores in Engineering.*

VI. Calculus (completed).—*Five recitation credits per week, second term. Required of Sophomores in Engineering.*

A. Algebra.—To quadratics. *Five recitation credits per week, throughout the year. Required of Sub-Freshmen, first year. An additional one-half laboratory credit during the first term.*

B. Algebra.—Quadratic equations, theory of quadratic equations, inequalities, ratio and proportion and the progressions. *Three recitation credits per week, throughout the year. Required of Sub-Freshmen, second year.*

C. Arithmetic, Algebra.—Elementary work planned to meet the needs of Short-Course students. *Four recitation credits per week, first term. Required of students in the Short-Courses in Agriculture and Engineering, first year.*

D. Algebra, Mensuration.—*Four recitation credits per week, second term. Required of students in Short Courses in Agriculture and Engineering, first year.*

E. Plane Geometry.—*Four recitation credits per week, throughout the year. Required of Sub-Freshmen, second year.*

F. Plane Trigonometry, Applied Mathematics, Elementary Surveying, and Drainage.—*Four recitation credits, throughout the year. Required in Short Courses in Agriculture and Engineering, second year.*

Military Science and Tactics.

CAPTAIN COOK.

All male students are required to attend exercises in military instruction during their attendance at the college unless excused by reason of physical disability. Credit is given for this work

on the same basis and under the same regulations as in other departments.

The war department furnishes for use in this instruction cadet rifles, equipments, sabres, ordnance; and details an officer of the army to act as instructor when the number of cadets is one hundred or more. The cadets are organized this year into a battalion of two companies of infantry. Theoretical instruction is given by means of lectures and recitations and practical instruction by means of infantry drills in the school of the squad, the company, and the battalion. The aim of these military exercises is to improve the physique, to inculcate the habit of prompt and cheerful obedience and courtesy to rightfully constituted authority, and to exercise an elevating influence on the conduct of the corps of cadets.

Competitive drills are held annually between the companies of the battalion. The name of the best drilled company and its commander is placed on the battalion colors. Company A, commanded by Cadet Captain L. A. Whipple, was the winner in the annual color contest held May 22, 1907.

Subjects.

Practical Instruction.—Drills in the school of the squad, of the company, and of the battalion. *Two exercises of one hour each per week, counting as one credit, throughout the year. Required of all the command.*

Theoretical Instruction.—United States Infantry Drill Regulations. Manual of Guard Duty. Field Service Regulations of United States Army.—*One recitation credit per week throughout the year. Required of all Freshmen.*

BATTALION ORGANIZATION, APRIL, 1908.

COMMANDANT,

MAURICE HOWE COOK, Captain and Signal Officer, R. I. N. G.

CADET OFFICERS.

Major.....E. R. BUTTS.
Adjutant.....E. F. SMITH.
Quartermaster.....D. E. WARNER.

Captain.....R. W. GOODALE.
Captain.....P. S. BURGESS.
First Lieutenant.....G. J. SCHAEFFER.
First Lieutenant.....S. QUINN.
Second Lieutenant.....H. F. FRENCH.
Second Lieutenant.....L. E. MOYER.

Sergeant-Major.....A. J. Miner.
Color Sergeant.....J. M. Craig.
First Sergeant.....A. M. Howe.
First Sergeant.....W. J. Moran.

Sergeant.....H. R. Tisdale.
Sergeant.....A. H. Kenyon.
Sergeant.....J. W. Salisbury.
Sergeant.....C. B. Edwards.
Sergeant.....W. T. Neal.
Sergeant.....H. Southard.
Sergeant.....W. G. Taylor.
Sergeant.....L. L. Mounce.
Corporal.....R. W. Cummings.
Corporal.....E. A. Comber.
Corporal.....A. F. Wagner.
Corporal.....O. M. Drummond.
Corporal.....H. J. Smith.
Corporal.....R. H. Carpenter.
Corporal.....I. C. Mitchell.
Corporal.....L. C. Easterbrooks.

Physics.

PROFESSOR TOLMAN, MR. W. S. RODMAN.

The instruction given in this department is intended to acquaint the students with the fundamental concepts of physical science. The work will be as broad as is consistent with the time and needs of the students.

This department is equipped with vernier and micrometer calipers, micrometer microscopes, comparator, dividing engine, cathetometer, simple and compound pendulums and balances for exact measurements in mechanics. It has also apparatus for determining the coefficient of linear expansion, and for the determination of specific and latent heats, a weight thermometer apparatus for determining the density of liquids and solids, a thermo-couple for direct determination of temperatures up to 1650° C., Melloni's apparatus for investigation in radiant heat, and apparatus for determining the mechanical equivalent of heat.

In light the laboratory is equipped to carry on the usual college work, and so has apparatus for finding the focal length of lenses and mirrors: a Pulfrich refractometer, spectrometers, an interferometer (Institute of Technology patterns), photometer, total re-

flectometer and many smaller instruments, including simple and compound microscopes. The greater part of the above listed apparatus is new, having been recently purchased of foreign makers.

The laboratory for exact measurements in electricity and magnetism is also fitted up with new apparatus recently purchased of the Leeds and Northrup Company of Philadelphia, and among other instruments are several types of D'Arsonval galvanometers; Wheatstone bridges, slide wire and post-office patterns; standard cells (Clark and Weston types); standards of resistance, capacity and self-induction; magnetometers; voltameters; and many smaller instruments sufficient to carry out the usual college work in electrical measurements. For advanced electrical measurements the department is provided with Weston and Thompson ammeters, and voltmeters with both low and high ranges, wattmeters, a Leeds and Northrup alternating and direct current comparator.

In the subject of sound the department is provided with apparatus for the determination of wave-length, pitch, frequency, etc.

Subjects.

