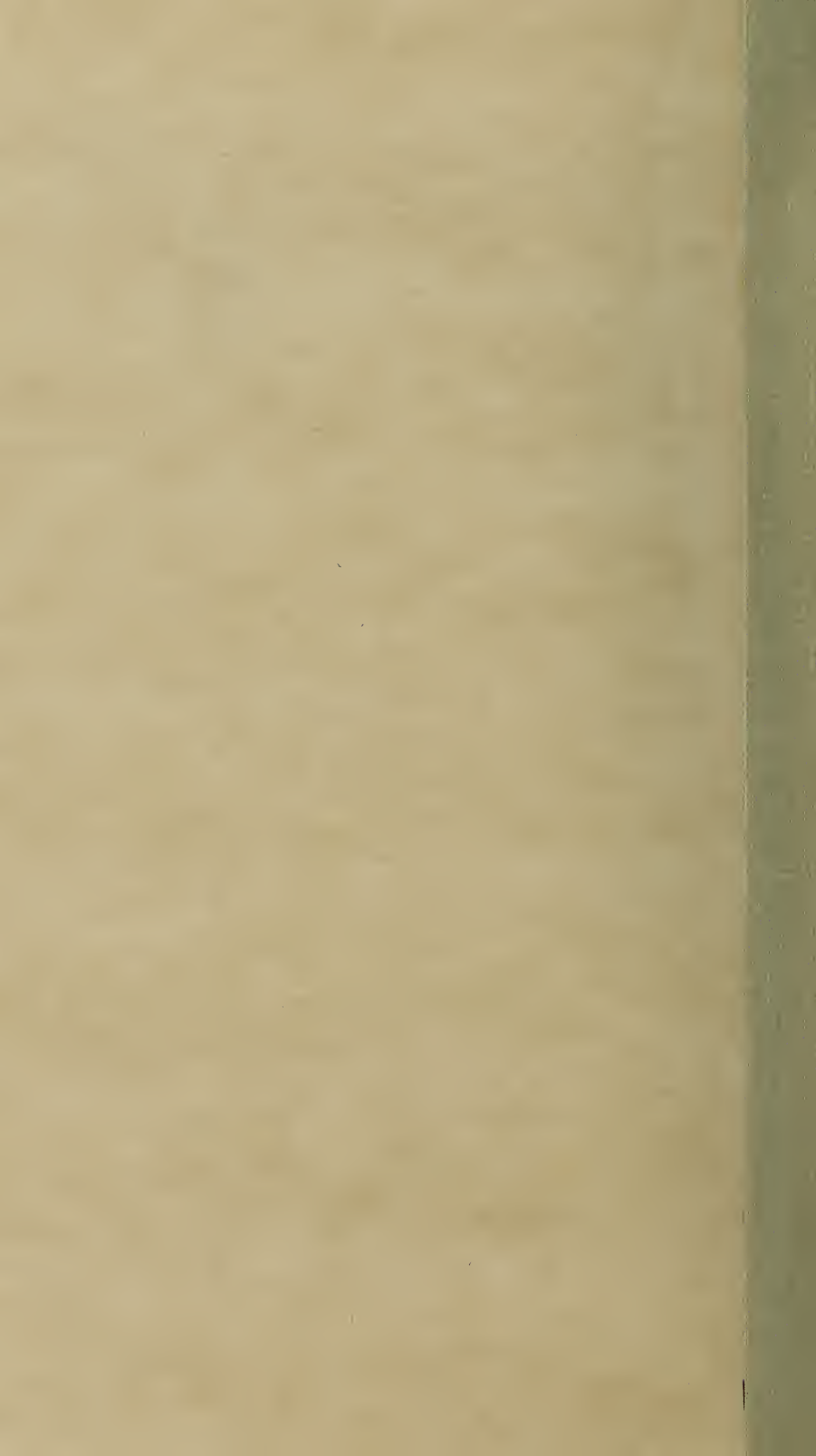


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MASSACHUSETTS
AGRICULTURAL COLLEGE

REPORT OF THE PRESIDENT
AND OTHER OFFICERS OF
ADMINISTRATION



UNIVERSITY OF ILLINOIS

1918-1919

THE M. A. C. BULLETIN
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THE FIFTY-SEVENTH ANNUAL REPORT OF THE
MASSACHUSETTS AGRICULTURAL COLLEGE

PART I.—THE REPORT OF THE PRESIDENT
AND OTHER OFFICERS OF ADMINISTRATION
FOR THE FISCAL YEAR ENDED NOV. 30, 1919



PUBLICATION OF THIS DOCUMENT
APPROVED BY THE
SUPERVISOR OF ADMINISTRATION.

1917
1918

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The Commonwealth of Massachusetts

MASSACHUSETTS AGRICULTURAL COLLEGE,
AMHERST, Nov. 29, 1919.

To His Excellency CALVIN COOLIDGE.

SIR:— On behalf of the trustees of the Massachusetts Agricultural College I have the honor to transmit herewith, to Your Excellency and the Honorable Council, Part I of the fifty-seventh annual report of the trustees, for the fiscal year ended Nov. 30, 1919, this being the report of the president of the college and other officers of administration to the corporation.

I am, very respectfully, your obedient servant,

KENYON L. BUTTERFIELD,

President.

REPORT OF THE PRESIDENT OF THE COLLEGE.

Gentlemen of the Corporation.

I herewith submit my annual report as president of the Massachusetts Agricultural College for the year ending Nov. 30, 1919, and with it transmit reports from other administrative officers of the institution.

REVIEW OF THE YEAR.

The year just closed has been essentially one of readjustment following the abnormal conditions which developed during the war.

Enrollment of Regular Students.

The Students' Army Training Corps was disbanded early in December, 1918. With the beginning of the second term of the college work, after the Christmas holidays, normal conditions began to be resumed. The college took a liberal attitude in making academic adjustments for those students desiring to return to college and continue their work. The registration of the second term up to Feb. 17, 1919, was 384; of these, 343 were enrolled in the four-year course, 12 in the graduate school, and 29 as unclassified students. From time to time, after February 17, a few others enrolled in the four-year course.

The enrollment of students in work of college grade in the autumn of 1919 totals 519, 453 of whom are registered in the four-year course, 33 in the graduate school, and 33 as unclassified students. There are 19 women students enrolled in our four-year course, two in the graduate school, and 9 as unclassified students, making a total of 30 doing work of college grade. The entering class of freshmen numbers 125.

It is gratifying to note that over 100 students enrolled in the four-year course this autumn are those whose college careers were interrupted by the war, and that the majority of these men have returned from overseas service.

Enrollment in the Two-year Course.

The work of our two-year course has met with an enthusiastic response from the people of the State. It will be recalled that the first year of the two-year course started about the first of December, 1918, and continued until the last of March, 1919. At the close of the first year's work in this course, those who had enrolled were placed on farms for six months' practical work. The enrollment in the two-year course this autumn is even larger than was anticipated, the total being 209, of whom 8 are women. Twenty-nine men have registered in special one-year courses in poultry husbandry and in rural engineering.

Summer School and Other Short Courses.

The summer school of 1919 had the largest enrollment in its history, the total being 238. The work of this course was developed in co-operation with the State Department of Education, and served as a training school for teachers of western Massachusetts and for others desiring special work in agriculture.

In the winter of 1919, when it was learned that the army in the American camps would be speedily demobilized, a series of six weeks' courses in agriculture was arranged to meet the need of those soldiers who should care to come to the college for a brief period and more adequately prepare themselves for farm work. These courses started February 10, April 14 and June 30, respectively. A special course in poultry husbandry was offered from March to June, 1919. The ten weeks' course of 1919 was quite well attended, the total enrollment being 63.

The development of our short course work has, under Prof. John Phelan's direction, been most gratifying, and the demand for the various courses already organized has been quite unexpected. I wish to submit in full Director Phelan's report covering this work. (See pages 43-47.)

Federal Board for Vocational Education.

The Federal Board for Vocational Education was, at the close of war hostilities, delegated to assume the responsibility for providing adequate training for those soldiers and sailors

who had been disabled during the war. The officers of this Board, who have charge of the New England district, chose the Massachusetts Agricultural College to which should be sent those disabled soldiers and sailors desiring to pursue an agricultural course in order to adequately fit themselves for a vocation which will render them self-supporting. A few of these returned soldiers and sailors were enrolled in the college in the spring of 1919, and this autumn some 75 are here. A few of these are enrolled in our four-year course, three or four being former students of this institution; but nearly all of the Federal Board men are enrolled in the two-year course.

Total Enrollment at the Present Time.

In addition to the 519 students enrolled in the work of college grade, we have on the campus at the end of November, 209 in the two-year course, and 29 in the one-year courses in poultry husbandry and rural engineering, making a total of 238 in our short courses, and a total student population of 757.

Student Activities.

All varsity athletic teams have now resumed intercollegiate relations on much the same basis as that prevailing before the war. The baseball team of 1919 played its first full schedule since 1916. A football schedule was carried out this autumn after an interruption of three years. It has been gratifying to note the rapidity with which the normal student life has been resumed.

Absence in France.

It was my privilege to serve as one of three members of the Overseas Educational Commission, which directed the educational program developed among the soldiers in the American Expeditionary Forces. I sailed for France on Nov. 30, 1918, and on arrival proceeded to organize the vocational work, particularly that in agriculture. While the commission went over under the auspices of the Y. M. C. A., the army subsequently assumed full responsibility for its work, and all those serving in connection with the project became civilian employees of the army, and were designated as the Educational Corps; the commission became the Educational Corps Commission.

The early demobilization of the American army in France resulted in our being obliged to curtail our program and to bring our educational work to an abrupt conclusion. Early in June I was able to practically close the work of which I had charge, and reached home June 23, in time for commencement.

Other members of our staff who rendered efficient service in connection with the educational work in France were Professors A. E. Cance, J. C. McNutt and R. J. Sprague. A goodly number of our alumni served as teachers and educational advisers at various points in France. The task of directing the work of the college during my absence was performed most successfully by the acting president, Edward M. Lewis. I cannot too strongly express my personal appreciation of the rare skill and complete loyalty with which he carried on the work during my absence, and I know I speak for both trustees and faculty, as well as students, when I say that in the difficult rôle of acting president, Dean Lewis gave abundant satisfaction, and his leadership brought enthusiastic support.

Resignations.

In the spring of 1919 Prof. W. D. Hurd, who had for nearly ten years been director of our Extension Service, resigned to accept an attractive position with the National Fertilizer Association. Professor Hurd came to the institution when Extension Service was a new enterprise, not only in this State but throughout the country. He did truly pioneer work in developing our State system of Extension Service, and evolved an organization and system of administration which was one of the most comprehensive and effective to be found in the country. Indeed, as the extension work became nationalized through Federal legislation and executive oversight, the general plan of administrative organization which Director Hurd developed here was regarded as in many ways a model. During the last five years of Director Hurd's administration the State had appropriated annually \$50,000 for extension work, and this amount was in 1919 increased to \$78,000. The Smith Lever and other Federal funds brought the total amount available for extension work up to nearly \$100,000 annually. During the war the United States Department of Agriculture made fur-

ther emergency grants of money to the administration of our Extension Service for the support of projects in home economics, agricultural production and in boys' and girls' club work. For something over half a year during the war Professor Hurd was assistant to the Secretary of Agriculture of the United States. He was an active member, and at one time chairman, of the committee on extension service of the Association of American Agricultural Colleges and Experiment Stations. Professor Hurd was skillful in selecting members of his staff, and their loyalty to him was most marked. His service was a notable piece of constructive educational work for Massachusetts, pursued with great energy and keen foresight.

Prof. A. G. Hecht, head of our Department of Floriculture, who had for some months served in the army, resigned, shortly after his return, to take up business activities in St. Louis. Professor Hecht was an able administrator and teacher, and a man well trained in his subject. It was with regret that we accepted his resignation, because we had been confident that under his guidance our Department of Floriculture would develop until it should take its rightful place of leadership, not only among the colleges of the country, but also among the commercial florists of the State.

New Appointments.

Mr. John D. Willard has been elected director of Extension Service to succeed Professor Hurd, and it is expected that he will assume the responsibilities of this office Jan. 1, 1920. Mr. Willard in 1916 was eminently successful as secretary of the Franklin County Farm Bureau. Early in 1917 he became executive secretary of the food committee of the Massachusetts Public Safety Committee, and later served as assistant to Henry D. Endicott, Food Administrator of Massachusetts. Early in 1919 Mr. Willard came on to the college staff in charge of the extension work in marketing. In July Governor Coolidge appointed him to the Commission on the Necessaries of Life, and for the past four months Mr. Willard has been devoting practically all of his time to this work.

Mr. Clark L. Thayer has been chosen to succeed Prof. A. G. Hecht as head of the Department of Floriculture. Mr. Thayer

is a graduate of this college in the class of 1913, and since graduation has taught in the department of floriculture at Cornell University under the direction of Prof. E. A. White, formerly of this institution. Mr. Thayer enters upon his task here with an excellent academic training and a rich practical experience.

War Record of the College.

I cannot too frequently call attention to the splendid war record of the college, not only as reflected by the number of students, alumni and faculty participating in the war, but also as indicated by the service which the institution rendered by its large force of scientific experts who contributed their time throughout the war period. The following table has been compiled from the latest records of those serving in the army and navy:—

War Record of the College.

	Total in Service (Army, Navy, Marine Corps).	Commis- sioned Officers.	Overseas.	Deaths.	Additional in State Guard.	Additional in Y.M.C.A., Red Cross, etc.
Faculty,	20	14	8	1	-	2
Class:—						
1873,	-	-	-	-	1	-
1876,	-	-	-	-	1	-
1878,	1	1	-	-	1	-
1882,	2	2	-	-	2	-
1885,	2	2	1	-	-	-
1886,	-	-	-	-	2	-
1890,	1	1	-	-	-	1
1891,	-	-	-	-	2	1
1892,	-	-	-	-	1	-
1893,	-	-	-	-	1	-
1894,	1	1	-	-	-	-
1895,	2	2	2	-	1	1
1896,	-	-	-	-	3	-
1897,	2	2	-	-	1	-
1898,	-	-	-	-	1	-
1899,	1	1	1	-	2	-
1900,	1	1	-	-	-	1

War Record of the College — Concluded.

	Total in Service (Army, Navy, Marine Corps).	Commissioned Officers.	Overseas.	Deaths.	Additional in State Guard.	Additional in Y.M.C.A., Red Cross, etc.
1901,	1	-	-	-	1	-
1902,	1	-	-	-	-	-
1903,	3	3	1	-	1	-
1904,	1	1	-	-	1	-
1905,	-	-	-	-	1	1
1906,	4	4	3	-	2	1
1907,	6	4	3	-	-	1
1908,	9	6	4	1	1	-
1909,	7	2	2	-	2	-
1910,	13	5	6	2	3	-
1911,	19	7	10	2	-	-
1912,	36	18	17	1	4	3
1913,	48	24	26	6	-	1
1914,	73	33	29	2	-	-
1915,	78	31	37	1	-	1
1916,	107	47	50	2	-	1
1917,	129	55	56	7	1	-
1918,	137	66	71	7	-	2
1919,	158	52	57	6	-	1
1920,	130	26	25	3	3	-
1921,	92	11	4	2	-	-
1922,	108	-	1	-	-	-
Graduate students,	39	4	11	2	-	-
Unclassified,	62	12	16	5	1	1
Total,	1,318	437	441	50	33	19

The secretary of the college is still working on this record in order that it may be as complete as possible, and it is proposed to publish in the near future a rather comprehensive report on the full participation of the college in the war.

Alumni Memorial Building.

In the spring of 1919, Acting President Lewis invited a group of some twenty-five representative alumni residing in the vicinity of Boston to meet him there and discuss various

problems confronting the institution; among other things which were considered at that time was the question of erecting a suitable memorial to commemorate the splendid war record of our alumni and students, but more especially to serve as a memorial to the fifty M. A. C. boys who gave their lives in the great war. As a result of this conference the Alumni Association held a banquet in Boston on May 23. It has been said by many to have been the most significant alumni meeting in the history of the college; 288 were present. Tentative plans for erecting a student memorial building which would cost \$150,000 were presented at that time; the alumni unanimously endorsed the project, and that evening subscribed approximately \$20,000 toward it. Subsequently the campaign for raising the balance of the fund was organized under the direction of an alumni committee, with Mr. Almon W. Spaulding of the class of 1917 as manager. The campaign was launched the 1st of October, and as a result \$143,000 has to date been subscribed. The response of the students to the appeal for support was remarkable; \$26,000, subscribed by them during the campus campaign, was pledged practically in twenty-four hours. The memorial building will be located in the area south of the stone chapel, and will serve as headquarters for various student activities and will be the center of the social life of the college.

I cannot commend too highly the spirit which inspired this project, nor the splendid success which has thus far been attained in the campaign for funds. It is the first time that our alumni have been asked to make any large contribution for the benefit of the institution. The purpose of the building is, in my judgment, ideal, and the whole effort will certainly result in bringing the body of loyal alumni into still closer touch with the institution. It is indeed a courageous undertaking for a small college without wealthy alumni to assume so large a responsibility. Its immediate success and the enthusiasm and energy with which it was carried out are simply indicative of what one may well, without any attempt at rhetoric, characterize as the traditional "Aggie spirit."

Memorial Service.

On June 11 there was held in Stockbridge Hall a memorial service in memory of our men who gave their lives in the war. The relatives and friends of the men were invited, and 17 out of the 50 families were represented. Luncheon was served at 1 o'clock, and at 3 P.M. the following program was carried out:—

Organ prelude.

Invocation.

Rev. JOHN A. HAWLEY

Organ solo, prelude in C Minor, *Chopin*
Mrs. EDNA K. WATTS

Remarks in behalf of the trustees.

Mr. CHARLES A. GLEASON

Vocal solo, "Lest We Forget," *DeKoven*
Mr. HARLAN N. WORTHLEY, 1918

Remarks in behalf of the alumni.

Dr. JOSEPH B. LINDSEY

Organ solo, Prelude and Fugue in G, *Bach*
Mrs. EDNA K. WATTS

Remarks in behalf of the faculty.

Dean EDWARD M. LEWIS

Vocal solo, "The Americans Come," *Fay Foster*
Mr. HARLAN N. WORTHLEY, 1918

Benediction.

Rev. JOHN HAWLEY

Organ postlude.

Practically all the students were present, as well as a large number of faculty and towns people.

Commencement.

The annual commencement was held Tuesday, June 24. Albert R. Mann, Dean of the College of Agriculture of Cornell University, delivered the commencement address, his subject being, "The Place of the Trained Man in Agriculture." Degrees were awarded to 61 men and 10 women. The degree of bachelor of science honoraria causa was also conferred upon 25

former members of the college who died in military service and who did not remain in college long enough to complete their work.

The degree of master of science was conferred upon one candidate.

Legislative Appropriations.

The Legislature in 1919 was requested to appropriate \$150,000 for the construction and equipment of a women's building; \$45,000 for miscellaneous improvements and equipment; and \$15,000 for the market-garden field station. The appropriations granted were as follows: women's building and equipment, \$127,400; miscellaneous improvements and new equipment, \$20,000; market-garden field station, \$15,000; for a special study of the grounds, \$2,000, making a total of \$164,400.

Improvements and New Construction.

The improvements completed during the present fiscal year include the turbine building provided in 1918. This is a brick building in which is stored all of the electrical equipment of the power plant. The building was completed late in the spring. Numerous improvements have been made in the building and grounds to make them more suitable for the needs of the institution. The construction of the women's building was begun early in November, and it is hoped that sufficient progress may be made before winter closes in to permit the contractors to continue work during the winter with little interruption.

Consolidation Law.

Following the mandate of the voters of the Commonwealth as expressed by their approval of an amendment to the Constitution referred to them by the Constitutional Convention, the Legislature of 1919 was obligated to pass a law consolidating all the State boards, departments and commissions into not more than twenty groups. The Massachusetts Agricultural College was logically placed in the group of other educational institutions, all of which are included in the Department of Education. (General Acts of 1919, chapter 350, Part III, Division 9.)

The College as a State Institution.

The college has now for a full fiscal year been operated as a "State institution." We have been obliged to make numerous adjustments in our methods of accounting, payment of bills and other details of administration. The college has made every effort to comply in all respects with the laws and new administrative rules governing the work of the college, and has found the various State departments and officials responsible for the administration of these laws most patient and indeed generous in helping us to make the various adjustments. It is quite possible that some rather important and even serious problems of institutional efficiency may arise out of the new requirements. A State budget system is unquestionably necessary and desirable. It is highly appropriate that the Commissioner of Education should head the educational forces of the State. The only question is, how can the greatest efficiency of the college itself be sustained, with such initiative and final authority as are necessary to that efficiency still residing in the trustees and faculty, and at the same time conform loyally, thoroughly and fully to the new centralizing plan that has undoubtedly come to stay. I feel very sure that these matters can be worked out. Certainly, we must show the same spirit of courtesy and good will that has been shown us by the officials from the State House.

