

1904

Annual Report 1904, Part III

University of Rhode Island

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SIXTEENTH 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
1904

PART III. — CATALOGUE

PART I—General Report for the Year—is printed under separate cover

PART II—Experiment Station Report—is printed under separate cover

PROVIDENCE

E. L. FREEMAN & SONS, PRINTERS TO THE STATE

1904

Rhode Island College of Agriculture and Mechanic Arts.

Corporation.

HON. MELVILLE BULL.....	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. MELVILLE BULL, Treasurer.....	P. O., NEWPORT, R. I.

Report.

*To His Excellency Lucius F. C. Garvin, Governor, and the Honorable
General Assembly of the State of Rhode Island and Providence
Plantations, at its January Session, 1904:*

I have the honor to submit herewith Part Three of the Sixteenth 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.*

KENYON LEECH BUTTERFIELD, A. M.,

PRESIDENT,

Professor of Political Economy and Rural Sociology,

B. S., Michigan Agricultural College, 1891; Assistant Secretary, Michigan Agricultural College, 1891-1892; Editor, Michigan "Grange Visitor," 1892-1896; Superintendent, Michigan Farmers' Institutes, 1895-1899; Field Agent, Michigan Agricultural College, 1896-1899; Graduate student, University of Michigan, 1900-1902; A. M., University of Michigan, 1902; Instructor in Rural Sociology, University of Michigan, 1902; Entered upon duties as President, April 1, 1903.

HOMER JAY WHEELER, PH. D.,

Professor of Geology and Agricultural Chemistry,

B. S., Massachusetts Agricultural College, 1883; Assistant Chemist, Massachusetts State Experiment Station, 1883-1887; Graduate student, University of Göttingen, 1887-1889; Ph. D., Göttingen, 1889; Appointed Chemist of Rhode Island Agricultural Experiment Station and Professor of Geology, 1890; Acting President, August 15, 1902-April 1, 1903.

E. JOSEPHINE WATSON, A. M.,

Professor of Languages,

A. B., Smith College, 1882; A. M., Cornell University, 1883; Assistant in English, Smith College, 1883-1887; Student of North European Languages in Göttingen, 1887-1889; Appointed Professor of Languages, September, 1892; Student of French in Tours, summer of 1895.

WILLIAM ELISHA DRAKE, B. S.,

Professor of Mechanical Engineering.

B. S., Polytechnic Institute, Worcester, 1886; Instructor in Physics and Electricity, Worcester Polytechnic Institute, 1887; Instructor in Woodworking at Pratt Institute, Brooklyn, 1887-1893; Appointed Professor of Mechanical Engineering, 1893.

HARRIET LATHROP MERROW, A. M.,

Professor of Botany,

B. S., Wellesley College, 1886; Teacher of Science, Plymouth (Mass.) High School, 1887-1888; Teacher of Science, Harcourt Place, Gambier, O., 1888-1891; Graduate student, University of Michigan, 1891-1892; A. M., Wellesley College, 1893; Graduate assistant, Botanical Laboratory, University of Michigan, 1893-1894; Appointed Professor of Botany, January, 1895.

All salaries of members of the faculty are paid from United States funds.

* Hereafter the catalogue will be issued for the college year only. The present number, however, covers the period from January, 1903 to June, 1904, and the names of members of the faculty not connected with the college after June, 1903, are indicated by a * or †.

FRED WALLACE CARD, M. S.,

Professor of Agriculture,

B. S., Cornell University, 1892; M. S., Cornell University, 1893; Assistant Horticulturist, Cornell University Experiment Station, 1893; Associate Professor of Horticulture, University of Nebraska, 1893-1898; Appointed Professor of Horticulture, 1898.

COOPER CURTICE, D. V. S., M. D.,

Professor of Animal Industry,

B. S., Cornell University, 1881; D. V. S., Columbia Veterinary College, N. Y., 1883; M. D., Columbian University, Washington, D. C., 1887; Assistant Paleozoic Paleontologist, U. S. Geological Survey, 1883-1886; Specialist, Department of Agriculture, Washington, D. C., 1886-1892; Veterinarian, State Board of Health, N. Y., 1892-1894; Tuberculosis Specialist, U. S. Department of Agriculture, Washington, D. C., 1895-1896; Professor of Zoölogy, North Carolina College of Agriculture and Mechanic Arts, 1898; State Veterinarian, North Carolina, 1899; Appointed Professor of Zoölogy, 1900; Professor of Animal Industry, 1902.

ARTHUR CURTIS SCOTT, PH. D.,*

Professor of Physics and Electrical Engineering,

B. S., R. I. College of Agriculture and Mechanic Arts, 1895; Appointed Professor of Physics, 1897; Ph. D., University of Wisconsin, 1902.

SOLOMON E. SPARROW, †

CAPTAIN, UNITED STATES ARMY,

Professor of Military Science and Tactics,

Graduate of West Point, 1878; Detailed Professor of Military Science and Tactics, 1900.

LAURENCE ILSLEY HEWES, PH. D.,

Professor of Mathematics,

B. S., Dartmouth, 1898; With Engineering Department, Massachusetts Highway Commission, seasons of 1897-1899; Assistant Engineer, G. R. & I. Street Railway, Essex Co., Mass., 1899; Inspector of Macadam Road Construction, Brookline, Mass., 1900; Ph. D., Yale University, 1901; Appointed Professor of Mathematics, 1901.

VIRGIL LOUIS LEIGHTON, PH. D.,

Professor of Chemistry,

A. B., Tufts College, 1894; A. M., Kansas State University, 1895; Ph. D., Tufts College, 1897; Instructor in Organic Chemistry, Tufts College, 1897-1901; Appointed Associate Professor of Chemistry, 1901, Professor, 1903.

JOHN BARLOW, A. M.,

Professor of Zoölogy,

B. S., Middlebury, 1895; A. M., Brown University, 1896; Assistant Biologist, R. I. Experiment Station, 1898; Professor of Biology, Fairmount College, 1898-1901; Appointed Professor of Zoölogy, 1901.

All salaries of members of the faculty are paid from United States funds.

* Resigned September 1, 1903.

† Died July 9, 1903.

GILBERT TOLMAN, A. M.,

Professor of Physics and Electrical Engineering,

B. M. E., University of Maine, 1896; Instructor in Physics and Physical Geography, Shaw University (Raleigh, N. C.), 1896-1900; A. M., Columbia University (New York City), 1901; Assistant, Department of Physics, Columbia University, 1901-1903; Appointed Professor of Electrical Engineering, 1903.

THOMAS CARROLL RODMAN,

Instructor in Woodwork,

Appointed, 1890.

MABEL DEWITT ELDRED, B. S.,

Instructor in Drawing,

B. S., R. I. College of Agriculture and Mechanic Arts, 1895; Appointed Instructor in Drawing, 1897.

MARSHALL HENRY TYLER, B. S.,

Instructor in Surveying and Master of the Preparatory School,

B. S., Amherst College, 1897; Instructor at St. Mark's, 1897-1898; Appointed Master of the Preparatory School, 1898.

ELIZABETH WATSON KENYON, A. M.,

Instructor in Languages and History,

B. S., Mt. Holyoke College, 1896; A. M., Brown University, 1897; Instructor in English and History, Middleborough (Mass.) High School, 1898-1900; Appointed Instructor in Languages and History, 1900.

SARAH WATSON SANDERSON, B. L.,*

Instructor in Languages,

B. L., Smith College, 1900; Appointed Instructor in Languages, 1900.

LEWIS BALCH, M. D.,

Acting Instructor in Military Science and Tactics,

Late Brig.-Surg., U. S. Vol.; Appointed Acting Instructor in Military Science and Tactics, 1903.

HOWLAND BURDICK, B. S.,

Instructor in Agriculture and Farm Superintendent,

B. S., R. I. College of Agriculture and Mechanic Arts, 1895; Appointed Assistant in Agriculture, 1897; Appointed Instructor in Agriculture and Farm Superintendent, 1900.

F. PEARLE TILTON,

Instructor in Stenography and Typewriting.

All salaries of members of the faculty are paid from United States funds.

* Resigned June 30, 1903.

JOSEPHINE OSBORNE BOSTWICK, A. B.,

Instructor in Languages,

A. B., Acadia College, 1901; Assistant in English Branches, Acadia Seminary (Wolfville, N. S.), 1902-1903; Appointed Instructor in Languages, 1903.

WALTER ALFRED MITCHELL, A. B.,

Instructor in Physics and Electrical Engineering,

A. B., Trinity, 1901; With Engineering Department, Hartford Water Commission, 1900; with N. Y., N. J. Tel. Co., 1901-1902; Tutor in Physics, University of Maine, 1902-1903; Graduate student, University of Maine, 1902-1903; Appointed Instructor in Physics and Electrical Engineering, 1903.

JOHN FRANKLIN KNOWLES, B. S.,

Assistant in Woodwork.

GEORGE BURLEIGH KNIGHT,

Assistant in Ironwork.

LILLIAN MABELLE GEORGE, B. S.,*

Assistant in English and Librarian.

ANDREW EDWARD STENE, M. S.,

Assistant in Horticulture,

B. S., University of Minnesota, 1897; Principal of Schools, Ashby (Minn.), 1897-1901; M. S., Cornell University, 1902; Appointed Assistant in Horticulture, 1903.

LUCY COMINS TUCKER,

Secretary to the President.

SARA LOUISA McCRILLIS,

Matron.

 SUPERINTENDENT OF COLLEGE EXTENSION,

WILLIAM D. HURD, B. S., Michigan Agricultural College, May 15—August 15, 1903; J. WESTON HUTCHINS, September 15, 1903—April 1, 1904; ANDREW EDWARD STENE, M. S., present incumbent, appointed April 1, 1904.

All salaries of members of the faculty are paid from United States funds.

* Absent for the year.

Non-Resident Lecturers and Demonstrators in Short Courses in Agriculture, January, 1903, to June, 1904.

Poultry Course, 1903.

- Watson Allen, Bernardsville, N. J., "Bees and Their Management."
H. S. Babcock, Providence, R. I., "Oriental Breeds."
Dr. A. A. Brigham, Marlboro, Mass., Director of the Columbia Poultry Correspondence School, "Principles of Breeding."
M. Davenport, Dryden, N. Y., "European Breeds," "Winter Eggs," "Buildings."
I. K. Felch, Natick, Mass., "Standard, Scoring, and Judging," "Belgian Hares."
J. Alonzo Jocoy, Wakefield, R. I., "Incubators and Brooders."
D. J. Lambert, Apponaug, R. I., "American Breeds," "How to Begin in the Poultry Business."
F. W. Murphy, Boston, Mass., Demonstration in Killing and Picking.
H. A. Nourse, Superintendent Fishers' Island Poultry Farm, Fishers' Island, N. Y., "Preparing Fowls for Exhibition," "Daily Operations on a Large Plant."
J. H. Rankin, South Easton, Mass., "Duck Raising."
J. H. Robinson, Editor of Farm Poultry, Boston, Mass., "Business Qualifications for Poultry Keeping."
W. D. Rudd, of W. H. Rudd, Son & Co., Boston, Mass., "Preparing Fowls for Market."
E. Collins Tefft, Wakefield, R. I., "Asiatic Breeds."
Thomas Wright, South Sudbury, Mass., "Pigeon Squab Raising."

Farm-Practice Course, 1903.

- George M. Clark, Higganum, Conn., "Grass Culture."
Robert S. Handy, Catamuck, Mass., "Cranberry Culture."
A. Warren Patch, Faneuil-Hall Market, Boston, Mass., "The Marketing of Farm Produce."
William A. Peckham, Little Compton, R. I., "Potato Growing."
Louis J. Reuter, Westerly, R. I., "The Culture of Roses and Carnations."
Prof. J. W. Sanborn, Gilmanton, N. H., "A System of Farming for Success."

Poultry Course, 1904.

- Dr. A. A. Brigham, Marlboro, Mass., Director of the Columbia Poultry Correspondence School, "Principles of Breeding." Eight lectures.
J. Fred Crandall, Simsbury, Conn., "Mating of Plymouth Rocks." Two lectures.

- M. Davenport, Dryden, N. Y. Demonstrator and lecturer on Poultry Craft. Four weeks.
- I. K. Felch, Natick, Mass., "Scoring, Standard, and Judging." Eight lectures and demonstrations.
- A. F. Hunter, 94 Perham St., West Roxbury, Mass., "The Needs of the Market." Four lectures.
- J. Alonzo Jocoy, Wakefield, R. I., "The Making of a Breed." One lecture.
- D. J. Lambert, Apponaug, R. I., "Making a Beginning," and "Advice to a Beginner." Two lectures.
- F. W. Murphy, Boston, Mass., Demonstration in Killing and Picking.
- Franklane L. Sewell, artist for the Reliable Poultry Journal, Quincy, Ill., crayon illustrations of types. Two lectures.
- Sayles B. Steere, Chepachet, R. I., "Bees and Bee Keeping." Two lectures.
- E. Collins Tefft, Wakefield, R. I., "Breeding and Rearing Asiatics." Four lectures.
- Thomas Wright, South Sudbury, Mass., "Pigeon Squab Raising." Two lectures.

College Calendar.

1903.

Tuesday, September 15 Entrance Examinations at 9 A. M.
Wednesday, September 16 Fall Term begins at 1 P. M.
Tuesday, November 3 Election Day.
Wednesday, November 25, 12 M. }
Tuesday, December 1, 8:30 A. M. } Thanksgiving Recess.
Wednesday, December 23 Fall Term ends at 12 M.

1904.

Tuesday, January 5 Winter Term begins at 1 P. M.
Thursday, January 28 Day of Prayer for Colleges.
Monday, February 22 Washington's Birthday.
Tuesday, March 29 Winter Term ends at 12 M.
Tuesday, April 5 Spring Term begins at 1 P. M.
Friday, May 13 Arbor Day.
Monday, May 30 Memorial Day.
Sunday, June 12 Baccalaureate Address.
Tuesday, June 14 Commencement Exercises.
Friday, June 17 Entrance Examinations at 9 A. M.
Tuesday, September 13 Entrance Examinations at 9 A. M.
Wednesday, September 14 Fall Term begins at 1 P. M.
Tuesday, November 8 Election Day.
Wednesday, November 23, 12 M. }
Tuesday, November 29, 8:30 A. M. } Thanksgiving Recess.
Wednesday, December 21 Fall Term ends at 12 M.

1905.

Tuesday, January 3 Winter Term begins at 1 P. M.
Thursday, January 26 Day of Prayer for Colleges.
Wednesday, February 22 Washington's Birthday.
Tuesday, March 28 Winter Term ends at 12 M.
Tuesday, April 4 Spring Term begins at 1 P. M.
Friday, May 12 Arbor Day.
Tuesday, May 30 Memorial Day.
Sunday, June 11 Baccalaureate Address.
Tuesday, June 13 Commencement Exercises.
Friday, June 16 Entrance Examinations at 9 A. M.

Experiment-Station Council.

KENYON L. BUTTERFIELD, A. M.....	{ President of the College. Ex-officio Member.
H. J. WHEELER, Ph. D.*.....	Director and Chemist.
FRED W. CARD, M. S.....	Horticulturist.
COOPER CURTICE, D. V. S., M. D.,†.....	Biologist.
BURT L. HARTWELL, Ph. D.....	Associate Chemist.
GEORGE E. ADAMS, B. S.....	Assistant, Field Experiments.
A. E. STENE, M. S.....	Assistant Horticulturist.
JAMES W. KELLOGG, B. S.....	First Assistant Chemist.

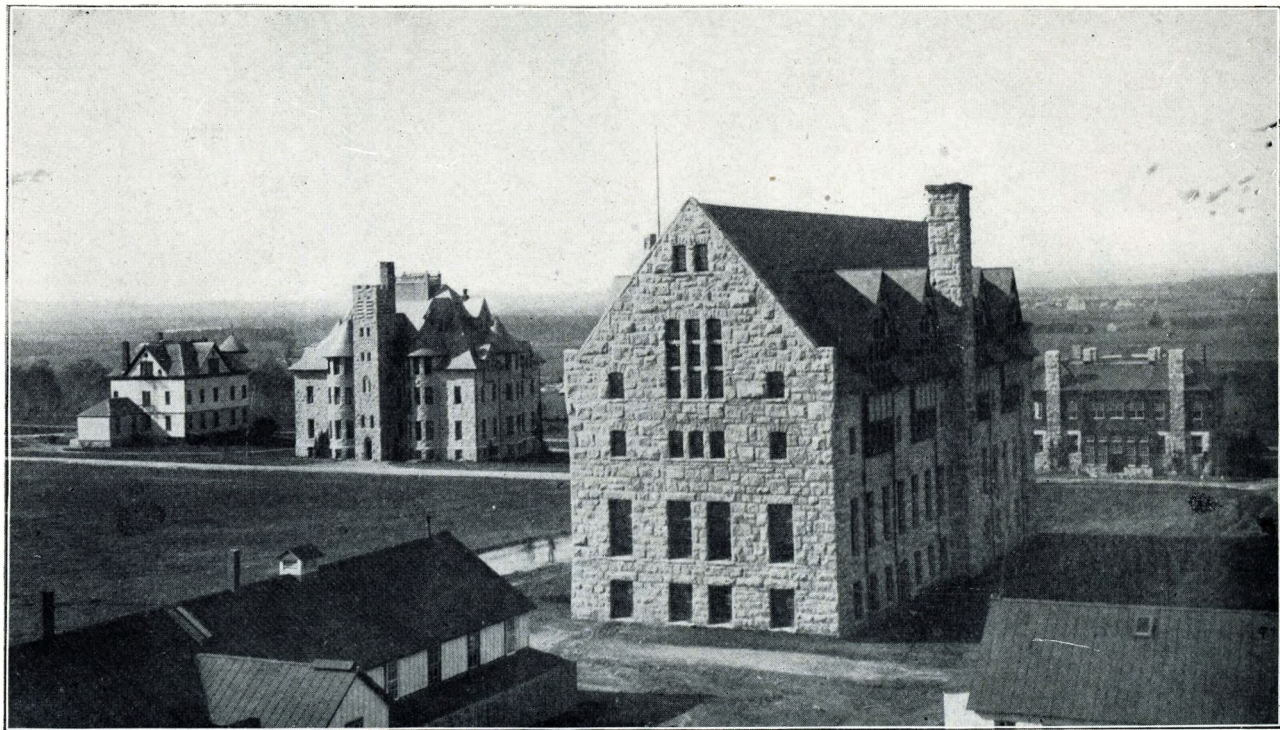
Other Members of the Station Staff.

A. G. LAUDER, B. S. A.....	Second Assistant Chemist.
NATHANIEL HELME.....	Meteorologist.
BEULAH A. HOITT.....	Stenographer and Accountant.
ETHEL M. CHADWICK.....	Stenographer and Librarian.

* In charge of field experiments.

† In charge of poultry experiments.

The publications of the Station will be mailed free on request to anyone in Rhode Island interested in agriculture. The Station desires the co-operation of the farmers of the state in the work of investigation, and any facts of special interest concerning animal or vegetable growth or disease are solicited. Visitors are always welcome. Railroad station, telegraph, express, and post-office—Kingston, Rhode Island. Long distance telephone, Narragansett Pier exchange.



VIEW OF CAMPUS.

The College.

History.

In 1863 the state of Rhode Island accepted from the United States Government the land grant scrip, which gave to each state thirty thousand acres of the public lands for each senator and representative in Congress. The land was to be sold by the states or their agents, the proceeds arising from the sale invested, and the annual income derived therefrom was to be "inviolably appropriated by each state which may take and claim the benefit of this act, to the endowment, support, and maintenance of at least one college where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to Agriculture and Mechanic Arts, in such manner as the legislatures of the states may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life."

On March 2, 1887, the act known as the Hatch Act was passed, appropriating \$15,000 annually to each state, for the purpose of establishing an Agricultural Experiment Station in connection with an Agricultural College or School. Such an Agricultural School was provided for by Chapter 706 of the Public Laws, passed May 23, 1888.

The United States Congress, on August 30, 1890, passed an act known as the New Morrill Bill. This appropriated for the further support of the agricultural and mechanical colleges a sum beginning with \$15,000 and continuing, with a yearly increase of \$1,000, until the annual appropriation should reach \$25,000.

That the school already established might receive the benefit of the act of Congress, the General Assembly amended Chapter 706 of the Public Laws, incorporating the Rhode Island College of Agriculture and Mechanic Arts.

Since September, 1892, the institution has been conducted on a college basis, with an entirely new course of study.

On April 19, 1894 the legislature passed an act authorizing the state treasurer to pay Brown University the sum of \$40,000, in consideration of which the university was to turn over to the state the proceeds of the original land grant of 1862 and to withdraw from the United States Supreme Court its suit for the Morrill fund.

On January 27, 1895, the college dormitory was destroyed by fire; but it was replaced by a new granite building, which was ready for use the first of October of the same year, and was called Davis Hall.

At the January session of the legislature, 1897, the institution was given an appropriation for a stone building, one hundred and thirty feet by forty feet, practically three stories high. The basement has three rooms used for instruction in photography and physics, and a large room devoted to electrical engineering. On the second floor are recitation-rooms, chapel, library and reading-room, and young women's study-room. The third floor contains a large hall for drill and gymnasium purposes, above which are bath-rooms and lockers. The hall is also used for assemblies whenever larger audiences are expected than the chapel can accommodate. This building is called Lippitt Hall.