I. Descriptive Physics.—A course designed for students in Agriculture. Considerable time is given to the discussion of the principles of mechanics as applied to farm machinery. The course furnishes an excellent foundation for further work in agricultural physics. *Five recitation credits per week, second term. Required of Sophomores in Agriculture.*

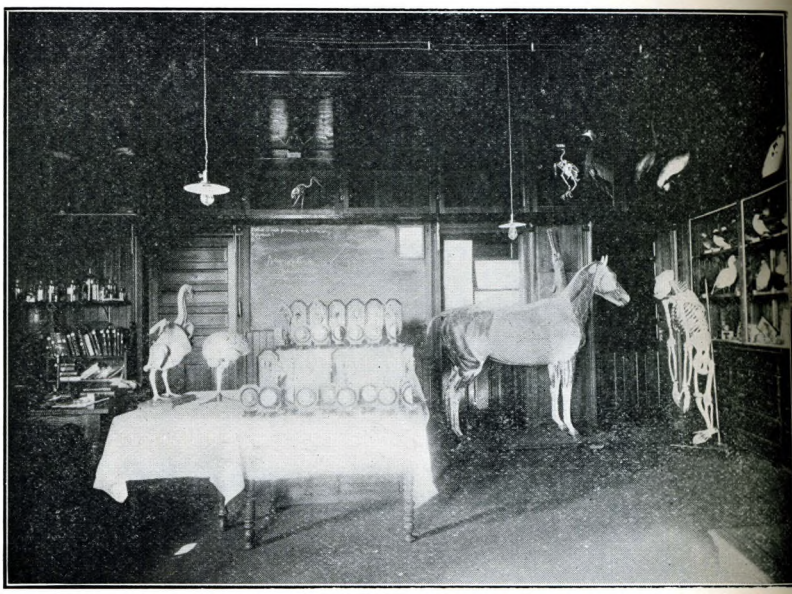
II. General Physics.—A mathematical treatment of the subject. *Four recitation credits per week, throughout the year. Required of all Sophomores in Engineering and Teachers' Course in Applied Science.*

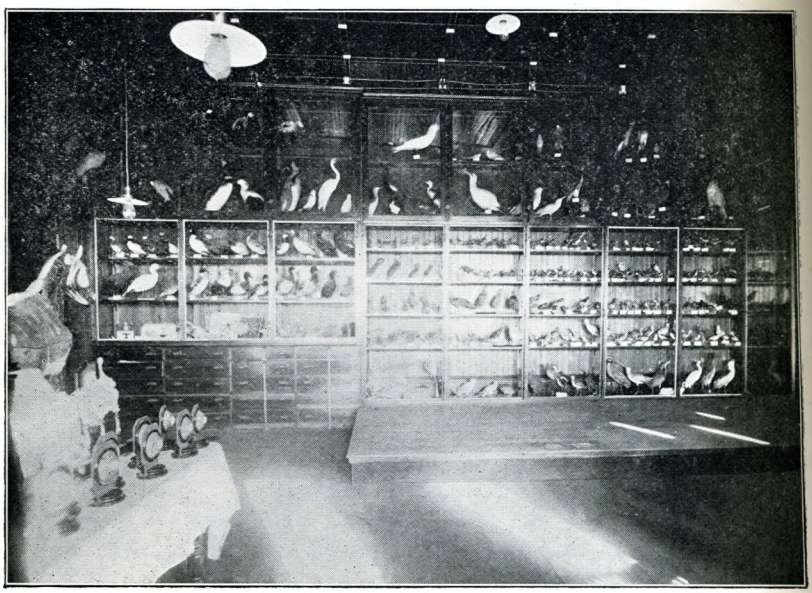
III. Laboratory Physics.—A course in physical measurements intended to give students methods and to form a basis for future engineering work. The calculation of results will be given special attention. *One and one-half laboratory credits per week, throughout the year. Required of Sophomores in Engineering and Teachers' Course in Applied Science.*

IV. Electrical Measurements.—A course of lectures treating of the theory and manipulation of electrical measuring instruments. *Three recitation credits per week for three weeks, first term. Required of Juniors in Electrical Engineering.*

V. Electrical Measurements Laboratory.—Direct currents measurements, resistance, potential, current, magnetic properties of iron and steel, calibration of direct current instruments. *Three laboratory credits per week for twelve weeks, first term. Required of Juniors in Electrical Engineering.*

VI. Photometric Measurements.—A study of the candle power of different





THE BIOLOGICAL LABORATORY.

forms of arc, incandescent, and mercury-vapor lamps. *Two laboratory credits per week, second term. Required of Juniors in Electrical Engineering.*

VII. Electrical Measurements Laboratory.—Alternating currents measurements, self-induction, mutual-induction, capacity. Calibration of alternating current instruments. *Three laboratory credits for six weeks, first term. Required of Seniors in Electrical Engineering.*

A. Elementary Physics.—A descriptive course covering the subjects, mechanics of liquids and gases. *Two recitation and one laboratory credits per week, second term. Required of Sub-Freshmen and Short-Course students in Engineering, first year.*

B. Elementary Physics.—A descriptive course in continuation of Physics A, completing an elementary course in the subject. *Two recitation and one-half laboratory credits per week, throughout the year. Required of Sub-Freshmen and Short-Course students in Engineering, second year.*

Psychology.

PRESIDENT EDWARDS.

I. Lectures, recitations, simple laboratory experiments.—*Three recitation credits per week, first term. Required of Juniors in Applied Science and Home Economics.*

Stenography and Typewriting.

MISS TOLMAN.

Stenography and typewriting are offered as electives. A thorough knowledge of the common English branches is required of every one taking the subjects. The Chandler system of stenography and either the touch or sight system of typewriting are taught. Absolute accuracy is required from the first in both subjects, and particular attention is paid to spelling and punctuation.

Subjects.

I. Elementary.—Instruction in principles; dictation. *Four recitation credits per week, throughout the year. Elective.*

II. Advanced.—Dictation, including the following: business letters, legal documents,—terms used, deeds, wills, mortgages, contracts, declarations; hints useful in office work; general dictation. *Three recitation credits per week, throughout the year.*

Zoölogy.

PROFESSOR BARLOW.

