1896

Annual Report 1896

University of Rhode Island

Eighth 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, 1896.

PART I.

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

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1896.

Rhode Island College of Agriculture and Mechanic Arts.

CORPORATION.

HON. MELVILLE BULL.....NEWPORT COUNTY.
HON. C. H. COGGESHALL .....BRISTOL COUNTY.
HON. CHARLES J. GREENE .....WASHINGTON COUNTY.
HON. HENRY L. GREEN. .....KENT COUNTY.
HON. GARDINER C. SIMS. .....PROVIDENCE COUNTY.

OFFICERS OF THE CORPORATION.

HON. C. H. COGGESHALL, President.....P. O., BRISTOL, R. I.
HON. HENRY L. GREEN, Vice-President .. ..P. O., RIVERPOINT, R. I.
HON. CHARLES J. GREENE, Clerk.....P. O., KENYON, R. I.
HON. MELVILLE BULL, Treasurer.....P. O., NEWPORT, R. I.

REPORT.

To His Excellency Charles Warren Lippitt, Governor, and the Honorable General Assembly of the State of Rhode Island and Providence Plantations, at its January Session, 1896:

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

Since our last annual report, the College has lost its dormitory by fire. This loss was due to the fact that we had no water supply. The State has since granted us an appropriation for the rebuilding of the dormitory and the construction of a water supply. I submit a letter from the President of the College stating its financial condition as a result of the fire and of the construction of the water supply; the report of Captain W. W. Wotherspoon, superintendent of construction of our new dormitory; and the annual report of the Faculty.

CHANDLER H. COGGESHALL,

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

LETTER OF THE PRESIDENT.

KINGSTON, R. I., Dec. 31, 1895.

HON. CHANDLER H. COGGESHALL, *President of the Board of Managers of the Rhode Island College of Agriculture and Mechanic Arts, Kingston, R. I.:*

DEAR SIR:—In stating the condition of affairs at the Rhode Island College of Agriculture and Mechanic Arts, I would respectfully call your attention to the fact that on January 1, 1895,

we had just completed extensive alterations in the dormitory, which burned. We had refitted the room used as a chapel for a botanical laboratory, furnished a physical laboratory in the basement, and put in a very comfortable bath room on the second floor. The Board of Managers had decided to ask the legislature for a new building to be used as a recitation and drill hall, and also to contain a large room where the whole College could assemble for lectures and chapel exercises.

On November 12, 1894, Capt. W. W. Wotherspoon reported at the institution for duty as professor of military science and tactics, having been appointed November 1 by President Cleveland. He has given instruction in military tactics and in the company movements. The object of this is to teach our students to become officers. Text-book work in military tactics is required, also signal drill and target practice. The government has issued arms and ammunition for all the students, in addition to the two field pieces of artillery; but as the College is in session only from the middle of September to the middle of June (during the cold weather), it is absolutely necessary for the health of the students that they have a place for drill under cover in comfortable quarters.

We have had no large class room. It was the desire of the Board of Managers to provide one in this recitation and drill hall. The estimated cost of the building was about $45,000. Its size was to be 40 x 120 feet, with a basement and two stories: the basement to be used for physical laboratories and bath rooms; the first floor, for chapel, reading and recitation rooms, and library; the second floor, for a drill hall and gymnasium. The College has over $10,000 worth of books and no place where they can be properly kept. Before the fire, it was deemed necessary to have this building; but since then it has become doubly necessary, as that deprived us of recitation rooms and laboratories. Only the basement of the new building is used for classroom purposes, as it is not safe to have expensive apparatus in a dormitory.

Another want which was noted by the Board of Managers before the fire was an adequate water supply. The fire destroyed a building, the first cost of which without heating facilities was $42,000, upon which the College had subsequently expended $3,000 in fitting up laboratories and bath rooms. The building burned in less than forty-five minutes; had there been a water supply, it could have been saved. There were Babcock fire ex-

tinguishers in the dormitory and two of them were used. They abated the fire for a time, but the wind was so high that nothing could be accomplished without a large quantity of water.

When the building burned, we had eighty students. It was imperative that something be done at once; it was the beginning of the year and our $10,000 appropriation for current expenses had been used. We had no money with which to make temporary arrangements except the $10,000 which was held by the treasurer as "an appropriation for a barn and other necessary buildings," the plans of which were being considered by the Board of Managers. Now there was urgent demand "for other necessary buildings." Within a week after the fire we had completed the carpenter shop, which was 40 x 27 feet; in two weeks were built the barracks, a building 24 x 110 feet with an L 12 x 15 feet; also a building for laboratory and classroom work in botany 38 x 18 feet, with three rooms upstairs which are used for photographic purposes and experiments in light,—all temporary buildings. The cost of the barracks, carpenter shop, and laboratory was $3,963; and in consequence of the fire, we have expended for furniture $1,681.

The legislature was asked to appropriate money to rebuild the dormitory and also to erect the recitation and drill hall. It granted only a portion of our request, by rebuilding the dormitory.

In the fire we lost $12,000 worth of apparatus, machines, and furniture. The State gave us nothing to replace this; and as some of it was absolutely essential to the continuance of our work, we were obliged to draw on that $10,000, which had been reserved for "barn and other necessary buildings." The students lost so much furniture in the fire, by leaving it to burn while they saved the College library, that the Board of Managers felt it right to help them replace some of their furniture, and gave each man the use of it while he was here. This was another expenditure unprovided for.

The legislature at the last session passed a law directing us to send a team to the depot to bring up students, and yet appropriated nothing for securing the same. At that time the College owned only two horses: one, used in the administration of the College; the other, constantly used in the horticultural department. The Experiment Station owned four horses, but they are needed for the regular work of the Experiment Station. Dr. Allen, who is an inspector from Washington and visits the institution once a year,

and inquires into the expenditure of the appropriations, has impressed upon us the ruling of the Department of the Interior, that no government money can be used to execute a state law. This is a general principle. It became necessary for us to purchase a pair of horses, a large covered carriage, which transports nineteen pupils, and to procure a driver. The entire expense of the outfit will be $1,150 for the first year; the cost of keeping the team will afterwards be nearly $700 a year.

In asking for a new dormitory and water supply, the Board of Managers consulted Mr. Stone, of the firm of Stone, Carpenter & Willson, as to the expense of rebuilding the dormitory on the same lines. The old dormitory had cost $42,000; the west wall, left standing by the fire, was valued by Mr. Stone at $7,000, and he therefore estimated the cost of the new building at $35,000. When his plans for the new dormitory were sent us to work upon, we found that the roof which he put upon it was very different and much more expensive than the old. He had added a tower on the front of the building, the cost of which was $3,000, but this was necessary for hygienic purposes. In beginning to build, it was found that every window cap and sill in the old wall had been cracked by the fire and that the bow windows had spread; much of this had to be taken down and rebuilt. The least cost of repairing that wall was $2,500. The cleaning off of the quarry and excavating for the new drill hall, which we had hoped to build, cost $1,252; the removal of the debris from the cellar of the dormitory, $552; and the derricks and railroad iron procured to bring the stone up from the quarry to the building, $836. The Board of Managers deemed it wise when the new building was being constructed to wire it for electricity, which we may use as a means of lighting in the near future. That was an extra expenditure of $908, and the heating plant for the dormitory cost $1,500. These extra expenditures amount to over $10,000, and there was no money to use but that appropriated for the barn.

There remains at the present time a deficit of $4,950. It was the estimate of Capt. W. W. Wotherspoon, who had charge of the construction of the new dormitory, that the two buildings could have been built together for $5,000 less than if built separately, on account of the economy in working the quarry and carting the stone. I feel that the College should have the barn, because we have no proper place to keep stock and develop our agricultural department.

In regard to the water supply, bids had been asked for to complete a plant proposed by one of our professors; and it was found that this would cost $5,000. When the Board of Managers were ready to build in July, they considered the plans for the water supply inadequate. The mains and the stand-pipe were both too small; the price of iron had in the mean time greatly advanced; and altogether the work cost $2,500 more than the appropriation.

The number of students at the College this past year has been larger than ever before, notwithstanding the extremely trying experiences which the institution has passed through during the last twelve months. We have at present insufficient room; our boarding department is so full that there are seats for only six more students, and the question arises How much does the State wish to develop the institution? Or in other words, What does it wish to do with the College? I might say that we give instruction to a class of men more than seventy per cent. of whom would never receive higher instruction, were it not for this College.

The number of women students at the College has increased rapidly during the past two years. Until recently they have been obliged to secure board at the farmhouses in the vicinity of the College. The Board of Managers felt that if they were to be responsible for the care and conduct of these students, proper dormitory accommodations must be provided, where they could be under the control of some person accountable to the Board of Managers. The farmhouse on our grounds was consequently remodelled into a woman's dormitory, capable of accommodating fourteen pupils; this required an expense of $1,056.

Considering our present condition, and in view of the fact that we have no funds, it would seem that an immediate appropriation for our relief should be granted, to make good the deficit on the dormitory of $4,950, and on the water supply of $2,500, together with the $10,000 of barn money, which was used for the above mentioned necessities, and also for the other expenditures.

Very respectfully,

J. H. WASHBURN.

REPORT OF SUPERINTENDENT OF CONSTRUCTION.

DECEMBER 29, 1895.

To the Building Committee of the Board of Managers of the Rhode Island College of Agriculture and Mechanic Arts, Kingston, R. I.:

GENTLEMEN :—I have the honor to submit the following report of the construction of the dormitory and the expenditures made thereon so far as they are known to me.

Work was undertaken in a desultory manner on the foundations of the still burning dormitory in February and prosecuted to the best advantage until the 18th of March, at about which date a larger force of laborers was put on and everything was done to push the building to completion within the time specified by the Committee; it being the Committee's desire that the building should be completed and ready for use by the 1st of October following so that the fall term might open at or near the usual date. While pushing the work, your superintendent kept constantly in mind the need of caution in carrying to completion a building of such size and walls of such weight as the plans called for. It was evident that to put the building in such a state as would permit of its being occupied by the date specified, the stone walls would have to be completed by the twentieth or twenty-fifth of July. This gave just four months in which to build the walls to the fourth story. This limited time pointed to the necessity for a departure from the methods and material used in the construction of the original building. In the walls of that building large flat stones of irregular size and shape were used, with few locking stones or headers running from outer to inner faces of walls; the jambs for window and door frames were not cut to fit, flat ashler simply overreaching the frames; the beds of the stones were not cut to rest square and firm, dependence being placed upon the mortar, which with the slower method of building had ample time to set; for the same reason, probably, a cheaper quality of cement was used and the joints between ashler and backing not thoroughly filled. It was therefore decided to use the best possible mortar, to cut all stones to a square bed that they might rest firmly and take up the weight of the structure above, to cut all jambs for window and door frames, and to thoroughly secure the work by frequent binding by "headers." This,

while making the walls much firmer and more secure than the original structure and permitting the rapid prosecution of the work, which would have been impossible if the older method of construction had been followed, added somewhat to the cost of the work. This additional cost I estimated at between $1,500 and $2,000 for the whole work. The result of the precautions would seem to have justified the additional expense, as not only was the building ready for use near the time designated, but no faults in the way of even the slightest settlement or even slight cracking of this mass of masonry has developed.

It will be remembered by your committee that the estimate upon which the bill for an appropriation for the rebuilding of the dormitory was based was made in great haste by Mr. Stone, of the firm of architects Stone, Carpenter & Willson. His estimate was made as follows: taking the cost of the original structure at $42,000, he estimated the value of the west wall left standing after the fire, together with the foundations, as worth one-sixth of the original cost, or $7,000, leaving $35,000 as the probable cost of rebuilding. This estimate was at fault in a number of ways. In the first place, at the time it was made it was not known that every window sill and cap, as well as all door sills and caps on that front, were broken by the heat and would have to be taken out and replaced. Each section of the water table on the west front was out cracked by fire and had to be cut out and replaced, and it was also found upon closer examination that the two bays in that wall and part of the straight wall were out of plumb, having been forced out of line by the falling roof. The plans when finally submitted called for a relative alteration of the west entrance, involving the cutting away of the lower part of the central wall and the putting in of the windows and a different size door from the original. It will be easily understood that the cutting away of so much of this wall and the proper setting of new and perfect stones in the place of those cracked and broken by the fire required the greatest care and skill. Only the best workmen could be put upon the work and progress was necessarily slow; the wall had to be cut through and wedged or jacked up to permit the work; all hollows and imperfections had to be filled with the best Portland cement. This was all the more necessary, as the planning of the new building did not permit of the wall being tied by the floor joists to the other walls as had been originally done; the floor joists ran parallel with the wall instead of perpendicular to it.

I estimate the cost of repairing this west wall at not less than $2,500. In the second place, in making the estimate no mention was made of the tower and the chimney running up eighty feet. There had been no tower on the old building, hence this was an additional expense. I estimate the cost of this tower at the very lowest at $3,000. In the third place, the estimate did not include cost of wiring the building for electricity, the actual cost of which was $908, nor of heating, the cost of which was $1,500.

