1900

Annual Report 1900

University of Rhode Island

TWELFTH ANNUAL REPORT

OF THE

CORPORATION, BOARD OF MANAGERS,

OF THE

R. I. COLLEGE OF AGRICULTURE

AND

MECHANIC ARTS,

MADE TO THE

GENERAL ASSEMBLY AT ITS JANUARY SESSION, 1900.

PART I.

PART II—EXPERIMENT STATION REPORT—IS PRINTED UNDER SEPARATE COVER.

PROVIDENCE, R. I.
E. L. FREEMAN & SONS, PRINTERS TO THE STATE.
1900.

Rhode Island College of Agriculture and Mechanic Arts.

CORPORATION.

HON. MELVILLE BULL.....NEWPORT COUNTY.
HON. C. H. COGGESHALL.....BRISTOL COUNTY.
HON. HENRY L. GREENE.....KENT COUNTY.
HON. BENJAMIN A. JACKSON.....PROVIDENCE COUNTY.
HON. J. V. B. WATSON.....WASHINGTON COUNTY.

OFFICERS OF THE CORPORATION.

HON. HENRY L. GREENE, President.....P. O., RIVERPOINT, 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 Elisha Dyer, Governor, and the Honorable General Assembly of the State of Rhode Island and Providence Plantations, at its January Session, 1900:

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

HENRY L. GREENE,

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

FACULTY AND ASSISTANTS.

JOHN HOSEA WASHBURN, PH. D.,

PRESIDENT,

Professor of Agricultural Chemistry,

B. S., Massachusetts Agricultural College, 1878; Graduate student, Brown University, 1880; Graduate student, Massachusetts Agricultural College, 1881-1883; Professor of Chemistry, Storrs Agricultural School, 1883-1887; Student in Göttingen University, 1885 and 1887-1889; Ph. D., Göttingen, 1889; Appointed President, 1890.

HOMER JAY WHEELER, PH. D.,

Professor of Geology,

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.

ANNE LUCY BOSWORTH, PH. D.,

Professor of Mathematics,

B. S., Wellesley College, 1890; First Assistant, Amesbury (Mass.) High School, 1890-1892; Appointed Professor of Mathematics, April, 1892; Graduate student at the University of Chicago, summer of 1894 and 1896; Student in Göttingen University, 1898-1899; Ph. D., Göttingen, 1899.

E. JOSEPHINE WATSON, A. M.,

Professor of Languages,

A. B., Smith College, 1882; A. M., The 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.

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

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.

ARTHUR AMBER BRIGHAM, PH. D.,

Professor of Agriculture,

B. S., Massachusetts Agricultural College, 1878; Engaged in practical farming, 1878-1888; Professor of Agriculture in the Imperial Agricultural College at Sapporo, Japan, 1888-1893; Graduate student at Göttingen University, 1893-1896; Ph. D., Göttingen, 1896; Appointed Professor of Agriculture, 1896.

GEORGE WILTON FIELD, PH. D.,

Professor of Zoölogy,

A. B., Brown University, 1887, and A. M., 1890; Ph. D., Johns Hopkins University, 1892; Assistant in Biology, Johns Hopkins University, 1891-1892; Occupant of Smithsonian Table at Naples Zoölogical Station, 1892-1893; Student at University of Munich, 1893; Associate Professor of Cellular Biology, Brown University, 1893-1896; Appointed Professor of Zoölogy, 1896.

FRED WALLACE CARD, M. S.,

Professor of Horticulture,

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.

JOHN EMERY BUCHER, A. C., PH. D.,

Associate Professor of Chemistry,

State Normal School, Millersville, Pa., 1887-1888; A. C., Lehigh University, 1891; Ph. D., Johns Hopkins University, 1894; Instructor in Organic Chemistry, Tufts College, 1894-1897 Appointed Associate Professor of Chemistry, 1897.

ARTHUR CURTIS SCOTT, B. S.,

Assistant Professor of Physics,

B. S., R. I. College of Agriculture and Mechanic Arts, 1895; Student at Harvard University, summer course in Physics, 1895; Appointed Instructor in Physics, 1895; Student at Cornell University, summer course in Physics, 1896; Student at Massachusetts Institute of Technology, summer course in Physics, 1897; Student at Harvard University, summer course in Geology, 1897; Appointed Assistant Professor of Physics, 1897.

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

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; Student at Chase Art School, winters of 1897-1898, 1898-1899; Appointed Instructor in Drawing, 1897.

MARY WATKINSON ROCKWELL, B. L.,

Instructor in Languages,

Student at Göttingen, 1887-1889; Graduate, Norwich Free Academy, 1892; Student in France, 1892-1893; B. L., Smith College, 1897; Appointed Instructor in Languages, 1897.

JAMES SIDNEY ALLEN, JR., A. B.,

Instructor in History and Political Science,

A. B., Brown University, 1898; Appointed Instructor in History and Political Science, 1898.

MERCY WOODWORTH SANBORN,*

Instructor in Expression,

Graduate of School of Expression, Boston, Mass., 1898; Graduate student, School of Expression, Boston, 1899; Appointed Instructor in Expression, 1899.

ELIZABETH WATSON KENYON, A. M.,

Instructor in Languages,

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, 1900.

HOWLAND BURDICK, B. S.,

Assistant in Agriculture and Farm Superintendent,

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

MARSHALL HENRY TYLER, B. S.,

Master of the Preparatory Department,

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

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

*Left, January, 1900, on account of illness.

GRACE BURTON HAZLEWOOD,

Instructor in Stenography and Typewriting,

Student at Wheaton Seminary, Norton, Mass., 1894-1898; Graduate of Chandler Normal Shorthand School, 1899; Assistant Instructor in Chandler Normal Shorthand School, 1899; Appointed Instructor in Stenography and Typewriting, 1899.

JOHN FRANKLIN KNOWLES, B. S.,

Assistant in Woodwork.

GEORGE BURLEIGH KNIGHT,

Assistant in Ironwork,

Appointed, 1896.

CAPTAIN TIBERIO GARCIA ALOMA,

Assistant Instructor in Spanish.

NATHANIEL HELME,

Meteorologist.

GRADUATE ASSISTANTS.

CARROLL KNOWLES, B. S.,

Assistant in Mechanics.

BLYDON ELLERY KENYON, B. S.,

Assistant in Physics.

LILLIAN MABELLE GEORGE, B. S.,

Librarian.

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

COLLEGE CALENDAR.

1900.

SPRING TERM.

April 9, 10 A. M. ..... Examination of Conditioned Students.
April 10, 1 P. M. ..... Term begins.
May 11 ..... Arbor Day.
May 30 ..... Memorial Day.
June 17 ..... Baccalaureate Sunday.
June 18 ..... Reading of Cincinnati Orations for Lippitt Prize.
June 19 ..... Commencement.
June 22, 9 A. M., Entrance Examinations for College and Preparatory Department, given at the College; the State Normal School, Providence; and at the School Committee rooms, Clarke Street, Newport.

FALL TERM.

August 31, 9 A. M. ..... Entrance Examinations at the College.
September 18, 9 A. M. ..... Entrance Examinations at the College.
September 18, 10 A. M. ..... Examination of Conditioned Students.
September 19, 1 P. M. ..... Term begins.
November 6. ..... Election Day.
———— ..... Thanksgiving Day.
December 21. ..... Term ends.

1901.

WINTER TERM.

January 2, 10 A. M. ..... Examination of Conditioned Students.
January 2, 1 P. M. ..... Term begins.
January 31 ..... Day of Prayer for Colleges.
February 22 ..... Washington's Birthday.
March 29 ..... Term ends.

SPRING TERM.

April 8, 10 A. M. ..... Examination of Conditioned Students.
April 9, 1 P. M. ..... Term begins.
May 10 ..... Arbor Day.
May 30 ..... Memorial Day.
June 16 ..... Baccalaureate Sunday.
June 18 ..... Commencement.
June 21, 9 A. M ..... Entrance Examinations.

EXPERIMENT STATION STAFF.

JOHN H. WASHBURN, PH. D.....PRESIDENT OF THE COLLEGE.
A. A. BRIGHAM, PH. D.....DIRECTOR AND AGRICULTURIST.
H. J. WHEELER, PH. D.....CHEMIST.
GEORGE W. FIELD, PH. D.....BIOLOGIST.
FRED W. CARD, M. S.....HORTICULTURIST.
BURT L. HARTWELL, B. S.....FIRST ASSISTANT CHEMIST.
GEO. E. ADAMS, B. S.....PHOTOGRAPHER, ASSIST. HORTICULTURIST.
J. A. TILLINGHAST.....ASSISTANT, FIELD EXPERIMENTS.
H. W. MARSHALL, B. S.....ASSISTANT BIOLOGIST.
ALFRED W. BOSWORTH, B. S.....ASSISTANT CHEMIST.
J. A. WARREN.....POULTRYMAN.
NATHANIEL HELME.....METEOROLOGIST.
MILDRED W. HARVEY, B. S.....STENOGRAPHER.
S. ALINE NYE.....STENOGRAPHER.

The EXPERIMENT STATION COUNCIL consists of the President of the College, the Director of the Station, the heads of departments, and their first assistants.

TAFT LABORATORY. DAVIS HALL. BOARDING HALL.

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.

From the time of the acceptance by the State of Rhode Island of the land scrip in 1863, there were many people who felt that this State did not offer to young men such advantages for instruction in agriculture and mechanic arts as others afforded that had genuine agricultural and mechanical colleges. So great was the dissatisfaction among the citizens of Rhode Island at the absence

of these educational advantages, that they were determined to have the Hatch Agricultural Experiment Station located at a *bona fide* agricultural educational institution.

The Rhode Island State Agricultural School was established according to 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 which is now designated as 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 bathrooms 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.

OBJECT OF THE INSTITUTION.

The college stands for the idea that technical work, properly taught, possesses educative value equal at least to that furnished by the classics, but that premature specialization is to be avoided if the best results are to be obtained; that technical education, to meet the requirements, must be based upon a sound knowledge of mathematics, the natural sciences, and the English language. The method employed is technical instruction in agriculture, in the mechanic arts, and in the sciences.

There are five courses leading to the degree of Bachelor of Science; the agricultural course, mechanical engineering course, electrical engineering course, chemical course, and biological course. On entering, all regular students take the same course until the winter term of the Freshman year, when a choice is made. The aim of the agricultural course is to fit students not only for practical agriculture but for positions in experiment stations, as teachers, and farm superintendents. 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 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. The biological course offers so many electives that it is well adapted to prepare students for high-school teaching in general science, mathematics, and English. It is especially adapted to fit one to pursue a course in medicine or

veterinary science, to become an assistant in an experiment station, or to take a government position in some special department of science.

PREPARATORY DEPARTMENT.

Young men and young women from farm homes, who have had no opportunity to receive high-school instruction, may enter the college through the preparatory department.

SPECIAL COURSES.

Short courses in agriculture and certain lines of mechanics, and special work in science, are open to those unable to take the regular college work. For these courses no examination is required, except such as will satisfy the professor in charge of any branch chosen that the applicant is prepared to derive benefit from the work he wishes to elect. Whenever possible, however, 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.

Among the special courses offered are the Summer School for Nature Study, of two weeks, designed for the teachers of Rhode Island; the Poultry School of six weeks, and the Horticultural School of two weeks. Payment of tuition fees for those outside the State and board for the full time is required in advance of students registering in the 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 PREPARATORY DEPARTMENT, 1900.

Candidates for admission must bring testimonials of good character, and must be not less than fifteen years of age.

For admission to the first year in the preparatory department,

oral or written examinations will be given in arithmetic, geography, English grammar, and United States history. In the arithmetic examination special attention will be paid to common and decimal fractions, denominate numbers, percentage, and interest. Whitney and Lockwood's English grammar, and Fiske's United States history are recommended. In English, each candidate will be required to answer certain questions in grammar, and to write a short composition correct in spelling, capitalization, punctuation, and paragraphing, on a subject announced at the time of the examination. This composition will be expected to show familiarity with the following works: Hawthorne's The House of the Seven Gables; Whittier's Snow-Bound, The Tent on the Beach, and Other Poems; DeFoe's Robinson Crusoe; The Arabian Nights; Macaulay's Lays of Ancient Rome. Useful editions of these works will be found either in the Riverside School Library or the Riverside Literature Series, published by Houghton, Mifflin and Company.

Students wishing to enter the second-year class in this school will be examined in geography and United States history as mentioned above, advanced arithmetic, algebra to quadratics, and English. In 1900 the English requirements will cover Shakespeare's Merchant of Venice and Macbeth; Pope's Iliad, books I, VI, XXII, XXIV; Addison's The Sir Roger de Coverley Papers; Scott's Ivanhoe; and Cooper's The Last of the Mohicans. In 1901, Milton's L'Allegro, Il Penseroso, Comus, and Lycidas; Macaulay's Essays on Milton and Addison; Burke's Speech on Conciliation; Eliot's Silas Marner; Tennyson's The Princess; and Goldsmith's The Vicar of Wakefield.

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

Students entering the preparatory department may take, together with the regular studies of this course, any other work from the college courses for which they are prepared.

REQUIREMENTS FOR ADMISSION TO THE COLLEGE, 1900.

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 and cube root; thorough drill in mental arithmetic will be necessary. The applicant should have mastered all of Wells's Academic or Wentworth's School Algebra, 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 1900 are the following: (*a*) Addison's The Sir Roger de Coverley Papers; Cooper's The Last of the Mohicans; De Quincey's The Flight of a Tartar Tribe; Dryden's Palamon and Arcite; Goldsmith's The Vicar of Wakefield; Lowell's The Vision of Sir Launfal; Pope's Iliad, books I, VI, XXII, XXIV; Scott's Ivanhoe; Tennyson's The Princess. (*b*) Burke's Speech on Conciliation with America; Macaulay's

Essays on Milton and Addison; Milton's Paradise Lost, books I and II; Shakespeare's Macbeth. For 1901: (*a*) Addison's The Sir Roger de Coverley Papers; Coleridge's The Ancient Mariner; Cooper's The Last of the Mohicans; Eliot's Silas Marner; Goldsmith's The Vicar of Wakefield; Lowell's The Vision of Sir Launfal; Pope's Iliad, books I, VI, XXII, XXIV; Scott's Ivanhoe; Shakespeare's The Merchant of Venice; 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 1902: (*a*) Addison's The Sir Roger de Coverley Papers; Coleridge's The Ancient Mariner; Cooper's The Last of the Mohicans; Eliot's Silas Marner; Goldsmith's The Vicar of Wakefield; Lowell's The Vision of Sir Launfal; Pope's Iliad, books I, VI, XXII and XXIV; Scott's Ivanhoe; Shakespeare's The Merchant of Venice; Tennyson's The Princess. (*b*) Same as 1901. For 1903: (*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*) Same as 1901. 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, Lyon and De Larpent's Primary French Translation Book; the Joynes-Meissner German Grammar, Part I, or Collar's Shorter Eysenbach, Guerber'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 offered to men are open to women, together with special courses. 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.

DOMESTIC SCIENCE.

The college offers no separate course by the title of domestic science, but all young women candidates for a degree may receive instruction in domestic science as follows. In the fall term of the Sophmore year, there is offered a three-hour elective in the construction, ventilation, plumbing, and heating of homes and school buildings. In chemistry, the adulteration of foods is studied; and analyses of milk, water, dairy products, and fruits are made. Electives are offered in physiological chemistry, sanitary chemistry, and the chemistry of cooking. Hygiene and the physiology of digestion are treated in the courses in zoölogy.

EXPENSES FOR WOMEN.

Board, including room rent, is three dollars per week. 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 to all Rhode Island students. The regular expenses are tabulated below:

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* For exceptions in expenses for women, see above.

WATSON HOUSE. FARM BUILDINGS.

		Per year. Minimum.	Maximum.
Men's Dormitory.	Board, $3 per week, for 36 weeks	$108 00	$108 00
	Room rent, $3 per term	9 00	9 00
	Light, $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
General expense, for damage in building, etc., 50c. per term		1 50	1 50
Laboratory fees, $2 to $10 per term		6 00	30 00
		$173 55	$251 85

The amount of laboratory fees depends upon the laboratory work taken each term. One dollar per term is charged for each of the following: botanical, zoölogical, and physical laboratories; carpenter shop; wood-turning, forge shop, machine shop, and wood-carving. 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. Graduates pay the cost of diplomas, five dollars. *No diploma will be issued until the candidate has paid all term bills.* 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 are required to deposit five dollars per term in advance. 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 shall pay term bills in advance, 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. A reduction of fifty cents per week on board is allowed students going home Friday afternoon and returning Monday forenoon, provided that notice of the intended absence is given in advance. Those failing to give such notice will be charged full price for board. No other reduction is made for less than three whole days' absence at one time, and this only when notice is given as above. Fifteen cents extra is charged for each meal sent to a student's room, from sickness or any other cause. *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. All clothing should be distinctly marked.