The work in this department is designed to meet the needs of two classes of students, those who are interested in the economic aspect of animal life and those who purpose to become teachers. To meet the needs of the first class, subjects are given which are planned to call attention to the economic importance of the different orders. Much time is alloted to entomology, and in this subject special attention is given to injurious species. For those who are to be teachers, a thorough training is given in the morphology and classification of animals as a preparation for the more special subjects that follow. In these attention is directed to the habits and relations of animals, which are studied both in the field and laboratory.

The laboratory is equipped with a series of charts, valuable models and many mounted skeletons. The Rhode Island birds are represented by mounted specimens of practically every species; fishes, reptiles, and batrachians, by alcoholic preparations. The collection of insects, begun recently, now fills about eighty cases, and is being steadily increased. Each student is given the use of compound and dissecting microscopes and necessary instruments for laboratory work.

Subjects.

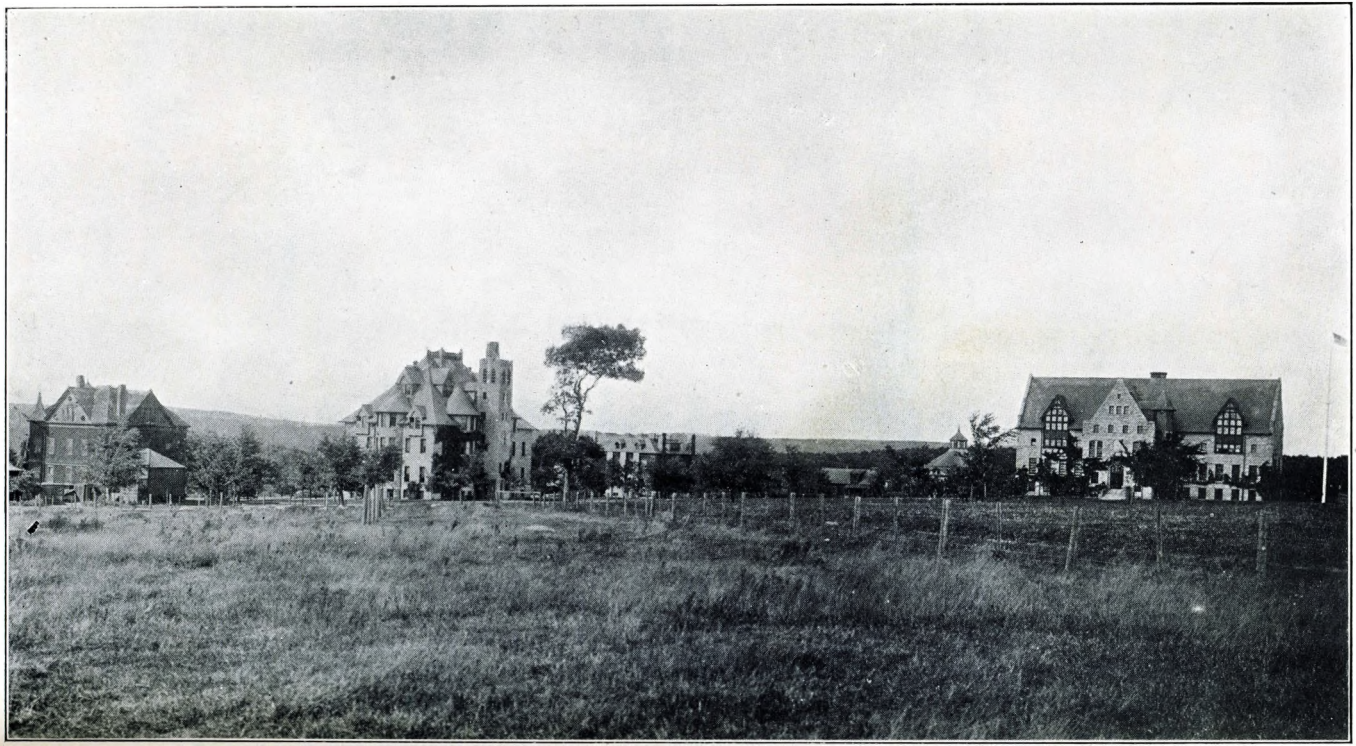
I. General Zoölogy.—Discussion of the more important laws of Biology and the dissection of representatives of the more important Phyla. *Two laboratory and one recitation credits, first term. Required of Sophomores in Agriculture, Home Economics, and Applied Science.*

II. General Zoölogy, continued.—Special attention being given to the relation of animals to their surroundings. *Two laboratory and one recitation credits, second term. Required of Sophomores in Applied Science.*

III. Physiology.—The physiology of the higher mammals. *One laboratory and three recitation credits per week, second term. Required of Sophomores in Agriculture and Home Economics.*

IV. Economic Entomology.—*One laboratory and three recitation credits per week, second term. Required of Juniors in Agriculture.*

V. General Entomology.—*Two laboratory and two recitation credits per week throughout the year. Elective.*



FROM THE VILLAGE ROAD.

VI. Systematic Entomology.—*Three laboratory credits per week, throughout the year. Elective for those who are taking or have taken Zoölogy V.*

VII. Vertebrate Anatomy.—*Two laboratory and one recitation credits per week, first term. Required of Juniors in Home Economics.*

VIII. Histology and Embryology.—*Two laboratory and one recitation credits per week, second term. Required of Juniors in Home Economics.*

IX. Methods in Nature Study.—Bird life, habits of insects, aquaria. *Two laboratory or field credits and one recitation credit per week, second term. Required of Sophomores in the Teachers' Course in Applied Science.*

A. Elementary Zoölogy.—Deals with forms of economic importance. *Two recitation and two and one-half laboratory credits per week, first term. Required of Short-Course students in Agriculture, first year.*

Organizations.

Athletic Association.

JAMES MCINTYRE CRAIG.....President.
LEROY LEIDMAN MOUNCE.....Vice-President.
JOHN BARLOW.....Secretary-Treasurer.

Agricultural Club.*

LEROY LEIDMAN MOUNCE.....President.
JOHN LELAND SHERMAN.....Vice-President.
HOWARD ALBERT SAFFORD.....Secretary-Treasurer.

