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REPORT OF THE BOARD OF MANAGERS

KINGSTON, R. I.

1916

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Rhode Island State College

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REPORT.

To His Excellency R. Livingston Beeckman, Governor, and the Honorable General Assembly of the State of Rhode Island and Providence Plantations, at its January Session, 1916:

I have the honor to submit herewith the Twenty-Eighth Annual Report of the Board of Managers of Rhode Island State College, as required by law.

WALTER E. RANGER,

President, Board of Managers.

REPORT OF THE PRESIDENT OF THE COLLEGE.

To the Honorable Board of Managers of Rhode Island State College:

GENTLEMEN:—In preparing my tenth report for submission to your honorable body, it has seemed well, and, indeed, even incumbent on me, to try to summarize what has been accomplished in these ten years. Such a summary is proper at this time, not merely because a decade is in a sense a symmetrical time unit, although that consideration alone would seem naturally to demand it, but more especially because it is needed as a basis for decisions as to future policy which must now be taken.

NECESSARY TO RESTRICT ATTENDANCE.

The one outstanding fact of the year 1915 has been that it has been necessary to limit the attendance. More than a year ago, it became apparent that unless some means of restricting the size of the incoming class in September, 1915, were adopted, we should not be able to care for the number that would be registered. The freshman class of 1913–14 numbered 87; that of 1914–15 numbered 118, an increase of 36 per cent. On the same basis of entrance the present freshman class would have numbered 160, and the total attendance would have been approximately 350 students. Now our accommodations, not merely as to dormitory space, but also and more significantly as to classroom and laboratory facilities and as to the size of the teaching force, do not permit of the successful and adequate training of more than 300 students. The number of houses in Kingston for rent is limited. We have secured all that are available and are using them to their full capacity. Our classrooms and laboratories are filled to the limit of capacity. The number of teachers reckoned in terms of full time employment is $29\frac{13}{15}$, which means under present conditions, 10.4 students to each professor and instructor. This is regarded in American college work as certainly approaching the upper limit of efficiency. It seemed obvious, therefore, that some means must be adopted to exclude from the incoming freshman class in September some fifty prospective applicants.

Students with More than One Condition Not Admitted to Freshman Class.

The means adopted was to deny registration to students with more than one condition, at the same time not allowing credits for high-school units over a total of fourteen to offset any deficiency in the subjects of the required entrance list. The rule undoubtedly worked harshly in many cases, and we frequently regretted the necessity for enforcing it; but it did bring about the result desired, in that the present freshman class numbers only four more than that of last year—122 as against 118 in September, 1914. I give below a comparative statement:

	1914	*1915*
Entering conditioned on two units	7	....
Entering conditioned on one and one-half units	6	....
Entering conditioned on one unit	7	11
Entering conditioned on one-half unit	6	9
Total	26	20

Short Courses More Thoroughly Differentiated From College Courses.

At the same time that these measures were taken with regard to the entering freshman class, other measures of a differentiative nature were adopted as to the short courses. The reason for retaining the short courses is that the land-grant college should not divorce itself from the average farmer's boy or girl living actually on the farm. Unless the State has made adequate provision in agricultural high schools so that high-grade instruction in all phases of agriculture shall be accessible to the young man or woman on the farm and lacking the advantages of a high school education, it should always be possible for such a young man or woman to attend the agricultural college and obtain there needed practical knowledge and training. For this reason it is of primary importance here at Rhode Island State College that short and special courses shall be maintained.

We have noted, however, that these courses have frequently attracted the city boy who for any reason is unsuccessful at the high school, while the country boy for whom they were intended is sometimes prevented from attending by the fact that he cannot be spared from the farm so early as the opening of September. It seemed possible, by deferring the opening of the short course work to the

latter part of October, to discourage the attendance of young people who had no real desire or aptitude for the work, while at the same time facilitating the entrance of those who were looking for genuine aid in meeting the practical problems of farm life.

Accordingly, it was advertised that the short courses would not begin until October 18. The result has been to reduce the attendance on the short and special courses from thirty last year to nineteen this year; but this number is composed almost entirely of young men from the farming regions of this State.

By the foregoing methods the total attendance has been prevented from going much over that of last year, being 311 as against 285 of one year ago.

Future Policy.

I have entered into detail in this matter in order that the situation might be fully and clearly grasped and a future policy to consciously adopted. The question before us is: Shall the college continue to grow and provide opportunity for all the young people who seek its training? Or shall it be the avowed policy to restrict its privileges to a limited number selected by increasingly searching and rigid tests? My own strong feeling is that the latter policy is not only inherently undemocratic, but also not in accordance with the spirit and purpose of the laws under which the national funds come to us. The spirit of the Morrill acts is "to offer an opportunity in every state for a liberal and larger education to large numbers, not merely those destined to sedentary professions, but to those needing higher instruction for the world's business, for the industrial pursuits and professions of life." To carry out this idea, however, beyond what we we are now doing means additional dormitories, additional laboratories and classrooms, additional land and farm equipment, and additional professors and instructors. These additions are conditioned on a whole-hearted policy among our people and in the General Assembly of steady financial support for the institution. They depend for their realization, not upon spasmodic appropriations wrung by campaign methods at irregular intervals from an unwilling public, but upon the adoption and maintenance of a definite plan of support which shall include the providing of adequate funds for permanent improvements as well as for increased maintenance.

On the other hand, if we have not the public spirit and courage to face a wise program of this kind, I cannot but feel that it is better

not to dilute efficiency with unwieldly numbers, not to require of teachers impossible things, not to deceive ourselves and others into believing that we are what we are not; but rather, frankly to avow a policy of restriction that is fair to all, selecting the beneficiaries of the public funds available in such manner as will bring together those best fitted to receive instruction and maintaining a high grade of college efficiency that will command the respect of the people and bring to the commonwealth results commensurate with the expenditure of effort and treasure.

These two lines of policy seem to me to be the only wise alternatives, for I do not believe that the people of the State would for a moment consider either the abolition or the disintegration of the college; neither do I believe that they would counsel the increase of numbers at the cost of decreased efficiency and lowered standards of scholarship. In fact, such a policy would soon bring public contempt, loss of prestige and rapid decay. I therefore earnestly advise that you give careful consideration to a method of getting the matter before the people and the General Assembly, possible by means of a printed address, in order that it may be fully discussed and a decision arrived at.

The Accomplishment of Ten Years.

In arriving at such a decision it should, first of all, be realized that, in the last decade especially, the college has attained a recognized position and become a recognized power in the educational affairs of the State. It is only stating a well-known fact to say that ten years ago it was unrecognized and unregarded, without financial support and with but few friends. There were some who realized its possibilities, but these were only the far-seeing few, and even among its local supporters there was discord and discontent.

To point out the development that has taken place without detracting in any way from the noble and intelligent work of that earlier time is a difficult and somewhat invidious task, but it seems to be necessary in view of the alternatives of policy now confronting us and the momentous decision now to be arrived at. Let me say briefly that in the comparison here instituted there is no intention of belittling the work or criticising the policies of those who guided the affairs of the college in that earlier day. On the contrary, I often wonder at the courage and constancy of those men who labored under overwhelming adverse conditions which they could not control and

for which they were in no sense responsible. Let me point out further, that there is one evidence of their earnestness, wisdom, and diligence which can never be gainsaid. The graduates which they turned out, while few in numbers, have shown unusual virility and power; have taken their places in the work of the world and have shown efficiency comparable with that of graduates from our best known schools. There is nothing to be ashamed of in their record and much to be proud of and grateful for.

Much of the internal growth and development cannot be measured by figures or numbers. It can be indicated only by statement of changes in policy and practice as follows:

1. Discontinuance of secondary school work. In the year 1905–06 much of the time of teachers was taken up in giving instruction on secondary subjects in a preparatory school to students of high school age and grade. In fact, in that year the preparatory students numbered more than the combined numbers of the four regular college classes. This preparatory school was entirely abolished in 1908–09.