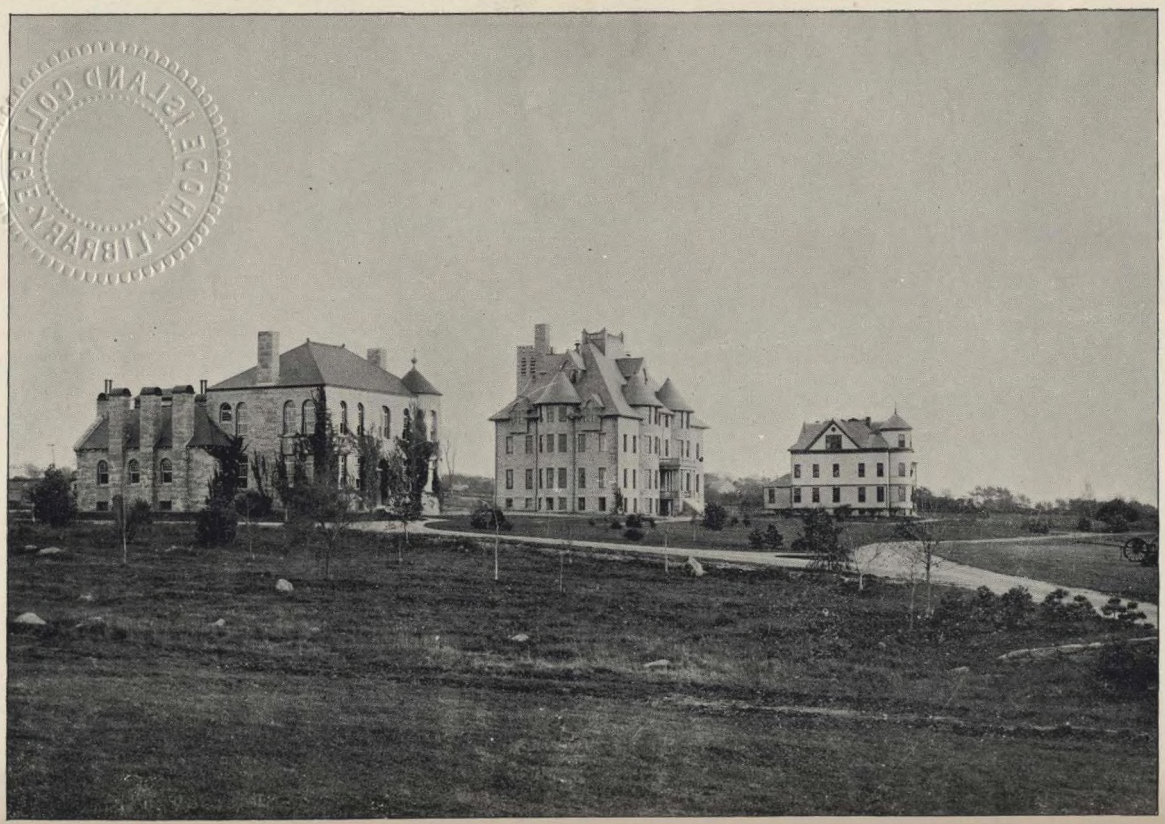
The list of monthly bills for labor and material, audited by your superintendent, amounts at this date to $43,257.50. There are two additions to be made to this ; one of $602 for plastering, and another of $230 for iron fire-escapes. These will bring the total expenditure up to $44,089.50, a seeming excess of $9,089.50 over the amount appropriated for the building. This seeming excess is explained as follows :

1.	Amount expended in excavating for drill hall	$1,252 39
2.	Cost of railroad and machinery	836 43
3.	Wiring building for electric lights	908 00
4.	Clearing rubbish from foundation	552 43
5.	Heating building	1,500 00
6.	Cost of repairing west wall	2,500 00
7.	Cost of building tower	3,000 00
		$10,549 25

If this amount is taken from the total expended, it will leave the cost of the building $33,940.25 ; or if the cost of repairing and putting in order the west wall be included, which might properly be done, it would give the cost of the building *as it was intended to* be built at the time of the estimate, $36,440.25, or $1,400 over the estimate.

In addition to these figures, it might be pointed out that the College has a well equipped quarry thoroughly opened for future work, with all necessary machinery for getting out stone; a railroad laid and equipped for future work; all machinery necessary for moving and handling stone on any new structures; a large collection of tools; stone cutter's shed, etc.,—which will materially reduce the cost of future work.

Attention is invited to the fact that the superintendent had nothing whatever to do with the purchase of material, it being specially understood that this was to be left in other hands. All purchases were, it is understood, made only after carefully



CHEMICAL LABORATORY. COLLEGE HALL. BOARDING HALL.

canvassing the market; and the prices as a rule were low for the material purchased, which was in all cases the best of its kind. Whenever it was possible, bids were invited and the lowest bid was taken. To avoid any discussion in the future, I would recommend that bids for all material be invited through advertisements in the newspapers; the bids to be opened at a designated hour and place, and bidders being invited to be present at the opening.

In conclusion, I beg to state my opinion that the College has a well built and strong structure, free from flaws, of the best material, thoroughly and honestly built in all its parts.

All plans, papers, correspondence, time books, bids, etc., are herewith transmitted, and I am

Very respectfully, your obedient servant,

W. W. WOTHERSPOON.

COLLEGE CALENDAR.

1896.

WINTER TERM.

January 13, 8:30 A. M. ..... Term begins.
January 30 ..... Day of Prayer for Colleges.
February 22 ..... Washington's Birthday.
April 3 ..... Term ends.

SPRING TERM.

April 13, 8:30 A. M ..... Term begins.
—— —— ..... Arbor Day.
May 30 ..... Memorial Day.
June 11 ..... Senior Examinations begin.
June 19, 10 A. M ..... Entrance Examination.
June 21 ..... Baccalaureate Sunday.
June 23 ..... Commencement.

FALL TERM.

September 15, 10 A. M ..... Entrance Examination.
September 16, 8:30 A. M ..... Term begins.
—— —— ..... Thanksgiving Day.
December 23 ..... Term ends.

1897.

WINTER TERM.

January 5 ..... Term begins.

FACULTY.

JOHN HOSEA WASHBURN, PH. D.,

PRESIDENT,

Professor of Chemistry.

CHARLES OTIS FLAGG, B. Sc.,

Professor of Agriculture.

LORENZO FOSTER KINNEY, B. Sc.,

Professor of Horticulture.

HOMER JAY WHEELER, PH. D.,

Professor of Geology.

ANNE LUCY BOSWORTH, B. Sc.,

Professor of Mathematics.

ESSIE JOSEPHINE WATSON, A. M.,

Professor of Languages.

WILLIAM ELISHA DRAKE, B. Sc.,

Professor of Mechanical Engineering.

OLIVER CHASE WIGGIN, M. D.,

Professor of Comparative Anatomy and Physiology.

WILLIAM WALLACE WOTHERSPOON,

Captain of 12th Infantry,

Professor of Military Science and Tactics.

HARRIET LATHROP MERROW, A. M.,

Professor of Botany.

JAMES DE LOSS TOWAR, B. Sc.,

Associate Professor of Agriculture and Mathematics.

THOMAS CARROLL RODMAN,

Instructor in Woodwork.

FREDERICK ATHERTON LANE,

Instructor in Woodwork.

MARY POWELL HELME,

Instructor in Drawing.

ANNA BROWN PECKHAM, A. B.,

Instructor in English and History.

WILLIS THOMAS LEE, PH. B.,***

Instructor in Chemistry and Physics.

ARTHUR CURTIS SCOTT, B. Sc.,

Instructor in Chemistry and Physics.

GEORGE BURLEIGH KNIGHT,

Instructor in Iron Work.

SAMUEL CUSHMAN,

Lecturer on Beekeeping.

WARREN BROWN MADISON, B. Sc.,

Assistant in Horticulture.

GEORGE CLARENCE AMMONDS, B. Sc.,*

Assistant in Mechanics.

GEORGE ALBERT RODMAN, B. Sc.,**

Assistant in Mechanics.

SAMUEL WATSON SLOCUM, B. Sc.,**

Assistant in Mechanics.

JOHN FRANKLIN KNOWLES, B. Sc.,**

Assistant in Mechanics.

CHARLES SHERMAN CLARK, B. Sc.,

Assistant in Mechanics.

ROBERT ARTHUR WILBUR, B. Sc.,*

Assistant in Mechanics.

NATHANIEL HELME,

Meteorologist.

* Resigned Feb. 1st, 1895. ** Resigned March 30, 1895. *** Resigned July 1st, 1895.

EXPERIMENT STATION STAFF.

JOHN H. WASHBURN, Ph. D.... ....PRESIDENT OF THE COLLEGE.
CHARLES O. FLAGG, B. Sc.....DIRECTOR AND AGRICULTURIST.
H. J. WHEELER, Ph. D..... ....CHEMIST.
L. F. KINNEY, B. Sc..... .....HORTICULTURIST.
SAMUEL CUSHMAN.....APIARIST AND POULTRY MANAGER.
J. D. TOWAR, B. Sc..... .....ASSISTANT AGRICULTURIST.
GEORGE M. TUCKER, B. Sc.....ASSISTANT AGRICULTURIST.
B. L. HARTWELL, B. Sc..... .... ASSISTANT CHEMIST.
C. L. SARGENT, B. Sc.....ASSISTANT CHEMIST
GEORGE E. ADAMS, B. Sc.....ASSISTANT HORTICULTURIST.
NATHANIEL HELME..... .....METEOROLOGIST.
BERTHA E. BENTLEY..... CLERK.

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

WATSON HOUSE. FARM BUILDINGS.

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 2d, 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 instruc-

* See Bulletin No. 1 of Experiment Station.

tion 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. (See Fifth Annual Report, page 6).

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, (for text see Fifth Annual Report, page 12), 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.

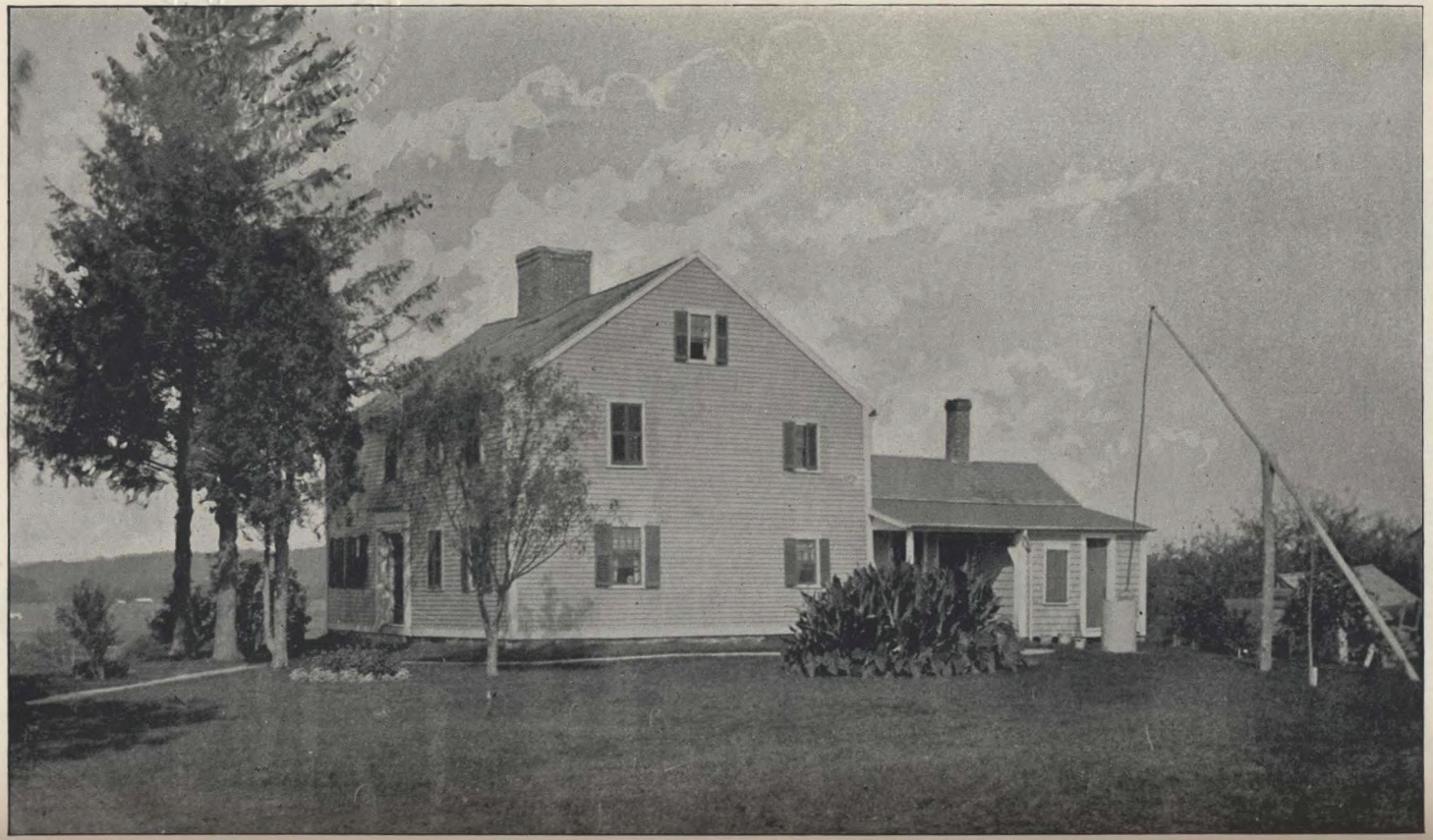
GROWTH DURING 1895.

On Sunday, the twenty-seventh of January last, at about 11 o'clock in the forenoon, at the time when most of the young men and faculty were at church, College Hall, the only dormitory connected with the College, caught fire and burned to the ground in less than one hour. At that time, the wind was registering on the anemometer the rate of forty miles per hour. There was no

water supply, and the small tank full of water in the attic was cut off by the fire. The fire extinguisher checked it for a moment, but nothing except a large volume of water could save the building. The loss of the building amounted to $45,000; and apparatus, tools, machinery, books, and furniture were destroyed which cost $12,000. From this loss the institution will not recover for years.

Upon the old foundation, a new dormitory of ampler accommodations has been built, which was occupied on the tenth of October. Temporary buildings were constructed shortly after the fire to be used as barracks, carpenter shop, and recitation rooms. They continue to be so used except the barracks, which has been fitted up as a temporary physical laboratory, library, and reading-room. It is dangerous to have so much valuable material, over $2,000 worth of physical apparatus and at least $4,000 worth of books, stored in such a temporary wooden structure, which must be heated by stoves. The College is sadly in need of recitation rooms, laboratories, and drill hall. There is no adequate place for instructing the students in military science and tactics, although the government has liberally supplied the institution with $8,000 worth of arms and other material for instruction and has detailed an army officer, Capt. W. W. Wotherspoon, to teach in this department, which is of so much value to the State. It would seem to be a duty of the State to provide suitable quarters for instruction in military drill and tactics. In the horticultural department, glass structures are much needed. During the year, Arthur C. Scott, B. Sc., has been appointed instructor in chemistry and physics; and Charles S. Clarke, B. Sc., assistant in mechanics. There have been more students than ever before, and the scholarship and efficient work of the College are steadily improving.

Valuable additions of apparatus and books have been made during the past year to the working facilities of all departments. Grateful acknowledgment is made of gifts of minerals from the Smithsonian Institute; agricultural books from President H. H. Goodell of the Massachusetts Agricultural College; ten White



GIRLS DORMITORY.

Mountain plants from Miss Adelaide Smith ; forty New Hampshire plants from Miss Fanny E. Langdon ; two hundred specimens of Michigan and Ohio plants from a friend of the College ; a full set of War Records with maps, through the courtesy of the Hon. Nathan F. Dixon ; a number of valuable reports from the State Board of Agriculture of this and other States ; Report from the State Board of Health ; Health Reports from the City of Newport ; Records from the Rhode Island Historical Society ; a plough and hoe, such as are used at the Azore Islands, which were brought here by Dr. Philip K. Taylor ; a spinning-wheel for the studio from Miss Lizzie Robinson ; and various articles from other friends.

REQUIREMENTS FOR ADMISSION.