Engineering Society.

CLESSON HERBERT FIELD.....President.
ALBERT MENDEL HOWE.....Vice-President.
LUCIUS ALBERT WHIPPLE.....Secretary-Treasurer.

Science Club.

J. FRANK MORGAN.....Secretary.

Members of the Faculty, Juniors, and Seniors are eligible to membership.

Young Men's Christian Association.

HARRY ROBERT TISDALE.....President.
RANDOLPH HAYWOOD CARPENTER.....Vice-President.
DAVID L. BRIDGE WORRALL.....Secretary.
WALTER GRAY TAYLOR.....Treasurer.

Young Women's Christian Union.

ORPHA LILLIE ROSE.....President.
MARY ALBRO SHERMAN.....Vice-President.
RUBY BELLE ROCKWELL.....Secretary-Treasurer.

*Affiliated with the New-England Federation of Agriculturists.

Alumni Association.

ARTHUR EARLE MUNRO, 1900.....President.
Providence, R. I.

MINER SANFORD MACOMBER, 1907.....Vice-President.
State College, Pa.

MABEL DEWITT ELDRED, 1895.....Secretary-Treasurer.
Kingston, R. I.

Executive Committee.

A. E. MUNRO, 1900,
M. S. MACOMBER, 1907,
M. D. Eldred, 1895,
H. R. LEWIS, 1907,
JEAN GILMAN, 1905.

Students.

Graduates.

Bidwell, George Leslie, B. S. (Tufts, '05), Chem.....Kingston.
George, Lillian Mabelle, B. S. ('99), Physics.....Kingston.
Bosworth, Alfred Willson, B. S. ('99) Chem.....Geneva, N. Y.

Seniors.

Drew, Joseph Drake, Chem.....Brockton, Mass.
Field, Clesson Herbert, Civil Eng.....Brockton, Mass.
Fiske, Herbert Andrew, Elec. Eng.....Olneyville.
Gardiner, Robert Franklin, Chem.....Wakefield.
Gory, Edward Allen, Elec. Eng.....Pascoag.
Kenyon, Susan Elnora, Biol.....Usquepaugh.
Mitchell, Clovis William, Civil Eng.....Harrisville.
Rose, Orpha Lillie, Gen. Sci.....Kingston.
Sheldon, George Ware, Elec. Eng.....Wakefield.
Sherman, Mary Albro, Agr.....Portsmouth.
Smith, John Lebroc, Elec. Eng.....Narragansett Pier.
Whipple, Lucius Albert, Civil Eng.....Greenville.

Juniors.

Cargill, Rhobie Lucelia, Gen. Sci.....Abbott Run.
Craig, James McIntyre, Agr.....Riverpoint.
Crandall, Fred Kenyon, Agr.....Westerly.
French, Henry Frank, Elec. Eng.....Providence.
Gardiner, Henry Wallace, Civil Eng.....Wakefield.
Howe, Albert Mendel, Elec. Eng.....Brockton, Mass.
Knowles, Walter, Civil Eng.....Kingston.
Moran, Walter John, Civil Eng.....New London, Conn.
Moyer, Louis Earl, Civil Eng.....Dexter, N. Y.
Rockwell, Ruby Belle, Chem.....Troy, Penn.
Salisbury, James William, Civil Eng.....Bristol.
Smith, Elmer Francis, Elec. Eng.....East Lyme, Conn.
Tisdale, Harry Robert, Chem.....New London, Conn.
Tucker, Ellen Capron, Gen. Sci.....Kingston.

Sophomores.

Blomberg, Charles Harold, Civil Eng.....Brooklyn, N. Y.
Burgess, Paul Steere, Chem. Eng.....Pawtucket.
Canfield, Robert Henry Munson, Civil Eng.....Bridgeport, Conn.

Carpenter, Randolph Haywood, Elec. Eng.....East Providence.
Cummings, Robert Winthrop, Mech. Eng.....Orange, Mass.
Easterbrooks, Harold Arnold, Biol.....Providence.
Easterbrooks, Louis Church, Civil Eng.....Providence.
Edwards, Clarence Bland, Elec. Eng.....Kingston.
Fairchild, Stanley, Civil Eng.....Westport, Conn.
Goodale, Ralph Waldo, Civil Eng.....Leominster, Mass.
Hardy, John Ira, Chem.....Groveland, Mass.
Heath, Bertha May, Agr.....Lunenburg, Mass.
Henry, Warren, Civil Eng.....Hopedale, Mass.
Kenyon, Amos Harris, Elec. Eng.....Usquepaugh.
Lamond, Helen Scott, Gen. Sci.....Usquepaugh.
Lee, Alfred Rogers, Agr.....Greenwood, Mass.
Mounce, Leroy Leidman, Agr.....North Marshfield, Mass.
Peabody, George Abbott, Elec. Eng.....Middleton, Mass.
Sherman, John Leland, Agr.....Providence.
Smith, Hiram Jameson, Civil Eng.....Woonsocket.
Stetson, Clifton Orrison, Elec. Eng.....Randolph, Mass.
Taylor, Walter Gray, Elec. Eng.....Middletown.
Tucker, Harriet Taber, Gen. Sci.....West Kingston.
Wagner, Albert Frederic, Civil Eng.....Berkeley.
Wheeler, Richard Howes, Elec. Eng.....New London, N. H.
Worrall, David Elbridge.....Woonsocket.

Freshmen.