In 1898 an excellent dairy barn was erected. This has given the agricultural department increased facilities for instruction.

On May 8, 1901, the Board of Managers established a school of mines, to be connected with the school of mechanical and electrical engineering. The courses of instruction for the Freshman and Sophomore years of this school have already been arranged, and are identical with the courses given in the mechanical and electrical engineering school. The courses for the Junior and Senior years will be made ready for publication as soon as sufficient funds are at hand to put them into effect.

Object of the College.

The Rhode Island College of Agriculture and Mechanic Arts is an integral part of the school system of the state. Young men and young women from the high schools are admitted to the privileges of the institution without charge for tuition. The object of the college is to prepare young people to take active part in the agricultural, manufacturing, and commercial development of the

state. To this end, technical instruction in the sciences and mechanic arts is the fundamental work of the institution. In order that specialization may not be premature, technical instruction in the various courses is accompanied by instruction in languages, history, political science, and mathematics.

There are seven courses leading to the degree of Bachelor of Science: agriculture, mechanical engineering, electrical engineering, highway engineering, chemistry, biology, and general science. Certain courses are chosen in the Freshman year, others in the Sophomore year; and at the beginning of the Junior year each student has selected the particular course in which he hopes to take a degree.

The aim of the agricultural course is to fit students not only for practical agriculture but for positions in experiment stations and as teachers. To this end, thorough instruction is given in science and the application of its principles to agriculture, supplemented by a general training in mathematics and languages. The mechanical course is intended for those wishing to become mechanical engineers, as the electrical course is designed to train electrical engineers. The course in highway engineering is designed to equip students as practical working highway engineers. The instruction given is essentially civil engineering adapted to highway construction. The chemical course offers several special lines of work. A student may prepare himself to become a general chemist or a teacher; may specialize in agricultural chemistry with a view to experiment-station work; or may elect industrial chemistry with the idea of obtaining a position in a factory, dyeing establishment, or along other technical lines. In the course in biology the student may take his major work in animal or in plant biology. The course offers special inducements as a preparation for the medical or veterinary school, or training school for nurses. It is likewise adapted to fit one to become a teacher, an assistant in an experiment station, or to take a government position in some biological line of work. The general science course, as the name implies, is not so special as the other courses. It offers a number of electives in history, the modern languages, and art. It is designed for those who wish a good general education in preparation for any line of life-work which they may follow. In the Senior year every student is required to prepare a thesis or report on some subject connected with the work of the course which he has chosen.

Preparatory School.

Young men and young women who have had no opportunity to receive high-school instruction may enter this department to prepare for the college.

For entrance requirements and course of study, see pages 65-67.

Agricultural High School.

This course, embracing a large amount of practical agricultural instruction, is designed to meet the wants of those who feel that they cannot spend the time necessary for the completion of the full college course in agriculture.

For details regarding this course, see pages 71-74.

Industrial High School.

Students unable to pursue the regular college mechanical engineering course of four years, may take in connection with the preparatory school a two-years' course along one of the following industrial lines: carpentry, machine shop, mechanical draughting, steam engineering.

For details regarding this course, see pages 77-79.

Special 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 student.

However, any courses 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.

Special Students in Agriculture.

Students having a working knowledge of the English branches may enter the college without examination and take those subjects which will prove of most direct benefit to them in the work of the farm. One or two years can thus be spent with excellent results. A certificate will be granted at the end of the time, showing the work covered.

Such a course may include studies chosen from the agricultural high-school course as well as those given in the college proper. Among the subjects which might be included are agricultural soils, plant life, drainage, agricultural implements and apparatus, farm fertility and its maintenance, field crops, breeds of farm animals, stock-breeding, feeding of farm animals, dairy-husbandry, poultry-raising, business arithmetic and farm accounts, social problems of the farmer, the principles of horticulture, fruit-growing, vegetable-gardening, landscape-gardening, physiology, entomology, bench-work, wood-turning, and forging. In connection with the above, other subjects for which the student is fitted may be taken. The study of English should generally be included.

A special course in farm practice, continuing six weeks, is offered before the Christmas holidays. A special course in poultry keeping, also continuing six weeks, follows the Christmas vacation. A special course in farm mechanics, given during the twelve weeks of the winter term, includes instruction in carpentry, mechanical drawing, piping (steam and gas), and blacksmithing. Payment of tuition fees for those outside the state and board for the full time is required in advance of students registering in the short special courses. Those interested in these courses will please send for circulars giving a full description of them. Address the president.

Requirements for Admission to the College, 1904.

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. Graduates from high schools are not admitted on diploma.

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.

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 293, 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 1904 are the following: (a) Addison's *The Sir Roger de Coverley Papers*; Carlyle's *Essay on Burns*; Coleridge's *The Ancient Mariner*; Eliot's *Silas Marner*; Goldsmith's *The Vicar of Wakefield*; Lowell's *the Vision of Sir Launfal*; Scott's *Ivanhoe*; Shakespeare's *The Merchant of Venice*, and *Julius Cæsar*; Tennyson's *The Princess*. (b) Burke's *Speech on Conciliation with America*; Macaulay's *Essays on Milton and Addison*; Milton's *L'Allegro*, *Il Penseroso*, *Comus*, and *Lycidas*; Shakespeare's *Macbeth*. For 1905: (a) Same as 1904. (b) Same as 1904. The language requirements cover one year's work in either French, German, or Latin: and Latin is recommended. In French and German this requirement comprises the essentials of grammar, easy reading, and elementary composition. In Latin the candidate must be prepared to study Cæsar. The following text-books are recommended: Chardenal's *Complete French Course* or Longman's *French Grammar (Complete Edition)*, Super's *French Reader* or Aldrich and Foster's; the *Joynes-Meissner German Grammar, Part I*, Collar's *Shorter Eysenbach* or Lange's *German Method for Beginners*, Gueroer's *Märchen und Erzählungen, Part I*; Collar and Daniel's *First Latin Book*, or Lindsay and Rollins's *Easy Latin Lessons*.

Admission to Advanced Standing.

Candidates may enter any of the higher classes for which they are prepared.

Opportunities Offered to Women.

The courses of instruction are open to men and women alike. The women's dormitory will accommodate a limited number of students, and the college will on application find boarding-places for others in private families in town. Special waiting and study-rooms are provided for the women who are day students.

Expenses for Women.

Room-rent is free in compensation for certain required duties. Fuel and lights are supplied at cost. Rooms are provided with necessary furniture, including mattresses, but no other bedding material. Other expenses are as given below. The women have an opportunity to do their own washing and ironing. A Singer and a Household sewing-machine are at the disposal of all those living at the dormitory.

Expenses.*

Tuition is free. The regular expenses are tabulated below:

		Per year.	
		Minimum.	Maximum.
Board, \$3.50 per week for 36 weeks.....		\$126 00	\$126 00
Men's Dormitory.	{ Room-rent, \$3 per term.....	9 00	9 00
	{ Lights, \$1 to \$3 per term.....	3 00	9 00
	{ Fuel, spring and fall terms, each \$3; winter term, \$6.....	12 00	12 00
	{ Books.....	15 00	30 00
Washing, 30c. to 60c. per week.....		10 80	21 60
Uniform for military drill, \$15.....		7 50	30 00
Reading-room tax, 25c. per term.....		75	75
Incidental expenses, 50c. per term.....		1 50	1 50
Laboratory fees, \$2 to \$10 per term.....		6 00	30 00
		<hr/>	<hr/>
		\$191 55	\$269 85

*For exceptions in expenses for women, see above.

FEEs.—The amount of laboratory fees varies from one to ten dollars per term, depending upon the laboratory work taken. One dollar per term is charged for each of the following: botanical and zoölogical laboratories; carpenter shop; wood-turning, forge shop, machine shop, and wood-carving. Fees for physics are as follows: for preparatory students, one dollar per term; for Freshmen, one dollar and a half; for Sophomores, two dollars. This pays for the material ordinarily used in class work and for the wear and care of tools and apparatus. Any person who breaks apparatus or tools, through carelessness or neglect of instructions, will be charged the cost of the same. The chemical laboratory fee is three dollars per term for qualitative, quantitative, and organic laboratory work. This covers general chemicals and use of apparatus. Students are required to pay for breakage and for any chemicals they may use in making special preparations for themselves. A fee of three dollars is also required in the electrical laboratory. Graduates pay the cost of diplomas, five dollars. *No diploma will be issued until the candidate has paid all term bills.*

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.

DAY STUDENTS.—Day students are required to deposit five dollars per term in advance, or to pay cash for articles purchased at the college store. 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.—Boarding students shall deposit fifty dollars each term, or give bond for two hundred dollars for the payment of all bills. No bond will be accepted from any member of the faculty. The price of board for 1904-5 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 five whole days' absence at one time, and this only when due written notice has been given. No person will be admitted to the dining room until he has secured a dining-room card from the matron. After this card is issued, all

charges for board will be made in accordance therewith unless the student has the card changed by the matron. All questions relative to bills for board must come before the matron, and her statement of bills will be accepted by the college office. Arrangement of charges for meals sent to students' rooms for any cause must be made in advance with the matron.

FURNITURE.—*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 eight to ten dollars. 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.

Self-Help.

A limited amount of work about the buildings, on the farm, at the experiment station, in the laboratories, and in the college laundry, will be furnished to students who desire it and who prove industrious and trustworthy. Good students, who desire to help in paying their expenses, should be able to earn from twenty-five to one hundred dollars per year, depending upon the amount of time they can spare from their studies. *No work is given to students who have not a fair standing in their classes.* The larger sums can be earned only by students who spend their vacations here at work. These opportunities are offered only to students who show a sense of responsibility in the performance of the duties assigned to them, and a disposition to render a fair equivalent for the compensation they receive. The legislature has, for two years, made special appropriations for student labor.

Regulations of the College.

Conditions.—*Section 1.*—Any student absenting himself from more than ten per cent. of the total number of recitations in any subject shall not be allowed to take his examination in that subject, except by special vote of the faculty, but shall be conditioned.

Section 2.—No student shall begin or drop a study without the consent of the committee on courses of study; the penalty for dropping such subject being a condition.

Section 3.—Examinations of conditioned students shall be held only at the beginning of each term: in September, on the day before the term opens; in January and April, on the morning of the day the term opens—in each case at 9 A. M. Any student who, after such examination, shall still have three or more conditions shall be obliged to withdraw from the college. Students still having not more than two conditions may take second examinations at the next regular time, and, failing to pass, shall have no further opportunity to remove such conditions except by special vote of the faculty.

Section 4.—A student wishing to take an examination to remove a condition must make application for the same, to the professor in whose department the condition was received, at least seven days before the date of the examination.

Section 5.—Students, whether regular or special, shall remove entrance conditions to both the preparatory school and the college within a year from the date of entrance, unless excused by the committee on courses of study.

Section 6.—At the opening of a term, any student previously registered in one of the three upper classes of the college who has two conditions shall be classified as a member of the next lower class.

Thesis.—*Section 7.*—Every student who is a candidate for a degree shall prepare a thesis, and shall submit it to the president of the college at least one month before the time for granting the degree.

Student Publications.—*Section 8.*—No student shall publish any article in any college, class, or society publication designed for public circulation, or deliver any address on the college campus attended by persons other than students, without the consent of the president or some person appointed by him for granting such permissions.

Athletics.—*Section 9.*—No student shall represent the college on the athletic field, or in any other organization before the public, who is not regularly registered and in good standing; by good standing is meant conformity to all the rules of the college.

Public Worship.

Being a state institution the college is strictly non-sectarian, and the widest latitude is given to all creeds and forms of religious

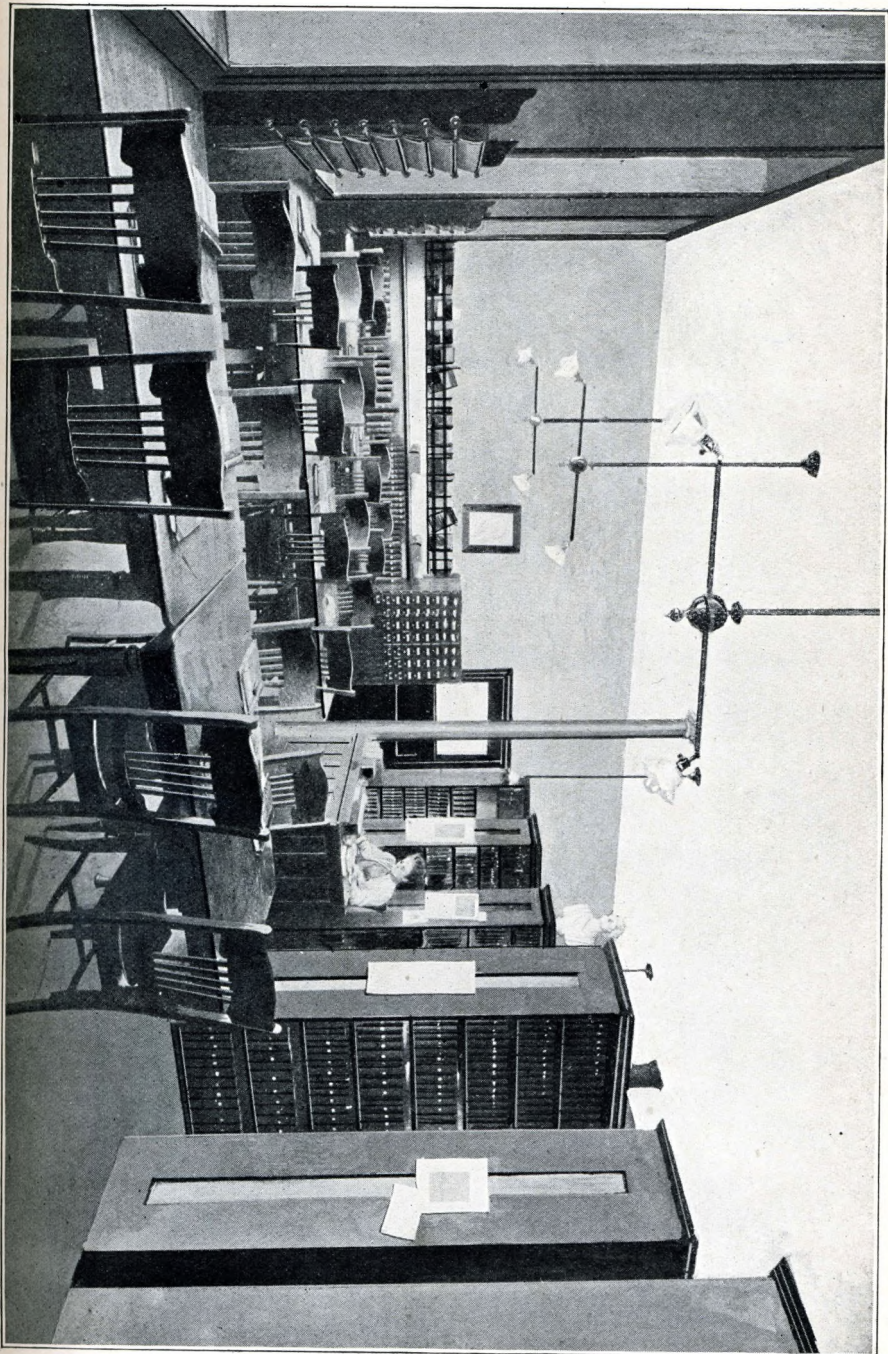
belief. Simple chapel exercises are held each morning, except Saturday and Sunday, conducted by the president or some member of the faculty. All students are expected to be present, unless excused upon the special request of parents or guardians. A branch of the Intercollegiate Young Men's Christian Association is doing good work among the students, as is also the Young Women's Christian Union.

Thursday Lectures.

From time to time speakers from abroad, both clergymen and laymen, are invited to address the students upon various subjects. This year members of the faculty have also been among the lecturers. The list of speakers for the fall and winter terms was as follows:

- October 1. President Kenyon L. Butterfield, "A Word to New Students."
- October 8. Rev. Malcolm Dana, Kingston, "The College Student and the Bible."
- October 15. Hon Charles Dean Kimball, Providence, "The College Man's Relations to Public Affairs."
- October 22. Dr. H. J. Wheeler, "Experiment-Station Work."
- October 29. Professor W. E. Drake, "The Industrial Development of America."
- November 5. Mr. J. Van Wagenen, Jr., Lawyersville, N. Y., "The Opportunity Agriculture Offers to Educated Men."
- November 12. Mr. Herbert J. Wells, Kingston, "Savings and Investments for Salaried People."
- November 20. Professor W. C. Poland, Brown University, "The Beginning of Architecture."
- December 10. Dr. L. I. Hewes, "Athletic Ideals."
- December 17. Mr. William C. Greene, Peace Dale, "The Spindle."
- January 14. Bishop William McVickar, Providence, "Christian Manliness."
- January 21. Mr. William C. Greene, Peace Dale, "The Spindle—Part II."
- January 28. Rev. W. L. Swan, Westerly, "Purpose."
- February 4. Rev. J. W. Fobes, Peace Dale, "A Summer in Alaska."
- February 11. Miss. E. J. Watson, "Our Library and Its Use."
- February 25. Rev. E. I. Lindh, Hope Valley, "The Duty of the Citizen."
- March 10. Mr. Gregory Dexter Walcott, New York, "The Bible as Literature."
- March 17. Professor John Barlow, "Mimicry Among Animals."

The first lecture of the spring term was delivered on April 8, by Dr. K. Asakawa, of Dartmouth College, on "The Situation in the far East." The other lectures of the term will consist of a course



THE LIBRARY.

on practical ethics to be given by Rev. F. B. Makepeace, of New York City. The following is a list of the subjects and dates:

- Tuesday, April 19. "Ethics Considered as a Science."
- Wednesday, April 20. "Conditions Necessary to Ethical Conduct."
- Tuesday, May 3. "Life under Law."
- Wednesday, May 4. "The Will; The Law of Habit; Conscience."
- Tuesday, May 17. "The Virtues of the Individual Life."
- Wednesday, May 18. "Duties of the Social Life."
- Tuesday, May 31. "Certain Wider Relations of Life, and the Obligations which they Impose."
- Wednesday, June 1. "Personal Economics; How to Get the Most out of Life."

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 1903-1904, the following programme was secured: January 8, Mr. J. L. Harbour, "Blessed be Humor;" February 5, Mr. David Bangs Pike, "The Yellowstone National Park," illustrated in colors; February 19, Mr. W. M. R. French, "The Wit and Wisdom of the Crayon," illustrated by crayon sketches; March 11, Mr. Augustus F. Howell, "An Evening with American Authors;" April 15, Professor C. T. Winchester, "An Old Castle."

The Library.

The library occupies a large room in Lippitt Hall and numbers over eleven 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 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 research work.

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.

Departments of Instruction.

The following subjects are offered in the different departments. All studies required of regular students lead to the degree of Bachelor of Science.

Chemistry.

DR. LEIGHTON, DR. WHEELER.

Instruction in chemistry begins with the Freshman year and consists of lectures, recitations, and laboratory work; two hours of laboratory work being counted as equivalent to one period of recitation or lecture work. General chemistry extends through this year: two periods per week being devoted to lectures and recitations, and one period to laboratory work. Qualitative analysis extends through the first and second terms of the Sophomore year, a portion of the time being given 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 chemistry their profession, either as teachers or practical chemists. The more advanced subjects furnish an excellent preliminary basis for the study of medicine, biology, or agriculture.

The subject of stoichiometry and theoretical chemistry is begun in the general chemistry and continued in the third term of the Sophomore year, much attention being given to the application of the principles to problems. Inorganic preparations occupy three periods per week in the first term of the Junior year. Quantitative analysis is also taken up in this term, and extends throughout the Junior year. Organic chemistry begins in the first term of the Junior year, and extends through five terms. It includes much laboratory work in organic preparations. The subject of theoretic-

cal chemistry, begun in general chemistry and continued in the Sophomore year, is taken up in a much more advanced way in the first term of the Senior year, a portion of the time being devoted to laboratory work. The subject also affords opportunity for work in advanced inorganic chemistry, gas analysis, mineralogy, blowpipe analysis, assaying, sanitary chemistry, industrial chemistry, physiological chemistry, agricultural chemistry, toxicology, and textile coloring. In the Senior year, candidates for a degree in the chemical course are required to prepare a thesis on some chemical subject. Instruction in agricultural chemistry, as applied especially to poultry foods, their use and digestion, is given to students in poultry-raising. Agricultural chemistry, embracing the chemistry of soils, composition of fertilizers, their manufacture and use, and the composition and analysis of fodders and their feeding-values, is offered to agricultural students in the Junior year.

The laboratory is thoroughly equipped with apparatus for the above-mentioned subjects, and opportunity is given for graduate students to continue work in the above lines beyond that required for a degree. A large number of German, French, and English chemical journals are accessible, thus affording excellent opportunity for research work.

Subjects.

