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To the General Assembly of the State of South Carolina:

Gentlemen:

I am herewith submitting to you and ask your careful inspection of this the twenty-seventh annual report of the Board of Trustees of Clemson Agricultural College. This report is made up from a report submitted to the Board of Trustees at its December meeting by the President of the College and comprises every detailed transaction of the College, not only in a financial sense, but as to its teaching, its analysis of the fertilizers used by the farmers of the State, its public work carried on through the demonstration agencies among the farmers, its discipline, the health of its student body, and also the general good behavior of the student body. This report is required of the Trustees by the law of the State, and it is their desire always to make it full and frank, in order that the representatives of the people may have some idea of the great work this institution is accomplishing for the State.

Permit me to say, gentlemen, that the College is wisely managed by its able President, his able body of teachers, and his discipline committee that measures up to the full standard of judicial mindedness; that is, this discipline committee seeks always to be just, to be fair, to be temperate, and yet firm in their management of any infraction of the law. I am glad to say that there has been no serious trouble at the College since our last report and nothing has occurred that is not liable to occur in any institution of its magnitude. The expenditure of every dollar of the College's income is laid down in this report and the necessity for the further liberality of the General As-
semblably in dealing with the College under the continued financial distresses caused by a world-wide war.

Trusting that you will give this report your very careful and earnest consideration, we desire to express to you our sincere appreciation of the past aid given to the Board of Trustees by the wise laws which have been enacted in the years that are past and bespeak your still further sympathy and aid.

Most respectfully,

ALAN JOHNSTONE,
Chairman Board of Trustees.
REPORT OF THE PRESIDENT OF THE COLLEGE

Clemson College, S. C., November 1, 1916.

Mr. Alan Johnstone, President of the Board of Trustees of the Clemson Agricultural College.

Dear Sir: I have the honor to submit herewith the President's Annual Report, covering the twenty-third session of the Clemson Agricultural College. This is intended as the basis for your twenty-seventh Annual Report to the Legislature.

The report covers the fiscal year from July 1, 1915 to June 30, 1916.

I have arranged the report in seven main divisions as follows:


PART I. GENERAL STATEMENT.

The session has been an uneventful, although a thoroughly satisfactory one from a collegiate standpoint. The greatly curtailed use of fertilizers reduced the income of the College practically $106,000 below the income of the year preceding the European War. There was no money with which to complete or expand the College plant, or take on new lines of collegiate work. The new Y. M. C. A. Building and the new Athletic and Drill Field were the only substantial additions during the fiscal year under consideration.

The Faculty worked loyally and efficiently. The scholastic work of the students was good. The health of the corps was excellent. There were no serious disciplinary troubles.

That harmony and cooperation so necessary to the efficiency of a college was evident in the relations between the student body and the faculty, and between the College President and the
Board of Trustees. The entire session passed with a smoothness which I trust is becoming characteristic.

I might note in passing that in January I shall have completed seven years as Acting President and President of Clemson College. I take this occasion to say that no college president, by the loyal support and cooperation of his Board of Trustees, and especially of its Chairman, Mr. Alan Johnstone, ever had a better opportunity to succeed than I have had. Earnest, sympathetic, and broadminded, the Board has shown a single minded loyalty to the highest interests of the College at once rare and most commendable.

The College has continued to extend its usefulness along lines of public service, until more and more of it is coming to be looked upon as the proper source of expert advice along agricultural and industrial lines. The expression used in my report of a year ago that the College is rapidly becoming the "fireside university" of our farmers can be repeated here with added emphasis.

It is with sadness that I chronicle the death on April 26 of Col. M. B. Hardin, (C. S. A.) Emeritus Professor of Chemistry and Consulting State Chemist. Col. Hardin had been connected with the College since its beginning. His ability and integrity as State Chemist in charge of all fertilizer analyses, established for his laboratory a wide reputation for fairness and accuracy. As a teacher of Chemistry he held the unbounded respect and admiration of his students, not only for his efficiency but for the high character that shone out in every duty. In his death the College has lost an imminent scientist and a wise councillor, the South one of its distinguished Confederate leaders, and the generations of students to come a great teacher and a noble example.

Inspections:

During the session the College was inspected by the Legislative Committee, the "Ways and Means Committee" of the House, the "Financial Committee" of the Senate, the State Board of Health, the Board of Visitors, the United States War Department, the State Bank Examiner, and U. S. Department of Agriculture. From every one of these inspections the College got a perfect report.
(a) The Legislative Committee visited the College in December, 1915. The following extract taken from the printed report to the General Assembly, sums up its impression of the College:

"Your Committee's visit to this institution was most agreeable, and afforded many pleasant surprises. We do not believe the people of South Carolina know, or appreciate, even in a small degree, the scope of the activities and agencies of this splendid institution. Its position among the educational institutions of the State is unique from several points of view; but especially so from the viewpoint that it serves so many people of every class and kind, and chiefly those who need most that service, and whose support Clemson enjoys in the use of fertilizers. The College, as such, may be favorably compared with other institutions of its kind, and affords a liberal education in the Arts and Sciences, in addition to the technique of certain trades, vocations and professions. But the feature which most impressed your committee is the splendid work she is doing in her departments of research, farm demonstration, extension work, the establishment of creameries, and centers for the sale and shipment of cattle and grain, and other practical operations which so aptly fit and fulfill the needs of our agricultural population. The splendid and detailed report of President W. M. Riggs treats of these matters so fully, however, that we shall not dwell upon them.

"We recommend that authority be given to renew the loan made under your Act at the last session; and that a direct appropriation be made to meet the needs of this institution, pending a return of its normal revenue from the fertilizer tax.

"We are pleased to report that a very handsome Y. M. C. A. building is nearing completion at Clemson. This represents a gift from John D. Rockefeller, the trustees and alumni of the College, as a result of the importunities of President Riggs.

"In this connection we desire to pay tribute to the wonderful administrative ability of President Riggs, and to compliment him on his splendid system whereby he keeps in daily touch with every department of the institution over which he presides."

In this connection it is interesting to note the following opinions of Legislative Committees for the past few years.