Standardization of Salaries.

Pursuant to the State law, the Supervisor of Administration has, in consultation with the president of the college, been studying the problem of standardizing the salaries, duties, qualifications and titles of the officers of the institution. The college has welcomed the initiative of the Supervisor in this effort, and I hope that out of it may come many advantages to the institution, such as the specification of titles, the more definite establishment of grades with respect to salary, a substantial increase in actual and prospective salaries, an adjustment in discrepancies of titles and salaries, and, above all, a greater certainty to the members of our staff of reasonable and adequate salary advances, combined with a fuller knowledge of what a staff member may reasonably expect ultimately to receive.

The Departments of Undergraduate Instruction.

As has already been indicated, the work of the past year has been largely that of readjustment. The departments, especially those in agriculture and horticulture and the sciences, have all been confronted with numerous problems of relationship between the two-year course and the four-year course. Thus far the adjustments at this point have been happily made. A number of instructors who have served in the war have returned during the year to resume their work, although a number of other instructors have resigned. Heads of divisions are unanimous in expressing the opinion that something must be done in the way of larger salaries if we are to maintain our present staff or our present quality of instructors. Quite a few of our best men have left during the year to accept more attractive positions in educational work or in commercial activities.

The effectiveness of the work in the Department of Agricultural Education has been greatly increased by the appointment of an additional professor who, in co-operation with the Department of Education, is giving special attention to the training of teachers for agricultural work.

We still feel very keenly the handicap of inadequate facilities in certain directions. The need of the library is more pressing than ever, chiefly in view of the fact that we have more students on the campus than ever before. The chemistry laboratory is becoming more and more inadequate, and certainly the instruction given there is performed under conditions which lessen its effectiveness and economy in operation.

Women's Work.

Miss Edna L. Skinner was appointed professor of home economics at the beginning of the second term of the current calendar year. She is also serving for the present as adviser of women students. With no adequate facilities for teaching home economics, she has had to overcome a good many handicaps; the work, however, is being enthusiastically received by the women students who desire to supplement their training in agriculture with a limited number of courses in home economics and allied subjects. One of our problems is to develop

the general field of homemaking, especially in respect to preparation for the rural home. We need ampler facilities than we can possibly provide at present, with a reasonable amount of equipment and some additions to the teaching force. During the year Miss Margaret Hamlin has been designated definitely as vocational counselor for women, with particular reference to helping women who desire to enter agriculture. She has succeeded in placing quite a number of our graduates in permanent positions, and has a record of applications much greater than we have thus far been able to fill. There is no doubt whatever but women are coming to the college in increasing numbers, both for agriculture and for homemaking, and it is only fair to them and to the people of the State that we should as rapidly as possible make fully adequate provision for housing and for teaching.

One of the problems confronting the management of women's work has been that of making adjustments for an increasing number of women students in a college where all the policies, equipment and methods have been intended to meet the requirements of men students. For example, there are no traditions of social life. Much improvement has been made, particularly in the creation of the *esprit de corps*; social regulations have been revised, and the Student Government Association organized. The interest of women in all phases of agriculture has been markedly increased during the past year. An endeavor has been made to enforce the idea that the farm and the farm home are a unit. Women studying agriculture, therefore, are offered courses in homemaking. A clothing laboratory and a food laboratory have been equipped for this purpose and are now in use. The completion of the dormitory for women will not only afford adequate accommodations for the rooming of a hundred students, but it will meet some of the difficulties that have been mentioned.

The Infirmary.

A special need growing out of the increase of women students is in the procurement of satisfactory infirmary facilities. Inasmuch as these facilities are already rather crowded for men students, it will probably be necessary within a few years to

construct a fairly large infirmary building, and, indeed, it may be wise to provide two buildings, one for men and one for women. All this confirms the judgment of Dr. Marshall, the supervisor of the infirmary, that we must have first-class hospital facilities and a hospital force to meet exigencies as well as the ordinary needs.

Market-Garden Field Station.

During the past two years two greenhouses, a boiler house and a farmer's cottage have been constructed. On account of the increased cost of building some changes had to be made in the plans, but the appropriations were not exceeded. The station is now on a permanent and substantial basis and fully meeting the work expected of it.

The Library.

The attendance records for the library show a marked increase in library use. Careful records kept during October, for example, show that 3,277 visited the library in October a year ago, and 6,010 in October of this year. The branch library in Stockbridge Hall had 430 visitors the same month a year ago, and 1,132 this year. The book accessions for the year have been creditable. There are now 62,000 volumes on hand, about double the number ten years ago. It is hardly necessary to repeat the plea that has been made over and over again for the last sixteen or eighteen years as to the need of a new building to house this equipment. The library extension work continues to grow. Collections of the latest books on agriculture and home economics are loaned to the libraries of the Commonwealth, and package libraries on special subjects in these fields are sent out. All this material is loaned for a period of eight weeks, subject to a renewal when possible.

Department of Physical Education.

During the year Professor Hicks, Professor Gore and Mr. Derby all returned from war service duties to the regular work here. Physical drill is now a requirement in the training of the Reserve Officers Training Corps, so that it is now carried

on under the joint supervision of the professor of military science and tactics and the physical director. Active interest has been maintained in interclass athletics, and, as already indicated in this report, intercollegiate athletics have been resumed. It seems to be a fact that service men returning to college have an unusual interest in athletic work. The department has also had to meet the problem of providing exercises for nearly two hundred men in the two-year course. During the past fall the attendance of the men in the work of this department is at least 50 per cent greater than at any previous time in the history of the institution. The perennial need of the department is a new gymnasium. The present drill hall cannot be used for gymnastics, and repeated attempts to do this have finally been abandoned. In other words, the department has to confine its work almost wholly to athletics. Athletic field facilities are somewhat less pressing, but still should be provided, particularly so long as we have no gymnasium.

Department of Military Science and Tactics.

The work with the Reserve Officers Training Corps, under the supervision of the War Department, has been resumed. We believe that this plan, carrying as it does a progressive scheme of instruction, will develop great interest among the student body as well as harmonize with the general governmental policy. The head of the department finds the drill hall completely inadequate, and states that the failure of the State to provide armory facilities is so serious a handicap that it defeats to a very large extent the real purpose of the military drill.

During the year Col. R. H. Wilson, who had been in charge of the department for two years, retired from service here and his place was taken by Col. R. H. Walker. Colonel Wilson was especially effective with the Student Army Training Corps unit. The results obtained with the unit during the autumn term were really remarkable. The showing of the men as they paraded on Armistice Day was a revelation. Colonel Walker comes to us out of the abundant experience in the army, and full of enthusiasm for the possibilities of the Reserve Officers Training Corps.

LEGISLATIVE BUDGET, 1920.

The legislative budget, as adopted by the Board of Trustees last October, calls for considerable increases, both in funds for current expenses and in special appropriations for permanent improvement. There are four main groups of needs which the Legislature is asked to meet through increases in the appropriations for current expenses, as follows:—

1. Increase of salaries for the members of the staff. This is, by all odds, the most important single need of the institution. So much has been said publicly concerning the humiliating position in which the teachers, both in public schools and in colleges, find themselves in this era of high prices that I do not care to repeat the argument for illustration here. I can only enforce with all the power at my command the pleas that have been made repeatedly by presidents of many of our leading universities and colleges, both endowed and state supported, on behalf of higher salaries for members of the staff. The matter has become more than serious; it has become critical. Men are leaving us for other lines of work. The morale is being broken down, and discouragement and disheartenment will soon result unless the remedy is immediately applied. The increases we ask are modest, undoubtedly less than are deserved, but we hope that these increases, taken in connection with adjustments of salary grades which members of our staff may reasonably expect to achieve within a few years, will at least do reasonable justice to the situation.

2. A number of new positions are asked for on the teaching force, in the Experiment Station and in the Extension Service. We have not asked for the establishment of any new position that we did not think was absolutely necessary in order to make it possible for the institution to render the service that is being demanded of it by the people of the State. We must remember that the college, in all lines of its work, is an investment. If the college does its work well, for every dollar that the State puts in to the support of the college many dollars are returned to the productivity and welfare of the Commonwealth.

3. In the Extension Service an unusually large increase is required, not only because of new demands, but because the

withdrawal of United States funds, both emergency war funds and other funds which had been available, make it necessary for the State to make good the loss, or else we shall have to entirely drop many important lines of extension activity which have, without any doubt whatever, found a place in the agricultural educational system of the State. There is also included in the Extension Service budget an item for the appropriation of State funds to aid directly the county farm bureaus. It is a matter of very great gratification to us all that the farm bureaus are asking for this through the college in order that not only they may have the larger support to which they feel they are entitled, but in order that there may be the closest possible co-operation between them and the Extension Service of the college.

4. The nominal increase in our request for current expenses is much larger than the actual increase in former years, because under State law we are obliged to return to the State treasury all income, no matter how earned. For example, all of the receipts from the farm, the dairy, the poultry plant, the horticultural department go directly to the State treasury. The so-called producing departments, therefore, are charged with all the expenses of growing crops, producing milk, etc., but without any opportunity to receive credit in money for the sale resulting from their productivity. This is unfortunate in many ways. Under a system by which departments do get credit for what they sell, it often happens that the larger the gross expenditures the less the net cost to the college because the larger expenditure has resulted in increased production. On the other hand, under the present plan, every expenditure for producing or harvesting simply adds to the cost of the department. It is universally agreed upon the campus that this system does not work well from the college point of view. Whether it can be changed is another question.

Requests for Special Appropriations for Permanent Improvements.

It has been difficult for the trustees to reach a conclusion as to the wisest and fairest policy to follow with respect to special appropriations from the incoming Legislature. The building

program of the college, already far behind the needs of the institution, was practically laid aside during the war. It is recognized that other State institutions pursued a similar policy, and that the total requests from these institutions will be very large indeed. It is also recognized that we are in an era of high costs for buildings. Our best advice is, however, that we can hardly look for any sharp decrease in building costs for some time to come. The attendance at the college is larger than ever before, and need for room and equipment will increase rather than diminish. It has seemed, therefore, as if the trustees were best meeting their duty by presenting a budget which represented the present needs of the institution, leaving it to the responsible State authorities to indicate what the State can afford to spend upon the institution another year.

The specific items in the special legislative budget are as follows:—

Library Building and Equipment.

In the report of the trustees for the fiscal year 1915 the library building was requested and the needs for it outlined. Attention is called to the fact that late President Goodell, who himself acted as college librarian for many years, as far back as 1902 emphasized the need for a new library building. This need, of course, has strengthened with the years. The report of the Commission on Investigation of Agricultural Education, made in January, 1918, said that "An adequate library building is at present one of the greatest material needs of the college."

The original estimate for this building has, of course, to be increased. It is believed that to carry out the plans adopted by the trustees it will be necessary to call for an appropriation of \$425,000. Probably about one-third of this amount will be required during the fiscal year in which the building is begun.

Chemistry Laboratory and Equipment.

While this is the first time that this structure has been asked for, it has been under discussion for many years. The Commission on Investigation of Agricultural Education said that "An adequate chemistry laboratory is equally needed. The present chemistry building is one of the oldest, most dilapi-

dated and most unsuitable buildings on the campus." Chemistry is a subject required of every student because it is fundamental in all agricultural work. For the same reason the research work in chemistry demands more space than does any other single branch of investigation. It is estimated that it will require an appropriation of \$600,000 to build and equip a building that will be at all adequate to meet the situation. As in the case of the library, however, not more than one-third of this amount will be needed during the fiscal year.

Miscellaneous Improvements and Equipment.

The time has come when the college should be liberally treated with reference to the making of a large number of miscellaneous improvements and the purchase of many items of equipment for the different departments. For many years past our requests for these things have been seriously cut by the Legislature. The result is that some departments are almost scandalously short of equipment. This item is in turn composed of a large number of separate items which are indicated in the list submitted to the Supervisor of Administration, together with definite projects covering each detail. The aggregate in figures is \$120,000.

A Dwelling for Farm Help.

There can be no question but far more efficient farm help can be kept at the college if provision is made for residence near the college buildings. This is especially desirable, as the barn and piggery are south of the college farm. It is believed that this house can be built at a very reasonable figure by using timber belonging to the college. The estimate is \$5,000.

The Extension of the Rural Engineering Shops.

These shops, erected nearly four years ago, are totally inadequate to accommodate the large number of students taking the work. As was expected when the department was organized, it has developed into one of the most useful and popular of the practical departments, and there is clearly no limit to the service that it can render to the students and the farmers of the State. Farm machinery is becoming more and more an im-

portant factor in agriculture. Simply to meet the existing demand requires that the present space be doubled; this will cost \$25,000.

Improvements at Power and Heating Plant.

The request for an appropriation aggregating \$80,000 for the power plant is made necessary when we consider the needs of the institution from an economic point of view. Two of the old boilers should have their foundations replaced the coming year, the cost of which is approximately \$5,000. They are seventeen years old, and when they are twenty years old it will be necessary to replace them, as their pressure will undoubtedly be cut down. It seems, therefore, that the economic thing to do is to put in two boilers next year. With the new building being erected, we should have a spare boiler so that it will not be necessary to run the entire battery during the peak load without having any boiler for emergency service. We recommend that two Heine water tube boilers, 400 horse power, be installed with stokers. At this time the Dillon boiler, which was purchased in 1915, should be connected with a stoker also. The feed water heater is in very poor condition. It is of too small a capacity, and was secondhand when purchased. We recommend the purchase of a heater.

With the increased lighting requirement there continues to be wasted every year a considerable amount of exhaust steam. We recommend that a tunnel be constructed from the power plant north to Flint Laboratory and Stockbridge Hall, through which all steam mains may be carried. This would allow us to install a heating main carrying exhaust steam to these buildings, which would take care of the loss of steam.

Stable for Cavalry Unit.

The United States War Department has notified the college that it will send to this institution and maintain a unit of at least thirty horses, the maintenance to include feed, care, veterinary service and blacksmithing. This will permit cavalry drill to be added to infantry drill as a part of the military education carried on at all of the institutions which receive Federal aid as does ours. The only requirement placed upon the college

is to build a stable that will accommodate the horses. It is estimated that this will cost \$15,000; in this case it is believed that substantial savings can be made by the use of lumber cut from the college forests.

The Celebration of the Fiftieth Anniversary of the College.

It will be recalled that rather elaborate preparations had been made for the celebration of the fiftieth anniversary of the opening of the college to students, through a program which was to have taken place in October, 1917. Because of the entrance of the country into the war it was thought that it would be impossible to carry out the program with satisfaction, and it was therefore entirely canceled. It is now proposed to resume the project for a celebration, and you will have laid before you plans originating with a committee of the faculty, looking toward a celebration going over a period of about a year, beginning with the laying of the cornerstone of the new Memorial Hall next spring and ending in June, 1921, at Commencement time, with a dedication of the Memorial Hall, a presentation of the pageant which had been prepared for 1917, a celebration of the fiftieth anniversary of the graduation of the first class of the college in 1871, and other appropriate exercises. Between these dates it is proposed to hold a series of conferences, the college either acting as host or co-operating with other organizations and places, these conferences to bear upon some phase of the development of agriculture and country life. The Association of Land Grant Colleges has again voted to meet in Springfield some time next autumn, and the delegates will arrange to spend a day at the college. I will not go into further detail at the present time. I do want to call attention to the fact that to carry out this plan we need a special appropriation from the Legislature.

Some Problems.

In closing, I desire in a very brief way merely to call your attention to some very important questions that must be answered in the near future.

1. *Salaries.* — I have already referred to this matter in another part of this report, but it is of such vital consequence

to the continuing effectiveness of the college that I desire to reiterate the statement that it is the most important single question before us. The increase of salaries is not only a matter of justice to the individuals on the staff, but it is absolutely necessary in order to retain men upon the staff who are effective, and who, to maintain their effectiveness, must be relieved from serious worry in regard to financial matters. College teachers for years have been underpaid.

2. *The building program* of the college is still years behind. I am beginning to wonder if the State of Massachusetts really intends to provide on this campus the buildings and equipment that are absolutely necessary in order to maintain a first-class agricultural college. I ask this question in all seriousness. I am quite aware of the fact that building costs are, at present, extremely high; that several good buildings have been granted by the Legislature during the past few years; and that the buildings we have had are first class and in every way most satisfactory. But there still remains the demand for certain facilities that the college has never been able to get and for the needs of a growing institution. We are ten years behind a normal building program.

3. *Housing of Students.* — A special feature of the building need is that of accommodations for students. At present, the village of Amherst is unable to accommodate the student body in a manner that is satisfactory. Men are living a mile or a mile and a half, some even a greater distance, from the college. The dormitory problem, therefore, is becoming a crucial question. I wish to recommend a very careful consideration of the proposition that will come to you in at least outline form, that we move at once to secure the erection of plain dormitories in the nature of first-class barracks, comfortable and convenient in every way, with the hope that we can at least temporarily relieve the situation in this way, particularly by providing accommodations for the short-course students, and perhaps eventually for freshmen students. But this does not dispose of the problem. The college, at its inception, adopted as a part of its policy the dormitory system for its students. It does not, however, house in its dormitories as many students as it did thirty years ago at a time when the college was generally

looking more and more toward the dormitory system as an integral part of its policy. Our college is obliged to state the fact that it has practically no accommodations whatever for its student body.

4. *Policy and Organization.* — Several years ago, in a report to your Board, I took considerable time to develop what I believed to be the needs of the institution with respect to a study of general policy and organization. For various reasons those studies have materialized only in part, but I feel that the time has fully come when we should put on paper very distinctly a statement of our aims, purposes and methods. I should like to see these made a part of the anniversary celebration.

5. *The Scope of the College.* — In connection with this general need for defining policies, there is a specific feature. I have been conscious, particularly since getting back from Europe, of an increasing call for courses to be given at this institution other than those connected with the vocation of agriculture. The fact that the Massachusetts Agricultural College is the only one of the land grant colleges which confines itself to the agricultural field, while a matter of pride in the past and undoubtedly a matter of advantage at many points, raises the question as to whether, in a great urban State like Massachusetts, the one State educational institution should not serve a wider constituency. I am not at this time expressing any opinion in this matter, but I think it my duty to call your attention to the fact, or at least what seems to me to be a fact, that to an increasing degree the question is being asked of us, and we must, I think, in the near future, give either a negative or an affirmative answer.

In Conclusion.

In conclusion I wish to express to your Board my hearty appreciation for your continued support, for your unwearied devotion in committee work and other trustee obligations, and for your intelligent consideration of the projects that come to you from time to time from the staff of the institution.

KENYON L. BUTTERFIELD,

President.

REPORTS OF OTHER ADMINISTRATIVE OFFICERS.

The Report of the Dean.

Undoubtedly the great problems of the dean's office are those of the scholarship and the life of the students, especially of the freshmen and sophomores. The fact that a large number of freshmen fall below a satisfactory record in scholarship, while very few juniors and seniors fail, is due not merely to the break between the secondary school and the college, but also to the differences in characters of the studies of the first two years and of the last two years. The problem of overcoming the interruption occasioned by the change of school and of methods of instruction has in the last few years been met with increasing sympathy, clearer understanding and a larger degree of success by the method of special advisors working in co-operation with the dean. I believe that tutors may well be employed for a time for freshmen, and that sympathy and study of the needs of all students should continue indefinitely. It is clear to me, also, that actual assistance by tutoring should continue only during one term or, at most, two terms, of the freshman year. The English university seeks to educate only safe practitioners and leaders; the American college seeks to give higher education to as many as can possibly pass. But in neither ideal is there any desire to foist upon the community unsafe men who are to pose as experts or superficial leaders, or, in short, to fill the professional classes with "lame ducks." The man should be strictly on his own feet, on both of them, by the end of the first, or at most, the second, term of his freshman year. After that, sympathy, understanding, encouragement, intimacy, but not tutoring.

In this connection there arises the great problem of student life as it concerns the freshmen and sophomores. This problem is as important in this office as the problem of scholarship. Some method that would bring students and instructors to-

gether socially, but not in mere so-called receptions, in normal, natural fellowship, very commonly should be found. Specifically, freshmen and sophomore instructors should, if necessary, be assisted financially so as to meet the freshmen and sophomores very often in small groups.

The much greater cause, however, of the apparent inability of freshmen and sophomores as compared with juniors and seniors is not in the men but in our college courses. The courses of the freshmen and sophomore years, almost without exception, are more condensed and more difficult than a very large number of those of the two upper years. This difference is due to two fundamental difficulties:—

1. A fundamental difference exists, of course, in the fact that the studies of the first two years are not technical, while those of the last two years are technical. In my opinion the mere liking that a student has for subjects in his major is not an explanation for his better scholarship in those subjects than in the subjects of the first two years. It is evident that many of them are not in his major and are not preferred by him. Nor is his mere acquaintance with the school an explanation. These subjects should really be more difficult because they are technical. Again it seems evident that there is something wrong. As a matter of fact, I wonder whether we can expect real college work if the student is required to carry so many hours a week. Textbook work is possible, but not much beyond. If the work of the latter two years through compulsion of time is forced into laboratory and textbook work only, it will, of course, be easier than the work of the first two years. I believe that in every year of the college course we require too many hours a week.