SELF-HELP.

A limited amount of work about the buildings, on the farm, at the experiment station, and in the laboratories, 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 of work for the com-

pensation they receive. Thus far no worthy student has been compelled to leave the institution for lack of means.

DISCIPLINE.

The discipline of the institution has been delegated by the faculty to two joint committees of faculty and students, called the Activity Committees. The committee for the direction of the young women is composed of three women of the faculty and two students; and that for the young men is composed of three men of the faculty and four students, one from each class. Entertainments and exercises which are conducted by both the men and women students, are sanctioned by the conference of these joint committees. It is the duty of the committees to see that the general rules of conduct for the members of the institution are observed. Money paid for dormitory expenses will not be refunded to students dismissed from the dormitory.

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.—Examinations of conditioned students shall be held only on the days assigned in the college calendar. 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 3.—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 examination.

Section 4.—Students, whether regular or special, shall remove entrance conditions to both the preparatory department and the college within a year from the date of entrance, unless excused by the committee on courses of study.

Exemption from Examination.—Section 5.—Students shall be exempt from examination at the end of the term in studies in which their term averages are above eighty per cent.

Thesis.—Section 6.—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 7.—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 8.—No student shall represent the college on the athletic field, or 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.

The students are expected to be present at chapel exercises every morning, and on Sundays to attend some church at least once a day, or the praise service which is held at the college every Sunday afternoon. Absence from chapel must be reported at the president's office for excuse on Tuesday morning of each week. 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. Following is a list of speakers who have addressed the students during the past year:

REV. JOHN E. TUTTLE.....Worcester, Mass.
REV. A. M. LORD.....Providence, R. I.
PROF. CHAS. F. KENT, Brown University....Providence, R. I.
REV. C. J. BURNS.....Wakefield, R. I.
REV. WALLACE NUTTING.....Providence, R. I.
REV. W. H. GARTH.....Wakefield, R. I.
REV. J. W. FOBES.....Peace Dale, R. I.
REV. PARLEY D. ROOT.....Wakefield, R. I.
REV. ALEXANDER MCCALL.....Briarcliff Manor, N. Y.
PROF. F. W. VERY.....Providence, R. I.
REV. J. H. HOLDEN.....Attleboro, Mass.
REV. J. HAGADORN WELLS.....Kingston, R. I.
REV. L. F. RANDOLPH.....Hopkinton City, R. I.
REV. THEODORE SNOW.....Wakefield, R. I.
REV. JOHN MACCALMAN.....Swansea Centre, Mass.
REV. E. TALLMADGE ROOT.....Providence, R. I.
REV. F. H. DECKER.....Westerly, R. I.
REV. FRANK H. PALMER.....Boston, Mass.
PRIN. J. W. V. RICH.....Providence, R. I.
MR. EUGENE W. LYMAN, Yale University...New Haven, Conn.
MR. H. W. JUMP, Yale University.....New Haven, Conn.
MR. BLANCHARD, Yale University.....New Haven, Conn.
MR. BUTLER, Yale University.....New Haven, Conn.
MR. GEO. R. MONTGOMERY, Yale University..New Haven, Conn.

THE LIPPITT PRIZE.

The Lippitt prize consists of a purse of one hundred dollars, offered through the generosity of ex-Governor Charles Warren Lippitt. This sum is divided into two prizes; the first of sixty, and the second of forty dollars, which are awarded to the best written and delivered essays on the history of Rhode Island in the Revolution. These essays are of the nature of Cincinnati orations, and are read on the Monday preceding commencement. In 1899 the successful competitors were Arthur Earle Munro, Quonochontaug, R. I., first prize; Bertha Douglas Tucker, Swansea Centre, Mass., second prize.

THE LIBRARY.

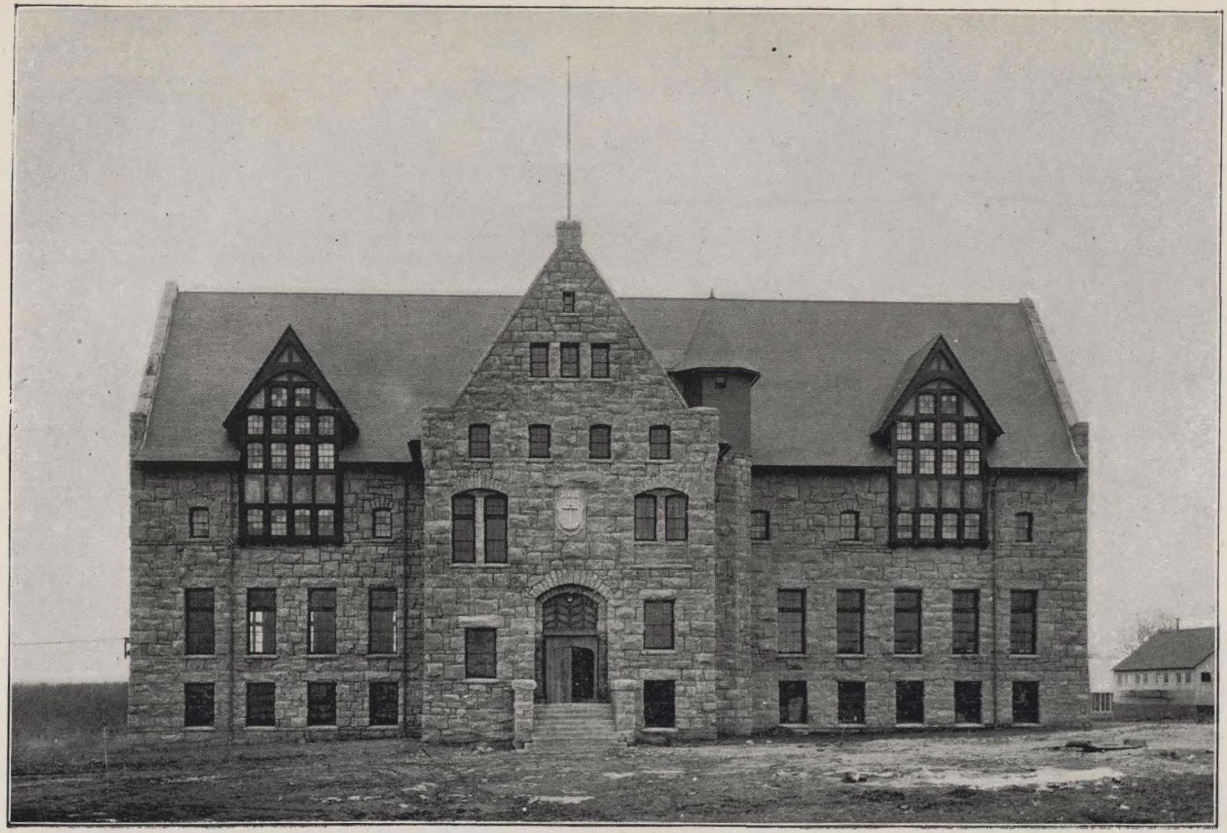
The library occupies a large room in Lippitt Hall, and numbers about eight thousand volumes. The books are arranged in stacks, to which the students have free access. The Dewey system of classification is used; and a dictionary catalogue gives author, subject, and title. As the library has been from 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 sixty 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; on Sunday it is open in the afternoon only, from 12:30 to 1:30 and from 2:30 to 5:00. 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 urged to use its library.

LOCATION.

The college is situated on a hillside, which furnishes it with quick drainage and a delightful view. It is less than two miles from the railroad station. A macadamized road leads from the grounds to the station, insuring at all times a good walk and drive. The railroad station is situated on the New York, New Haven & Hartford Railroad, with twenty-one trains daily, in the winter, stopping at Kingston, and more in the summer. The town is a very healthful place, five or six miles from the ocean.

THE LIBRARY.



LIPPITT HALL.

DEPARTMENTS OF INSTRUCTION.

CHEMISTRY.

Instruction in chemistry begins with the Sophomore 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. The course in general chemistry extends through the first two terms of this year; three periods per week being devoted to lectures and recitations and one period to laboratory work. The course in qualitative analysis extends through the second and third terms of this year, part of the time being given to lectures and recitations, but the greater part to practical work in the laboratory. The above courses are required of all candidates for a degree, as part of a liberal education, and are preparatory to the subsequent courses, which are designed for students desiring to make chemistry their profession, either as teachers or practical chemists.

The more advanced courses furnish an excellent preliminary basis for the study of medicine, biology, or agriculture.

The first two courses are followed by a course in inorganic preparations, three periods per week in the third term of the Sophomore year. The subject of 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. This subject is continued in a much more advanced way in the first term of the Senior year, a portion of the time being devoted to laboratory work. Quantitative analysis is taken up in the Junior year, both gravimetric and volumetric

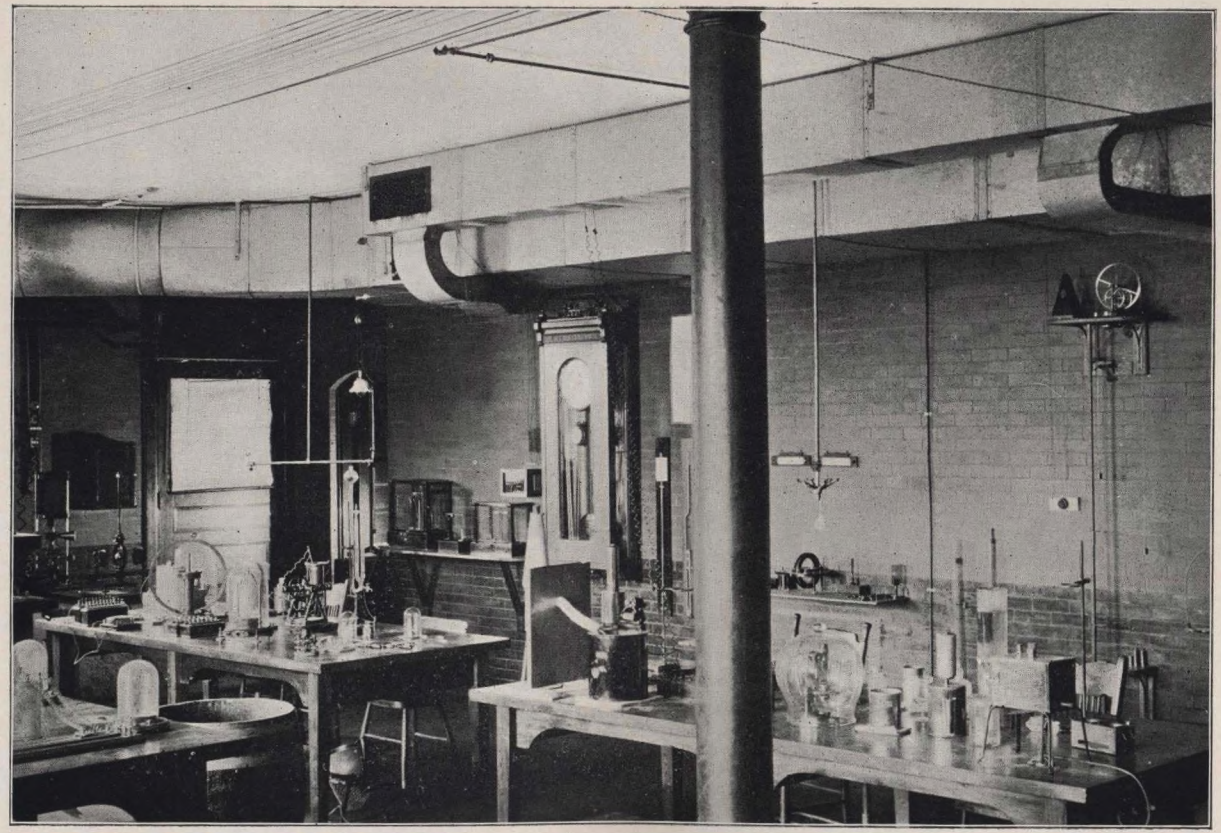
work being required. Accuracy in the work is insisted upon. Organic chemistry begins in the first term of the Junior year and extends through five terms. It includes an extended course in organic preparations. The course also affords opportunity for work in gas analysis, metallurgy, mineralogy, blow-pipe 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. Agricultural chemistry is required of all agricultural students, and is given during the winter and spring terms of the Junior year and the fall term of the Senior year. The instruction consists of lectures of three exercises per week during the first two terms and three exercises per week of laboratory work during the third term.

The laboratory is thoroughly equipped with apparatus for the above-mentioned courses, and opportunity is given for graduate students to continue work in the above lines beyond that required for a degree. Provision is also made for special students who are unable to spend the time required by the regular courses. They may take such courses as will be of most benefit to them in the line of work they intend to follow. A large number of German, French, and English chemical journals are accessible, thus affording excellent opportunity for research work.

PHYSICS.

Instruction in physics in the college course begins with the first term of the Freshman year, and consists of lectures and recitations attended by all regular students. The various branches grouped under this head are treated both mathematically and experimentally. Mechanics and heat are studied in the fall term, magnetism and electricity in the winter term, and sound and light in the spring term.

The study of advanced physics follows in the Sophomore year,



CORNER OF PHYSICAL LABORATORY.

and is required throughout the year of all students in the electrical engineering course; for the fall and spring terms, of all mechanical course students; and is open as an elective to all students in other courses who have completed course I or its equivalent. Facilities for instruction in physics are of the best. A large room in Lippitt hall is arranged especially for laboratory work.

Photography.—Special instruction in photography is offered as an elective course to students who have an elementary knowledge of physics and chemistry. The course embraces lectures and recitations upon the subject, together with practical methods of photography in the making of negatives and photographs.

A course in advanced photography is open to students who have completed course I, consisting of a more extended study of the chemistry and optics of photography, and laboratory work in making bromide enlargements and lantern slides. This is followed by the theory and use of the microscope and practical work in photo-micography, the manipulation of the projection microscope and the optical lantern.

The department is provided with room and ample apparatus for illustrating and testing every form of light that is in use in projection work, together with apparatus for X-ray photography with either the high frequency induction coil or electrostatic machine.

The theory and practice of color photography are considered, and apparatus is at hand for projection of photographs in colors from nature.

Sanitary engineering.—A course in plumbing, and the heating and ventilation of buildings, is given throughout the Junior and Senior years, alternating with a course in methods of refrigeration and cold storage.

These courses are elective, open to students having a knowledge of elementary physics. They are especially arranged the first term to accommodate the young women of the institution who may desire a knowledge of the principles without the mechanics. The remaining two terms of the year the subjects are treated by lectures and recitations in such a way as to include the necessary

amount of mechanics, supplemented by experimental laboratory work on different heating and ventilating, or refrigeration and cold storage, systems.

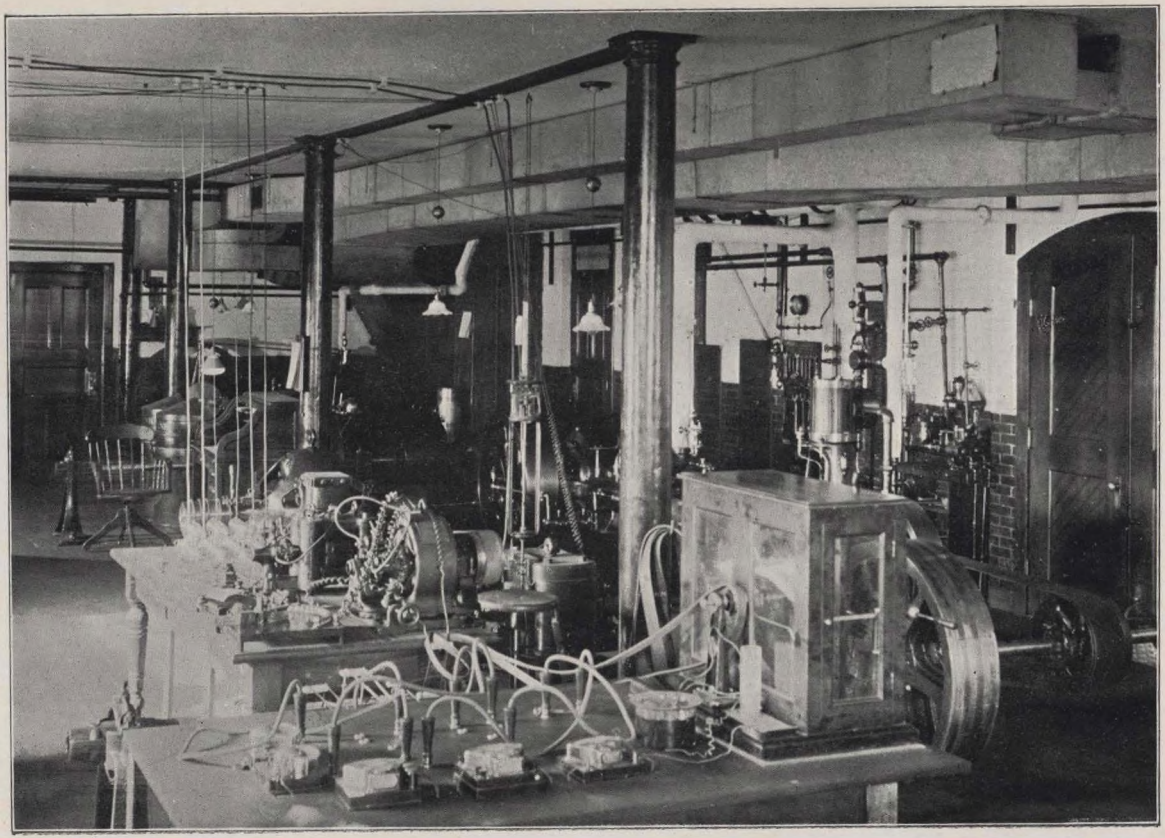
The laboratory is heated by both the direct and the indirect systems, the latter having an eight-foot fan with fifteen H. P. engine for driving the same, the system being arranged to impel both hot and cold air at the same time. These, together with four other systems in use at the college, and minor facilities, such as small fans, anemometers, manometers, etc., make the laboratory work in practical testing of much value to the student.