Candidates for admission must bring testimonials of good character and be not less than fifteen years of age. The requirements for admission to the College are necessarily low, on account of the deplorable condition of our district schools. They embrace both an oral and written examination in advanced arithmetic, geography, English grammar, and United States History. Each candidate will be required to write a short composition upon a subject announced at the time of the examination. The composition will be expected to show familiarity with the works mentioned below: Hawthorne's Wonder Book, Dickens's Christmas Carol, Irving's Sketch Book, Scott's Lady of the Lake, Longfellow's Evangeline. Applicants for the regular course will find some knowledge of algebra of great assistance. On and after September, 1898, an examination in algebra through simple equations of two or more unknown quantities will be required.

ADMISSION TO ADVANCED STANDING.

Graduates of high schools, and others who have had a sufficient amount of high school or college work, may enter in advance any higher class for whose work they are prepared.

OPPORTUNITIES OFFERED TO WOMEN.

During the past year, the College has prepared excellent accommodations for young women, by furnishing a dormitory. Miss Anna B. Peckham has been made preceptress, having full charge of the young women at all times. Comfortable waiting and study rooms have been fitted up in another building for the use of the young women day students. The same courses that are offered to men are open to women, together with special courses which substitute for agriculture,—science, language, mathematics, and art.

EXPENSES.

Expenses at the College are as follows: Tuition free to Rhode Island students; table board at $3.00 per week; necessary text books, fuel and lights at cost; physical laboratory expenses for breakage, if the student is ordinarily careful, $1.00 per term; chemical laboratory charges, $3.00 for chemicals during each term of qualitative analysis; in the shops, $1.00 per term for the use of tools; room rent, $5.00 per annum, or $2.00 per term; gas, an average of $1.50 per term. Students are required to provide their own furniture and bedding; and if aid is needed, it will be given by the President, for whom special rates are made by the dealers. A uniform for military drill is also required; this uniform may be worn every day if the pupil chooses. Whenever a student is measured for a uniform or for any part of one, a corresponding deposit must be made. The price of a full uniform is $15.50. The only other expense is for heavy laundry work, 50 cents a dozen, 2 cents each for collars and cuffs. All clothing should be distinctly marked. Packages sent the students by express or freight in care of the College, will be taken from the station to the College free of charge. Once at the beginning and at the end of each term, a team will go to the station to take or bring trunks and other luggage. Graduates pay the cost of diplomas, $5.00. No diplomas will be issued till the candidate has paid all term bills. Day students are required to deposit $10 per term in ad-

vance; and boarding students must either pay term bills in advance, deposit $50, or give bond for $100, to insure the payment of all bills. No bond will be accepted from any member of the faculty.

The labor of the students during class exercises, in the shops, at iron work, and in the horticultural and agricultural departments, is a part of their instruction, and is not paid for unless special arrangements be made with the professor in charge. All extra work outside of the required hours of labor is paid for when the student is employed by the superintendent in charge. A limited amount of work about the buildings, on the farm, at the Experiment Station, and in the laboratories may be furnished to those students who are desirous of assisting themselves.

EXPENSES FOR YOUNG WOMEN.—Board including room-rent is $3.00 per week; fuel and lights are supplied at cost. Rooms are furnished, with the exception of bedding and towels. Other general expenses are given above. The young women have an opportunity to do their own washing and ironing.

PUBLIC WORSHIP.

The students are expected to be present at chapel exercises every morning, and on Sundays to attend service in some church at least once a day. A branch of the Intercollegiate Young Men's Christian Association is doing good work among the students; meetings are held every Wednesday evening.

DEPORTMENT.

The rule for the conduct of the young men is, "Be gentlemen." Students who do not understand the elements of gentlemanly conduct will not continue to be members of the institution. Negligence or absence from class duties of any kind will be vigorously opposed. The following regulations concerning absences are rigidly enforced.

1. Students shall go to each professor or instructor for excuses in his or her department.

2. An application for an excuse shall be made, if possible, beforehand; if not, at the first recitation after the student's return; otherwise, the absence will be considered unexcused.

3. A students may be absent from 10 per cent. of the total number of recitations in each subject for each term, without excuse.

4. An unexcused absence in excess of this number shall dismiss a student from the institution.

5. Attendance at Chapel exercises shall be treated like attendance upon any class, except that application for excuses from the same must be made at the President's office on Tuesdays, at 8.40 A. M.

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 R. R., 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 PHYSICAL LABORATORY.

DEPARTMENTS OF INSTRUCTION.

GENERAL AND AGRICULTURAL CHEMISTRY.

Instruction in chemistry begins with the third term of the Sophomore year, and consists of recitations and lectures with laboratory work. This course is continued during the first term of the Junior year; and there is laboratory work in qualitative analysis throughout the year. The second term, Junior year, is devoted to organic chemistry; the third term, to agricultural chemistry, which is continued through the first term, Senior year.

The instruction in agricultural chemistry consists of lectures and recitations with laboratory work upon artificial digestion; analysis of soils, fodders, and fertilizers, milk, butter, and cheese; tests for poisons in the stomachs of different animals; analysis of fruits for sugar, starch, and albuminoids; and the study of chemical changes in soils. Instruction in inorganic chemistry comprises recitations and laboratory work upon Remsen's advanced course in inorganic chemistry. Special illustrations, however, are given in the line of agriculture, physiology, and hygiene, for the purpose of making the chemistry of the farm and kitchen familiar to all. In the chemistry of the halogen conpounds, especial attention is paid to photographic chemistry and manipulation. This prepares the students for a special course in photography, which may be taken as an elective in the study of chemistry.

Text books: Remsen's Inorganic Chemistry (advanced course), Remsen's Theoretical Chemistry, Remsen's Organic Chemistry, Orndorff's Laboratory Manual, Appleton's Qualitative and Quantitative Analysis.

The Freshman class study physical geography during the first term. They pay special attention to the scientific phases of it, to the chemistry and geology of the soils, the influence of air and water on the same ; and much reading and time are expended on the flora and fauna of the different countries. Warren'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.

PHYSICS.

The department of physics is now well supplied with apparatus to meet the requirements of this subject. A temporary laboratory has been provided for the practical work, with an apparatus room adjoining. The elementary course, consisting of recitations and laboratory practice, extends through the Sophomore year, and is required of both agricultural and mechanical students. Mechanics and heat are studied in the fall term ; magnetism and electricity, in the winter term ; sound and light, in the spring term. This course, particularly the laboratory work, is very similar to the Harvard Course B. An advanced course is offered as an elective to students who have satisfactorily completed the elementary course.

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 mechanics covers two terms; and for students in agriculture, three terms. The first two terms are devoted to the study of a few groups of plants from the lowest to the highest. Flowering plants of economic importance are studied in the third term. Work may be elected by agricultural and mechanical students as indicated in the Courses of Instruction.

During the year, the College has subscribed to Ellis and Everhart's Fungi Columbiani and to Seymour's Grasses and Grass-like Plants of North America. A collection of plants to show devices for the dissemination of seeds has been started by the agricultural students, and a herbarium of plants growing in the vicinity of the College has been begun.

COMPARATIVE ANATOMY AND PHYSIOLOGY.

There have been no changes in the studies pursued in this department since the last report. They are as follows:

First year—Elementary Anatomy and Physiology through the winter and spring terms.

Third year—Zoölogy through the spring term.

Fourth year—Advanced Anatomy and Physiology, Comparative Anatomy, Comparative Physiology and Microscopic Anatomy through the entire year; Veterinary Science during the winter term; Constitution of the United States, together with State, County and Town Government, through the fall term; Political

Economy and Sociology through the winter and spring terms; Physiological Psychology through the spring term.

This department has been greatly enriched by the furnishing of ample lecture-rooms, laboratories, and a special library. Several thousand dollars have been expended for a synoptical collection for the study of zoölogy and human and comparative anatomy. In the laboratories are found all necessary conveniences for dissecting, mounting and preserving animals, and for embryological, physiological and microscopical work. For purposes of demonstration, there are (1) mounted microscopical objects representing every kind of tissue and cell in the animal system, (2) the living subject for dissection, (3) alcoholic preservations, models in plaster and *papier maché*, skeletons and stuffed subjects of most of the orders of the amimal kingdom, from a sponge to a man, (4) Leuckart's zoölogical wallcharts, and other charts and diagrams of our own make, (5) ample blackboard facilities of which much is made, (6) chemical and physical apparatus, (7) all necessary mechanical appliances. The collection of skeletons of all the domestic animals cannot be excelled. In the class of birds, there have been added all the species of Rhode Island, comprising some 270 individuals. These prove of exceptional interest and stimulate inquiry because of their local habitat and more or less familiar mien. In the collection are found the skeletons of the great classes of birds showing striking structural peculiarities. It is also proposed to add the nests and eggs of all those species of the collection which nest in the State. It will thus be seen that there is an exceptionally good equipment for teaching the courses in zoölogy, physiology, and anatomy, both human and comparative, which are so liberally provided for in this College.

Apparatus is being collected for the course in experimental psychology. The course occupies but one term and the time given to experimentation is limited. The demonstrations are simple mechanical appliances to illustrate the sensations and perceptions. But few experiments are attempted on the more complex mental phenomena, which require intricate and costly appliances, much

time, and more special training than the College students can summon. The beautiful models and charts of the human brain, spinal cord, and organs of special sense, are most serviceable in teaching the mechanism and functions of the great nerve centres. The appliances in this department are so complete as to expedite the study in no small degree. It is believed that a more lively interest is thus created, that more ground is covered, and that a clearer comprehension of this branch is given than could otherwise be done in twice the time allotted to it. The same claim may be predicated of the whole range of biological studies.

AGRICULTURE.

The work of this department is intended to cover ground both practical and theoretical in agricultural knowledge, not included in other divisions, and to further impress upon the student the application of scientific principles to agriculture. The course for the first year is the same for both agricultural and mechanical students, and aims to begin with such subjects as may be somewhat familiar to them and about which they have some elementary knowledge. One afternoon in each week of the first term of the Freshman year is devoted to the study of farm buildings, their location and convenience of arrangement; farm machinery, its use and care; a discussion of general and special farming with the arrangement of farm buildings and fields for the various kinds of farming, including the subject of fences and fencing. The third term is given to the subject of land drainage; the effect of water upon the soil and growing crops; tile and other methods of draining; how drains act, and affect the soil; how to lay out a system of drains; draining-tools and their use; laying tile, silt basin, outlets, and care of tile drains. A little time will be devoted to the history, value, and cost of tile draining. Practical field work is given in laying out drains, leveling, and preparing plans.

The agriculture of the first term of the Sophomore year is assigned to the study of the breeds of live stock—horses, cattle, sheep, and swine; the history, characteristics, and value of each

for various purposes, with practice in tracing pedigrees from herd records and in the use of score cards in judging animals. For the study of animals, the stock of the College and Experiment Station as well as the herds of stock breeders in the vicinity are available. Two exercises each week of the first term are devoted to the study of farm crops, their relation to the soil and stock of the farm, their relation to each other, rotations and the planting, cultivating and harvesting of the various crops generally grown.

Two terms of the Junior year are given to the study of soils, manures, and fertilizers. This includes the relation of water, heat, light, and air to the soil as affecting plant growth and crop cultivation. Some time is given to the careful study of the manures made upon the farm; their value, and the best course to pursue in handling them to prevent loss. Chemical and artificial fertilizers as plant food and as chemical agents in rendering inert material in the soil available to plants, receive the consideration due them. The student is taught how to learn what the soil requires and how to compound the material to supply the elements found lacking. The chemical and biological changes constantly taking place within the soil and their bearing upon the supply of available plant food, are considered; and attention is paid to the influences tending to increase their activity.

Senior year agriculture is devoted to the study of the laws of breeding and stock feeding. Such subjects as heredity, atavism, fecundity, in and in breeding, cross breeding, influence of parentage and pedigree, are studied in their relation to the breeding of animals. The latter includes the compounding of feeding rations for specific purposes in the feeding of various classes of animals, and practice in the selection of such waste products used for feeding as will balance the coarse fodders grown on the farm to make a cheap and complete food to produce the most satisfactory results.

The farm, fields, and work of the Experiment Station are at all times available for the purpose of illustration. The students are not required to devote their time to manual labor in the common operations of the farm with which they are already familiar.

THE HORTICULTURAL DEPARTMENT.

Skill in manual labor is the result of practice; and once the knowledge of and reason for any certain farm operation is acquired by the student, it is hardly wise for him to spend the time and opportunities of a college course in the acquiring of mere manual dexterity in farm operations. He can easily do that elsewhere. His time here can be used to better advantage.

Agricultural text-books suitable for class use have not yet reached the state of perfection found in those of other lines of study, and the labor of teaching is augmented by the necessity of lectures and the more frequent use of reference books. The College and Experiment Station libraries are valuable for this purpose. Collections of chemicals and fertilizing materials, grains, various commercial foods and by-products are used for the purpose of illustration and instruction.

The text-books used thus far are as follows:—Draining for Profit and Health, Waring; Horses, Cattle, Sheep and Swine, Curtis; Soils and Crops, Morrow and Hunt; Agriculture, Storer; Stock Breeding, Miles; Feeding Animals, Stewart.

HORTICULTURE.

Seven courses are offered in this department. Regular agricultural students are required to take three of these; the others are elective. Course I as given under Courses of Instruction is of an introductory character. The other courses provide for special study of garden vegetables, ornamental plants, fruits, diseases and insect enemies of orchard and garden plants, horticultural literature, and landscape gardening.

LANGUAGES AND HISTORY.