2. Definition of the field of collegiate endeavor. This was accomplished in 1907. The courses were limited to the field of collegiate vocational work affirmatively prescribed by the Morrill acts. To do this, it was necessary to eliminate, on the one hand, courses in general science, pure biology and chemistry, and on the other hand, unrelated work like stenography, typewriting and wood-carving. It was further necessary more accurately to define the vocational work itself by substituting specified work for "electives" in the courses.

3. Establishment of the women's course in home economics. This course, established in 1907–08, was undertaken in pursuance of the idea expressed under the foregoing head to give to women opportunities in vocational work parallel with those for men in agriculture and engineering.

4. Establishment of course for teaching of vocational work. Here again, the effort was to comply with a clause of the Nelson amendment looking to the preparation of vocational teachers in agriculture. This course in applied science for teachers was originated in 1907–08.

5. Establishment of two-year vocational courses. These courses were intended to connect the college directly with young men and women on the farms and engaged in actual work which has precluded the obtaining of high school training. They are intended to give practical knowledge and training needed in farm and home life. Established in 1907–09.

6. Establishment of standard entrance requirements. This movement was carried out beginning in 1908 and accomplished in 1911. Requirements in 1905–06 were approximately eight and a half units; requirements in 1911 and following years, fourteen units.

7. Correlating the high schools with the college. In 1905–06 the number of high schools represented at the college by graduates was possibly five, there being only ten high school graduates in attendance. In 1915–16 in the freshman class alone, thirty-eight high schools are so represented, and in the classes of the last three years seventy high schools have had representatives, the numbers from the schools in any one year varying from eighteen to one.

8. Increase in college attendance. The following table shows the comparative attendance by classes.

	1905-6	*1915-16*
Graduate students	....	4
Seniors	8	41
Juniors	9	37
Sophomores	15	79
Freshmen	17	122
Irregulars	16	9
Total	65	292
NOTE:—For total comparative registration for the two years (excluding for 1905-06, the forty-six preparatory students who have no parallel in 1915-16) add year vocational	....	12
Winter poultry	21	7
Total	86	311

9. Increase in specified courses.

	1905-06	*1915-16*
Agricultural courses (total)	31	81
Divided as follows: Degree course	10	62
Two-year Vocational course		12
Winter Poultry course	21	7

	1905-06	*1915-16*
Engineering courses	29	142
Applied Science for Teachers	....	52
General Science,—Biology and Chemistry	26	....
Home Economics course	....	36
Total	86	311

10. Enlargement of service to the State.

Non-resident in State	39	73
Resident in State	47	238
Total	86	311
Residents by counties:		
Bristol	....	14
Kent	4	18
Newport	2	10
Providence	16	127
Washington	25	69
	47	238
Residents by towns:		
Barrington	....	4
Bristol	....	9
Burrillville	3	4
Central Falls	....	2
Coventry	....	3
Cranston	....	6
Cumberland	....	2
East Greenwich	3	5
East Providence	3	13
Exeter	....	1
Foster	....	1
Glocester	....	2
Hopkinton	....	5
Johnston	....	2
Narragansett	2	2
Newport	....	8
Lincoln	1	....
Middletown	1	....
North Kingstown	2	8
Pawtucket	1	18
Portsmouth	1	....
Providence	6	63
Scituate	....	3
Smithfield	1	2

	1905-06	*1915-16*
South Kingstown	17	35
Tiverton	....	2
Richmond	3	....
Warren	....	1
Warwick	....	6
Westerly	1	18
West Warwick	1	4
Woonsocket	1	9
	47	238

The main points to note in these tables is (1) the relative increase of attendance from the State—from 47 to 238—a five-fold increase; (2) the change in ratio of non-resident students—while Rhode Island students have increased five-fold, the non-residents have not quite doubled; or put it in this way, percentage of non-resident students in 1905–06 is 45.4 and in 1915–16 it is only 23.5; (3) the change from predominating local attendance—just half of the Rhode Island attendance coming from the three towns of South Kingstown, Richmond and Narragansett—to State-wide attendance, only 37 out of 238 being from the three towns mentioned; and (4) the more adequate representation from the more populous centers of the State—sixty-three from Providence in place of six; eighteen from Pawtucket in place of one; six from Cranston; nine from Woonsocket; two from Central Falls; nine from Bristol; thirteen from East Providence; eight from Newport; eighteen from Westerly, and so on. These tables would seem to indicate a radical change in the attitude of the State and its high schools toward the college, a readiness all over the State to take advantage of the opportunities it offers, and a consequent State-wide interest in its fortunes.

11. Strengthening of the faculty. The following comparative table shows the number of persons utilized in the main divisions of the work, in terms of full-time employment in one direction. For instance, in one case, two persons are each giving half his time to agriculture and half to experiment station work. These two are counted as one man on agriculture and one on experiment station work.

Department.	1905–06.				1915–16.			
	Chief or Professor.	Assistant Professor.	Subord. or Instructor.	Total.	Chief or Professor.	Assistant Professor.	Subord. or Instructor.	Total.
Administration	$\frac{2}{3}$	....	2	$2\frac{2}{3}$	$\frac{2}{3}$	1	$2\frac{1}{2}$	$4\frac{1}{6}$
Agriculture	1	....	3	4	$3\frac{1}{5}$	2	$1\frac{1}{2}$	$6\frac{7}{10}$
Engineering	$2\frac{1}{2}$	....	3	$5\frac{1}{2}$	3	1	3	7
Science	$3\frac{7}{10}$	....	$\frac{1}{2}$	$4\frac{1}{5}$	$4\frac{1}{3}$	1	4	$9\frac{1}{3}$
Language, economics, etc	$1\frac{1}{3}$	....	2	$3\frac{1}{3}$	$2\frac{1}{3}$	1	....	$3\frac{1}{3}$
Extension	1	....	....	1	$2\frac{1}{3}$	3	....	$5\frac{1}{2}$
Experiment station	$1\frac{4}{5}$	2	5	$8\frac{4}{5}$	$1\frac{7}{15}$	3	7	$11\frac{7}{15}$
Physical Training and Military	$\frac{1}{2}$	....	....	$\frac{1}{2}$	$1\frac{1}{2}$	....	....	$1\frac{1}{2}$
Home Economics	....	....	....	....	1	1	....	2
Total	$12\frac{1}{2}$	2	$15\frac{1}{2}$	30	$20\frac{1}{2}$	9	21	51

It will be noted that the teaching force (obtained by deducting administration, extension, and experiment station figures from the total) in 1905–06 amounted to $17\ \frac{8}{15}$, while in 1915–16 it is $29\ \frac{13}{15}$; that is to say, the teaching force is increased by seven-tenths. Comparing this with the increase in college students, who are four and one-half times as numerous in 1915–16, a very marked gain in service-efficiency will be noted, and this comparison may be carried through the several departments.

12. Betterment of inadequate salaries. In 1905–06, salaries were quite incommensurate with the positions to which they were attached. Some full professorships paid to the incumbents such yearly salaries as $1,000, $1,200, $1,500, the highest being $1,700. It must be evident that good officials could not be retained, nor others of high attainments and scholarship secured at such salaries. From time to time therefore salaries have been increased, until in 1915–16, the salaries of full professors at the college approach those of other institutions offering similar work. The same advance has been made in the pay of instructors and the whole movement has been attended with a corresponding increase in the efficiency of the teaching force.

13. Additions to the real property and equipment of the college. The inventoried value of the property of the college in 1905–06 was $272,213.33. The inventory for 1915–16 amounts to approximately $520,000. Notable additions have been the greenhouses, East Hall and Science Hall.