Albro, Harry Benjamin.....Pontiac.
Andrews, Carmen Nichols.....Slocums.
Bacon, Carlos Fabens.....Bangor, Me.
Briggs, Sarah Elsie.....Kenyon.
Butts, Eberhard Raynor.....East Greenwich.
Caldwell, Dorothy Walcott.....Woonsocket.
Comber, Edward Anthony.....Narragansett Pier.
Crandall, Frank Henry.....Westerly.
Davis, Edgar George.....Providence.
Drummond, Oliver Murray.....Providence.
Eleazarian, Aram.....Teheran, Persia.
Faulkner, Clarence William.....Warren.
Gilchrest, Clyde Ronald.....Leominster, Mass.
Gilman, M. Elvin.....Gilman, Me.
Hadley, George Francis.....Hope Valley.
Hahn, Byron George.....Thomaston, Me.
Harris, Burton Kenneth.....Lime Rock.
Hazard, Ralph Marshall.....Newport.
Healy, Patrick Joseph.....Newport.
Kent, Robert Willard.....Woonsocket.
Leonard, Charles Augustus.....Hingham, Mass.
Madison, Thomas Edwin.....East Greenwich.

Minor, Arthur Jacob ..... Kingston.
Mitchell, Irving Calvary ..... Harrisville.
Mowry, William Wheatley ..... Woonsocket.
Quinn, Stephen ..... Wakefield.
Robinson, Benjamin Rowland ..... Bedford Station, N. Y.
Safford, Howard Albert ..... Providence.
Sanford, Thomas Whitredge ..... Adamsville.
Schaeffer, George Joseph ..... Peacedale.
Twe, Dihdwo ..... Liberia, West Africa.
Wade, Ceylon Raymond ..... Bridgeton.
Warner, David Edmond, Jr ..... Bridgeton.
Whalen, William Joseph ..... Providence.
Wheeler, Ellery Harrison ..... Valley Falls.
Wood, Edith Channing ..... Slocums.

Specials.

Browne, Mary Katherine ..... Kingston.
Davis, Augustus Boss ..... Kingston.
Hulse, Frank Halsey ..... Cowesett.
Meears, Etta Elizabeth ..... Kingston.
Pettengill, George Herbert ..... Amherst, N. H.
Pratt, Stuart Greene ..... Providence.
Rawdon, Herbert Edward Carson ..... Providence.
Sisson, Colville Brown ..... Providence.
Slack, Lewis ..... Kingston.
Soule, Daniel Anthony ..... Wickford.

Sub-Freshmen.

Balanzategui, William ..... San Sebastian, Spain.
Burdick, George Chester ..... Niantic.
Daniels, Willis Washington ..... Pawtucket.
Drake, Howard Prouty ..... Kingston.
Dyer, Lola Segar ..... Slocums.
Espina, Manuel ..... Matanzas, Cuba.
Holland, Leo Joseph ..... Providence.
Hopkins, Raymond Canfield ..... Shannock.
Hoxie, Harry Bailey ..... Quonochontaug.
Johnson, Frederick Isaiah ..... Barrington.
Kennedy, William Franklin ..... Wakefield.
Kenyon, Annie Eliza ..... Usquepaugh.
Macklin, Walter Elwood ..... Cumberland Hill.
MacNiff, David John Shields ..... Providence.
Neal, William Thomas ..... Pittsfield, Mass.
Patterson, Arthur John ..... Buffalo, N. Y.
Wood, Susie Stanton ..... Slocums.
Young, James Hannibal ..... Brooklyn, N. Y.

Short Course in Agriculture.

Aizpuru, Frank ..... Panama, Panama.
Barker, Stephen Congdon ..... Middletown.
Bradshaw, Alvin Simpson ..... Gardner, Mass.
Cobb, Electra Henrietta ..... Howardsville, Va.
Robinson, Eben George ..... Edgewood.
Southard, Horace ..... Providence.
Stevens, George Austin, Jr ..... Ridgewood, N. J.

Short Course in Engineering.

Aizpuru, Elias ..... Panama, Panama.
Chappell, Frank ..... Westerly.
Fagan, Hugh Jean ..... Peacedale.
Furber, Everett Wilkinson ..... Pawtucket.
Hayward, Harry Louis ..... Holyoke, Mass.
Millard, George Albert ..... Arlington.
Miller, John Wright ..... Narragansett Pier.
Rayhill, Charles William ..... Warwick.
Toolin, Bartholomew James ..... Cowesett.
Tully, William Henry ..... Peacedale.
Wood, John Midgley ..... Pawtucket.

Course in Poultry Keeping.

Anthony, Karl Gustaf ..... Newport.
Atwell, S. Virginia ..... Worcester, Mass.
Austin, Edith M ..... New York, N. Y.
Barber, Frank Gardner ..... Norwalk, Ohio.
Brummer, Henry C ..... New York, N. Y.
Carr, Daniel Nicholas ..... Peacedale.
Crandall, Frank Henry ..... Westerly.
Crowell, Nathan ..... East Dennis, Mass.
Davidson, Albert Porter ..... Centre Conway, N. H.
Duffee, Charles Pierce, Jr ..... Chelsea, Mass.
Eldred, Ida Lewis Sherman ..... Kingston.
Hazard, Harold L ..... Peacedale.
Lifshitz, Samuel Solomon ..... New York, N. Y.
Murch, Ralph Herbert ..... West Lebanon, N. H.
Parker, Emma J ..... Still River, Mass.
Sherman, Philip A ..... Grantham, N. H.
Stevens, George Austin, Jr ..... Ridgewood, N. J.
Taylor, Andrew Puffner ..... Swarthmore, Penn.
Twe, Dihdwo ..... Liberia, West Africa.