I. General Chemistry.—Lectures, recitations, and laboratory work. *Throughout the Freshman year.* Lectures and recitations, 2 exercises per week; laboratory work, 1 exercise of 2 hours per week. *Required of all candidates for a degree.*

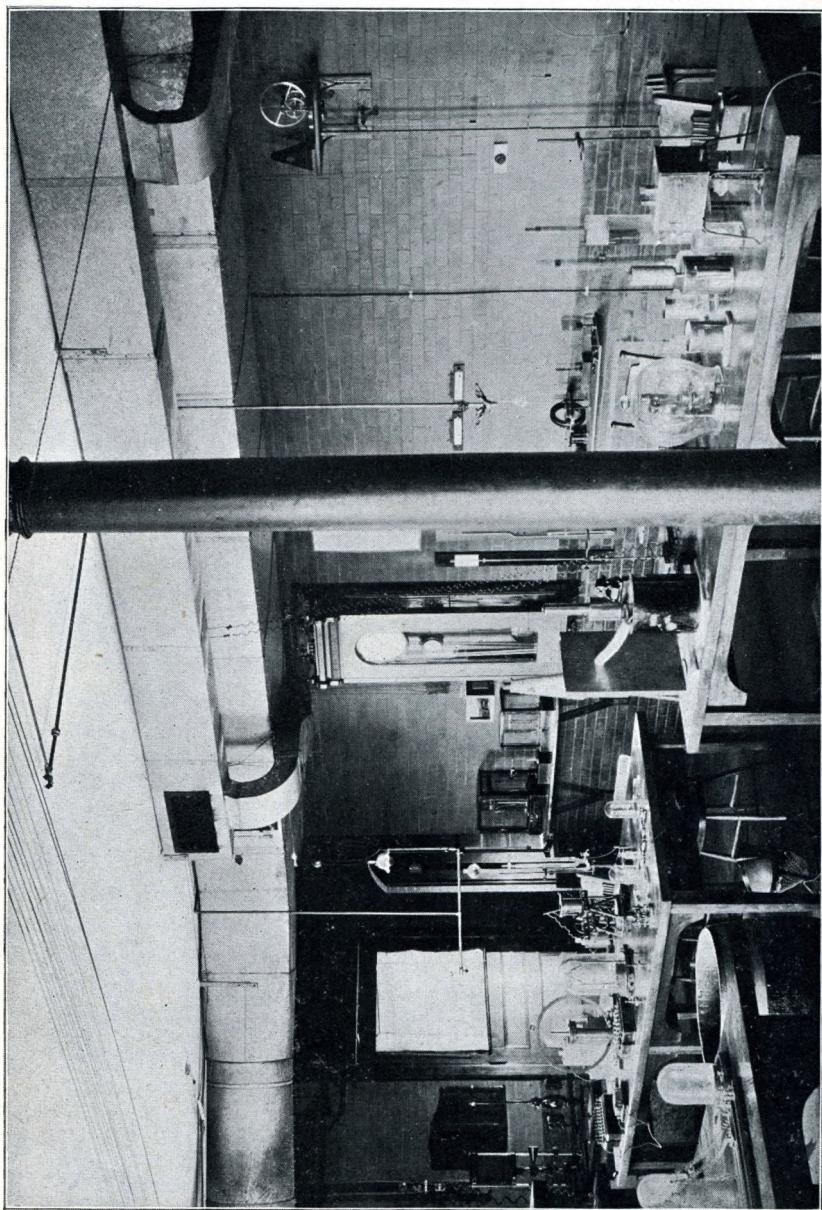
II. Qualitative Analysis.—Basic and acid analysis; analysis of salts. Industrial and natural products. Lectures, recitations, and laboratory work. *Fall and Winter terms, Sophomore year; 3 exercises of 2 hours each per week.* *Required of all candidates for a degree.*

III. Inorganic Preparations.—*Fall term, Junior year; 3 exercises of 2 hours each per week.* *Required of students in the Chemical course.*

IV. Stoichiometry and Theoretical Chemistry.—Lectures and recitations. *Spring term, Sophomore year; 3 exercises per week.* *Required of all students in Agriculture and Science.*

V. (A) Quantitative Analysis.—Gravimetric and volumetric analysis. Analysis of minerals. *Throughout the Junior year; 3 exercises of 2 hours each per week.* *Required of students in the Chemical course.*

V. (B) Quantitative Analysis (Advanced).—Analysis of minerals, ores,



CORNER OF PHYSICAL LABORATORY.

alloys, and industrial products. *Throughout the Junior year; 3 exercises of 2 hours each per week. Required of students in the Chemical course.*

VI. Organic Chemistry.—Lectures, recitations, and laboratory work. *Fall and Winter terms, Junior year: lectures and recitations, 3 exercises per week; laboratory work, 1 exercise of 2 hours per week. Required of students in the Chemical course.*

VII. Organic Preparations.—*Spring term, Junior year; 3 exercises of 2 hours each per week. Required of students in the Chemical course.*

VIII. Sanitary Chemistry.—*Winter term, Junior year; 2 exercises of 2 hours each per week. Required of students in the Chemical course.*

IX. Mineralogy and Blowpipe Analysis.—*Winter term, Junior year; 3 exercises of 2 hours each per week. Required of students in the Chemical course and in Highway Engineering.*

X. Gas Analysis.—*Spring term, Junior year; 1 exercise of 2 hours per week. Required of students in the Chemical course.*

XI. Assaying.—*Spring term, Junior year; 1 exercise of 2 hours per week. Required of students in the Chemical course.*

XII. Industrial Chemistry.—Lectures and recitations. *Spring term, Junior year, and Fall term, Senior year; 3 exercises per week. Required of students in the Chemical course.*

XIII. Organic Chemistry (Advanced).—*Fall and Winter terms, Senior year; 3 exercises per week. Required of students in the Chemical course.*

XIV. Theoretical Chemistry (Advanced).—Lectures, recitations, and laboratory work. *Fall term, Senior year: lectures and recitations, 3 exercises per week; laboratory work, 2 exercises of 2 hours each per week. Required of students in the Chemical course.*

XV. Physiological Chemistry and Toxicology.—*Spring term, Senior year; 3 exercises of 2 hours each per week; elective.*

XVI. Textile Coloring.—*Winter and Spring terms, Senior year; 3 exercises per week. Optional for students in the Chemical course with Chemistry XVIII and XIX as alternatives.*

XVII. Agricultural Chemistry.—*Spring term, Senior year; 3 exercises per week. Required of students in the Chemical course.*

XVIII. Electro-Chemistry.—*Winter term, Senior year; 3 exercises per week. Optional for students in the Chemical course with Chemistry XVI as alternative.*

XIX. Metallurgy.—Lectures and recitations.—*Spring term, Senior year; 3 exercises per week. Optional for students in the Chemical course with Chemistry XVI as alternative and required in Spring term, Junior year, of students in Highway Engineering.*

XX. (A) Advanced Inorganic Chemistry.—*Winter Term, Senior year; 3 exercises per week. Required of students in the Chemical course.*

XX. Thesis Work.—*Throughout the Senior year. Required of students in the Chemical course.*

Physics.

PROFESSOR TOLMAN, MR. MITCHELL.

The instruction in physics is given with reference to the particular needs of the students in the different years. It begins with the Freshman year, and consists of lectures, recitations, and laboratory work. The various branches grouped under this head are treated both mathematically and experimentally. The recitations in Freshman physics are prepared chiefly from Carhart and Chute's Elements of Physics. The laboratory work consists of special experiments from various authors. Sophomore physics embraces a deeper and more extended discussion of statics, kinetics, and mechanics of fluids, in the fall term; heat, electricity and magnetism in the winter term; sound and light, in the spring term. Hastings and Beach's General Physics is used as a text-book, supplemented by lectures. Laboratory exercises accompany the theoretical work, and must be taken with it throughout the year.

The department is equipped with modern apparatus for illustrating the lectures, as well as for conducting satisfactory qualitative and quantitative laboratory experiments.

Subjects.

I. General Physics.—Study of mechanics, hydraulics, pneumatics, and heat. *Fall term:* electricity and magnetism; *Winter term:* sound and light; *Spring term, Freshman year:* 2 recitations per week; laboratory work, 1 exercise per week. *Required of all students in Agriculture and Science courses.*

II. General Physics.—*Throughout the year; 4 exercises per week. Required of Sophomores in Engineering courses.*

Mineralogy and Geology.

DR. LEIGHTON, DR. WHEELER.

GENERAL MINERALOGY.—General mineralogy is taught in the winter term of the Junior year, and consists of three exercises per week. 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.

GEOLOGY FOR AGRICULTURAL AND HIGHWAY-ENGINEERING STUDENTS.—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.

Subjects.

III. Mineralogy.—See Chemistry IX. Dr. Leighton.

IV. Geology for Agricultural and Highway-Engineering students.—Lectures and recitations. *Spring term, Senior year; 3 exercises per week. Elective.* Dr. Wheeler.

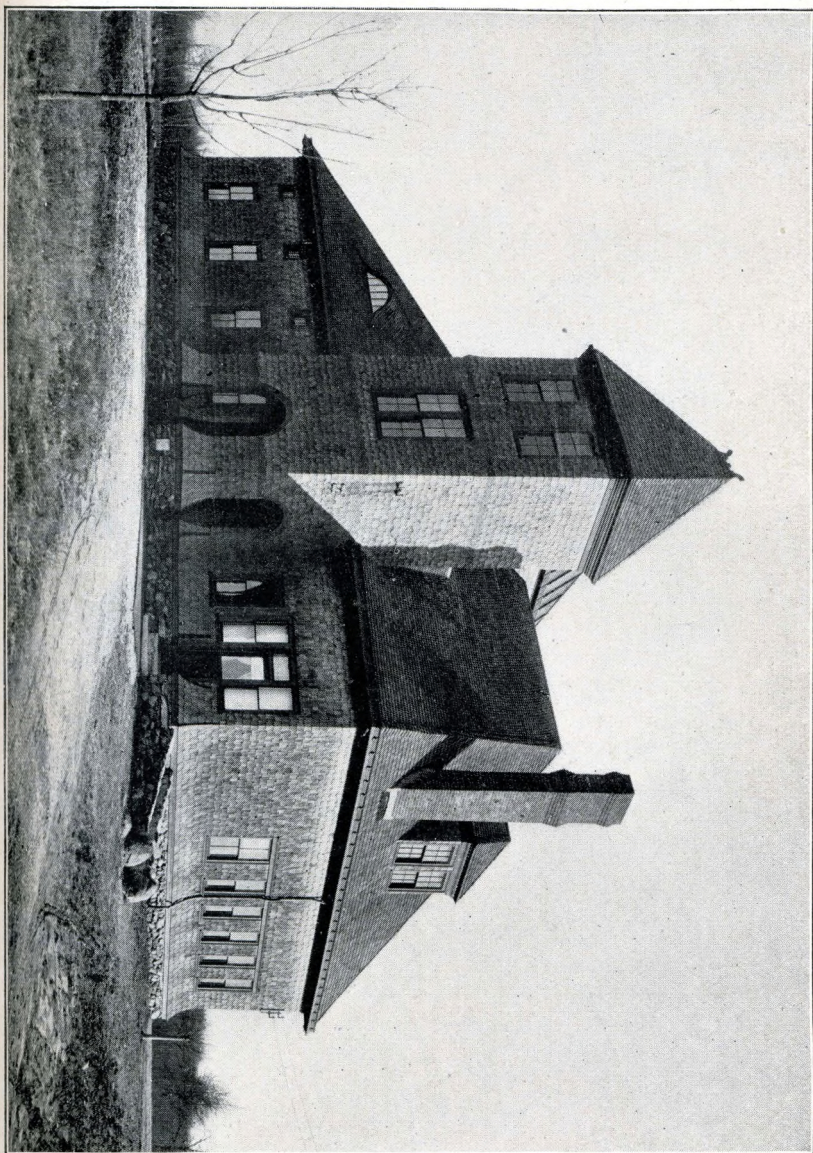
Botany.

PROFESSOR MERROW.

The required work in botany for students in agriculture and the science courses begins in the fall term of the Sophomore year with the biology of plants, which continues three terms. The aim of this subject is to give the student a knowledge of plant life, by the study of the plants themselves in the laboratory and in the field. Attention is given to representatives of the vegetable kingdom from the lowest to the highest. Some time is given to the determination of species, but emphasis is placed on the structure of the plant, its activities, and its relation to its environment. In short, the subject is adapted to the needs of the general student who desires a knowledge of the principles of biology as illustrated by our common plants, and also furnishes a good foundation to the student who is to follow more advanced work in botany, agriculture, horticulture, or medicine. Elementary agricultural botany is given in the agricultural high school, and is described with the other subjects of that school. Students wishing to emphasize botany in their choice of studies are given every opportunity to follow lines of work best suited to their needs. Excellent advantages are offered to those who wish to



THE BOTANICAL LABORATORY.



LADD LABORATORY.



FUTURE GUARDIANS OF THE HERD.



It aims to emphasize a study of the soil and the plant as constituting the foundation of successful farm practice.

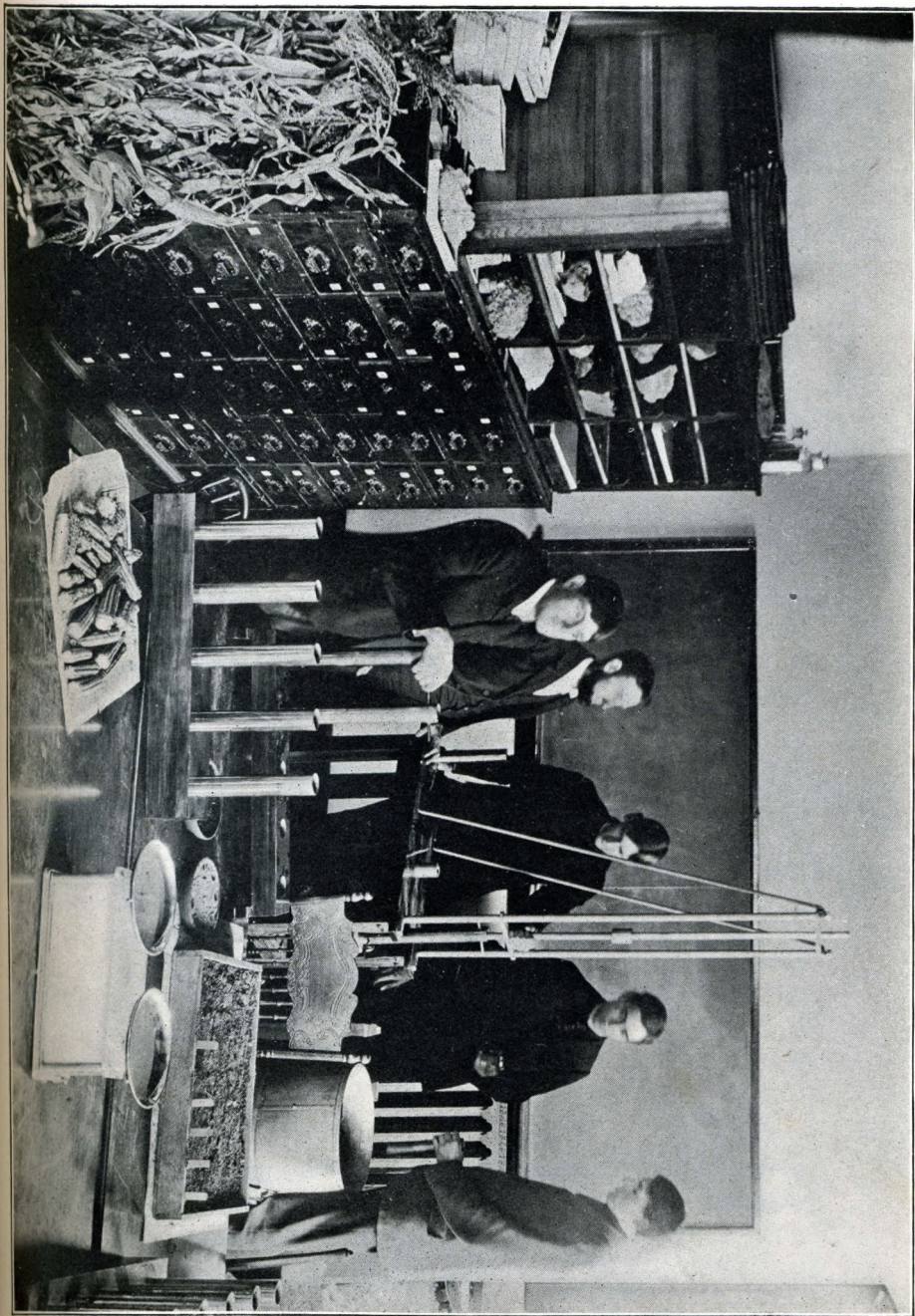
The following subjects are taken up during the course: soils and fertilizers, how soils are made, kinds of soil, the purchase, mixing, and use of commercial fertilizers; soil management, effects and methods of tillage, humus supply, moisture conservation, rotations, and cover crops; field-crops; fruit-growing; vegetable-gardening; the feeding and breeding of live stock; agricultural physics, mechanics as applied to farm implements, soil physics, drainage; the plant, its method of life and its enemies; insect life, enemies of the farm and garden; wood-work; iron-work; farm business. Practical men from outside the college aid in the instruction.

The expenses are kept as low as possible. A certificate of attendance is given at the completion of the course. No entrance examination is required.

SPECIAL COURSE IN POULTRY-KEEPING.—A special course in poultry-keeping continues for six weeks immediately following the Christmas vacation. The aim of the course is to give pointed, practical instruction in the science and art of poultry-keeping and to present the latest and best methods in practice and management. This, the pioneer course in poultry-keeping, has been in progress for the past seven years and has proved uniformly successful.

Theoretical or practical teaching is given in the following subjects: zoölogy, including anatomy, physiology and embryology; breeds of fowls and their origin; principles of breeding, mating, care and management; incubation and brooding; chemistry of foods; feeding; egg and flesh production; caponizing; fattening; killing, dressing and marketing; the prevention of diseases; poultry plants—including location, drainage, buildings, drawing of plans, specifications, estimates, construction, ventilation, and heating; records and accounts; crops raised for poultry or as an adjunct to the business.

The practical work includes individual practice in artificial incubation and brooding, and in the preparation of fowls for market. Frequent excursions are made to typical poultry plants for a study of their stock and practical management. An annual trip is made to either the Boston or New York poultry show. One of the strong features of the course consists in the fact that the students are brought in contact with a large number of practical poultrymen, who come to the college annually to assist in the instruction.



IN THE SOIL LABORATORY.

Early enrollment is necessary for admission to this course, as the number of applications frequently exceeds the number of students that can be accommodated. No entrance examinations are required. Certificates of attendance are given to deserving students at the close of the course.

Subjects.

I. Soils and Fertilizers.—Origin and formation of soil; chemical properties; influence of chemical constituents upon the physical conditions and biology of the soil. Farm manures; artificial manures; composition, precautions and economy in using, influence upon the soil and plants; action of soils and of plants upon manures; formulas for farm crops, with calculations of formulas. *Spring term; 3 exercises per week. Required of Agricultural students. Dr. Wheeler.*

I. (A) The Soil.—Constituents; elements of fertility; texture; moisture; living organisms; under-draining; tillage; humus; temperature. This course treats of the physical characteristics of the soil as distinct from the chemical. *Fall term, Junior year; 2 class exercises and one laboratory period per week. Required of Agricultural students. Professor Card.*

II. Farm Crops.—Needs of the plant; maintenance of fertility and humus; rotations; pastures; meadows; grains; grasses; clovers; forage plants and roots. *Winter term, Junior year; 3 exercises per week. Required of Agricultural students. Professor Card.*

III. Farm Equipment.—Selection and equipment of farms; buildings, fences, roads, water supply, farm power, field machinery and appliances. *Spring term; 3 exercises per week. Elective. Professor Card and Mr. Burdick.*

IV. Farm Management.—Farm capital, fixed and circulating; labor, manual and team; choice of a farm; ownership or rental; farm balance; implements and equipment; systems of farming; marketing problems; advertising; records and accounts; legal questions; coöperation; specific types of farming. *Winter term; 2 exercises per week. Elective. Professor Card.*

V. Agricultural Economics.—The study of agriculture as an industry, from the point of view of political economy. History of the agricultural industry; agricultural resources of the world; physical conditions affecting agriculture; the agricultural market; transportation of agricultural products; agricultural labor; farm ownership and tenancy; mortgages, etc.; business co-operation in agriculture; land laws and land policies in the United States; relation of agriculture to other industries and to the industrial order; relation of legislation to agriculture; government aid to agriculture. *Spring term; 2 exercises per week. Elective. President Butterfield and Professor Card.*

VI. Farm Surveying and Drainage.—Mapping of fields; location of drains; leveling and construction of farm drains. *Fall term; 2 exercises per week. Elective. Mr. Tyler.*

VII. Farm Animals.—A study of the types, breeds, and care of different farm animals. *Fall term; 3 exercises per week. Elective. Dr. Curtice.*

VIII. Farm Animals.—Principles of feeding, nutrition, assimilation, and excrementation; selection, composition, and digestibility of food-stuffs; feeding standards and compounding of rations; practice in the preparation of foods and methods of feeding; principles of hygiene and management. *Winter term; 3 exercises per week. Elective. Dr. Curtice.*

VIII. (A) Farm Animals.—Principles governing their choice and breeding. *Spring term; 3 exercises per week. Elective. Dr. Curtice.*

Poultry-Keeping.—Under subjects VII, VIII, and VIII (A) the student may substitute poultry-keeping for farm animals. The poultry course will essentially parallel that of Farm Animals, but be modified to suit its requirements. It is expected that students taking the poultry-course work will spend a certain portion of the Fall and Spring terms in incubation and brooding.