Experimental laboratory work will be given in refrigeration as far as practicable, and inspection excursions will be made to typical cold storage plants.

ELECTRICAL ENGINEERING.

The course in electrical engineering is offered to students who have completed courses I and II in physics. As a foundation for subsequent work, instruction is given in the theory of electricity, together with thorough consideration of the various technical applications of electricity: including land and submarine telegraphy; the telephone; manipulation of direct and alternating current generators, motors, transformers; electric lighting, and transmission of power; the storage battery, electrolysis, and electroplating. The department has a typical plant for laboratory purposes, containing two sixty-horse power water-tube boilers; two high speed engines of fifty and fifteen horse power; one thirty K. W. 1,000 V. Westinghouse compound alternator with exciter; two 110 V. continuous current generators, one twenty-five K. W. and the other eight K. W.; a storage battery of 110 cells; several small dynamos and motors; arc and incandescent lamps; a good assortment of Weston test instruments and of rheostats.

This course is designed to fit students to be practical electrical engineers, and special attention may be called to the fact that the laboratory is itself a practical plant; and the student is expected



THE ELECTRICAL ENGINEERING LABORATORY.

during the course to become familiar with the handling of boilers and engines as well as electrical machinery. The course is continued throughout the Junior and Senior years.

PHYSIOGRAPHY.

The first-year preparatory class study physiography, three exercises per week, during the fall term. The instruction consists of lectures upon general physiography and the relation of physiography to the sciences, and attention is given to meteorology. Ward's Meteorology is used as a text-book and is completed during the course. The Freshman class study physiography during the fall term, with two exercises per week of recitation and one of laboratory work, and during the winter with one exercise per week of laboratory work, including occasional excursions and field work.

A well-equipped physiographic laboratory, with globes, models, maps, charts, and other illustrative material, together with a special library, is open to the students. Especial attention is given to the scientific phases of the study—to the chemistry and geology of the soils, the influence of air and water on the same; and some reading and time are expended on the flora and fauna of the different countries. Tarr's Physical Geography is taken as a basis; and Dana's Coral Islands, Shaler's Aspects of the Earth, and Dana's Characteristics of Volcanoes are thoroughly studied during the term. Five hundred lantern slides, illustrating ethnological subjects, are projected and explained before the class. This course seems especially valuable to introduce the student to the scientific studies which are to follow.

General Mineralogy.—General mineralogy is given in the winter term of the Junior year, and consists of three exercises per week. The morphology of minerals and elements of crystallography are taught, together with the physical and chemical characteristics of minerals, especially of those rock-making minerals which compose our soils. Laboratory work consists of tests

illustrating the range of minerals and the application of chemical and blow-pipe analysis to determine the species.

AGRICULTURAL GEOLOGY.

The course in agricultural geology embraces structural, dynamical, and historical geology, particular attention being paid to the first-mentioned subdivision. A careful study is made of those minerals and rocks of importance in the formation of soils, of the agencies by which their decomposition is effected, and of the compounds which result. In this connection the instruction is designed to familiarize the student with the desirable mineral and physical features of soils, with those compounds the presence of which is undesirable or which may give rise to a greater or less degree of soil sterility, and with the means by which such conditions may be avoided or overcome. A proportionate amount of time is devoted to the history of those natural deposits of particular interest to agriculturists; such as nitrate of soda, the German potash salts, and phosphates of various kinds.

BOTANY.

The required work in botany for students in the agricultural, biological, and chemical courses begins in the winter term of the Freshman year with a course called the biology of plants, which continues three terms. The object of this course 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 the chief work of the course is the study of the structure of the plant, its activities, and its relation to its environment. In short, the course 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

THE BOTANICAL LABORATORY.

student who is to follow more advanced work in botany, agriculture, horticulture, or medicine.

Each student is supplied with a compound microscope, a dissecting microscope, re-agents, and small instruments. The laboratory is provided with apparatus for simple physiological experiments, a microtome, paraffin bath, charts, thirty Brendel models, Briosi and Cavara's Parasitic Fungi of cultivated plants, Ellis's Fungi Columbiani, Seymour and Earle's Economic Fungi, and a collection of native plants. A good working library and several American and foreign periodicals are an important part of the equipment of the laboratory. So far as possible elective courses are given to suit the needs of students applying for them.

It is believed that excellent advantages are offered to those who wish to elect work in the parasitic fungi of seed-plants. The laboratory is provided with a supply of dry and alcoholic material, and collecting fields for fresh material are near at hand.

ZOÖLOGY.

The courses are open to students who have done satisfactory work in the biology of plants, or an equivalent, and are designed to meet needs of three sorts:

(A) Of students who will manage farms. To agricultural students are recommended courses in animal biology; zoölogy of the farm animals; journals; the principles and practice of aquiculture; entomology; comparative animal physiology; and the spring fauna of Kingston,—as described under zoölogy in the courses of instruction.

(B) Of students who wish to prepare themselves for careers in medicine, veterinary, and sanitary science. Such students are recommended to take the biological course.

(C) Of students who wish merely a general knowledge of zoölogical science sufficient to comprehend and to profit by the important current discussions bearing upon man's relations to his environment. To such is recommended the course in biology of

animals, followed, if desired, by entomology and the spring fauna of Kingston.

Special attention is called to two features: (1) The strength of the course in zoölogy as applied directly to general agriculture, and as furnishing an adequate basis for understanding our domesticated animals. (2) The course adapted for preliminary training for students who wish to become, after graduation, science teachers in the public schools, or to enter schools of human or veterinary medicine and surgery.

In pure and applied zoölogy, proximity to the sea-coast renders possible the study under natural conditions, as well as in aquaria, of the habits and development of many marine animals. The experiment station's marine laboratory, under the direction of the professor of zoölogy, is open to students who show capacity for effective work. It is located on the shores of the town, near Point Judith, and offers excellent opportunities for original investigation and experimentation upon problems of marine biology.

Further opportunities for study are furnished by springs, streams, ponds (natural and artificial), and lakes, upon or immediately adjacent to the college grounds. These, added to the location of the college township—in the southeast corner of Rhode Island, its shores bounded by Narragansett bay, and by the Atlantic—render the institution an ideal locality for biological study.

The department is provided with Leuckart's charts; Zeigler's and other models, manikins elucidating the anatomy of man, horse, and fowl; preparations of skins and skeletons of typical vertebrated animals; including not only the domesticated animals but also such rare forms as the gorilla, chimpanzee, lemurs, phalangers, manatee, and sloth; birds and mammals peculiar to the Australian region; the lung-fishes (Dipnoi); the Surinam toad; the giant salamander (C. japonicus); preserved specimens and preparations of the most important invertebrated forms; including Nautilus in the shell, Argonauta; apparatus for class demonstration of macroscopic and microscopic preparations. The department library includes the best literature on the subject; all of the

DAIRY BARN.

current zoölogical journals are available, either at the experiment station library, or by special arrangements. Particular attention is given to the collection illustrating the zoölogy of Rhode Island.

PSYCHOLOGY.

An elective course in psychology is offered during the winter and spring terms, to Juniors and Seniors. James's Briefer Course is used. Lectures and recitations are supplemented by reading and simple experiments.

AGRICULTURE.

In connection with the new course in agriculture, it may be said that the foundation instruction is largely given in the study of chemistry, botany, physics, geology, anatomy, physiology, zoölogy, and economics.

Following upon this fundamental knowledge, it is the aim in the agricultural course to teach the student the practical application of the scientific principles underlying technical agriculture. This is sought to be accomplished by means of lectures and recitations and by the use of text-books and reference books as far as available. The chief desire is to supplement, enforce, and fix this instruction by what may be termed laboratory work in agriculture: that is, by actual educational training in the different branches of farming. The object of the agricultural course is to assist in preparing the young man to become a successful farmer and a useful citizen. The course also aims to fit the student to fill remunerative positions as managers of farms and estates.

Preliminary to the teaching of agriculture a course is taken in the winter term of the Freshman year in agricultural mechanics, including the use of tools, bench work, and carpentering. Commencing in the spring term of the Freshman year, an introduction is given, in the form of lectures dealing with the origin and necessity of agriculture, its relation to other occupations, the

preparation for farming, and the relations of air, water, and sunshine, and of plant and animal life, to agriculture.

In the Sophomore year a study is made of farm soils, their characteristics, classification, and adaptions, their faults and means of improvement, clearing land and preparing for crops, irrigation and land drainage, with practice in planning and constructing systems of under-draining on the college farm. In the winter term instruction is supplied in the construction, use, and care of farm implements, machines, and vehicles; and in the arrangement, construction, and maintenance of farm buildings, fences, roads, and bridges. In the spring term fertilization is dealt with, and the instruction is re-inforced by object lessons offered by the fertilization experiments of the experiment station department and by the manuring for the farm crops.

In the first term of the Junior year, field crops are considered. During this year horticulture is chiefly taught. (See horticulture.)

In the Senior year opportunity is provided to study live stock husbandry, including the breeds, breeding, care and management of farm animals; rational feeding of live stock; dairy husbandry; poultry culture; farm management and accounts.

Further elective subjects are available to advanced students by special arrangement, including the history and economics of agriculture, agricultural and horticultural literature, farm law, apiculture, agricultural debate, and agricultural experimentation.

During the course in agriculture occasional inspection excursions will be made by the classes to learn what practical, successful specialists in the various branches of modern farming are doing.

Plans for short courses in agriculture and horticulture have been made. These courses would instruct special students in the principles and details underlying dairying, gardening, and general farming. The aim in the special courses is to provide the instruction needed to enable the student promptly to engage in a particular branch of farming, or to take charge of such work as superintendent. For placing these courses in full operation the college

FILLING THE SILO.

awaits the providing by the State of additional suitable buildings and equipment, which will greatly re-inforce the means of instruction in the regular agricultural course.

For the past two years a short course of instruction in poultry culture has been held during the winter term, commencing in January and continuing six weeks. The college has a strong force of regular teachers in the sciences and arts upon which poultry culture is based, and a large number of expert poultry specialists assist as instructors.

In this special course of study the main purpose is to teach the fundamental knowledge which underlies practical poultry keeping. Instruction is given in chemistry, zoölogy, anatomy, and physiology sufficient for the foundation of the course. Embryology is taught in the biological laboratory, where also the nature and habits of poultry parasites are studied. Carpentering and the construction of poultry houses and fences are taught in the carpenter shop. The course of study includes the following topics: poultry plants, location, planning, and establishment; drainage of the land; buildings, planning and drawing of plans, making specifications and estimates, location and arrangement, construction, heating, ventilation, and furnishing; fowls, their origin, kinds, breeds, and types; principles of breeding, mating, special breeding of water-fowl, turkeys, pigeons, etc.; incubation and rearing, both natural and artificial; foods, feeding, care, and management; production of eggs and flesh, caponizing, fattening, killing, dressing, and marketing; diseases, business methods and management, scoring, accounts, poultry photography, etc. The Saturdays are devoted chiefly to inspection excursions to different poultry farms in New England. Special public lectures are occasionally given. Opportunity is further offered to a limited number of students to supplement this special course of study by a year's practical training in the college poultry plant.

No entrance examination is required. Oral or written examinations may be given during and at the close of the course. Certificates will be awarded according to merit.

HORTICULTURE.

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.

In the introductory course the aim will be to discuss principles of general importance to all who have to deal with orchard or garden crops. The courses in 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 will appeal 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 courses in reading and original investigation are designed chiefly for students who wish to make a specialty of horticulture.

LANGUAGES.

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

English—comprising composition, rhetoric, and literature—may be studied throughout the course. It is required during the preparatory years and the first three years of the collegiate department. The preparatory students review English grammar,

and study the works prescribed for entrance to the New England colleges. The theory and practice of rhetoric are taught throughout the Freshman year, and the application of rhetorical principles is sought in exercises and themes. The Sophomores make a critical study of certain prose masterpieces and write essays and various short papers. The required work of the Juniors consists of a course in English history and a study of the leading poets from Chaucer to Tennyson. Collateral reading is supplied, and students are encouraged to special investigation along literary and historical lines. In the Senior year electives are offered in literature and themes.

In the courses in agriculture, mechanical engineering, electrical engineering, and chemistry, three years of foreign language study are required for graduation; one preparatory and two advanced. It is desirable that two of the three years be spent upon one language. In the biological course, four years of foreign language study are required for graduation; one preparatory, and three advanced. Of the three years, two must be given to German and one to French.

A three years' course in German has been arranged, which is begun in the Freshman year. As far as possible the language itself is made the medium of instruction; and the subject is studied in grammar work, dictation, conversation, and translation — from English into German and from German into English. The course is carefully graded. As soon as a small vocabulary is acquired, the student begins the reading of simple prose and poetry, passing gradually to more difficult texts.

French may also be studied three years. Six courses are offered. The instruction in this language is similar to that given in German. Grammar, conversation, dictation, translation, and composition are taught.

Beginning with the fall of 1900, a two years' course in Spanish is offered. The work will be elective, and is intended largely to meet the needs of those students who may wish to engage in business in Spanish-speaking countries. Special attention will

therefore be paid to conversation, reading, letter-writing, and commercial forms.

Latin is elective except in the preparatory department. The college offers a two years' course. Should a student wish to pursue the subject farther, he may do so at his own expense, by taking private lessons of the instructor. Much attention is paid to derivation of words, in order that such study may aid in comprehending the terminology of science.

HISTORY AND POLITICAL SCIENCE.

General history is required throughout the first year in the preparatory department. An elective in United States history is offered to Sophomores and Juniors. This extends through the year. English history is studied in connection with English literature during the Junior year, and is required of all candidates for a degree. In the Senior year a course in modern European history from the beginning of the French revolution is offered as an elective. This may also be taken by Juniors who have had the work in United States history. In all of these courses much use is made of the library.

Political science I, offered in the fall term, consists of a study of the origin, development, and present structure of our government—town, city, county, state, and national. Special attention is paid to municipal problems, and to the United States constitution. Extensive use of the library is necessary. The winter and spring terms are devoted to political economy, based upon Walker's Advanced Course. In the spring term special consideration is given to the application of the general principles to banking, finance, and other present day problems.

MATHEMATICS.

Three courses in mathematics are prescribed for all candidates for a degree; the subjects being higher algebra, plane trigonometry, and solid and spherical geometry. The work extends through-

out the Freshman year, and is of the utmost importance, both as a basis for further work in mathematics and science, and as a means for developing the power of logical reasoning and of exact and concise expression. It is the aim throughout the course to select such problems and applications as shall have direct bearing upon practical subjects.

Courses in analytical geometry and calculus are required of students in the mechanical and electrical engineering courses, in addition to the above, and a number of electives are open to students who propose to make a specialty of mathematics or of any of the sciences which depend largely upon it.

The course in analytical geometry includes the subject of loci and their equations, the analytical demonstration of many geometrical theorems, and the simpler properties of the conic sections. The work in calculus includes the differentiation of algebraic, trigonometric, anti-trigonometric, exponential, and logarithmic functions, successive differentiation, and the integration of simple functions, illustrated by applications to the rectification of plane curves, the areas of plane curves, and the surface and volume of solids of revolution. The fundamental formulas of mechanics are developed and illustrated. The more familiar devices for integration are studied, and a short time is devoted to the interesting subject of curve-tracing.

Students wishing to prepare for advanced work along the lines of mechanical or electrical engineering are especially advised to elect courses in advanced integral calculus, analytical mechanics, and differential equations; while those who desire an insight into the development of modern pure mathematics may elect work in projective geometry, modern analytical geometry, theory of equations, and theory of functions.