14. Increase of annual income. The advance noted in the foregoing paragraph has been rendered possible by increases in the funds from the United States and by some increase in funds from the State, as follows:

Income in 1905:

United States Morrill Fund of 1890	$25,000 00
" " " " " 1862	2,500 00
" " Hatch, Experiment Station Fund	15,000 00
Rhode Island, State Maintenance Fund	15,000 00
" " Extension, Student-labor and repairs	6,500 00
Receipts from tuition, dormitory fees, department sales and service	8,051 62
Receipts from experiment station	1,127 14
Total	$73,178 76

Income in 1915:

United States Morrill Fund	$50,000 00
" " " " of 1862	2,500 00
" " Experiment station funds	30,000 00
" " Smith-Lever fund and addition	11,500 00
Rhode Island State Maintenance	40,000 00
Receipts from tuition, dormitory fees, department sales	22,737 55
" " experiment station	2,642 22
Total	$159,379 77

The receipts for board (not included in the foregoing) are:

1905 Boarding receipts	$13,877 18
1915 " "	37,048 50

It will be noted that, while the State appropriations for maintenance since 1905 have increased 86 per cent., the college attendance has increased 349 per cent. The boarding receipts (and expenditures) have increased 167 per cent., the national funds have increased 121 per cent., and the total receipts (exclusive of boarding funds) have increased 118 per cent.

15. Enlargement of work of experiment station and of extension service. Funds coming from the General Government to the experiment station have doubled in amount during the ten years, making possible double the amount of investigative work carried on. The development in extension work has been phenomenal, the funds for that purpose being increased from some $2,000 in 1905–06 to over $11,500 in 1915–16, allowing an increase in employees from one at the earlier date to five and one-half at the latter, and enabling us to cover the State with an effective propaganda for better agriculture.

Summary of Review.

The foregoing indications of progress are cited as conclusive evidence that the college has become established as one of the prominent educative agencies in the State, that it has achieved a recognized dignity and standing as an educational institution, that it has woven itself into the life and thought of a large part of the people throughout the State, that it is benefiting large numbers of the citizens in a fashion vital to the welfare of the State and the individual, and that the State cannot afford to pause or to hesitate in maintaining and enlarging the influences that are going out from it. Consideration of these facts seems imperative in arriving at a decision on the question submitted in the foregoing part of this report.

Attendance During the Current Year.

The usual analysis of the attendance for the current year is herewith submitted, so far as it has not already been given in the comparative statement preceding.

Class.	By Sex.		By Date of Matriculation.		By Registration in Courses.				
	Men.	Women.	Previous to 1915-1916.	For 1015-16.	Agr.	Engin.	Appl. Sci.	Home Econ.	Total.
Graduates	3	1	1	3	.....	.....	4	.....	4
Seniors	36	5	41	.....	11	22	3	5	41
Juniors	35	2	37	.....	9	23	2	3	37
Sophomores	67	12	77	2	14	44	11	10	79
Freshmen	105	17	6	116	27	51	29	15	122
Irregulars	6	3	.....	9	1	2	4	2	9
Total (College)	252	40	162	130	62	142	53	35	29
Two-year	12	.....	3	9	12	.....	.....	.....	12
Winter Poultry	5	2	.....	7	7	.....	.....	.....	7
Final Total	269	42	165	146	81	142	53	35	311

The increase in the freshman class over last year has, as has been noted, been kept down and amounts to four only. The increase in the senior class over that of last year is nearly 58 per cent. The increase in college attendance is 14.5 per cent. and the increase in total attendance is 9 per cent. The relative number of women to men is somewhat smaller than last year, being 12.8 per cent. in place of 14 per cent. The women this year number only four more than last year, while the number of men is thirty-two greater than last year. The relative number of agricultural students is smaller than last year, being 26 per cent. of the total attendance in place of 31 per cent. The number in the college course in agriculture, however, is two more than it was last year. The engineering courses number 45.6 per cent. of the total in place of 52 per cent. of last year. The course in applied science for teachers has made a notable increase, jumping from 6 per cent. last year to 16.5 per cent. this year. The home economics course has 11.5 per cent. in place of 11 per cent. of last year.

The attendance from within and without the State has been partly set forth previously. The number not residing in the State is seventy-three, being 23½ per cent. of the total attendance.

Changes in Personnel of the Faculty.

During the past year few changes have taken place in the faculty of the college. One addition has been made by the creation of the position of Physical Director, to which office Mr. James Baldwin, head of the department of physical training in the public schools of Passaic, New Jersey, was elected. The step taken in the creation of this department should mean very great advance in safe-guarding the health and improving the physical development of students.

Miss Gladys E. Burlingame, who had for several years faithfully and efficiently conducted the affairs of the library, resigned at the close of the scholastic year. In her place, Miss Helen E. Peck, a graduate of Wellesley College, and for several years a most successful teacher in the South Kingstown High School, was asked to assume the duties of the position and accepted.

In the department of Chemistry the resignation of Mr. Clyde R. Perry was accepted and Mr. Edward H. Perkins, a B. S. graduate of Wesleyan University, Middletown, Connecticut, and a graduate student of Yale University, was chosen in his place.

In the Poultry department, Mr. Daniel J. Lambert, having shown especial capability for and interest in extension work, was transferred to that department. The position of professor of poultry husbandry was created and Mr. H. W. Rickey, a successful member of the extension department of the University of Kentucky, was elected to the position.

Finances.

In my last report much space was taken up with the presentation of the unsatisfactory condition of our maintenance funds. It was shown that the college was no longer able to meet increased demands, due to enlarging attendance, and that in spite of efforts to economize, the college was running behind. The General Assembly was therefore urged to increase the State maintenance fund to $40,000.00 yearly. This was done, and it gives me great pleasure to report that on January 1, 1916, we were able to show a clear summary sheet as presented in the financial report of the treasurer for the year.

Improvements During the Year.

In addition to the increase of the annual maintenance fund, the sum of $5,000 was granted to meet certain of our requests in 1915, viz.:

For water supply	$1,500 00
For enlargement of kitchen	1,500 00
For gas machine	1,500 00
To apply on roads, grading, etc	500 00
	$5,000 00

The improvements for which funds were here provided were made successfully, except that for water. It proved much more difficult to secure water than we had supposed. One well was driven to a depth of five hundred feet without securing more than six gallons per minute. A second well was started and carried to two hundred feet, securing twenty gallons of water. These, with the well already existing on the hill giving twenty-three gallons per minute, make a total water supply per minute of forty-nine gallons. This will suffice as a supply for some time; but in the extended well-digging, so much beyond our calculation, we have consumed practically all the funds allotted, and shall need about one thousand dollars to complete the work of installing pumps, making connections and applying power to the pumps as now planned.

Statement of Special Needs for the Year 1916.

By authority of a vote of your Board at meetings held November 23 and December 23, the following statement of needs was authorized and a resolution was prepared and submitted covering the needs specified.

Statement of Needs.

1. Certain requests were presented at the session of the General Assembly in 1915, and were explained in detail in the report of the Board of Managers for that year (see Report of the Board of Managers for 1915, pp. 15–21). Of the items there listed the following were granted:

No. 2 (p. 16)	For water supply	$1,500 00
No. 3 (p. 17)	For enlargement of kitchen	1,500 00
No. 4 (p. 18)	For new gas machine	1,500 00
No. 5 (p. 18)	For cement walks, etc. (Request for $2,500)	500 00
		$5,000 00

(Information as to the expenditure of these funds was given in the heading just preceding.)

The Board of Managers renews the requests previously made and not allowed, as follows:

No. 1 (p. 16)	For a sewage-disposal plant	$8,000 00
No. 5 (p. 18)	For road renewals, sewage connections, grading, etc.	2,000 00
No. 6 (p. 18)	For instructional museum cases	1,000 00

Itemized further as follows:

3 specimen cases	$300 00
1 bird cabinet	240 00
Enlarging insect cases	130 00
320 Cornell insect boxes	330 00

2. The college has had no money with which to buy furniture for the enlarging needs of classrooms, laboratories, offices and dormitories. Meanwhile old furniture has greatly deteriorated and large new necessities have arisen with greatly enlarged attendance. The situation has become so acute that classrooms have not sufficient seats, and the assembly room has to be prepared each time by moving chairs from other rooms for the time being. The Board of Managers, after carefully considering the whole situation, has ordered a list of needed furniture to be prepared and has requested an appropriation of $5,000 to purchase the items included. Copy of list is subjoined.