Total number of students (none counted twice) 153

Graduates.*

1894.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ADAMS, GEORGE EDWARD . . . Kingston.	Agr.	Professor of Agriculture, R. I. C. A. & M. A.
AMMONDS, GEORGE CLARENCE . . 5 Boylston Place, Boston, Mass.	Mech.	Railroad Postal Clerk, on N. Y., N. H. & H. R. R. Co.
ARNOLD, CHAPIN TRAFFORD . . 52 Wood St., Providence.	Agr.	Electrical Contractor, Office 283 Westminster St., Room 10, Providence.
BURLINGAME, GEO. WASHINGTON . R. F. D. No. 2, Box 56, North Scituate.	Agr.	Farmer.
CLARK, HELEN MAY (MRS. WM. F. B. LEAVITT), B. L., Smith College, 1899. Essex Fells, New Jersey.		At home.
KNOWLES, JOHN FRANKLIN . . Ashaway.	Mech.	With Contractor John Bristow.
MADISON, WARREN BROWN . . Kingston.	Agr.	Professor of Animal Husbandry, R. I. C. A. & M. A.
MATHEWSON, ERNEST HOXSIE . . Ph. B., Brown University, 1896. 1486 Meridian Place, Washington, D. C.	Mech.	Crop Technologist in Tobacco, U. S. Department of Agriculture.
PECKHAM, REUBEN WALLACE . . Melville Station, Newport.	Agr.	Market Gardener.
RATHBUN, WILLIAM SHERMAN . . 241 Washington Avenue, West Haven, Conn.	Agr.	Editor West Haven Advertiser.
RODMAN, GEORGE ALBERT . . . New Haven, Conn.	Mech.	Building Dept., Room 24, Union Station, N. Y., N. H. & H. R. R. Co.
SARGENT, CHARLES LAWRENCE . . Ph. D., University of Pennsylvania, 1900. Newark, New Jersey.	Agr.	Chemist, Murphy Varnish Co.
SLOCUM, SAMUEL WATSON . . . 130 West Broad St., Westerly.	Agr.	Carpenter.

*It is earnestly desired that the graduates inform the Alumni Bureau of any permanent change of address.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
SPEARS, JOHN BARDEN . . . . South Scituate, R. F. D.	Agr.	Farmer.
SWEET, STEPHEN ADELBERT . . Slocum.	Agr.	Farmer.
TUCKER, GEORGE MASON . . . Ph. D., Göttingen, 1899. Flora, Illinois.	Agr.	Proprietor, Plant-Breeding Farm.
WILBER, ROBERT ARTHUR . . . East Greenwich.	Mech.	Express Agent.

1895.

ALBRO, LESTER FRANKLIN . . . Melville Station, Newport.	Agr.	Professional Singer.
BURDICK, HOWLAND . . . . . Kingston.	Agr.	Instructor in Dairying, R. I. C. A. & M. A.
CLARKE, CHARLES SHERMAN . . Jamestown.	Mech.	Marine Engineer.
ELDRED, MABEL DEWITT . . . Kingston.		Instructor in Drawing, R. I. C. A. & M. A.
HAMMOND, JOHN EDWARD . . . Jamestown.	Agr.	Farmer.
OATLEY, LINCOLN NATHAN . . . Wakefield.	Mech.	Contractor and Builder.
SCOTT, ARTHUR CURTIS . . . . Ph. D., Univ. of Wisconsin, 1902. Austin, Texas.	Mech.	Professor of Electrical Engineering, Consulting Engineer, Univ. of Texas.
TEFFT, JESSE COTTRELL . . . . Jamestown.	Mech.	Purser, Newport and Jamestown Ferryboat Co.
WINSOR, BYRON EDGAR . . . . Coventry.	Mech.	Poultryman.

1896.

BROWN, MAY (MRS. CHARLES A. WHITE). Narragansett Pier.		At home.
GREENMAN, ADELAIDE MARIA (MRS. R. WALLACE PECKHAM) . Melville Station, Newport.		At home.
KENYON, ALBERT LEWIS . . . Lebanon, Connecticut.	Mech.	Farmer.
MOORE, NATHAN LEWIS CASS . . Shannock.	Agr.	Fruit-Grower.
TABOR, EDGAR FRANCIS . . . . 69 Doyle Ave., Providence.	Mech.	Calico Printer, Silver Spring Bleaching and Dyeing Co.
*WILLIAMS, JAMES EMERSON . .	Agr.	

* Deceased.

1897.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CARMICHAEL, WELCOME SANDS . . Shannock.	Sci.	Bookkeeper. Providence Journal Co., Providence.
CASE, HERBERT EDWARDS BROWN . Ph. B., Brown University, 1900. Graduate, Hartford Theological Seminary, 1904.	Mech.	Missionary, Marianas, Island of Guam, U. S. A.
GRINNELL, ARCHIE FRANKLIN . . 85 Ninth St., Providence.	Mech.	Draughtsman, Brown & Sharpe Mfg. Co.
HANSON, GERTRUDE MAIE . . . Usquepaugh.	Sci.	Teacher.
HOXSIE, BESSIE BAILEY (MRS. E. F. RUECKERT) . . . . 98 Melrose St., Providence.	Sci.	At home.
KENYON, ALBERT PRENTICE . . 10 West St., Westerly.	Mech.	Bookkeeper, Maxson & Co., Westerly.
KENYON, CHARLES FRANKLIN . . Shannock.	Mech.	Stationary Engineer, Boston, Mass.
LARKIN, JESSIE LOUISE . . . . 98 Beach St., Westerly.	Sci.	Stenographer.
MARSLAND, LOUIS HERBERT . . . 7 Exchange St., Auburn, N. Y.	Mech.	Leveller, Dept. State Engineer and Surveyor.
TEFFT, ELIZA ALICE . . . . . 16 Rocket St., Westerly.	Sci.	Teacher, East Greenwich.
THOMAS, IRVING . . . . . 2217 South Darien St., Philadelphia, Pa.	Mech.	Designer of Patterns.

1898.

ARNOLD, SARAH ESTELLE (MRS. R. O. BROOKS) . . . . 191 Franklin St., New York City.	Sci.	At home.
BARBER, GEORGE WASHINGTON . East Greenwich.	Agr.	Clerk.
CARGILL, EDNA MARIA (MRS. LESTER H. BROWN) . . . Abbott Run.	Sci.	At home.
CASE, JOHN PETER . . . . . 26 Courtland St., New York City.	Agr.	With Brown Hoisting Machinery Company.
CLARK, WILLIAM CASE . . . . Wakefield.	Sci.	Secretary, Sea-View Electric Railroad.
CONGDON, HENRY AUGUSTUS . . Kingston.	Mech.	Farmer.
FLAGG, MARTHA REBECCA . . . Hardwick, Mass.	Sci.	At home.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
HARLEY, WILLIAM FERGUSON . . 62 Hillside Avenue, Providence.	Agr.	Salesman, with Messrs. Callender, McAuslan & Troup Providence.
TURNER, HARRIETTE FLORENCE (MRS. GEO. M. TUCKER) . . . Graduate, Drexel Institute, 1900, Flora, Illinois.	Sci.	At home.
WILSON, GRACE ELLEN (MRS. W. F. HARLEY) . . . . 62 Hillside Avenue, Providence.	Sci.	At home.