CIVIL ENGINEERING.

In civil engineering four courses are offered: plane surveying, land drainage, advanced surveying, and road construction. Plane

surveying is required of agricultural Sophomores and may be elected by chemical Sophomores during the fall term. Surveying is supplemented during this term by a course in land drainage, continuing one-half the term. In the spring term the work in plane surveying is continued by the agricultural Sophomores. It embraces work in land, topographical, and stadia surveying. In the spring term of the Junior year a course in road construction is offered as an elective to agricultural students.

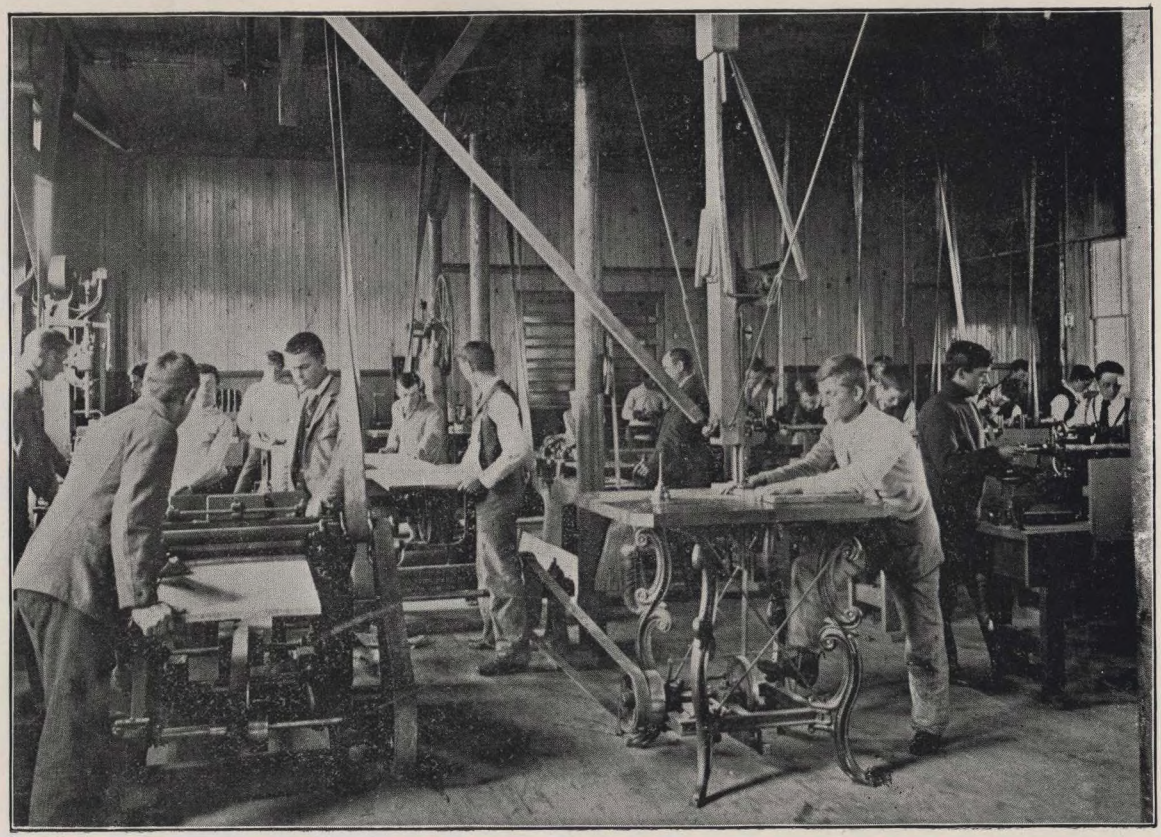
MECHANICAL ENGINEERING.

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. No attempt is made to teach trades; but the course offered in 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. Thorough courses in mathematics, physics, chemistry, electricity, English, French, and German are made the basis of this work. 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.

Students in the agricultural course receive instruction in wood-working and forging, and may elect other work with the advice and consent of the committee on studies. Women are given

LADD LABORATORY.

THE CARPENTER SHOP.



THE WOOD-WORKING MACHINERY.

the opportunity to elect wood-carving at any time during the four years' course. During the winter term of three months, the shops are open to receive persons who may wish to enter the college and take up special work of a trade nature in any of the above lines. In addition to this work, these students may take a limited amount of time for the study of any related subject.

The carpenter shop contains benches and tools sufficient to accommodate twenty-four students at one time. The course 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. A series of practical lectures upon the art of estimating the cost of various constructions of wood is given to the agricultural students of the Sophomore year. 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 of 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 mechanical and electrical engineering courses work in the machine shop.

The course here 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. A course of 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 wiers. During the spring term of the Senior year the class in mechanical engineering holds semi-weekly conferences; reports are given upon articles in the industrial magazines and journals, and engineering subjects of general interest are discussed. The following are some of the topics considered: types of steam boilers, furnaces, boiler feeders, fuels, lubricants, gas and heat engines, preparation and use of wood, cutting tools for metals, pumping machinery.

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 course. Practice in tracing and blue printing is given to all students. The course in drawing is designed to aid in the corresponding courses of shop work and not to produce professional draughtsmen.

STUDENTS IN DRILL HALL.

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. The library contains an excellent collection of art books. In addition to the art electives, comprising drawing from still life and the cast, painting in oil, pastel, and water color, and modeling, special work will be arranged for scientific and mechanical students. An hour's study of the history of art, by means of reading, lectures, and the use of photographs, with which the studio is well supplied, may be substituted for one hour of the three-hour art elective offered in the spring term, Sophomore year.

STENOGRAPHY AND TYPEWRITING.

Stenography and typewriting are offered as an elective to members of the preparatory school and college. A thorough knowledge of the common English branches is required of every one taking the course. The Chandler Practical Shorthand and either the touch or sight system of typewriting are taught. The shorthand work may be divided into two parts: first, the perfecting of the knowledge of the system; second, a graded course in dictation. In typewriting, the students are given a series of exercises consisting of words, sentences, phrases, business letters and forms, and other matter selected with reference to its variety and scope. Absolute accuracy is required from the first in both subjects, and particular attention is paid to spelling and punctuation.

PHYSICAL TRAINING.

Unless excused by a physician, the young women meet once a week for athletic sports, conducted by Miss Grace B. Hazlewood. All are urged to join one of the classes which are organized for gymnastic practice.

COURSES OF INSTRUCTION.

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

CHEMISTRY.

I. General Chemistry.—Lectures, recitations, and laboratory work. *Fall and Winter terms, Sophomore year;* lectures and recitations, *3 exercises per week;* laboratory work, *1 exercise of 2 hours per week. Required of all candidates for a degree.*

II. Qualitative Analysis.—*Winter term, Sophomore year; 2 exercises of 2 hours each per week. Spring term, Sophomore year; 3 exercises of 2 hours each per week. Required of all candidates for a degree.*

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

IV. Theoretical Chemistry.—Lectures and recitations. *Spring term, Sophomore year; 3 exercises per week. Required of students in the Chemical and Biological courses.*

V. Quantitative Analysis. — Gravimetric and Volumetric. *Throughout the Junior year. Fall term; 5 exercises of 2 hours each per week, required of students in the Chemical course; 3 exercises of 2 hours each per week, required of students in the Agricultural and Biological courses; 2 exercises of 2 hours each*

per week, required of students in Mechanical and Electrical Engineering courses. Winter term; 3 exercises of 2 hours each per week. Required of students in the Chemical and Biological courses. Spring term; 5 exercises of 2 hours each per week. Required of students in the Chemical course; elective, open to students in the Biological 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. Fall term, required of students in the Chemical, Agricultural, and Biological courses. Winter term, required of students in the Chemical and Biological courses.*

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

VIII. Sanitary Chemistry.—*Winter term, Junior year; 3 exercises of 2 hours each per week. Required of students in the Chemical course; elective, open to students in the Biological 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; elective, open to students in the Biological course.*

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 course).—*Fall and winter terms, Senior year; 3 exercises per week. Required of students in the Chemical course; and elective, open to students in the Biological course.*

XIV. Theoretical Chemistry (Advanced course).—Lectures, recitations, and laboratory work. *Fall term, Senior year;* lectures and recitations, *4 exercises per week;* laboratory work, *2 exercises of 2 hours each per week. Required of students in the Chemical course; elective, open to students in the Biological course.*

XV. Physiological Chemistry.—*Fall and winter terms, Senior year; 3 exercises per week. Required of students in the Chemical course.*

XVI. Textile Coloring.—*Winter and Spring terms, Senior year; 3 exercises per week. Required of students in the Chemical course.*

XVII. Agricultural Chemistry.—*Winter and Spring terms, Junior year; 3 exercises per week. Fall term, Senior year; 3 exercises per week. Required of students in the Agricultural course. Winter and Spring terms, Senior year; 3 exercises per week, taken with the Juniors. Required of students in the Chemical course; and elective, open to students in the Biological course.*

XVIII. Electro-Chemistry.—*Winter term, Senior year; 3 exercises per week. Required of students in the Chemical course.*

XIX. Metallurgy.—Lectures and recitations. *Spring term, Senior year; 3 exercises per week. Required of students in the Chemical course.*

XX. Toxicology.—*Spring term, Senior year; 1 exercise of 2 hours per week. Required of students in the Chemical course.*

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

PHYSICS.

I. General Course.—Study of mechanics, hydraulics, pneumatics, and heat, *Fall term;* electricity and magnetism, *Winter term;* sound and light, *Spring term, Freshman year;* recitations, *2 exercises per week;* laboratory work, *1 exercise per week. Required of all candidates for a degree.*

II. Advanced Physics.—*Throughout the year;* recitations, *2 exercises per week;* laboratory work, *2 exercises per week. Required of all Sophomores in the Electrical Engineering Course, 3 exercises per week; Fall and Spring terms. Required of students in Mechanical Engineering course; and elective, open to students in other courses who have completed Physics I or its equivalent.*

III. Elementary Photography.—A course of lectures and recitations upon the optics and chemistry of photography, together with practical photographic work. *Spring term;* lectures, *2 exercises per week;* laboratory work, *1 exercise per week. Elective; open to all students.*

IV. Advanced Photography.—A course of lectures on photomicrography, the making of lantern slides and bromide enlargements, and the manipulation of the optical lantern. *Spring term;* lectures, *1 exercise per week;* laboratory work, *2 exercises per week. Elective; open to students who have taken course I.*

V. Sanitary Engineering.—A course of lectures on plumbing, heating, and ventilation, accompanied by laboratory work, given in alternate years with refrigeration and cold storage. *Throughout the year.* Lectures, *3 exercises per week, Fall term; lectures 2 exercises and laboratory work 1 exercise, Winter and Spring terms.* Elective; open to students who have taken Physics I or its equivalent. Required of students in the Electrical Engineering course.

ELECTRICAL ENGINEERING.

I. Advanced Electrical Work.—A course of lectures and laboratory work upon electrical measurements, testing of instruments,

dynamos and motors. *Throughout the year:* lectures, *1 exercise per week;* laboratory work, *2 exercises per week. Required of students in the Electrical Engineering course; and elective, open to students who have taken course II.*

II. Applied Electricity.—A course of lectures, accompanied by laboratory work upon modern practical applications of electricity. *Throughout the year;* lectures, *1 exercise per week;* laboratory work, *2 exercises per week. Required of students in Electrical Engineering course; and elective, open to students who have taken course III.*

PHYSIOGRAPHY.

I. Ward's Meteorology is used as a text-book. *Fall term, first year Preparatory; 3 exercises per week.*

II. Tarr's Physical Geography, with required reading from reference books. Laboratory work and excursions. *Fall term, Freshman year; 3 exercises per week: Winter term, Freshman year; 1 exercise per week. Required of all candidates for a degree.*

III. Mineralogy. See Chemistry, IX.

GEOLOGY.

Agricultural Geology.—Lectures and recitations. *Winter term, Senior year; 2 exercises per week. Required of Agricultural students, elective for Mechanical students.*

BOTANY.

I. Biology of Plants.—The general principles of biology are illustrated by our common plants. Laboratory, reading, and lectures. *Winter and Spring terms, Freshman year, and Fall term, Sophomore year; 3 exercises of two hours each per week. Required of students in the Agricultural, Biological, and Chemical courses.*

II. Fungi.—A study of fungi with special reference to para-

sitic forms of economic importance. Laboratory, reading and lectures. *Elective; open to students who have taken course I. Hours arranged with instructor.*

III. Histology.—Laboratory, reading and lectures. The laboratory work includes methods of imbedding, sectioning, staining, and mounting. *Elective; open to students who have taken course I. Hours arranged with instructor.*

IV. A study of the Spring Flora of Kingston, with practice in the identification of species. Given with course V in Zoölogy. The time is equally divided between the fauna and the flora. Field and laboratory, *Spring term; 3 exercises per week. Elective; open to students who have taken course I.*

By consulting the instructor other arrangements may sometimes be made for those desiring to elect work in botany.

ZOÖLOGY.

I. Biology of Animals.—Instruction in animal biology embraces a careful treatment through the laboratory, lecture and text-book, of the general anatomical, physiological, and developmental phenomena of animal life; the conditions and the causes of the broad manifestations of life, in the cell, in the individual, and in the race. The types studied are: Amœba, Paramœcium, Vorticella, Hydra, earthworm, fish, frog, cat, and man. Among the questions dealt with are the meaning of such terms as protoplasm, nutrition, growth, reproduction, life, death, the physiological division of labor, heredity, the views held by the different schools of evolutionists, the variation of species, effect of environment, natural selection, parasitism, and geographical distribution. In brief, it is a course adapted for the general student who wishes a knowledge sufficient to comprehend and to profit by the important current discussions bearing upon man's relations to his environment; at the same time, it gives a broad foundation for one who plans to enter a career in biological science, either as a teacher, investiga-

tor, or medical practitioner. *Winter and Spring terms, Sophomore year; 3 exercises per week. Required of Agricultural, Chemical, and Biological students.*

II. Zoölogy of the Farm Animals.—A study of the anatomy and physiology, comparative anatomy, embryology and phylogeny of the horse, cow, sheep, pig, and fowl. (Including reference to parasites and diseases.) *Fall and Winter terms, Junior year; 3 exercises per week. Required of Agricultural and Biological students.*

III. Comparative Anatomy of Invertebrated Animals, including the principles and practices of aquiculture. *Spring term, Junior year; 3 hours per week. Open to those who have passed in course I, and required of students in Biological course.*

IV. Journals.—Articles on biological subjects in current French and German scientific journals. *Throughout the Senior year; 2 hours per week. Required of students in Biological course.*

V. Spring Fauna and Flora of Kingston. *Spring term, Sophomore or Junior year; 3 exercises per week. Elective.*

VI. Normal Animal Histology. *Fall and Winter terms, Junior year; 3 exercises per week. Elective.*

VII. Entomology.—*Spring term, Junior year; 3 exercises per week. Elective.*

VIII. Animal Biological Problems.—Principles and practice of experimentation. *Spring term, Junior year; 3 exercises per week. Elective.*

IX. Comparative Physiology and Physiological Chemistry.—*Fall and winter terms, Senior year; 3 exercises per week. Elective.*

X. Comparative Physiology.—*Spring term, Senior year; 3 exercises per week. Elective; open only to those who have satisfactorily completed course IX.*

XI. Economic Entomology.—*Spring term, Senior year; 3 exercises per week. Elective.*

PSYCHOLOGY.

Elementary Course.—Lectures, recitations, simple laboratory experiments. *Winter and Spring terms; 3 exercises per week. Elective for Juniors and Seniors.*

AGRICULTURE.