3. Under the head of additions and enlargement for agricultural teaching, the report of 1915 set forth the needs of the college under five sub-heads (see pages 18–21). The Board of Managers have thought it best at the present time to renew the request for only three of the five schedules, and accordingly ask as follows:

No. 2 (see p. 19)	(a)	Additions to dairy	$500 00
	(b)	Additions to laborers' quarters	200 00
	(c)	Three paddocks	500 00
	(d)	Water connections	100 00
			$1,300 00
No. 3 (p. 19)		Land for farm	$10,000 00
No. 4 (p. 20)		Funds for purchase of cattle	4,000 00

Summary of special requests:

Sewage disposal plant (see report, p. 16)	$8,000 00
Road renewals, etc. (see report, p. 16)	2,000 00
Museum cases (see report, p. 18)	1,000 00
Furniture for laboratories, classrooms, etc	5,000 00
Additions to dairy barns, etc. (see report, p. 19)	1,300 00
Land for farm (see report, p. 19)	10,000 00
Funds for purchase of cattle (see report, p. 20)	4,000 00
Total	$31,300 00

List of Furniture for Departments.

Main Office.

1 safe for account books and records	$175 00
2 cabinets at $30.00	60 00
3 stenographer's chairs at $8.00	24 00
4 steel bill files at $35.00	140 00
1 typewriter and desk	90 00

Women's Dormitory.

3 rugs	75 00
2 library tables	30 00
2 drop lights	8 00
1 divan	22 00
1 settee	17 00
1 chair	9 00
3 chairs at $8.00	24 00
6 chairs at $2.50	15 00
2 study tables	10 00

Assembly Hall.

125 double chairs at $3.80	475 00

Chemical Laboratory.

3 chemical desks for 16 students each	$645 00
3 chemical desks for 24 students each	967 50
24 chairs with tablet-arms at $1.68	45 12
40 stools at $0.90	36 00
Metal bookcases (85 ft.)	100 00

Biology Laboratory.

1 lecture table, water and gas	188 50
24 chairs with tablet-arms at $1.88	45 12
1 desk chair	5 25
4 office chairs at $3.50	14 00
1 office table	25 00
3 apparatus cases (8 feet, 6 feet, 5 feet)	200 00
1 cabinet for microscope slides	25 00
25 feet steel book shelves	30 00

Physics Department.

2 small tables	50 00
2 apparatus cases	200 00
1 office chair	8 00
30 chairs with tablet-arms at $1.88	56 40

Electrical Engineering Department.

1 lecture table wired and plumbed	110 00
Slate blackboards	25 00
1 filing cabinet	50 00
15 chairs with tablet-arms at $1.88	28 20

Mechanical Engineering Department.

1 cabinet for drawing instruments	35 00
1 case for charts	15 00

Physical Education.

1 typewriter and desk	90 00
1 desk chair	8 00

Miscellaneous.

1 lecture table for lecture room, Science Hall	190 00
13 dozen chairs for lecture room at $23.50	305 50
60 chairs at $0.80 each	48 00
18 stools at $4.50	81 00
10 stools at $1.10	11 00
10 single bedsteads at $4.50	45 00
25 steel lockers at $4.50	100 00
25 wardrobes for dormitory	125 00
10 doubledecked beds at $9.50	95 00
100 linear feet of slate blackboarding	100 00
	$5,276 59

Reports on Experiment Station and Extension Work.

Especial attention is called to the Report of the Director of the Experiment Station and to that of the Director of the Extension Service. They indicate prosperous and successful service in the cause of better agriculture. The report on the extension service is especially interesting, because it shows the direction that this new and very important effort for agricultural betterment is taking. I regret to say that Mr. Stene, Director of Extension Service, has been seriously ill for some time, that his health does not improve, and that it has been necessary to ask your Board for six months' leave of absence, which was granted at your last meeting. This makes it necessary to find some one temporarily to fill the position.

Commencement Exercises.

At the commencement exercises held June 17, 1915, the degree of Bachelor of Science, was bestowed on twenty-seven members of the senior class of that scholastic year. The degree of Civil Engineer was granted to Mr. Arthur J. Minor of the class of 1911, after examination and the presentation of a thesis on "Valuation Work on the Boston & Maine Railroad." The subject of the address on Baccalaureate Sunday was "The Legacy of the Fathers," and the main address on the commencement occasion the Tuesday following was delivered by President W. H. P. Faunce of Brown University.

Respectfully submitted,

HOWARD EDWARDS,

President.

TWENTY-EIGHTH ANNUAL REPORT

of the

Director of the Agricultural Experiment Station.

To Howard Edwards, *President*,

Rhode Island State College.

Sir:—I present herewith a statement of the work of the experiment station during the year 1915. In order that the report may be as concise as possible, the nature of the work will be indicated in so far as feasible by statements of definite information or impressions secured. It will prove unwise to follow this method, however, unless it is understood clearly that observations made during the progress of experiments must be subject to revision in the light of further work. The results of a single year rarely furnish positive proof, yet they would seem to warrant a brief presentation in this connection. Much of the work, however, has been continued sufficiently long so that the cumulative impressions received year upon year should prove of value while waiting for their future verification.

It appears as if blackhead of turkeys is not a communicable disease in the ordinary sense. The organisms associated with it are merely facultative parasites which are aroused into pathogenic activity as a result of wrong management, and especially by injudicious methods of feeding. An attempt is being made to determine what constitutes a safe method of feeding.

It has been found possible to distinguish between fowl cholera and other cholera-like diseases on the basis of agglutination tests. Contrary to previous opinions, it has been demonstrated that agglutinating reactions occur in the bacteria of fowl cholera. In the work on active immunizations by the use of dead cultures, pigeons have been rendered immune.

Families of fowls characterized by laying eggs about one-fourth larger than the average (58 grams), and, similarly, families yielding

eggs about one-third smaller than the average, have been produced. The factors underlying these heritable differences are being studied further.

The first phase of the work on the bacteriology of hens' eggs now justifies the following conclusions: (1) About 8 per cent. of normal fresh eggs are infected with bacteria in the yolk; the amount of infection occurring in the white is insignificant. (2) There is no essential differences in the percentage of infection in infertile and in fertilized eggs. (3) There is no correlation between percentage of infection and (a) fecundity, (b) hatchability, (c) season of the year, (d) age of fowl. (4) These results lead to the view that the probable original source of primary infection is in the ovaries, that these primary infections play no rôle in determining the keeping quality of eggs, and stand in no casual relation to poor hatching quality.

The investigations dealing with problems of infection and resistance in poultry and rabbits, and the studies of the principles of breeding with fowls and rabbits, have been continued.

The experimental work of interest to market gardeners has been extended by the addition of over a hundred plats just west of the road leading from the home of Asa Sweet toward the railway station. The main problem to be undertaken will be the partial or complete elimination of horse stable manure; the need for this work is emphasized by the present and prospective scarcity of the manure supply. Plans have been made to try green manures and fertilizer chemicals as the principal substitutes. An above-ground irrigation system sufficient to deliver 80 gallons of water per minute from thirty-acre pond is nearly installed, for the purpose of determining the relative dependency upon water of the various soil treatments. The study of the effect of crops on those which follow the next year has been extended to include the effect of early on late garden crops.

With a view to their use as green manures, certain crops were planted on light land about August, the first after early potatoes; by September 5, they had produced the following tons per acre of material after air-drying: rape, 2.5; Japanese millet, 2.0; barley, 1.7; and soy bean, .9; the growth of the rape and barley was of course checked less than the other crops by subsequent early frosts.