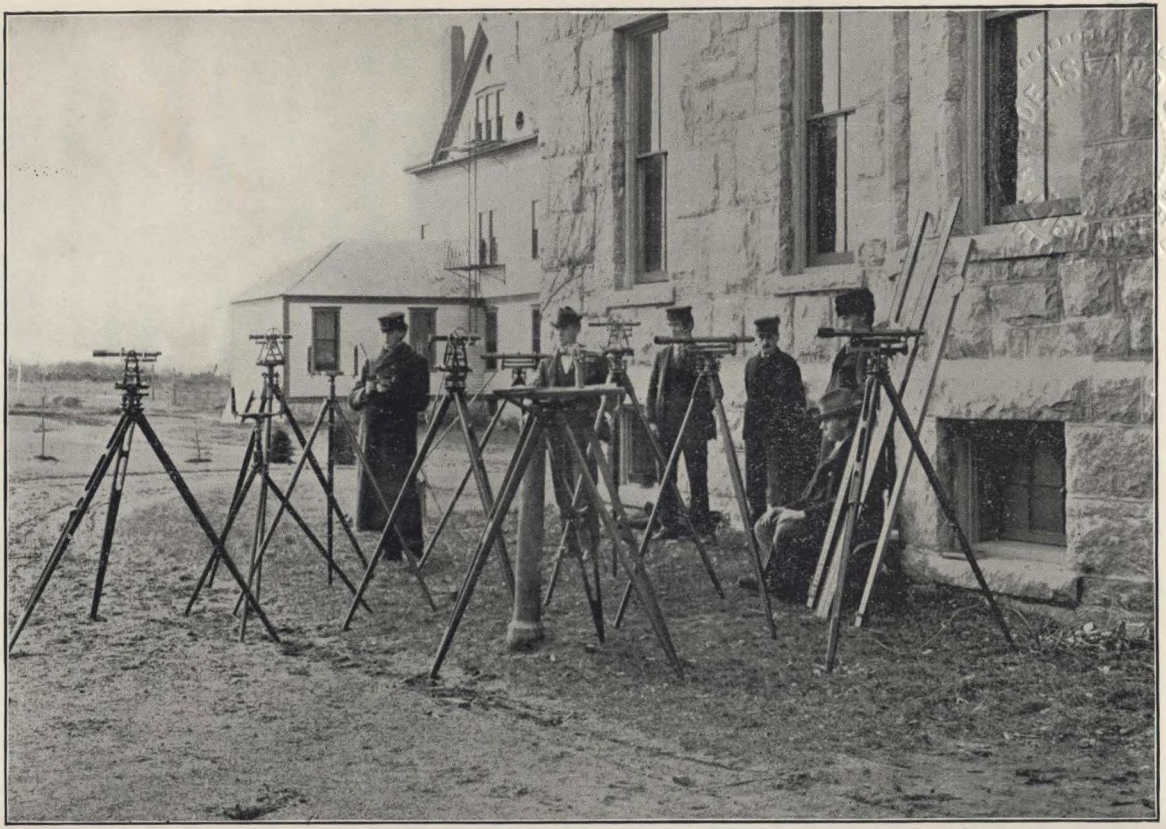
The subjects grouped under this head are English, German, French, Latin, and History.

English—comprising composition, rhetoric, and literature—is studied during the four years. In the Freshman year, a preparatory review is followed by an elementary course of rhetoric.

Written exercises are required, and there is a careful reading in the class room of representative works by famous authors, principally American, with the aim of developing early in the students a taste for literature. More advanced work in rhetoric and composition is given during the fall and winter terms of the Sophomore year, and the reading of American authors is continued. The winter and spring terms of the Junior year are devoted to general English literature. English history is studied at the same time, as it is thought impossible to understand an author apart from his age. Individual research is encouraged, and will increase, it is hoped, from year to year. Some attention will also be paid to contemporaneous literature. As far as possible, entire works of the most noted authors are critically read in class. Exercises in composition give opportunity for detailed treatment of special topics. An elective in English literature, designed to supplement the general course, is offered throughout the Senior year ; and during the fall and winter terms of the Senior year, students may elect essay writing and orations.

German is required throughout the Junior year and is elective during the Senior 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 is required during the Sophomore year, and is elective during the remaining two years. It is the aim of the department to make the instruction in this language similar to that given in German, with the expectation that the results will be greater in consequence of the longer time allotted to the subject. French, like German, is taught by means of grammar, conversation, dictation, translation, and composition. Progressive work throughout the three years will make it possible for the student at graduation to read with ease ordinary French, both literary and scientific.



A DIVISION OF THE SURVEYING CLASS.

Latin is an elective. The course, of four years, is essentially the same as that in the best preparatory schools.

In the fall term of the Freshman year, a careful review is made of American history, followed in the other two terms by outline work in general history. The method is topical. No one text-book is used, but students are taught to consult various authorities and to report upon what they have read. In the Junior year, English history is studied in connection with English literature; and an elective for special historical work is offered throughout the Senior year. A carefully selected library, which is constantly receiving additions, greatly enhances the value of these historical and literary courses.

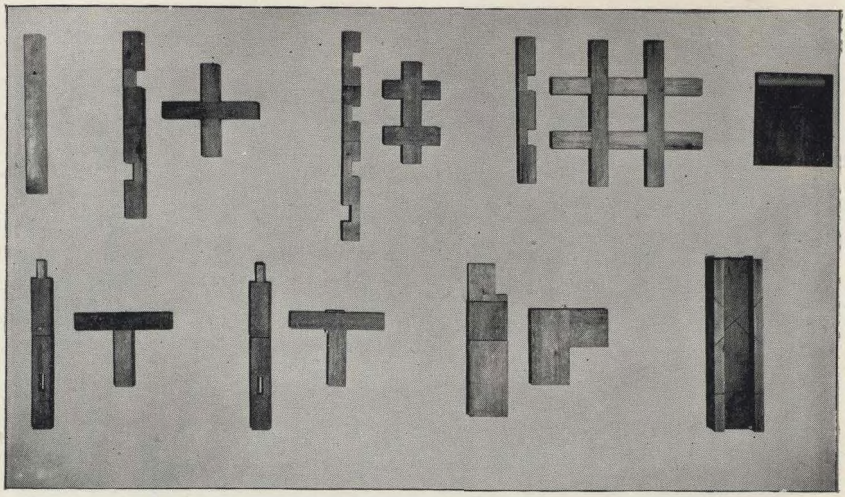
MATHEMATICS AND ASTRONOMY.

The required work in mathematics extends through the first two years of the course for students in the agricultural department, and throughout the entire four years for those in the mechanical course. The time devoted to the subject in the Freshman year, is spent in the study of algebra and plane geometry. The work in algebra consists of a systematic drill in the fundamental operations, leading up to a study of the equation, both simple and quadratic, the theory of exponents, radicals, the progressions, the binomial formula, and the graphic representation of equations. Especial attention is given to the expression, by means of equations, of the conditions of a problem, and the exact methods of reasoning involved. In the course in plane geometry, beginning with the third term, particular stress is laid upon the original demonstration of propositions, in order best to develop the rigidly logical methods of thought which are the outcome of exact geometrical work. Numerical problems and practical applications are given whenever possible. This course extends through the first term of the Sophomore year and is followed by a course in plane trigonometry during the winter term. The fundamental formulas are developed and application of them is made in the solution of

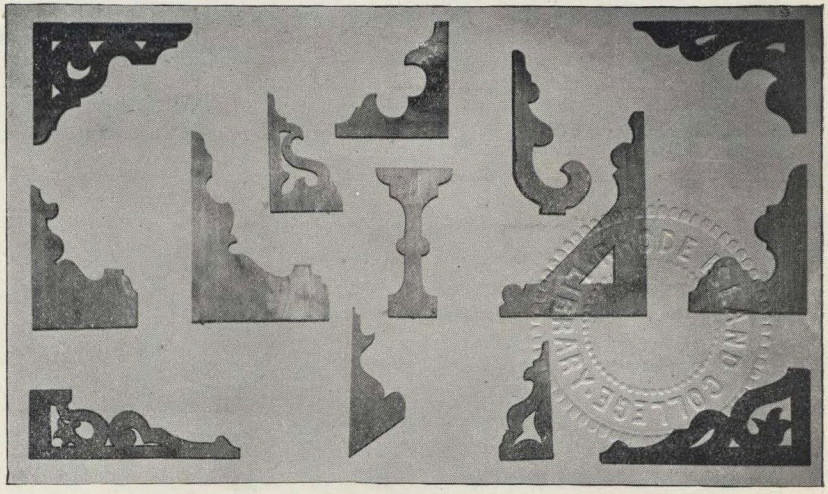
right and oblique triangles. The subject of logarithms is studied and sufficient applications are made to thoroughly familiarize the student with this invaluable aid to computation. It is the aim here, as throughout the course, to select such problems and applications as shall have direct bearing upon practical subjects. Practical work in surveying is given during the spring term and this work is continued through the first term of the Junior year, by the agricultural students, while the mechanical students enter upon the subject of analytical geometry, studying first the subject of loci and their equations and the analytical demonstration of many geometrical theorems, and later developing the simpler properties of the conics. A short course in descriptive geometry is also given during the first term. A one-term course in solid geometry is given to the mechanical students, in which are studied the point, the line and the plane in space, the familiar polyedrons, the cylinder, cone and sphere, including the measurement of these solid figures. The work in calculus begins with the second term of the Junior year and continues through three terms. It includes the differentiation of algebraic, trigonometric, anti-trigonometric, exponential and logarithmic functions, successive differentiation and the integration of simple forms, 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.

The primary aim of the entire course in mathematics is to stimulate original work, to insist upon and develop a capacity for clear thinking and logical, systematic reasoning such as will prove invaluable in any department of study or life, as well as to achieve familiarity with such mathematical principles as are necessary for applied work.

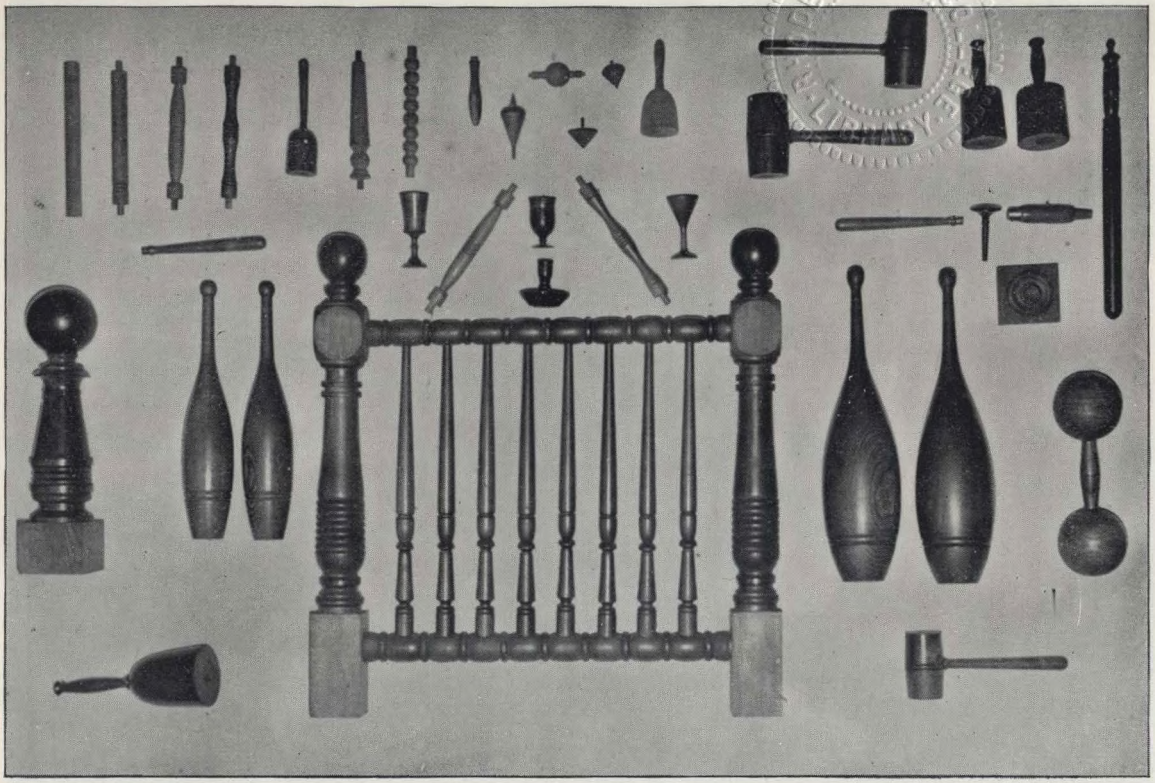
A growing reference library affords an opportunity for wider mathematical reading, the value of which is constantly becoming more fully appreciated by the students.



COURSE OF JOINERY.



COURSE IN SCROLL SAWING.



COURSE IN WOOD–TURNING

THE CARPENTER SHOP.

Several elective courses are offered by the department, and others will be added from time to time as may seem advisable. In pure mathematics courses are offered in college algebra, open to all who have completed the required work in algebra; in modern synthetic geometry, open to all students who have completed the required courses in algebra and plane geometry; in determinants; and an advanced course in integral calculus, open, of course, only to students who have completed the required work in calculus.

In applied mathematics the department offers a course in surveying and civil engineering, giving opportunity to students who have completed the required work to carry the subject farther; a course in analytical mechanics, open to students who have completed one term of the required work in calculus; a course in practical astronomy, in which the simpler problems of practical astronomy are discussed.

In astronomy, in addition to the course above mentioned, a lecture course in physical astronomy is offered in the spring term of the Senior year, the aim of which is to make the students familiar with the general characteristics of the various members of the solar system, and to emphasize the general laws which govern the universe. A four-inch equatorial telescope, an eighteen-inch celestial globe, a large collection of lantern-slides of astronomical phenomena and a small but carefully chosen reference library, add greatly to the resources of the department.

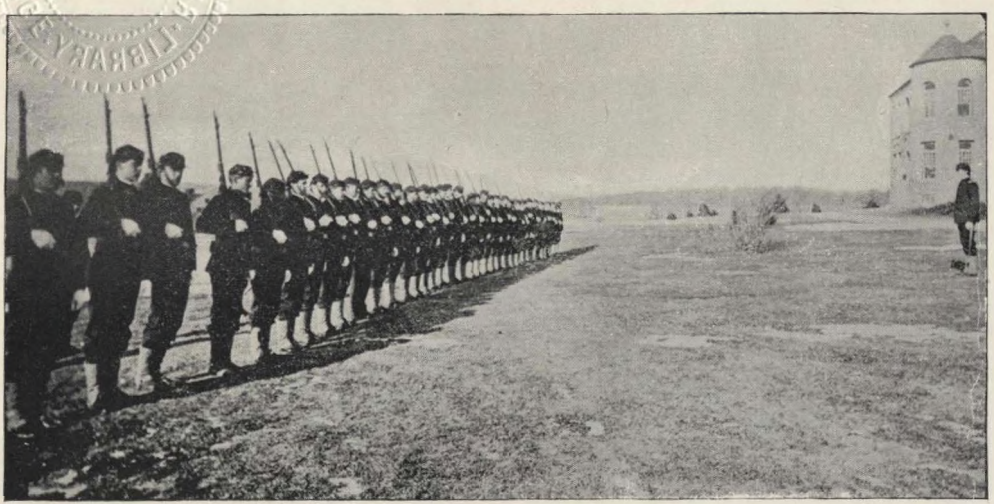
MECHANICS.

The object of this department is to give a technical and practical training to those who wish to prepare themselves for mechanical work. The College does not attempt to teach trades, but the courses of shop work that are offered are of the greatest value to a student who may enter a trade after graduation. Workrooms for instruction in bench-work in wood, wood-carving, wood-turning, pattern-making, forging, machine-shop work, and mechanical drawing are provided.