IX. Dairy Husbandry.—Care and management of dairy cattle; buildings and equipment; milk production, composition, management, aëration, pasteurization, sterilization, testing, preservation, transportation; creaming. *Spring term; 3 exercises per week. Elective. Dr. Curtice.*

XI. Agricultural Experimentation.—Objects, methods, and results of agricultural experimentation; precautionary measures; sources of error; interpretation of results. *Spring term; 2 exercises per week. Elective. Dr. Wheeler.*

XII. Agricultural Literature.—Seminary courses in the literature of special subjects. *By arrangement. Elective.*

XIII. Original Investigations.—For advanced students only. *By arrangement. Elective.*

XIV. Rural Sociology.—Movements of the farm population—causes and results; general social conditions of farmers, such as illiteracy, health, crime, industry, 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. *Fall term; 2 exercises per week. Elective. President Butterfield.*

XV. Handicraft Courses.—For students who wish training in the practical operations of agriculture, handicraft courses are open in the care of live stock, poultry-culture, fruit-growing, vegetable-gardening, use and care of farm machinery, etc. *By arrangement. Not to count toward a degree.*

Horticulture.

PROFESSOR CARD, MR. STENE.

Work in horticulture is designed for students from all courses. It is felt that some knowledge of the subject may very properly form a part of every well-rounded education.



PRUNING GRAPEVINES.



CATCHING THE PLUM CURCULIO.

In the introductory subject the aim is to discuss principles of general importance to all who have to deal with orchard or garden crops. The subjects of pomology and vegetable-gardening are designed to give practical instruction in the growing of fruits and vegetables.

Landscape-gardening is especially recommended to those who seek to appreciate the beautiful in nature or in art. Its aim is to apply the principles of beauty, as evinced in the work of nature, to the art of embellishing grounds.

Forestry touches problems of import to every citizen interested in the public welfare. Owing to the intimate relation between forests and waterflow, the subject is often of more vital importance to the manufacturer than to the farmer.

The subject of plant-breeding appeals chiefly to those interested in the broader problems of biological development and relationship. A careful study of the amelioration and development of plants under culture throws light upon many of the general problems of evolution which are of interest to all thinking students.

The subjects of reading and original investigation are designed chiefly for students who wish to make a specialty of horticulture.

Subjects.

I. Principles of Horticulture.—A discussion of fundamental principles underlying horticultural operations in orchard, garden, and greenhouse. *Fall term; 2 recitations and 1 laboratory period per week. Elective. Mr. Stene.*

II. Pomology.—Lectures and supplementary reading. Designed to give practical instruction in fruit-growing. *Winter term; 3 exercises per week. Elective. Mr. Stene.*

III. Vegetable-Gardening.—Methods of growing garden vegetables in the open ground and under glass. *Spring term; 3 exercises per week. Elective. Mr. Stene.*

IV. Landscape-Gardening.—The principles underlying landscape-gardening as a fine art, with discussion of the ornamentation of home grounds, school grounds, cemeteries, parks, highways and other public grounds. Lectures and supplementary reading. *Fall term; 3 exercises per week. Elective. Professor Card.*

V. Forestry.—General importance of forests, their influence on climate and water supply, methods of regeneration, and systems of forest management. Lectures and supplementary reading. *Spring term, Junior year; 3 exercises per week. Elective. Professor Card.*

VI. Plant-Breeding.—A discussion of the development of plants under culture, with especial reference to problems of heredity, environment, variation, selection and evolution. Lectures and supplementary reading. Open to students who have had Botany I. *Winter term; 2 exercises per week. Elective.* Professor Card.

VII. Horticultural Literature.—A seminary course designed to give familiarity with horticultural writings, ancient and modern. *By arrangement. Elective.*

VIII. Original Investigation.—For advanced students only. *By arrangement. Elective*

Languages.

The subjects grouped under this head are English, German, French, and Latin. For entrance requirements see page 20.

In all the college courses leading to a degree, three years of English and two years of foreign language study are required.

The aim of the department must necessarily vary with the language taught. In English the student is expected to gain increased facility in the correct use of his mother tongue as well as a large acquaintance with its best literature. In French and German, while practice in speaking and writing is constant, special emphasis is put upon a study of some of the literary masterpieces; and incidentally a good foundation is laid for the easy reading of scientific texts. The required year's work in Latin is looked upon as furnishing a valuable preparation for later language study and as being helpful in understanding scientific terms.

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

Subjects.

ENGLISH.

PROFESSOR WATSON, MISS BOSTWICK.

*II. Rhetoric.—Text-book study and practical application of rhetorical principles in themes and exercises. *Throughout the Freshman year; 2 exercises per week. Required of all candidates for a degree.*

III. Critical study of certain prose masterpieces by Carlyle, Emerson, Lamb, Holmes, Thoreau, Burroughs, and Warner; with essays and various short papers.

*Course I, Elementary English, is given in the preparatory school.

Throughout the Sophomore year; 2 exercises per week. Required of all candidates for a degree.

IV. General English Literature.—Largely a study of Chaucer, Shakespeare, Milton, Wordsworth, Tennyson, Browning, and their times. Essays and collateral reading required. Students are encouraged to special investigation along literary and historical lines. *Throughout the Junior year; 2 exercises per week. Required of all candidates for a degree.*

V. Special English Literature.—Study of special periods and authors. *Throughout the year; 3 exercises per week. Elective; open to students who have taken courses I-IV or their equivalent.*

VI. Special Work in Themes.—*Throughout the year. Elective; open to students who have taken courses I-IV or their equivalent.*

GERMAN.

PROFESSOR WATSON.

I. Elementary German.—Grammar, dictation, conversation, reading of easy prose and poetry. *Throughout the year; 4 exercises per week. Required of all candidates for a degree who do not offer French.*

II. Reading of intermediate texts, composition, conversation. *Fall term, Sophomore year; 3 exercises per week. Open to students who have taken course I or its equivalent, and required of all candidates for a degree who do not offer French.*

III. German Classics.—Goethe, Schiller, Lessing. *Winter and Spring terms, Sophomore year; 3 exercises per week. Open to students who have taken subjects I and II or their equivalent, and required of all candidates for a degree who do not offer French.*

IV. (A) German Prose.—Freytag, Von Scheffel, Dahn. *Throughout the year; 3 exercises per week. Elective; open to students who have taken subjects I-III or their equivalent.*

VII. Scientific German.—Special work assigned by different professors. *Elective; open to those who have taken subjects I-III or their equivalent.*

FRENCH.

PROFESSOR WATSON, MISS BOSTWICK.

I. Elementary French.—Grammar, dictation, conversation, reading of easy prose and poetry. *Throughout the year; 4 exercises per week. Required of all Freshmen not taking German or Latin and not offering French for admission.*

II. Reading of intermediate texts, composition, conversation.—*Throughout the Sophomore year; 3 exercises per week. Required of all candidates for a degree who do not offer German.*

III. French Classics.—Corneille, Racine, Molière. *Throughout the year; 3 exercises per week. Elective; open to students who have taken subjects I and II.*

IV. (A) French Prose.—Hugo, Sand, Balzac, Loti. *Throughout the year; 3 exercises per week. Elective; open to those who have taken subjects I–III or their equivalent.*

VI. Scientific French.—Special work assigned by different professors. *Elective; open to those who have taken subjects I and II or their equivalent.*

LATIN.

MISS BOSTWICK.

*II. Cæsar or selections from various Latin authors. *Elective. Throughout the year; 3 exercises per week.*

History and Political Science.

MISS KENYON, PRESIDENT BUTTERFIELD.

The aim of the courses in history is to present and interpret the political, social, constitutional and diplomatic development of the leading countries of Europe and America, and to foster scientific habits of study.

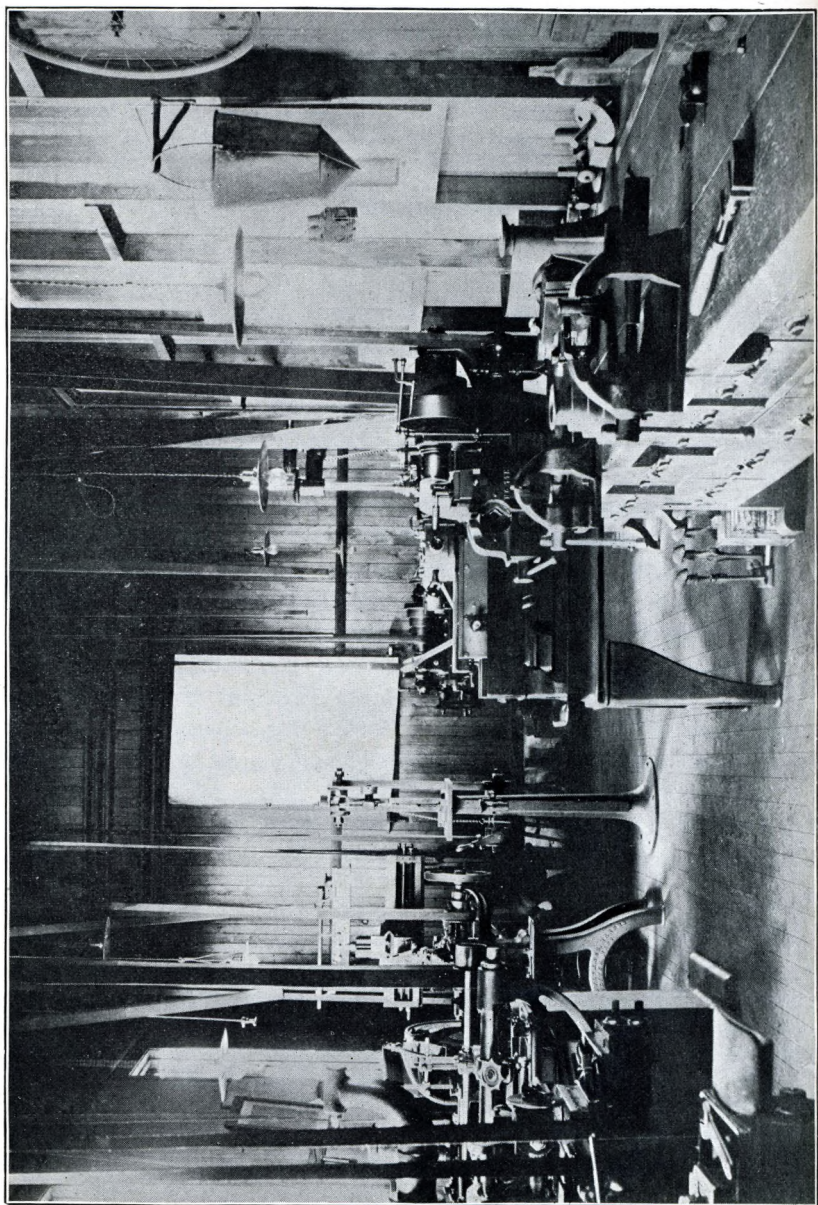
The library contains more than a thousand volumes on history and local records have been used for research work.

Subjects.

II. American History.—Lectures, recitations, reports. The origin and early development of American institutions; the colonial policies of European states; intercolonial wars; the Revolution; the establishment, the development and operation of the Constitution of the United States; political parties; the Civil War and Reconstruction. *Throughout the year; 3 exercises per week. Elective for Juniors and Seniors. Miss Kenyon.*

IV. European History.—Lectures, recitations, and reports. The sources of mediæval and modern civilization; the empire of Charles the Great; the feudal system; the crusades; the national growth of France, Germany and England; the Renaissance; the Reformation, the French monarchy in the seventeenth century, the system of the balance of power, the Puritan Movement, the Revolution of 1688, the rise of Prussia, the French Revolution and a general survey of European history since 1815. *Throughout the year; 3 exercises per week. Elective for Juniors and Seniors. Miss Kenyon.*

*Elementary Latin is given in the preparatory school.



V. Government.—Lectures, recitations, reports. *Fall term, Senior year; 3 exercises per week. Required of all candidates for a degree.* Miss Kenyon.

VI. Political Economy.—Text-book, Bullock's Introduction to Political Economy, 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. *Winter and Spring terms, Senior year; 3 exercises per week. Required of all candidates for a degree.* President Butterfield.

Mathematics.

DR. HEWES.

All students study higher algebra, solid geometry, and plane trigonometry, in their Freshman year. These subjects offer good mental discipline and form the basis of future work in engineering. They include as applications the solution of numerical equations and problems involving logarithms, the measurement of volumes and areas, and solution of triangles.

Those who elect engineering courses study analytical geometry during the first two terms of the Sophomore year. In the spring term calculus is begun and is completed in the winter term of the Junior year. The remainder of this winter term and the spring term during the Junior year are occupied with the study of theoretical mechanics.

Throughout the work emphasis is laid on the direct application of the subjects to the actual problems that arise in the engineering courses of which they form a part. The student is made to feel the need of advanced methods of treatment simultaneously with the presentation of that treatment. It is the aim of the work principally to develop engineers with useful mathematical training.

Subjects.

*IV. Higher Algebra.—Permutations and combinations, applications of the principle of mathematical induction, theory and use of logarithms (not involving infinite series), determinants, elements of the theory of equations. *Winter term, Freshman year; 4 exercises per week. Required of all candidates for a degree.*

V. Plane Trigonometry.—Study of the six functions as ratios; proofs of the principal formulas; in particular the sine, cosine, and tangent of $A \pm B$ and $2A$. The use of logarithms and the solution of triangles with applications. *Spring term, Freshman year; 4 exercises per week. Required of all candidates for a degree.*

*Courses I, II, and III are given in the preparatory school.

VI. Solid Geometry (Phillips and Fisher).—The usual theorems relating to lines and planes in space. Calculation of cubic contents of polyhedra, the cone, sphere, and cylinder. *Fall term, Freshman year; 3 exercises per week. Required of all candidates for a degree.*

VII. Analytical Geometry.—The various co-ordinate systems and their relations. Derivations of the equations of the line, circle and conics. Study of loci and methods of plotting. Detailed analysis of the equations of second degree in two variables. *Fall term, Sophomore year; 3 exercises per week. Required of students in the Engineering courses.*

VII. (A) Solid Analytical Geometry.—Co-ordinate systems in space and study of the line, plane, and quadric surfaces. Loci in space. *Winter term, Sophomore year; 3 exercises per week. Required of students in the Engineering courses.*

VIII. Calculus.—The differentiation of the ordinary functions and applications to geometry and engineering. Taylor's and Maclaurin's theorems, partial differentiation, maxima and minima of functions of one or more variables. Problems in physics and allied subjects. Methods of integration, theory of planimeter, applications to practical problems of geometry and mechanics. *Spring term, Sophomore year, and Fall term, Junior year; 3 exercises per week: Winter term; 4 exercises per week. Required of students in Engineering courses.*

IX. Theoretical Mechanics.—The laws of motion, forces acting at a point, and in a plane, parallel forces and centers of force, frictional resistance, principle of work, motions produced by constant and variable force. Motions of rigid bodies, impulsive forces. Solving of problems. *Spring term, Junior year; 4 exercises per week. Required of all students in the Engineering courses.*

Mechanical Engineering.

PROFESSOR DRAKE, MR. RODMAN, MR. KNOWLES, MR. KNIGHT.

The aim of this department is to give sound theoretical and thorough practical training to students who seek to prepare themselves for useful and responsible positions. Shop-work will furnish such training as will ensure, other things being equal, marked success in mechanical pursuits subsequent to graduation. The regular four-years' course deals with mechanical engineering as applicable to the industries carried on in New England and particularly in Rhode Island. Special attention is given to the designs and the economical operation of shops and mills, and of manufacturing and industrial machinery. The subjects of mechanism, metallurgy, heating and ventilation of buildings, engineering specifications, and laws of contracts are treated by lectures and text-

books. The several laboratories are well equipped for working in wood and metals and for the testing of materials used in construction. Students in the course of mechanical engineering receive instruction in bench-work in wood, wood-turning, pattern-making, forging, machine-shop work and mechanical drawing.

The carpenter shop contains benches and tools sufficient to accommodate twenty-four students at one time. The subject is designed to give skill and confidence in working the various kinds of wood, and also to impart a fair knowledge of the principles of building and construction. The wood-turning room contains thirteen lathes, each with its complete set of gouges and turning-tools. In the same room are benches for pattern-making, and also power machinery for working wood; such as circular saw, hand-saw, jig-saw, surface-planer, buzz-planer, mortising-machine, dowel-machine and others. All students take wood-turning, and during the period each has practice under the direct charge of the engineer in care of the shop, boiler and engine. The engine is of thirty horse-power. The work in pattern-making given to the students in the mechanical department consists in the making of selected pieces to illustrate the principles of shrinkage, drafts, finish, core-box making, built-up work, and the general requirements of pattern-making.

The forge shop will accommodate twelve students at one time. It contains twelve forges and anvils, a stock-cutter, a bolt-header, a post-drill, and is well supplied with all the hammers, tongs, and other forge and anvil tools necessary for complete work. A regular course is followed here as in other lines; and for the students of the agricultural course the work is of such a nature as is found about a farm. The various operations of drawing, bending, upsetting, and welding are taught and applied in the making of such useful pieces as staples, hooks, chains, and iron work for farm tools. The students of the mechanical department follow a similar course, but in a direction more suited to the machine shop. Bolts, nuts, machine-forgings, chisels, and lathe tools are made, and afterward put to practical use. Only students in the engineering courses work in the machine shop.

The subject is designed to give a sure knowledge of and intelligent practice in the best modern methods of using the various tools; such as lathes, planers, drills, milling-machines and grinding-machines. Hand work at the bench is offered, and includes instruction in chipping, filing, scraping and finishing. Students of former years

have made an engine, dynamo, speed lathe, full set of arbors, set of nut arbors, and a variety of other tools.

In experimental engineering the students make tests of engines, boilers, pumps, steam gauges, injectors and a hydraulic ram. The strength of materials is investigated theoretically in class under the head of mechanics of materials, and practically in the laboratory by conducting tests upon specimens of wood, iron, steel, brick, stone, cement, boiler-plate, etc. In hydraulics, water-meters are calibrated, and measurements of water made by orifices and weirs.

Subjects.