To obtain a comparison of legumes for winter cover crops, four were sown on separate plats July 20, in the sweet corn. The mammoth clover, winter vetch and sweet clover started into the winter satisfactorily, although the latter did not stand very thick, perhaps

because scarified seed was not used. The alfalfa made a very poor start.

Over twenty years of rotations in which one-half to two-thirds of the time is given to the production of hay, have shown that lime and chemicals may successfully replace manure entirely; such has not been the case, however, where most of the crops have been cultivated ones. For example, a plat which has annually received ten cords of stable manure in comparison with one where the money has always been used for fertilizer chemicals, produced in 1915 about a third more table beets and lettuce, and over twice the weight of cucumbers produced with the fertilizer chemicals, spraying with Bordeaux mixture increased the crop of cucumbers nearly three-fold. Analysis of the fine dried soil showed that more organic matter and nitrogen existed in the manure plat than in the chemical plat. Again, where field corn had been grown continually for years with moderate amounts of fertilizer chemicals and no manure, the yield of ears had dropped to about 15 bushels where no cover crop was used, but was about three times as much from a separate section where a legume cover crop had been grown each year. It was found that the latter area contained much more organic matter and nitrogen as a result of the annual contributions of the legumes. In 1915 for the first time in about 20 years the less productive area was given more nitrogen than the legume section. This was done because a pot experiment had indicated that a lack of nitrogen was at least one of the causes for the poor growth. It is proposed to find out whether large applications of nitrogen will restore the soil to a normal condition such as exists where legume cover crops have been grown; the yield in 1915 indicated that a start had been made in that direction.

If, as seems probable, much of our farming must be carried on without animal manure, it is necessary not only to determine the kind of vegetable matter to use, but how to use it. For years, in making preparation for potatoes, part of the grass sod has been plowed under in the fall and part in the spring. On the average the indications are in favor of fall plowing, but the results are not uniformly in one direction.

In view of the great value of grass sod in a rotation, especially without animal manure, it is sometimes desired to secure turf in a short space of time. Annual Italian rye grass was planted in the spring with clovers, and yielded, aside from a good crop of hay, such a

tough heavy sod which was turned under in the fall, that it would seem to be worth considering for such a purpose.

On plats 106 to 112 an experiment was begun in connection with a rotation for growing crops for a dairy herd, to determine the value of cow stable manure by the cost of the fertilizer chemicals necessary to grow crops of similar size. In the same experiment, manure and straw bedding is compared with manure and planer-shavings bedding; in addition, the advantages of supplementing the manure with acid phosphate, and also with muriate of potash are to be determined. Oats and Canada peas were followed by winter turnips, but no marked differences were secured the first year.

As usual, advantage was taken of opportunities for comparing varieties whenever it could be done without interfering with other experiments. Clyde potatoes proved no better than Norcross, the variety which has been grown most extensively on our rotations in recent years. Other potato varieties compared in a smaller way were: World's Wonder, Bethel Beauty, Green Mountain Jr., American Giant, Old's Scotch Rural, Pride of Vermont, Lowell's Green Mountain and Mill's Pride; it is planned to try nearly all of them again. For an early potato the Enohla proved to be as early as the Irish Cobbler and more productive. Mammoth White rye from Canada was compared with Excelsior rye which has been grown on the rotations, but was not found to be superior. Different varieties of early sweet corn were planted April 28. The first pickings were made August 6 and 9 of Early Cory, a special strain of which yielded about 50 per cent. more than the commercial seed. The first picking of Quincy Market was made August 11, and of Golden Bantam and Crosby's Early, August 13. The number of dozen ears which was produced on a given area by the different varieties on and before August 13 was as follows: Golden Bantam, 8; Crosby's Early, 41; Quincy Market, 75; Early Cory, 99; Early Cory, special strain, 129.

In 1914, White Cap corn was secured from Frank E. Marchant, West Kingston, and Philip Caswell, Middletown, for comparison with the White Cap strain that had been used on the rotations. Crosses for the three kinds were also made so that in 1915 the three strains and the three crosses from the same could be compared under the same conditions. There proved to be no decided difference in yield, although at other stations there has sometimes been an advantage found in crossing different strains of the same variety.

Some interest was shown in the Red Chaff winter wheat which yielded 30 bushels of grain, and in Sudan grass which was planted May 11 in drills 2 feet apart. Some of it cut on August 11 yielded 9 tons to the acre of green material, and some which was allowed to stand until September 3 yielded 11.5 tons. It grew fairly well on acid soil.

The yield of alfalfa was no greater where a liberal amount of hydrated or slaked lime had been mixed previously with both surface soil and subsoil, than where mixed only with the surface soil. Alfalfa cut on June 1, July 19 and September 14 yielded a total of 4.24 tons of hay per acre, as compared with 4.50 tons cut on June 22, August 14, and September 14; the latter dates of cutting were determined as usual by the time when the new shoots appeared. The plat seeded to orchard grass and alfalfa in 1912 yielded 4.20 tons of hay, and the one seeded to only alfalfa at the same time yielded 4.34 tons.

The yield was about the same whether 2 ounce potatoes were planted 18 inches apart in the row or one-ounce *pieces* were dropped 9 inches apart; but the yields decreased successively when ounce pieces were dropped 12 and 15 inches apart.

As usual, Norcross potatoes grown the preceding year at the station proved to be poorer "seed" than those grown in Maine and there was nothing gained by selecting the seed from the most productive hills. Those which had been selected for two years, however, proved to be superior to the unselected ones; it is possible that by continued selection a strain may be produced which will equal the northern-grown seed. So far no improvement had been made by planting potatoes about the first of July and securing immature seed in the fall. Previous differences in the amount of nitrogen or of potassium available to the potatoes had practically no effect on the productiveness of the seed tubers.

The experiment with different sources of lime, applied in such quantities as to neutralize the same amount of acidity, received a fresh application of the different sources in 1914, although not enough to completely neutralize the soil. Corn was grown in 1915, and the yields were increased about a third by the different sources of lime. There was practically no difference whether the hydrated lime had a high-calcium or a high magnesium content, or whether the two grades of lime were applied in their burned and subsequently slaked condition or in the original unburned limestone in a very finely ground condition, fine enough to pass an 80 mesh sieve.

Pot experiments furnished some evidence that certain plants are less injured by so-called soil acidity if the phosphate manuring is increased; such an increase was made in connection with the field determination of the lime requirements of different crops, and it was found that some of the plants were injured less than usual by the acidity; perhaps because a deleterious content of aluminum was precipitated. Pot, solution and laboratory experiments are always essential in explaining the field results.

With soil approaching neutrality, about the same average yield of different crops was secured with 80 pounds of nitrogen per acre in two applications whether from sulfate of ammonia or nitrate of soda.

In connection with a rotation without farm manure, an increase in the top-dressing for rye from 20 up to 40 pounds per acre of soluble nitrogen raised the yield of rye from 31 up to 38 bushels, but it stimulated the growth of young grasses seeded with the rye to such an extent that the early spring seeding of clover was crowded out to a considerable extent.

The pot experiments on the availability of organic nitrogen from different sources showed among other things that the insoluble nitrogen of certain commercial fertilizers was of such inferior grade that close attention should be given to the information afforded by the inspection bulletins. For top dressing grass, nitrogen in cyanamid was about as efficient as in sulfate of ammonia.

Undissolved phosphate rock, or floats, when applied to furnish 2¼ times as much phosphorus as was added in the dissolved phosphate, or acid phosphate, gave fair yields with certain crops, but quick returns should not be expected from it; the good results secured with bone and with basic slag, not only with the imported but the A. A. Duplex Basic Phosphate made in this country, indicated that these should receive first consideration as supplements to acid phosphate; the relative price at the farm is of course an important determining factor.