2. A number of courses in the upper two years are taught, not as education proper, but, in a way, as manual training. It raises, of course, the fundamental question whether this is a college or a training school, and whether the aim of a college is to teach the *science* or the *art*, or *both*. The question is too long for discussion here, but it is an axiom that the college must teach the science, and only illustratively the art. Nearly all subjects taught in this institution merely as arts evidently cannot be made as difficult as courses taught as science in the

freshman and sophomore years. In my opinion they do not belong in the course for a degree; they belong in the short courses. If they must exist in the degree course, which I doubt, they should be greatly condensed. The work should be intensive, if an art can be. There is small question that in some cases the work drawn out into courses covering two years or more might be and ought to be condensed — in a college — into two or three terms. I wonder whether any committee could be appointed that could and would effectively supervise and co-ordinate and evaluate all courses.

If something is not done to remedy this fundamental fallacy, then the passing grade should be higher in the junior and senior years than in the freshman and sophomore years.

During the year an obstacle in the way of assigning courses for students in the irregular conditions in which they found themselves loomed rather large. This obstacle was the large number of prerequisites to various courses. It has led me to question seriously whether a large number of these prerequisites could not be dropped. It seems to me desirable that there should be as much freedom as there possibly can be for students to take individual courses.

Another obstacle in the way of scholarship, particularly for the freshmen, is in the length of the "rushing" season for the fraternities. This year, as well as last, this has been a serious interruption. I suggest that the rushing season should be confined to two weeks, preferably one week before college opens and the first week of college, or the Christmas vacation and the first week after college opens for the winter term.

The war necessarily placed upon the dean's office an endless succession of special cases in regard to credits, requirements for graduation, maximum hours, etc., as well as more difficult questions of advice to our men who were returning from service. During the S. A. T. C. period, when the problems of co-ordination with military training were to be solved, and at the same time the needs of a body of regular students were to be supervised, the office was a very busy place. The acting dean has acted also as counsellor for disabled soldiers sent to this college by the Federal Board.

The unfailing sympathy and counsel of the Acting President and the wise rulings of the committee on scholarship, whose members were most faithful and painstaking, enabled the office to pass through a difficult period.

C. H. PATTERSON,
Acting Dean.

Report of the Director of the Experiment Station.

In spite of after-war conditions, which retained in military service for much of the year several of its staff, the Experiment Station has made positive progress in each of its departments, of which brief mention will be made in detail.

Agriculture. — A series of field experiments, supplemented by pot experiments, was begun with bacterized pest and with barium phosphate. While these experiments were projected partially to satisfy influential parties, they have shown the need for careful research into efficient use of natural materials and natural agencies for crop production in comparison with the customary employment of fertilizers prepared by artificial means. At present, extravagant claims are made for materials used as fertilizers which are based on results obtained under special and even unknown conditions, while strongly condemnatory statements are made with similar unstable foundations.

Agricultural Economics. — The work of this department was almost completely broken up for a time by war service. Nevertheless, a study of Holyoke's food markets was made, and a promising survey of farm ownership in the State has been begun.

Botany. — Positive ground has been gained in the control of lettuce drop and onion smut. These diseases can be effectively prevented by proper use of formaldehyde in the soil.

Chemistry. — The effect of temperature on the rate of chemical change in cranberries in storage has been definitely established. Variations in the character of the fats of milk during the progress of lactation have been determined. A study of the effect of low protein rations on growing calves has been completed. An investigation of jelly-making in co-operation with the Department of Pomology was begun, and a study of the effect of lactic acid in a ration for swine was also started.

Entomology. — The life history of the European corn borer was completed early in the year. The vacancy caused by Mr. Vinal's untimely death has remained unfilled, and the time of the department has been occupied in the necessary investigations of outbreaks of insect pests in various parts of the State.

Horticulture. — The projects of this department are of continuous, long-term character. Their progress has been uninterrupted by any unseasonal conditions. A graduate assistant was added during the year to the staff. The resignation of Dr. Shaw from the research work will cause considerable difficulty in insuring in the future satisfactory progress in some of the work of this department.

Microbiology. — The needs of the medical and sanitary corps of the army made it exceedingly difficult to secure assistants for the prosecution of the investigations in this department. This fall sees the staff nearly complete again, and work being vigorously prosecuted. The De Laval investigations of clarification of milk have been completed and partially published.

Poultry. — The breeding projects are necessarily continuous over a term of years, and their progress has been uninterrupted. As generations increase in numbers, the problem of land and housing becomes serious.

Veterinary Science. — This department also lacked strong members of its staff until the hospital service was demobilized. Shortly after September 1 its work was again organized, and the investigation of poultry diseases is being pushed. Under an act of the last Legislature, the department has renewed the effort to control the spread of bacillary white diarrhoea in poultry by means of blood tests performed on the fowls. Applications are on file for over 12,000 birds to be tested, and additions are made daily.

Changes in staff have not been numerous during the year, and with one exception have occurred in the minor positions. But these changes have occurred because higher salaries could be secured elsewhere, and it has been impossible to fill the vacancies with equally experienced parties. It is obvious that our scale of compensation is too low at present for the needs of our institution.

By the middle of the year lack of money for printing our bulletins became acute, and several manuscripts had to be withheld from the printer until recently, when it became safe to use the contingent reserve for a part of the work, and to carry the completion of other matter into next year. A considerable list of prepared and proposed bulletins has already been submitted to you in connection with the budget for the ensuing year, in which an increase for publications was requested.

The principal and almost the only line of contact of the research departments with the public is through our publications. There is positive need of greater development of this contact by more reports on investigations, either on completed studies or on progress, and also by short, readable statements of methods and results of our investigations which will interest all our constituents when the full report may appeal only to the people engaged in the special fields in which the problems arise. Such brief popular leaflets would be both an advertisement of the station's power for service and a defence against ignorant critics.

As new buildings are projected for the institution, it becomes apparent that some of our station field experiments occupy unusually fine and dominating building sites. Therefore it is clearly evident that it will be a wise forethought to provide as soon as possible some easily accessible fields with suitable soils for field experiments that will be adjacent to our station buildings, if the work of the station in the study of crops and fertilizers is not to be restricted and is to be permitted to grow as it should. Tillson farm is not, as a whole, suited to the station's needs, and is too remote to permit efficient work without the duplication of some of the present buildings and equipment.

The varied interests of our rural population and the highly capitalized lines of intensive crop production in our suburban localities offer numerous opportunities for fruitful investigations, and frequently call for quick solutions of pressing problems. This year four new projects were selected from several propositions and made a part of the estimated budget for next year. They included an investigation of feeding swine with household

garbage; studies in the economical preparation of jellies and other products from surplus fruits; the climatic effects on orchard spraying in eastern Massachusetts; and the beginning of an investigation of rural social conditions; with particular reference to the changes in our farm ownership.

There are so many opportunities for service that it is a serious problem how to complete the projects now under way while undertaking new ones that are asked for by different interests. A specialist in one line cannot, as a rule, be transferred to some other line, and, on the other hand, one cannot be employed satisfactorily for a temporary period. Possibly the solution of the problem may be reached through the use of graduate students, to whom may be assigned a single problem, as their thesis subject.

FRED W. MORSE,
Acting Director.

The Report of the Director of the Extension Service.

Activities of the Extension Service have been directed along lines similar to those in previous years. The emergency program conducted on account of the war has been dropped, and in some respects this has meant a reorganization of effort. Unfortunately it has been necessary to reduce the amount of work along many lines which the State has needed, but which the war only accentuated. This is particularly true of home demonstration and home gardening, entomology and plant pathology. The results of effort along those lines have shown conclusively that for the most part they should be continued in peace times. The same is true of other phases of the work which should have support, but for which no funds are available.

The purpose of the appropriation of public funds, by Congress through its Smith-Lever law and by the State Legislature, for Extension Service in agriculture and home economics was for disseminating agricultural information and giving practical instruction by designated agencies. This necessarily presupposed a close association of those agencies. Progress worthy of note has been made in that direction during the past year. Closer co-operation between the Extension Service of the college and

the farm bureaus has been established, and closer relationships and fairly frequent conference with farm bureau managers have done much to unify, co-ordinate and strengthen all the lines of extension work. In conjunction with farm bureau managers definite outlines of work have been planned for the coming year, and such new phases as they consider urgent have been asked from the Supervisor of Administration and the Legislature. As the result of co-ordinated effort the use of projects has increased, and this in turn has increased the efficiency of the work and enabled the specialists to be of more service to the county agents, and, through them, to the farmers themselves. They have co-operated to assist farmers to raise better roughage for their live stock; to improve their live stock by better breeding; to increase the demand for their milk by advertising; to increase the income from their poultry by early hatching of chicks, better feeding and careful culling; to improve the yield and quality of their potatoes by better selection of seed; to improve their methods of feeding and management of swine; to bring up to date their methods of orchard management and orchard practice; to keep books in order to study more intelligently the question of management and the proper relation of enterprises on the farm; to sell co-operatively those products which are produced individually in such small quantities as to work to the disadvantage of the grower; to develop among people interested in agriculture a farm bureau organization which will choose a definite and profitable program, and to assist in carrying it out in order that agriculture may be more profitable and country life more enjoyable.

In home demonstration work a distinct need has been met by the introduction of nutrition courses for mothers. This is especially true among foreigners, and over 15,000 people of 14 different nationalities have been reached by this work. Closely linked to this was the assistance given to the campaign for advertising the use of milk as food, a movement which has resulted in better nourishment of infants, children and adults, and which has improved the outlook for dairy farming in the State. Equally important is the continuation of the campaign for the preservation of food, which was emphasized as a war measure. This campaign is of vital importance in the solution

of some of the present-day economic problems. In this work over 10,000 housewives were reached. Increased interest has been shown in clothing efficiency, textiles, remodeling of clothes and in millinery. In this work leaders are taught and in turn teach groups of individuals. By this far-reaching method of clothing efficiency over 4,000 garments and 10,000 patterns were made. This service has issued a household account book which enables the family to keep a more businesslike record of the family budget. Extensive instruction has been given in keeping this account, and over 1,000 copies of the book have been distributed, while many others are to be distributed as soon as issued.

The year has seen a return of boys' and girls' club work to a peace basis. The appeal to patriotism due to war conditions gave way to an appeal of the work for the work's sake. The enrollment, not so great as last year, is, however, large enough to show that the work has a strong appeal to hundreds of young people. Although more effort has been concentrated upon having club members complete the work they set out to do, rather than enrolling large initial numbers, there has been a membership from all counties in the State of over 43,000 boys and girls. Emphasis has been placed upon the organization of clubs which hold regular meetings throughout the year, and whose program extends over a period of two, three or four years. This plan retains interest and enthusiasm, — necessary attributes which are not possible with the one-year program of work. The training of demonstration and judging teams has given the young people an opportunity to demonstrate their knowledge of the work they are doing, and their ability to judge the progress of their handiwork at community, county and State fairs. The results of this line of activity of the Extension Service have clearly indicated that it is developing future leaders for the Commonwealth, and that it is advancing the cause of agriculture in the most fertile field, — that of the farm boys and girls.

The principal difficulties which the service has met during the year have been due to the resignation of the director, and to the lack of funds. In the spring Director W. D. Hurd, who has been in the service ten years, left to accept commercial

work which would give him a larger territory for action. In addition to this loss there have been many changes in the staff due to resignations. In most cases the resignations occurred because it was impossible to pay higher salaries. In Massachusetts, extension needs were recognized by the Federal government, and a considerable amount of Federal money was available for extension work in the State during the war. Beginning July 1 there was some reduction in the total amount of Federal funds for extension work available for the entire country, but the change of distribution from the basis of needs to the basis of rural population severely discriminated against some of the States, particularly Massachusetts. As a result twenty-nine co-operative home demonstration agents were dropped, and also specialists in entomology, plant pathology and junior poultry clubs. Some losses have also resulted from our inability to increase the salary of men paid entirely from State funds. Apparently other State colleges are able to pay from \$500 to \$1,500 more for the same grade of work, — a condition which results in numerous resignations from our staff.

The spirit of the whole college — Experiment Station, resident teaching and extension — has been most satisfactory, and with the closer understanding existing between the farm bureaus extension work appears to be making healthy progress.

RALPH W. REDMAN,
Acting Director.

Report of the Director of the Graduate School.

Our graduate school suffered severely from the effects of the war. Accordingly, what we have to report upon are the mere fragments left behind.

The most important problems which confront the graduate school may be discussed briefly in the following manner: —

I. It becomes more and more evident that most of the students seeking entrance to the graduate school are very deficient in fundamental training and knowledge essential to the pursuit of graduate specialization and intensive study. Too often it is necessary to place these students back in undergraduate courses even as far as the freshman year. This, of

course, interferes very seriously with graduate work, and is discouraging to the student involved.

There is a common desire on the part of leaders in agriculture to place agriculture on the same plane as other leading professions. Wonder is often expressed why this cannot be done. Professions are not manufactured or made, they result from growth and development. Medicine, for instance, has moved ahead very rapidly and satisfactorily to a high plane of development, largely because university schools of medicine have forged ahead in the face of their clientele or practitioners, and because they have appreciated the bearing of the deepest, most intense, and most comprehensive study of all problems related. Consequently, they have fostered such study. This was done even when practitioners were antagonistic and could not see the force of such study or research, and looked upon the work as impracticable.

In agriculture the trained leaders of agriculture, who are most sympathetic and concerned, find the drags or influence which weigh them down so heavy as to nullify to a large extent the efforts made to rise out of stagnation. Progress is very, very slow. There is such a strong pull from constituents that instead of rising to new levels, a tendency exists to drop into the empiricism of agriculture as now largely practiced and recognized.

It is only possible for agriculture to grow through men who are as well trained as the university leaders in medicine, whose attitude is that of seeking new developments, whose training is commensurate with their difficult undertakings and the advancement of wisdom, and whose contributions, although perhaps not immediately interpretable in practice, will eventually enrich agriculture. Such spirit is not one of humiliating descendancy or stagnation, but is leadership which lifts. Agriculture needs the best and severest training possible to produce real leaders for the purpose of forging ahead. Basic or fundamental training and learning means grounding in subjects which will enable the student to grow, to rise without restriction or curbing, as against subjects which consist only of present and perhaps temporary methods or procedures. These are valuable

and necessary in their place, but are of very limited range outside of their own boundaries as subjects.

Graduate students should possess the most rigid training in fundamental subjects as undergraduates and as preparatory for specialized graduate study. This the agricultural college fails to furnish, although it is the only center on account of the environment where it can be done sympathetically.

II. As would be naturally anticipated under the stress of demands upon the instructor in an agricultural college, little energy remains to direct graduate study after other duties, which seemingly are more pressing, are accomplished. This doubtless leads to a condition of graduate study in some departments which is not satisfactory. The writer sometimes feels, too, that there is a want of appreciation and knowledge of graduate work in some departments which works mischief or depreciates standards and quality of work. If in a department a differentiation between "short-course" instruction, "undergraduate" instruction and "graduate" instruction cannot be made, then graduate instruction should not be undertaken. If, however, it is a lack of time or energy only, then much can be accomplished by organization within the scope of our "apprenticeship" system. Graduate study is and should be distinctive from all prior methods and study, for it is not only extended knowledge, but is peculiarly another attitude and atmosphere.

III. Graduate assistantships should be greatly encouraged. They have proven highly meritorious. The ambition to complete graduate study for an advanced degree makes these assistantships unusually valuable, and especially is this so when the graduate assistant majors in the department in which he serves. The graduate assistant is so intimately bound up with the department's activities that the experiences thus gained redound greatly to his education. When properly organized, they return to the department not only what is expected in actual service, but in addition an amount which is expended in energy and expense in their special instruction.

Nearly all the leading universities have fellowships or scholarships which enable graduate students to live fairly well. With

this institution their remuneration for half time is not at present sufficient to cover living expenses.

The time should approach in the near future when it will be possible to exercise to a much greater degree than in the past a discriminating power of selection among candidates for vacancies.

IV. An intangible subject, yet real, an institutional "atmosphere" is of great import in graduate study. A large part of the institutional life flows out into the field as "extension service," leaving an anæmic condition behind. There is scarcely enough "real red blood" left to revitalize the actual work of the organism, the college. This "letting of blood" for the "life" of the field is commendable and generous, but the time arrives when the organism which furnishes the "blood" succumbs, and in most cases the "patient" in the field will succumb, too. In order to maintain a constant flow fieldward, the vitality in the institution should be superabundant or large enough to maintain the "standard of vitality" within, and the "patients" in the field must assume the rôle of strong men who will join in helpfulness as a part of the organic whole in advancing agriculture.

With the flow out there has developed within the institution a spirit which lacks creative purpose and which has been substituted by a missionary purpose. The latter is a most commendable ideal, but when it dominates, agriculture remains unprogressive — it distributes what is and seeks no more: but *when properly combined* with the former, new developments are inevitable.

So little emphasis and energy have been given to the constructive processes within the institution that its functioning powers are lowering. So weak are they becoming that the spirit which is an expression of vigorous life fails in large degree. The intangible "atmosphere" which makes the institution a center of agricultural learning, research and instruction is somewhat deoxygenated.

The treatment of the problems above is designed to point out our institutional drift in the light of graduate study, and not with any desire to criticise.

It is assumed that a large number of the most highly trained

men as specialists will be needed year by year, as has become more clearly evident with the passing years. These men should be trained and educated in an agricultural environment. Anything short of the most rigorous training fundamentally and comprehensively invites a degradative movement in agricultural education and research. Accordingly, undergraduate education for graduate study demands high standards, well-chosen, basic subjects both for intensity and comprehensiveness, exacting requirements and scholarly attainments.

Strictly professional courses, limited courses and special courses have their place in the institution and have definite purposes, but at this time do not call for an interpretation in terms of graduate study.

CHARLES E. MARSHALL,
Director.

The Report of the Director of Short Courses.

PURPOSE.

Short courses in the Massachusetts Agricultural College are organized to provide instruction in agriculture, horticulture and related subjects for men and women who either do not possess college entrance requirements or who, for one reason or another, are unable to take the regular four-year college course. The resources of the college are thus made available to a large number of men and women in the State who otherwise would be unable to profit by them. The experience of the past year indicates a very general demand for such courses.

In my report for 1918 the statement was made that through short-course work the college would serve from 600 to 800 students each year. The total enrollment in all short courses from December, 1918, to November, 1919, was 636. Excluding students counted twice in continuing courses, 590 different persons have been served by the short course during the first fiscal year. The past year has not been a normal one. The Winter School and the first term of the two-year course offered during 1918-19 were seriously affected by the military situation.

If financial support may be had for instruction and maintenance of the courses already existing, and development of

such other courses as may be demanded, I am quite confident that we shall serve, through short-course administration, from 1,000 to 1,500 students a year. These students will not all be here at one time, but will come in groups for special lines of work at different periods of the year.

It is not the purpose of the short courses to enter the field of secondary agricultural education, but to provide practical courses for those men and women who feel that they are too old to enter the secondary school, and for men and women of more mature years and practical experience who wish to take advantage of the opportunities offered by the college. That there is such a mature group in the State is shown by the following age classification of the 238 students now enrolled in short courses: —

AGE.	Number of Students.	Per cent.
17-18,	10	4
18-19,	18	7
19-20,	31	13
20-21,	25	11
21-22,	29	12
22-23,	18	7
23-24,	11	5
24-25,	19	8
Over 25,	77	33
	238	100

Classification of Short Courses.

The Two-Year Course in Practical Agriculture.

The Ten Weeks' Winter School.

The Summer School.

The One-Year Vocational Poultry Course.

The One-Year Course in Rural Engineering.

The Regional School.

The Special Six Weeks' Courses in Agriculture for Returned Soldiers and Sailors.¹

¹ These were emergency courses organized during demobilization, to serve men who wished instruction in agriculture as a preparation for farming.

A committee of the faculty, composed of Professors Foord, Sears, Fernald, Cance, McNutt and Phelan, was appointed by the president to prepare the course of study of the two-year course and to make plans for its permanent organization.

The course as now organized makes available to the student three courses in agronomy, five courses in animal husbandry, five courses in fruit growing, six courses in rural engineering, five courses in dairying, four courses in poultry, four courses in rural home life, three courses in vegetable gardening, three courses in floriculture, two courses in botany, three courses in forestry, four courses in farm business, and one course in each of the following: farm manufacturing, hygiene and sanitation, English, and insect pests.

At the close of six months of study students are required to gain six months of farm experience. The college will assist students in finding positions and in placing them on farms where the experience gained will be of great advantage. Thus an effort will be made to place on a dairy farm the man expecting to take up dairying as his chief line of work, and a student of pomology on a fruit farm.