The 1912 Committee says, after describing the work of the College in some detail:

"In fact the work of all departments of the institution is well systemized, and is a model for our other State Institutions."
The 1913 Committee says of Clemson and the other State institutions:

"The earnest, alert and loyal spirit of the student body of the State educational institutions, the zeal, progressiveness, and breadth of vision of their heads, the devotion of the faculties, the efficiency that characterizes their business management, and the growth that is evident in each of the plants, show that the appropriations spent to develop citizenship are achieving results that promise substantial returns in the future."

The 1914 Committee says in part:

"It would be useless for this committee to say in this report that at Clemson you have a tremendous institution. Your committee spent two full days and the greater part of a night trying to see every department and the entire working of the College, but we are sorry to say that there was more than was possible for us to absorb in that time."

"In our judgment, they have the most perfect system of keeping books and records that it has ever been our privilege to examine, the details of which would be impossible to embody in the making of this report."

"There is a vast amount of valuable information to be obtained from Clemson by our farmers, and we trust that they will avail themselves of it."

"Some who are not familiar with the work of the College and with its full history, entertain the idea that a great amount of money is collected, more than is really needed to carry on its work. They lose sight of the fact, however, that this tremendous institution has been built and equipped and maintained out of the surplus fertilizer tax."

(b) The Ways and Means Committee:

Pursuant with the permission of the Board, I invited the Ways and Means Committee through its Chairman, Mr. Liles, to visit the College on November 2 and 3 and make a full inspection. The following members of the Committee were able to accept the invitation: Messrs. Liles (Chairman), Arnold, Bolt, Crum, Clement, Durst, Fripp, Huffman, Rivers, Sellers, Shirley, Smith, Toole, Traylor, Wagner, Walker, West.

The Committee spent the larger part of two days at the College and examined all important features as carefully as their time would permit. No formal report was filed or requested but the following is a newspaper interview given out by
Mr. Liles, the able Chairman of the Committee and printed in "The State" on November 8.

"It is to be regretted," said Mr. Liles, "that all South Carolinians cannot visit Clemson College. The citizens of the State generally have a fair knowledge and appreciation of the work this great institution is doing, but a visit to the College will prove an experience that will not only dissipate any prejudice that may exist, but will create a loyalty and pride in the hearts of those who value the kind of educational training that best equips for service in the lines of endeavor that are open to the majority of our people.

"Seventeen members of the Ways and Means Committee were at the College on November 2 and 3 and practically every minute of twenty hours was occupied in an inspection of the various departments.

"It is difficult in an interview to convey an idea of the great scope of the work of Clemson, but the committee was enabled to gain a qualitative conception of what is being undertaken and accomplished.

"The visitor cannot fail to be impressed with the qualities and fitness of the men who comprise the faculty. The financial system of the College has been so perfected that extravagance is almost impossible. Every item of expense must be justified before it is approved. There has been no extravagance in expenditures in building up and maintaining the institution. There has been a need for every building erected, every department provided, every extension made and all of these have been more than justified by the results accomplished.

"Clemson College has not simply justified its establishment, it has filled an imperative need and its benefits have extended into every home in South Carolina. Its present and future value to the State cannot be overestimated."

(c) The Finance Committee of the Senate:

An invitation was also sent to the members of the Finance Committee of the Senate to visit the College on November 4 and 5. The following members were present: Senators Brice, Buck, Johnstone, Ketchin, Manning, and Sherard.

The following letter from Senator Ketchin embodies, I think, the sentiments of the members of his Committee who made the inspection of Clemson College:

"I want to express my appreciation of the opportunity given me to visit Clemson College. I enjoyed every minute of my stay there and came away with entirely different ideas from those I previously had. Clemson College is a great institution,
and I am sure is not properly appreciated by the people of South Carolina generally, mainly for the reason that they have not full knowledge of the magnitude of the work.

"I was very much impressed with the systematic way in which the business end of it is managed, and with the business of everybody connected with it.

"My interest in Clemson College will be very much greater hereafter."

(d) The State Board of Health makes the following report of its inspection of the College on December 1st, 1915:

"Like Winthrop College the authorities were to be congratulated on a new building which will affect favorably the health of the cadets. This building is the Young Men's Christian Association. Two-thirds of the money was contributed by Mr. John D. Rockefeller. The committee noted provisions for baths and physical exercise. Near the building extensive improvements in the athletic and drill grounds are being made.

"It is necessary to call attention again, to the danger from the supplementary water supply which has been more frequently drawn upon in recent years than formerly. The Committee advised that a bacteriological examination be made a routine procedure to insure protection from contamination.

"The health of the cadet corps has been exceptionally good this term. We were glad to note a new departure in the medical inspection of the freshmen. There has always been a certain form of physical examination of the new men, but it is now contemplated to make this examination much more thorough, in order that the cadet and his family may be appraised of any defect which should be guarded against or corrected. This is a very important matter in as much as not a few students enter upon a college career with physical handicaps of which they are ignorant, and which may prove serious, or even endanger their lives. The time to prevent this calamity is at the beginning of the student's college experience.

"There is urgent need for a new hospital, as we have noted before in previous reports. The financial depression of 1914 thwarted the plans for this building, some of the material having already been placed on the grounds. The authorities are to be commended for the careful oversight of the sanitation of the institution."

(e) The Board of Visitorss. This Board of one representative from each Congressional District, appointed by the Board of Trustees, to hold office for two years. This committee met at the College on May 3, and spent several days in going through the departments and making as full a study as its time would permit.
The following is the personnel of the Board for 1916 and 1917:

First District—Charlton Durant _______________ Manning
Second District—W. I. Johns ______________________ Baldoc
Third District—J. Howard Moore _______________ Abbeville
Fourth District—W. W. Harris _______________ Clinton
Fifth District—W. P. Odom _______________ Chesterfield
Sixth District—D. D. McColl _______________ Bennettsville
Seventh District—Jas. M. Moss _______________ St. Matthews

The Board organized by the election of Mr. Durant as Chairman and Mr. Moore as Secretary.

The full report of the Board is appended to this report. The following paragraphs indicate the trend:

“There is about the entire institution and all of its departments an appearance of order, system and neatness that would indicate close, careful attention on the part of the heads of departments and those responsible for the control and direction of its affairs. The different departments seem to be co-ordinated and to work well together. The members of the faculty with whom we came in contact seem to be earnest, conscientious and enthusiastic, and these are very needful qualities in the education and development of the minds of the young men of the State.