Practically the same yield of corn was obtained without potassium as when this element was added in the different sources. On another, lighter soil early potatoes did not yield as well without as with potassium, but there was practically no difference when applied on the basis of water-soluble potassium whether muriate of potash or "American Rock Potash" was used. The latter was made by the United States Department of Agriculture by fusing ground feldspar with calcium chlorid; it contained about 4 per cent. of soluble

potassium oxid. Common slate was found to increase the yield of crops somewhat where available potassium was scarce.

The detailed weather records were published by the Climatological Service of the United States Weather Bureau. There were sufficiently heavy frosts to freeze potato vines on May 16, 27 and 29, a light frost on September 23, and a killing frost on October 11. There was a droughty condition during the last half of July and to a less extent in the middle of September. It was very rainy August 2 to 6, 4.27 inches of water having fallen, and the potato crop was very seriously affected.

Fortunately there was only one change in the station staff—the resignation in December of L. S. Crosby, A. B., assistant in chemistry.

The publications of the year were as follows:

Sex ratios in pigeons, together with observations on the laying, incubating and hatching of the eggs. Bul. 162, April, 1915, pp. 52.

The comparative value of different sources of phosphorus. Bul. 163, for June, 1915, pp. 48.

Inspection bulletins containing the analysis of commercial fertilizers for June and October, 1915, pp. 8 and 12.

Inspection bulletin containing the analysis of commercial feeding stuffs, for May, 1915, pp. 16.

Twenty-sixth and twenty-seventh reports of the station. Bul. of Rhode Island State College, 10, 22–27.

The rearing of turkeys with special reference to the blackhead disease. Extension Bul. R. I. State College, April, 1915, pp. 10.

The White Leghorn, Jour. of Heredity, 1915, 147–151.

The reciprocal relations of virulent and attenuated cultures in active immunization, Centbl. Bakt. (etc.), 1915, 76, 442–446.

Respectfully submitted,

BURT L. HARTWELL.

REPORT OF THE EXTENSION SERVICE.

NOTE:—It is greatly regretted that, owing to serious illness continued through several months, Professor Stene, Director of the Extension Service of the college, has not been able to compile and arrange the report for his department required by law; the only thing possible under the circumstances has been to collect statements from the different workers under him. These statements are herewith presented, as a report.

PROFESSOR A. E. STENE,

Director of Extension Service,
Kingston, Rhode Island.

DEAR SIR:—I have the honor to hand you herewith my annual report for the year ending December 31, 1915.

In accordance with Chapter 1232 of the Laws of Rhode Island, approved April 23, 1915, the State of Rhode Island has been divided into three Farm Bureau Districts as follows:—

District No. 1, Washington and Kent counties.
District No. 2, Providence county.
District No. 3, Bristol and Newport counties.

In District No. 1, the Southern Rhode Island Farm Bureau has been organized with 109 members. This organization has raised $1,006.17 from local funds, making available $1,000 from State funds. This Farm Bureau is now coöperating with the State College and the U. S. Department of Agriculture in employing Mr. S. N. Stimson as a District Agent. Mr. Stimson is rapidly acquainting himself with the farmers of the district and their problems, and is organizing them to coöperate and use better business methods.

In District No. 2, the Providence County Farm Bureau has been organized with 200 members. In District No. 3, the Newport and Bristol County Farm Bureau was recently organized with 13 charter members.

Two cow-testing associations have been organized. Each organization consists of 25 dairymen, who hire a man coöperatively to visit each farm one day each month, weigh and test the milk of each cow, and keep a financial record of the performance and the feed consumed by each cow. There are about five hundred cows on test in each association.

The following bulletins have been prepared during the year:

Extension Bulletin, Vol. IV, No. 10, Crop Rotations.

Extension Bulletin, Vol. V, No. 1, The Farm Bureau and the County Agent (with supplement).

6,325 copies of these bulletins and about six hundred Farmers' Bulletins published by the U. S. Department of Agriculture, have been distributed. The problem of organizing for the employment of county agents has been brought to the attention of nearly all of the agricultural, commercial and consumers' organizations of the State.

Very truly yours,

DAVID ELDER,
State Leader, County Agent Work.

FEBRUARY 9, 1916.

PROFESSOR A. E. STENE,
Director of Extension Service,
Kingston, Rhode Island.

DEAR SIR:—I beg to present the objects and results of the boys' and girls' club for 1915 as follows:

OBJECTS.

1. To offer to young people guidance that will lead to more efficient and contented farmers and home builders.
2. To develop a spirit of coöperation in the family and in the community by utilizing the social instinct or "gang spirit" which is dominant in young people between the ages of ten and eighteen.
3. To cultivate in boys and girls habits of industry and thrift and to show them the possibilities of the farm and country life.
4. To demonstrate the best methods of handling farm products. To prevent waste in the orchard, field and garden through home canning and better system of marketing.
5. To demonstrate through boys and girls the best farm and home practices.
6. To enlarge the vision of boys and girls and to give them definite purposes at an important period of their lives.
7. To dignify and magnify the vocation of the farmer by demonstrating the returns which may be secured from farming when it is properly conducted.
8. To bring the school life of the boy and girl into closer relationship to their home life.
9. To furnish to the aggressive teacher an opportunity to vitalize the work of the school by correlating the teaching of agriculture with actual practice.
10. To re-establish in some measure the home industrial training of boys and girls by utilizing in part their leisure hours in some form of good, constructive and profitable work.
11. To encourage and to help young people to continue their education through high school and college.

RESULTS.

Educational. Several young men have been encouraged to continue their education through high school with the idea of taking the course in agriculture at the State College. Three students now in the State College have been interested in the club work previous to coming to college. At least three of our club-members

in 1915 have indicated their desire to enter the college in September of this year. Hundreds of young people have been given a new conception of the importance and dignity of the farming business. The fact that the State College, Board of Agriculture, and the U. S. Department of Agriculture are interested in the club work has given the movement a great deal of prestige in the minds of the young people of the State. The study of agriculture has been introduced in the schools of three or four towns in the State.

Clubs Organized. During 1915, we have helped many young people interested in the following clubs: poultry, vegetable-garden, flower-garden, corn, potato, canning, sewing, baking, handicraft, sheep and pig club.

Profits. We have received reports from 1,359 pupils for the year 1915. Their total expenses were $5,037.39. The value of the products produced amounted to $12,674.89, leaving a net profit of $5.61 per pupil. In addition to the above records, we have incomplete reports from 7,493 boys and girls who probably did as well as the average of those who sent in complete reports. The reason for the large number of incomplete reports is that we have insufficient help either in the office or in the field to "follow up" so many pupils in a satisfactory manner.

Influence on Adults. Through this work with boys and girls, it has been possible to reach many parents and other adults who, otherwise perhaps, could not have been interested in better methods in agricultural practices and home-making.

Canning Demonstrations. Thirty-eight canning demonstrations have been given; total attendance was 5,256. This number consisted of 545 men, 2,430 women, and 2,281 boys and girls.

Lectures. The following lectures have been given: sixty lectures before boys and girls, attendance 10,000; thirty lectures before adults on various subjects, attendance, 1,500; total attendance, 11.500.

Conferences. Twenty conferences have been held with superintendents, teachers, and others interested in club work.

Field Meetings. With assistant's help, 855 field meetings have been held.

Club Members Visited. With assistant's help, 1,454 club members have been visited.

Fairs and School Exhibits. Twelve fairs and exhibits have been visited with assistance given in judging products.

Coöperation. When the clubs have been organized, young people have learned to conduct meetings and to take part in the discussion. They have learned to work together and to coöperate with each other in the purchase of supplies, etc.

Industry and Thrift. The average number of hours taken up by school work in a year is approximately 1,000. This leaves approximately 3,000 hours a year outside of the school hours which many young people spend in idleness. Idleness is the most pernicious influence in the lives of our young people. The club work has furnished an opportunity to utilize a part of this waste time in wholesome and profitable pursuits. Club members have made net profits this year from $5.00 to $200. Many have started bank accounts.