1899.

BOSWORTH, ALFRED WILLSON . . Geneva, N. Y.	Sci.	Associate Chemist, N. Y. Agr. Exp. Sta.
BROOKS, RALPH ORDWAY . . . 191 Franklin St., New York City.	Sci.	Director and Chief Chemist, Official Testing Laboratory.
GEORGE, LILLIAN MABELLE . . . A. B., Univ. Ill., 1904. Kingston.	Sci.	Librarian, R. I. C. A. & M. A.
HARVEY, MILDRED WAYNE . . . 115 Broadway, New York City.	Sci.	Private Secretary, National Copper Bank.
KENYON, BLYDON ELLERY . . . Austin, Texas.	Agr.	Instructor, School of Electrical Engineering, University of Texas.
KNOWLES, CARROLL . . . . . 127 Hamilton St., Providence.	Mech.	Tool Designer, Brown & Sharpe Mfg. Co.
KNOWLES, HARRY . . . . . Ph. B., Brown University, 1906. 19 East Park St., Newark, N. J.	Sci.	Reporter, Newark Sunday Call.
LADD, MERRILL AUGUSTUS . . . 304 No. Boulevard, Atlanta, Ga.	Mech.	Commercial Representative for Florida and Georgia, General Electric Co.
MORRISON, CLIFFORD BREWSTER . 543 Broad St., Providence.	Sci.	Chemist, City Sewerage Dept.
OWEN, WILLIAM FRAZIER . . . Schenectady, N. Y.	Mech.	Engineering Dept., General Electric Co.
PAYNE, EBENEZER . . . . . M. D., Univ. Michigan, 1904. Great Barrington, Mass.	Sci.	Physician and Surgeon.
PHILLIPS, WALTER CLARKE . . . Ph. B., Brown University, 1902. A. M., Brown University, 1903. 1005 W. Illinois St., Urbana, Ill.	Mech.	Instructor in English Literature, University of Illinois.
REYNOLDS, ROBERT SPINK . . . Room 314, Gen. Office Bldg.. New Haven, Conn.	Mech.	Chief Draughtsman, Building Dept., N.Y., N. H. & H. R. R. Co.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
RICE, MINNIE ELIZABETH (MRS. ROBERT J. SHERMAN) . . Lafayette.	Sci.	At home.
SHERMAN, ABBIE GERTRUDE (MRS. BENJAMIN BARTON) . . . 56 Pavilion Ave., Providence.	Sci.	At home.
SHERMAN, GEORGE ALBERT . . . West Kingston.	Mech.	Insurance Agent.
THOMPSON, SALLY RODMAN (MRS. LEWIS BALCH) . . . . Kingston.	Sci.	At home.

1900.

BRIGHTMAN, HENRY MAXSON . . 410 Murray Bldg., Grand Rapids, Mich.	Mech.	Engineering and Construction.
CROSS, CHARLES CLARK . . . . 814 So. 19th St., Newcastle, Indiana.	Mech.	Gen. Inspector, Maxwell-Briscoe Motor Co.
ELDRED, JOHN RALEIGH . . . Lincoln Hall, Ithaca, N. Y.	Mech.	Instructor in Civil Engineering, Cornell University.
FISON, GERTRUDE SARAH . . . 1178 Park Place, Brooklyn, N. Y.	Sci.	Children's Librarian, Brooklyn Public Library, 234 Albany Ave., Brooklyn.
FRY, JOHN JOSEPH . . . . . A. B., Oberlin, 1904. Glenbrook, Conn.	Mech.	Principal, Darien Public School.
GODDARD, EDITH (MRS. LAWRENCE B. REED) . . . 25 Main St., Plymouth, Mass.	Sci.	At home.
KENYON, AMOS LANGWORTHY . . Newburgh, N. Y.	Agr.	Dairyman, Brookside Farm.
MUNRO, ARTHUR EARLE . . . Ph. B., Brown University, 1902. 41 George St., Providence.	Sci.	Attorney-at-Law. 49 Westminster St.
SOULE, RALPH NELSON . . . . East Greenwich.	Sci.	Student, 201 E. St. N. W., Washington, D. C.
STEERE, ANTHONY ENOCH . . . Fort Hunter, N. Y.	Mech.	Assistant Civil Engineer, New York State Barge Canal.
STILLMAN, LENORA ESTELLE . . 443 Bleecker St., Brooklyn, N. Y.	Sci.	Teacher.
TUCKER, BERTHA DOUGLASS . . R. F. D. No. 2, Box 105, Swansea, Mass.	Sci.	Dressmaker.
WHEELER, CHARLES NOYES . . 97 Garden St., Pawtucket.	Sci.	Clerk, Wm. H. Haskell Manufacturing Co.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
WILSON, JOSEPH ROBERT . . . Belleville.	Mech.	In Woolen Mills, J. P. Campbell.

1901.