“The Y. M. C. A. Building is a beautiful structure, both inside and out and is fully and completely fitted up and adapted to the needs of the young men who seem to appreciate its advantages.” *

“The discipline and demeanor of the students was all that could be desired.” *

“We note with pleasure the large proportion of students taking the Agricultural course; the same constitutes about one-half of the total.

“The system of records and bookkeeping seems to be comprehensive and complete. The President, Dr. Riggs, seems to have a clear grasp not only of the large questions of administration, but also of the minute details of its operation, and we think to his wise and careful efforts much of its success is due.”

(f) The U. S. War Department. The College was inspected by Capt. S. B. Schindel of the General Staff, on April 10 and 11. The report covering the inspection is highly creditable to the College. In this report to the War Department Capt. Schindel sums up his opinion as follows:

“An advanced guard exercise, an outpost and an attack exercise, each by battalion was observed and considering the
lack of ground were satisfactory. This practical field work has been improved and has begun to show progress. The main difficulty is in the lack of suitable maneuvering ground. This is partly remedied by the camp held at Anderson annually.

“The entire plant was examined and found in a sanitary and satisfactory condition. The meals served were excellent, the daily per capita expenditure for this item of expense being 26 cents. The barracks were much improved in appearance. The general set up of all cadets has improved, and the marching of the organizations increased by means of the field exercises.

“The opportunity for establishing units of the R. O. T. C. is most promising. No report would be complete without some statement regarding the whole hearted cooperation of the President, Dr. Riggs, with the War Department in all matters. A great believer in the value of military training he has placed his institution in line for producing valuable reserve officers for future service.

“The method of keeping the financial side of the mess, so that a statement of the accounts of this department can be made up at any time was explained by Dr. Riggs.

“Generally speaking, the institution has improved greatly, and this year's inspection showed progress, improvement and increased interest on the part of all connected with the department.”

On August 29, 1916, I received the following letter from Major General H. L. Scott, Chief of Staff:

“I take great pleasure in informing you that the Secretary of War is gratified to note the steady progress and improvement in the Military Department of your institution, as shown by the report rendered by the Committee of the General Staff which is charged with the inspection of the military departments of educational institutions of learning.”

(g) *The U. S. Department of Agriculture*.—Dr. H. W. Evans, of the Office of Experiment Stations, U. S. Department of Agriculture, made the annual inspection of the work and finances of the S. C. Experiment Station last spring. Dr. Evans expressed himself as highly pleased with the conditions and progress of the work of the Station.

A careful audit of the books and accounts of the Extension Division were also made by Messrs. McLaughlin and Saverly of the States Relation Committee and declared correct in every particular.
**State Legislation:**

At the 1916 session of the General Assembly the following measures effecting the College were passed:

(a) An appropriation of $30,000 to continue the tick eradication work, and $31,382 to meet the provisions of the Smith-Lever Extension Act were made.

(b) An act was passed recommending to the 1917 Legislature that it make good to the College by appropriation any deficit in the fertilizer tax below $202,000, the amount estimated as necessary to carry on both the college and public service during the fiscal year 1916-1917.

(c) An act was passed whose purpose was to extend by five years the time in which the College might pay back the $62,400 (authorized to be borrowed at a previous session), instead of having payment become automatically due whenever the fertilizer tax goes beyond a certain fixed figure, viz., $147,836.14. (It seems that this act is faulty and does not give the intended relief.)

(d) An act was passed requiring the State Board of Charities and Corrections to investigate the financial status of all applicants for free tuition and scholarships in Clemson College, and other State institutions, and to repart their findings to the boards of trustees of the respective State institutions.

**Federal Legislation:**

The National Defense Act approved June 3, 1916, provides for the establishing of a "Reserve Officers Training Corps" at Colleges and Universities. Clemson College could easily comply with the terms of the act and enter the Senior Division, thereby serving the nation in its program of preparedness, increasing the variety and efficiency of its military work, and giving substantial financial help to worthy and needy young men who choose to avail themselves of the terms of the measure.

**Additions to Plant:**

Because of scarcity of funds practically no additions to buildings and equipment were made during the year.

All of our departments are feeling the need of new and additional equipment, which on account of our financial conditions has been necessarily denied during the past few years.
In this day of rapid development scientific and engineering laboratories are soon out of date in their equipment unless continually added to. The obligation to furnish the very best teaching facilities for our students must always be of first importance—other things needful must take a second place.

On January 1, 1916, the Y. M. C. A. Building was completed and opened for use. The building with its furnishings and equipment cost $78,182.00, of which $50,000 was donated by Mr. John D. Rockefeller, and $15,000 was given by the faculty, alumni, and students, and friends of the College. The balance, $13,182.00, represents the cost of this splendid plant to the State.

The new field for athletics and drill, "Riggs Field," was practically completed and ready for use by the opening of the session in the fall of 1916.

The addition to the engineering building, the new hospital and the new laundry, all projected or begun the year the European War broke out, are badly needed, but await necessary funds for completion.

Board of Trustees:

The Board held only the three meetings prescribed in the By-laws of the College. The utmost harmony prevailed in the Board, and between the Board and the President and officers of the college.

The terms of Messrs. E. T. Hughes, S. T. McKeown, and Dr. R. H. Timmerman, expired. Messrs. McKeown and Timmerman were re-elected, and Mr. S. A. Burns of Anderson County was elected to succeed Mr. Hughes, who did not stand for re-election.

Southern Railway Loan Fund:

Mr. G. E. Prince, who graduated in June, 1916, was the recipient for four years of a scholarship fund of $200 annually from the Southern Railway. After careful study and consideration of the opinions of the College Presidents in the states traversed by the Southern Railway, the officials of that Company decided to abandon the method of giving definite amounts to a single student each year, and instead, put into the hands of the College authorities a loan fund of $1,000, to be known as
the "William Wilson Finley Foundation," to be administered according to the rules which this board might adopt. The only condition was that the beneficiaries of the fund must live in a county traversed by the Southern Railroad and pursue an agricultural course.

The following rules are now in force:

(a) That no help be extended to a student during his first year in College.

(b) That after he has been in College for one year, and during that time demonstrated not only his need, but his worth in character, studiousness and promise, the President of the College may at any time during the session loan to such needy student a sum not to exceed seventy-five dollars in any one session, provided the beneficiary is pursuing a regular agricultural course (one year or four year course), is a resident of a county traversed by the Southern Railway, or the Blue Ridge Railway, and does not hold a scholarship of any kind.