Students in the mechanical department receive instruction in all of the above branches as a part of the regular four years' course. Students in the agricultural department receive instruction in wood-working and forging, and may elect other work with the advice and consent of the committee of studies. Young women are given 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 structures and 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 gauges 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 in turn has practice under the direct charge of the engineer in the care of the shop boiler and engine. This engine is of thirty horse power; and besides furnishing power for the shop, drives a ten K. W. dynamo for lighting the building. The work in pattern-making given to the students in the mechanical department in the Junior year consists of the making of selected pieces to illustrate the principles of shrinkage, draft, 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,



INFANTRY DRILL.

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 department, the work is of such a nature as would be 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 department work in the machine shop. The course here is designed to give a sure knowledge 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, finishing and scraping. Each student in the machine shop builds a complete machine before finishing the course. 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. A small amount of work is given to the Senior class in experimental engineering. Among other things, the students make actual tests of engines and boilers and operate the machinery for testing iron, steel, and cements.

During the spring term of the Senior year, the class in mechanical engineering holds bi-weekly conferences; engineering subjects of general interest are taken up and discussed; and reports of these meetings are handed in, with conclusions. The following are some of the topics considered by the class of '95: 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 taught throughout the Sophomore and Junior years. Students are required to 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.

FREEHAND DRAWING AND MODELING.—Freehand drawing is taught only in the spring and fall terms. Freshmen begin in the spring term with the study of values from objects and still life, continuing in the fall to draw and model from casts, with which the department is well supplied. In the Junior and Senior years, students may elect such work as they are prepared to take. Memory sketches of all objects drawn are expected of each student. The sketch class is an interesting feature of the department. This meets for one hour once a week and is conducted by its members, who pose in turn or find a substitute. These time sketches from life, without instruction, are of great benefit to the student, teaching him to note quickly the effect desired. Each student is required to leave at the College a specimen of his work. Modeling is limited to ten or twelve lessons in the Sophomore year. The library of the studio has a good nucleus of art books.

MILITARY SCIENCE AND TACTICS.

The military department is duly organized under Captain William W. Wotherspoon of the 12th Infantry, who was assigned to duty as Professor of Military Science and Tactics by the President of the United States, by special orders No. 257 from the war department, dated November 1, 1894.

The male students of the College are organized as a company of infantry, which organization it is recommended they hold until an increase in the number of undergraduates will warrant a battalion organization. Of course this does not prevent instruction in both cavalry and artillery; indeed, it prepares the way for it.

The cadets were wholly uninstructed on November 12, 1894,

ARTILLERY DRILL.

when the military department was organized, and it was necessary to start from the foundation ; instruction was therefore given in the school of the soldier, without arms, during the term. Since making the last report, a full set of arms and equipments has been received, and the cadets have been drilled both without arms and in the manual, in addition to the regular infantry and artillery drlll. There have been two classes under instruction in signaling, and the Seniors and Juniors have started a course of military science. No effort has been spared to instill into the cadets a sense of the importance of the work undertaken, while producing a proper and healthful carriage of the body and that quickness and readiness to obey which are necessary in a soldier. The progress made in the very limited time has been most satisfactory, and evinces an enthusiasm and intelligence on the part of the cadets which cannot be too highly commended. They have been quick to learn, ready to obey, at all times respectful in deportment and neat in their habits.

The inspections in quarters have resulted in marked improvement in the rooms. All orders have been obeyed ; and as the inspections become more rigid, as they will, matters in the dormitory will be much changed.

The cadets have been uniformed at very moderate expense in a neat and handsome uniform of fine blue cloth, consisting of a blouse and trousers cut after the pattern worn by the U. S. naval cadets, with forage caps holding the coat of arms of the State of Rhode Island. This uniform is not only handsome and economical but will last a long time with moderate care. It is recommended that white collars and an overcoat be added to it, and that the overcoat be worn at all times out of doors during the winter. As at present organized, the company has a full set of officers and non-commissioned officers who are zealous and painstaking in their duties and show much promise.

The greatest difficulty found so far in this department has been the weather and the limited space under cover for drill. When the weather would permit, drill has been held out of doors ; other-

wise, in the temporary shed built for the purpose. No hours have been lost for any cause, however, and the drill hall and gymnasium now proposed will, it is hoped, be finished in time for next winter. When it is finished, the College will be equipped with a drill hall superior to that of any institution of learning in the United States, and with a gymnasium equal to the very best.

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.

1. General Chemistry, Briefer Course.—Non-metals. Recitations, lectures and laboratory work. *Spring term, Sophomore year;* recitations and lectures, *3 exercises per week;* laboratory work, *1 exercise of 2 hours per week. Required of all candidates for a degree.*

2. General Chemistry.—Metals. Lectures and recitations. *Fall term, Junior year; 3 exercises per week. Required of all candidates for a degree.*

3. Qualitative Analysis.—Laboratory work. *Fall term, Junior year; 2 exercises of 2 hours each per week; Winter term, 2 exercises of 3 hours each per week. Required of all candidates for a degree.*

4. Organic Chemistry.—Lectures and recitations. *Winter term, Junior year; 4 exercises per week. Required of Agricultural students.*

5. Agricultural Chemistry.—Lectures. *Spring term, Junior year; 3 exercises per week.* Laboratory work. *Fall term, Senior year; 2 exercises of 3 hours each per week. Required of Agricultural Students.*

6. Quantitative Analysis. — Laboratory work. *Spring term, Junior year; 2 exercises of 3 hours each per week. Required of Agricultural students.*

7. Theoretical and Sanitary Chemistry and Quantitative Analysis.—Laboratory Work. *Throughout the Senior year; 2 exercises of 3 hours each per week. Elective; open to students who have taken courses 1 and 2.*

PHYSICS.

1. General Course.—Study of mechanics, pneumatics, hydraulics and accoustics; Fall term. Electricity and magnetism; Winter term. Light and Heat; Spring term. *Throughout the Sophomore year.* Recitations, *3 exercises per week;* laboratory work, *1 exercise of 2 hours per week. Required of all candidates for a degree.*

2. *Advanced Physics.* Throughout the year. Recitation, *1 exercise per week.* Laboratory work, *2 exercises of 3 hours each per week.* Elective; *open to students who have taken course 1.*

3. Applied Electricity.—A course of lectures upon the modern practical applications of electricity. *Spring term, Senior year;* lectures, *3 exercises per week.* Laboratory work, *1 exercise of 2 hours per week.* Elective; *open to students who have taken course 1.*

PHYSICAL GEOGRAPHY.

1. Warren's Physical Geography with required reading from reference books. *Fall term of Freshman year; 3 exercises per week.*

GEOLOGY.

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

BOTANY.

1. Biology of Plants.—Comparative morphology and physiology are emphasized rather than the details of classification. Laboratory, reading and lectures. *Winter and Spring terms, Sophomore year; 4 exercises of 2 hours each per week. Required of all candidates for a degree.*

2. Systematic and Economic.—Orders of phanerograms of economic importance are studied from fresh and preserved material. *Fall term, Junior year;* recitation, *1 exercise per week;* laboratory work, *2 exercises of 2 hours each per week. Required of Agricultural students. Elective for mechanical students and specials who have taken course 1.*

3. Fungi.—A study of types of fungi with special reference to parasitic forms of economic importance. Laboratory, reading, and lectures. *Elective; open to students who have taken course 1. Hours arranged with instructor.*

4. Histology.—Laboratory, reading and lectures. The laboratory work includes methods of imbedding, sectioning, staining, and mounting. *Elective; open to students who have taken course 1. Hours arranged with instructor.*

PHYSIOLOGY.

1. Elementary Course in Human Physiology.—Lectures and recitations. Includes hygiene instruction, development of observing faculties. *Winter term, Freshman year; 3 exercises per week. Spring term, Freshman year; 2 exercises per week. Required of all candidates for a degree. Elective for Special students.*

2. Advanced Course.—Comparative Anatomy and Physiology. Presupposes knowledge of chemistry, embryology and zoölogy. Instruction demonstrative, comparative, and theoretical. *Fall*

term, Senior year; 4 exercises per week. Winter term; 3 exercises per week. Required of Agricultural students.

ZOÖLOGY.

1. Zoölogy;—General Course. Embryology;—Limited Course, introductory to the Zoölogy Lectures. Laboratory work with incubators, microscopical dissections, alcoholic preparations, and models. *Spring term, Junior year; 4 exercises per week. Required of Agricultural students.*

VETERINARY SCIENCE.

1. Veterinary Science.—Theory of practice. Based on course of comparative anatomy and physiology. *Spring term, Senior year; 4 exercises per week. Required of Agricultural students.*

PSYCHOLOGY.

1. Elementary Course.—Lectures, recitations, simple laboratory experiments. *Spring term, Senior year; 4 exercises per week. Elective.*

AGRICULTURE.

1. Farm Management.—Definition of agricultural terms; mixed husbandry; special farming; rotation of crops; general suggestions for agricultural practice; farm buildings—plans, size, location, arrangement, care; silos and ensilage; farm fences; fence laws; methods of constructing fences; economy in the selection of fences; portable fences; gates. Farm tools and implements; reapers, mowers, hay-tedders and rakes, plows, harrows, grain-drills, cultivators, rollers, etc. Value, selection, use, and care of farm tools. Lectures. *Fall term, Freshman year; 2 exercises per week. Required of all candidates for a degree.*

2. Farm Bookkeeping (Same as Mathematics 2).—Inventory; use of day-book, cash-book, and ledger on the farm; farm accounts; accounts with stock, fields, and crops; yearly statements; inter-

est and discount. Classroom practice. *Winter term, Freshman year; 3 exercises per week. Required of all candidates for a degree.*

3. Drainage.—Drainage for Profit and Health (Waring). Sources of water; necessity of drains; kinds of drains; how drains act; how to lay out, build, and care for drains; drain tiles; cost and value of drains; sanitary effects of drainage; practice in the use of tools and instruments; details of the work. Text-book and actual practice. *Spring term, Freshman year; 2 exercises of 2 hours each per week. Required of all candidates for a degree.*

4. Farm Crops and their production.—Selection and preparation of soil and seed; quantity of seed; time of seeding; cultivation and harvesting of various farm crops; hay crop, its importance in agriculture; varieties of grasses; influence of time of cutting upon the value; method of storing; leguminous fodder crops; corn as a grain crop; five types of corn; corn and other crops for the silo. Other cereals—wheat, oats, barley and rye—origin, history and value; root crops—potatoes, beets, turnips, carrots, and onions; miscellaneous crops—buckwheat, cabbages, pumpkins, squashes, field peas, tobacco, broom corn; weeds—injury, dissemination, and eradication. Text-book and lectures. *Fall term, Sophomore year; 2 exercises per week. Required of all Agricultural students.*

5. Breeds of Live Stock.—Horses, Cattle, Sheep, and Swine (Curtis). Horses—draft, coach, saddle, thoroughbred, trotters, ponies, care and selection. Cattle—dairy, general purpose, beef, care, selection, and management. Sheep — short wool, middle wool, long wool, care, selection and management. Swine—large breeds, medium breeds, small breeds, care, selection and management. Origin of breeds; adaptability to climates and conditions; tracing pedigrees; scoring animals. Text-book and lectures. *Fall term, Sophomore year; 3 exercises per week. Required of Agricultural students.*

6. Agriculture (Storer). Relations of heat, air, and water to the soil; influence of soil, atmosphere, heat, light, and water upon the growth of plants; tillage and implements; natural sources of plant food; action of manures; special manures; phosphatic manures; nitrogenous compounds; green manuring; seaweeds; humus; farmyard manure; composts; modes of applying manures; night soil; history of the use of manures; potash, magnesium, lime and soda as manures; theory of rotation; irrigation; sewage; growth of crops; cereals; hay and hay-making; pastures; ensilage. Text-book. *Winter term, Junior year; 5 exercises per week. Spring term, Junior year; 2 exercises per week. Required of Agricultural students.*

7. Stock-Breeding (Miles.)—Breeding as an art; heredity; normal characteristics; diseases; acquired and abnormal characteristics; atavism (reversion); law of correlation; variation; fecundity; in and in breeding; cross-breeding; relative influence of parents; sex; pedigree; animal form and index of qualities; selections; period of gestation. Text-book. *Fall term, Senior year; 3 exercises per week. Required of Agricultural students.*

8. Feeding Animals (Stewart).—Composition of animal bodies; relative proportion of different parts of the carcass; elements of food material; digestion, its effect upon food; respiration and excretions; value of various animal manures; stock barns and their relation to the economy of feeding; principles of alimentation; early maturity; how to feed young animals; stock foods; nutritive ratio and feeding standards; definition of terms; calculation of ratios for various conditions and ages of animals; calculation of cost of rations, and their manurial value; soiling,—economy in land, fences, feed, and manure,—disadvantages, labor required; soiling crops; ensilage; economy of preserving crops in the silo; variety of crops that may be ensilaged; value of legumes and balancing rations; feeding for beef or milk; feeding horses, sheep and swine; cooked and uncooked food; cold and warm water; temperature of stables, and ventilation. Text-book.

Winter term, Senior year; 2 exercises per week. Required of Agricultural students.

9. Fertilizers.—Study of the composition of the various agricultural chemicals as sold in the markets; calculation of formulas for special crops; calculation and value of various home-made fertilizers. Lectures and classroom calculations. *Spring term, Senior year; 1 exercise per week. Required of Agricultural students.*

10. Dairying. American Dairying (Gurler).—The dairy cow, type, breeding, and management from birth to maturity; feed and management; branches of dairy husbandry; dairy utensils; milking; care of milk; separators and butter accumulators; separating cream; ripening and churning; salting, working, packing and printing butter. The Babcock milk test of skim milk and cream; value of skim milk; building creameries. Text-book and lectures. *Winter term, Senior year; 2 exercises per week. Elective.*

11. *Apiary work.*—Classroom work upon the habits, care and management of bees with practical work in the apiary. *Spring term, Senior year; 1 exercise per week. Elective.*

HORTICULTURE.

1. Elementary Horticulture.—A general course in the study of fruits, vegetables and flowers. Plants, soils and atmospheres are used as subjects of this study and students are required to work out common problems involved in the cultivation of garden plants. *Fall term, Junior year; 4 exercises per week. Required of Agricultural students.*

2. Olericulture.—The study of garden vegetables. *Winter term, Junior year; 2 exercises per week. Elective.*

3. Floriculture.—The study of ornamental plants. *Spring term, Junior year; 2 exercises per week. Elective.*

4. Pomology.—The study of orchard and garden fruits. *Fall term, Senior year; 4 exercises per week. Elective.*

5. Vegetable Pathology and Garden Entomology.—The study of the diseases and insect enemies of garden plants. *Winter term, Senior year; 3 exercises per week. Required of Agricultural students.*

6. Horticultural Literature.—*Winter term, Senior year; 2 exercises per week. Elective.*

7. Landscape Gardening.—The study of expressions of plants, mainly of trees and shrubs, and ways of arranging them about buildings, avenues, etc., for the purpose of shelter and ornamentation. *Spring term, Senior year; 2 exercises per week. Required of Agricultural students.*

ENGLISH.