BRAYTON, CHARLES ANDREW . . Fiskeville.	Agr.	Farmer.
BRIGGS, NELLIE ALBERTINE . . Providence.	Sci.	Stenographer, R. I. Hospital Trust Co.
BURGESS, CHARLES STUART . . . 264 Sayles St., Providence.	Mech.	Draughtsman, Brown & Sharpe Mfg. Co.
CLARNER, LOUIS GEORGE KARL, JR. Arnold's Mills.	Sci.	Farmer.
DAWLEY, EDNA ETHEL . . . . . Kenyon.	Sci.	Teacher.
DENICO, ARTHUR ALBERTUS . . 20 Croyland Road, Providence.	Sci.	With Providence Telephone Co.
*JAMES, RUTH HORTENSE (MRS. HERBERT E. ROUSE) . .	Sci.	
SHERMAN, ANNA BROWN . . . . Kingston.	Sci.	Advertising.
SHERMAN, ELIZABETH AGNES . . 41 Milk St., Boston, Mass.	Sci.	Stenographer, with Whitehall Portland Cement Co.
SMITH, HOWARD DEXTER . . . A. M., Brown University, 1904. Ph. D., Tufts College, 1906. 834 Church St., Beloit, Wisconsin.	Sci.	Instructor in Chemistry, Beloit College.
STEERE, ROENA HOXSIE . . . 98 Fifield St., Providence.	Sci.	Stenographer, with Anthony & Cowell Co.
WILBY, JOHN . . . . . Flat River, Missouri.	Sci.	Supply Clerk, Central Lead Co.

1902.

CLARKE, LATHAM . . . . . A. M., Brown University, 1903. Ph. D., Harvard University, 1905. Boylston Hall, Cambridge, Mass.	Chem.	Instructor in Chemistry, Harvard University.
FERRY, OLIVER NEEDHAM . . . 8 Armington Ave., Providence.	Mech.	With Providence Engineering Co.
MAXSON, RALPH NELSON . . . Ph. D., Yale University, 1905. 522 Rose St., Lexington, Kentucky.	Chem.	Assistant Professor in Chemistry, Kentucky University.
PITKIN, ROBERT WILLIAM . . . Rockville, Conn., R. F. D. No. 1.	Mech.	Farmer.

* Deceased.

1903.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
BARBER, KATE GRACE . . . Ph.D., Yale University, 1906. Washington, D. C.	Gen. Sci.	Micro-analyst, Bureau of Chemistry, U. S. Department of Agriculture.
CONANT, WALTER AIKEN . . Care Sidney A. Wilbour, 17 Milk St., Boston, Mass.	Agr.	Dairying, North Amherst, Mass.
GODDARD, WARREN, JR . . Graduate New Church Theological School, 1907. Contacook, New Hampshire.	Mech.	Pastor, New Jerusalem Church.
KEEFER, EDITH CECILIA . . 13 Poplar St., Providence.	Biol.	Teacher of Science.
KENT, RAYMOND WARREN . . A. M., Harvard University, 1904. Akron, Ohio.	Chem.	Chemist, Diamond Rubber Co.
TEFFT, ERNEST ALLEN . . . Broadway, Providence.	El. Eng.	With Amer. Locomotive Works.

1904.

BALLOU, WILLARD ALGER . . 231 Ryerson St., Brooklyn, N. Y.	Biol.	Instructor in Chemical Mathematics, Pratt Institute.
QUINN, MARY LOUISE . . . 640 South Webster Ave., Green Bay, Wisconsin.	Biol.	Teacher of Botany and Physiology, High School.
RODMAN, WALTER SHELDON . Kingston.	El. Eng.	Instructor in Physics and Electrical Engineering, R. I. C. A. & M. A.

1905.

CHAMPLIN, SARAH ELIZABETH . 30 Portland St., Providence.	Gen. Sci.	In Office of Burt Mfg. Co., 226 Eddy St.
DOW, VICTOR WELLS . . . 17 Battery Place, New York City.	High. Eng.	Traveling Representative of Barrett Mfg. Co.
GILMAN, JEAN . . . . . Hampton, Virginia.	High. Eng.	Assistant to Director of Trade School, Hampton Institute.
HARRALL, NELLIE ARMSTRONG Wakefield.	Gen. Sci.	Student, Normal School of Physical Training, Cambridge, Mass.

THE VILLAGE STREET.

1906.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ARNOLD, BENJAMIN HOWARD . 32 Vine St., Lynn, Mass.	El. Eng.	With General Electric Co.
BERRY, WALLACE NOYES . . Interlachen, Florida.	El. Eng.	Teacher, Electrical Engineering.
ELKINS, MARION GRAHAM . 10 Moody St., Amesbury, Mass.	Gen. Sci.	Graduate student, Yale University, 568 Chapel St., New Haven, Conn.
HARDING, LEE LAPLACE . . 248 Montauk Ave., New London, Conn.	High. Eng.	Instructor in Mathematics and Science, Manual Training High School.
KEYES, FREDERICK GEORGE . Brown Union, Providence.	Chem.	Graduate student, Brown University.
NICHOLS, HOWARD MARTIN . 26 Congress St., Lynn, Mass.	El. Eng.	In Engineering Dept., General Electric Co.
SISSON, CORA EDNA . . . Wickford.	Gen. Sci.	Teacher.
WILKINSON, ALBERT EDMUND Rock, Mass.	Agr.	Proprietor, Glen Farm.

1907.

BARBER, ARTHUR HOUGHTON . East Greenwich.	Mech. Eng.	Student, Cornell University, Ithaca, New York.
COGGINS, CALVIN LESTER . . Sharon, Mass.	El. Eng.	Assistant Physics Dept., Ohio State University, Columbus, O.
FERRY, JAY RUSSELL . . . Marion, Connecticut.	High. Eng.	
KELLOGG, DAVID RAYMOND . 159 W. Eighth Ave., Columbus.	Chem.	Assistant Physics Dept., Ohio State University, Columbus, O.
KENDRICK, WINFIELD SMITH . Lynn, Massachusetts.	El. Eng.	With General Electric Co.
LAMOND, JOHN KENYON . . Usquepaugh.	El. Eng.	Graduate student, Yale University, 103 Park St., New Haven, Conn.
LEWIS, HARRY REYNOLDS . . Woodbine, New Jersey.	Agr.	Teacher, Baron de Hirsch Agricultural School.
MACOMBER, MINER SANFORD . Box 215, State College, Pa.	Chem.	Instructor in Chemistry.
TUCKER, ETHEL ALDRICH . . Kingston.	Gen. Sci.	Graduate student, Rhode Island State Normal School.

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