(c) That the student receiving this financial assistance shall give his note bearing 6 per cent. interest, payable one, two, or three years after completion of course. The loans of the first year shall be payable within one year after completion of the course, and any second and third loans shall be payable two and three years respectively after date of normal completion of the course.

At the discretion of the President, the student may be required to furnish at least one endorsement from a financially responsible party, why may be the student's parent or guardian.

(d) The President shall at the close of each fiscal year, June 30, make a statement to the Clemson College Board of Trustees and to the President of the Southern Railway, giving full details as to the use and status of the Fund.

(e) Not more than one-fourth of the Fund shall be loaned in any one fiscal year.

Exhibits:

The exhibit of the College including that of the cooperative demonstration and extension and extension forces, at the State Fair in Columbia was highly creditable. It gave to the people of the State a comprehensive idea of the scope and value of the work of the College.

A creditable textile exhibit was also made at the Southern Textile Exposition at Greenville.
PART II. A FISCAL STATEMENT

The Treasurer's Annual Report, which is appended, gives detailed information in regard to the finances of the College during the year July 1, 1915 to June 30, 1916.

In addition to the summarized report made a part of this paper, the Legislature is furnished with a special report containing not only a condensed statement, but a list of all bills paid by the Treasurer out of College funds.

For the purpose of discussion, a condensed summary of resources and expenditures is given below in such form as to be readily understood.

**Resources**

Balance brought forward from June 30, '16 $ 9,701.04

Income:
- Privilege Fertilizer Tax $171,018.52
- Morrill & Nelson Fund (U. S.) 25,000.00
- Interest on Landscript 5,754.00
- Interest on Clemson Bequest 3,512.36
- Tuition from Cadets 4,670.00
- State Loan 62,400.00
- Sales, Interests, Rents, Refunds 7,634.96

Total Available Resources $268,179.44

Expenses:
- Public State Work:
  - Interest on Loan $1,133.44
  - Scholarships and Advertisements 21,459.63
  - Extension and Demonstration Work 20,602.20
  - Fertilizer Inspection and Analysis 25,467.02
  - Pee Dee Experiment Station 2,364.42
  - Coast Experiment Station 4,476.55
  - Veterinary Inspection 4,767.96
  - Cooperative Experimental Work 1,294.07
  - Crop Pest Commission 2,185.22
- Miscellaneous Public Work 1,969.64

Total 85,720.15

College Operating Expenses:
- Salaries, Labor, Coal, Materials, etc. 145,697.24

Total $289,690.88

Repaid on Loan 21,511.44

Total Available Resources $268,179.44
Additions to Plant:
Additional Shop, Library and Lab'y Equipment, etc. $ 1,051.34
Buildings and Permanent Improvements 4,258.31 5,309.65

Balance carried forward July 1, 1916 $236,727.04 31,452.40
TOTAL $268,179.44
Unpaid balance on loan carried forward $ 40,888.56

The following shows clearly in a graphical way the College finances for the year under consideration.
The above statement represents every cent available for the use of the College (including its contribution to public service.) The South Carolina Experiment Station receives $30,000.00 from the Federal Government, which can be used only for approved lines of agricultural research. The Extension Division, under the Smith-Lever Act, received $25,691.15 from the Federal Government, and $15,691.15 by Legislative appropriation, a total of $41,382.30, and in addition certain sums from counties and from the U. S. Department of Agriculture, but none of this money can be used for resident teaching or other collegiate work.

The money paid in by students for board, laundry, heat, light and water, medical attention and incidentals, is held in trust by the College for the use of the cadets, and none of it is used for College expenses.

It will be recalled that in January, 1916, with permission of the Legislature we borrowed $62,400.00, pledging all receipts from the fertilizer tax over $147,836.14 to the repayment of the loan. The loan was made at the low rate of 2.44 per cent. In July, 1916, the President of the Board of Trustees executed a renewal for the balance due of $40,888.56 at 4 per cent.

In accordance with our promise there was applied to our loan in payment on principal and interest all over $147,836.14 or $22,644.88. Of this amount $1,133.44 was paid as interest and $21,511.44 applied on the principal, leaving a balance due of $40,888.56.

It will be noted that while the College ended the year with cash on hand of $31,452.40, if balance due on loan had been paid there would have been an actual deficit of $9,436.16.

The College gets very little from the fertilizer tax during the first six months of the fiscal year (July 1 to December 31) and hence, since not required, it was deemed not wise to make further payment on the loan until again the fertilizer tax reached the prescribed figure of $147,836.14.

In view of the starvation basis on which the College has been operated during the past two years, and the many needs of shops and laboratories it would be wise to ask the Legislature to allow the College at its discretion to defer further payments for five years. At the last session of the Legislature a bill intended to give this extension was passed, but was found de-
fective. An extension of time would not cost the State anything, since the College pays the interest charges, and yet such extension might enable the College to continue its scholarships and public work, some or all of which might otherwise have to be discontinued until better times.

If the payment of the balance due on the loan can be deferred it is likely that the fertilizer tax next year will be sufficient to operate the College without borrowing again.

To carry on the regular college budget and the public service requires in addition to its other routine sources of support, a fertilizer tax of approximately $200,000. It is likely that in the fiscal year 1916-17 the tax will reach that figure. However, it is doubtful if it will reach $240,886.56, the figure necessary to include the balance due of the loan.

The audit of the books and accounts of the Treasurer was made by Mr. L. A. Searson under the supervision of the State Bank Examiner. His report is attached hereto.

PART III. THE COLLEGIATE WORK

The Faculty:

The faculty as a whole is a well trained, loyal, enthusiastic body of men—a credit to any college. Its work during the past session deserves special praise. The ratio of teachers to students is approximately 1 to 13. At the best colleges it is not usually better than 1 to 12.

Standard of Admission:

The College makes no pretention to standards of admission impossible of attainment in the present state of development of our public schools. The entrance requirements for the past session were based upon the completion of ten grades in the average school.

At Clemson College "conditions" are not allowed. A student enters the Freshman Class and takes the full course of thirty hours per week or does not enter at all. The College prefers to be judged by its exit requirements rather than its entrance standards, although the latter are on a par with the possible requirements of other male colleges of the State. All must of
necessity take tenth grade pupils into their Freshman classes or close their doors.