I. Introduction.—Definition of terms; origin and necessity of agriculture; relations of agriculture to other industries; agriculture as an occupation; education for agriculture; the atmosphere and sunshine in relation to agriculture; plant and animal life in agriculture. *Spring term, Freshman year; 2 exercises per week. Required of Agricultural students.*

II. Soils.—*The origin, formation, and deposition of soils are studied under physiography; the composition, mechanical and chemical analysis under agricultural chemistry; the physical properties and relations under soil-physics.* Agricultural Soils.—Definition; function; variation; classification; adaptation; location; examination; faults; improvement and preparation; clearing land; grading; mixing soils; paring and burning; reclaiming land; irrigation. *Fall term, Sophomore year; two exercises per week for one-half term. Required of Agricultural students.*

III. Land Drainage (Waring).—Sources of water; necessity of drainage; kinds of drains; action of drains; planning system of drainage; drain tiles; construction and care of drains; cost and value of drains; sanitary effects of drainage. *Fall term, Sophomore year; 2 exercises per week for one-half term. Required of Agricultural students.*

IV. Agricultural Apparatus and Constructions.—Farm tools; implements; machines and vehicles; farm buildings; fences; roads and bridges—arrangement, construction, care, and mainte-

nance. *Winter term, Sophomore year; 3 exercises per week. Required of Agricultural students.*

V. Farm Fertilization.—Introduction; classification of manures, atmospheric, mineral, and organic; manurial sources of potash, lime, magnesia, soda, iron, phosphates and nitrogen salts; stable manure, composition and management; animal manures; liquid manure; farm sewage; guanos; fish fertilizers; animal refuse; peat; green manuring; sea-weeds; vegetable refuse and by-products; composts; divisors for manures; application and action of manures; valuation of manures. *Spring term, Sophomore year; 2 exercises per week. Required of Agricultural students.*

VI. Field crops.—Balancing of farm; rotation of crops; grass-land; wood-land; tillage-land; preparation of land, planting, cultivating, harvesting, storing, and disposal of crops; special consideration of the hay crop, fodder crops, Indian corn, potatoes, root crops, field and garden vegetables; weeds. *Fall term, Junior year; 2 exercises per week. Elective.*

VII. Breeds of Farm Animals (Curtis).—Origin, history, characteristics, and adaptability of the leading breeds of the horse, neat cattle, sheep, swine, and poultry; scoring; tracing pedigrees; breeders' associations. *Fall term, Senior year; 2 exercises per week. Elective.*

VIII. Breeding of Live Stock.—The principles of breeding; heredity; atavism; correlation; variation; fecundity; in-breeding; cross-breeding; relative influence of parents; sex; pedigree; form; selection; the breeding, care, and management of the horse, neat cattle, sheep, swine, and poultry. *Fall term, Senior year; 3 exercises per week. Elective.*

IX. History of Agriculture.—Agriculture in relation to civilization; fisher and hunter-folk; nomads; tillers of the soil; development of tillage; history of the plow; crop rotation; irrigation; fertilization; general and special farming; agricultural education;

agricultural experimentation; evolution of farming implements; the farm and the farmer to-day. *Fall term, Senior year; 2 exercises per week. Elective by special arrangement.*

X. Feeding of Farm Animals.—Principles of rational feeding; animal body, composition, processes of digestion, assimilation, and excrementation; feeding-stuffs, composition and digestibility; nutrients; feeding-standards; formulating rations; selection of feeding-stuffs; preparation of food; methods of feeding; utility of shelter; special feeding of horse, cow, sheep, swine, and poultry. *Winter term, Senior year; 3 exercises per week. Elective.*

XI. Dairy Husbandry.—Breeds and breeding of dairy cattle; barns and dairy buildings; milk production, composition; management, æration, pasteurization, sterilization, testing, transportation, and marketing; creaming; butter-making; cheese-making; milk-preservation, condensed milk, milk-sugar, etc., milk preparation for infants and invalids; dairy bacteriology. *Winter term, Senior year; 3 exercises per week. Elective.*

XII. Poultry Raising.—Domestic fowls—kinds, breeds, selection, and breeding; buildings—location and arrangement, construction and furnishing, ventilation, yards and parks; foods and feeding, care and management, production of eggs and flesh, fattening; dressing and marketing; incubation, natural and artificial; rearing; diseases and enemies; caponizing; records and accounts; special management of turkeys, geese, ducks, and pigeons. *Winter term, Senior year; 2 exercises per week. Elective.*

XIII. Agricultural Economics.—The mutual relations of agriculture and the body politic; the position of agriculture; independence of agriculture; State intervention; legislation; tariff; bounties; taxation; insurance; credit; rewards; census; moral and social aspects of agriculture; division and distribution of farms; size of farms; extensive and intensive farming; ownership of land; inheritance; nationalization of land; government lands; colonization; agricultural laborers, machinery, experimentation;

education; association; coöperation; press; agricultural improvement; reclamation and irrigation of land; diversification of products. *Winter term, Senior year; 2 exercises per week. Elective by special arrangement for students who have taken Agriculture IX.*

XIV. Agricultural Literature.—An opportunity to read and study in any special line of agriculture for which the student is prepared. Examination and consideration of the reports and bulletins of the agricultural experiment stations. *Winter term, Senior year; 2 exercises per week. Elective by special arrangement.*

XV. Farm Management.—Introduction and definitions; farming requisites; farm production and market relations; capital—permanent, floating, and perishable—distribution in land, buildings, apparatus, live stock, and supplies; labor and power; machinery; kind of farming; size of farm; system of farming; ownership or rental of farm; maintenance and management; returns and results; inventory, and balancing of accounts. *Spring term, Senior year; 5 exercises per week. Elective.*

XVI. Farm Accounts and Records.—The principles and methods of book-keeping in their application to the keeping of farm accounts; diary; note-book; calendar; records and accounts of special departments, crops, fields, and animals; calculations; estimates, and valuations; inventories. *Spring term, Senior year; 1 exercise per week. Elective.*

XVII. Farm Law.—The legal rights and liabilities of farmers; purchase and sale of farm, forms of deeds; rental of farm, terms of lease; boundaries and fences; overhanging trees; water rights and drainage; ways over the farm; rights in the highway; roadsides; live stock; dogs; game; trespass; theft; fires; insurance; employing laborers; liability of employer and employed; contracts; mortgages; notes; taxes; exchange, sale, and purchase; contagious diseases of live stock and crops. *Spring term, Senior year; 1 exercise per week. Elective by special arrangement.*

XVIII. Apiculture.—A study of the habits, care, breeding,

and management of the honey-bee, with practical work in the apiary. *Spring term, Senior year; 1 exercise per week. Elective by special arrangement.*

XIX. Agricultural Debate.—Discussion in the form of regular parliamentary debates upon leading agricultural questions. *Spring term, Senior year; 1 exercise per week. Elective.*

XX. Agricultural Experimentation.—A study of the objects, principles, and methods of agricultural experimentation. Opportunity will be given for practical participation in the work of the experiment station to those students who arrange to continue this work through the experimental season. *Spring term, Senior year; 2 exercises per week. Elective by special arrangement.*

HORTICULTURE.

I. Principles of Horticulture.—A discussion of fundamental principles underlying horticultural operations in orchard, garden, and greenhouse. *Fall term, Junior year; 2 recitations and 1 laboratory period per week. Required of Agricultural students.*

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

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

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.*

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; 3 exercises per week. Elective.*

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 course I in botany. *Fall term; 2 exercises per week.* Elective.*

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.*

ENGLISH.

I. Elementary Course.—Grammar; composition; study of college preparatory English. *Fall term, first year; 6 exercises per week; Winter and Spring terms, 5 exercises per week; throughout the second year, 3 exercises per week. Required of all students in the Preparatory department.*

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, with essays and various short papers. *Throughout the Sophomore year; 2 exercises per week. Required of all candidates for a degree.*

IV. General English literature.—Topical study. Essays and collateral reading required. *Throughout the Junior year; 2 exercises per week. Required of all candidates for a degree.*

V. Special English Literature.—Study of special periods and

* Courses VI and VII may be combined to make a three-hour course.

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.

I. Elementary Course. — Grammar, dictation, conversation, reading of easy prose and poetry. *Fall and Winter term, Freshman year; 5 exercises per week: Spring term; 3 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.— *Winter and Spring terms; 3 exercises per week. Open to students who have taken courses I and II or their equivalent, and required of all candidates for a degree who do not offer French.*

IV. Goethe's Meisterwerke (Bernhardt).—*Fall term; 3 exercises per week. Elective; open to those who have taken courses I-III or their equivalent.*

V. Study of Schiller or Heine.— *Winter term; 3 exercises per week. Elective; open to those who have taken courses I-III or their equivalent.*

VI. Study of Freytag.—*Spring term; 3 exercises per week. Elective; open to those who have taken courses I-III or their equivalent.*

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

FRENCH.

I. Elementary Course. — Grammar, dictation, conversation, reading of easy prose and poetry. *Fall and Winter terms, Freshman year; 5 exercises per week: Spring term, 3 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.—*Throughout the year; 3 exercises per week. Elective; open to students who have taken courses I and II.*

IV. Lyrics of the Nineteenth Century.—*Fall term; 3 exercises per week. Elective; open to those who have taken courses I and II or their equivalent.*

V. Study of Victor Hugo.— *Winter term; 3 exercises per week. Elective; open to those who have taken courses I and II or their equivalent.*

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

SPANISH.

I. Elementary Course.—Grammar, dictation, conversation, letter-writing, commercial forms, reading of easy prose and poetry. *Throughout the year; 3 exercises per week. Elective.*

II. Advanced Course.—Continuation of course I. Reading of more difficult texts. *Throughout the year; 3 exercises per week. Elective.*

LATIN.

I. Elementary Course.—Grammar, composition, easy reading *Throughout the year; 5 exercises per week. Required of students in the Preparatory department.*

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

HISTORY AND POLITICAL SCIENCE.

I. General History.—*Throughout the year; 3 exercises per week. Required of all students in the Preparatory department.*

II. Constitutional and Political History of the United States. Based on "Epochs of American History."—Lectures, recitations, readings, and reports. *Throughout the year; 3 exercises per week. Elective for Sophomores and Juniors.*

III. English History.—This subject forms a part of the required work in Junior English. (See English IV.)

IV. Modern European History from the Beginning of the French Revolution.—*Throughout the year; 3 exercises per week. Elective for Juniors and Seniors.*

V. Science of Government.—Town, city, country, state, and United States. Their origin, development, and practices. Critical analysis of the Constitution of the United States. Lectures, recitations, and reports. *Fall term; 3 exercises per week. Required of all candidates for a degree.*

VI. Political Economy.—General principles. Based on Walker's Advanced Course.—Lectures, recitations, discussions, readings, essays. Consideration of present day problems. *Winter and Spring terms, Senior year; 3 exercises per week. Required of all candidates for a degree.*

MATHEMATICS.

I. Arithmetic.—Mensuration, the metric system, cube root, square root, proportion, and general review. *Preparatory department; Fall term, first year; 5 exercises per week.*

II. Algebra (Hall and Knight).—The fundamental operations,

addition, subtraction, multiplication, division, of algebraic quantities; factoring and its applications; the solution of simple equations with one or more unknown quantities; involution; evolution; the theory of exponents; the solution of radical and quadratic equations; arithmetical and geometrical progression; the binomial theorem. *Preparatory department; Winter and Spring terms, first year; 5 exercises per week; 4 exercises per week throughout the second year.*

III. Plane Geometry (Phillips and Fisher).—Rectilinear figures; the circle; measurements of angles; the theory of proportion; similar figures; regular polygons; areas of polygons; the measurement of the circle; original demonstrations. *Preparatory department; second year; 3 exercises per week.*

IV. College Algebra (Taylor).—The theory of limits; differentiation; development of functions in series; permutations and combinations; determinants. *Fall term, Freshman year; 4 exercises per week. Required of all candidates for a degree.*

V. Plane Trigonometry (Wentworth).—The derivation of the fundamental formulas; logarithms; the solution of right and oblique triangles; practical problems. *Winter term, Freshman year; 3 exercises per week. Required of all candidates for a degree.*

VI. Solid Geometry (Phillips and Fisher).—Lines and planes in space; diedral angles; polyhedral angles; polyhedrons; the cylinder, cone, and sphere; measurement of the cylinder, cone, and sphere; numerical examples and original demonstrations. *Spring term, Freshman year; 3 exercises per week. Required of all candidates for a degree.*

VII. Analytical Geometry (Loney).—Coördinate systems; the point; the line; relation between different coördinate systems; the equation of the first degree, the straight line; the equation of the second degree, the conic sections; higher plane curves. *Throughout the Sophomore year; 3 exercises per week. Required*

of students in the Mechanical and Electrical Engineering courses. Elective for other students.

VIII. Calculus (Osborne).—The differentiation of algebraic, trigonometric, logarithmic, exponential, and anti-trigonometric functions. Integration of fundamental forms; definite integrals; applications to geometry and mechanics; successive differentiation; successive integration with applications; evaluation of indeterminate forms; the development of functions in series; maxima and minima; change of the independent variable; integration of rational fractions; integration by rationalization; integration by parts and by series; curve tracing. *Throughout the Junior year; 3 exercises per week. Required of students in the Mechanical and Electrical Engineering courses. Elective for other students.*

IX. Differential Equations.—*First half the Senior year; 3 exercises per week. Required of students in the Electrical Engineering course. Elective for other students who have completed course VII.*

X. Analytical Mechanics.—*Second half the Senior year; 3 exercises per week. Required of students in the Electrical Engineering course. Elective for other students who have completed course VIII.*

XI. Courses in synthetic geometry, projective geometry, theory of equations, modern analytical geometry, theory of functions, may be arranged for by consultation with the head of the department.

CIVIL ENGINEERING.

I. Plane Surveying (Raymond).—Elementary course, field work, recitation, and plotting. Use of compass, transit, and levels; adjustment of instruments. *Fall term, Sophomore year; 1 exercise per week of classroom work, 2 exercises of three hours each of field work per week. Required of Agricultural students. Elective, for Chemical students.*

II. Land drainage. (See Agriculture III.) *Required of Agricultural students.*

III. Civil Engineering.—Land, topographic, and stadia, surveying; the study of the use of engineer's tables. *Spring term, Sophomore year; 4 exercises per week. Required of Agricultural students.*

IV. Road construction and Leveling (Spalding).—Location and construction of roads; mechanical structures; earth, gravel, broken stone, paved and macadam roads. *Fall term; Junior year; 3 exercises of text-book work and 1 exercise of three hours of field work per week. Elective; open to Agricultural students.*

MECHANICS.

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

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

III. Mechanical Drawing.—Descriptive geometry. *Spring term, Sophomore year; 3 periods of two hours each per week. Required for degree in Mechanical and Electrical Engineering.*

IV. Mechanical Drawing.—Machine details and parts, tracing, blue printing. *Fall term, Junior year; 3 periods of two hours each per week. Required for degree in Mechanical and Electrical Engineering.*

V. Mechanical Drawing.—Elements of machine design. *Winter term, Junior year; 3 periods of two hours each per week. Required for a degree in Mechanical Engineering.*

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

VII. Mechanical Drawing.—Elements of topographical drawing as introductory to land surveying. *Winter term, Sophomore year; 1 period of 2 hours per week. Required for a degree in Agriculture.*

VIII. Wood-working.—Use of tools, bench work, and carpentering. *Winter term, Freshman year; 2 exercises of 3 hours each per week. Required for a degree in Mechanical and Electrical Engineering and Agriculture.*

IX. Wood-working. — Wood-turning and pattern-making. *Spring term, Freshman year; 3 exercises of 3 hours each per week. Required for a degree in Mechanical and Electrical Engineering.*

X. Shopwork.—Foundry practice, principles of moulding and casting. *Fall term, Sophomore year; 2 exercises of 2 hours each per week. Required for a degree in Mechanical Engineering.*

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

XII. Shopwork.—Forging. Short course. *Spring term, Freshman year; 1 exercise of 3 hours per week. Required for a degree in Agriculture.*

XIII. Machine-shop Practice. — *Winter and Spring terms, Junior year; 2 exercises of 3 hours each per week. Required for a degree in Mechanical and 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. *Elective in the Preparatory department and the College; 1 exercise of 3 hours per week.*

XV. Steam Boilers.—Types, construction, strength, uses, and management. *Fall term, Junior year; 2 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; 4 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.*

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 each 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 and Electrical Engineering.*

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

THE STUDIO.

XXIII. Mill Construction.—Lectures upon the structural development and design of shops and mills. *Fall term, Senior year; 3 exercises per week. Required for a degree in Mechanical and Electrical Engineering.*

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

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. Required for a degree in Mechanical Engineering.*

NOTE.—Students may elect studies in other courses, if fully prepared and time allows.

DRAWING AND MODELING.

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

II. Drawing in Charcoal from Still Life and the Cast.—*Spring term, Freshman year; 3 exercises of 2 hours per week. Elective; open to students in Chemical and Biological courses.*

III. Drawing in Charcoal from Still Life and the Cast.—*Fall term, Sophomore year; 3 exercises of 2 hours per week. Elective; open to students in the Biological course who have taken course I. Spring term, Sophomore year; open to students in Biological course.*

IV. Modeling.—*Fall term, Sophomore year; 3 exercises of 2 hours per week. Elective; open to students in Chemical and Biological courses.*

STENOGRAPHY.

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

II. Advanced Course.—Dictation, including the following: business letters, legal documents, terms used, deeds, wills, mortgages, contracts, declarations, etc.; hints useful in office work; general dictation. *Throughout the year; 3 periods per week. Elective.*

THE PREPARATORY DEPARTMENT

OF THE

Rhode Island College of Agriculture and Mechanic Arts.

Students in the Preparatory Department are placed in one of the following classes, according to their attainments.

The object of this course is to prepare students from the country schools for the college courses.

FALL TERM.