1. Elementary Course.—Preparatory review. Study of representative American authors. *Fall term, Freshman year; 5 exercises per week. Required of all candidates for a degree.*

2. Middle Course.—Rhetoric. Continued study of American literature. Composition. *Winter term, Freshman year; 5 exercises per week: Spring term; 4 exercises per week: Fall and Winter terms, Sophomore year; 2 exercises per week. Required of all candidates for a degree.*

3. Advanced Course.—General English literature and history. *Winter and Spring terms, Junior year; 4 exercises per week. Required of all candidates for a degree.*

4. English Literature.—Study of special periods and authors. *Throughout Senior year; 3 exercises per week. Elective; open to students who have taken courses 1, 2, and 3.*

5. Orations and Essays. *Fall and Winter terms, Senior year; 1 exercise per week. Elective for all seniors.*

GERMAN.

1. Elementary Course.—Grammar, dictation, conversation, reading of easy prose and poetry. *Throughout Junior year; 3 exercises per week. Required of all candidates for a degree.*

2. Middle Course.—Composition. Modern German writers. *Fall term of Senior year; 3 exercises per week. Elective; open to students who have taken course 1.*

3. Advanced Course.—German Classics. History of German literature. *Winter and Spring terms, Senior year; 3 exercises per week. Elective; open to students who have taken courses 1 and 2.*

4. Scientific German. *Winter and Spring terms, Senior year; 2 exercises per week. Elective; open to students who have taken courses 1 and 2.*

5. Reading at Sight. *Throughout Senior year; 1 exercise per week. Elective; open to students who have taken courses 1 and 2.*

FRENCH.

1. Elementary Course.—Grammar, dictation, conversation, reading of easy prose and poetry. *Throughout the Sophomore year; 3 exercises per week. Required of all candidates for a degree.*

2. Middle Course.—Composition. Modern French writers. *Throughout the Junior year; 3 exercises per week. Elective; open to students who have taken course 1.*

3. Advanced Course.—French classics. History of French literature. *Throughout the Senior year; 3 exercises per week. Elective; open to students who have taken courses 1 and 2.*

4. Scientific French. *Throughout the Senior year; 2 exercises per week. Elective; open to students who have taken courses 1 and 2.*

5. Reading at Sight. *Throughout the Senior year; 1 exercise per week. Elective; open to students who have taken courses 1 and 2.*

LATIN.

1. Beginner's Latin Book. Grammar. *Throughout the Freshman year; 3 exercises per week. Elective.*

2. Cæsar. Composition. *Throughout the Sophomore year; 3 exercises per week. Elective; open to students who have taken course 1.*

3. Cicero. Composition. *Throughout the Junior year; 3 exercises per week. Elective; open to students who have taken courses 1 and 2.*

4. Virgil. Composition. *Throughout the Senior year; 3 exercises per week. Elective; open to students who have taken courses 1, 2, and 3.*

HISTORY.

1. American History. *Fall term, Freshman year; 2 exercises per week. Required of all candidates for a degree.*

2. General History. *Winter and Spring terms, Freshman year; 2 exercises per week. Required of all candidates for a degree.*

3. English History and English Literature.—(Same as English 3). *Winter and Spring terms, Junior year; 4 exercises per week. Required of all candidates for a degree.*

4. Special Work for Individual Students. *Spring term, Senior year; 3 exercises per week. Elective; open to students who have taken courses 1, 2 and 3.*

POLITICAL SCIENCE.

1. Science of Government.—Town, County, State, and United States. Their origin, development, and practices. Critical analysis of the Constitution of the United States. Lectures, recitations and discussions. *Fall term, Senior year; 4 exercises per week. Elective.*

2. Political Economy.—Elementary course. Based on Walker's Briefer Course, and Andrew's Institutes of Economics. Lectures,

recitations, discussions, readings, original problems, citations from the daily press, and essays. *Winter term, Senior year; 4 exercises per week. Elective.*

MATHEMATICS.

1. Algebra (Wells).—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. *Freshman year; 5 exercices per week, Fall and Winter terms; 3 exercises per week, Spring term. Required of all candidates for a degree.*

2. Book-keeping (Bryant and Stratton).—Explanation of commercial terms; single entry; double entry; use of books,—day-book, cash-book, journal and ledger; practical exercises; original accounts; farm accounts; mechanics' accounts; inventory; statements; partnership; interest; discount; exercise in commercial forms—bills, receipts, checks, notes, orders, drafts. *Winter term of Freshman year; 1 one hour exercise and 2 two hour exercises per week. Required of all candidates for a degree.*

3. Plane Geometry (Wells).—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. *Spring term of Freshman year; 4 exercises per week. Fall term of Sophomore year; 5 exercises per week. Required of all candidates for a degree.*

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

5. Plane Surveying (Carhart).—Elementary course, field work, recitation and plotting. Use of compass, transit and levels; adjustment of instruments; stadia surveying. *Spring term of Sophomore year; 1 exercise per week of classroom work, 2 exercises of three hours each of field work per week. Required of Agricultural students.*

6. Road Construction and Leveling (Gillespie).—Location and construction of roads: mechanical structures; earth, gravel, broken stone, paved and macadam roads. *Fall term of Junior year; 3 exercises of text-book work per week and 1 exercise of three hours of field work per week. Required of students in the Agricultural course.*

7. Civil Engineering.—A continuation of course 5, embracing land, topographic and railroad surveying, the study of the use of engineer's tables and practice in overseeing under-classmen beginning the subject. *Fall and Spring term; 2 exercises of two hours each week. Elective; open to students who have completed course 5.*

8. Solid Geometry (Wells).—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 of Sophomore year; 3 exercises per week. Required of students in the Mechanical course.*

9. Analytical Geometry (Hardy).—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 section; higher plane curves. *Fall and winter terms of Junior year; 4 exercises per week. Required of students in the Mechanical course.*

10. Descriptive Geometry (Faunce).—Notation and elementary principles; problems on the point, line and plane; problems relating to the cylinder, cone and double curved surface of revolution; intersection and development of planes and solids; practical

problems. *Fall term of Junior year; 3 exercises per week. Required of students in the Mechanical course.*

11. Calculus (Taylor).—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. *Winter and spring terms of Junior year, and fall term of Senior year; 3 exercises per week. Required of students in the Mechanical course.*

12. Synthetic Geometry (Dupuis).—The line, point, and circle; comparison and measurement of areas; proportion amongst line segments; collinearity; inversion; anharmonic division; homography. *Spring term; 3 exercises per week. Elective; open to students who have completed courses 1 and 3.*

13. Determinants (Harris).—Proofs of fundamental propositions; determinant minors; development of determinants; rectangular arrays; reciprocal determinants; symmetrical, skew-symmetric, and skew-determinants. *Fall term; 3 exercises per week. Elective; open to students who have completed course 10.*

14. Advanced Calculus (Byerly).—An extension of course 10, including further discussion of definite integrals; imaginaries, length of curves, areas, volumes, the elements of elliptic integrals, and of the theory of functions. *Winter and spring terms; 3 exercises per week. Elective; open to students who have completed course 11.*

15. Analytical Mechanics.—(Same as Mechanics 21). *Spring term; 3 exercises per week. Elective; open to students who have completed one term of course 11.*

16. Higher Algebra (Taylor).—The theory of limits; differen-

tiation; development of functions in services; permutations and combinations; probability; the theory of equations. *Fall term; 2 exercises per week. Elective; open to students who have completed course 1.*

ASTRONOMY.

1. Physical Astronomy. — Lecture course, illustrated with copious lantern slides, observations with a four-inch telescope, and laboratory work with the sun spectrum and the spark spectrum sufficient to give an insight into modern methods of astronomical work. *Spring term of Senior year; 2 exercises per week. Elective; open to all Seniors.*

2. Practical Astronomy.—The use of instruments; the determination of time, of latitude, of longitude. *Spring term of Senior year; 2 exercises per week. Elective; open to Mechanical Seniors.*

MECHANICS.

1. Strength of Materials.—Strength of iron and steel; simple and continuous beams; pipes and columns. *Spring term, Junior year; recitations, 3 exercises per week, laboratory work 1 exercise of 2 hours per week. Required of Mechanical students.*

2. Mechanism.—Rectilinear motion. Rotary motion. Transmission of motion. *Spring term, Junior year; 2 exercises per week. Required of Mechanical students.*

3. Mechanics of Engineering.—Bodies in equilibrium and in motion; work and power; friction of rest and motion. Recitations. *Fall term of Senior year; 5 exercises per week.* Theory of arches, retaining walls, gas engines, hot-air engines. *Winter term of Senior year; 4 exercises per week.* Hydraulics and water-wheels. *Spring term of Senior year; 5 exercises per week. Required of Mechanical students.*

4. Steam Engineering.—Study of steam and its properties;

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simple and compound engines; steam boilers. *Fall term, Senior year; 3 exercises per week. Elective.*

5. Metallurgy.—Study of the manufacture of cast iron, wrought iron, and steel; rolling-mill machinery; metallurgy of copper, tin, zinc, and silver; alloys. *Winter term, Senior year; 3 exercises per week. Elective.*

6. Mechanical Drawing. *Sophomore year. Winter term; 1 exercise of 2 hours per week. Required of Agricultural students.*

7. Mechanical Drawing. *Sophomore year. Fall term; 2 exercises of 2 hours each per week. Winter term; 1 exercise of 2 hours per week. Spring term; 1 exercise of 3 hours per week. Required of Mechanical students.*

8. Mechanical Drawing. *Junior year. Fall term; 2 exercises of 2 hours each per week. Winter term; 1 exercise of 3 hours per week. Spring term; 2 exercises of 2 hours each per week. Required of Mechanical students.*

9. Mechanical Drawing.—Machine drawing and design. *Winter and Spring terms of Senior year; 1 exercise of 3 hours per week. Required of Mechanical students.*

10. Wood-Working.—Use of tools, bench work and carpentering. *Fall term of Freshman year; shop-work, 2 exercises of 3 hours each per week.* Carpentering and practical construction in wood. *Winter term of Freshman year; shop-work, 2 exercises of 3 hours each per week. Required of all Freshmen.*

11. Wood-Turning. *Fall term of Sophomore year; shop-work, 2 exercises of 3 hours each per week. Required of Mechanical students.*

12. Wood-Turning. *Fall term of Sophomore year; shop-work, 1 exercise of 3 hours per week. Required of Agricultural students.*

13. 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 throughout the course; 1 exercise of 3 hours per week.*

14. Iron Work.—Forging, drawing, bending, welding and tool dressing. *Winter term of Sophomore year; shop-work, 2 exercises of 3 hours each per week. Required of Mechanical students.*

15. Construction, and Estimates of Cost. *Winter term of Sophomore year; shop-work and lectures, 2 exercises of 2 hours each per week. Required of Agricultural students.*

16. Forging. *Spring term of Sophomore year; shop-work, 1 exercise of 3 hours per week. Required of Mechanical students.*

17. Forging. *Winter term of Junior year; 1 exercise of 3 hours per week. Required of Agricultural students. Spring term of Junior year; 1 exercise of 3 hours per week. Elective for Agricultural students.*

18. Pattern-Making. Principles of moulding and casting. *Fall term of Junior year; shop-work, 2 exercises of 3 hours per week. Required of Mechanical students.*

19. Machine-Shop Practice. *Winter and Spring terms of Junior year; 1 exercise of 3 hours per week. Required of Mechanical students.*

20. Machine Construction. *Throughout the Senior year; shop-work, 2 exercises of 3 hours each per week. Required of Mechanical students.*

21. Analytical Mechanics.—(Same as Mathematics 15). *Junior year, Spring term. Open to students who have completed one term of Mathematics 11.*

22. Engineering Conferences.—Subjects chosen by the class. *Spring term of Senior year; 2 exercises per week. Required of Mechanical students.*

DRAWING AND MODELING.

1. Freehand Drawing.—Drawing in charcoal from objects and still life. Special attention given to values. Memory sketches required. *Spring term of Freshman year; 2 exercises of 2 hours each. Required of all Freshmen.*

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2. Drawing from the cast in charcoal.—Memory sketches required. *Fall term of Sophomore year; 1 exercise of 2 hours per week. Required of all Sophomores.*

3. Drawing from life or the cast. Painting in oil, pastel or water color. *Elective; open to students who have taken courses 1 and 2.*

4. Modeling in clay from simple objects and casts. *Fall term of Sophomore year; 1 exercise of 2 hours per week. Required of Agricultural students.*

MILITARY DRILL AND TACTICS.

1. Infantry Drill.—School of the soldier. School of the company. School of the battalion and small-arm target practice. *Throughout the course, 3 exercises per week.*

2. Artillery Drill.—School of the soldier dismounted. Sabre exercise and target practice. School of the battery dismounted for selected detachments. Students in course 2 are selected by the commandant from those reasonably proficient in course 1.

3. Military Science. *Lectures given in Winter term.*

4. Signal Drill.—With heliograph flags, torches, and telegraphic instruments, according to the United States Signal code.

COURSE OF STUDY

OF THE

R. I. College of Agriculture and Mechanic Arts.

FRESHMAN YEAR.

FALL TERM.

	Exercises per week.		Exercises per week.
Physical Geography, I*	3	Mathematics, I	5
Agriculture, I	2	Mechanics, X	2
English, I	5	Military Drill and Tactics, I	3
History, I	2		

Electives—Latin, I. Mechanics, XIII.

WINTER TERM.

Physiology, I	3	Mathematics, I	5
English, II	5	Mathematics, II	3
History, II	2	Mechanics, X	2
		Military Drill and Tactics, I	3

Electives—Latin, I. Mechanics, XIII.

SPRING TERM.

Physiology, I	2	Mathematics, I	3
Agriculture, III	2	Mathematics, III	4
English, II	4	Drawing, I	2
History, II	2	Military Drill and Tactics, I	3

Electives—Latin, I. Mechanics, XIII.

* The Roman numerals refer to the number of the course. See pp. 40-56.

SOPHOMORE YEAR.

FALL TERM.

Agricultural Course.	Exercises per week.
Physics, I	4
Agriculture, IV	2
Agriculture, V	3
English, II	2
French, I	3
Mathematics, III	5
Mechanics, XII	1
Drawing, II	1
Modeling, IV	1
Military Drill and Tactics, I	3

Mechanical Course.	Exercises per week.
Physics, I	4
English, II	2
French, I	3
Mathematics, III	5
Mechanics, VII	2
Mechanics, XI	2
Drawing, II	1
Military Drill and Tactics, I	3

*Electives—Latin, II. Mathematics, XVI. Mechanics, XIII.