This College prefers to have its usefulness to the State measured by the quality of its service and by its finished product, rather than by any arbitrary system of units.

The Clemson College catalogue is not an advertising document, but a plain and literal statement of facts. It is designed to give information to prospective students, not to solicit them. Already there are more applicants than can be accommodated.

Enrollment and Classification:

The total enrollment for the regular College session was 803, distributed as follows:

- In Agricultural courses: 52.4 per cent.
- In all other courses: 47.6 per cent.

The percent of students in the four-year Agricultural Courses is probably larger than in any Agricultural and Mechanical College in the United States.

The division of the total enrollment, by classes, is as follows:

- Seniors: 120
- Juniors: 120
- Sophomores: 223
- Freshmen: 286
- One Year Agricultural Course: 41
- Special and Irregular Students: 13

Total during regular session: 803
Summer School students: 148

Total enrollment for year: 951

The following data is taken from 785 of the regular students above:

1. Average age, 19.3 years.
2. Average height, 5 feet, 9½ inches.
3. Types—blondes 350, brunettes 435.
4. Number living in the country and in small towns and villages, 71 per cent.
5. Number born in the "country", 64 per cent.
6. Number who have lived on the farm, 69.3 per cent.
7. Average years on the farm of the 69.3 per cent., 14.3 years.
8. Number whose parents are now or have been farmers, 81 per cent.
On May 26 we awarded certificates to 36 young men who had completed the One-Year Agricultural Course, and on Commencement Day diplomas to 118 graduates, distributed as follows:

Agricultural .................................................. 63
Electrical and Mechanical Engineering .................. 27
Textile Engineering .......................................... 11
Civil Engineering ........................................... 11
Architectural Engineering .................................. 3
Chemistry ..................................................... 3

Two were awarded certificates on completion of the special two-year course in Textile.

Certificates of recognition of meritorious agricultural service were awarded to Mr. J. C. Stribling, of Pendleton, and to Mr. D. R. Coker, of Hartsville.

The total enrollment of the College since its beginning is 13,941 students, and the total number of graduates, 1,237, distributed as follows:

In the Agricultural Courses .................................. 549
In the Mechanical-Electrical Engineering Course ...... 397
In the Civil Engineering Course ............................ 139
In the Chemistry and Geology Course ..................... 13
In the Course of Textile Industry ......................... 130
Chemistry ..................................................... 4
Architectural Engineering ................................... 5

Total graduates ............................................... 1,237

Cost Per Student:

The operating cost of the College was $145,697.24. This includes everything except expenditures for buildings and permanent improvements (which are not chargeable against any one student body), and the cost of Public Service, which is rendered to a different constituency. Dividing the cost of operation by the number of students (803), we have the cost per student to the State, $181.44, a figure probably as low as at any Agricultural and Mechanical College in the nation.

Changes in Courses, etc.:

Beginning with the session of 1916-17, post graduate work will be given in certain divisions of the Agricultural Depart-
ment, although Master's degrees will not yet be awarded.

Also acting with your approval of such a policy, at least one year of practical farm experience will be required of all graduates in agricultural courses. Students who have not had this experience prior to entering college, will be required to take at the College during vacations three months before reaching the Junior Class, and as many Saturday afternoons during the Junior year as may be considered necessary. Two summer vacation periods spent in practical work on approved South Carolina farms may be accepted in lieu of the practical work otherwise required at the College.

Resignations:


In the Engineering Department: G. C. Lang, Instructor in Architectural Engineering, Sept. 1, 1915.

In the Academic Department: F. F. Covington, Instructor in English, Sept. 1, 1915.

In Chemistry Department: W. T. Pierce, Assistant Professor of Chemistry, Sept. 1, 1915.

In the Treasurer's Office: S. C. Keys, Bookkeeper, April 30, 1916.

In the Military Department: E. B. Elmore, Clerk Commandant's Office, April 17, 1916.

Appointments to Fill Vacancies:


In the Engineering Department: Albert Simons, Instructor in Architectural Engineering, Sept. 1, 1915.
In the Academic Department: J. E. McDaniel, Instructor in English, Sept. 1, 1915.

In the Military Department: S. C. Kennett, Clerk to Commandant's Office, April 18, 1916.


Promotions:

In Agricultural Department: W. B. Aull, Jr., from Assistant in Botany, Experiment Station, to Assistant Professor of Bacteriology (partly a new position), Dec. 15, 1915; F. G. Tarbox, from Asst. Agronomist, Experiment Station to Corn Breeding Expert, Extension Division, July 1, 1915.

In Treasurer's Office: F. L. Carroll from Assistant Bookkeeper to Bookkeeper, May 1, 1916; E. B. Elmore from Clerk Commandant's Office to Assistant Bookkeeper, May 1, 1916.

New Positions:

In the Experiment Station: R. C. Faulwetter, Asst Botanist and Plant Pathologist, Salary $1,800.00, Jan. 1, 1916.

Leaves of Absence: (Without Pay)

R. B. Lowry, Assistant in Agronomy and Farm Machinery, to Sept. 1, 1915; to Sept. 1, 1916.

Deaths:

M. B. Hardin, Emeritus Professor of Chemistry and Consulting State Chemist, April 26, 1916.

Review of Department:

All of the departments are feeling the need of new and additional equipment, which on account of our financial condition has been necessarily denied during the past few years. Additional instructors and class rooms are also needed.

Engineering Department: The work of this department has been up to the usual standard of excellence. Without Scholarships, it attracts its full proportion of the best and most earnest students in the College. In June, forty-one young men gradua-
ted in the Electrical-Mechanical, Civil and Architectural Engineering Courses.

The equipment of the Mechanical and Electrical Laboratories to which nothing has been added for the past four years, is getting seriously out of date, and its condition is becoming the subject of complaint by students and instructors. Just as soon as possible, we must make substantial additions to these two laboratories in particular, or suffer serious loss in the prestige and efficiency of our engineering work.

The fifty-foot addition to the Engineering Building begun the year the war broke out is greatly needed but awaits better financial times.

In the main, the faculty of this department is strong and progressive.

Textile Department: In this department eleven young men graduated, twenty-two received textile instruction, and 102 instruction in cotton grading. In addition, Prof. Doggett taught a class of seven Chemistry students in German.