Two hundred and thirty-eight students have enrolled this fall for the short courses. Of these, 70 are men who have been disabled in military or naval service of the United States and sent here by the Federal Board for Vocational Education. These men vary in academic preparation from college graduates to men who have not completed the common schools. They range in age from eighteen to fifty. The need of these men for education is very great, since the adjustment from war to peace is hard for them to make, particularly in view of the fact that they have suffered disability.

NEEDS OF THE SHORT COURSES.

In considering the needs of the short courses, the most important fact is not that during the first year we enrolled more than 600 men, but the fact that we added to the work of this college the equivalent of fifteen months of instruction for 200 men. The two-year course has created suddenly a small college in itself.

We need more teaching assistance. Several instructors are

now paid out of the short-course funds, but no attempt has been made this year to arrange a short-course staff. Each department is managing the short-course work on exactly the same basis as for any other group of students. This arrangement has been fortunate this year, for it would have been utterly impossible to provide instruction for the men enrolled in the two-year course if the subjects had been taught by members of a small special staff. I am inclined to think, however, that we shall have to create, very rapidly, a special short-course staff. There are some disadvantages to this plan, but there are many advantages. This special staff should have the same relation to the department that members of the Extension Service staff now have.

Assistance for instruction is our first and greatest need. Short-course classes should be small, twenty-five or thirty men, if we are to achieve the best results. We should begin to add as rapidly as possible, if funds will permit, special short-course instructors. These instructors should be mature men of teaching ability and broad human sympathies.

The second need is for a supervisor of farm practice who could assist in the administration of short-course work. The course of study calls for six months of farm experience. This should be under competent supervision in order that the boys may realize the greatest benefit from the course. The supervisor of farm practice might well take charge of the winter school and teach certain courses during the six months that he would be on the campus.

Summer School. — The summer school for 1919 was under the joint direction of the Massachusetts Agricultural College and the Massachusetts State Board of Education. The college offered instruction in agriculture, horticulture and related subjects. The Board of Education offered courses in elementary education. The arrangement was very satisfactory in every respect; students expressed their appreciation of the plan, and there were many inquiries asking if the plan would be continued another year. The enrollment was 238, the largest in the history of the college. I wish to suggest that for the ensuing year the summer school be lengthened to six weeks; that courses be offered that will carry college credit; and that, if agreeable to the State Board of

Education, the arrangement for a joint management be continued.

More courses in agricultural education and rural social science should be offered in the summer school. All of these courses should carry credit and be so organized that they may be taken up by graduate or undergraduate students.

Winter School. — The winter school for 1919 enrolled 63 students. It has always appealed to a more mature class of students, and the work of the school should be further extended so that young men who can attend only during the winter school might come for two or three years in succession in order to take a series of related courses.

One-Year Vocational Poultry Course. — The one-year vocational poultry course is designed to prepare practical poultrymen. The number of students who enroll in this course is limited by the fact that laboratory provision can be made only for a small group, twelve or fifteen men.

One-Year Course in Rural Engineering. — This course was organized in the fall of 1919, and was designed especially for men sent here by the Federal Board for Vocational Education, who wish instruction in farm machinery.

The Federal Board placed at the college an instructor to give courses in mechanical drawing and physics.

A Regional School. — I wish to urge the advisability of the organization of a regional school of from four to six weeks in connection with some other educational institution located in the eastern part of the State, in or near Boston, by means of which we may offer short courses in practical agriculture to those who cannot come to Amherst for instruction.

The organization of such a school would meet a very definite need. The cost would be small in view of the fact that most of the work would be done by the regular staff of the college.

Special Six Weeks' Course in Practical Agriculture. — Three special six weeks' courses in practical agriculture were offered during the winter of 1919. These courses were designed to offer an opportunity to demobilized men to prepare them for farm work. These courses were organized during the period of demobilization.

JOHN PHELAN,
Director.

TABLES AND STATISTICS.

TABLE I. — *Resignations.*

POSITION.	Name.
Assistant chemist, Experiment Station,	Windom A. Allen. ¹
Professor of general and physical chemistry,	Ernest Anderson.
Assistant State leader of home economics,	Stella A. Belcher.
Extension professor of farm management demonstrations,	Wesley H. Bronson.
Clerk, Extension Service,	Cassie L. Clark.
Clerk, library,	Lois Clark.
Clerk, president's office,	Ruth Clow.
Clerk, Extension Service,	Elsie H. Cooley.
Instructor in dairying,	Harry D. Drain.
Garden supervisor,	Henry R. Francis.
Clerk, president's office,	Lillian M. Gelinas.
Clerk, poultry husbandry,	Nettie A. Gilmore.
Clerk, Division of Agriculture,	Mary G. Hanifin.
Instructor in mathematics,	Burt A. Hazeltine.
Assistant professor of floriculture,	August G. Hecht.
First clerk, Experiment Station,	Alice M. Howard.
Director of the Extension Service,	William D. Hurd.
Associate professor of dairying,	Orville A. Jamison.
Clerk, Extension Service,	Ethel L. Kennedy.
Extension assistant professor of pomology,	Austin D. Kilham.
Assistant in veterinary science, Experiment Station,	John B. Lentz.
Assistant to the director of Extension Service,	Daniel J. Lewis.
Chief clerk, Extension Service,	Carleton D. Livermore.
Stenographer, treasurer's office,	Irene A. Martin.
Assistant chemist, Experiment Station,	Esther S. Mixer.
Clerk, treasurer's office,	Hazel Parker.
Instructor in farm management	Walter M. Peacock.
Assistant chemist, Experiment Station,	Harold B. Pierce.
Associate professor of animal husbandry,	Byron E. Pontius.
Associate professor of physics,	Harold E. Robbins. ²
Assistant chemist, Experiment Station,	Robert S. Scull.
Research pomologist, Experiment Station,	Jacob K. Shaw.

¹ Died in service.² Effective Dec. 31, 1919.

TABLE I. *Resignations* — Concluded.

POSITION.	Name.
Extension assistant professor of landscape gardening, . . .	Frank A. C. Smith.
Assistant chemist, Experiment Station,	John B. Smith.
Extension professor of farm management demonstrations, . . .	Benjamin G. Southwick.
Instructor in poultry husbandry,	Lloyd L. Stewart.
Extension assistant professor of animal husbandry,	William F. Turner.
Chief clerk, Extension Service,	Lawrence A. Wheaton.
Curator, Department of Botany,	Mae H. Wheeler.

TABLE II. — *New Appointments.*A. *In the Academic Departments.*

POSITION.	Name.	Institution from which graduated, and Degrees.
Instructor in zoölogy,	Charles H. Abbott, . . .	Ph.D., ¹ Brown University, 1918.
Assistant professor of farm management.	Max F. Abell, ¹	B.Sc., Cornell University, 1914.
Assistant, Department of Botany;	Alyn S. Ball, ²	- - -
Assistant in physics,	Henry J. Burt, ³	B.Sc., Massachusetts Agricultural College, 1919.
Assistant professor of pomology,	Brooks D. Drain,	B.Sc., Ohio State University, 1917.
Instructor in pomology,	Charles H. Gould,	B.Sc., Massachusetts Agricultural College, 1916.
Instructor in physical education,	Emory E. Grayson,	B.Sc., Massachusetts Agricultural College, 1917.
Assistant in physical education,	Mrs. C. S. Hicks, ³	Michigan State Normal College, 1909.
Instructor in animal husbandry,	Richard L. Holden,	B.Sc., Massachusetts Agricultural College, 1917.
Associate professor of dairying,	Henry F. Judkins,	B.Sc., New Hampshire State College, 1911.
Assistant in physical education,	Arthur M. McCarthy,	B.Sc., Massachusetts Agricultural College, 1919.
Instructor in rural engineering,	John B. Newlon,	- - -
Instructor in mathematics,	Laurence H. Parker,	A.B., Tufts College, 1902.
Instructor in farm management,	Leland Spencer, ⁴	B.Sc., Cornell University, 1918.
Assistant professor of rural engineering.	James L. Strahan,	M.Sc., Cornell University, 1913.
Instructor in agronomy,	Charles H. Thayer,	Short Course, Massachusetts Agricultural College.
Associate professor of floriculture and head of department.	Clark L. Thayer,	B.Sc., Massachusetts Agricultural College, 1913.
Instructor in botany,	Ray L. Torrey,	B.Sc., Massachusetts Agricultural College, 1912; Ph.D., Harvard University, 1918.
Instructor and foreman, vegetable gardening.	Gilbert S. Watts,	B.Sc., Pennsylvania State College, 1918.
Professor of agricultural education,	Winthrop S. Welles,	B.Sc., University of Illinois, 1901.
Instructor in dairying,	Fred E. Wheeler,	B.Sc., Cornell University, 1919.

¹ To take effect Jan. 1, 1920.² Transferred from labor account.³ Part time.⁴ Temporary.

TABLE II. *New Appointments* — Continued.*B. In the Experiment Station.*

POSITION.	Name.	Institution from which graduated, and Degrees.
Assistant chemist,	Ethel Bradley,	B.Sc., Connecticut College, 1919.
Assistant chemist,	Arthur M. Clarke,	A.B., Amherst College, 1917.
Assistant in veterinary science, . .	Thomas G. Hull, ¹	Ph.D., Yale University.
Curator, Department of Botany, . .	Marguerite G. Ickis,	B.Sc., Ohio University, 1918; M.A., Columbia, 1919.
Assistant chemist,	Anne C. Messer,	A.B., Mount Holyoke College, 1916.

C. In the Extension Service.

Assistant professor of agricultural education.	Lincoln W. Barnes, ¹	B.Sc., Colorado Agricultural College, 1918.
Assistant state leader of home economics.	Stella A. Belcher,	- - -
Instructor in horticultural manufactures.	William R. Cole,	Massachusetts Agricultural College, 1898-1900.
Assistant professor of animal husbandry.	Roy B. Cooley,	B.Sc., Ontario Agricultural College, 1910.
Assistant state leader of home economics.	Laura Gifford,	Two years at Teachers College.
Specialist in dairying,	Delos L. James,	University of Illinois.
Instructor in charge of poultry club work.	Earl H. Nodine, ¹	Connecticut Agricultural College.
Professor of agricultural economics,	John D. Willard,	A.B., Amherst College, 1907.
Assistant to the director,	John D. Zink,	B.Sc., Pennsylvania State College 1916.

D. Miscellaneous.

Farm superintendent,	Enos J. Montague,	B.Sc., Massachusetts Agricultural College, 1915.
Field agent,	Almon W. Spaulding,	B.Sc., Massachusetts Agricultural College, 1917.

E. In the Clerical Staff.

POSITION.	Name.
Clerk, president's office,	Nellie V. Barkhouse.
Clerk, treasurer's office,	Mary Broadfoot.
Secretary, president's office,	Evelyn Brewster.
Stenographer, Extension Service,	Susan L. Clark.
Clerk, treasurer's office,	Grace Colburn.
Stenographer, Extension Service,	Elsie H. Cooley.

¹ Temporary.

TABLE II. *New Appointments — Concluded.**E. In the Clerical Staff — Concluded.*

POSITION.	Name.
Clerk, Division of Agriculture,	Irene Crutch.
Mailing clerk, Extension Service,	Margaret G. Davidson.
Clerk, dean's office,	Charlotte E. Erickson.
Library assistant,	Lottie M. Fosdick.
Stenographer, Extension Service,	Catherine A. Harrington.
Stenographer, Extension Service,	Marion E. Hawthorne.
Stenographer, Extension Service,	Margaret C. Leduc.
Clerk, Division of Horticulture,	Honor A. Lee.
Stenographer, short courses,	Marie Mercier.
Clerk, president's office,	Rachel C. Packard.
Clerk, short courses,	Mildred Pierpont.
Clerk, Extension Service,	Jessie M. Prince.
Stenographer, Department of Poultry Husbandry,	Laura Sabin.
Clerk, president's office,	Marjorie Silcox.
Chief clerk, Extension Service,	Lawrence A. Wheaton.

TABLE III. — *Changes in Title and Transfers.**Changes in Title of Officers of the Institution.*

NAME.	Former Title.	Present Title.
Nellie V. Barkhouse,	Clerk, president's office,	Clerk, home economics office.
Arthur B. Beaumont,	Associate professor of agronomy,	Professor.
Abram L. Dean,	Extension instructor in charge of poultry club work.	Instructor in poultry husbandry.
Charlotte E. Erickson,	Clerk, dean's office,	Clerk, treasurer's office.
Cora B. Grover,	Clerk, Extension Service,	Clerk, Experiment Station.
Arao Itano,	Assistant professor of microbiology.	Associate professor.
Arthur N. Julian,	Instructor in German,	Assistant professor.
Anderson A. Mackimmie,	Assistant professor of French,	Professor.
Frederick A. McLaughlin,	Instructor in botany,	Assistant professor.
Rebecca L. Mellor,	Clerk, Experiment Station,	First clerk, Experiment Station.
Charles H. Patterson,	Assistant professor of English,	Professor.
Victor A. Rice,	Extension instructor in charge of pig club work.	Assistant professor of animal husbandry.
Doris Tower,	Stenographer, Department Poultry Husbandry.	Clerk, Department of Poultry Husbandry.
John D. Willard,	Extension professor of agricultural economics.	Director of the Extension Service.

TABLE IV. — *Leaves of Absence.*

POSITION.	Name.	Cause of Leave.
Foreman of grounds,	Lawrence S. Dickinson, .	Service with Walter Reed Hospital, Washington, D. C.
Professor of poultry husbandry, .	John C. Graham,	Charge of educational work for the blind, Baltimore, Md.
Extension professor of community planning.	Ezra L. Morgan,	Service with the Red Cross.
Extension professor of agricultural economics.	John D. Willard,	Service with Commission on Necessaries of Life.

TABLE V. — *Speakers for the Year.*A. *Speakers at Wednesday Assembly for Year ending Nov. 30, 1919.*

1918.

- Dec. 4. — Mr. Herbert A. Parsons, Boston.
 Dec. 18. — Col. Clarence Ousley, Washington, D. C.

1919.

- Jan. 8. — Mr. Ralph S. Rounds, New York City.
 Jan. 15. — Lieutenant V. de Wierzbici, Paris.
 Jan. 22. — Dr. Horace M. Kallen, Boston.
 Jan. 29. — Pres. William A. Neilson, Northampton.
 Feb. 5. — Rev. Charles T. Riggs, Northampton.
 Feb. 12. — Dr. J. N. Mills, Washington, D. C.
 Feb. 19. — Student forum.
 Feb. 26. — Lieut. Harry G. Milsom, Canada.
 Mar. 5. — Rev. Gerald C. Treacy, Boston.
 Mar. 12. — Student forum.
 Apr. 2. — Dr. J. J. Walsh, New York City.
 Apr. 9. — Prof. Albert H. Gilmer, Tufts College.
 Apr. 16. — Dr. Arthur W. Gilbert, Boston.
 Apr. 23. — Prof. W. L. Stoddard, Boston.
 Apr. 30. — Capt. Thomas G. Chamberlain, New York City.
 May 7. — Student forum.
 May 21. — Mr. Bertram Tupper, Newton.
 June 4. — Prof. Charles H. Patterson, M. A. C.
 Oct. 1. — Mr. Howard L. Russell, Worcester.
 Oct. 8. — Dr. W. I. Chamberlin, Hudson, Ohio.
 Oct. 15. — Pres. Kenyon L. Butterfield, M. A. C.
 Oct. 22. — Student forum.
 Oct. 29. — Prof. Robert J. Sprague, M. A. C.
 Nov. 5. — Prof. Fred S. Cooley, Bozeman, Mont.
 Nov. 12. — Hon. Joseph Walker, Boston.
 Nov. 19. — Mr. Alva Agee, Trenton, N. J.

B. *Speakers at Sunday Chapel, for Year ending Nov. 30, 1919.*

1918.

- Dec. 1. — Rev. Henry A. Atkinson, New York City.
 Dec. 8. — Dr. Anson Phelps Stokes, New Haven, Conn.
 Dec. 15. — Rev. John A. Hawley, Amherst.

1919.

- Jan. 5. — Prof. Harry F. Ward, New York City.
 Jan. 12. — Dean Lee McColester, Tufts College.
 Jan. 19. — Rev. J. C. Sycamore, Holyoke.
 Jan. 26. — Dean Charles R. Brown, New Haven, Conn.
 Feb. 2. — Dr. Albert P. Fitch, Amherst.
 Feb. 9. — Mr. Albert E. Roberts, New York City.
 Feb. 16. — Rev. Charles F. Carter, Hartford, Conn.
 Feb. 23. — Rev. H. G. Ives, Amherst.

B. Speakers at Sunday Chapel, for Year ending Nov. 30, 1919 — Concluded.

1919.

- Mar. 2. — Rev. John Haynes Holmes, New York City.
 Mar. 9. — Mr. Owen R. Lovejoy, New York City.
 Mar. 16. — Bishop Edwin H. Hughes, Melrose.
 Apr. 6. — Rev. Christian F. Reisner, New York City.
 Apr. 13. — Dr. Joel E. Goldthwait, Boston.
 Apr. 20. — Rev. Joseph C. Robbins, Boston.
 Apr. 27. — Rev. Daniel Evans, Cambridge.
 Sept. 28. — Pres. Kenyon L. Butterfield, M. A. C.
 Nov. 2. — Dr. Albert Parker Fitch, Amherst.
 Nov. 9. — Rev. Herbert J. White, Hartford, Conn.
 Nov. 16. — Rev. Norman MacLeod, Hartford, Conn.
 Nov. 23. — Rabbi Sidney E. Goldstein, New York City.

TABLE VI. — *Attendance.**A. In Work of College Grade.*

CLASS.	REGISTRATION FEB. 17, 1919.			REGISTRATION NOV. 30, 1919.		
	Men.	Women.	Total.	Men.	Women.	Total.
Graduate students,	9	3	12	31	2	33
Senior class,	64	10	74	110	3	113
Junior class,	69	3	72	100	3	103
Sophomore class,	70	5	75	100	4	104
Provisional sophomores,	—	—	—	8	—	8
Freshman class,	93	4	97	101	9	110
Provisional freshmen,	25	—	25	15	—	15
Unclassified students,	26	3	29	24	9	33
	356	28	384	489	30	519

B. Short-course Enrollment.

	Men.	Women.	Total.
Two-year course, 1919, winter term, ¹	31	6	37
Ten weeks' course, 1919, ¹	43	20	63
First six weeks' course, 1919, ¹	13	—	13
Second six weeks' course, 1919,	9	1	10
Vocational poultry course, March to June, 1919,	6	—	6
Summer school, 1919,	46	192	238
Summer course for Federal men, 1919,	31	—	31
Two-year course, 1919-20,	201	8	209
Vocational poultry course, 1919-20,	13	—	13
Rural engineering course, 1919-20,	16	—	16
Total,	409	227	636
Counted twice,	46	—	46
Total,	363	227	590

TABLE VI. — *Attendance — Concluded.*
C. *Convention Registration.*

	1918.	1919.
Farmers' week,	632	898
Polish farmers' day,	12	-
County agents' conference,	150	30
Poultry convention,	200	200
Boys' camps,	17	52
Girls' camp,	24	33
	1,035	1,213

TABLE VII. — *Legislative Budget, 1919.*

ITEMS.	Amount asked.	Amount granted.
Women's building and equipment,	\$150,000	\$127,400
Miscellaneous improvements in buildings and grounds, and teaching, operating and office equipment.	35,000	20,000
Market-garden field station,	15,000	15,000
Study of the grounds,	-	2,000
	\$200,000	\$164,400

Current Appropriations for 1918-19.

Maintenance.