First Year Preparatory.		Second Year Preparatory.	
Advanced Arithmetic	5	Algebra	4
English	6	Geometry	3
General History	3	English	3
Physiography	2	Latin	5

WINTER TERM.

Algebra	5	Algebra	4
English	5	Geometry	3
General History	3	English	3
Physics	3	Latin	5

SPRING TERM.

Algebra	5	Algebra	4
English	5	Geometry	3
General History	3	English	3
Physics	3	Latin	5

Students able to take afternoon work may elect one of the following subjects: carpentering, freehand drawing, wood-carving, practical agriculture, stenography and typewriting.

Students desiring special work in Agriculture or Mechanics, who are not prepared to enter the regular courses leading to a degree, may combine with work in the preparatory department such courses in Agriculture and Mechanics as may fit their especial needs. The successful completion of such a special course will lead to a certificate covering the work completed.

THE COURSES OF STUDY LEADING TO A DEGREE.

FRESHMAN.

Fall Term.

Physiography II	3
Physics I	3
Mathematics IV	4
English II	2
German I	5
Freehand Drawing I	1

Winter Term. / Spring Term.

Agriculture.		Mechanical Engineering.		Electrical Engineering.		Chemistry.		*Biology.	
Mathematics V	3	Mathematics V	3	Mathematics V	3	Mathematics V	3	Mathematics V	3
Physics I	3	Physics I	3	Physics I	3	Physics I	3	Physics I	3
Physiography II	1	Physiography II	1	Physiography II	1	Physiography II	1	Physiography II	1
English II	2	English II	2	English II	2	English II	2	English II	2
German I	5	German I	5	German I	5	German I	5	German I	5
Mechanics VIII	2	Mechanics VIII	2	Mechanics VIII	2	Botany I	3	Botany I	3
Botany I	3	Mechanics I	2	Mechanics I	1	Military Drill.		Military Drill.	
Military Drill.		Military Drill.		Military Drill.					
Mathematics VI	3	Mathematics VI	3	Mathematics VI	3	Mathematics VI	3	Mathematics VI	3
Physics I	3	Physics I	3	Physics I	3	Physics I	3	Physics I	3
English II	2	English II	2	English II	2	English II	2	English II	2
German I	3	German I	3	German I	3	German I	3	German I	3
Mechanics I	1	Mechanics I	2	Mechanics I	2	Botany I	3	Botany I	3
Botany I	3	Mechanics IX	3	Mechanics IX	3	Military Drill.		Freehand Drawing II.	3
Agriculture I	2	Military Drill.		Military Drill.		ELECTIVES.		Military Drill.	
Military Drill.						(*One to be chosen.*)			
						Freehand Drawing II.	3		
						Mechanics I	3		

*At some time during the course, besides the required biological subjects, the equivalent of three hours for thirty-six weeks must be elected from the department of Zoölogy or Botany.

History must be elected for three hours for thirty-six weeks in either the Sophomore or Junior year.

The student is required to take three years' work in modern language. Two of these years must be German, and one French.

SOPHOMORE.

Fall Term.

Agriculture.	Mechanical Engineering.	Electrical Engineering.	Chemistry.	Biology.
Chemistry I. 4	Chemistry I..... 4	Chemistry I..... 4	Chemistry I. 4	Chemistry I. 4
English III..... 2	English III..... 2	English III..... 2	English III.... 2	English III..... 2
German II..... 3	German II..... 3	German II..... 3	German II..... 3	German II..... 3
Botany I. 3	Physics II..... 3	Physics II..... 4	Botany I 3	Botany I..... 3
Civil Engineering I..... 3	Mathematics VII 3	Mathematics VII..... 3	Military Drill.	Military Drill.
Agriculture II, III..... 2	Mechanics X.... 2	Military Drill.	ELECTIVES.	ELECTIVES.
Military Drill.	Military Drill.		*(Each subject three times a week, two to be chosen.)*	*(Each subject three times a week, two to be chosen.)*
			FIRST GROUP.	FIRST GROUP.
			(Only one of this group may be taken.)	*(Only one of this group may be taken.)*
			History II.	History II. French I, II.
			French. German.	SECOND GROUP.
			SECOND GROUP.	*(One of this group must be and two may be chosen.)*
			(One of this group must be and two may be taken.)	Physics V. *(Given in alternate years.)* Physics II.
			Physics II, V. Civil Engineering I. Mathematics VII.	Mathematics VII.
			Agriculture II, III. Freehand drawing III.	Horticulture I, IV.
				Freehand Drawing III.
				Modeling IV.

Winter Term.

Agriculture.	Mechanical Engineering.	Electrical Engineering.	Chemistry.	Biology.
Chemistry I..... 4	Chemistry I..... ... 4	Chemistry I. 4	Chemistry I. 4	Chemistry I. 4
Chemistry II..... 2	Chemistry II..... 2	Chemistry II... 2	Chemistry II.... 2	Chemistry II..... 2
English III..... 2	English III.... 2	English III..... 2	English III..... 2	English III.... 2
German III..... 3	German III..... 3	German III..... 3	German III..... 3	German III..... 3
Zoölogy I..... 3	Mathematics VII..... 3	Physics II. 4	Zoölogy I..... 3	Zoölogy I..... 3
Mechanics VII..... 1	Mechanics II..... 3	Mathematics VII..... 3	Military Drill.	Military Drill.
Agriculture IV..... 3	Military Drill.	Military Drill.	ELECTIVES.	ELECTIVES.
Military Drill.			*(Each subject three times a week, one to be chosen.)*	*(Each subject three times a week, one to be chosen.)*
			History II. French I, II.	History II. French I, II.
			German. Physics II.	Botany. Physics II.
			Mathematics VII.	Mathematics VII.
				Horticulture V.

Spring Term.

Agriculture.	Mechanical Engineering.	Electrical Engineering.	Chemistry.	Biology.
Chemistry II..... 3	Chemistry II.... 3	Chemistry II.... 3	Chemistry II..... 3	Chemistry II..... 3
English III..... 2	English III.... 2	English III..... 2	English III..... 2	English III..... 2
German III..... 3	German III 3	German III..... 3	German III..... 3	German III..... 3
Zoölogy I..... 3	Physics II..... 3	Physics II..... 4	Zoölogy I..... 3	Zoölogy I..... 3
Civil Engineering III.... 4	Mathematics VII..... 3	Mathematics VII..... 3	Chemistry III..... 3	Chemistry IV..... 3
Agriculture V..... 2	Mechanics III. 3	Military Drill.	Chemistry IV..... 3	Military Drill.
Military Drill.	Military Drill.		Military Drill.	ELECTIVES.
			ELECTIVES.	*(Each subject three times a week, one to be chosen.)*
			(Each subject three times a week, one to be chosen.)	History II. French I, II.
			History II. French I, II.	Botany. Chemistry III.
			Physics II, III.	Physics II, III.
			Mathematics VII.	Mathematics VII.
			Agriculture V.	Zoölogy V. or Botany IV.
				Freehand Drawing III.
				Horticulture V.

JUNIOR.

	Agriculture.	Mechanical Engineering.	Electrical Engineering.	Chemistry.	Biology.
Fall Term.	Chemistry V..... 3 English IV..... 2 Zoölogy II..... 3 Zoölogy VII..... 3 Horticulture I..... 3 Chemistry VI..... 4 Military Drill.	Chemistry V..... 2 English IV..... 2 Mathematics VIII..... 3 Electrical Engineering I. 3 Mechanics IV..... 3 Mechanics XI..... 2 Mechanics XV..... 2 Military Drill.	Chemistry V..... 2 English IV..... 2 Mathematics VIII..... 3 Electrical Engineering I. 3 Mechanics IV..... 2 Mechanics XV..... 2 Military Drill. ELECTIVES. *(Each subject three times a week, one to be chosen.)* Civil Engineering I. History II.	Chemistry V..... 5 English IV..... 2 Chemistry VI..... 4 Military Drill. ELECTIVES. *(Each subject three times a week, two to be chosen.)* FIRST GROUP. *(Only one of this group may be taken.)* History II, IV. French. German. SECOND GROUP. *(One of this group must be and two may be taken.)* Zoölogy II. Botany. Physics II. Mathematics VIII. Horticulture I.	Chemistry V..... 3 English IV..... 2 Chemistry VI..... 4 Zoölogy II..... 3 Military Drill. ELECTIVES. *(Each subject three times a week, two to be chosen.)* FIRST GROUP. *(Only one of this group may be taken.)* History II, IV. French. German. SECOND GROUP. *(One of this group must be and two may be taken.)* Botany. Horticulture VI, IV. Zoölogy VI. Mathematics VIII. Physics V.
Winter Term.	English IV..... 2 Chemistry XVII..... 3 Military Drill. Elective.....12	English IV..... 2 Mathematics VIII..... 3 Electrical Engineering I. 3 Mechanics V..... 3 Mechanics XIII..... 2 Mechanics XVI..... 4 Military Drill.	English IV..... 2 Mathematics VIII..... 3 Electrical Engineering I. 3 Mechanics XIII..... 2 Mechanics V..... 3 Military Drill. ELECTIVES. *(Each subject three times a week, one to be chosen.)* Mathematics XI. (Synthetic Geometry.) History II.	English IV..... 2 Chemistry VI..... 4 Chemistry VIII..... 3 Chemistry V..... 3 Chemistry IX..... 3 Military Drill. ELECTIVES. *(Each subject three times a week, one to be chosen.)* History II, IV. French. German. Psychology. Physics II. Mathematics VIII.	English IV..... 2 Chemistry VI..... 4 Chemistry V..... 3 Zoölogy II..... 3 Military Drill. ELECTIVES. *(Each subject three times a week, two to be chosen.)* FIRST GROUP. *(Only one of this group may be taken.)* History II, IV. French. German. SECOND GROUP. *(One of this group must be and two may be taken.)* Botany. Chemistry IX, VIII. Zoölogy VI. Mathematics VIII.
Spring Term.	English IV..... 2 Chemistry XVII..... 3 Military Drill. Elective.....12	English IV..... 2 Mathematics VIII..... 3 Electrical Engineering I. 3 Mechanics XIII..... 2 Mechanics XVII..... 3 Mechanics XVIII..... 4 Military Drill.	English IV..... 2 Mathematics VIII..... 3 Electrical Engineering I. 3 Mechanics XIII..... 2 Mechanics XVII..... 3 Military Drill. ELECTIVES. *(Each subject three times a week, one to be chosen.)* Physics III. History II.	English IV..... 2 Chemistry VII..... 3 Chemistry XII..... 3 Chemistry V..... 5 Chemistry X..... 1 Chemistry XI..... 1 Military Drill. ELECTIVES. *(Each subject three times a week, one to be chosen.)* History II, IV. French. German. Psychology. Physics II. Zoölogy III. Mathematics VIII.	English IV..... 2 Chemistry V..... 2 Zoölogy III..... 3 Military Drill. ELECTIVES. *(Each subject three times a week, three to be chosen.)* FIRST GROUP. *(Only one of this group may be taken.)* History II, IV. French. German. SECOND GROUP. *(Two of this group must be and three may be taken.)* Chemistry V, VII. Botany. Zoölogy VII, VIII, V. Physics IV. Mathematics VIII.

SENIOR.

	Agriculture.	Mechanical Engineering.	Electrical Engineering.	Chemistry.	Biology.
Fall Term.	Political Science V..... 3 Chemistry XVII..... 3 Military Drill. Elective.....11	Political Science V..... 3 Mechanics VI..... 2 Mechanics XIX..... 4 Mechanics XXII..... 3 Mechanics XXIII..... 3 Military Drill.	Political Science V..... 3 Electrical Engineering II 3 Physics V..... 3 Mechanics XXIII..... 3 Thesis. Military Drill. ELECTIVES. (*Each subject three times a week, one to be chosen.*) Mathematics IX. Mathematics XI. History II, IV.	Political Science V..... 3 Chemistry XIII..... 3 Chemistry XIV..... 6 Chemistry XII..... 3 Chemistry XV..... 3 Thesis..... Military Drill. ELECTIVES. (*Each subject three times a week, one to be chosen.*) History II, IV. French. German.	Political Science V..... 3 Zoölogy IV..... 2 Thesis. Military Drill. ELECTIVES. (*Each subject three times a week, three to be chosen.*) FIRST GROUP. (*Only one of this group may be taken.*) History II, IV. French II. German III. English V, VI. SECOND GROUP. (*Two of this group must be and three may be taken.*) Chemistry XIV, XIII. Botany. Zoölogy IX.
Winter Term.	Political Science VI..... 3 Military Drill. Elective.....12	Political Science VI..... 3 Mechanics XX..... 4 Mechanics XXII..... 3 Mechanics XXIV..... 3 Thesis. Military Drill.	Political Science VI..... 3 Electrical Engineering II 3 Physics V..... 3 Thesis. Military Drill. ELECTIVES. (*Each subject three times a week, one to be chosen.*) Mathematics IX, X. Psychology. History II, IV.	Political Science VI..... 3 Chemistry XIII..... 3 Chemistry XVI..... 3 Chemistry XVII..... 3 Chemistry XV..... 3 Chemistry XVIII..... 3 Thesis. Military Drill. ELECTIVES. (*Each subject three times a week, one to be chosen.*) History II, IV. French. German. Psychology.	Political Science VI..... 3 Zoölogy IV..... 2 Thesis. Military Drill. ELECTIVES. (*Each subject three times a week, three to be chosen.*) FIRST GROUP. (*Only one of this group may be taken.*) History II, IV. French. German. English V, VI. SECOND GROUP. (*Two of this group must be and three may be taken.*) Chemistry XIII, XVII. Zoölogy IX. Botany. Psychology.
Spring Term.	Political Science VI..... 3 Military Drill. Elective.....14	Political Science VI..... 3 Mechanics XXI..... 4 Mechanics XXII..... 3 Mechanics XXV..... 3 Thesis. Military Drill.	Political Science VI..... 3 Electrical Engineering II 3 Physics V..... 3 Inspection Excursions. Thesis. Military Drill. ELECTIVES. (*Each subject three times a week, one to be chosen.*) Mathematics X. Psychology. History II, IV. Physics IV.	Political Science VI..... 3 Chemistry XIX..... 3 Chemistry XVI..... 3 Chemistry XVII..... 3 Special Chemistry..... 3 Chemistry XX..... 1 Thesis. Military Drill. ELECTIVES. (*Each subject three times a week, one to be chosen.*) History II, IV. French. German. Psychology.	Political Science VI..... 3 Zoölogy IV..... 2 Thesis. Military Drill. ELECTIVES. (*Each subject three times a week, three to be chosen.*) FIRST GROUP. (*Only one of this group may be taken.*) French. English V, VI. German. History II, IV. SECOND GROUP. (*Two of these must be and three may be taken.* Chemistry XVII. Botany. Physics IV. Zoölogy X. Psychology.

SCHOOL OF CORRESPONDENCE.

For the benefit of those who cannot attend its classes the college will undertake to conduct correspondence courses, suited to the individual, in lines of study connected with the farm or farm home, outlining a course of reading, supervising the work done, and rendering such assistance as is possible. There is no charge for tuition, the only expense to the student being that of books and postage. Arrangements have been made with the Orange Judd Co., 52 Lafayette Place, N. Y., whereby books can be obtained at reduced rates by members of the school. Further information and enrollment cards will be furnished upon application.

Address, SCHOOL OF CORRESPONDENCE,
RHODE ISLAND COLLEGE,
KINGSTON, R. I.

THE NATURE GUARD.

The Nature Guard is an organization of young people formed for the purpose of awakening in its members a livelier interest in the things of out-door life. Its primal object is to stimulate observation and to furnish a key to the coyly hidden secrets of nature, while underneath and behind it all is the desire to instil a love of nature and country life.

The movement began in October, 1899, and the following bands had been enrolled previous to the expiration of the winter term of 1900.