The demand for Textile graduates continues to exceed the supply.

In addition to the work of the regular session, this Department gave instruction in Cotton Grading to a large number of students of the Summer School. In fact, the course in Cotton Grading was the most popular single course.

The exhibit of the Greenville Textile Exposition resulted in the following gifts of machines by manufacturers: A Stafford "Ideal" loom, a Stafford bag loom, a Universal bobbin winder, a Franklin dyeing machine, and numerous small equipment and supplies.

Textile Extension Work has been carried on at Pacolet and Newry by lectures on Textile subjects.

The Director reports efficient and enthusiastic work on the part of his entire staff of teachers.

Chemistry Department: The work of this department has gone forward smoothly. In addition to the Chemistry given to all regular students, three young men graduated from this department. Of the work of the Department, Director Brackett says: "The efficiency of the working force of this department leaves nothing to be desired. All the members have been loyal,
and have done their work with keen interest and conscientiousness."

Mr. Pennell, whom I appointed at the opening of the fertilizer season, has had charge of the preparation of all fertilizer samples, thus remedying a weak point in organization. The total number of samples handled this year was 2,370 as compared with 1,724 in 1914-15. The official samples were 30 per cent. above 1914-15, and the farmers' samples 112 per cent. above.

The equipment of this Department is excellent, and taking it as a whole, its staff is one of the strongest in the College organization.

*Academic Department:* It is still necessary in this department to give some work which should be given in the high schools. It is our experience that on the whole, the work of the high schools, particularly in mathematics, is not of a thorough character. The academic department comes most closely in touch with the work of the public school system of the State.

The work in the department shows, I think, a continued slight improvement. The work in the English and Physics particularly, has in recent years been extended and improved. Some recent changes in the curriculum in the mathematics department, and other changes which go into effect next session, have improved and will still further improve the character of instruction. No especial changes are reported in the division of History and Political Economy.

*The Military Department:* The detail of Lieut. J. M. Cummins expired by statutory limitations on February 17, 1916, and Lieut. Ralph A. Jones was appointed by the War Department to succeed him.

Lieut. Cummins left with the appreciation and the regret of the student body and faculty. I regard him as one of the most efficient men I have ever seen in any position. During his four year detail he developed and maintained discipline to a very high standard.

The Encampment held in April in Anderson was successful in every way. Not only did it afford valuable military instruction, but it brought great credit to the College because of the good behavior of the cadets.
Two Colt's Automatic Machine Guns were added to the equipment of the department on March 15th, and a Machine Gun Platoon will be organized next session.

The Cadet Regulations need a thorough revision and a committee of three trustees, the Commandant, and President was appointed to do this work.

The Cadet Corps was inspected on April 11th by Capt. S. B. Schindel representing the War Department, and a very favorable report was received. (See details under "Inspections.")

Agricultural Department: Out of a graduating class of 118, sixty-three were from this department. Probably no other Agricultural and Mechanical College in the nation has so large a percent of its graduates in full four-year courses in agriculture. In addition to these graduates, thirty-six young men completed the "One Year Agricultural Course." Dean Harper in his report covering the work and needs of the department says in part:

"The work of this Department for the past session has been exceptionally good. Considering everything, I believe this has been the most successful year the Agricultural Department has ever experienced. The members of the Agricultural faculty are hard working, conscientious teachers, and have assiduously endeavored to promote the welfare and interest of the students. Our agricultural courses are being improved from year to year and the elective system, introduced two years ago, has been a growing success.

"The excellent training that we are giving at this institution is recognized by other institutions in the South. As an evidence of this there is a growing demand for the graduates of this college.

"This Department is very much in need of more class room and laboratory space. As soon as the finances of the College will permit, it will be necessary for us to add to our equipment. We are greatly in need of more assistance in the Divisions of Horticulture and Botany. We are also badly in need of farm machinery to give the proper instruction to the students who are going back to the farm. Our most crying need is an Agronomy laboratory. Our Agronomy work would also be very much improved if we could have a well equipped farm of small
size where the students could be drilled in farm practice with various implements."

A very interesting report of Director Harper covering the work at the Pee Dee and Coast Experiment Stations, and on the College Farm is attached to this report.

**The Treasurer's Office:**

No feature of the College work or management is more efficient or receives more recognition and praise, than does the work of this office.

The promotion of Mr. F. L. Carroll to the position of Bookkeeper to succeed Mr. S. C. Keys, and the selection of Mr. E. B. Elmore to fill Mr. Carroll's place have proved quite satisfactory.

The volume of work in the Treasurer's office has been greatly increased by the large number of vouchers and other papers to be handled for the Extension Division, which disburses the Smith-Lever Funds.

No effort is spared by Mr. Evans and his assistants to make their records full and absolutely correct.

The books and accounts of the Treasurer for the year 1915-1916 were audited by Mr. L. A. Searson, a well known accountant, under the supervision of the State Bank Examiner, and his report is attached hereto.

**The Library:**

It gives me pleasure to report a growing use of the Library by the cadets. We now have 17,195 bound volumes, 10,000 government publications, and 15,000 pamphlets. Few books have been added during the past few years. Students are encouraged by the Librarian and her Assistant to use the Library for research and reference, thus familiarizing them with the methods of obtaining information.

**Public Utilities:**

Under this heading are included the work of Construction and Repairs, Heat, Light and Water, and Sewerage Systems, the College Printery, and Campus and Roads. These represent, as it were, the municipal features of the College.
The Construction and Repair Division is under the supervision of Mr. Joseph Hewer. Prof. R. E. Lee is the Architect of the College. This Division is charged with the upkeep of all the buildings of the College property, and the erection of all but the most important buildings.

The Heat, Light and Water Division, under the supervision of the Engineering Department, maintains the lighting and power service, furnishes the necessary steam for heating the barracks and college buildings, and operates the pumps that distribute the water supply. Water and light are furnished members of the faculty and charged for on a meter basis. On account of the addition of the new Y. M. C. A. Building, an additional boiler will have to be installed next session.

The question of a decent water supply is becoming more pressing with every passing year. As our consumption amounts up to over 120,000 gallons daily, we are having to pump more and more from the Hunnicutt-branch station, a source of supply annually condemned by the State Board of Health.