Personal services: —

Administration,	\$30,000 00
Instruction,	119,000 00
General maintenance,	88,000 00
Experiment station,	38,000 00
Extension service,	43,000 00
Market garden, field station,	4,500 00
Short courses,	10,500 00
Travel, office and other expenses,	37,000 00
Teaching laboratory, supplies and equipment,	52,000 00
Experiment Station: —	
Supplies and equipment,	11,500 00
Travel and office expenses,	5,000 00
Extension service, supplies, equipment, travel, etc.,	35,000 00
Short courses,	6,500 00
Heat, light and power,	45,000 00
Farm,	26,600 00
Repairs, ordinary,	7,000 00
Replacements,	8,000 00
Market gardening, field station,	3,500 00
	\$570,100 00
Trustees' expenses,	\$900 00
Printing reports,	3,000 00
Commercial feedstuffs,	6,000 00
	9,900 00
	\$580,000 00

TABLE VIII. — *Statistics of Freshmen entering Massachusetts Agricultural College, September, 1919.*A. *Home Addresses of Students (classified by Towns and Cities).*

Amherst, 6	Hopedale, 1	Pleasantville, N. Y., 1
Arlington, 2	Ipswich, 2	Plymouth, 1
Barnard, Vt., 1	Lake Mohegan, N. Y., 1	QUINCY, 1
Belmont, 1	Lexington, 1	Sandwich, 1
BEVERLY, 2	Littleton, 1	Sharon, 1
BOSTON, 18	LYNN, 2	South Shaftsbury, Vt., 1
Brighton, 1	Marshfield, 1	South Glastonbury, Conn., 1
BROCKTON, 1	Middlefield, 1	SPRINGFIELD, 2
Brookline, 1	MEDFORD, 1	Sunderland, 2
Buxton, Me., 1	MELROSE, 1	Sterling, 1
CAMBRIDGE, 1	MINNEAPOLIS, MINN., 1	Sturbridge, 1
Charlton, 1	Milford, 1	Turner, Me., 1
CHELSEA, 1	Mount Kisco, N. Y., 1	Upton, 1
Cohasset, 1	Natick, 1	Uxbridge, 1
Dalton, 1	NEW BEDFORD, 1	WALTHAM, 1
Danvers, 1	Newfane, Vt., 1	Warren, 1
Deerfield, 1	NEWTON, 5	Watertown, 3
Elizabeth, N. J., 1	NEW YORK, N. Y., 1	West Bridgewater, 1
EVERETT, 2	NORTH ADAMS, 1	West Springfield, 4
Franklin, 1	NORTHAMPTON, 2	WOBURN, 1
Greenfield, 3	Oxford, 1	WORCESTER, 6
Groton, 1	Palmer, 1	Williamstown, 1
Hamden, Conn., 1	PEABODY, 3	
HOLYOKE, 8	PITTSFIELD, 1	

B. *Home Addresses (classified by States).*

	Number.	Per Cent.		Number.	Per Cent.
Connecticut,	2	1.6	New Jersey,	1	.8
Maine,	2	1.6	New York,	4	3.2
Massachusetts,	112	89.6	Vermont,	3	2.4
Minnesota,	1	.8		125	100.0

C. *Home Addresses (classified by Counties of Massachusetts).*

	Number.	Per Cent.		Number.	Per Cent.
Barnstable,	1	.89	Middlesex,	22	19.64
Berkshire,	4	3.57	Norfolk,	6	5.36
Bristol,	1	.89	Plymouth,	4	3.57
Essex,	10	8.93	Suffolk,	20	17.86
Franklin,	6	5.36	Worcester,	15	13.39
Hampden,	15	13.40		112	100.00
Hampshire,	8	7.14			

TABLE VIII. — *Statistics of Freshmen entering Massachusetts Agricultural College, September, 1919 — Continued.**D. Nativity of Parents.*

	Number.	Per Cent.
Neither parent foreign born,	85	68.0
Both parents foreign born,	20	16.0
Father (only) foreign born,	7	5.6
Mother (only) foreign born,	10	8.0
No statistics,	3	2.4
	125	100.0

E. Education of Father.

	Number.	Per Cent.
Common school,	52	41.6
High school,	31	24.8
Business school,	10	8.0
College or university,	29	23.2
No statistics,	3	2.4
	125	100.0

F. Religious Census.

	MEMBERSHIP.		PREFERENCE.		TOTALS.	
	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.
Baptist,	13	10.4	2	1.6	15	12.0
Catholic,	17	13.6	1	.8	18	14.4
Congregationalist,	28	22.4	8	6.4	36	28.8
Episcopal,	6	4.8	3	2.4	9	7.2
Hebrew,	6	4.8	2	1.6	8	6.4
Methodist,	3	2.4	5	4.0	8	6.4
Unitarian,	7	5.6	6	4.8	13	10.4
Universalist,	3	2.4	1	.8	4	3.2
Miscellaneous,	8	6.4	3	2.4	11	8.8
No statistics,	—	—	—	—	3	2.4
	91	72.8	31	24.8	125	100.0

TABLE VIII. — *Statistics of Freshmen entering Massachusetts Agricultural College, September, 1919 — Concluded.**G. Occupation of Father.*

	Number.	Per Cent.
Agriculture and horticulture,	29	23.2
Artisans,	30	24.0
Business,	35	28.0
Deceased or no statistics,	6	4.8
Miscellaneous,	16	12.8
Professional,	9	7.2
	125	100.0

H. Intended Vocation of Student.

	Number.	Per Cent.
Agriculture or horticulture (practical),	58	46.4
Agriculture or horticulture (professional),	37	29.6
Professions,	5	4.0
Miscellaneous,	10	8.0
Undecided or no statistics,	15	12.0
	125	100.0

I. Farm Experience.

	Number.	Per Cent.
Brought up on a farm,	32	25.6
Not brought up on a farm and having had no or practically no farm experience.	35	28.0
Not brought up on a farm but having had some farm experience.	58	46.4
	125	100.0

J. Miscellaneous Statistics.

Average age, 19.36 years.

TABLE IX. — *Cases treated at the Infirmary, Dec. 1, 1918, to Nov. 30, 1919.*

	Daily Count.	Individual.
Dec. 1, 1918, to Jan. 1, 1919: —		
House cases,	217	37
Out-patients,	72	59
January 1 to February 1: —		
House cases,	75	13
Out-patients,	25	16
February 1 to March 1: —		
House cases,	42	9
Out-patients,	49	35
March 1 to April 1: —		
House cases,	19	5
Out-patients,	32	20
April 1 to May 1: —		
House cases,	10	1
Out-patients,	25	17
May 1 to June 1: —		
House cases,	22	8
Out-patients,	47	25
June 1 to July 1: —		
House cases,	3	1
Out-patients,	42	18
July 1 to August 1: —		
House cases,	4	1
Out-patients,	11	4
September 1 to October 1: —		
House cases,	7	2
Out-patients,	25	14
October 1 to November 1: —		
House cases,	54	13
Out-patients,	137	54
November 1 to December 1: —		
House cases,	63	12
Out-patients,	107	55
Number of house cases,		516
Number of out-patients,		572
Total,		1,088
Number cared for in the house,		102
Number cared for as out-patients,		317
Total,		419

REPORT OF THE TREASURER

FOR THE FISCAL YEAR ENDING NOV. 30, 1919.

BALANCE SHEET.

	DR.	CR.
1918.		
Dec. 1. To balance on hand,	\$22,554 65	
1919.		
Nov. 30. To departmental income,	143,304 99	
Nov. 30. To receipts from State Treasurer,	616,877 25	
Nov. 30. To receipts from United States Treasurer,	99,072 68	
Nov. 30. To November schedule in transit,	66,413 37	
Nov. 30. Expenditures for fiscal year,		\$774,475 74
Nov. 30. Income transferred to State Treasurer,		143,304 99
Nov. 30. Balance on hand,		30,442 21
	\$948,222 94	\$948,222 94

STATEMENT OF LEGISLATIVE APPORTIONMENT AND EXPENDITURES FOR FISCAL YEAR ENDING NOV. 30, 1919, AND APPORTIONMENT REQUESTED FOR 1920.

	Apportionment for Last Fiscal Year.	Expenditures.	Apportionment for New Fiscal Year.
College: —			
Personal services,	\$234,000 00	\$245,094 90	\$366,855 00
Maintenance,	178,600 00	182,149 14	205,705 00
	\$412,600 00	\$427,244 04	\$572,560 00
Experiment Station: —			
Personal services,	\$38,000 00	\$38,826 25	\$92,510 00
Maintenance,	16,500 00	9,901 80	20,600 00
	54,500 00	48,728 05	113,110 00
Extension Service: —			
Personal services,	\$43,000 00	\$41,805 77	\$160,260 00
Maintenance,	35,000 00	27,164 70	68,130 00
	78,000 00	68,970 47	228,390 00
Short courses: —			
Personal services,	\$10,500 00	\$12,233 62	\$33,975 00
Maintenance,	6,500 00	5,132 41	10,300 00
	17,000 00	17,366 03	44,275 00
Market-garden and field station: —			
Personal services,	\$4,500 00	\$4,666 08	\$5,400 00
Maintenance,	3,500 00	1,685 87	3,000 00
	8,000 00	6,351 95	8,400 00
Totals,	\$570,100 00	\$568,660 54	\$966,735 00

STATEMENT OF LEGISLATIVE APPORTIONMENT AND EXPENDITURES FOR
FISCAL YEAR ENDING NOV. 30, 1919, AND APPORTIONMENT RE-
QUESTED FOR 1920 — *Concluded.*

	Apportionment for Last Fiscal Year.	Expenditures.	Apportionment for New Fiscal Year.
Trustees, travel, . . .	\$900 00	\$1,027 48	\$1,200 00
Printing reports, . . .	3,000 00	3,000 00	6,000 00
Commercial feedstuffs, . . .	6,000 00	6,000 00	6,000 00
Totals, . . .	\$580,000 00	\$578,688 02	\$979,935 00
Fertilizer law, . . .	10,500 00	11,548 68	12,500 00
Poultry disease law, . . .	2,000 00	813 66	4,000 00
Milk testing law, . . .	500 00	616 69	550 00
Totals, . . .	\$593,000 00	\$591,667 05	\$996,985 00

CASH STATEMENT.

	Other Funds.	State Funds.	Totals.
Balance Dec. 1, 1918,	\$22,554 65	-	\$22,554 65
<i>Receipts.</i>			
College receipts from students and others,	-	-	16,401 48
Tuition,	-	\$2,595 22	
Laboratory fees,	-	6,486 63	
Rents,	-	7,319 63	
Department sales,	-	-	112,271 72
Produce,	-	105,396 25	
Miscellaneous,	-	6,875 47	
Experiment Station,	-	-	8,752 05
Cranberry receipts,	-	4,234 46	
Chemical receipts,	-	1,604 86	
Miscellaneous,	-	2,912 73	
Extension Service,	-	-	1,185 13
Correspondence courses,	-	612 00	
Miscellaneous,	-	573 13	
Short courses,	-	-	1,898 63
Students' fees,	-	1,467 75	
Summer school,	-	35 28	
Winter school,	-	395 60	
Market-garden field station,	-	-	2,795 98
Produce,	-	2,795 98	
Treasurer of the Commonwealth,	-	-	616,877 25
Maintenance,	-	509,084 87	
Special appropriations,	-	104,479 06	
Endowment,	3,313 32	-	
Federal government,	-	-	99,072 68
Land grant of 1862,	7,300 00	-	
Hatch fund of 1887,	15,000 00	-	
Morrill fund of 1890,	16,848 67	-	
Adams fund of 1906,	15,000 00	-	
Nelson fund of 1907,	16,848 66	-	
Smith Lever fund of 1914,	25,392 19	-	
S. A. T. C., plumbing,	2,683 16	-	
November schedule in transit,	-	66,413 37	66,413 37
	\$124,940 65	\$823,282 29	\$948,222 94

CASH STATEMENT — *Concluded.*

	Other Funds.	State Funds.	Totals.
<i>Payments.</i>			
College expenses,			\$468,019 62
Personal services,	\$37,864 69	\$245,094 90	
Maintenance,	2,910 89	182,149 14	
Experiment Station,			78,423 14
Personal services,	28,133 59	38,826 25	
Maintenance,	1,561 50	9,901 80	
Extension Service,			92,357 05
Personal services,	17,734 01	41,805 77	
Maintenance,	5,652 57	27,164 70	
Short courses,			17,366 03
Personal services,	-	12,233 62	
Maintenance,	-	5,132 41	
Market-garden field station,			6,351 95
Personal services,	-	4,666 08	
Maintenance,	-	1,685 87	
Special appropriations,			111,957 95
Feed law,	-	6,000 00	
1914, agricultural building,	-	925 35	
1917, improvements and equipment,	-	2,231 00	
1917, power plant,	-	3,029 22	
1917, printing reports,	-	888 79	
1918, improvements and equipment,	-	11,448 39	
1918, power plant,	-	49,697 74	
1918, market-garden field station,	-	7,235 49	
1918, dining hall,	-	2,173 87	
1918, printing reports,	-	3,000 00	
Printing,	-	158 17	
1919, improvements and equipment,	-	10,443 74	
1919, women's dormitory,	-	6,016 07	
1919, market-garden field station,	-	4,348 73	
1919, engineering survey,	-	832 27	
Trustees, travel,	-	1,027 48	
S. A. T. C., plumbing,	2,501 64	-	
Income,	-	143,304 99	143,304 99
Balance,	30,442 21	-	30,442 21
	\$126,801 10	\$821,421 84	\$948,222 94

CLASSIFICATION OF INCOME FROM STUDENTS AND OTHERS.

	Laboratory Fees.	Department Sales.	Transfers.	Rent.	Miscellaneous.	Tuition.	Totals.
Agricultural economics,	-	-	-	-	\$1 22	-	\$1 22
Agricultural education,	-	-	-	-	10	-	10
Agromony,	\$252 00	-	-	-	-	-	252 00
Animal husbandry,	293 50	-	-	-	70	-	294 20
Botany,	620 00	-	-	-	7 76	-	627 76
Chemistry,	2,652 88	-	\$16 54	-	-	-	2,669 42
Dairying,	331 50	\$32,970 24	-	-	20	-	33,301 94
Domestic science,	-	-	-	-	68	-	68
Entomology,	82 00	788 32	212 18	-	-	-	1,082 50
Farm,	-	42,166 18	2,072 29	-	-	-	44,238 47
Farm management,	195 50	-	-	-	10	-	195 60
Floriculture,	68 50	4,477 49	-	\$4 00	-	-	4,549 99
Forestry,	9 00	-	-	-	-	-	9 00
Freshman agriculture,	219 00	-	-	-	-	-	219 00
General agriculture,	-	-	-	-	4 15	-	4 15
General horticulture,	-	-	1,849 90	-	398 36	-	2,248 26
Grounds,	-	-	24 50	-	82 63	-	107 13
Horticultural manufactures,	-	641 03	-	-	-	-	641 03

Hospital,	-	-	-	-	-	792 48	-	792 48	-	792 48
Landscape gardening,	218 00	-	-	-	30 24	248 24	-	-	-	248 24
Language and literature,	170 00	-	-	-	-	170 00	-	-	-	170 00
Library,	-	59 34	-	-	-	59 34	-	-	-	59 34
Market gardening,	76 00	-	4,728 51	-	-	4,804 51	-	-	-	4,804 51
Mathematics,	232 81	-	-	-	-	232 81	-	-	-	232 81
Microbiology,	307 00	-	-	-	-	704 60	-	397 60	-	704 60
Mount Toby,	-	5,872 15	-	-	-	5,872 15	-	-	-	5,872 15
Physics,	21 00	-	-	19 00	-	40 05	-	05	-	40 05
Pomology,	135 00	3,603 61	-	-	-	3,738 61	-	-	-	3,738 61
Poultry husbandry,	114 00	15,719 10	-	-	-	15,895 74	-	62 64	-	15,895 74
Rural engineering,	214 14	-	-	-	-	214 14	-	-	-	214 14
Veterinary,	6 00	-	-	-	-	6 00	-	-	-	6 00
War emergency,	-	844 62	-	-	-	844 62	-	-	-	844 62
Zoology and geology,	511 00	-	-	-	4 63	516 13	-	50	-	516 13
Operating and maintenance,	-	-	-	30 00	-	6,187 70	\$2,595 22	3,562 48	-	6,187 70
North dormitory,	-	-	-	2,574 42	-	2,574 42	-	-	-	2,574 42
South dormitory,	-	-	-	2,395 04	-	2,395 04	-	-	-	2,395 04
College residences,	-	-	-	745 72	-	745 72	-	-	-	745 72

CLASSIFICATION OF INCOME FROM STUDENTS AND OTHERS — Concluded.

	Laboratory Fees.	Department Sales.	Transfers.	Rent.	Miscellaneous.	Tuition.	Totals.
Dean's office,	-	-	-	-	\$0 55	-	\$0 55
President's office,	-	-	-	-	3 50	-	3 50
Registrar's office,	-	-	-	-	25	-	25
Treasurer's office,	-	-	-	-	64 55	-	64 55
Draper Hall,	-	-	-	\$1,624 75	-	-	1,624 75
General expense (cash credits),	-	-	-	-	1,494 97	-	1,494 97
Totals,	\$6,728 83	\$111,870 59	\$4,210 28	\$7,392 93	\$6,875 47	\$2,595 22	\$139,673 32
Less refunds (\$315.50) and journal entries (\$10,684.62),	242 20	10,684 62	-	73 30	-	-	11,000 12
	\$6,486 63	\$101,185 97	\$4,210 28	\$7,319 63	\$6,875 47	\$2,595 22	\$128,673 20

ANALYSIS OF COLLEGE EXPENDITURES.

ADMINISTRATION.	Office Expense.	Salaries and Labor.	Travel.	Minor Equipment.	Building Supplies.	Publicity and Lectures.	Student Activities.	Com-mence-ment.	Miscel-laneous.	Totals.
Dean's office,	\$334 71	\$134 89	\$2 20	\$50 70	-	-	-	-	-	\$522 50
Executive order,	-	-	2,663 44	-	-	\$1,454 79	\$87 50	\$754 43	\$2,125 07	7,085 23
President's office,	1,309 16	248 86	302 53	58 42	\$12 36	-	-	-	40 25	1,971 58
Registrar's office,	472 50	65 90	61 39	79	-	-	-	-	-	600 58
Treasurer's office,	864 14	213 49	223 38	161 58	44 81	-	-	-	32 82	1,540 22
Administration (salaries),	-	31,743 14	-	-	-	-	-	-	-	31,743 14
Totals,	\$2,980 51	\$32,406 28	\$3,252 94	\$271 49	\$57 17	\$1,454 79	\$87 50	\$754 43	\$2,198 14	\$43,463 25

MAINTENANCE.	Office Expense.	Labor.	Laboratory Supplies.	Refunds.	Minor Equipment.	Building Supplies.	Travel.	General Expense.	Miscel-laneous.	Salaries.	Totals.
Academic maintenance: —											
Agricultural economics,	\$155 37	\$67 91	\$6 60	-	\$46 84	\$0 23	\$100 98	-	-	-	\$377 98
Agricultural education,	134 05	-	44 56	-	35 55	-	50 09	-	-	-	264 25
Agronomy,	199 38	286 36	219 43	\$1 50	139 41	-	101 86	-	-	-	947 94
Animal husbandry,	211 78	158 50	53 11	6 00	53 76	-	259 60	-	-	-	742 75
Botany,	261 93	625 96	440 58	3 50	1 03	149 78	-	-	-	-	1,482 78
Chemistry,	155 37	967 10	3,310 60	83 30	35 26	76 15	8 84	-	-	-	4,636 62

ANALYSIS OF COLLEGE EXPENDITURES — *Concluded.*

MAINTENANCE.	Office Expense.	Labor.	Laboratory Supplies.	Refunds.	Minor Equipment.	Building Supplies.	Travel.	General Expense.	Miscellaneous.	Salaries.	Totals.
Dairying,	\$217 50	\$3,910 05	\$28,953 89	\$14 50	\$317 84	\$131 51	\$5 41	-	-	-	\$33,550 70
Domestic science,	234 39	671 03	200 91	-	1,017 80	119 74	153 40	-	-	-	2,397 27
Economics and sociology,	47 60	8 00	10 18	-	-	-	-	-	-	-	65 78
Entomology,	84 75	510 13	166 23	-	33 36	149 40	-	-	-	-	943 87
Farm management,	153 12	22 64	68 36	1 50	5 97	-	106 73	-	-	-	358 32
Floriculture,	38 94	5,968 32	1,413 26	-	22 80	25 08	-	-	-	-	7,468 40
Forestry,	73 96	95 79	11 55	-	41 08	6 96	108 45	-	-	-	337 79
Freshman agriculture,	20 12	33 81	110 45	-	24 22	-	-	-	-	-	188 60
General agriculture,	-	1,506 86	-	-	176 65	238 44	-	-	\$79 20	-	2,001 15
Horticultural manufactures,	49 67	1,155 21	1,933 53	-	224 15	-	66 57	-	-	-	3,429 13
Hospital,	-	1,225 78	-	-	36 11	-	-	\$950 36	-	-	2,212 25
Landscape gardening,	18 86	-	117 37	3 00	30 21	-	-	-	-	-	169 44
Language and literature,	11 00	24 28	113 73	20 00	41 05	-	-	-	-	-	210 06
Market gardening,	161 42	5,907 94	1,433 86	6 50	117 15	36 19	229 36	-	-	-	7,892 42
Mathematics,	55 24	109 07	12 27	-	25 00	19 28	-	-	-	-	220 86
Microbiology,	99 20	577 08	770 93	81 90	261 41	35 38	-	-	-	-	1,825 90
Military science,	107 71	705 71	3 85	-	225 61	221 09	-	123 80	-	-	1,387 77
Mount Toby,	-	2,970 85	-	-	181 35	-	131 34	-	88 80	-	3,372 84
Physical education,	35 17	281 15	211 90	-	52	-	312 53	-	-	-	841 27
Physics,	37 56	271 22	209 12	-	156 84	47 50	-	-	-	-	722 24
Pomology,	196 22	3,226 08	953 04	5 00	108 05	-	61 79	-	-	-	4,550 18

CURRENT ACCOUNTS.

Disbursements and Receipts.