ERNEST K. THOMAS,

FEBRUARY 9, 1916. *State Leader in Club Work.*

PROFESSOR A. E. STENE,

Director of Extension Service,
Kingston, Rhode Island.

DEAR SIR:—The Home Economics Extension Department of Rhode Island State College endeavors to help the women of the State in their many problems of home-making. In the past year, the field work consisted of instruction by general lectures and demonstrations and the organization of classes of clubs.

The chief line of work has been in home-economics study clubs. Up to January 1, 1916, there have been 20 clubs, with a total membership of 503. The average course consisted of 8 lessons. Four courses in sewing were given and 16 in general home economics, which consisted largely of a study of food.

Aside from the regular club work, 86 lectures and demonstrations were given before women's clubs, granges, camp-fire girls, and other organizations. These pertained to textiles, home furnishing, food and food preservation, marketing and home management. Four bulletins were written. They are "Jelly" and Jelly Making," "Bread Making," "The Use of Corn in the Diet," and "How to Make an Apron." These bulletins have been distributed widely, and have been especially helpful in home-economics clubs.

All inquiries have been answered in regard to foods and their adulterations, preparation and preservation, the efficiency of cooking utensils, and labor-saving devices, etc.

JENNIE E. KŒHLER,

FEBRUARY 9, 1916. *Instructor in Home Economics Extension Department.*

POFESSOR A. E. STENE,

Director of Extension Service,
Kingston, Rhode Island.

DEAR SIR:—The work was outlined for this division, beginning September 1, 1915, as follows:

A Home Reading Course.
A Regular Lecture Course.
Judging Demonstrations at Poultry Exhibitions.
Special Trips and Demonstrations.
Bacillary White Diarrhœa Test.
Office Correspondence.

Bulletins explaining the Home Reading Course were sent out early in November, and by December 31 there were 32 members. Twenty-seven of these were in Rhode Island, and the remaining five scattered. Each member who receives 60 per cent. or more on each lesson is entitled to a diploma at the completion of the 10 lessons.

A number of lectures have been given before boys' and girls' clubs, poultry shows, and at Farm Bureau meetings. One lecture was given at Durham, New Hampshire, in exchange with Professor Mitchell.

Fourteen fairs have been visited and judging and demonstrations given at same. Personal visits to farmers have been made to give assistance and advice.

We are receiving applications for the Bacillary White Diarrhœa test and are beginning to undertake the work.

One bulletin has been written and one revised. A large number of questions have been answered and advice given through correspondence.

D. J. LAMBERT,

FEBRUARY 9, 1916. *Extension Instructor in Poultry.*

PROFESSOR A. E. STENE,

Director of Extension Service,
Kingston, Rhode Island.

DEAR SIR:—I have the honor to hand you herewith my annual report for the year ending December 31, 1915.

Field demonstrations are conducted along various Agronomy lines on farms in different sections of the State. The idea of this work is to bring to the attention of the farmer the value of new methods of field-crop production and of new kinds of varieties of crops. Whenever anything of interest is to be seen at the demonstration plots, meetings are held, the neighboring farmers invited, and the demonstrator explains the work. The results speak for themselves.

The lines of work undertaken during the past year are as follows: Farmers have been assisted in putting in 15 plots of alfalfa, 5 seed-corn tests to show the value of good seed and productive strains were conducted in different sections of the State. Thirty plots of vetch and rye were started to demonstrate the value of this combination as a cover crop. Lime demonstrations were started, using crops such as alfalfa and clover, which are sensitive to sour soils. The coöperative purchase of hardy strains of alfalfa seed of the Grimm type has been encouraged. Correspondence in regard to crops were answered, samples of soil tested for acidity and suggestions offered in regard to the use of fertilizers. Agricultural exhibits were prepared and displayed at the fairs during the fall.

MYRON A. HAWKINS,

FEBRUARY 9, 1916. *Demonstrator in Agronomy.*

REPORT OF THE TREASURER.

R. S. BURLINGAME, TREASURER, *in account with the different funds of* RHODE ISLAND STATE COLLEGE, *for the year ending December 31, 1915.*

MORRILL FUND OF 1890 AND NELSON ACT OF 1907.

1915.		CR.	DR.
Jan. 1.	To balance from last year		$24,050 29
July 1.	To United States warrant for year ending June 30, 1916		50,000 00
Dec. 31.	By instruction	$43,076 24	
	Apparatus	1,730 72	
	Tools and machinery	186 92	
	Live stock	47 00	
	Feed	1,603 27	
	Text-books and reference books	431 20	
	Seeds	120 04	
	Fertilizers	260 40	
	Chemical supplies	44 29	
	Periodicals	160 10	
	Gasolene	309 94	
	Miscellaneous	1,260 80	
	Balance on hand	24,819 37	
		$74,050 29	$74,050 29

MORRILL FUND OF 1862.

Jan. 1.	To cash from land scrip fund		$2,500 00
Dec. 31.	By instruction	$2,450 00	
	Books	34 43	
	Apparatus	10 20	
	Medals	5 37	
		$2,500 00	$2,500 00

SMITH–LEVER FUND of 1914.

Jan. 1.	To balance from last year		$5,906 91
	United States warrant for year ending June 30, 1916		10,109 15
Dec. 31.	By salaries	$8,221 67	
	Postage, telephone, telegraph, freight and express	307 29	
	Chemical supplies	14 93	
	Seeds, plants and sundry supplies	124 27	

Dec.	31.	By stationery and printing	$225 20	
		Publications	271 01	
		Traveling	1,802 56	
		Scientific apparatus	32 28	
		Furniture and fixtures	315 36	
		Books	6 80	
		Tools, machinery and appliances	30 50	
		Labor	5 88	
		Balance on hand	4,658 31	
			$16,016 06	$16,016 06

STATE—MAINTENANCE FUND.

Jan.	1.	To State appropriation		$40,000 00
Dec.	31.	By salaries	$9,370 88	
		Labor (janitor, farm, etc.)	8,340 64	
		Traveling	902 93	
		Postage, stationery and printing	2,542 22	
		Construction and repairs	3,898 86	
		Fuel	9,383 95	
		Feed	1,156 25	
		Rental of dormitories and land	1,209 37	
		Oil and gasolene	598 81	
		Telephone and telegraph	291 10	
		Commencement	331 72	
		Stable supplies and auto repairs	145 56	
		Furniture and fixtures	618 57	
		Water rate on rented dormitories	60 00	
		Freight and express	9 98	
		Horseshoeing	41 58	
		Miscellaneous	1,097 58	
			$40,000 00	$40,000 00

STATE.—REPAIRS AND IMPROVEMENTS.

Jan.	1.	To State appropriation		$5,000 00
Dec.	31.	By grading around Science Hall	$100 00	
		Gas machine	1,160 77	
		Kitchen changes	1,663 71	
		Water supply	1,094 55	
		Cement walk	345 36	
		Balance on hand	635 61	
			$5,000 00	$5,000 00

Current Fund.

Jan.	1.	To reserve		$2,000 00
		Department sales		8,929 64
		Department service		1,212 20
		Dormitory fees		6,047 21
		Tuition		1,896 91
		Interest		1,478 99
		Loan returned from trust fund		954 61
		Department fees		2,220 99
Dec.	31.	By debit balance from last year	$8,777 55	
		Salaries	2,175 77	
		Labor (student, janitor, farm, etc.)	6,801 17	
		Traveling	164 15	
		Postage, stationery and printing	472 94	
		Construction and repairs	619 97	
		Fuel	108 52	
		Feed	281 16	
		Freight and express	520 94	
		Advertising in publications	375 13	
		Entertainments	789 94	
		Refunds	47 25	
		Miscellaneous	1,331 63	
		Reserve fund	2,000 00	
		Balance on hand	271 43	
			$24,737 55	$24,737 55

Trust Fund.