I. Mechanical Drawing.—Elementary principles, use of tools, inking in, geometrical drawing. *Winter and Spring terms, Freshman year; 2 periods of 2 hours each per week. Required for a degree in Engineering courses.*

II. Mechanical Drawing.—Screw threads, bolts and nuts, shade lines, line shading. *Fall term, Sophomore year; 2 periods of 2 hours each per week for Mechanical Engineers; 3 periods for Electrical and Highway Engineers. Required for a degree in Engineering courses.*

III. Mechanical Drawing.—Descriptive Geometry. *Spring term, Sophomore year; 3 periods of 2 hours each per week. Required for a degree in Engineering courses.*

IV. Mechanical Drawing.—Machine details and parts, tracing, blue printing. *Winter and Spring terms, Sophomore year; 2 periods of 2 hours each per week for Mechanical Engineers: Winter term, Sophomore year; 3 periods for Electrical and Highway Engineers. Required for a degree in Engineering courses.*

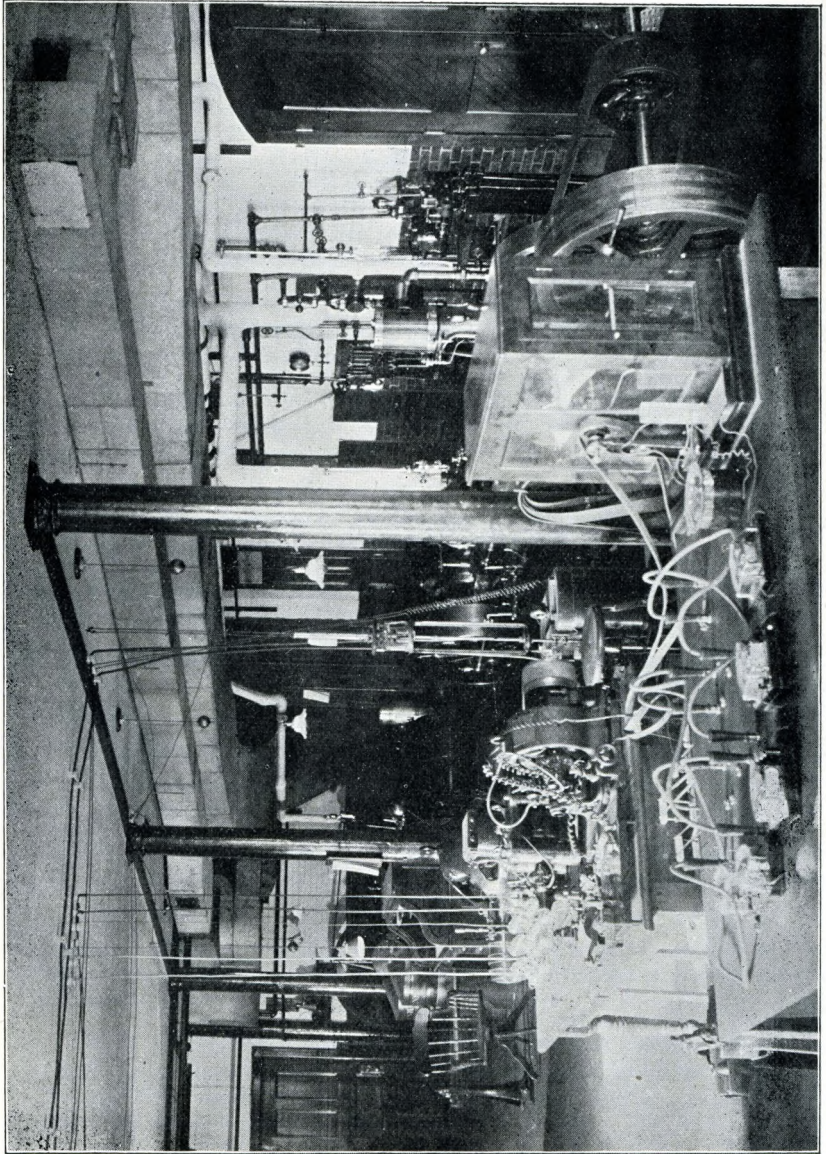
V. Mechanical Drawing.—Elements of machine design. *Fall and Winter terms, Junior year; 3 periods of 2 hours each per week for Mechanical Engineers: Winter term, 3 periods for Electrical Engineers. Required for a degree.*

VI. Mechanical Drawing.—Practical machine design. *Fall term, Senior year; 3 periods of 2 hours each per week. Required for a degree in Mechanical and Electrical Engineering.*

VII. Mechanical Drawing.—Elements of topographical drawing as introductory to land surveying. *Winter term, 1 period of 2 hours per week. Required as introductory to Highway Engineering II.*

VIII. Wood-Working.—Use of tools, bench-work, and carpentering. *1 exercise of 3 hours per week, Fall and Winter terms. Required for a degree in Engineering courses. Students must receive credit for this subject before beginning the work of the Junior year.*

IX. Wood-Working.—Wood-Turning. *Spring term; 1 exercise of 3 hours per week. Required for a degree in Engineering courses. Students must receive credit for this subject before beginning the work of the Junior year.*



THE ELECTRICAL ENGINEERING LABORATORY.

X. (A) Pattern-Making.—*Fall term, Junior year; 2 exercises of 3 hours each per week. Required for a degree in Mechanical Engineering.*

XI. Shop-Work.—Forging, drawing, bending, welding and tool dressing. *Winter term, Junior year; 2 exercises of 3 hours each per week. Required for a degree in Mechanical Engineering.*

XIII. Machine-Shop Practice.—*Spring term, Junior year; 2 exercises per week. Fall term, Senior year; 3 exercises of 3 hours each per week for students in Mechanical Engineering. Winter and Spring terms, Junior year; 2 exercises of 3 hours each per week for students in Electrical Engineering.*

XIV. Wood-Carving.—Care and use of tools, geometrical motives, diaper patterns, incised carving, flat and curved surface carving, historic ornament, low relief and high relief. *1 exercise of 3 hours per week. Elective.*

XV. Steam Boilers.—Types, construction, strength, uses and management. *Winter term, Senior year; 3 exercises per week. Required for a degree in Mechanical and Electrical Engineering.*

XVI. Thermodynamics.—As directly applied to the steam engine. Simple and compound engines. *Winter term, Junior year; 3 exercises per week. Required for a degree in Mechanical Engineering.*

XVII. Steam Engineering.—Valve gears, regulators, condensers, power plants, tests. *Spring term, Junior year; 3 exercises per week. Required for a degree in Mechanical and Electrical Engineering.*

XVII. (A) Transporting Machinery.—*Spring term, Senior year; 3 exercises per week. Required for a degree in Mechanical Engineering.*

XVIII. Strength of Materials.—Wood, iron, steel, alloys, brick, stone and cements. *Spring term, Junior year; 3 exercises and 1 laboratory exercise of 2 hours per week. Required for a degree in Mechanical Engineering.*

XIX. Theoretical and Applied Mechanics.—Bodies at rest and in motion, friction of rest and motion, energy, work and power. *Fall term, Senior year; 4 exercises per week. Required for a degree in Mechanical Engineering.*

XX. Graphic Statics of Structures and Machines.—*Winter term, Senior year; 4 exercises per week. Required for a degree in Mechanical Engineering.*

XXI. Hydraulics.—Flow of water through pipes, orifices and sewers. Measurement of flow of rivers and streams. Water power and water supply. *Spring term, Senior year; 4 exercises per week. Required for a degree in Mechanical Engineering.*

XXII. Engineering Laboratory.—Physical tests of materials used in industries and in construction. Tests of machines and apparatus. *Winter and Spring terms, Senior year; 2 lectures and 1 laboratory exercise per week. Required for a degree in Mechanical Engineering.*

XXIII. Mill Construction.—Lectures upon the structural development and

design of shops and mills. *Fall term, Senior year; 3 exercises per week. Elective in Engineering courses.*

XXIII. (A) A Mill Equipment. *Winter term, Senior year; 3 exercises per week. Elective.*

XXIV. Metallurgy.—Cast iron, wrought iron, steel, copper, tin, lead, zinc and alloys. *Fall term, Junior year; 3 exercises per week. Required for a degree in Mechanical and Electrical Engineering courses.*

XXV. Textile Machinery.—Lectures upon types of machinery and processes for the manufacture of cotton and woolen goods. *Spring term, Senior year; 3 exercises per week. Elective in Mechanical Engineering course.*

XXVI. Engineering Laboratory.—*3 exercises per week. Elective, Senior year.*

Electrical Engineering.

PROFESSOR TOLMAN, MR. MITCHELL.

The object of this course is to provide thorough preparation in the fundamental principles of this branch of engineering; to illustrate the application of these principles, as far as possible, in laboratory practice and by visits to electric power plants in other places.

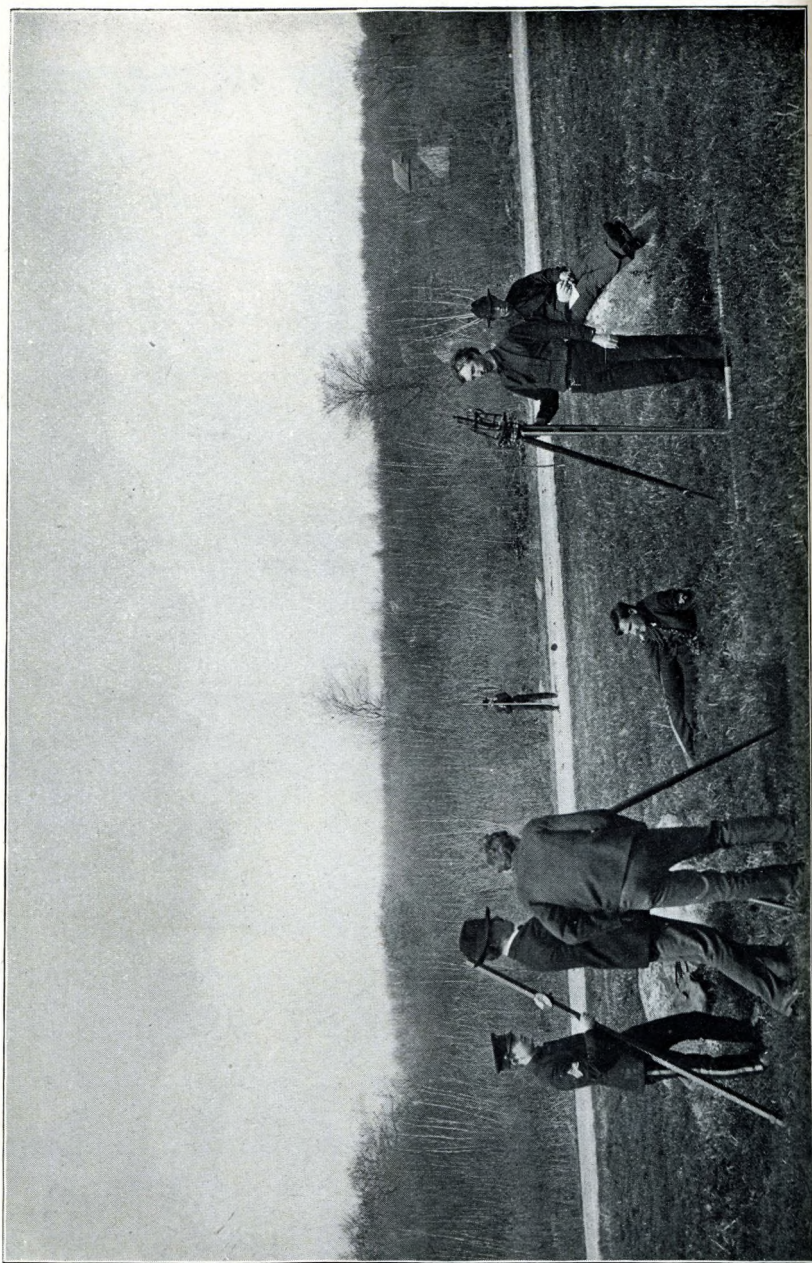
The department is equipped with two water-tube boilers of sixty horse power each; a fifty horse-power Armington and Simms's engine; one thirty Kilo Watt 1,000 volt single-phase alternating-current generator; one five Kilo Watt Westinghouse rotary converter; one 110 volt direct-current motor arranged with slip rings so that the machine may be used to generate single-phase or three-phase current as desired; two 110 volt direct-current generators; one 25 Kilo Watts, the other 8 Kilo Watts; one 3 Kilo Watt 110 volt direct-current motor; a storage battery of 108, 30 amper-hour cells arranged so that different voltages may be obtained for testing purposes; transformers; condensers; Hewitt, arc and incandescent lamps; Thompson and Weston measuring instruments.

A photometry room has recently been fitted up for testing and comparing different forms of illuminating apparatus.

It is believed that this equipment is well selected to give a practical course in the manipulation of apparatus used in electrical engineering at the present time.

The arrangement of motive power in the laboratory is such that determination of the efficiency of an isolated plant may be made, including engine and boilers, as well as generators, and a test of the





relative economy of the use of exhaust steam from such a plant for general heating purposes.

Subjects.

I. (A) Electricity and Magnetism (Thompson).—A study of the fundamental principles of the subject. *Fall term; 4 exercises per week for students in Electrical Engineering; 3 exercises for students in Mechanical Engineering.*

I. (B) The Dynamo (Hawkins and Wallis).—The design, construction and care of the dynamo. *Winter term; 4 exercises per week for students in Electrical Engineering; 3 exercises for students in Mechanical Engineering.*

I. (C) Direct-Current Machinery (Sheldon and Mason).—*Spring term; 4 exercises per week for students in Electrical Engineering; 3 exercises for students in Mechanical Engineering.*

II. Alternating Currents and Alternating-Current Machinery.—This subject considers the theory of generation and utilization of alternating currents; the design, construction, and operation of single-phase and poly-phase alternating-current dynamos, motors, and transformers. Sheldon and Mason's Alternating Current Machines is completed and supplemented by lectures.

The laboratory work which accompanies the subject consists of the determination of the characteristics of alternating-current circuits having various combinations of inductance and capacity; the shape of E. M. F. and current waves of different machines; measurements of self-inductance, capacity, and mutual induction; measurements of power in single-phase and poly-phase circuits; measurements of total impedance in different circuits; determination of characteristics of alternators and rotary converters; complete tests of transformers, including those of core and copper losses, regulation, and efficiency. *Throughout the Senior year; 4 exercises per week for students in Electrical Engineering. Other students may elect the work as a three-hour subject.*

III. Telephones.—The subject of telephone engineering is open as an elective to Seniors and others who have had the equivalent Junior electrical work. *Lectures. 2 exercises per week, Winter and Spring terms.*

IV. Electric Lighting (Crocker).—A complete study of the subject of electric lighting. *Fall and Winter terms; 2 exercises per week. Elective; open to students in Electrical Engineering, Senior year.*

V. Design.—Design of a lighting system including a study of location and equipment of the central station, the distributing system, and cost of installation for arc and incandescent lighting. *Winter term; 2 exercises per week. Elective; open to students in Electrical Engineering, Senior year.*

VI. Power Distribution (Bell).—A study of different methods of power distribution with especial reference to the use of electricity as motive power. *Winter and Spring terms; 2 exercises per week. Elective; open to students in Electrical Engineering, Senior year*

Highway Engineering.

DR. HEWES, PROFESSOR DRAKE.

Instruction in highway engineering is designed to equip students as practical working highway engineers. Connected as it is on the one side with work in mechanic arts and on the other hand, with the advancement of agriculture through better roads, the subject is peculiarly appropriate to this college. The interest in the road movement is increasing rapidly, and the supply of competent road engineers is not sufficient to meet even the present demand for them. This work is offered, therefore, with a good deal of confidence in its success, and recommended to young men who have the requisite scholarship to complete it, and who may develop the administrative skill necessary for road engineers.

The instruction given is essentially civil engineering adapted to highway construction. The adaptation consists partly in emphasizing throughout the work in the underlying principles of civil engineering those subjects that should enter directly into a road builder's training, such as, for instance, the geology of road materials. Then in the Senior year the students' efforts are concentrated mainly on the theory and practice of the construction, maintenance, and repair of roads in the United States. For the present the field work has been provided for by coöperation with the town of South Kingstown. It is fully recognized that the highway engineer must have a training in civil engineering, and further recognized that he must know how to *build roads*.

Subjects.

I. Surveying (Raymond).—Study of instruments, and simple surveying with the compass, level, and transit. The practice in the field includes laying out and dividing land, leveling for profiles, and simple city work. The true meridian is determined by the sun and polar star. The office work includes plotting and computing from the field notes taken in the above work, also determination of areas. *Sophomore year, Spring term; 4 exercises per week. Required of students in Electrical and Highway Engineering.*

II. Surveying.—Railroad work, including a reconnoissance, preliminary and location survey of a short line of railroad in vicinity of Kingston. A complete preliminary estimate of the cost of the line is made from the notes in the office in the winter, and finished plans drawn. Special attention is also given to survey-



STAIRCASE, STUDIO.

ing for street railroads and highway improvement. *Throughout the Junior year; 4 exercises per week. Required of students in Highway Engineering.*

III. (A) Masonry Structures (Baker).—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 laboratory work is performed at intervals, as facilities and ability of the student permit. *Fall term, Senior year; 3 exercises per week. Required of students in Highway Engineering.*

III. (B) Stereotomy (French and Ives).—This subject is designed to familiarize students with the preparation of drawings used in masonry structures, and the practical details of building stone masonry. *Winter term, Senior year; 3 exercises per week.*

IV. (A) Graphic Statics (J. Sondericker).—The student is taught the graphical method of treating construction problems. *Fall term, Senior year; 3 exercises per week.*

IV. (B) Bridge Construction.—Following the general study of graphic methods, application is made to the construction of bridge trusses of various types. Highway bridges of steel, wood, and stone receive particular attention. *Winter term, Senior year; 3 exercises per week.*

V. (A) Road Building.—This is a course in practical highway work. It includes the application of engineering principles to the preliminary survey, and estimate of cost of building and rebuilding roads in town and country. The subjects of surfacing old and new roads with gravel or stone and the drainage and repair of them receive particular emphasis. The details of staking out work, placing catch-basins, curbs, culverts, etc., and the crushing and rolling of stone are discussed. The student is directed to state and government reports and required to read selected topics in the literature of the subject. *Winter term, Senior year; 3 exercises per week. Required of students in Highway Engineering.*

V. (B) Field Work.—*Spring term; 12 hours' credit.*

Drawing.

PROFESSOR DRAKE, MISS ELDRED.

MECHANICAL DRAWING is required for a period of three years. Students keep notebooks, in which freehand sketches are made from models; and these sketches are afterward worked up into finished drawings. The making of working drawings for some machine completes the subject. Practice in tracing and blue printing is given to all students. The drawing is designed to aid in the corresponding shop-work and not to produce professional draughtsmen.

FREEHAND DRAWING.—Freehand drawing is taught in the fall and spring terms and is required in the fall term, Freshman year. The required work comprises the study of perspective and values from objects, still life and simple casts. Memory sketches of the objects drawn are expected of each student, who is also required to leave at the college a specimen of his work. An hour's study of the history of art, by means of reading, lectures, and the use of photographs, may be substituted for one hour of II. The department is well equipped with art books and photographs.

Subjects.

I. Freehand Drawing.—Drawing in charcoal from objects. Memory sketches required. *Fall term, Freshman year; 1 exercise of 2 hours per week for students in Agriculture and Science and 2 exercises for all Engineering students. Required of all candidates for a degree.* Miss Eldred.

II. Drawing in Charcoal from Still Life and the Cast.—*Spring term; 3 exercises of 2 hours per week. Elective.* Miss Eldred.

III. Drawing in Charcoal from Still Life and the Cast.—*Fall term; 3 exercises of 2 hours per week. Elective.* Miss Eldred.

IV. Modeling.—*Fall term; 3 exercises of 2 hours per week. Elective.* Miss Eldred.

V. Mechanical Drawing (For subjects in Mechanical Drawing, see Mechanical Engineering, page 47). Professor Drake.

Stenography and Typewriting.

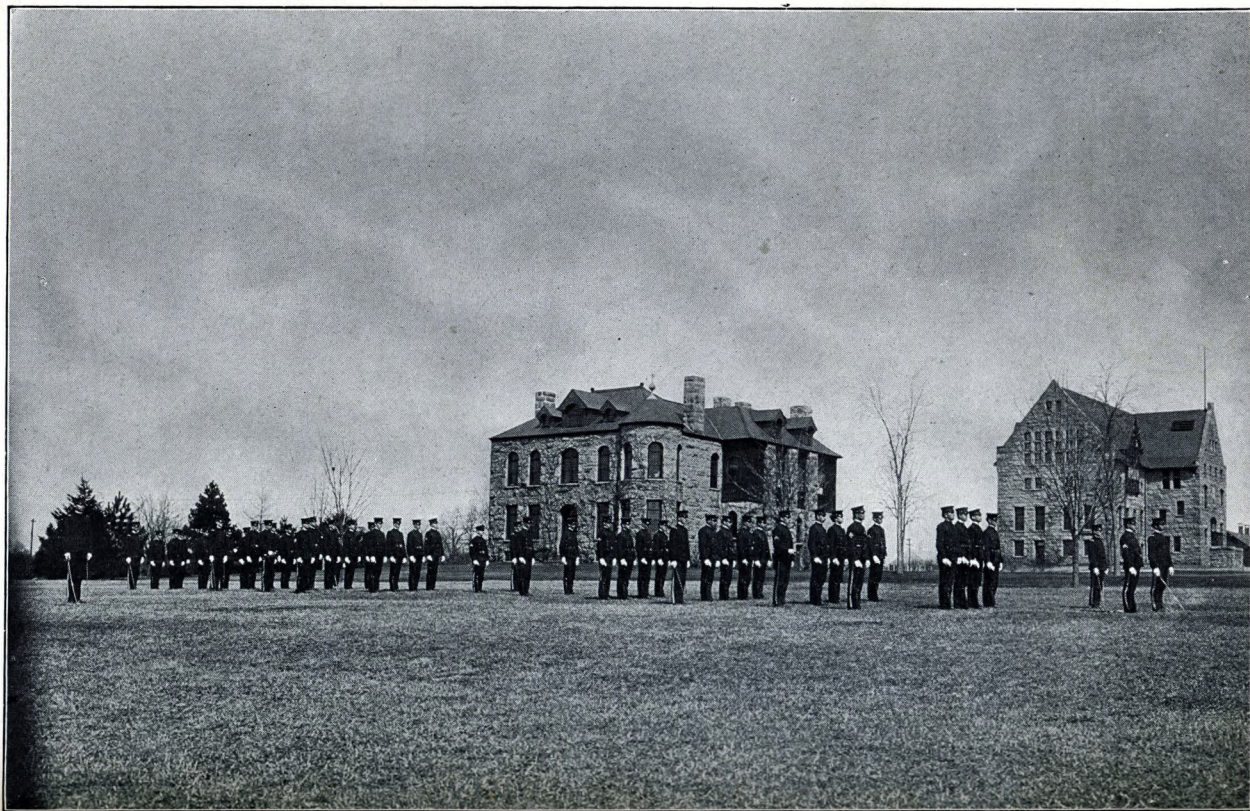
MISS TILTON.

Stenography and typewriting are offered as electives. A thorough knowledge of the common English branches is required of every one taking the subjects. The Benn Pitman 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. Course I only, may be counted as an elective by candidates for a degree.

Subjects.

I. Elementary.—Instruction in principles; dictation. *Throughout the year; 4 exercises per week. Elective.*

II. Advanced.—Dictation, including the following: business letters, legal documents, terms used, deeds, wills, mortgages, contracts, declarations, etc.;



DRILL ON CAMPUS.

hints useful in office work; general dictation. *Throughout the year. 3 periods per week. Elective.*

Military Science and Tactics.