ACCOUNTS.	Disbursements from Nov. 30, 1918, to Nov. 30, 1919.	Receipts from Nov. 30, 1918, to Nov. 30, 1919.	Apportionment for Year ending Nov. 30, 1919.	Balance to Credit.
Administration:—				
Dean's office,	\$522 50	\$0 55	\$500 00	—\$22 50
Executive order,	7,085 23	—	6,700 00	—385 23
President's office,	1,971 58	3 50	1,500 00	—471 58
Registrar's office,	600 58	25	600 00	—58
Salaries,	31,743 14	—	30,000 00	—1,743 14
Treasurer's office,	1,540 22	64 55	1,200 00	—340 22
Maintenance, academic:—				
Agricultural economics,	377 98	1 22	338 50	—39 48
Agricultural education,	264 25	10	350 00	85 75
Agronomy,	947 94	252 00	975 00	27 06
Animal husbandry,	742 75	294 20	610 00	—132 75
Botany,	1,482 78	627 76	1,600 00	117 22
Chemistry,	4,636 62	2,669 42	4,450 00	—186 62
Dairying,	33,550 70	33,301 94	33,665 00	114 30
Domestic science,	2,397 27	68	500 00	—1,897 27
Economics and sociology,	65 78	—	50 00	—15 78
Entomology,	943 87	1,082 50	1,000 00	83 87
Farm management,	358 32	195 60	400 00	41 68
Floriculture,	7,468 40	4,549 99	6,850 00	—618 40
Forestry,	337 79	9 00	250 00	—87 79
Freshman agriculture,	188 60	219 00	300 00	111 40
General agriculture,	2,001 15	4 15	1,750 00	—251 15
Horticultural manufactures,	3,429 13	641 03	2,665 00	—764 13
Hospital,	2,212 25	792 48	1,800 00	—412 25
Landscape gardening,	169 44	248 24	350 00	180 56
Language and literature,	210 06	170 00	400 00	189 94
Market gardening,	7,892 42	4,804 51	4,700 00	—3,192 42
Mathematics,	220 86	232 81	220 00	—86
Microbiology,	1,825 90	704 60	1,725 00	—100 90
Military science,	1,387 77	—	1,460 00	72 23
Mount Toby,	3,372 34	5,872 15	5,000 00	1,627 66
Physical education,	841 27	—	700 00	—141 27
Physics,	722 24	40 05	600 00	—122 24
Pomology,	4,550 18	3,738 61	3,935 00	—615 18
Poultry husbandry,	16,248 47	15,895 74	16,075 00	—173 47
Rural engineering,	742 47	214 14	575 00	—167 47
Rural sociology,	174 96	—	150 00	—24 96
Veterinary,	895 21	6 00	1,100 00	204 79
War emergency,	102 62	844 62	—	742 00
Zoölogy and geology,	655 34	516 13	575 00	—80 34
Maintenance, general:—				
Farm,	50,997 36	44,238 47	46,600 00	—4,437 72
General horticulture,	9,117 97	2,248 26	8,800 00	—317 97
Graduate school,	60 26	—	100 00	39 74
Grounds,	5,731 00	107 13	5,800 00	69 00
Library,	6,919 64	59 34	6,036 50	—883 14
General expense,	31,350 07	31,350 07	—	—
Operating and maintenance,	98,123 29	13,527 63	90,000 00	—8,082 93
Endowment fund,	7,220 76	10,613 32	10,613 32	3,392 56
Instruction:—				
Salaries,	121,518 21	—	130,000 00	8,481 79
United States Treasurer, Morrill fund (\$16,666.67 and \$182 refund),	16,777 42	16,848 67	16,666 67	9,793 47
United States Treasurer, Nelson fund (\$16,666.67 and \$182 refund),	16,777 40	16,848 66	16,666 66	9,793 48
State Treasurer, account of schedules,	—	427,244 04	—	—
Income to State Treasurer,	128,673 20	—	—	—
	\$638,146 96	\$641,083 11	\$466,901 65	\$9,431 02
Less journal entries (\$40,539.72) and refunds (\$914.42),	41,454 14	—	—	—
Less journal entries (\$40,539.72) and refunds (\$315.50),	—	40,855 22	—	—
	\$596,692 82	\$600,227 89	—	—
Balance beginning fiscal year Dec. 1, 1918,	—	19,444 44	—	—
Balance on hand Nov. 30, 1919,	22,979 51	—	—	—
	\$619,672 33	\$619,672 33	—	—

COLLEGE ACCOUNTS.

Comparative Disbursements and Receipts for 1918-19.

ACCOUNTS.	DISBURSEMENTS.		RECEIPTS.	
	1918.	1919.	1918.	1919.
Agricultural economics,	\$262 55	\$377 98	-	\$1 22
Agricultural education,	323 67	264 25	-	10
Agronomy,	772 83	947 94	\$199 12	252 00
Animal husbandry,	376 50	742 75	139 50	294 20
Beekeeping,	1,025 52	-	538 12	-
Botany,	1,377 19	1,482 78	320 50	627 76
Chemistry,	3,093 18	4,636 62	1,545 92	2,669 42
Dairying,	31,821 36	33,550 70	26,479 19	33,301 94
Dean's office,	388 40	522 50	43 43	55
Domestic science,	-	2,397 27	-	68
Economics and sociology,	74 65	65 78	-	-
Entomology,	393 08	943 87	25 90	1,082 50
Executive order,	5,649 07	7,085 23	14 91	-
Farm management,	349 61	358 32	138 56	195 60
Farm,	47,778 65	50,997 36	41,988 56	44,238 47
Floriculture,	5,873 28	7,468 40	2,407 98	4,549 99
Forestry,	120 81	337 79	7 00	9 00
Freshman agriculture,	88 54	188 60	238 55	219 00
General agriculture,	1,538 01	2,001 15	75	4 15
General horticulture,	8,326 81	9,117 97	2,671 87	2,248 26
Graduate school,	82 57	60 26	-	-
Grounds,	4,780 99	5,731 00	92 24	107 13
Horticultural manufactures,	1,893 63	3,429 13	374 33	641 03
Hospital,	1,565 61	2,212 25	280 32	792 48
Land,	5,000 00	-	5,000 00	-
Landscape gardening,	178 53	169 44	157 71	248 24
Language and literature,	382 73	210 06	112 00	170 00
Library,	6,238 82	6,919 64	480 07	59 34
Market gardening,	5,037 99	7,892 42	3,423 29	4,804 51
Market garden field station,	1,121 94	-	2,317 46	-
Mathematics,	151 21	220 86	60 10	232 81
Military science,	1,003 49	1,387 77	89 41	-
Microbiology,	836 54	1,325 90	434 45	704 60
Mount Toby,	7,139 81	3,372 34	357 00	5,872 15
Physical education,	452 64	841 27	-	-
Physics,	556 60	722 24	76 00	40 05
Pomology,	3,340 64	4,550 18	2,635 05	3,738 61
Poultry husbandry,	16,812 64	16,248 47	16,449 05	15,895 74
President's office,	1,828 64	1,971 58	26 00	3 50
Registrar's office,	592 26	600 58	-	25
Rural engineering,	544 47	742 47	191 00	214 14
Rural sociology,	101 87	174 96	-	-
Salaries,	170,048 15	153,261 35	676 81	-
Treasurer's office,	1,184 60	1,540 22	-	64 55
Veterinary science,	920 54	895 21	20 12	6 00
War emergency,	2,236 28	102 62	2,042 51	844 62
Women's dormitories,	724 71	-	542 00	-
Zoölogy and geology,	243 55	655 34	175 38	516 13
1917 celebration,	1,751 94	-	-	-
General expense,	-	31,350 07	-	31,350 07
Operating and maintenance,	86,129 77	98,123 29	9,628 37	13,527 63
State Treasurer:—				
Endowment fund,	-	7,220 76	10,613 32	10,613 32
Graduate school,	-	-	3,000 00	-
Maintenance,	-	-	110,000 00	-
Instruction,	-	-	115,000 00	-
Administration,	-	-	39,000 00	-
United States Treasurer:—				
Morrill fund (\$16,666.67 and \$182 re- fund),	-	16,777 42	16,666 66	16,848 67
Nelson fund (\$16,666.66 and \$182 re- fund),	-	16,777 40	16,666 67	16,848 66
State Treasurer account of schedules,	-	-	-	427,244 04
Income to State Treasurer,	-	128,673 20	-	-
Less journal entries and refunds,	\$432,516 87	\$638,146 96	\$433,397 18	\$641,083 11
	-	41,454 14	-	40,855 22
	\$432,516 87	\$596,692 82	\$433,397 18	\$600,227 89
Balance beginning of fiscal year,	-	-	18,266 00	19,444 44
Balance on hand at close of fiscal year,	19,146 31	22,979 51	-	-
	\$451,663 18	\$619,672 33	\$451,663 18	\$619,672 33

COLLEGE ACCOUNTS — *Concluded.**Summary.*

	Disbursements.	Receipts.
Cash on hand Dec. 1, 1918,	-	\$19,444 44
Institution receipts Nov. 30, 1919,	-	128,673 20
State Treasurer's receipts Nov. 30, 1919,	-	427,244 04
United States Treasurer's receipts Nov. 30, 1919,	-	33,697 33
State Treasurer, endowment fund,	-	10,613 32
Total disbursements,	\$468,019 62	-
Receipts turned in to State Treasurer,	128,673 20	-
	\$596,692 82	\$619,672 33
Bills receivable Dec. 1, 1918, deducted,	-	5,972 27
Bills payable Dec. 1, 1918, deducted,	7,961 55	-
	\$588,731 27	\$613,700 06
Bills receivable Nov. 30, 1919,	-	8,206 00
Bills payable Nov. 30, 1919,	7,179 90	-
Balance,	25,994 39	-
	\$621,906 06	\$621,906 06

FARM DISBURSEMENTS.

	Labor.	Equip- ment.	Feed.	Supplies.	Sundry.	Bedding.	Fertilizer.	Seeds.	Improve- ments.	Totals.
Dairy cattle,	\$10,067 59	\$562 39	\$2,731 54	\$1,758 45	\$764 14	—	—	—	—	\$15,884 11
Horses,	2,033 75	236 18	193 05	25 45	361 23	—	—	—	—	2,850 66
Sheep,	976 26	50 38	133 34	33 40	126 36	—	—	—	—	1,319 74
Live stock,	314 58	—	11,279 66	—	—	\$1,040 66	—	—	—	12,634 90
Swine,	1,025 59	92 82	1,605 19	—	76 30	—	—	—	—	2,799 90
Field crops,	5,057 13	—	—	77 81	—	—	\$1,042 00	—	—	7,052 26
Tools and machinery,	570 97	1,142 73	—	295 66	—	—	—	—	—	2,009 36
Miscellaneous,	4,129 67	—	—	221 44	—	—	—	—	\$2,095 32	6,446 43
Totals,	\$24,175 54	\$2,084 50	\$15,942 78	\$2,413 21	\$1,328 03	\$1,040 66	\$1,042 00	\$875 32	\$2,095 32	\$50,997 36

FARM CREDITS.

	Milk.	Stock.	Sundry.	Labor.	Live Stock.	Field Crops.	Tools and Machinery.	Improve- ments.	Totals.
Dairy cattle,	\$31,155 08	\$3,264 24	\$361 45	—	—	—	—	—	\$34,780 77
Horses,	—	455 00	10 85	—	—	—	—	—	1,403 51
Sheep,	—	1,092 19	—	—	—	—	—	—	1,092 19
Live stock,	—	—	—	—	\$150 75	—	—	—	150 75
Swine,	—	3,075 27	—	—	—	—	—	—	3,075 27
Field crops,	—	—	—	—	—	\$2,391 88	—	—	2,391 88
Tools and machinery,	—	—	—	—	—	—	\$51 72	—	51 72
Miscellaneous,	—	—	—	1,134 63	—	—	—	\$157 75	1,292 33
Totals,	\$31,155 08	\$7,886 70	\$372 30	\$2,072 29	\$150 75	\$2,391 88	\$51 72	\$157 75	\$44,233 47

AGRICULTURAL DIVISION.
Disbursements and Receipts.

	Disbursements.	Receipts.
Agronomy,	\$947 94	\$252 00
Animal husbandry,	742 75	294 20
Dairying,	33,550 70	33,301 94
Farm,	50,997 36	44,238 47
Farm management,	358 32	195 60
Poultry husbandry,	16,248 47	15,895 74
Rural engineering,	742 47	214 14
Division totals,	\$103,588 01	\$94,392 09

Summary.

	DR.	CR.
By total division receipts,		\$94,392 09
By bills receivable,		5,652 57
By net apportionment,		4,507 91
By total disbursements,	\$103,588 01	
To bills payable,	4,335 74	
Balance,		3,371 18
	\$107,923 75	\$107,923 75

Inventory of Quick Assets.

	Nov. 30, 1918.	Nov. 30, 1919.
Inventory of produce,	\$10,550 24	\$14,967 85
Inventory of cattle,	17,100 00	17,090 00
Inventory of swine,	1,957 00	1,507 00
Inventory of horses,	4,675 00	4,350 00
Inventory of poultry,	2,682 10	2,946 10
Inventory of sheep,	1,655 00	2,010 00
	\$38,619 34	\$42,870 95

HORTICULTURAL DIVISION.

Disbursements and Receipts.

	Disbursements.	Receipts.
Floriculture,	\$7,468 40	\$4,549 99
Forestry,	337 79	9 00
General horticulture,	9,117 97	2,248 26
Grounds,	5,731 00	107 13
Horticultural manufactures,	3,429 13	641 03
Landscape gardening,	169 44	248 24
Market gardening,	7,892 42	4,804 51
Pomology,	4,550 18	3,738 61
Mount Toby,	3,372 34	5,872 15
	\$42,068 67	\$22,218 92

Summary.

	DR.	CR.
By total division receipts,		\$22,218 92
By bills receivable,		2,043 99
By net apportionment,		16,131 08
To total division disbursements,	\$42,068 67	
To bills payable,	551 68	
By balance,		2,226 36
	\$42,620 35	\$42,620 35

Inventory of Quick Assets.

	Nov. 30, 1918.	Nov. 30, 1919.
Floriculture,	\$1,200 00	\$1,200 00
General horticulture (live stock),	1,663 00	1,995 00
Horticultural manufactures,	—	200 00
Market gardening,	805 00	175 50
Mount Toby,	9,260 00	4,790 22
Pomology,	1,181 00	455 00
	\$14,109 00	\$8,815 72

EXPENSE OPERATING AND MAINTENANCE.

	Salaries.	Labor.	Fuel and Water.	Repairs.	Supplies.	Tools.	Architect.	Miscellaneous.	Totals.
General:—									
General superintendent,	\$2,572 18	—	—	—	—	—	—	—	\$2,572 18
Office,	810 00	—	—	—	\$283 36	—	—	—	1,093 36
General expense,	—	—	—	—	40 36	—	—	—	40 36
Power plant:—									
Heat,	—	\$10,757 39	\$46,926 78	\$3,403 67	—	—	—	—	61,087 84
Light,	—	2,136 25	—	899 73	—	—	—	—	3,035 98
Tools,	—	—	—	—	—	\$892 67	—	—	892 67
Amherst Water Company,	—	1,688 49	2,307 73	—	—	—	—	—	2,307 73
Night watchman,	—	—	—	—	—	—	—	—	1,688 49
Mail service,	—	301 96	—	—	—	—	—	—	301 96
Water mains,	—	510 82	—	—	—	—	—	—	510 82
Steam mains,	—	1,935 45	—	—	—	—	—	—	1,935 45
Electric light circuit,	—	1,851 64	—	—	—	—	—	—	1,851 64
Miscellaneous sundry,	—	—	—	—	—	—	—	\$3,934 31	3,934 31
Sewers and cesspools,	—	55 68	—	—	—	—	—	—	55 68
Walks and drives,	—	365 79	—	—	—	—	—	—	365 79
Emergency maintenance,	—	1,135 03	—	—	102 81	—	—	967 39	2,205 23
Expert service,	—	—	—	—	—	—	\$684 97	—	684 97
Fire department,	—	—	—	—	47 15	—	—	—	47 15
Totals,	\$3,382 18	\$20,738 50	\$49,234 51	\$4,303 40	\$473 68	\$892 67	\$684 97	\$4,901 70	\$84,611 61

EXPENSE OPERATING AND MAINTENANCE — Continued.

	Electric Repairs.	Plumbing Repairs.	Heat Repairs.	C. and M. Repairs.	Janitor.	Bell Ringing.	Sundry.	Totals.
College buildings:—								
Animal husbandry building,	—	—	—	\$8 60	—	—	—	\$8 60
Apiary building,	\$1 89	\$6 83	—	2 13	—	—	—	10 85
Chemical building,	39 34	25 69	\$43 61	47 27	—	—	—	155 91
Clark Hall,	34 94	29 29	26 45	211 77	—	—	—	302 45
Cold storage building,	3 80	3 70	—	—	—	—	—	7 50
Dairy building,	11 60	39 88	18 17	100 78	—	—	—	170 43
Dairy barn and storage,	12 94	72 68	4 30	56 51	—	—	—	146 43
Draper Hall,	143 47	248 02	120 37	957 84	—	—	—	3,167 84
Drill hall,	5 45	19 54	19 34	272 95	—	—	\$1,697 64	3,17 88
Durfee glass house (old),	—	—	1 01	2 85	—	—	—	3 86
Entomology building,	44 70	15 45	60 82	60 82	—	—	—	125 20
French Hall,	105 18	18 21	4 23	8 69	—	—	—	194 39
Horse barn,	1 27	5 45	62 31	18 06	—	—	—	24 78
Horticultural barn,	7 72	—	—	95 67	—	—	—	108 66
Hospital,	57 82	4 19	5 27	32 08	—	—	—	98 32
Machine barn,	—	—	4 23	12 66	—	—	—	17 17
Mathematics building,	—	4 20	1 29	2 08	—	—	—	7 57
Microbiology building,	2 13	49 68	40 94	62 73	—	—	—	155 48
Physics building,	—	2 46	6 94	344 19	—	—	—	353 59
Poultry No. 1,	2 77	16	58	—	—	—	—	3 51
Poultry No. 4,	45	—	—	11 92	—	—	—	12 37
Poultry No. 5,	—	—	—	10 23	—	—	—	10 23
Poultry No. 8,	—	—	—	5 20	—	—	—	5 20
Power building,	219 39	82 96	546 74	885 29	—	—	—	2,158 00
Rural engineering building,	—	1 90	28	—	\$423 62	—	—	2 18
Stockbridge Hall,	61 85	18 01	57 26	206 47	—	—	—	343 99
Agronomy greenhouse,	—	—	—	1 18	—	—	—	1 18
Upper plant house,	—	13 50	—	208 86	—	—	—	222 36
Veterinary building,	1 00	—	1 00	12 90	—	—	—	14 90
Wilder Hall,	—	10 95	11 96	84 70	—	—	—	31 51
Young stock barn,	—	—	—	8 62	—	—	—	84 72
East experiment station,	—	—	15 61	13 42	—	—	—	31 13
East experiment station barn,	—	2 10	—	93	—	—	—	93
West experiment station,	7 20	140 73	23 71	264 75	—	—	—	436 39

EXPERIMENT STATION.
Disbursements and Receipts.

ACCOUNTS.	Disbursements from Dec. 1, 1918, to Nov. 30, 1919.	Receipts from Dec. 1, 1918, to Nov. 30, 1919.	Apportionment for Year ending Nov. 30, 1919.	Balance to Credit.
Administration,	\$835 87	\$1 00	\$1,100 00	\$264 13
Agricultural,	9,205 27	4,908 59	7,000 00	—2,205 27
Agricultural economics,	699 16	—	800 00	100 94
Botanical,	1,967 65	—	2,000 00	32 35
Chemical,	4,991 27	3,820 67	5,000 00	8 73
Cranberry,	3,618 41	4,234 46	4,100 00	481 59
Entomological,	605 48	4 55	650 00	44 52
Freight and express,	353 38	—	400 00	46 62
Horticultural,	1,603 09	100 25	2,000 00	396 91
Library,	742 17	—	600 00	—142 17
Meteorology,	321 96	—	400 00	78 04
Microbiology,	1,258 22	—	1,300 00	41 78
Poultry,	2,355 95	32 70	2,400 00	44 05
Publications,	1,374 62	—	800 00	—574 62
Salaries,	50,753 50	—	49,066 00	—1,687 50
Tillson farm,	2,340 73	1,259 91	2,500 00	159 27
Treasurer's office,	341 37	—	350 00	8 63
Veterinary,	813 66	148 54	500 00	—313 66
Hatch fund,	—	15,000 00	—	—
Adams fund,	—	15,000 00	—	—
State Treasurer, account of schedules,	—	48,728 05	—	—
Income remitted to State Treasurer,	8,752 05	—	—	—
	\$92,933 81	\$93,238 72	\$80,966 00	—\$3,215 66
Less journal entries,	5,758 62	5,758 62	—	—
	\$87,175 19	\$87,480 10	—	—
Balance beginning fiscal year Dec. 1, 1918.	—	2,534 07	—	—
Balance on hand Nov. 30, 1919, . . .	2,838 98	—	—	—
Totals,	\$90,014 17	\$90,014 17	—	—

EXPERIMENT STATION — *Continued.*
Comparative Disbursements and Receipts, 1918-19.