Jan.	1.	To balance on hand from last year		$3,028 18
		Boarding receipts		32,554 06
		Store receipts		4,494 44
Dec.	31.	By boarding	$31,949 48	
		Store	4,740 07	
		Balance on hand	3,387 13	
			$40,076 68	$40,076 68

Hatch Fund. Experiment Station.

Jan.	1.	To balance on hand from last year		$612 82
		United States check		3,750 00
April	15.	United States check		3,750 00
July	1.	United States check		3,750 00
Oct.	1.	United States check		3,750 00
Dec.	31.	By salaries	$6,341 13	
		Labor	3,079 30	
		Publications	2,015 80	
		Postage and stationery	212 62	

Dec. 31.	By freight and express		$154 82	
	Heat, light, water and power		193 20	
	Chemical supplies		79 50	
	Seeds, plants and sundry supplies		441 96	
	Fertilizers		909 08	
	Feeding stuff		452 55	
	Library		498 60	
	Tools, implements and machinery		57 57	
	Furniture and fixtures		6 06	
	Scientific apparatus		30 17	
	Traveling expenses		260 59	
	Contingent expenses		20 00	
	Buildings and land		202 87	
	Balance on hand		657 20	
			$15,612 82	$15,612 82

ADAMS FUND.—EXPERIMENT STATION.

Jan. 1.	To United States check			$3,750 00
April 1.	United States check			3,750 00
July 1.	United States check			3,750 00
Oct. 1.	United States check			3,750 00
	Amount overdrawn			1,447 21
Dec. 31.	By debit balance from last year		$880 08	
	Salaries		8,481 01	
	Labor		3,908 38	
	Postage and stationery and printing		85 64	
	Freight and express		82 39	
	Heat, light, water and power		430 79	
	Chemical supplies		210 86	
	Seeds, plants and sundry supplies		313 09	
	Fertilizers		13 75	
	Feeding stuff		1,039 11	
	Library		19 03	
	Tools, implements and machinery		288 50	
	Furniture and fixtures		155 71	
	Scientific apparatus		88 44	
	Live stock		280 75	
	Traveling expenses		27 07	
	Buildings and land		142 61	
			$16,447 21	$16,447 21

MISCELLANEOUS.—EXPERIMENT STATION.

Jan. 1.	To balance on hand from last year			$5,548 01
	Department sales			2,350 21
	Department service			122 85
	Refund on Ford auto			50 00
	Interest			119 16

Dec. 31.	By labor	$448 37	
	Publications	329 71	
	Postage, stationery and printing	12 83	
	Freight and express	33 84	
	Heat, light, water and power	253 56	
	Chemical supplies	105 89	
	Seeds, plants and sundry supplies	151 46	
	Fertilizers	4 00	
	Feeding stuff	258 32	
	Library	9 50	
	Tools, implements and machinery	595 44	
	Scientific apparatus	41 78	
	Live stock	8 00	
	Traveling expenses	80 88	
	Contingent expenses	120 09	
	Buildings and land	1,017 34	
	Balance on hand	4,719 22	
		$8,190 23	$8,190 23

Summary of Funds Exclusive of Experiment Station.

Total income, including balances:			
United States—1890	$74,050 29		
United States—1862	2,500 00		
Smith-Lever	16,016 06		
		$92,566 35	
State:			
Maintenance	$40,000 00		
Repairs	5,000 00		
		$45,000 00	
Institution:			
Current	$24,737 55		
Trust	40,076 68		
		$64,814 23	$202,380 58
Total expenditures:			
United States—1890	$49,230 92		
United States—1862	2,500 00		
Smith-Lever	11,357 75		
		$63,088 67	
State:			
Maintenance	$40,000 00		
Repairs	4,364 39		
		$44,364 39	
Institution:			
Current	$22,466 12		
Trust	36,689 55		
		$59,155 67	$166,608 63
Balance on hand			$35,771 85

Balance held as follows:

Morrill Fund—1890	$24,819 37	
Smith-Lever	4,658 31	
State-repairs	635 61	
Current	2,271 43	
Trust	3,387 13	
		$35,771 85

I hereby certify that the above is correct and true, and truly represents the details of expenditures for the period and by the institution named.

R. S. BURLINGAME,
Treasurer.

This is to certify that we, the undersigned, auditing committee of the Board of Managers of Rhode Island State College, have examined the accounts of R. S. Burlingame, treasurer of the said college, and find the same correct.

THOMAS G. MATHEWSON,
B. F. ROBINSON,
Auditors.

APPENDIX A.

Summaries Dealing with Certain Phases of Receipts and Expenditures for the Year Ending June 30, 1915.

Summary for Year.

Balance on hand July 1, 1914	$12,642 29
Total income during year	191,145 02
Total	$203,787 31
Total expenditure during year	179,665 41
Balance on hand June 30, 1915	$24,121 90

Income.

Income from students:		
Tuition fees	$1,696 75	
Matriculation and incidental fees	2,071 55	
Chemicals and laboratory supplies	1,969 11	
Dormitory fees	5,898 33	
Dining hall	30,832 92	
Store sales	4,085 61	
		$46,554 27
Income from State and Nation:		
State—Maintenance appropriation	$35,000 00	
Repairs and improvements	5,000 00	
		$40,000 00
Federal—Morrill Act of 1890 and Nelson Amendment of 1907	$50,000 00	
Morril Act of 1862	2,500 00	
Hatch Act of 1887, Experiment Station	15,000 00	
Adams Act of 1906, Experiment Station	15,000 00	
Smith-Lever Act of 1914, Extension	10,000 00	
	$92,500 00	$132,500 00

Income from other sources:		
Sales and service of departments		$8,794 60
Interest		894 07
Experiment Station—Sales and service		2,253 96
Interest		148 12
		$12,090 75
		$191,145 02
Receipts from tuition:		
Students taking course of one year or more	276	
Students taking poultry course of six weeks	9	
Total number of students registered	285	
Number of students paying tuition (non-resident in Rhode Island) at rate of $30 per year, 63		$1,656 75
Number of students paying tuition (non-residents in Rhode Island) at rate of $10 per year, 4		40 00
		$1,696 75

Expenditures.

Expenditures, exclusive of Experiment Station and Extension Service:		
Advertising, including track meet	$1,279 27	
Apparatus	1,556 47	
Boarding	29,026 61	
Books	825 89	
Commencement	628 37	
Construction and repairs	5,081 32	
Dormitory rentals	1,188 03	
Entertainment	787 35	
Feed	2,968 64	
Fertilizer	263 65	
Freight and express	517 08	
Fuel	7,493 07	
Gasoline and oil	597 27	
Labor (engineers, poultrymen, farm, etc.)	10,422 65	
Labor (undergraduate)	5,778 48	
Live stock	139 00	
Postage, stationery and printing	2,844 34	
Salaries	52,234 41	
Store	4,269 81	
Telephone and telegraph	268 19	
Tools and machinery	317 23	
Traveling	1,004 27	
Miscellaneous	6,995 92	
		$136,488 32
Expenditures, Experiment Station		32,489 87
Expenditures, Extension Service		10,687 22
Total expenditures		$179,665 41

Summary of Balances on Hand, July 1.

	1914.	1915.
Morrill Fund of 1862	.....	.....
Morrill Fund of 1890	.....	.....
Hatch Fund, Experiment Station	.....	.....
Adams Fund, Experiment Station	.....	.....
Smith-Lever Fund	.....	.....
State—Maintenance Fund	$7,930 45	$13,012 86
State—Repairs and Improvements	.....	4,767 07
Current Fund	2,397 18	Dr. 1,346 76
Trust Fund	726 53	1,394 03
Miscellaneous—Experiment Station	4,382 49	4,294 70
Reserve Fund	2,000 00	2,000 00
Totals	$12,642 29	$24,121 90