WINTER TERM.

Physics, I	4
Botany, I	4
English, II	2
French, I	3
Mathematics, IV	3
Mechanics, VI	1
Mechanics, XV	2
Military Drill and Tactics, I	3

Physics, I	4
Botany, I	4
English, II	2
French, I	3
Mathematics, IV	3
Mechanics, VII	1
Mechanics, XIV	2
Military Drill and Tactics, I	3

Electives—Latin, II. Mechanics, XIII.

SPRING TERM.

Chemistry, I	4
Physics, I	4
Botany, I	4
French, I	3
Mathematics, V	3
Military Drill and Tactics, I	3

Chemistry, I	4
Physics, I	4
Botany, I	4
French, I	3
Mathematics, VIII	3
Mechanics, VII	1
Mechanics, XVI	1
Military Drill and Tactics, I	3

Electives—Latin, II. Mathematics, XII. Mechanics, XIII. Drawing, III.

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*A student may elect work offered to a lower class or to the other division of his own class.

JUNIOR YEAR.

FALL TERM.

Agricultural Course.	Exercises per week.
Chemistry, II.	3
Chemistry, III.	2
German, I.	3
Mathematics, VI.	4
Botany, II.	3
Horticulture, I.	4
Military Drill and Tactics, I.	3

Mechanical Course.	Exercises per week.
Chemistry, II.	3
Chemistry, III.	2
German, I.	3
Mathematics, IX.	4
Mathematics, X.	3
Mechanics, VIII.	2
Mechanics, XVIII.	2
Military Drill and Tactics, I	3

Electives—Physics, II. French, II. Latin, III. Mechanics, XIII. Drawing, III.

WINTER TERM.

Chemistry, III.	2
Chemistry, IV.	4
English, III.	4
German, I	3
Agriculture, VI.	5
Mechanics, XVII.	1
Military Drill and Tactics, I	3

Chemistry, III.	2
English, III.	4
German, I.	3
Mathematics, IX.	4
Mathematics, XI.	3
Mechanics, VIII.	1
Mechanics, XIX.	1
Military Drill and Tactics, I	3

Electives—Physics, II. Botany, III, IV. Horticulture, II. French, II. Latin, III. Mechanics, XIII. Military Drill and Tactics, III.

SPRING TERM.

English, III.	4
German, I.	3
Chemistry, V.	3
Chemistry, VI.	2
Zoölogy, I	4
Agriculture, VI	2
Military Drill and Tactics, I.	3

English, III.	4
German, I.	3
Mathematics, XI.	3
Mechanics, VIII.	2
Mechanics, II.	2
Mechanics, I.	4
Mechanics, XIX.	1
Military Drill and Tactics, I.	3

Electives—Physics, II. Botany, III, IV. Horticulture, III. French, II. Latin, III. Mathematics, XV. Mechanics, XIII, XVII. Drawing, III.

*SENIOR YEAR.

FALL TERM.

Agricultural Course.	Exercises per week.	Mechanical Course.	Exercises per week.
Chemistry, V	2	Mathematics, X	3
Physiology, II	4	Mechanics, III	5
Agriculture, VII	3	Mechanics, XX	2
Military Drill and Tactics, I	3	Military Drill and Tactics, I	3

Electives—Chemistry, VII. Physics, II. Botany, III, IV. Horticulture, IV. English, IV, V. German, II, V. Latin, IV. French, III, IV, V. Political Science, I. Mathematics, VII, XIII. Mechanics, IV, XIII. Drawing, III.

WINTER TERM.

Physiology, II	3	Mechanics, III	4
Geology, I	2	Mechanics, IX	1
Agriculture, VIII	2	Mechanics, XX	2
Horticulture, V	3	Military Drill and Tactics, I	3
Military Drill and Tactics, I	3		

Electives—Chemistry, VII. Physics, II. Botany, III, IV. Agriculture, X. Horticulture, VI. English, IV, V. German, III, IV, V. Latin, IV. French, III, IV, V. Political Science, II. Mathematics, XIV. Mechanics, V, XIII. Military Drill and Tactics, III.

SPRING TERM.

Veterinary Science, I	4	Mechanics, III	5
Agriculture, IX	1	Mechanics, IX	1
Horticulture, VII	2	Mechanics, XX	2
Military Drill and Tactics, I	3	Mechanics, XXII	2
		Military Drill and Tactics, I	3

Electives—Chemistry, VII. Physics, II, III. Botany, III, IV. Agriculture, XI. Psychology, I. English, IV. German, III, IV, V. Latin, IV. French, III, IV, V. History, IV. Mathematics, VII, XIV. Astronomy, I, II. Mechanics, XIII. Drawing, III.

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*The equivalent of 15 hours of recitation per week is required.

AGRICULTURAL COLLEGE EXTENSION.

FOR the benefit of persons within the State who cannot attend the College as students, the faculty has arranged a course of study known as the Agricultural College Extension. The plan of operation is similar to that of the Chautauqua Reading-Circle. On December 20th, 1894, circulars giving the course of study, suggestions for supplementary reading, and other information relating to the course, were sent to those persons within the State whose names were on our mailing list. The following is reprinted from our Extension circular:

COURSE OF STUDY.

The course of study is so arranged as to meet the requirements of all, with no limitations as to age, sex, or occupation. Persons may take short special courses in any branch, and receive certificates for proficiency therein, or they may take a more extended course, and receive the award of a special diploma. An examination either at the college or under the direction of some authorized person will be necessary for obtaining either certificate or diploma, but this arrangement does not prevent persons from taking any course without such examination. Persons desiring to graduate will be required to pass an examination on at least one book under each number in the following three years' course; thus taking five studies each year. Additional work may be taken by any desiring it. Persons will be passed, upon writing a satisfactory review, of one thousand or more words, of the books marked by a star. On all other books, a written examination will be required.

	FIRST YEAR.	Publisher's Price.	Price to Members of the Extension.	Postage.
1.	First Principles of Agriculture. *Mills and Shaw*	$	$ 40	$ 05
	American Literature. *Hawthorne and Lemmon*		1 12	10
2.	*Home Floriculture. *Rexford*	1 50	1 20	08
	Silos, Ensilage, and Silage. *Miles*	50	38	04
	*Helps for Home Makers. *Mary Blake*	75	56	08
3.	Insects and Insecticides. *Weed*	1 25	1 00	08
	The Human Body. *Martin*		1 20	10
4.	Feeding Animals. *Stewart*	2 00	1 60	12
	American History. *Montgomery*		1 00	11
5.	Manual of the Constitution. *Andrews*		1 00	08
	SECOND YEAR.			
1.	Soils and Crops. *Morrow and Hunt*	$1 00	$ 75	$ 06
	Representative English Literature. *Pancoast*		1 60	12
2.	Text-Book of Botany			
	Horses, Cattle, Sheep and Swine. *Curtis*	2 00	1 60	12
	*Ornamental Gardening for Americans. *Long*	2 00	1 50	08
3.	How the Farm Pays. *Henderson and Crozier*	2 50	1 88	12
	How to Make the Garden Pay. *Greiner*	2 00	1 60	12
	Profitable Poultry Keeping. *Beale*	1 50	1 12	08
	*Anna Maria's Housekeeping. *Power*	75	56	08
4.	Stock Breeding. *Miles*	1 50	1 12	12
	English History. *Montgomery*		1 12	11
5.	Political Economy (Briefer Course). *Walker*		1 00	08
	Astronomy. *Newcomb*		1 30	12
	THIRD YEAR.			
1	Practical Farm Chemistry. *Greiner*	$1 00	$ 80	$ 06
	General History. *Meyers*		1 50	15
2.	A Text-Book of Chemistry			
	The Nursery Book. *Bailey*	1 00	80	06
	Draining for Profit and Health. *Waring*	1 50	1 12	08
3.	Langstroth on the Hive and Honey Bee. (Danant's Revision)		1 12	08
	American Fruit Culturist. *Thomas*			
	American Dairying. *Gurler*	1 00	80	06

		Publisher's Price.	Price to Members of the Extension.	Postage.
4.	Green-House Construction. *Taft*	$1 50	$1 20	$ 08
	Horse Breeding. *Sanders*	2 00	1 50	12
	*Our Farming. *Terry*	2 00	1 60	13
	English translation of a foreign literature. (Books will be recommended later acccording to the subject chosen.)			
5.	*The New Womanhood. *Fernald*	1 25	94	08
	Advanced Course in Political Economy. *Walker*		2 00	15
	Soils and Rocks. *Stockbridge*	2 50	2 25	12

This arrangement affords opportunity for taking special courses in either agriculture or horticulture, while it also contains studies that will admit of a course entirely without the agricultural books, which some might not care to study exclusively.

It was with a great deal of reluctance that physiology, botany, and chemistry were placed in the course; and while a knowledge of these sciences is considered of great value, no person will be encouraged to begin them unless he arranges either to come to the College one term for laboratory practice and aid, or to join a class to be taught by an instructor from the College. This latter arrangement can be perfected, if communities, granges, etc., take up the work with that end in view.

SUPPLEMENTARY READING.

In selecting the books for this course of study, the committee has had under consideration a large number of valuable ones; and in many cases, selection was difficult. It therefore feels that in presenting the limited number of studies for this course, several books have been left out which should have a place, if not in the regular reading-course, in the home, grange, or town library. A list of supplementary works is therefore appended.

	Publisher's Price.	Price to Members.	Postage.
Agriculture (2 vols.) *Storer*	$5 00	$3 75	$ 24
Talks on Manures. *Harris*	1 75	1 31	08
Practical Dairy Husbandry. *Willard*	3 00	2 00	16
The Grasses of North America. *Beal*	2 50	2 00	10

	Publisher's Price.	Price to Members.	Postage.
The Farmer's Veterinary Adviser. *Law*	$3 00	$2 40	$ 16
Plant Life on the Farm. *Masters*	1 00	75	06
The Shepherd's Manual. *Stewart*	1 50	1 12	11
Harris on the Pig. *Harris*	1 50	1 12	08
Practical Poultry Keeping. *Wright*	2 00	1 50	12
The Book of Poultry. *Wright.* }	5 00	3 75	24
Colored Plates. }	12 50	9 38	32
How Crops Feed. *Johnson*	1 50	1 12	11
How Crops Grow. *Johnson*	1 50	1 12	11
A B C of Bee Culture. *Root*	1 25	1 00	12
A Modern Bee Farm. *Simmins*			
Bees and Bee-Keeping. (2 vols.) *Cheshire*			
The Production of Comb Honey. *Hutchinson*		25	
The Production of Extracted Honey. *Cowan*			
The Incubator and its use. *Rankin*			
Poultry for Profit. *Jacobs*			
Incubators and Brooders. *Jacobs*			
Natural and Artificial Duck Raising. *Rankin*			
Poultry. (A Treatise on raising Broilers and Ducks by Artificial Means) *McFetridge*			
Hand-book of Plants. *Henderson*	$4 00	3 20	28
Flowers, Fruits and Leaves. *Sir John Lubbock*			
How to Know the Wild Flowers. *Dana*		1 50	Free
Origin of Species. *Darwin*	2 00	1 50	14
Animals and Plants under Domestication. (2 vols.) *Darwin*	5 00	3 75	28
The American Commonwealth. *Bryce*		3 50	Free
Letters to a Daughter. *Starrett*	75	60	06
How the Other Half Lives. *Riis*		1 25	06
Amenities of Home	60	45	05
How to Win. *Frances E. Willard*	1 00	75	07
New-England Legends and Folk Lore. *Drake*	2 00	1 50	12
A Nameless Nobleman. *Jane Austin*	1 25	94	08
Dr. LeBaron and his Daughter. *Jane Austin*	1 25	94	08
Standish of Standish. *Jane Austin*	1 25	94	08
Betty Alden. *Jane Austin*	1 25	94	08
Half Hours with American History. (2 vols.) *Morris.*	3 00	2 25	24
Masterpieces of American Literature		1 00	08

	Publisher's Price.	Price to Members.	Postage.
Riverside Literature Series		15	Free
A Short History of the English People. *Green*		1 20	15
Student's History of England. *Gardiner*		3 00	15
Readings from English History. *J. R. Green*	1 50	1 12	12
English Classic Series		12	Free
Public Opinion (Periodical)			

MEMBERSHIP.

No examination is required for membership in the College Extension courses. Any person desiring to become a student in this department should make application by sending to the secretary his name, address and occupation, together with a statement as to the course of study he wishes to pursue, and the extent of his previous study and practical experience in the line chosen. Upon receipt of this application, the student will be enrolled as a member of the College Extension, and his name will be forwarded to the Rhode Island News Company, 113 and 115 Westminster street, Providence, from which firm he can then obtain any books in the above list at special rates.

CLASS STUDY.

While students are earnestly encouraged to work independently, decided advantages will be found to arise from the formation of reading circles in neighborhoods and granges, where weekly meetings for consultation and discussion may be held. If several (not less than six) in the same locality are taking a given course, arrangements may be made for an instructor from the college to be present at the meetings of the class when special instruction is desired. A course may be begun at any time during the year.

GRADUATION.

Upon the completion of a year's work, arrangements for examination may be made by correspondence with the secretary, and upon the completion of three years' work, examinations upon the same having been successfully passed, the student will graduate, and receive a diploma from the college. Students graduating from this department will be expected to be present at the college on Commencement Day, to receive their diplomas.

EXPENSES.

The expense to readers in this course is for books only, any of which are worthy of a place in the farm home library, and are offered here at very reasonable prices. In case an instructor is called to give lessons away from the college, the members interested will be required to pay his traveling expenses.

CORRESPONDENCE.

If further information is desired upon any point, if difficulties of any nature are encountered by the student in his study, or if any advice is required in the selection of books, a letter to the secretary will insure a reply upon the point in question. All interested in this work, whether enrolled as students or not, are invited to visit the college frequently—its library, laboratories and the Experiment Station—and to encourage others to do the same. It is the object and wish of the management of the college to do all in its power to promote the best interests of the people of the State, and the co-operation of every loyal citizen is sought. All correspondence relating to the Agricultural College Extension should be addressed to

J. D. TOWAR, *Secretary*,

Kingston, Rhode Island.

MILITARY ORGANIZATION.

COMMANDANT.

W. W. WOTHERSPOON, Captain Twelfth Infantry, U. S. A.

BENJAMIN BARTON, Captain of Company.

E. F. TABOR.....First Lieutenant.
C. A. BRAYTON.....Second Lieutenant.
W. B. MADISON.....First Sergeant.
J. E. WILLIAMS.....Sergeant.
H. E. B. CASE.....Sergeant.
W. C. P. MERRILL.....Sergeant.
N. L. C. MOORE.....Sergeant.
A. F. GRINNELL.....Corporal.
A. A. TUCKER.....Corporal.
A. L. KENYON.....Corporal.
L. H. MARSLAND.....Corporal.
H. W. CASE.....Bugler.