ACCOUNTS.	DISBURSEMENTS.		RECEIPTS.	
	1918.	1919.	1918.	1919.
Administration,	\$888 49	\$835 87	\$40 65	\$1 00
Agriculture,	9,627 26	9,205 27	6,064 36	4,908 59
Agricultural economics,	355 71	699 16	-	-
Botanical,	2,202 50	1,967 65	-	-
Chemical,	14,641 14	4,991 27	13,423 39	3,820 67
Cranberry,	5,705 37	3,618 41	6,220 20	4,234 46
Entomological,	603 71	605 48	-	4 55
Equipment,	11 00	-	-	-
Feed inspection,	6,925 28	-	6,053 00	-
Fertilizer inspection,	9,519 67	-	7,007 50	-
Freight and express,	334 71	353 38	8 65	-
Graves orchard,	126 38	-	1,004 50	-
Horticultural,	2,142 69	1,603 09	61 66	100 25
Library,	218 39	742 17	-	-
Meteorology,	325 82	321 96	-	-
Microbiology,	947 61	1,258 22	-	-
Poultry,	2,316 15	2,355 95	19 63	32 70
Pomology,	-	-	3 40	-
Publications,	247 94	1,374 62	-	-
Salaries,	47,123 30	50,753 50	-	-
Tillson farm,	3,390 51	2,340 73	1,010 94	1,259 91
Treasurer's office,	246 46	341 37	-	-
Veterinary,	270 98	813 66	206 35	148 54
Hatch fund,	-	-	15,000 00	15,000 00
Adams fund,	-	-	15,000 00	15,000 00
State fund,	-	-	40,000 00	-
State Treasurer, account of schedules,	-	-	-	48,728 05
Income remitted to State Treasurer,	-	8,752 05	-	-
	\$108,171 07	\$92,933 81	\$111,124 23	\$93,238 72
Less journal entries,	-	5,758 62	-	5,758 62
	\$108,171 07	\$87,175 19	\$111,124 23	\$87,480 10
Balance beginning of fiscal year,	-	-	8,688 34	2,534 07
Balance on hand at close of fiscal year,	11,641 50	2,838 98	-	-
Totals,	\$119,812 57	\$90,014 17	\$119,812 57	\$90,014 17

EXPERIMENT STATION — *Concluded.*
Analysis of Experiment Station Accounts.

	Adams Fund.	Hatch Fund.	State Fund.	Totals.
Salaries,	\$13,290 83	\$14,173 57	\$23,289 10	\$50,753 50
Labor,	504 96	164 23	18,187 82	18,857 01
Publications,	—	—	934 49	934 49
Postage and stationery,	—	80 50	1,324 14	1,404 64
Freight and express,	—	—	418 93	418 93
Heat, light, water and power,	—	—	287 36	287 36
Chemical and laboratory supplies,	193 96	—	1,001 40	1,195 36
Seeds, plants and sundry supplies,	96 14	—	1,788 36	1,884 50
Fertilizers,	115 20	203 65	888 48	1,207 33
Feedstuffs,	201 25	—	1,744 45	1,945 70
Library,	—	20 00	745 07	765 07
Tools, machinery and appliances,	—	—	541 38	541 38
Furniture and fixtures,	—	—	184 01	184 01
Scientific apparatus and specimens,	535 30	115 50	149 85	800 65
Live stock,	—	—	107 00	107 00
Traveling expenses,	—	—	1,785 70	1,785 70
Buildings and land,	—	—	1,109 13	1,109 13
Totals,	\$14,937 64	\$14,757 45	\$54,486 67	\$84,181 76
Less journals,	—	—	5,758 62	5,758 62
	\$14,937 64	\$14,757 45	\$48,728 05	\$78,423 14

Summary.

	Disbursements.	Receipts.
Cash on hand Dec. 1, 1918,	—	\$2,534 07
Receipts from State Treasurer,	—	48,728 05
Receipts from United States Treasurer,	—	30,000 00
Receipts from other sources,	—	8,752 05
Total disbursements,	\$78,423 14	—
Receipts turned into State Treasurer,	8,752 05	—
	\$87,175 19	\$90,014 17
Bills receivable Dec. 1, 1918, deducted,	—	2,599 44
Bills payable Dec. 1, 1918, deducted,	424 64	—
	\$86,750 55	\$87,414 73
Bills receivable Nov. 30, 1919,	—	770 44
Bills payable Nov. 30, 1919,	954 14	—
Balance,	480 48	—
	\$88,185 17	\$88,185 17

EXTENSION SERVICE.¹
Disbursements and Receipts.

CLASSIFICATION.	Disbursements.	Receipts.	Apportionment.	Balance.
Administration,	\$1,256 95	-	\$2,000 00	\$743 05
Animal husbandry,	837 04	-	1,000 00	162 96
Co-operative marketing,	1,279 44	-	1,200 00	-79 44
Correspondence courses,	773 70	\$612 00	1,600 00	826 30
County agents' work,	957 29	-	200 00	-757 29
Dairying,	1,264 42	-	1,200 00	-64 42
Director's office,	3,739 13	772 97	2,700 00	-1,039 13
Exhibits,	4,028 26	-	2,000 00	-2,028 26
Expenses, urban home demonstration, .	580 06	35	1,475 00	894 94
Extension courses at college,	1,758 11	9 52	3,800 00	2,041 89
Extension schools,	62 32	-	-	-62 32
Farm management demonstration, . . .	369 74	111 68	250 00	-119 74
Home economics,	2,081 68	43 20	300 00	-1,781 68
Home gardening,	270 33	-	940 00	669 67
Horticultural manufactures,	1,635 57	2 68	780 00	-855 57
Injurious insects,	38 57	-	200 00	161 43
Junior extension work,	3,640 42	40	3,160 00	-480 42
Lectures,	53 37	-	500 00	446 63
Library extension,	241 01	-	200 00	-41 01
Local community organization,	558 87	14 40	1,000 00	441 13
Methods of extension instruction, . . .	269 33	-	492 00	222 67
Plant diseases,	58 09	-	200 00	141 91
Pomology,	624 86	-	1,100 00	475 14
Poultry husbandry,	646 55	-	500 00	-146 55
Printing,	1,037 40	296 11	3,000 00	1,962 60
Rural civic planning,	14 64	16 90	-	-14 64
Salaries,	40,422 52	-	47,163 67	6,741 15
Sheep husbandry,	360 22	9 67	100 00	-260 22
Soils and crops,	932 44	-	940 00	7 56
State Treasurer, account of schedules, .	-	68,970 47	-	-
Income remitted to State Treasurer, . .	1,185 13	-	-	-
	\$70,977 46	\$70,860 35	\$78,000 67	\$8,208 34
Less journal entries (\$704.75), refund (\$111.11) and \$6.	821 86	704 75	-	-
	\$70,155 60	\$70,155 60	-	-

¹ Includes Federal Smith-Lever Fund.

EXTENSION SERVICE — *Continued.*
Summary.

	Disbursements.	Receipts.
Balance Dec. 1, 1918,	—	\$2,618 11
Receipts Nov. 30, 1919,	—	1,185 13
Received from State Treasurer,	—	68,970 47
Received from United States Treasurer,	—	25,392 19
Disbursements to Nov. 30, 1919,	\$92,357 05	—
Receipts turned into State Treasurer,	1,185 13	—
	\$93,542 18	\$98,165 90
Bills receivable Dec. 1, 1918, deducted,	—	138 03
Bills payable Dec. 1, 1918, deducted,	69 25	—
	\$93,472 93	\$98,027 87
Bills receivable Nov. 30, 1919,	—	88 82
Bills payable Nov. 30, 1919,	708 11	—
Balance,	3,935 65	—
	\$98,116 69	\$98,116 69

SMITH-LEVER FUND (FEDERAL).

	Disbursements.	Receipts.
Administration,	\$5 00	-
Dairying,	161 96	\$250 00
Extension schools,	747 94	
District and county agents,	38 05	-
Farm management demonstration,	553 02	-
Home economics,	75 46	-
Home gardening,	37 23	-
Horticultural manufactures,	379 81	-
Junior extension,	1,939 90	-
Plant diseases,	239 68	-
Pomology,	17 08	-
Poultry husbandry,	539 30	-
Printing and publications,	515 71	-
Salaries,	17,734 01	-
Sheep husbandry,	402 43	-
State Treasurer,	-	25,142 19
	\$23,386 58	\$25,392 19
Balance beginning of fiscal year Dec. 1, 1918,	-	2,618 11
Balance on hand Nov. 30, 1919,	4,623 72	-
Totals,	\$28,010 30	\$28,010 30

SHORT COURSES.

	Salary.	Office.	Laboratory Supplies.	Labor.	Travel.	Miscellaneous.	Total.
Two-year course,	\$3,614 42	\$253 82	\$446 10	\$249 11	\$194 51	\$564 26	\$5,322 22
Ten weeks' winter course,	150 00	74 44	1,208 67	44 69	154 15	221 72	1,853 67
Summer school,	3,980 00	179 95	577 16	960 40	73 25	850 87	6,631 63
Administration,	3,225 00	3 50	-	-	45 93	312 08	3,586 51
Totals,	\$10,979 42	\$511 71	\$2,231 93	\$1,254 20	\$467 84	\$1,948 93	\$17,394 03
Less cash refunds,	-	-	-	-	-	-	28 00
							\$17,366 03
State appropriation,	-	-	\$17,000 00	-	-	-	-
Amount of receipts,	-	-	1,898 63	-	-	-	-
Amount of receipts transferred to State Treasurer,	-	\$1,898 63	-	-	-	-	-
Department expenditures,	-	17,366 03	-	-	-	-	-
Balance overdrawn,	-	-	366 03	-	-	-	-
		\$19,264 66	\$19,264 66	-	-	-	-

MARKET GARDEN FIELD STATION.

	Debit.	Credit.
Labor,	\$4,666 08	
Maintenance,	1,481 12	
Minor equipment,	221 48	
Miscellaneous,	18 07	
Total,	\$6,386 75	
Less journal entries,	34 80	
Net expenditures,	\$6,351 95	
State appropriation,		\$8,000 00
Amount of receipts,		2,795 98
Amount of receipts transferred to State Treasurer,	\$2,795 98	
Department expenditures,	6,351 95	
Balance unexpended,	1,648 05	
	\$10,795 98	\$10,795 98

SPECIAL APPROPRIATIONS.

	Date made.	Appropriation.	Amount expended to Date.	Unexpended Balance.
Agricultural building,	1914	\$210,000 00	\$210,000 00	-
Microbiology building,	1915	67,500 00	65,450 31	\$2,049 69
Agricultural building,	1916	13,732 34	12,243 49	1,488 85
Rural engineering building,	1916	12,000 00	11,997 57	2 43
Improvement and equipment,	1917	33,500 00	33,471 20	28 80
Power plant improvements,	1917	40,000 00	39,955 91	44 09
Printing,	1917	-	888 79	-
Improvement and equipment,	1918	20,000 00	19,496 57	503 43
Power plant improvements,	1918	54,500 00	54,500 00	-
Market garden field station,	1918	16,500 00	13,068 97	3,431 03
Dining hall,	1918	12,000 00	11,676 41	323 59
Printing,	1918	3,000 00	3,000 00	-
Improvement and equipment,	1919	20,000 00	10,443 74	9,556 26
Women's dormitory,	1919	127,400 00	6,016 07	121,383 93
Market garden field station,	1919	15,000 00	4,348 73	10,651 27
Engineering studies,	1919	2,000 00	832 27	1,167 73
Printing,	-	-	158 17	-
Feed law,	1919	6,000 00	6,000 00	-
Trustees' travel,	1919	900 00	1,027 48	-127 48
S. A. T. C., plumbing,	-	-	2,501 64	-
Totals,	-	\$654,032 34	\$507,077 32	\$150,503 62
Amount spent previous to Dec. 1, 1918,	-	-	-	395,119 37
Amount expended during fiscal year,	-	-	-	111,957 95
Unexpended balance Nov. 30, 1919,	-	-	150,503 62	-
	-	\$654,032 34	\$657,580 94	\$657,580 94

INVENTORY — REAL ESTATE.

Land (Estimated Value).

Angus land,	\$800 00
Allen place,	500 00
Baker place,	2,500 00
Bangs place,	2,350 00
Brown land,	500 00
Charmbury place,	450 00
Clark place,	4,500 00
College farm,	37,000 00
Cranberry land,	12,745 00
Geo. Cutler, Jr., trustee,	2,700 00
Dickinson land,	7,850 00
Harlow farm,	1,584 63
Hawley and Brown place,	675 00
Kellogg place,	3,368 45
Loomis place,	415 00
Louisa Baker place,	5,000 00
Market garden field station,	4,800 00
Mount Toby demonstration forest,	30,000 00
Newell farm,	2,800 00
Old creamery place,	1,000 00
Owen farm,	5,000 00
Pelham quarry,	500 00
Tillson farm,	2,950 00
Westcott place,	2,250 00
Total,	<hr/> \$132,238 08

College Buildings (Estimated Value).

	Inventory at Beginning of Year.	Per Cent de- ducted.	Value at Beginning of Year less Per Cent De- terioration.	Repairs and Improve- ments during Year.	Total Value at Close of Fiscal Year.
Apiary,	\$3,043 03	2	\$2,982 17	\$10 85	\$2,993 02
Animal husbandry building,	9,390 57	2	9,202 76	8 60	9,211 36
Cashier's house,	1,660 90	5	1,577 85	25 75	1,603 60
Chemical laboratory,	8,190 95	5	7,781 40	552 44	8,333 84
Clark Hall,	63,995 60	2	62,715 69	353 03	63,068 72
Cold-storage laboratory,	11,190 07	2	10,966 27	7 50	10,973 77
Dairy building,	71,226 86	2	69,802 32	373 47	70,175 79
Dairy barn and storage,	27,599 63	3	26,771 64	146 43	26,918 07
Dining hall,	65,797 49	3	63,823 57	3,643 57	67,467 14
Drill hall and gun shed,	8,891 24	5	8,446 68	317 28	8,763 96
Durfee glass houses, old,	8,582 37	5	8,153 25	3 96	8,157 21
Durfee glass houses, new,	12,497 72	5	11,872 83	176 87	12,049 70
Entomology building,	74,801 30	2	73,305 27	333 83	73,639 10
Farm bungalow,	2,653 85	3	2,574 23	9 78	2,584 01
Farmhouse No. 1,	2,492 24	3	2,417 47	187 33	2,604 80
Farmhouse No. 2,	4,512 52	8	4,151 52	20 86	4,172 38
French Hall,	47,071 45	2	46,130 02	194 39	46,324 41
Grounds' tool shed,	245 00	5	232 75	-	232 75
Harlow house,	1,603 55	5	1,523 37	31 54	1,554 91
Horse barn,	4,649 75	3	4,510 26	24 78	4,535 04
Head of Division of Horticulture,	2,342 52	5	2,225 39	27 64	2,253 03
Horticultural barn,	2,433 67	3	2,360 66	108 66	2,469 32
Horticultural tool shed,	1,770 59	3	1,717 47	-	1,717 47
Hospital,	14,917 49	2	14,519 14	98 32	14,617 46
Kellogg house,	2,369 50	5	2,251 02	317 67	2,568 69
Machinery barn,	3,565 35	3	3,458 39	12 66	3,471 05
Market garden field station barn,	3,395 00	3	3,293 15	-	3,293 15
Mathematical building,	5,185 08	5	4,925 83	7 57	4,933 40
Microbiology building,	59,981 80	2	58,782 16	155 48	58,937 64
Military storage,	250 00	5	237 50	-	237 50
Mount Toby house and barn,	4,007 18	5	3,806 82	2 85	3,809 67
North dormitory,	24,550 64	2	24,059 63	459 97	24,519 60
Physics laboratory,	4,673 48	5	4,439 81	353 59	4,793 40
Piggery,	2,672 97	3	2,592 78	-	2,592 78

College Buildings (Estimated Value) — Concluded.

	Inventory at Beginning of Year.	Per Cent de- ducted.	Value at Beginning of Year less Per Cent De- terioration.	Repairs and Improve- ments during Year.	Total Value at Close of Fiscal Year.
Poultry department: —					
No. 1 demonstration building,	\$1,354 12	2	\$1,327 04	\$3 51	\$1,330 55
No. 2 oil house,	71 60	2	70 17	—	70 17
No. 3 brooder, killing and fattening laboratory.	2,389 09	2	2,332 49	—	2,332 49
No. 4 mechanics, storage building and incubator cellar.	3,445 07	2	3,376 17	12 37	3,388 54
No. 5 laying house,	1,663 43	2	1,630 16	10 28	1,640 44
No. 6 manure shed,	94 73	2	92 84	—	92 84
No. 7 small henhouse,	47 67	2	46 72	—	46 72
No. 8 breeding house,	1,504 66	2	1,474 57	5 20	1,479 77
No. 9 experimental breeding house, .	592 23	2	580 39	—	580 39
No. 10 duck house,	98 01	2	96 05	—	96 05
No. 11 unit house for 200 hens, . .	495 85	2	485 93	—	485 93
No. 12 unit house for 100 hens, . .	400 10	2	392 10	—	392 10
Power plant and storage building, in- cluding coal pocket.	47,410 53	2	46,462 32	1,734 38	48,196 70
President's house,	11,958 83	3	11,609 07	1,655 28	13,264 35
Quarantine barn,	486 91	3	472 30	—	472 30
Rural engineering building,	3,585 03	2	3,513 33	2 18	3,515 51
Sheep barn,	1,457 31	3	1,413 59	—	1,413 59
South dormitory,	35,090 90	2	34,389 08	2,917 57	37,306 65
Stockbridge Hall,	175,342 74	2	171,835 89	343 59	172,179 48
Agronomy greenhouse,	2,039 09	2	1,998 31	1 18	1,999 49
Stockbridge house,	1,407 23	5	1,336 87	262 67	1,599 54
Stone chapel,	28,323 67	2	27,757 20	134 76	27,891 96
Turbine house,	—	—	—	—	17,665 00
Vegetable plant house,	4,366 24	5	4,147 93	222 36	4,370 29
Veterinary laboratory and stable, . .	22,519 03	2	22,068 65	14 90	22,083 55
Waiting station,	476 30	2	466 77	—	466 77
Wilder Hall,	34,971 06	2	34,271 64	31 51	34,303 15
Young stock barn,	5,948 16	3	5,769 72	84 72	5,854 44
Totals,	\$949,741 95	—	\$927,028 37	\$15,403 13	\$960,096 50

College Equipment (Estimated Value).

Administrative division:—	
Dean's office,	\$484 90
President's office,	2,188 00
Registrar's office,	1,206 11
Treasurer's office,	3,035 89
Agricultural division:—	
Agronomy,	6,860 06
Animal husbandry,	729 38
Dairy,	20,077 28
Farm,	48,923 66
Farm management,	969 90
General agriculture,	3,879 95
Poultry,	6,441 91
Rural engineering,	3,897 21
Domestic science,	1,906 81
Dining hall,	17,868 48
Extension,	12,407 97
General science:—	
Apiary,	2,218 06
Botanical,	23,023 76
Chemical,	12,853 42
Entomology,	4,612 52
Mathematics,	2,407 25
Microbiology,	7,792 05
Physics,	7,005 15
Veterinary,	10,260 25
Zoölogical and geological,	17,143 60
Graduate school,	115 80
Horticultural division:—	
Floriculture,	18,897 04
Forestry,	2,180 74
General horticulture,	7,057 51
Grounds,	1,399 63
Horticultural manufactures,	4,117 40
Landscape gardening,	5,049 18
Market-garden field station,	1,711 90
Market gardening,	2,513 62
Mount Toby reservation,	4,905 29
Pomology,	5,929 30
Hospital,	1,104 72
Humanities division:—	
Economics and sociology,	195 00
Language and literature,	626 00
Library,	107,724 13
Military,	1,417 05
Operating and maintenance:—	
College supply,	1,650 30
Fire apparatus,	2,156 32
General maintenance,	172,769 99
Carpentry and masonry supplies,	6,252 49
Electrical supplies,	2,417 83
Equipment,	152,516 53
Heating and plumbing supplies,	9,844 07
Painting supplies,	1,739 07

*College Equipment (Estimated Value) — Concluded.*Operating and maintenance — *Con.*

Janitor's supplies,	\$863 33
Sewer line,	11,812 74
Water mains,	10,570 89
Physical education,	1,779 34
Rural social science:—	
Agricultural economics,	1,119 30
Agricultural education,	988 25
Rural sociology,	236 10
Short course,	536 80
Textbooks,	1,931 68
Trophy room,	1,200 00
Total,	\$590,752 92

Experiment Station Buildings (Estimated Value).