MAJOR BALCH.

All men college students are required to attend classes in military instruction for three years, or such portion thereof as the student is in college, unless excused by reason of physical disability. Credit is given for this work, and the same regulations of attendance are in force as for other subjects.

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, and detachments are made for artillery drill and signalling. Theoretical instruction is by means of lectures and recitations. The military exercises improve the physique, inculcate habits of prompt obedience, and courtesy, and have an elevating influence on the conduct of the cadets.

The organization is as follows:

MAJOR LEWIS BALCH, LATE U. S. VOLUNTEERS	Commandant.
B. H. ARNOLD	Major.
L. L. HARDING	Captain.
W. N. BERRY	Captain.
F. G. KEYES	1st Lieutenant-Adjutant.
V. W. DOW	1st Lieutenant.
P. W. SLOCUM	1st Lieutenant.
H. L. GARDINER	2nd Lieutenant.
F. B. HODGES	2nd Lieutenant.
A. B. DAVIS	Battalion Sergeant Major.
R. A. MARTINEZ	1st Sergeant.
J. K. LAMOND	1st Sergeant.
D. R. ARNOLD	2nd Sergeant.
E. S. LADD	2nd Sergeant.
M. S. MACOMBER	3rd Sergeant.
J. R. FERRY	3rd Sergeant.
B. F. SHERMAN	Corporal.
F. J. CLEMENS	Corporal.
D. A. SOULE	Corporal.
H. M. NICHOLS	Corporal.
F. J. MARTIN	Corporal.
C. E. BRETT	Corporal.

G. J. SCHLEFFER	Corporal.
G. W. SHELDON	Corporal.
J. P. GRINNELL	Corporal and Trumpeter.
H. P. STACY	Trumpeter.

Subjects.

I. Practical instruction, drills and exercises.—Manuals of instruction U. S. Army. *3 exercises of 1 hour each per week for the entire year except from January 1 to April 1, when only two drills are required. All the command.*

II. Lectures in Military Science.—*1 lecture per week January 1 to April 1. Lectures illustrated by diagrams and practical demonstrations. All the command.*

III. Recitations in Manuals of Instruction U. S. Army.—*1 recitation per week, entire year. Commissioned officers and Sophomores.*

IV. Recitations in Manuals of Instruction U. S. Army.—*1 recitation per week, entire year. Freshmen and preparatory classes.*

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. By advice of the committee on courses of study, French may be substituted for German for the language requirement. Consulting with the committee on courses of study the student chooses his electives from the subjects described on pages 28-55.

Freshman Year.

Agriculture and Courses in Science.

Fall.	Winter.	Spring.
English II (41)..... 2	English II (41)..... 2	English II (41)..... 2
German I (42)..... 4	German I (42)..... 4	German I (42)..... 4
Mathematics VI (45)..... 3	Mathematics IV (44)..... 4	Mathematics V (44)..... 4
Physics I (31)..... 3	Physics I (31)..... 3	Physics I (31)..... 3
Chemistry I (29)..... 3	Chemistry I (29)..... 3	Chemistry I (29)..... 3
Freehand Drawing I (53).. 1
Military Drill and Taetics.. 2	Military Drill and Taetics.. 2	Military Drill and Taetics.. 2

Courses in Engineering.

English II (41)..... 2	English II (41)..... 2	English II (41)..... 2
German I (42)..... 4	German I (42)..... 4	German I (42)..... 4
Mathematics VI (45)..... 3	Mathematics IV (44)..... 4	Mathematics V (44)..... 4
Chemistry I (29)..... 3	Chemistry I (29)..... 3	Chemistry I (29)..... 3
Mechanics VIII (47)..... 1	Mechanics VIII. (47)..... 1	Mechanics IX (47)..... 1
Freehand Drawing I (53).. 2	Mechanics I (47)..... 2	Mechanics I (47)..... 2
Military Drill and Taetics.. 2	Military Drill and Taetics.. 2	Military Drill and Taetics.. 2

Sophomore Year.

Agriculture and Courses in Science.

Fall.	Winter.	Spring.
English III (41)..... 2	English III (41)..... 2	English III (41)..... 2
German II (42)..... 3	German III (42)..... 3	German III (42)..... 3
Chemistry II (29)..... 3	Chemistry II (29)..... 3	Chemistry IV (29)..... 3
Zoölogy I (B) (35)..... 3	Zoölogy I (B) (35)..... 3	Zoölogy I (B) (35)..... 3
Botany I (33)..... 3	Botany I (33)..... 3	Botany I (33)..... 3
Elective..... 3	Elective..... 3	Elective..... 3
Military Drill and Tactics.. 2	Military Drill and Tactics.. 2	Military Drill and Tactics. 2

Mechanical Engineering.

English III (41)..... 2	English III (41)..... 2	English III (41)..... 2
German II (42)..... 3	German III (42)..... 3	German III (42)..... 3
Chemistry II (29)..... 3	Chemistry II (29)..... 3	Physics II (31)..... 4
Physics II (31)..... 4	Physics II (31)..... 4	Mathematics VIII (45).... 3
Mathematics VI (45)I..... 3	Mathematics VII (A) (45).. 3	Mechanics III (47)..... 3
Mechanics II (47)..... 2	Mechanics IV (47)..... 2	Mechanics IV (47)..... 2
Military Drill and Tactics.. 2	Military Drill and Tactics.. 2	Military Drill and Tactics. 2

Electrical and Highway Engineering.

English III (41)..... 2	English III (41)..... 2	English III (41)..... 2
German II (42)..... 3	German III (42)..... 3	German III (42)..... 3
Chemistry II (29)..... 3	Chemistry II (29)..... 3	Physics II (31)..... 4
Physics II (31)..... 4	Physics II (31)..... 4	Mathematics VIII (45).... 3
Mathematics VII (45)..... 3	Mathematics VII (A) (45).. 3	Mechanics III (47)..... 3
Mechanics II (47)..... 3	Mechanics IV (47)..... 3	Highway Engineering I (51). 4
Military Drill and Tactics.. 2	Military Drill and Tactics.. 2	Military Drill and Tactics. 2

Junior Year.

Agriculture.

Fall.	Winter.	Spring.
English IV (42)..... 2	English IV (42)..... 2	English IV (42)..... 2
Agriculture I (A) (38)..... 3	Agriculture II (38)..... 3	Agriculture II (38)..... 3
Military Drill and Tactics.. 2	Military Drill and Tactics.. 2	Military Drill and Tactics..
Elective.....12	Elective.....12	Elective.....12
(At least eight hours must be chosen from subjects bearing directly on agriculture.)	(At least eight hours must be chosen from subjects bearing directly on agriculture.)	(At least eight hours must be chosen from subjects bearing directly on agriculture.)

Biology.

English IV (42)..... 2	English IV (42)..... 2	English IV (42)..... 2
Biology..... 6	Biology..... 6	Biology..... 6
(Credit will be given for all courses in Zoölogy and Botany, and for Horticulture VI.)	(Credit will be given for all courses in Zoölogy and Botany, and for Horticulture VI.)	(Credit will be given for all courses in Zoölogy and Botany, and for Horticulture VI.)
Military Drill and Tactics.. 2	Military Drill and Tactics.. 2	Military Drill and Tactics.. 2
Elective..... 9	Elective..... 9	Elective.....9

Chemistry.

English IV (42)..... 2	English IV (42)..... 2	English IV (42)..... 2
Chemistry V (A) (29)..... 3	Chemistry V (A) (29)..... 3	Chemistry V (A) (29)..... 3
Chemistry V (B) (29)..... 3	Chemistry V (B) (29)..... 3	Chemistry V (B) (29)..... 3
Chemistry VI (30)..... 4	Chemistry VI (30)..... 4	Chemistry VII (30)..... 3
Chemistry III (29)..... 3	Chemistry VIII (30)..... 2	Chemistry X (30)..... 1
Military Drill and Tactics.. 2	Chemistry IX (30)..... 3	Chemistry XI (30)..... 1
Elective (not a chemical subject)..... 3	Military Drill and Tactics.. 2	Chemistry XII (30)..... 3
	Elective (not a chemical subject)..... 3	Military Drill and Tactics.. 2
		Elective (not a chemical subject)..... 3

General Science.

Fall.	Winter.	Spring.
English IV (42)..... 2	English IV (42)..... 2	English IV (42)..... 2
Military Drill and Tactics.. 2	Military Drill and Tactics.. 2	Military Drill and Tactics.. 2
Elective.....15	Elective.....15	Elective.....15
(A minimum of six hours of science must be chosen.)	(A minimum of six hours of science must be chosen.)	(A minimum of six hours of science must be chosen.)

Mechanical Engineering.

English IV (42)..... 2	English IV (42)..... 2	English IV (42)..... 2
Mathematics VIII (45)..... 3	Mathematics VIII (45)..... 4	Mathematics IX (45)..... 4
Electrical Engineering I } A (50) } 3	Electrical Engineering I } B (50) } 3	Electrical Engineering I } C (50) } 3
Mechanics V (47)..... 3	Mechanics V (47)..... 3	Mechanics XIII (48)..... 2
Mechanics X (A) (48)..... 2	Mechanics XI (48)..... 2	Mechanics XVII (48)..... 3
Mechanics XXIV (49)..... 3	Mechanics XVI (48)..... 3	Mechanics XVIII (48)..... 4
Military Drill and Tactics.. 2	Military Drill and Tactics.. 2	Military Drill and Tactics.. 2

Electrical Engineering.

English IV (42)..... 2	English IV (42)..... 2	English IV (42)..... 2
Mathematics VIII (45)..... 3	Mathematics VIII (45)..... 4	Mathematics IX (45)..... 4
Electrical Engineering I } A (50) } 4	Electrical Engineering I } B (50) } 4	Electrical Engineering I } C (50) } 4
Mechanics XXIV (49)..... 3	Mechanics XIII (48)..... 2	Mechanics XIII (48)..... 2
Military Drill and Tactics.. 2	Mechanics V (47)..... 3	Mechanics XVII (48)..... 3
Elective..... 5	Military Drill and Tactics.. 2	Military Drill and Tactics.. 2
	Elective..... 3	Elective..... 3

Highway Engineering.

English IV (42)..... 2	English IV (42)..... 2	English IV (42)..... 2
Mathematics VIII (45)..... 3	Mathematics VIII (45)..... 4	Mathematics IX (45)..... 4
Highway Engineering II (51) 4	Highway Engineering II (51) 4	Highway Engineering II (51) 4
Geology (32)..... 2	Chemistry IX (30)..... 3	Chemistry XIX (30)..... 3
Mechanics XVI (48)..... 3	Mechanics XVIII (48)..... 3	Mechanics XV (48)..... 3
Military Drill and Tactics.. 2	Military Drill and Tactics.. 2	Military Drill and Tactics.. 2
Elective..... 3	Elective..... 3	Elective..... 3
	(Electrical Engineering I (B) is recommended as an elective.)	(Electrical Engineering I (C) is recommended as an elective.)

Senior Year.

Agriculture.

Fall.	Winter.	Spring.
Political Science V (44)... 3	Political Science VI (44)... 3	Political Science VI (44)... 3
Elective.....14	Elective.....14	Elective.....14
(At least eight hours must be chosen from subjects bearing directly on agriculture.)	(At least eight hours must be chosen from subjects bearing directly on agriculture.)	(At least eight hours must be chosen from subjects bearing directly on agriculture.)

Biology.

Political Science V (44)... 3	Political Science VI (44)... 3	Political Science VI (44)... 3
Biology..... 9	Biology..... 9	Biology..... 9
(Credit will be given for all courses in Zoölogy and Botany, and for Horticulture VI.)	(Credit will be given for all courses in Zoölogy and Botany, and for Horticulture VI.)	(Credit will be given for all courses in Zoölogy and Botany, and for Horticulture VI.)
Elective..... 3	Elective..... 3	Elective..... 3

Chemistry.

Political Science V (44)... 3	Political Science VI (44)... 3	Political Science VI (44)... 3
Chemistry XIII (30)..... 3	Chemistry XIII (30)..... 3	Chemistry XVII (30)..... 3
Chemistry XIV (30)..... 5	Chemistry XX (A) (31)... 3	Special Chemistry..... 3
Chemistry XII (30)..... 3	Chemistry XVI or XVIII (30) 3	Chemistry XVI or XIX (30) 3
Chemistry XX (31).....	Chemistry XX (31).....	Chemistry XX (31).....
Elective..... 3	Elective..... 3	Elective..... 3
(To be chosen from the following: History II, IV, French, German.)	(To be chosen from the following: History II, IV, French, German, Psychology.)	(To be chosen from the following: History II, IV, French, German, Psychology, Chemistry XV.)

General Science.

Political Science V (44)... 3	Political Science VI (44)... 3	Political Science VI (44)... 3
Elective.....12	Elective.....12	Elective.....12
(A minimum of six hours of science must be chosen.)	(A minimum of six hours of science must be chosen.)	(A minimum of six hours of science must be chosen.)

Mechanical Engineering.

Fall.	Winter.	Spring.
Political Science V (44)... 3	Political Science VI (44)... 3	Political Science VI (44)... 3
Mechanics VI (47)... 3	Mechanics XX (48)... 4	Mechanics XVII (A) (48).. 3
Mechanics XIX (48)... 4	Mechanics XV (48)... 3	Mechanics XXI (48)... 4
Mechanics XIII (48)... 3	Mechanics XXII (48)... 3	Mechanics XXII (48)... 3
Military Drill and Tactics..	Military Drill and Tactics..	Military Drill and Tactics.
Elective..... 3	Elective..... 3	Elective..... 3
(To be chosen from the following: Mechanics XXIII, XXVI, Electrical Engineering II, Mathematics IX, X, Civil Engineering.)	(To be chosen from the following: Mechanics XXIII (A), XXVI, Electrical Engineering II, Mathematics IX, X, Civil Engineering.)	(To be chosen from the following: Mechanics XXV, XXVI, Electrical Engineering II, Mathematics XI, Civil Engineering.)

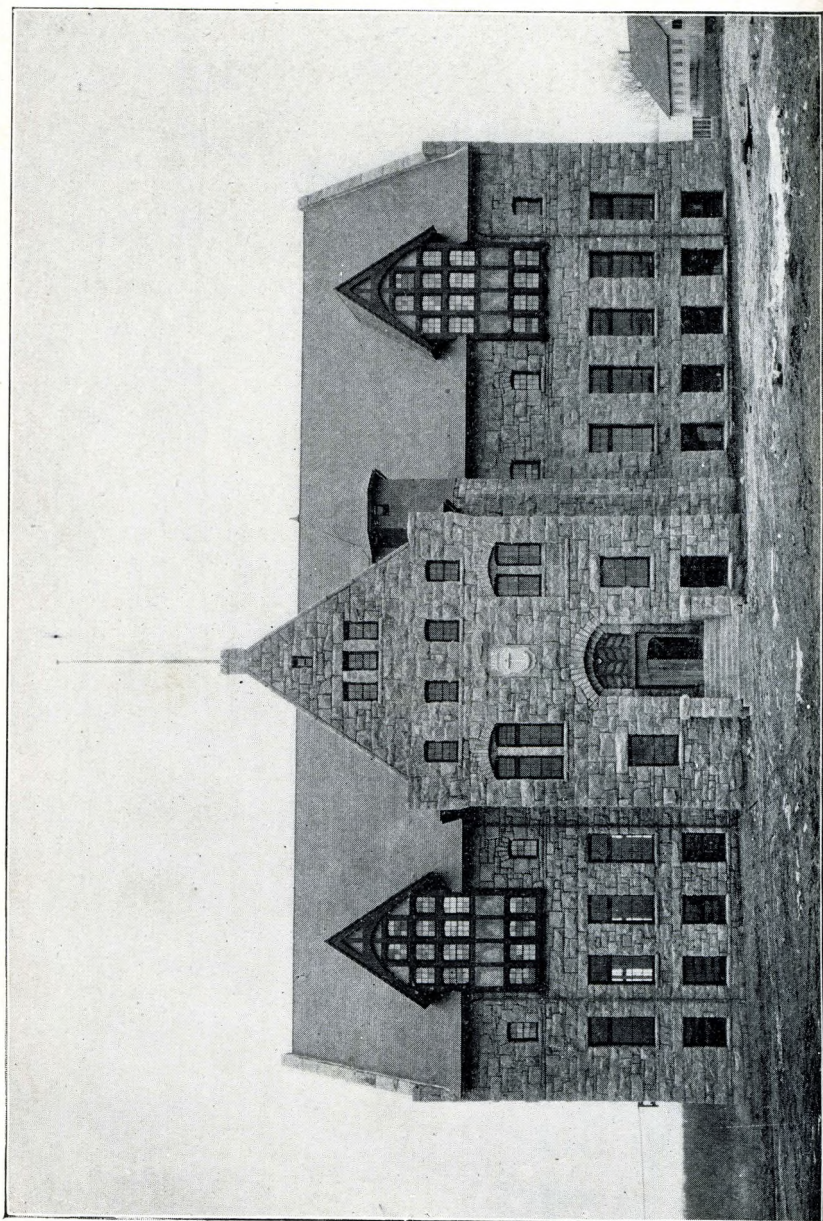
Electrical Engineering.

Political Science V (44)... 3	Political Science VI (44)... 3	Political Science VI (44)... 3
Electrical Engineering II (50) 4	Electrical Engineering II (50) 4	Electrical Engineering II (50) 4
Mechanics VI (47)... 3	Mechanics XV (48)... 3	Inspection Excursions.
Military Drill and Tactics.	Military Drill and Tactics.	Military Drill and Tactics.
Elective..... 6	Elective..... 6	Elective..... 6
(At least three hours must be chosen from the departments of Mathematics, Mechanics, or Civil Engineering.)	(At least three hours must be chosen from the departments of Mathematics, Mechanics, or Civil Engineering.)	(At least three hours must be chosen from the departments of Physics, Mechanics, Mathematics, or Civil Engineering.)

Highway Engineering.

Political Science V (44)... 3	Political Science VI..... 3	Political Science VI (44)... 3
Mechanics XVIII (48)... 4	Highway Engineering III { B (52) } 3	Highway Engineering V { B (52) } 12
Mechanics XXI (48)... 3	Highway Engineering V { A (52) } 3	
Highway Engineering III { A (52) } 3	Highway Engineering IV { B (52) } 3	
Highway Engineering IV { A (52) } 3		

THE PREPARATORY SCHOOL.



LIPPITT HALL.

The Preparatory School

OF THE

Rhode Island College of Agriculture and Mechanic Arts.

The school is intended for young men and women who have not the advantages offered by a high school in their home town, and also for those who because of maturity are out of touch with the schools of their neighborhood. The Special Class has been added to the preparatory school to meet the needs of certain students who come from the rural schools. Pupils are prepared for entrance to the Freshman year of the college.

Entrance Requirements of the Preparatory School.

Special Class.

To this class any student over fourteen years of age who has studied arithmetic through percentage, has completed geography, and who understands the principles of elementary English grammar is admitted on probation by the presentation of a certificate, covering the work, from any Rhode Island teacher.

First Year Class.

For admission to the first year in the preparatory school examinations are given in arithmetic, geography, English grammar, and United States history. The arithmetic examination covers common and decimal fractions, denominate numbers, percentage, and interest. For the examinations in English grammar and United States history students are recommended to study books of the

same grade as Whitney and Lockwood's English grammar and Fiske's United States history. In English each candidate is required to answer certain questions in grammar, and to write a short composition correct in spelling, capitalization, punctuation, and paragraphing. Candidates are expected to show familiarity with the following works: Hawthorne's *The Great Stone Face* and the *Snow Image*; Tennyson's *Idylls of the King*; DeFoe's *Robinson Crusoe*; *The Arabian Nights*; Macaulay's *Lays of Ancient Rome*.

Second Year Class.

Students wishing to enter the second year class in this school are examined in geography, United States history, advanced arithmetic, algebra to quadratics, and English. In 1904 the English requirements will cover Shakespeare's *Merchant of Venice*, *Macbeth*, and *Julius Cæsar*; Addison's *The Sir Roger De Coverley Papers*; Scott's *Ivanhoe*; Eliot's *Silas Marner*; Lowell's *The Vision of Sir Launfal*; Coleridge's *The Ancient Mariner*.

Admission without Examination.

Any mature person who can satisfy the examining committee that he has the capacity to do the work, may enter on probation and take the examination later.

Program of Study.

Special Preparatory.

<i>Classroom Work.</i>	<i>Laboratory Work.</i>
Arithmetic—Bailey.....5	{ Mechanical Drawing. One period of 2 hours per week or, Practical Housekeeping. One period of 2 hours per week. Gymnasium, 3 periods. Physiography, 1 period.
{ Whitney and Lockwood's Grammar.	
English { Scott and Denney's English Composition.	
{ Literature.....4	
Physical Geography—Davis.....2	
English History.....2	

FIRST YEAR.

Classroom Work.

Laboratory Work.