Name of Band.	Number of Members.
Agassiz Band, Woonsocket, R. I.	18
Altus Band, Altus, Pa.	9
Argus Band, Woonsocket, R. I.	30
Bright-Eyed Band, Westerly, R. I.	33
Buckfield Nature Band, Buckfield, Me	28
Clover-Leaf Band, Exeter, R. I.	9
Clover-Leaf Band, Mansfield, Pa.	20
Daisy Band, Phenix, R. I.	27
Daisy Band, Providence, R. I.	29
Forest Band, Westerly, R. I	35
Laurel Lake Band, Kingston, R. I.	20
Look About You Club, Providence, R. I.	44
Look Out Band, Tiverton, R. I.	15
Mary Dickerson Band, Providence, R. I	29
Mayflower Band, Madison, Conn.	13
Mother Nature's Students, Westerly, R. I.	26
Nature Observers, Providence, R. I.	31
Sylvan Band, Sylvania, Pa.	21
Washington Band, North Scituate, R. I.	6
Waterton Band, Providence, R. I.	18
Wide Awake Band, Phenix, R. I.	15
Wide Awake Band, Yantic, Conn	10
Woodland Band, Woonsocket, R. I.	25
Young Observers of Nature, Providence, R. I.	35

For further information, address

THE NATURE GUARD,

RHODE ISLAND COLLEGE,

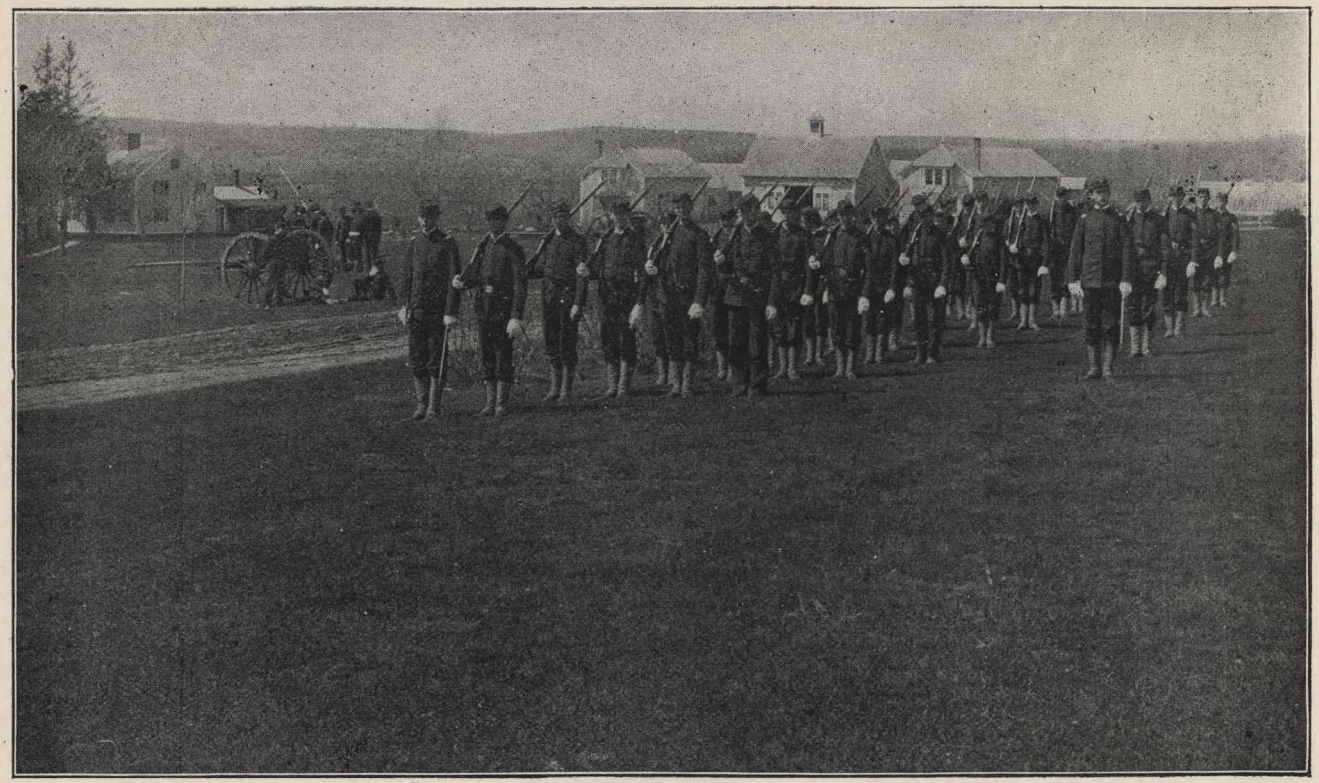
KINGSTON, R. I.

MILITARY ORGANIZATION.

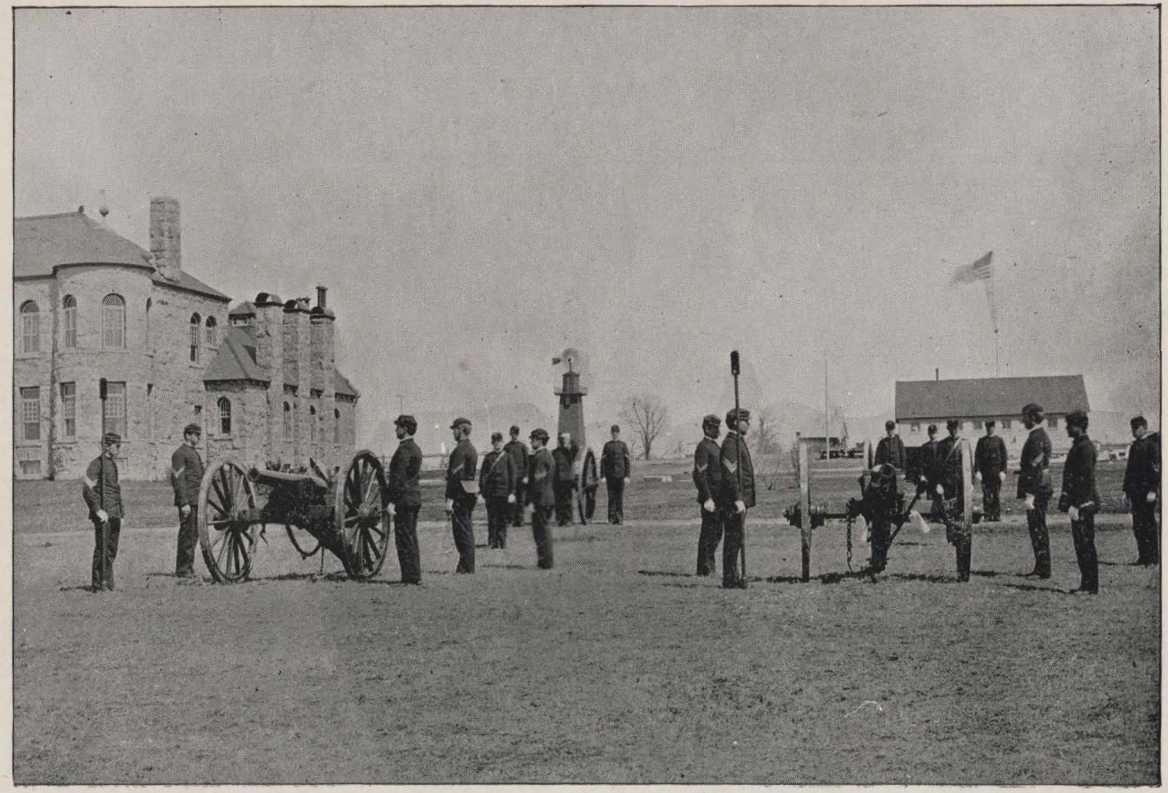
COMPANY A.

R. N. SOULE, Captain.

C. N. WHEELER.....First Lieutenant.
J. R. ELDRED.....Second Lieutenant.
H. M. BRIGHTMAN.....Third Lieutenant.
A. A. DENICO.....Sergeant.
C. S. BURGESS.....Sergeant.
H. D. SMITH.....Sergeant.
L. G. K. CLARNER, Jr.....Sergeant.
J. WILBY.....Sergeant.
B. J. CORNELL.....Corporal.
A. L. REYNOLDS.....Corporal.
O. N. FERRY.....Corporal.
R. W. PITKIN.....Corporal.
A. E. MUNRO.....Battalion Adjutant (Capt.).
L. CLARKE.....Bugler.



INFANTRY DRILL.



ARTILLERY DRILL.

RELIGIOUS ORGANIZATIONS.

Young Men's Christian Association.

W. M. HOXSIE.....President.
H. D. SMITH.....Vice-President.
R. W. PITKIN.....Cor. Secretary. / Rec. Secretary.
L. G. K. CLARNER, JR. .....Treasurer.

Young Women's Christian Union.

B. D. TUCKER.....President.
E. S. RODMAN.....Vice-President.
E. E. DAWLEY.....Secretary.
L. A. COOKE.....Treasurer.

ALUMNI ASSOCIATION.

H. E. B. CASE, President.

GEORGE A. RODMAN, Secretary, Woonsocket, R. I.

J. F. KNOWLES, Treasurer, Kingston, R. I.

STUDENTS.

Post Graduates.

Arnold, Sarah Estelle	Wakefield,	R. I.
Cargill, Edna Maria	Abott Run,	"
Flagg, Martha Rebecca	Kingston,	"
George, Lillian Mabelle	Amesbury,	Mass.
Greenman, Adelaide Maria	Kingston,	R. I.

Graduates of 1899.

Bosworth, Alfred Willson, Sci	Boston,	Mass.
Brooks, Ralph Ordway, Sci	Somerville,	"
George, Lillian Mabelle, Sci	Amesbury,	"
Harvey, Mildred Wayne, Sci	Allenton,	R. I.
Kenyon, Blydon Ellery, Agr	Wood River Junc.,	"
Knowles, Carroll, Mech	Kingston,	"
Knowles, Harry, Sci	Point Judith,	"
Ladd, Merrill Augustus, Mech	Bay Shore,	N. Y.
Morrison, Clifford Brewster, Sci	Pawtucket,	R. I.
Owen, William Frazier, Mech	Cannonsville,	N. Y.
Payne, Ebenezer, Sci	Lyons Farms,	N. J.
Phillips, Walter Clark, Mech	Lafayette,	R. I.
Reynolds, Robert Spink, Mech	Wickford,	"
Rice, Minnie Elizabeth, Sci	Wickford,	"
Sherman, Abbie Gertrude, Sci	Kingston,	"
Sherman, George Albert, Mech	West Kingston,	"
Thompson, Sally Rodman, Sci	Wakefield,	"

Seniors.

Brightman, Henry Maxon, Sci	Westerly,	R. I.
Cross, Charles Clark, Mech	Narragansett Pier,	"
Cross, Morton Robinson, Sci	Wakefield,	"
Eldred, John Raleigh, Mech	Kingston,	"
Fison, Gertrude Sarah, Sci	Peace Dale,	"
Fry, John Joseph, Sci	East Greenwich,	"
Goddard, Edith, Sci	Brockton,	Mass.
Kenyon, Amos Langworthy, Agr	Wood River Junc.,	R. I.
Munro, Arthur Earle	Quonochontaug,	"
Soule, Ralph Nelson	East Greenwich,	"
Steere, Anthony Enoch, Mech	Chepachet,	"
Stillman, Lenora Estelle, Sci	Kenyon,	"
Tucker, Bertha Douglass, Sci	Swansea Centre,	Mass.
Wheeler, Charles Noyes, Sci	Shannock,	R. I.
Wilson, Joseph Robert, Mech	Allenton,	"

Juniors.

Briggs, Nellie Albertine, Sci	Shannock,	R. I.
Burgess, Charles Stuart, Mech	Providence,	"
Clarner, Louis George Karl, Jr., Sci	Pawtucket,	"
Dawley, Edna Ethel, Sci	Kenyon,	"
Dawley, William James, Agr	Kenyon,	"
Denico, Arthur Albertus, Sci	Narragansett Pier,	"
James, Ruth Hortense, Sci	Kenyon,	"
Reuter, Louis John, Mech	Westerly,	"
Sherman, Arthur Almy, Mech	Portsmouth,	"
Sherman, Anna Brown, Sci	Kingston,	"
Sherman, Elizabeth Agnes, Sci	West Kingston,	"
Smith, Howard Dexter, Sci	North Scituate,	"
Steere, Roena Hoxsie, Sci	Providence,	"
Wells, Emily Potter, Sci	Kingston,	"
Wilby, John, Sci	Kingston,	"

Sophomores.

Brayton, Bertha May, Biol	Fiskeville,	R. I.
Clarke, Latham, Biol	West Kingston,	"
Ferry, Oliver Needham, Mech	Palmer,	Mass.
Kenyon, Charles Franklin, Mech	Point Judith,	R. I.
Pitkin, Robert William, Mech	Providence,	"
Reynolds, Arthur Leone, El. Eng	Athol,	Mass.

Freshmen.

Barber, Kate Grace	Carolina,	R. I.
Bell, Louis Frederick, Jr	Wakefield,	"
Brennan, Thomas	Peacedale,	"
Church, Albert Sumner	Narragansett Pier,	"
Clarner, John Adam	Pawtucket,	"
Cooke, Laura Marion	Narragansett Pier,	"
Crandall, Daniel Alva	Canonchet,	"
Crandall, Elverton Jewett	Adamsville,	"
Cross, Frederick Lawrence	Narragansett Pier,	"
Cross, John Gardiner	Narragansett Pier,	"
Daniels, Robert Keeney	Glastonbury,	Conn.
Duffy, John Edward	Riverpoint,	R. I.
Goddard, Warren, Jr	Brockton,	Mass.
Hoxsie, Fred Clifford	Woodville,	R. I.
Hoxsie, Willard Munroe	Quonochontaug,	"
Keefer, Edith L	Oceanus,	N. Y.
Kent, Raymond Warren	Woonsocket,	R. I.
Loomis, William	Glastonbury,	Conn.
MacKnight, Robert Bruce	Adamsville,	R. I.
Peckham, Arthur Noyes	Kingston,	"
Quinn, Mary Louise	Wakefield,	"
Reynolds, Walter Florus	Brockton,	Mass.
Rice, George Henry	Wickford,	R. I.
Rodman, Edith Stoughtenburg	Kingston,	"

Tefft, Ernest Allen	Hope Valley,	R. I.
Wheeler, Everett Eugene	Shannock,	"
White, Mabelle Frances	Amesbury,	Mass.
Whitmore, Charles Ely	Holyoke,	"
Wood, John Amos	Hope Valley,	R. I.

Preparatory Department.

Alóma, Tiberio Garcia	Cienfuegos,	Cuba.
Barber, Ernest Clark	Shannock,	R. I.
Barber, Frank Oscar	Mystic,	Conn.
Briggs, Myron Watson	Kingston,	R. I.
Brown, Cora	West Kingston,	"
Brown, Martha Browning	Kingston,	"
Carpenter, Hortense Blakesley	Kingston,	"
Case, Elizabeth Marvin	Wakefield,	"
Champlin, Sarah Elizabeth	Kingston,	"
Clancy, John	Mystic,	Conn.
Clark, Rollin Grover	Narragansett Pier,	R. I.
Conway, William Joseph	Narragansett Pier.	"
Dorgan, Joseph	Narragansett Pier,	"
Flagg, Caleb Belcher	Kingston,	"
Gardiner, Leigh Orrin	Peace Dale,	"
Grinnell, George Francis	Narragansett Pier,	"
Harrall, Nellie Armstrong	Wakefield,	"
Hoxsie, Katharine Mertie	Woodville,	"
Jillson, Laura Agatha	Woonsocket,	"
MacDonald, James Merton	Wood River Junc.,	"
McCarthy, Charles Henry	Central Falls,	"
Murray, James Lee	Narragansett Pier,	"
Pascoe, Milton Cooper	Narragansett Pier,	"
Pearse, George Merton	Wakefield,	"
Priday, Edward Thomas	Peace Dale,	"
Redfern, John Lester	Woonsocket,	"
Sisson, Neva Maude	Wickford,	"

Thompson, Leroy Eldred	Narragansett Pier,	R. I.
Tillinghast, Emma	Slocumville,	"
Wells, Thomas Perry	Kingston,	"
Wright, Lola Rodman	Wakefield,	"

Specials.

Andrews, Carlton Garfield	Potter Hill,	R. I.
Cargill, James Edward	Abbott Run,	"
Chace, Emery Perkins	Warren,	"
Clarke, Isabelle Nye	Usquepaugh,	"
Cornell, Bailey Jordan	Croton-on-Hudson,	N.Y.
Emmet, James R	Peace Dale,	R. I.
Knowles, Leroy Weston	Point Judith,	"
Maxson, Ralph Nelson	Westerly,	"
Morton, John Garfield	New York,	N. Y.
Parkhurst, Elizabeth May	Wickford,	R. I.
Sherman, Robert Joseph	Usquepaugh,	"
Stillman, Fannie Esther	Kenyon,	"
Wightman, Levi Eugene	South Scituate,	"
Wilcox, Charles William	Kingston,	"

Specials in Wood-carving.

Armstrong, Mrs. C. H	Wakefield,	R. I.
Brown, Mary J	Kingston,	"
Clark, Mrs. George	Shannock,	"
Greenman, Mrs. A. A	Kingston,	R. I.
Johnson, Mrs. F. D	Peace Dale,	"
Kroener, Mrs. G. W	Wakefield,	"
Palmer, Mrs. J. W	Wakefield,	"
Sherman, Abbie Gertrude	Kingston,	"

Specials in Poultry School.

Andrews, Fred Matthias	Pompey,	N. Y.
Brayman, Benjamin Lewis	Wickford,	R. I.