	Inventory at Beginning of Year.	Per Cent.	Cost at Beginning of Year less Per Cent De- terioration.	Repairs and Improve- ments during Year.	Total Value at Close of Year.
Agricultural laboratory,	\$14,483 32	2	\$14,193 65	\$31 13	\$14,224 78
Agricultural barn,	4,585 23	3	4,447 67	93	4,448 60
Agricultural farmhouse,	1,434 52	3	1,391 48	25 93	1,417 41
Agricultural glass house,	407 26	5	386 90	—	386 90
Cranberry buildings,	2,718 51	5	2,582 58	830 38	3,412 96
Plant and animal chemistry laboratory,	28,207 26	2	27,643 11	436 39	28,079 50
Plant and animal chemistry barns,	4,052 26	3	3,930 69	150 55	4,081 24
Plant and animal chemistry dairy,	1,770 59	3	1,717 47	—	1,717 47
Six poultry houses,	574 01	2	562 53	—	562 53
Entomological glass houses,	756 04	5	718 24	—	718 24
Tillson house,	570 93	5	542 38	16 02	558 40
Tillson barn,	1,140 00	5	1,083 00	—	1,083 00
Total,	\$60,699 93	—	\$59,199 70	\$1,491 33	\$60,691 03

Experiment Station Equipment (Estimated Value).

Apiary,	\$161 07
Agricultural economics department,	171 02
Agricultural laboratory,	7,563 90
Botanical laboratory,	6,692 98
Chemical laboratory,	24,317 12
Cranberry station,	3,632 40
Director's office,	5,940 16
Entomological laboratory,	23,598 84
Horticultural laboratory,	4,494 15
Meteorological laboratory,	758 00
Microbiological laboratory,	2,235 80
Poultry department,	5,338 33
Treasurer's office,	988 00
Total,	\$85,891 77

Inventory Summary.

Land,	\$132,238 08
College buildings,	960,096 50
College equipment,	590,752 92
Experiment Station buildings,	60,691 03
Experiment Station equipment,	85,891 77
Total,	\$1,829,670 30

	Acres.
College estate, area,	642.79
Cranberry station, Wareham, area,	23.67
Market-garden field station, Lexington, area,	12.00
Mount Toby demonstration forest, area,	755.27
Rifle range,	46.20
Pelham quarry,50
Total acreage,	1,480.43

STUDENTS' TRUST FUND ACCOUNT.

	Disburse- ments, Year ending Nov. 30, 1919.	Receipts, Year ending Nov. 30, 1919.	Balance on Hand.	Balance brought for- ward Dec. 1, 1918.
Athletics,	\$11,232 22	\$9,918 44	—\$1,140 94	\$172 84
Dining hall,	63,848 95	76,299 55	—11,230 05	—23,680 65
Keys,	64 50	123 25	77 00	18 25
Student deposits,	37,679 25	44,967 24	17,856 64	10,568 65
Social Union,	970 57	1,471 58	817 93	316 92
Textbooks,	7,253 92	6,929 88	674 63	998 67
Athletic field,	723 82	822 27	—256 26	—354 71
Uniforms,	17 06	27 56	31 54	21 04
Fertilizer law,	11,660 23	11,660 23	—	—
Cow testing,	14,278 94	14,617 69	338 75	—
Dairy law,	616 69	593 02	—23 67	—
	\$148,346 15	\$167,430 71	\$7,145 57	—\$11,938 99
	—11,938 99	—	—	—
	7,145 57	—	—	—
	\$167,430 71	\$167,430 71	—	—

CONDENSED OPERATING STATEMENT OF THE DINING HALL.

	Operating Charges.	Income.
1918.		
Dec. 1, Balance,	\$23,680 65	-
1919.		
Nov. 30, Total disbursements,	63,848 95	-
Outstanding bills,	3,254 89	-
Total collections,	-	\$76,299 55
Accounts outstanding,	-	596 49
Inventory,	-	9,868 68
Balance,	-	4,019 77
	\$90,784 49	\$90,784 49

ENDOWMENT FUND.¹

	Principal.	Income.
United States grant (5 per cent),	\$219,000 00	\$7,300 00
Commonwealth grant (3½ per cent),	142,000 00	3,313 32
	-	\$10,613 32

¹ This fund is in the hands of the State Treasurer, and the Massachusetts Agricultural College received two-thirds of the income from the same.

BURNHAM EMERGENCY FUND.

	Market Value Dec. 1, 1919.	Par Value.	Income.
Two bonds American Telephone and Telegraph Company 4s, at \$810,	\$1,620 00	\$2,000 00	\$80 00
Two bonds Western Electric Company 5s, at \$970,	1,940 00	2,000 00	100 00
One United States Liberty Bond 4s, at \$940,	470 00	500 00	20 00
	\$4,030 00	\$4,500 00	\$200 00
Unexpended balance Dec. 1, 1918,	-	-	380 55
Cash on hand Nov. 30, 1919,	-	-	\$580 55

LIBRARY FUND.

Five bonds New York Central & Hudson River Railroad Company 4s, at \$850,	\$4,250 00	\$5,000 00	\$200 00
Five bonds Lake Shore & Michigan Southern Railroad Company 4s, at \$880,	4,400 00	5,000 00	200 00
Two shares New York Central & Hudson River Railroad Company stock, at \$70,	140 00	200 00	10 00
Amherst Savings Bank, deposit,	167 77	167 77	7 59
	\$8,957 77	\$10,367 77	\$417 59
Disbursements for fiscal year ending Nov. 30, 1919,	-	-	417 59

SPECIAL FUNDS.

Endowed Labor Fund (the Gift of a Friend of the College).

Two bonds American Telephone and Telegraph Company 4s, at \$810,	\$1,620 00	\$2,000 00	\$80 00
Two bonds Lake Shore & Michigan Southern Railroad Company 4s, at \$880,	1,760 00	2,000 00	80 00
One bond New York Central Railroad debenture 4s,	850 00	1,000 00	40 00
One bond Louisville Gas and Electric 7s,	1,000 00	1,000 00	69 61
Amherst Savings Bank, deposit,	143 39	143 39	6 49
One United States Liberty Bond 4¼s,	940 00	1,000 00	41 45
	\$6,313 39	\$7,143 39	\$317 55
Unexpended balance Dec. 1, 1918,	-	-	76 20
Cash on hand Nov. 30, 1919,	-	-	\$393 75

Whiting Street Scholarship Fund.

One bond New York Central debenture 4s,	\$850 00	\$1,000 00	\$40 00
Amherst Savings Bank, deposit,	271 64	271 64	12 32
	\$1,121 64	\$1,271 64	\$52 32
Unexpended balance Dec. 1, 1918,	-	-	342 87
Cash on hand Nov. 30, 1919,	-	-	\$395 19

SPECIAL FUNDS — *Continued.**Hills Fund.*

	Market Value Dec. 1, 1919.	Par Value.	Income.
One United States Liberty Bond 4s, at	\$940 00	\$1,000 00	\$40 00
One United States Liberty Bond 4½s, at	940 00	1,000 00	41 45
One bond American Telephone and Telegraph Company 4s, at	810 00	1,000 00	40 00
One bond New York Central & Hudson River Railroad debenture 4s, at	850 00	1,000 00	40 00
One bond New York Central Railroad debenture 4s, at	850 00	1,000 00	40 00
Three bonds Pacific Telephone and Telegraph Company 5s, at \$880,	2,640 00	3,000 00	150 00
One bond Western Electric Company 5s, at	970 00	1,000 00	50 00
Boston & Albany Railroad Stock, 3⅞ shares at \$125,	453 00	362 00	31 68
Amherst Savings Bank, deposit,	72 75	72 75	3 28
Electric Securities Company bonds 1½% bonds at \$950,	1,121 00	1,180 00	59 00
Two bonds Louisville Gas and Electric 7s, at	2,000 00	2,000 00	139 22
	\$11,646 75	\$12,614 75	\$634 63
Unexpended balance Dec. 1, 1918,	-	-	295 33
	-	-	\$929 96
Disbursements for fiscal year ending Nov. 30, 1919,	-	-	15 00
	-	-	\$914 96
Cash on hand Nov. 30, 1919,	-	-	

Mary Robinson Fund.

Amherst Savings Bank, deposit,	\$142 00	\$142 00	\$6 45
Boston & Albany Railroad stock, ⅜ share at \$125,	47 00	38 00	3 32
Electric Securities Company Bonds, 41½% bond, at \$950,	779 00	820 00	41 00
	\$968 00	\$1,000 00	\$50 77
Unexpended balance Dec. 1, 1918,	-	-	239 73
	-	-	\$290 50
Cash on hand Nov. 30, 1919,	-	-	

Grinnell Prize Fund.

Ten shares New York Central & Hudson River Railroad stock, at \$70,	\$700 00	\$1,000 00	\$50 00
Unexpended balance Dec. 1, 1918,	-	-	245 74
	\$700 00	\$1,000 00	\$295 74
Disbursements for prizes,	-	-	50 00
	-	-	\$245 74
Cash on hand Nov. 30, 1919,	-	-	

Gassett Scholarship Fund.

One bond New York Central & Hudson River Railroad debenture 4s, at \$850,	\$850 00	\$1,000 00	\$40 00
Amherst Savings Bank, deposit,	11 64	11 64	48
	\$861 64	\$1,011 64	\$40 48
Unexpended balance Dec. 1, 1918,	-	-	263 71
	-	-	\$304 19
Cash on hand Nov. 30, 1919,	-	-	

SPECIAL FUNDS — *Continued.**Massachusetts Agricultural College (Investment).*

	Market Value Dec. 1, 1919.	Par Value.	Income.
One share New York Central & Hudson River Railroad Stock at \$70,	\$70 00	\$100 00	\$5 00
Unexpended balance Dec. 1, 1918,	-	-	90 45
Cash on hand Nov. 30, 1919,	-	-	\$95 45

Danforth Keyes Bangs Fund.

Two bonds Pacific Telephone and Telegraph Company 5s, at \$880,	\$1,760 00	\$2,000 00	\$100 00
Two bonds Union Electric Light and Power Company 5s, at \$920,	1,840 00	2,000 00	100 00
Two bonds American Telephone and Telegraph Company 4s, at \$810,	1,620 00	2,000 00	80 00
Interest from student loans,	-	-	43 09
One United States Liberty Bond 4½s, at	940 00	1,000 00	41 45
	\$6,160 00	\$7,000 00	\$364 54
Unexpended balance Dec. 1, 1918,	-	-	1,023 24
	-	-	\$1,387 78
Total loans made to students during fiscal year, \$1,915 00			
Cash received on account of student loans, 1,105 00			
Excess of loans made over accounts paid by students,	-	-	810 00
Cash on hand Nov. 30, 1919,	-	-	\$577 78

John C. Cutter Fund.

One bond Pacific Telephone and Telegraph Company 5s, at	\$880 00	\$1,000 00	\$50 00
Unexpended balance Dec. 1, 1918,	-	-	126 13
	\$880 00	\$1,000 00	\$176 13
Disbursements for fiscal year to date,	-	-	14 63
Cash on hand Nov. 30, 1919,	-	-	\$161 50

William R. Sessions Fund.

One \$500 bond New York Central & Hudson River Rail- road Stock 6s, at \$910,	\$455 00	\$500 00	\$30 00
Three United States Liberty Bonds, two at \$1,000 and one at \$500, 4s, at \$940,	2,350 00	2,500 00	100 00
One bond Toledo Light and Power Company 7s, at	1,000 00	1,000 00	70 00
One bond United Electric Light Company 6s, at	1,000 00	1,000 00	60 00
	\$4,805 00	\$5,000 00	\$260 00
Unexpended balance Dec. 1, 1918,	-	-	378 11
	-	-	\$638 11
Disbursements for fiscal year ending Nov. 30, 1919,	-	-	587 53
Cash on hand Nov. 30, 1919,	-	-	\$50 58

SPECIAL FUNDS — *Concluded.*
Alvord Dairy Scholarship Fund.

	Market Value Dec. 1, 1919.	Par Value.	Income.
One United States Liberty Bond 4s, at	\$940 00	\$1,000 00	\$40 00
One bond Toledo Light and Power Company 7s, at	1,000 00	1,000 00	70 00
Two bonds United Electric Light Company 6s, at	2,000 00	2,000 00	120 00
	\$3,940 00	\$4,000 00	\$230 00
Overdraft Dec. 1, 1918,	-	-	14 70
Cash on hand Nov. 30, 1919,	-	-	\$215 30

SUMMARY OF BALANCES ON HAND OF THE INCOME FROM FUNDS HELD IN
 TRUST BY THE MASSACHUSETTS AGRICULTURAL COLLEGE.

Burnham emergency fund,	\$580 55
Endowed labor fund,	393 75
Whiting Street scholarship fund,	395 19
Hills fund,	914 96
Mary Robinson fund,	290 50
Grinnell prize fund,	245 74
Gassett scholarship fund,	304 19
Massachusetts Agricultural College investment fund,	95 45
Danforth Keyes Bangs fund,	577 73
John C. Cutter fund,	161 50
William R. Sessions fund,	50 58
Alvord dairy scholarship fund,	215 30
	\$4,225 49
W. D. Cows and J. H. Howard, land,	\$733 33
March 26, by check,	366 67
	366 66
	\$3,858 83

I hereby certify that I have this day examined the Massachusetts Agricultural College account, as reported by the Treasurer, Fred C. Kenney, for the year ending Nov. 30, 1919. All bonds and investments are as represented in the treasurer's report. All disbursements are properly vouched for, and all cash balances are found to be correct.

CHARLES A. GLEASON,
Auditor.

AMHERST, Jan. 8, 1920.

HISTORY OF SPECIAL FUNDS.

Burnham emergency fund:—

A bequest of \$5,000 from T. O. H. P. Burnham of Boston made without any conditions. The trustees of the college directed that \$1,000 of this fund should be used in the purchase of the Newell land and Goessmann library.

The fund now shows an investment of \$4,000 00

Library fund:—

The library of the college at the present time contains 61,439 volumes. The income from the fund raised by the alumni and others is devoted to its increase, and additions are made from time to time as the needs of the different departments require. Dec. 27, 1883, William Knowlton gave \$2,000; Jan. 1, 1894, Charles L. Flint gave \$1,000; in 1887, Elizur Smith of Lee, Mass., gave \$1,315. These were the largest bequests, and now amount to

10,000 00

Endowed labor fund:—

Gift of a friend of the college in 1901, income of which is to be used for the assistance of needy and deserving students,

5,000 00

Whiting Street scholarship fund:—

Gift of Whiting Street of Northampton, for no special purpose, but to be invested and the income used. This fund is now used exclusively for scholarship,

1,000 00

Hills fund:—

Gift of Leonard M. and Henry F. Hills of Amherst, Mass., in 1867, to establish and maintain a botanic garden,

10,000 00

Mary Robinson fund:—

Gift of Miss Mary Robinson of Medfield, in 1874, for scholarship,

1,000 00

Grinnell prize fund:—

Gift of Hon. Wm. Clafin, to be known as the Grinnell agricultural prize, to be given to the two members of the graduating class who may pass the best oral and written examination in theory and practice of agriculture, given in honor of George B. Grinnell of New York,

1,000 00

Gassett scholarship fund:—

Gift of Henry Gassett of Boston, the income to be used for scholarship,

1,000 00

Massachusetts Agricultural College investment fund:—

Investment made by vote of trustees in 1893 to purchase one share of New York Central & Hudson River Railroad stock. The income from this fund has been allowed to accumulate,

100 00

Danforth Keyes Bangs fund: —

Gift of Louisa A. Baker of Amherst, Mass., April 14, 1909, the income thereof to be used annually in aiding poor, industrious and deserving students to obtain an education in said college, \$6,000 00

John C. Cutter fund: —

Gift of Dr. John C. Cutter of Worcester, Mass., an alumnus of the college, who died in August, 1909, to be invested by the trustees, and the income to be annually used for the purchase of books on hygiene, 1,000 00

Alvord dairy scholarship fund: —

Gift of Henry E. Alvord, who was the first instructor in military tactics, 1869-71, and a professor of agriculture, 1885-87, at this institution. The income of this fund is to be applied to the support of any worthy student of said college, graduate or postgraduate, who may be making a specialty of the study of dairy husbandry (broadly considered), with the intention of becoming an investigator, teacher or special practitioner in connection with the dairy industry, provided that no benefits arising from such fund shall at any time be applied to any person who then uses tobacco in any form, or fermented or spirituous beverages, or is known to have done so within one year next preceding, 4,000 00

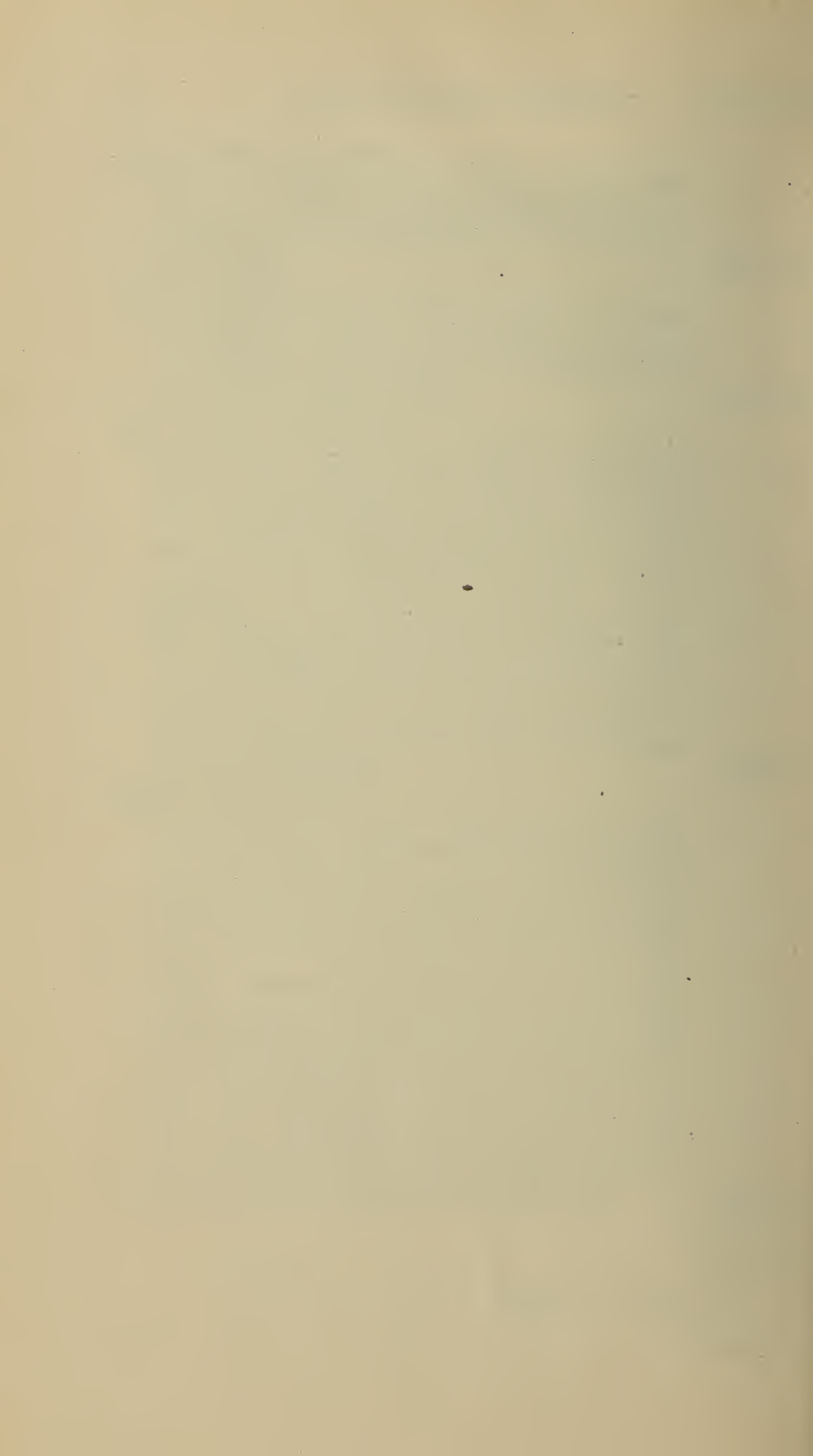
William R. Sessions fund: —

In accordance with the request of my deceased wife, Clara Markham Sessions, made in her last will, I bequeath to the trustees of the Massachusetts Agricultural College, Amherst, Mass., the sum of \$5,000, it being the amount received by me from the estate of the said Clara Markham Sessions. The said \$5,000 to be kept by the said trustees a perpetual fund, the income from which shall be for the use of the Massachusetts Agricultural College; and according to the further request of my deceased wife, made in her last will, this is to be known as the William R. Sessions fund, and is to be a memorial of William R. Sessions; and it is my special request that the said trustees shall make record of the fact that this fund came from the estate of my deceased wife, Clara Markham Sessions, in accordance with her request made in her last will, . . . 5,000 00

\$49,100 00

FRED C. KENNEY,

Treasurer.



UNIVERSITY OF ILLINOIS-URBANA



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