It will cost $5,000 to put in the necessary auxiliary plant and filter beds to get a water supply of satisfactory and safe quality.

The College Printery is well equipped with a linotype, cylinder press and other standard apparatus. As an evidence of what can be done, it might be cited that the College catalogue and this report are printed here. The plant is leased to a manager who works under the general supervision of the College.

The beauty of the Campus has been greatly enhanced by the building of cement walks and good roads. The College has no greater asset than its campus, and much more can well be expended in its development. The campus now constitutes a part of the equipment of the Horticultural Division, and is being developed under the expert supervision of Prof. Newman.

PART IV. THE STUDENT INTERESTS

The health, subsistence, recreation and religious life of the students is of no less importance than the fiscal and academic phases of college administration. Therefore, a consideration of these matters has a proper and important place in this report.

On account of the advantageous contracts, made before the recent rise in prices, we were able to maintain the standard of
subsistence furnished the cadets without a deficit and without increase in charge for board. This will not likely be possible next session, 1916-17.

The living conditions in Barracks were in the main quite satisfactory. My relations with the students, both personal and official, were very pleasant. In spite of my being away from the College quite a good deal on official business, and the many other demands made on my time, I have records on file of 1,096 conferences. Of course, many others were not recorded.

Every reasonable effort is made to remove temptation to spend money. Civilian clothes are barred at all times while students are at College, and leaves of absence that involve parents in expense, are limited as far as practicable. Textbooks, and other necessary articles are sold in the Cadet Exchange at about cost, plus 5 per cent.

**Expenses:**

Each regular student who is in College for a session pays the following amounts to the Treasurer to cover his living expenses:

- Uniforms (3 coats, 2 trousers, 1 cap, 1 overcoat) $45.10*
- Breakage fee (refunded if not required) 3.00
- Medical fee 6.00
- Matriculation and Incidental fee 5.00
- Board (9 months at $8.00 per month) 72.00
- Laundry (9 months at $1.00 per month) 9.00
- Heat, light and water (9 months at $1.00 per month) 9.00

**Total for session of 9 months** $149.10**

Average per month $16.56

Expenses of students in the One-Year Agricultural Course, October 1, to June 1, are as follows:

- Uniforms (2 coats, 2 trousers, 1 cap) $28.05
- Breakage fee 3.00
- Medical fee 6.00
- Incidental and matriculation fee 5.00
- Board (8 months at $8.00 per month) 64.00
- Laundry (8 months at $1.00 per month) 8.00
- Heat, light and water (8 months at $1.00 per month) 8.00

**Total** $122.05**

Average per month $13.56

* Usually less than half this amount after the first session.
** Students who are able, pay $40.00 additional for tuition.
It has been shown in this report that at Clemson College the cost to the State per student is $181.44. This is significant of economy. But a fact of still greater importance to the patron is the cost to him. I doubt if anywhere in the nation can a technical college be found where the cost to the parent, as well as to the State, is as low as it is at Clemson.

**Cadet Funds:**

The following is a statement of receipts and expenditures for the fiscal year 1915-1916:

### Cadet Funds

<table>
<thead>
<tr>
<th></th>
<th>Receipts</th>
<th>Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subsistence</td>
<td>$61,799.06</td>
<td>$61,484.95</td>
</tr>
<tr>
<td>Laundry</td>
<td>8,726.84</td>
<td>8,134.25</td>
</tr>
<tr>
<td>Hospital</td>
<td>4,786.70</td>
<td>4,395.65</td>
</tr>
<tr>
<td>Heat, Light and Water</td>
<td>6,609.19</td>
<td>6,597.83</td>
</tr>
<tr>
<td>Incidental</td>
<td>4,328.00</td>
<td>4,541.02</td>
</tr>
<tr>
<td>Breakage</td>
<td>2,570.37</td>
<td>1,205.52</td>
</tr>
<tr>
<td>Uniforms</td>
<td>27,967.95</td>
<td>27,947.05</td>
</tr>
</tbody>
</table>

**Totals** --------------  $116,788.11  $114,306.27

Net Balance to Credit of Cadet Account -------$ 2,481.84

Not a dollar of the above receipts is used for any College purpose. The money paid in is regarded as trust fund and is expended entirely for the living and other expenses of the cadets. Any balance that may accrue is either carried forward to the credit of the next year or used to make improvements in the equipment and facilities of service to the students.

**Health:**

The health of the cadets has been remarkably good. There have been no deaths and only a few cases of serious illness. There were no contagious outbreaks.

The Board of Health in 1914 so severely condemned our present Hospital that at your July, 1914 meeting an appropriation of $15,000 was made to build an adequate and up-to-date Cadet Hospital. The brick were bought, but unfavorable financial conditions compelled a postponement of the work of erection.
Religious Influences:

Four churches are located near the College and the cadets worship in these every Sunday during the session. Chapel services are held in Memorial Hall every morning except on Saturday. The College contributes $500.00 to the salary of each of the four resident ministers, and in return they are expected to do pastoral work among the cadets in Barracks. The College also contributes $500.00 to the salary of the Y. M. C. A. Secretary. Chapel service every morning and church attendance every Sunday are required of every cadet.

Recreation:

Play is just as necessary as work in a successful college course. The college plant must include along with class rooms and laboratories proper facilities for rest and recreation. The Y. M. C. A. building with its swimming pool, gymnasium, bowling alleys, etc., and the new athletic field furnish ample facilities for healthful exercise. The large auditorium in the Y. M. C. A. building is utilized to give lectures, musicales, moving picture shows, and the like. Among the principle lines of student activities may be mentioned the student publications: "The Tiger", "The Chronicle", "The Agricultural Journal", and "Taps"; the six literary societies; the Thalian and the Class Dancing Clubs; athletics, including inter-collegiate baseball, football, basketball, tennis and track.

PART V. THE PUBLIC SERVICE

The work of Clemson College is not confined to resident teaching. In fact, an Agricultural College is a great public service corporation that must protect and serve the agricultural and industrial people of the State as well as merely educate their sons.

The Public Work of the College includes regulatory work, such as is required under the laws governing the movements of live stock, the control of contagious live stock diseases, the protection of buyers against diseased nursery stock and against plant diseases and insect pests, and the inspection and analysis of commercial fertilizers. This public work also includes the
diffusion of agricultural information to the farmers and country children, stimulation of the schools by the offer of competitive scholarships, assistance in the school building program of the Department of Education by furnishing plans, etc., and in general is an effort to carry the benefits of the College to the largest possible number of agricultural people.