Algebra—Hall and Knight.....	5	{ Plant Life, 2 periods of 2 hours. *Carpentry, or, { Clay Modeling, Fall and Spring, { Woodcarving, Winter. { One period of 3 hours per week. Military Drill, or Gymnasium, 3 periods per week.
English { Review of Grammar.	}	
Scott and Denney's English		
Composition.		
College Requirements in		
Literature.....	4	
General History—Myers.....	3	
Plant Life.—Bailey's Botany.....	1	

SECOND YEAR.

Classroom Work.

Laboratory Work.

Algebra—Hall and Knight.....	2	{ Physics—one period of 2 hours per week.	
Geometry—Hobbs.....	4		
English—College Requirements.....	3	{ (Forging, Fall. { Woodturning, Winter. { Machine Shop, Spring, or, { Freehand Drawing, Fall and Spring. { Woodcarving, Winter. { One period of 3 hours per week.	
Latin { Lindsay and Rollin's	}		
Easy Latin Lessons.			
Collar's Via Latina.....			5
Physics—Carhart and Chute.....			1

Military drill or gymnasium 3 periods of 1 hour each per week.

Diplomas.

Pupils are awarded diplomas upon completing the regular work of the Preparatory School.

Correspondence relating to work in the preparatory course should be directed to M. H. Tyler, Kingston, R. I.

*Students who have not completed the course in mechanical drawing take that in the place of carpentry.

THE AGRICULTURAL HIGH SCHOOL



The Agricultural High School

OF THE

Rhode Island College of Agriculture and Mechanic Arts.

This course is designed to occupy a position somewhat similar to that of the Manual Training High School of the city, except that it offers agriculture in place of mechanics. It aims to do for those interested in rural pursuits what the Manual Training High School does for those interested in mechanical lines. It offers to the student fitted to enter a high school an opportunity to take much of the regular work of a high-school course, combined with work in agriculture which will be of direct practical value on the farm. This course aims to put the student in the field, the barn, and the greenhouse, just as the manual-training course puts him at the bench. Classroom instruction goes hand in hand with laboratory practice, emphasizing both the how and the why of agricultural methods.

Requirements for Admission.

The requirements for admission are the same as for admission to the preparatory school (see pages 65-66). With the consent of the examining committee a mature person who has not recently attended school may, without examination, enter on probation.

Subjects of Study.

Beginning with the first year the subject entitled "The Soil and the Plant" treats of the plant; the more important characteristics of different soils, considering their physical make-up, their crop-producing power and the physical properties most essential in a

fertile soil; the forms of plant-food available, and how best applied; the changes which take place in the soil; the mixing of fertilizers, and interpretation of fertilizer formulæ. Much attention is given to the principles of tillage and to methods of increasing and conserving soil moisture. The subject includes simple experiments in the laboratory, tillage experiments and methods of tile drainage, together with a study of the propagation and management of plants in the greenhouse.

The spring term is given to a study of vegetable gardening, particular attention being paid to the methods employed by market gardeners. Experience is gained in the starting of plants under glass, the making and management of hotbeds, the sowing of seeds, the care and transplanting of plants, etc.

In the fall term of the second year rotations and their importance in agricultural practice, meadows, pastures, and soiling, together with the leading farm crops and their methods of management are discussed. The subject of farm animals includes a brief study of anatomy, physiology, and hygiene, the essential points of breeding, a glance at the most prominent characteristics of a few leading breeds and practice in judging.

In the winter term the subject of farm mechanics embraces a study of the simpler laws of mechanics in use in agricultural implements, farm power, principles of draft and construction, with practice in taking down and setting up agricultural machinery, etc. The work with animals gives chief attention to the dairy, including the feeding and care of dairy cows, food requirements, composition of foods and compounding of rations, together with the care and handling of milk.

The study of fruit-growing in the spring term includes methods of propagation, planting, pruning and caring for fruit trees and small fruits, methods of fighting insects and fungi, etc. In animal husbandry the spring term is occupied with poultry culture, including practice in incubating, brooding, care and feeding of chicks.

So far as possible the laboratory work follows the lines of instruction as laid down for the different years; but since laboratory work in agriculture must be to a great extent dependent upon the season, the work in the field does not always correspond with the work in the classroom at the time. The laboratory work includes practical experience in such subjects as tile drainage, the management of farm machinery, the tilling of land, the pruning of trees,

packing of apples, grafting and making of cuttings, the preparation of insecticides and fungicides, the sowing of seeds and handling of plants under glass and in the field, the feeding, care and management of cows, the handling of milk, judging of stock, rearing of chicks and other operations of the farm.

The subject of plant life running through the first year is arranged with special reference to the needs of agricultural students. The principles studied in geometry are applied to measuring land. Business arithmetic and bookkeeping deal with the every-day business of the farmer. The subject of social problems deals with the relation of the farmer to society. The complete course of study is as follows:

Program of Study.

All subjects continue throughout the year unless otherwise stated.

First Year.

Required.	Hrs. per week.
Algebra (Hall & Knight). To quadratics.....	5
English. Covers requirements for admission to second year preparatory school.....	4
Plant Life.....	3
The agricultural plant, its environment, nutrition, growth and reproduction; text-book supplemented by reading, laboratory and field work. Special study of rose family, clover family, grass family and weed plants; seed testing for germination and purity. Plant diseases and bacteria.	
The Soil and the Plant (Fall and Winter terms).	
The soil: constituents; factors determining fertility; texture, underdraining and its influence on texture; tillage, its objects and methods; humus, its effects and how obtained; plant-food, essential elements, where obtained, their effect upon the plant; fertilizers and fertilizer formulæ; soil moisture, capacity for and conservation. The plant: general demands, demands from the soil, demands from the air; how the plant lives; propagation.	
} 3	
Vegetable Gardening (Spring term).	
Market gardening methods. Seed-sowing, transplanting, watering, making and management of hotbeds. Study of different vegetable garden crops.....	
Military Drill	
Electives.—Carpentering, Forging, Freehand Drawing, Mechanical Drawing, Stenography.	

Second Year.

FALL TERM.

Required.	Hrs. per week.
Algebra. Quadratics.....	2
Geometry (Hobbs). Plane Geometry.....	4
General History (Myers).....	3
Farm Crops.....	3
Rotations, advantages, dangers from neglect. Pastures, permanent, in rotation; meadows, soiling, farm crops and their management.	
Animals and their management	3
Anatomy, physiology, hygiene, breeding, judging.	
Military Drill.	
Electives.—Forging, Carpentering, Freehand Drawing, Mechanical Draw- ing, Stenography.	

WINTER TERM.

Business Arithmetic and Farm Bookkeeping.....	3
Geometry	4
General History.....	3
Farm Mechanics.....	3
Mechanical laws used in farm machinery, farm power, principles of draft and construction, taking down and setting up of agri- cultural machinery.	
Dairying.....	3
Feeding and care of dairy cows, food requirements, compounding of rations, care and handling of milk.	
Military Drill.	
Electives.—Forging, Carpentering, Mechanical Drawing, Stenog- raphy.	

SPRING TERM.

Social Problems of the Farmer.....	3
General History.....	3
English. Study of authors, with theme writing.....	3
Fruit-Growing.....	3
Orchard and small fruits, grafting plants, pruning, methods of fighting insects and fungi.	
Poultry Culture.....	3
Incubating, brooding, care and feeding of chicks.	
Military Drill.	
Electives.—Forging, Carpentering, Freehand Drawing, Mechanical Drawing, Stenography.	

THE INDUSTRIAL HIGH SCHOOL.

The Industrial High School

OF THE

Rhode Island College of Agriculture and Mechanic Arts.

The college has arranged to give a series of four courses, each of two years, in the following industrial lines:

- I. CARPENTRY.
- II. MACHINE SHOP.
- III. MECHANICAL DRAUGHTING.
- IV. STEAM ENGINEERING.

These courses consist of a moderate amount of study in the preparatory school, and a large amount of practice in the college shops or draughting-room. They are planned to meet the needs of those young men who are unable to spend four years or more to complete the regular engineering course, and who need to begin their life work early.

Requirements for Admission.

The requirements for admission are the same as for admission to the preparatory school (see pages 65-66). With the consent of the examining committee a mature person who has not recently attended school may, without examination, enter on probation.

Subjects of Study.

Instruction is given in English, algebra, geometry, physics, and military science.

Those who select one of the shop courses are required to take a short course in mechanical drawing, and likewise those who may

enter the draughting course are to spend some time in the shops. About one-third of the time for the two years is spent in study and two-thirds in shopwork or drawing. It is expected that only those persons who have a special desire or a natural inclination for mechanics will enter these courses. Such a student, by two years of faithful work, can acquire the principles and practice of a trade and, at the end, take a place in a shop as a journeyman at good wages.

Program of Study.

All subjects continue throughout the year.

First Year.

	Hrs. Per week.
Algebra (Hall & Knight.).....	5
English. Covers requirements for admission to second year preparatory school.....	4
Drawing.....	3
First term, freehand, principles of projection, lettering. Second term, geometrical problems, use of instruments. Third term, machine details, tracing.	
Manual Work.....	3
The student elects this work in carpentry, machine shop, mechanical draughting, or steam engineering.	
Military Drill and Science.....	2

Second Year.

Geometry (Hobbs) Plane Geometry.....	4
English.....	3
Physics.....	2
Lecture.....	1
Manual Work.....	5
The student continues in the same line of manual work elected the first year.	
Military Drill and Science.....	2

EXTENSION WORK.

Extension Work

OF THE

Rhode Island College of Agriculture and Mechanic Arts.

Agriculture.

The purpose of the extension work in agriculture is to carry the help of the college to those who cannot come to it for study. Whenever necessary and possible, visits will be made to any part of the state for the purpose of identifying injurious insects or plant diseases and giving instruction in the methods of treatment. Soils will be tested for acidity, and suggestions given regarding the use of lime and fertilizers. The college is open for consultation at any time in regard to any problem of the farm, garden, or orchard.

Whenever possible, arrangements will be made for talks or demonstrations by members of the college faculty or experiment-station staff, when called for, at any agricultural meeting, or neighborhood gathering. Plans for co-operative experiments in different parts of the state are being formulated, with a view to helping the farmer solve some of the problems which are peculiar to his own farm or his portion of the state.

Another important phase of extension work is that of the Nature Guard, which aims to interest the young people of the schools in the things of nature and the farm. Assistance will also be given to those who desire to carry on study at home.

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 primal object is to stimulate observation and to furnish a key to the coyly hidden secrets of nature, while under-

neath and behind it all is the desire to instil a love of nature and of country life.

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. Each band fixes its own times of meeting and adopts its own methods of procedure. Enrolment cards, to be signed and returned, are furnished from headquarters. Printed leaflets are mailed monthly during the school-year, and monthly reports giving observations of their own are asked from the members.

The following bands were enrolled during the school-year of 1902-1903:

- Arctic Grammar School Band. Arctic, R. I.
 Bright Eyes Band, Lynn, Mass. Gladys W. Hill, Spy; Mabel A. Chick, Guardian.
 Buckfield Nature Band, Buckfield, Me. Leon L. Purkis, Spy; Cleora M. De Coster, Guardian.
 Conanicut Junior Naturalists, Jamestown, R. I. Sadie Hoyle, Spy; Mariquita Anthony, Guardian.
 Family Band, Peru, Me. Mrs. M. V. Hall, Mother.
 Fernwood Band, Wyoming, R. I. Geo. V. Crandall, Spy; Alice A. Arnold, Guardian.
 Greenwood Band, Providence, R. I. Percy Bodge, Spy; Faith Hull, Guardian.
 Harris Avenue School Band, Riverpoint, R. I. Andrew Gregory, Spy; Hulda Taylor, Guardian.
 Hiawatha Band, Phenix, R. I. Gertrude Collins, Spy; Mary V. Bradley, Guardian.
 Laurel Lake Band, Kingston, R. I. Elsie Briggs, Spy; Walter Knowles, Guardian.
 Little Lookers, Lynn, Mass. Thomas Moloney, Spy; Ethel H. Venn, Guardian.
 Lookout Band, Yantic, Conn. Gilbert Daniels, Spy; Charlie Davis, Guardian.
 Mayflower Band, Madison, Conn. Gerrit A. Smith, Spy; Jennie M. Whedon, Guardian.
 Mary C. Dickerson Band, Providence, R. I. Fanny Whipple, Guardian.
 Seekers The, Lynn, Mass. Mrs. E. T. Chamberlain, Mother.
 Sharp Eyes Band, Hope, R. I. Ira H. Potter, Spy; Clara J. Williams, Guardian.
 Sylvan Band, Sylvania, Pa. Rubie Rockwell, Spy; Ethel Card, Guardian.
 Thaxter Band, Phenix, R. I. Alice I. McGill, Spy; Frederick Tew, Guardian.
 Wake-Robin Band, Norway, Me. Lona E. Noble, Spy; Eva M. Upton, Guardian.
 True Blue Band, Phenix, R. I. Sadie Kelley, Spy; Archie Brown, Guardian.
 Waterton Band, Providence, R. I. Frank McEll, Spy; Frank Kellehen, Guardian.

White River Squirrel Band, South Royalton, Vt. Harry E. Bingham, Guardian.

Wide Awake Band, Poland, Me.

Wide Awake Nature Guard Club, River Point, R. I. Earl Budlong, Spy; Cora Bigwood, Guardian.

Wide Awake Band, Yantic, Conn. Milton F. Beckwith, Spy; Marion J. Lamb, Guardian.

Wild Rose Band, Liberty, R. I. L. Vera Grinnell, Spy; Lydia R. Sherman, Guardian.

Young Naturalists' Association, Woonsocket, R. I. Frederick E. Widmer, Spy; Merton L. Fernald, Guardian.

Religious Organizations.

Young Men's Christian Association.

WILLARD ALGER BALLOU, '04.....	President.
WALLACE NOYES BERRY, '06.....	Vice-President.
DAVID RAYMOND KELLOGG, '07.....	Secretary.
JASON PERCIVAL GRINNELL.....	Treasurer.

Young Women's Christian Union.

NELLIE ARMSTRONG HARRALL, '05.....	President.
HANNAH MAHALA TUCKER, '07.....	Vice-President.
MARION GRAHAM ELKINS, '06.....	Secretary.
EDITH MAY FLEMMING, '06.....	Treasurer.

Alumni Association.

ARTHUR CURTIS SCOTT, '95.....	President.
University of Texas, Austin, Tex.	
BLYDON ELLERY KENYON, '99.....	Vice-President.
General Electric Co., Schenectady, N. Y.	
GEORGE EDWARD ADAMS, '94.....	Secretary-Treasurer.
Experiment Station, Kingston, R. I.	

Executive Committee.

A. C. SCOTT, '95,	G. E. ADAMS, '94,
B. E. KENYON, '99,	G. A. RODMAN, '94,
R. W. PITKIN, '02.	

Students.*

Graduated June 16, 1903.

Barber, Kate Grace, Gen. Sci.....	Carolina.
Student Assistant, Conn. Experiment Station, New Haven, Conn.	
Conant, Walter Aiken, Agr.....	Boston, Mass.
With Alamito Sanitary Dairy Company, Omaha, Neb.	
Goddard, Warren, Jr., Mech.....	Brockton, Mass.
Student of Naval Architecture.	
Keefer, Edith Cecelia, Biol.....	Innwood, N. Y.
Teacher of Science, High School, Mason City, Ia.	
Kent, Raymond Warren, Chem.....	Woonsocket.
Graduate Student, Harvard University.	
Tefft, Ernest Allen, El. Eng.....	Hope Valley.

Students Registered from January to June, 1903.†

Alomà, Tiberio Garcia, El. Eng.....	Cienfuegos, Cuba.
Barber, Kate Grace, Gen. Sci.....	Carolina.
Catterson, Thomas Henry, Prep.....	Arctic.
Clark, George Thomas, Prep.....	Indianapolis, Ind.
Clark, Rollin Grover, Fr.....	Narragansett Pier.
Cross, Frederick Lawrence, El. Eng.....	Narragansett Pier.
George, Lillian Mabelle, Grad.....	Amesbury, Mass.
Goddard, Warren, Jr., Mech.....	Brockton, Mass.
Hayward, Eleanor Frances, Agr.....	Owing's Mills, Md.
Hills, Clarence Arnold, Fr.....	Torrington, Conn.
Keefer, Edith Cecelia, Biol.....	Innwood, N. Y.
Knight, Mildred Frances, Fr.....	Exeter, N. H.
Macdonald, James Merton, Spec.....	Wood River Junction.
Murray, James Lee, Spec.....	Narragansett Pier.
Richardson, Carroll Morton, Prep.....	Cumberland Mills, Me.
Roche, Edward, Spec.....	Providence.
Spensley, Jessie Mae, Prep.....	Clarksville, N. Y.
Tefft, Ernest Allen, El. Eng.....	Hope Valley.

*As hereafter the catalogue will be a record of the college year only, this issue is a transitional one and includes all students in attendance from January, 1903 to June, 1904.

†Not in attendance from September, 1903 to June, 1904.

Towers, Elizabeth Ann, Prep	Peace Dale.
Williams, Hazel Eugene, Prep	Sylvania, Pa.
Yost, Isaac Harrison, Prep	Peace Dale.

September, 1903—June, 1904.

Seniors.

Ballou, Willard Alger, Biol	Lawrence, Mass.
Quinn, Mary Louise, Biol	Wakefield.
Rodman, Walter Sheldon, El. Eng	Wakefield.

Juniors.

Champlin, Sarah Elizabeth, Gen. Sci	Slocums.
Dow, Victor Wells, Highway Eng	Hartland, Me.
Gilman, Jean, Highway Eng	Gilman, Me.
Harrall, Nellie Armstrong, Gen. Sci	Wakefield

Sophomores.

Arnold, Benjamin Howard, El. Eng	East Greenwich.
Berry, Wallace Noyes, El. Eng	Chatham, Mass.
Elkins, Marion Graham	Amesbury, Mass.
Flemming, Edith May	Valley Falls.
Harding, Lee LaPlace, Highway Eng	Lyme, Conn.
Keyes, Frederick George	Rochester, N. Y.
Martinez, Rolando, Highway Eng	Havana, Cuba.
Nichols, Howard Martin, El. Eng	Kenyon.
Sisson, Cora Edna	Wickford.
Slocum, Percy Wilfred	Kingston.

Freshmen.

Arnold, Daniel Ray	East Greenwich.
Barber, Arthur Houghton	East Greenwich.
Coggins, Calvin Lester	Sharon, Mass.
Davis, Augustus Boss	Kingston.
Ferry, Jay Russell	Palmer, Mass.
Fitz, Edward Arthur	Pascoag.
George, Susan Frances	Amesbury, Mass.
Kellogg, David Raymond	New London, Conn.
Kendrick, Winfield Smith	South Chatham, Mass.
Ladd, Elwood Shepard	Central Village, Conn.
Lamond, John Kenyon	Usquepaugh.
MacKinnon, Harry Edward	Worcester, Mass.
Macomber, Miner Sanford	Hartford, Conn.

Poladian, News	Marash, Turkey.
Smith, John Lebroc	Narragansett Pier.
Stacy, Henry Pomeroy	Pawtucket.
Tucker, Ethel Aldrich	Kingston.
Tucker, Hannah Mahala	West Kingston.
Vickere, Ralph Albertus	Providence.

Specials.

Brett, Clarence Elmer, Agr	Brockton, Mass
Brown, Martha Browning, Art	Kingston.
Hoxsie, Fred Clifford, Mech	Woodville.
Jordan, Frederick Williams, Chem	Auburn.
Kenyon, Alfred Clark, Chem	Usquepaugh.
Sherman, Benjamin Francis, Agr	West Kingston.
Sherman, Mary Albro, Agr	Newport
Smith, James Campbell	Manville.
Tyler, Edwina Richardson, Art	Kingston.
Weeden, James Vaughan, Agr	Matunuck.
White, Frederick Pierce, Chem	Pawtucket.
Wilkinson, Albert Edmund, Agr	Dorchester, Mass.

Preparatory School.

Akers, Arthur Clerauce	Charlestown.
Akers, Cora Emma	Charlestown.
Akers, Mary Louise	Charlestown.
Albro, Harford Harold	Providence.
Boston, Howard Jacob	Woonsocket.
Brougham, Joseph Stephen	Peace Dale.
Browne, Mary Katharine	Providence.
Buckingham, Robert Mather	Drownville.
Bullock, Edwin Chappell	Wakefield.
Carr, Chester Arthur	Melville Station.
Church, Charles Leslie	Douglas, Mass.
Clemens, Fred Joseph (Indust. High)	Peace Dale.
Comins, Raymond Carey	Willimantic, Conn.
Cooke, Benjamin Henry	Nasonville.
Corriveau, Louis H. M. de B.	Stonington, Conn.
Crandall, Fred Kenyon	Westerly.
Curtice, Anna Helena	Kingston.
Dexter, Leon Arthur	Moosup Valley.
Doyle, John Lawrence	Providence.
Eastland, Clarence Raymond	Fitchville, Conn.
Fields, Timothy	Fitchville, Conn.
Freeborn, Millard Cornell	Allenton.
Ganley, John (Indust. High)	Peace Dale.
Gardiner, Harold Lincoln	Wakefield.