Coggeshall, Dexter Elton	Everett,	Mass.
Currens, Robert Clifford	Kearney,	Neb.
Dornacher, Sebastian John	West Springfield,	Mass.
Flagg, Caleb Belcher	Kingston,	R. I.
Gifford, Harold Green	Barrington,	"
Harris, William Marchant	West Kingston,	"
Hodges, Mrs. Leonie Rose	Newark,	N. J.
Hope, Harry Vincent	Kingston,	R. I.
Jones, Frank Steward	Chicago,	Ill.
Marshall, John	Fleming,	N. Y.
Marshall, Margaret Elizabeth	Slocumville,	R. I.
Murray, Nelson Shepard	Little Falls,	N. Y.
Oatley, George Nichols	Allenton,	R. I.
Partelow, Earle Dexter	Wakefield,	"
Soenke, Carl Herman	Walcott,	Ia.
Stackus, Washington Graham	Southington,	Conn.
Stearns, Ralph Waldo	Jamestown,	R. I.
Stoneburn, Frederick H	Morristown,	N. Y.
Taylor, Thomas House, Jr	Plainfield,	N. J.
Thebaud, Mathilde M	New York City,	N. Y.
Tyler, Frankling Eugene	Greenville,	Me.

Nature-Study School.

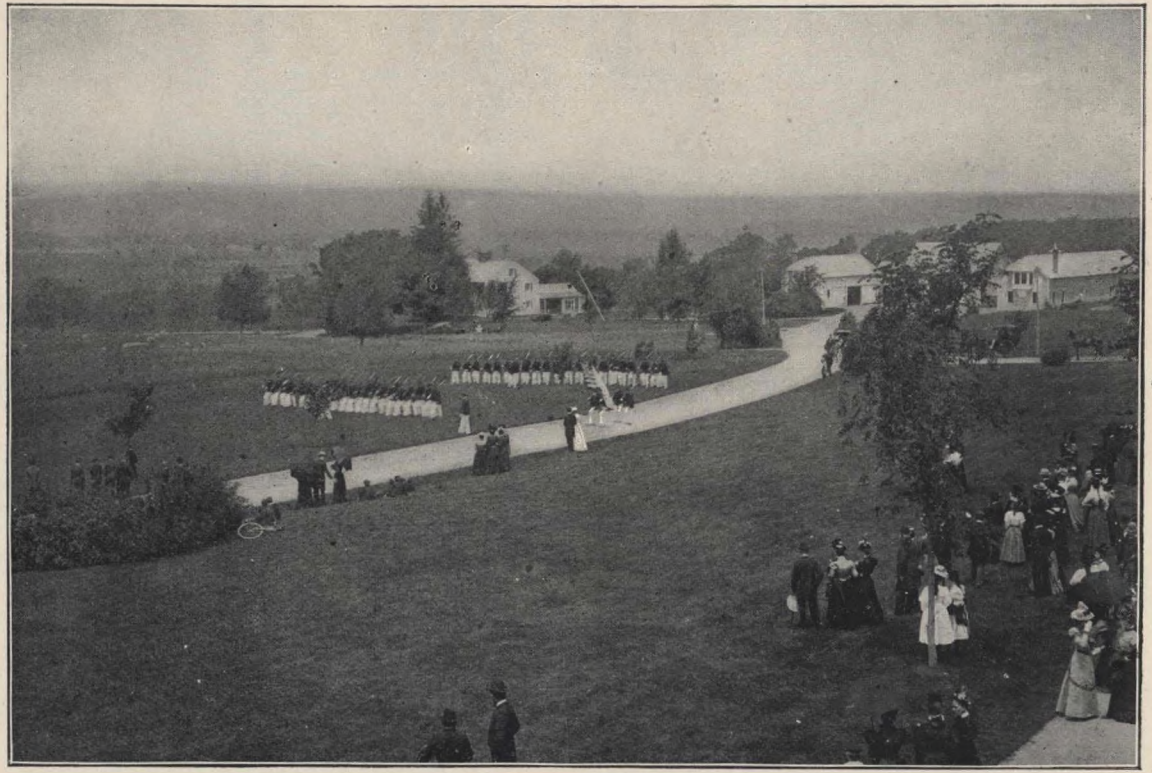
Almy, Laura E	Providence,	R. I.
Aull, Jennie E	Providence,	"
Babcock, Hattie S	Westerly,	"
Bannon, Alma	Central Falls,	"
Beckwith, Minnettie C	Providence,	"
Bennett, Katherine D	Westerly,	"
Bigelow, Edward F	Stamford,	Conn.
Bowen, Hannah S	Providence,	R. I.
Brown, Ellen P	Providence,	"
Brown, Emmie D	Providence,	"
Brown, Mary L	Providence,	"

Butler, Margaret	Pawtucket,	R. I.
Case, Alice W	Providence,	"
Case, William C	Gould,	"
Chase, Josephine P	Woonsocket,	"
Collins, Ruth	Westerly,	"
Crane, Annie	Providence,	"
Darling, Minnie	Pascoag,	"
Davis, Charles Abbott	Providence,	"
Dawley, Jennie A	Westerly,	"
Duffy, Susan G	Providence,	"
Emerson, Mary E	Providence,	"
Emmett, DePledge	Peace Dale,	"
Farrell, Elizabeth J. A	Providence,	"
Farrell, Mary A	Providence,	"
Fletcher, Sara	Providence,	"
Gage, Ellen I	Providence,	"
Gale, Alice J	Fall River,	Mass.
Greene, Alice J	Providence,	R. I.
Grinnell, Grace E	Liberty,	"
Hamlin, May W	Willimantic,	Conn.
Harris, Mary A	Providence,	R. I.
Hawkins, Avis A	Providence,	"
Helme, Bernon E	Kingston,	"
Hickox, Mrs. Abbie M	Westerly,	"
Hopkins, Abbie P	Pawtucket,	"
Houghton, Florence B	Westerly,	"
Hoxsie, Sarah	Quonochontaug,	"
Kenyon, Elizabeth,	Point Judith,	"
Kenyon, Florence R	Providence,	"
Lamphear, Gertrude	Peace Dale,	"
Leland, Cora J	Westerly,	"
Lyons, Mary	Peace Dale,	"
Mann, A. E	Westerly,	"
Martin, Isabelle F	Providence,	"
McCabe, Mary E	Pawtucket,	"

McLoughlin, Mary E	Central Falls,	R. I.
McNiff, Genevieve S	Providence,	"
Metcalf, Lucy A	Providence,	"
Miett, M. Matilda	Providence,	"
Murphy, Theresa M	Providence,	"
Payton, Carrie	Providence,	"
Peckham, Elizabeth A	South Portsmouth,	"
Randall, Ellen P	Westerly,	"
Read, Sarah R	Providence,	"
Richards, Annie B	Providence,	"
Roche, Minnie	Westerly,	"
Rose, Alice E	Wakefield,	"
Rose, Mary E	Wakefield,	"
Schaffer, Elizabeth	Providence,	"
Scholfield, Bessie M	Providence,	"
Scholfield, Mrs. S	Providence,	"
Sheldon, Cora L	Peace Dale,	"
Shields, Kate C	East Providence,	"
Smith, Jean	Westerly,	"
Sullivan, Clara L	Providence,	"
Sweeney, Ella L	Providence,	"
Taft, Eliza F. W	Providence,	"
Tyler, Harriet E	Westerly,	"
Vernon, Adelaide W	Providence,	"
Vernon, Anne T	Providence,	"
Watson, Adah S	"	"
Whitehead, Clara	"	"
Wilber, Sarah M	Pascoag,	"

Post Graduates	5
Graduates of 1899	17
Seniors	15
Juniors	15
Sophomores	6
Freshmen	29

Preparatory Department	31
Specials	14
Specials in Wood-carving	8
Poultry School	23
Nature-study School	74
Total, counting none twice	236



DRILL ON CAMPUS.

TREASURER'S REPORT.

MELVILLE BULL, *Treasurer, in account with the* RHODE ISLAND COLLEGE OF AGRICULTURE AND MECHANIC ARTS.

1899. DR.

Jan. 1.	To cash balance on hand	$43	08
	State of Rhode Island	3,943	45
	J. H. Washburn, president, for students' board, etc.	14,920	72
	Cash received from incidentals	1,272	19
	Cash received from interest	27	50
		$20,206	94

1899. CR.

By salaries	$358	76
Postage, stationery, and printing	105	45
Freight and express	109	77
Traveling	501	37
Labor	5,455	17
Store	808	96
Furniture	10	20
Lumber, grain, fuel, implements, incidentals	6,237	64
Construction and repairs	1,285	44
Provisions	2,736	66
Boarding expense	1,877	22
Balance	720	30
	$20,206	94

THIS IS TO CERTIFY that the undersigned, auditing committee of the Board of Managers of the Rhode Island College of Agriculture and Mechanic Arts, have examined the accounts of Melville Bull, treasurer, as above, and find the same to be correct, leaving a balance in the said treasurer's hands of seven hundred and twenty dollars and thirty cents ($720.30).

HENRY L. GREENE,
J. V. B. WATSON,
Auditing Committee.

THE RHODE ISLAND STATE AGRICULTURAL EXPERIMENT STATION *in account with the* UNITED STATES' APPROPRIATION.

1899.	DR.		
	To receipts from the treasurer of the United States as per appropriation for the year ending June 30, 1899, under act of Congress approved March 2, 1887.		$15,000 00
1899.	CR.		
June 30.	By salaries	$7,333 46	
	Labor	2,995 42	
	Publications	759 92	
	Postage and stationery	229 03	
	Freight and express	146 88	
	Heat, light, and water	307 61	
	Chemical supplies	151 53	
	Seeds, plants, and sundry supplies	344 84	
	Fertilizers	309 25	
	Feeding-stuffs	642 65	
	Library	309 48	
	Tools, implements, and machinery	75 91	
	Furniture and fixtures	56 92	
	Scientific apparatus	157 15	
	Live stock	118 35	
	Traveling expenses	301 65	
	Contingent expenses	11 00	
	Building and repairs	748 95	
			$15,000 00

WE, the undersigned, duly appointed auditors of the corporation, do hereby certify that we have examined the books and accounts of the Rhode Island State Agricultural Experiment Station for the fiscal year ending June 30, 1899; that we have found the same well kept, and classified as above; and that the receipts for the year from the treasurer of the United States are shown to have been $15,000, and the corresponding disbursements $15,000, for all of which proper vouchers are on file, and have been by us examined and found correct, thus leaving no balance.

And we further certify that the expenditures have been solely for the purposes set forth in the act of Congress approved March 2, 1887.

Signed,

HENRY L. GREENE,
J. H. WASHBURN,
Auditors.

MELVILLE BULL, *Treasurer, in account with the* RHODE ISLAND AGRICULTURAL EXPERIMENT STATION.

1899.	DR.	
June 30.	To balance from last year	$1 90
	Station receipts	752 55
	Station receipts, fertilizer inspection	505 46
	Interest	51 79
		$1,311 70

1899.	CR.	
	By salaries	$296 48
	Labor	43 88
	Publications	26 72
	Chemical supplies	8 40
	Seeds, plants, and sundry supplies	17 10
	Fertilizer control	504 96
	Feeding-stuffs	49 00
	Library	116 13
	Tools, implements, and machinery	1 89
	Furniture and fixtures	6 18
	Traveling expenses	13 52
	Building and repairs	81 33
	Balance	146 11
		$1,311 70

This certifies that the undersigned, auditing committee of the Board of Managers of the Rhode Island College of Agriculture and Mechanic Arts, have examined the accounts of Melville Bull, treasurer of the Agricultural Experiment Station, and the vouchers corresponding therewith, for the year ending June 30, 1899, and find the same correct.

The total receipts are $1,311.70, and the total expenditures are $1,165.59, thus leaving a balance to new account of $146.11.

HENRY L. GREENE,
J. H. WASHBURN,
Auditors.

Synopsis of the Report of the Treasurer of the Rhode Island College of Agriculture and Mechanic Arts to the Secretary of Agriculture and the Secretary of the Interior, of amount received under Act of Congress, of August 30, 1890, in aid of Colleges of Agriculture and the Mechanic Arts, and of the disbursements thereof, to and including June 30, 1899:

Balance on hand, July 1, 1898	$5,834 09
Installment for 1898–99, received July 21, 1898	24,000 00
	$29,834 09

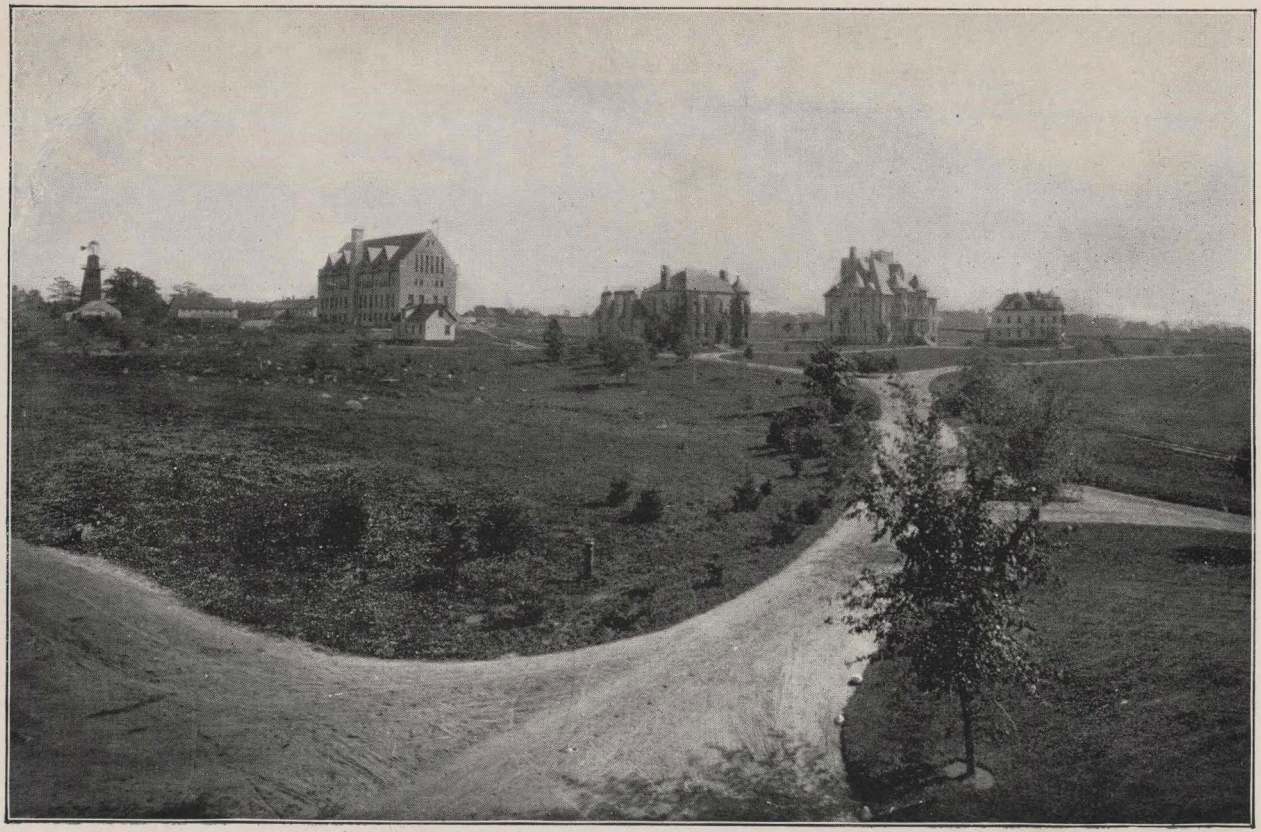
DISBURSEMENTS THEREOF FOR AND DURING THE YEAR ENDING JUNE 30, 1899.

SCHEDULE A.—Disbursements for Instruction in Agriculture and for facilities for such instruction	$5,765 04
SCHEDULE B.—Disbursements for Instruction in the Mechanic Arts and for facilities for such instruction	5,976 76
SCHEDULE C.—Disbursements for Instruction in English Language and for facilities for such instruction	4,542 32
SCHEDULE D.—Disbursements for Instruction in Mathematical Science and for facilities for such instruction	2,024 55
SCHEDULE E.—Disbursements for Instruction in Natural Science and for facilities for such instruction	10,080 79

SCHEDULE F.—Disbursements for the Instruction in Economic Science and for facilities for such instruction	1,006 40	
Total expended during the year		$29,395 86
Balance remaining unexpended		438 23
		$29,834 09

I HEREBY CERTIFY that the above account is correct and true, and, together with the schedules hereunto attached, truly represents the details of expenditures for the period and by the institution named; and that said expenditures were applied only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural, and economic science, with special reference to their application in the industries of life, and to the facilities for such instruction.

MELVILLE BULL, *Treasurer.*



GENERAL VIEW.]