GENERAL VIEW.

YOUNG MEN'S CHRISTIAN ASSOCIATION.

C. A. BRAYTON, President.

H. E. B. CASE, Vice President.

W. E. DRAKE, Corresponding Secretary.

A. C. SCOTT, Recording Secretary.

W. P. ALEXANDER, Treasurer.

ALUMNI ASSOCIATION.

GEORGE M. TUCKER, President.

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

CHARLES L. SARGEANT, Treasurer, Peacedale, R. I.

STUDENTS.

POST GRADUATES.

Adams, George Edward	Rocky Brook,	R. I.
Ammonds, George Clarence	Kingston,	"
Clark, Helen May	Kingston,	"
Eldred, Mabel DeWitt	Kingston,	"
Knowles, John Franklin	Kingston,	"
Madison, Warren Brown	East Greenwich,	"
Rodman, George Albert	Kingston,	"
Tucker, George Mason	Swansea Centre,	Mass.
Winsor, Byron Edgar	Summit,	R. I.

GRADUATES OF 1895.

Albro, Lester Franklin, Agr	Middletown,	R. I.
Burdick, Howland, Agr	Newport,	"
Clarke, Charles Sherman, Mech	Jamestown,	"
Eldred, Mabel DeWitt	Kingston,	"
Hammond, John Edward, Agr	Jamestown,	"
Oatley, Lincoln Nathan, Mech	Peace Dale,	"
Scott, Arthur Curtis, Mech	Summit,	"
Tefft, Jesse Cottrell, Mech	Jamestown,	"
Winsor, Byron Edgar, Mech	Summit,	"

SENIORS.

Barton, Benjamin, Agr	East Greenwich,	R. I.
Brayton, Charles Andrew, Agr	Fiskeville,	"
Brown, May	Narragansett Pier,	"

Greenman, Adelaide Maria	Kingston,	R. I.
Kenyon, Albert Lewis, Mech	Point Judith,	"
Moore, Nathan Lewis Cass, Agr	Shannock,	"
Tabor, Edgar Francis, Mech	Slatersville,	"
Williams, James Emerson, Agr	Summit,	"

JUNIORS.

Carmichael, Welcome Sands, Agr	Shannock,	"
Case, Herbert Edwards Brown, Mech	Pawtucket,	"
Grinnell, Archie Franklin, Mech	Middletown,	"
Hoxsie, Bessie Bailey	Quonochontaug,	"
Kenyon, Charles Franklin, Mech	Shannock,	"
Kenyon, Albert Prentice, Mech	Ashaway,	"
Marsland, Louis Herbert, Mech	Franklin,	N. Y.
Peckham, Charles Herbert, Mech	Coventry,	R. I.
Tefft, Eliza Alice	Allenton,	"
Thomas, Irving, Mech	Lafayette,	"
Turner, Harriette Florence	Lakeside,	N. Y.

SOPHOMORES.

Arnold, Sarah Estelle	Wakefield,	R. I.
Barber, George Washington, Agr	Shannock,	"
Bates, Edward Ayer, Mech	Pawtucket,	"
Cargill, Edna Maria	Abbott Run,	"
Case, John P., Agr	Gould,	"
Clark, William Case, Jr., Mech	Wakefield,	"
Clarke, William Lamont Wheeler, Mech	Jamestown,	"
Congdon, Henry Augustus, Mech	Mooresfield,	"
Flagg, Martha Rebecca	Kingston,	"
Hadfield, John Slater	Forestdale,	"
Harley, William Ferguson, Agr	Pawtucket,	"
Larkin, Jessie Louise	Watch Hill,	"
O'Neil, Henry Francis, Mech	Providence,	"
Rose, George, Agr	Mooresfield,	"

Steere, John Purkis., Agr	Chepachet,	R. I.
Strout, Robert Bruce, Agr	Wakefield,	"
Taylor, William James, Agr	Slatersville,	"
Tucker, Attmore Arnold, Agr	Wakefield,	"
Wheeler, Charles Noyes	Shannock,	"
Wilson, Henry Paige, Mech	Allenton,	"
Wilson, Grace Ellen	Allenton,	"
Worden, Cornelia	Allenton,	"

FRESHMEN.

Allen, Nathaniel Bertram	East Greenwich,	R. I.
Arnold, Everett Mullen	Wood River Junction,	"
Angell, Ralph Day	Providence,	"
Barber, Arthur Sisson	Hope Valley,	"
Batchelder, Nelson A	Crompton,	"
Brightman, Henry Mason	White Rock,	"
Cargill, James Edward	Abbott Run,	"
Cumming, John Stuart	Pawtucket,	"
Eddy, Frank Roffee	Providence,	"
Doughty, Robert Stanley	Providence,	"
Gray, Herman James	Adamsville,	"
Harvey, Mildred Wayne	Allenton,	"
Kenyon, Blydon Ellery	Wood River Junction,	"
Knowles, Carroll	Kingston,	"
Knowles, Harry	Point Judith,	"
Ladd, Merrill Augustus	Bay Shore, Long Island,	N. Y.
Minor, George Eldred	Westerly,	R. I.
Main, George E	Hope Vallley,	"
Palmer, Walter T	Adamsville,	"
Payne, Ebenezer	Lyons Farms,	N. J.
Phillips, Walter Clark	Lafayette,	R. I.
Pierce, Nellie Hollis	Littleton,	Mass.
Reynolds, Robert Spink	Wickford,	R. I.
Sherman, George Albert	West Kingston,	"

SPECIALS.

Ballou, Latimer A.	Lawrence,	Mass.
Boynton, Myra Louisa	"	"
Case, Harold Warren	Pawtucket,	R. I.
Clarke, John G.	West Kingston,	"
Clarke, William Hazard	West Kingston,	"
Fiske, Nina Viola	Olneyville,	"
Gardner, George Wallace	Block Island,	"
Gates, Eugene Herbert	Shannock,	"
Gross, Herbert Dow	North Foster,	"
Hanson, Gertrude Maie King	Peace Dale,	"
Kingsley, Walter Burnside	Hamilton,	"
Magill, Arthur Reginald	Newport,	"
Merrill, William Chauncey Palmer	Central Falls,	"
Nelson, George Oscar	Peace Dale,	"
Newton, Willis Bertram	Washington,	"
Oatley, George Nathan	Peace Dale,	"
Peckham, Herbert James	Middletown,	"
Pike, David	Riverpoint,	"
Reynolds, Rebecca D.	East Greenwich,	"
Sherman, Abbie Gertrude	Kingston,	"
Steere, Enoch Mowry	Chepachet,	"
Van Horne, Mahlon Augustus	Newport,	"
Wells, Grace Perry	Kingston,	"
Wright, Silas Wilber	Wakefield,	"
Wright, Mary Ella	Shannock,	"
Woodmansee, Mattie Florence	Shannock,	"

SPECIALS IN WOOD-CARVING.

Adams, Mrs. H. F.	Kingston,	R. I.
Auel, Mrs. Chas.	Kenyon,	"
Armstrong, Mrs. Chas., Jr.	Wakefield,	"
Bishop, Mrs. N. N.	Kingston,	"
Bosworth, Mrs. Ellen	Kingston,	"

Carmichael, Mrs. George	Shannock,	R. I.
Clemens, Julia	Wakefield,	"
Green, Aldana	Kenyon,	"
Green, Nellie	Kenyon,	"
Greenman, Mrs. A. A	Kingston,	"
Hudson, Lila	Wakefield,	"
King, Lizzie	Kenyon,	"
Metcalf, Alice	Carolina,	"
Northrup, Florence	Rocky Brook,	"

Post Graduates	9
Graduates, 1895	9
Seniors	8
Juniors	11
Sophomores	22
Freshmen	24
Specials	26
Specials in Wood-Carving	14
Total, counting none twice	121

TREASURER'S REPORT.

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

1895.	DR.	
Jan. 1.	To cash balance on hand	$8,246 54
Dec. 31.	Interest from 1862 fund	1,533 13
	J. H. Washburn, President, for students' board, etc.	8,155 21
	Incidental credits, cash	28 53
	Cash received from interest	69 52
		$18,032 93

1895.	CR.	
	By Salaries	$1,223 83
	Postage, stationery, and printing	154 15
	Freight and expressage	290 16
	Traveling	208 51
	Labor	1,560 69
	Store	1,004 87
	Furniture	2,176 21
	Incidentals	2,208 96
	Construction and repairs	6,989 96
	Provisions	1,755 10
	Boarding expense	456 22
	Cash on hand	4 27
		$18,032 93

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 four dollars and twenty-seven cents ($4.27).

GARDNER C. SIMS,
HENRY L. GREENE,
CHAS. J. GREENE,
Auditing Committee.

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

1895.	DR.		
	To receipts from the Treasurer of the United States as per appropriation for the year ending June 30, 1895, under act of Congress approved March 2, 1887.....		$15,000 00
1895.	CR.		
June 30.	By Salaries.....	$8,591 50	
	Labor.....	2,194 45	
	Publications.....	850 26	
	Postage and stationery.....	123 25	
	Freight and expressage.....	167 82	
	Heat, light and water.....	93 13	
	Chemical supplies.....	200 16	
	Seeds, plants and sundry supplies.....	311 56	
	Fertilizers.....	525 33	
	Feeding stuffs.....	447 65	
	Library.....	157 83	
	Tools, implements, and machinery.....	303 84	
	Furniture and fixtures	65 26	
	Scientific apparatus.....	61 76	
	Live stock.....	216 25	
	Traveling expenses.....	217 53	
	Contingent expenses.....	13 25	
	Building and repairs.....	459 17	
			$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

Agricultural Experiment Station for the fiscal year ending June 30, 1895; 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 fifteen thousand dollars, (see general station account in the Treasurer's hands), and the corresponding disbursements fifteen thousand dollars; for all of which proper vouchers are on file and have been by us examined and found correct.

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

GARDINER C. SIMS,
CHAS. J. GREENE.

Kingston, Aug. 20, 1895. *Auditors.*

I hereby certify that the above is a true copy from the books of the account of the institution named.

MELVILLE BULL,
Treasurer of the Rhode Island College of Agriculture and Mechanic Arts.

I hereby certify that the above signature is that of the Treasurer of the Rhode Island College of Agriculture and Mechanic Arts.

C. H. COGGESHALL,
President of the Board of Managers of the Rhode Island College of Agriculture and Mechanic Arts.

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

1895.	DR.	
June 30.	To balance from last year	$35 28
	Station receipts	1,346 42
	Station receipts Fertilizer inspection	2,026 57
	Interest	46 59
		$3,454 86
	CR.	
	By Salaries	$456 62
	Labor	345 16
	Supplies and repairs	1,016 16
	Freight and expressage, postage and stationery	27 72
	Library and printing	133 25
	Scientific instruments	35 70

By	Chemical apparatus and supplies	114 49
	Live stock	5 00
	Traveling	16 91
	Building	128 44
	Fertilizer inspection	126 88
	Incidentals	26 90
	Balance on hand	1,021 63
		$3,454 86

MELVILLE BULL, *Treasurer, in account with* UNITED STATES' SPECIAL APPROPRIATION.

1895.	DR.	
June 30.	To balance on hand	$1,581 97
	Interest	27 00
		$1,608 97

CR.

By	Library	$184 28
	Chemical apparatus	114 49
	Scientific apparatus	35 70
	Balance unexpended	1,274 50
		1,608 97

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, ending June 30, 1895, and the vouchers corresponding therewith, and find the same correct.

GARDINER C. SIMS,
HENRY L. GREENE,
CHAS. J. GREENE,
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, 1895.

Balance on hand July 1, 1894	$61,899 43	
Installment for 1894-95, received July 26, 1894	20,000 00	
Total available for year ending June 30, 1895		$81,899 43

DISBURSEMENTS THEREOF FOR AND DURING THE YEAR ENDING JUNE 30, 1895

SCHEDULE A.—Disbursements for Instruction in Agriculture and for facilities for such instruction	$5,449 93	
SCHEDULE B.—Disbursements for Instruction in Mechanic Arts and for facilities for such instruction	13,600 52	
SCHEDULE C.—Disbursements for Instruction in English Language and for facilities for such instruction	4,280 49	
SCHEDULE D.—Disbursements for Instruction in Mathematical Science and for facilities for such instruction	1,993 52	
SCHEDULE E.—Disbursements for Instruction in Natural or Physical Science and for facilities for such instruction	15,755 45	
SCHEDULE F.—Disbursements for Instruction in Economic Science and for facilities for such instruction	149 10	
Total expended during year	$41,229 01	
Balance remaining unexpended	40,670 42	
		$81,899 43

I HEREBY CERTIFY that the above acccount is correct and true, and, together with the schedules hereunto attached, truly represents the details of ex-

penditures 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 applications in the industries of life, and to the facilities for such instruction.

MELVILLE BULL, *Treasurer.*

INVENTORY OF THE PROPERTY OF THE RHODE ISLAND COLLEGE OF AGRICULTURE AND MECHANIC ARTS.

Books and apparatus in Department of Physiology	$4,297 97
Books and apparatus in Art Department	1,211 55
Books and apparatus in Botanical Department	1,304 57
Books in Department of Languages and History	4,078 87
Geological specimens	234 25
Books and apparatus in Horticultural Department	2,976 89
Tools and machinery in Wood-Working and Iron-Working Departments	10,063 77
Books and apparatus in Mathematical Department	1,398 74
Books, lantern slides, and apparatus in the Photo. Department	1,263 75
Books and apparatus in Chemical Department	3,593 04
Books and apparatus in Agricultural Department	2,380 16
Books and apparatus in the Department of Physics	2,500 00
Property of the Boarding Department	2,035 00
Furniture of the Women's Dormitory	1,000 00
Guns, cannon, and other military equipment	*4,500 00
Furniture in the offices and schoolrooms	1,016 00
Scientific apparatus, tools, and machinery of the Experiment Station	4,485 00
Books of the Experiment Station	2,300 00
Other property of the Experiment Station	4,977 00
Amount of personal property	$55,616 56

Women's Dormitory	$2,500 00
Hothouse	200 00
Mechanical Building	10,000 00
Blacksmith Shop	400 00
Temporary wooden buildings	4,000 00
Boarding Hall	10,000 00

* Loaned by the War Department.

Dormitory	45,000 00
Water Supply	10,000 00
Experiment Station Laboratory	20,000 00
Barns	5,000 00
Farm, roads, and improvements	15,000 00
Amount of real estate	$122,100 00
Total amount of real estate and personal property	$177,716 56