Gardiner, Henry Wallace	Wakefield.
Gough, Harry Ogden	Peace Dale.
Grinnell, George Francis (Indust. High)	Narragansett Pier.
Grinnell, Jason Percival	Middletown.
Hayden, Littleton Carlyle	Providence.
Hodges, Frank Blake, Jr.	Cowesett.
Holland, Harry Rivers	Peace Dale.
James, Mary Vira	Kenyon.
Keating, John	Norwich, Conn.
Kelly, John	Peace Dale.
Kent, Maurice Eugene	East Greenwich.
Kenyon, Susan Elnora	Usquepaugh.
Knight, Arthur Rhodes	East Greenwich.
Knight, Richard Greene Howland	East Greenwich.
Knowles, Walter (Indust. High)	Kingston.
Marra, Daniel Edward	Fitchville, Conn.
Martin, Francesco José (Indust. High)	Cartago, Costa Rica.
McGrath, Thomas Francis	Peace Dale.
McGuire, Charles Andrew, Jr.	Arctic.
Mee, James Philip, Agr.	New York City.
Mills, John Walter	East Greenwich.
Miner, Arthur Jacob	Rochester, N. Y.
Mugica, Alfredo	Havana, Cuba.
Murray, Prudence	Narragansett Pier.
Northup, Mary Hazel	Kingston.
Quinn, Stephen	Wakefield.
Rockwell, Rubie Belle	Sylvania, Pa.
Salzer, Thomas Frederick	Peace Dale.
Schæffer, George Joseph	Peace Dale.
Sheldon, George Ware	Wakefield.
Schermerhorn, Lyman Gibbs	Kingston.
Sherman, Julia Frances	West Kingston.
Sisson, Bernice Eugenia	White Rock.
Slack, Lewis	Abbott Run.
Smith, Lowndes Alexander, Jr.	Oak Lawn.
Soule, Daniel Anthony	East Greenwich.
Spalding, George Wanton	Providence.
Surós, Obdulio	Manzanillo, Cuba.
Tefft, William Hazard	Davisville.
Tucker, Ellen Capron	Kingston.
Watson, Leon Burton	Wakefield.
Weaver, Bertha Isabel	Peace Dale.
Widmer, Frederick Elmer	Woonsocket.

Specials in Shop-Work and Wood-Carving.

Barton, Abbie Sherman	Kingston.
Greenman, Mary Easton	Kingston.

Lane, Frederick Athearn	Kingston.
Lewis, Aubrey Clifford	West Kingston.
Negus, Percy Acton	Kingston.

Course in Poultry-Keeping, 1902-1903.

Allen, Watson	Bernardsville, N. J.
Clemence, Elliot Marsh	Southbridge, Mass.
Crane, William Augustus	New York, N. Y.
Diamond, Charles Herbert	New York, N. Y.
Forsell, Lydia Elise	Boston, Mass.
Givernaud, Mrs. Louis	New York, N. Y.
Gleason, Walter Carpenter	Providence.
Gunther, Ernesto Teodoro Eisele	Valparaiso, Chile.
Harms, Fred Casper	Greenville, N. Y.
Hill, Frank Ernest	North Attleboro, Mass.
Kenyon, Charles Clifford	Usquepaugh.
Kolbe, Dietrich Wilhelm	Kingston.
Kornegay, Mary Elizabeth	Southern Pines, N. C.
Ruso, John C.	Albany, N. Y.
Sedgwick, Thomas Llewellyn	Lenox, Mass.
Smith, Bert Cleveland	Tarkiln.
Spensley, Raymond J.	Clarksville, N. Y.
Weed, George	Ticonderoga, N. Y.

Course in Poultry-Keeping, 1903-1904.

Burdick, Arthur	New York, N. Y.
Foster Francis Arthur	Mount Hermon, Mass.
Hall, Fred Porter	West Newton, Mass.
Hertz, Henry Louis, Jr.	Chicago, Ill.
Hertz, Martin P.	Chicago, Ill.
Hicks, Harry Edward	Shrewsbury, Mass.
Horne, James Kingman	Dover, N. H.
Knowles, Frank T.	Eastham, Mass.
Miles, Ray Vernon	Crystal, N. H.
Negus, Willard Campbell	Jersey City, N. J.
Putnam, Victor Haven	Rye, N. Y.
Ramsdell, Elmer Pitts	West Newton, Mass.
Richardson, Henry Winslow	Winchester, Mass.
Roseberry, Jacob Sayer	Brooklyn, N. Y.
Roulston, George E.	South Boston, Mass.
Schlamp, Henry	Weehauken, N. J.
Smith, Earl Taylor	Brooklyn, N. Y.
Stearns, Charles Henry	Framingham, Mass.
Steere, Sayles B.	Chepachet.
Voegtlen, William Charles	Newark, N. J.
Whitmarsh, Everett Holmes	Kingston.

Course in Farm Practice, 1903-1904.

Smith, Earl Taylor	Brooklyn, N. Y.
Voegtlen, William Charles	Newark, N. J.
White, Frederick Pierce	Pawtucket.
Whitmarsh, Everett Holmes	Kingston.

Course in Farm Mechanics, 1903-1904.

Dennis, Marshall Leroy	Middletown.
Number of students September, 1903-June, 1904 (none counted twice)....	142
Number of students January, 1903-June, 1904 (none counted twice)....	183

Graduates.

1894.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ADAMS, GEORGE EDWARD Kingston.	Agr.	Assistant in charge of Field Experiments, R. I. Agr. Experiment Station.
AMMONDS, GEORGE CLARENCE . . . Kingston.	Mech.	Railroad Postal Clerk, on N. Y., N. H. & H. R. R.
ARNOLD, CHAPIN TRAFFORD Providence.	Agr.	Electrician, Office 283 Westminster St., Room 10, Providence
BURLINGAME, GEORGE WASHINGTON . Chepachet.	Agr.	Teacher and Poultryman.
CLARK, HELEN MAY B. L., Smith College, 1899. 12 East 70 St., N. Y. City.		Private Secretary.
KNOWLES, JOHN FRANKLIN Kingston.	Mech.	Assistant Wood-Working Dept., R. I. C. A. & M. A.
MADISON, WARREN BROWN Mount Hermon, Mass.	Agr.	Instructor in Horticulture, Mount Hermon Boys' School.
MATHEWSON, ERNEST HOXSIE . . . Ph. B., Brown University, 1896. Appomattox, Va.	Mech.	Tobacco Expert, U. S. Department of Agriculture.
PECKHAM, REUBEN WALLACE Melville Station, Newport.	Agr.	Market Gardener.
RATHBUN, WILLIAM SHERMAN . . . Wakefield.	Agr.	Practicing Veterinary and Ed. Wakefield Examiner.
RODMAN, GEORGE ALBERT Providence.	Mech.	Division Engineer's Office, 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.
SPEARS, JOHN BARDEN Foster Centre.	Agr.	Farmer.

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

NAME AND ADDRESS.	COURSE.	OCCUPATION.
SWEET, STEPHEN ADELBERT Slocums.	Agr.	Farmer.
TUCKER, GEORGE MASON Ph. D., Göttingen, 1899. 1002 Lowry St., Columbia, Mo.	Agr.	Agronomist, Agr. Experiment Station; Instructor in Agriculture in the College, University of Missouri.
WILBER, ROBERT ARTHUR East Greenwich.	Mech.	Express Agent.

1895.

ALBRO, LESTER FRANKLIN Melville Station, Newport.	Agr.	Professional Singer.
BURDICK, HOWLAND Kingston.	Agr.	Farm Superintendent, R. I. C. A. & M. A.
CLARKE, CHARLES SHERMAN Jamestown.	Mech.	Marine Engineer, Newport and Jamestown Ferryboat Co.
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, Univ. 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 LOUIS 59 Camp St., Providence.	Mech.	Printer, Silver Spring Bleaching and Dyeing Co.
*MOORE, NATHAN LEWIS CASS Shannock.	Agr.	Railroad Postal Clerk on N. Y., N. H. & H. R. R.
TABOR, EDGAR FRANCIS 18 Balaklava St., Providence.	Mech.	Calico Printer, Silver Spring Bleaching and Dyeing Co.
WILLIAMS, JAMES EMERSON Summit.	Agr.	Grain Dealer and Teacher.

* Not heard from this year.

1897.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CARMICHAEL, WELCOME SANDS . . . Shannock.	Sci.	With P. F Collier & Son, 31 Washington St., Providence.
CASE, HERBERT EDWARDS BROWN . . Ph. B., Brown University, 1900. Hartford, Conn.	Mech.	Student, Hartford Theological Seminary.
GRINNELL, ARCHIE FRANKLIN . . . 11 Broadway, N. Y. City.	Mech.	Draughtsman, American Deisel Engine Co.
HANSON, GERTRUDE MALE Peace Dale.	Sci.	At home.
HOXSIE, BESSIE BAILEY (Mrs. E. F. RUECKERT) 98 Melrose St., Providence.	Sci.	At home.
KENYON, ALBERT PRENTICE Ashaway.	Mech.	Bookkeeper, Maxson & Co., Westerly.
KENYON, CHARLES FRANKLIN Shannock.	Mech.	With Silver Spring Bleaching and Dyeing Co., Providence.
LARKIN, JESSIE LOUISE 98 Beach St., Westerly.	Sci.	Stenographer
MARSLAND, LOUIS HERBERT 193 Chestnut St., Cleveland, Ohio.	Mech.	Assistant to Resident Engineer The Lake Shore & Michigan Southern Railway Co.
TEFFT, ELIZA ALICE Jackson, Miss.	Sci.	Teacher, Jackson College.
*THOMAS, IRVING Allenton.	Mech.	Designer of Patterns.

1898.

ARNOLD, SARAH ESTELLE (Mrs. R. O. BROOKS) Trenton, New Jersey.	Sci.	At home.
BARBER, GEORGE WASHINGTON Shannock.	Agr.	Clerk.
CARGILL, EDNA MARIA 255 Main St., Pawtucket.	Sci.	Stenographer, Pawtucket Insti- tution for Savings.
CASE, JOHN PETER Cleveland, Ohio.	Agr.	With Brown Hoisting and Ma- chinery Co.
CLARKE, WILLIAM CASE Wakefield.	Sci.	Secretary, Sea View Electric Railroad.
CONGDON, HENRY AUGUSTUS Kingston.	Mech.	Farmer.
FLAGG, MARTHA REBECCA Hardwick, Mass.	Sci.	At home.

*Not heard from this year.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
HARLEY, WILLIAM FERGUSON . . . 62 Hillside Ave., Providence.	Agr.	Salesman, with Messrs. Callender, McAuslan & Troup Co., Providence.
TURNER, HARRIETTE FLORENCE . . . Graduate Drexel Institute, 1900. Florence, Mass.	Sci.	Director, Domestic Science Dept., Hill Industrial School.
WILSON, GRACE ELLEN (MRS. WM. F. HARLEY)	Sci.	At home.
561 Pawtucket Ave., Pawtucket.		

1899.

BOSWORTH, ALFRED WILLSON . . . Storrs, Conn.	Sci.	Expert Cheese Chemist, U. S. Dept. of Agriculture.
BROOKS, RALPH ORDWAY Trenton, New Jersey.	Sci.	State Chemist, Laboratory of Hygiene.
GEORGE, LILLIAN MABELLE Kingston.	Sci.	Librarian, R. I. C. A. & M. A.
HARVEY, MILDRED WAYNE Ithaca, New York.	Sci.	Vice-President, Cornell Incubator Mfg. Co.
KENYON, BLYDON ELLERY Scheneectady, N. Y.	Agr.	Draughtsman, General Electric Co.
KNOWLES, CARROLL Providence.	Mech.	Draughtsman, Brown & Sharpe Mfg. Co.
KNOWLES, HARRY Point Judith.	Sci.	Instructor in Mathematics, American School of Correspondence.
LADD, MERRILL AUGUSTUS Norwood, Ohio.	Mech.	Engineer.
MORRISON, CLIFFORD BREWSTER . . . 543 Broad St., Providence.	Sci.	Chemist, City Sewerage Dept.
OWEN, WILLIAM FRAZIER Scheneectady, New York.	Mech.	Engineering Dept., General Electric Co.
PAYNE, EBENEZER Ann Arbor, Michigan.	Sci.	Student, Medical School of the University of Michigan.
PHILLIPS, WALTER CLARK Ph. B., Brown University, 1902. Lafayette.	Mech.	Graduate Student, Brown University.
REYNOLDS, ROBERT SPINK 502 Grand Central Station, New York City.	Mech.	Draughtsman, Bridge Dept., N. Y., N. H. & H. R. R. Co.
RICE, MINNIE ELIZABETH Jackson, Miss.	Sci.	Teacher, Jackson College.
SHERMAN, ABBIE GERTRUDE (MRS. BENJAMIN BARTON)	Sci.	At home.
176 Sherban St., Providence.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
SHERMAN, GEORGE ALBERT . . . 554 Massachusetts Ave., Boston.	Mech.	Insurance Agent.
THOMPSON, SALLY RODMAN . . . Wakefield.	Sci.	At home.

1900.

BRIGHTMAN, HENRY MAXSON . . . 1409 Majestic Bldg., Detroit, Mich.	Mech.	Michigan Representative, Buffalo Forge and Blower Co.
CROSS, CHARLES CLARK 220 East 13th St., Cheyenne, Wyoming.	Mech.	With Union Pacific R. R.
ELDRED, JOHN RALEIGH 194 Vinton St., Providence.	Mech.	Draughtsman, Household Sewing Machine Co.
FISON, GERTRUDE SARAH Northampton, Mass.	Sci.	Library Assistant, Forbes Library.
FRY, JOHN JOSEPH East Greenwich.	Mech.	Suburban Correspondent for Providence Telegram.
GODDARD, EDITH 254 Main St., Brockton, Mass.	Sci.	Teacher, High School, Hopedale, Mass.
KENYON, AMOS LANGWORTHY . . . Kingston.	Agr.	Dairyman, R. I. C. A. & M. A.
MUNRO, ARTHUR EARLE Ph. B., Brown University, 1902. Quonochontaug.	Sci.	Student, Boston University Law School, Boston.
SOULE, RALPH NELSON East Greenwich.	Sci.	Student, Massachusetts Institute of Technology.
STEERE, ANTHONY ENOCH 271 Chestnut St., Clinton, Mass.	Mech.	Engineering Dept., Metropolitan Water Board.
STILLMAN, LENORA ESTELLE . . . 74 W. 124th St., New York City.	Sci.	Teacher, Manhattan Borough.
TUCKER, BERTHA DOUGLASS Swansea Centre, Mass.	Sci.	Dressmaker.
WHEELER, CHARLES NOYES State St., New London, Conn.	Sci.	With Southern New-England Telephone Co.
WILSON, JOSEPH ROBERT Belleville.	Mech.	In Woolen Mills, J. P. Campbell.

1901.

BRAYTON, CHARLES ANDREW . . . Fiskeville.	Agr.	Farmer.
BIGGS, NELLIE ALBERTINE 122 Fountain St., Providence.	Sci.	In office of R. I. Hospital Trust Co.
BURGESS, CHARLES STUART . . . 264 Sayles St., Providence.	Mech.	Draughtsman, Brown & Sharpe Mfg. Co.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CLARNER, LOUIS GEORGE KARL, JR., Arnolds' Mills.	Sci.	Overseer, Chemical Dept., Silver Spring Bleaching and Dyeing Co.
DAWLEY, EDNA ETHEL Kenyon.	Sci.	Teacher.
DENICO, ARTHUR ALBERTUS Narragansett Pier.	Sci.	Electrician, 231 W. 43 St., New York City.
JAMES, RUTH HORTENSE* (MRS. HERBERT E. ROUSE)	Sci.	
SHERMAN, ANNA BROWN Kingston.	Sci.	Stenographer, with Harness & Saddlery Co., Washington St., Providence.
SHERMAN, ELIZABETH AGNES 285 Chestnut Ave., Jamaica Plain, Mass.	Sci.	Stenographer, with B. T. Sturte- vant Co.
SMITH, HOWARD DEXTER North Scituate.	Sci.	Graduate Student, Brown Uni- versity.
STEERE, ROENA HOXSIE 98 Fifield St., Providence.	Sci.	Stenographer, with Anthony & Cowell Co.
WILBY, JOHN Central, Missouri.	Sci.	Supply Clerk, Central Lead Co.

1902.

CLARKE, LATHAM A. M., Brown Univ., 1903. Boylston Hall, Cambridge, Mass.	Chem.	Graduate Student, and Assistant in Chemistry, Harvard Uni- versity.
FERRY, OLIVER NEEDHAM 8 Armington Ave., Providence.	Mech.	With Providence Engineering Co.
MAXSON, RALPH NELSON Kent Chemical Laboratory, New Haven, Conn.	Chem.	Graduate Student, Yale.
PITKIN, ROBERT WILLIAM Rockville, Conn.	Mech.	Farmer.

1903.

BARBER, KATE GRACE 136 Division St., New Haven, Conn.	Gen. Sci.	Student Assistant, Conn. Ex. Sta.
CONANT, WALTER AIKEN Omaha, Neb.	Agr.	Alamito Sanitary Dairy Co.
GODDARD, WARREN Campello, Mass.	Mech.	Student of Naval Architecture.

* Deceased.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
KEEFER, EDITH CECILIA Mason City, Iowa.	Biol.	Teacher of Science, High School.
KENT, RAYMOND WARREN 32 Irving St., Cambridge, Mass.	Chem.	Graduate Student, Harvard University.
TEFFT, ERNEST ALLEN Hope Valley.	El. Eng.	

INDEX.

	PAGE.		PAGE.
Absences, unexcused.....	23	Church attendance.....	24
Admission,		College, history.....	15
advanced standing.....	21	location.....	27
agricultural high school.....	71	object.....	16
certificate.....	19	Conditions.....	23
college.....	19	Courses of study.....	17
examination.....	20	agriculture.....	56-61
farm-practice course.....	36	biology.....	56-61
industrial high school.....	77	chemistry.....	56-61
poultry-keeping course... 37, 38		electrical engineering.....	56-61
preparatory school..... 65, 66		general science.....	56-61
special courses..... 18		highway engineering.....	56-61
Agricultural high school..... 18		mechanical engineering.....	56-61
admission.....	71	special courses.....	18
course.....	73, 74	Dairy building.....	16
scope.....	71	Degree.....	17, 28
Agricultural experiment station,		Departments of instruction.....	28
establishment.....	15	Deposit.....	22
publications.....	14	Dormitories.....	21, 23
staff.....	14	Drawing, freehand.....	53
Agriculture.....	36	mechanical.....	47, 52
college course.....	56-61	Drill, hall.....	16
extension work.....	81-83	military.....	54
high school..... 18, 71-74		Electrical engineering.....	49
special students.....	19	course.....	56-61
Alumni, association.....	84	Embryology.....	35
list.....	91-97	English.....	41
Anatomy.....	35	Entomology.....	35
Athletics.....	24	Examinations,	
Biology, animal.....	35	conditioned students.....	24
plant.....	33	dates.....	13
Board of managers.....	3	entrance.....	13
Boarding-expenses.....	22	Expenses.....	21
Botany.....	32	Experiment station, staff.....	14
Bulletins of experiment station... 14		bulletins.....	14
Calendar.....	13	Extension work.....	81-83
Certificate, admission by.....	19	Faculty and other officers.....	5
Chemistry.....	28	Farm-mechanics course.....	19
course.....	56-61	Farm-practice course.....	36

	PAGE.		PAGE.
Forestry.....	40	Mineralogy.....	30, 31
French.....	42	Mines, school of.....	16
Fees, laboratory.....	22	Nature guard.....	81
Furniture.....	23	Physics.....	31
Geology.....	31, 32	Physiology.....	35
German.....	42	Political economy.....	44
Government.....	44	Poultry-keeping.....	37
Graduation requirements.....	17	Preparatory school.....	18
Graduates, list.....	91-97	admission.....	65, 66
Highway engineering.....	51	course.....	66, 67
course.....	56-61	scope.....	65
Histology, animal.....	35	Psychology.....	35
plant.....	33	Publications, student.....	24
History and political science.....	43	Reading-room.....	26
Holidays.....	13	Registration.....	24
Horticulture.....	39	Regulations of college.....	23
Industrial high school.....	18	Rhetoric.....	41
admission.....	77	Sociology, rural.....	39
course.....	78	Special courses.....	18
scope.....	77	Stenography and typewriting.....	53
Laboratory fees.....	22	Students, boarding.....	22
Landscape-gardening.....	40	day.....	22
Languages.....	41	list.....	85-90
Latin.....	43	number.....	90
Lecture association, R. I. C.....	26	Thesis.....	24
Lecturers, non-resident,		Tuition.....	21
short-course.....	9	Typewriting.....	53
Thursday.....	25	Uniform.....	22
Library.....	26	Women, expenses.....	21
Mathematics.....	44	opportunities for.....	21
Mechanical engineering.....	45	Work, for students.....	23
course.....	56-61	Worship, public.....	24
Military science and tactics.....	54	Y. M. C. A.....	84
requirements.....	54	Y. W. C. U.....	84
uniform.....	22	Zoölogy.....	34