Under the present policy of cooperation, the U. S. Department of Agriculture is doing all of its extension work in the State in cooperation with the Agricultural College. If the College is to retain its leadership in agricultural matters, it must be prepared in attitude, in men and in money to take its full share of the load in double harness.

The College realizes the obligation that rests upon it to serve the agricultural people of the State. In 1908 when the fertilizer tax was $168,115.28, the expenditures for public service was $56,366.12. This year, 1915-16, with a fertilizer tax of approximately the same figure, the expenditure for public service increased to $85,402.95. Meanwhile the College has increased its student body by over one-third, and nearly doubled the College plant.

It has been stated elsewhere in this report that $85,402.95, over 57 per cent. of the available fertilizer tax, was expended for Public Work not directly contributory to the collegiate work of the institution.

For the sake of emphasis, the cost of the Public Work for the fiscal year which closed June 30, 1916, is given in detail below:

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Fertilizer Inspection and Analysis</td>
<td>$25,467.02</td>
</tr>
<tr>
<td>2. Extension and Demonstr. Work</td>
<td>$20,602.20</td>
</tr>
<tr>
<td>3. Beneficiary Scholarships and Adv.</td>
<td>21,459.63</td>
</tr>
<tr>
<td>4. Pee Dee Experiment Station</td>
<td>2,364.42*</td>
</tr>
<tr>
<td>5. Coast Experiment Station</td>
<td>4,476.55*</td>
</tr>
<tr>
<td>6. Veterinary Inspection</td>
<td>4,767.96</td>
</tr>
<tr>
<td>7. Crop Pest Commission</td>
<td>2,185.22</td>
</tr>
<tr>
<td>8. Co-operative Experimental Work</td>
<td>1,294.07</td>
</tr>
<tr>
<td>9. Miscellaneous Public Work</td>
<td>2,785.88  59,935.93</td>
</tr>
</tbody>
</table>

Total----------------------------------------$85,402.95

* (Plus receipts from sales.)
1. **Fertilizer Inspection and Analysis:**

Under the State laws the Board of Trustees is charged with the inspection and analysis of all commercial fertilizers sold within the State. A Committee of the Trustees constituting the Board of Fertilizer Control gives special oversight to this duty. Its personnel is Messrs. R. I. Manning, (Chairman), J. E. Wannamaker, S. T. McKeown, and Alan Johnstone, (Ex Officio).

The work of inspection is under the immediate charge of Mr. H. M. Stackhouse, Secretary of the Board of Fertilizer Control, and the analysis is done under the supervision of Dr. R. N. Brackett, State Chemist. A full report of each of these officers accompanies this report.

Mr. Stackhouse reports a total sale within the State of 541,886 tons of fertilizers other than cotton seed meal, and 128,724 tons of cotton seed meal, an increase of barely 13 per cent. above the figures of 1914-15. The total number of “official samples” collected was 1,808 and of “farmers samples” 426, a total of 2,234 as compared to 1,659 samples for the year before.

Regarding the fertilizer business of the year, Mr. Stackhouse makes the following interesting statement:

“Due to the prevalence of war conditions, the trade in fertilizers has been more irregular and exacting than any former year. The inability of manufacturers to secure the usual supply of sacks, and the scant supply of potash made it impossible for them to meet former legal requirements as to grades, brands, etc. Only by the special acts of the last Legislature was the trade and Department able to meet the conditions thus imposed. Then too, a feeling of uncertainty on part of the buyers was created, so that the fertilizer trade in this State only exceeds by 13 per cent. that of last year. The demands for analysis, however, were nearly doubled. With the efficient aid of Director Long’s agents in each county, more than twice the farmers availed themselves of the special law made for their benefit in the matter of “farmers’ samples.”

The dual use of cotton seed meal for feed and fertilizer leads to confusion and loss to the farmer. Much low grade meal is shipped into the State with feed stuff guarantees. The farmer often buys this meal for fertilizer purposes, paying the price of standard meal.

The analytical work has been done in a prompt and efficient manner.
During the year ending June 30, 1,598 official samples of fertilizers were analyzed as compared with 1,229 samples for the previous year, being an increase of thirteen per cent.

An examination of the report of the Chief Chemist will show that there was also an increase this year over last year of about 112 per cent. in the number of "farmers' samples" analyzed. There was furthermore an increase of 17 per cent. in the number of samples other than fertilizers which were sent in for analysis and examination.

It is interesting to note that, on account of the continued shortage in potash, there was a large number of samples on the market furnishing phosphoric acid and ammonia only. 550 such samples were analyzed.

The large number of low grade cotton seed meals found during the season is noteworthy, and is probably due to the thoroughness with which the linters are being removed from the seed and the consequent difficulty of completely separating the hulls from the meats.

Of 511 samples of mixed fertilizers examined as to availability of nitrogen, only 38, 7.44 per cent. fell below the requirement of the College in that particular. These results show that the manufacturers are using ammoniates of good quality in their mixed goods.

2. Extension and Demonstration Work:

During the fiscal year the College supplemented the funds derived from State and Federal sources for this work by the amount of $20,602.20. A full account of the work of the Extension Division will be found in Part VI. devoted to the cooperative work of the College and the U. S. Department of Agriculture.

3. Crop Pest Commission's Work:

The report of the State Entomologist and State Pathologist, who work under the supervision of the Crop Pest Commission, form a part of this report. Prof. Conradi's discussions of two new importations, the "Cottonny Cushion Scale," and the "Argentine Ant," both of which appeared in Charleston, the latter in the historic cemetery of St. Michael's Church, are most interesting. A reading of the report is also of great interest to
those concerned with the shipping or importation of nursery stock.

4. State Veterinary Inspection:

The report of the State Veterinarian is made a part of this report. This report shows that glanders has practically disappeared from the State. Only two cases have been found the past year, although a number of animals were tested for the disease. Our laws covering the importation of mules and horses brought into the State are largely responsible for the absence of this fatal disease. It is interesting in this connection to note that 18,207 horses and mules were imported into South Carolina this year as compared with 1,500 last year, and 29,068 the year before the European War. In all, the Division received health certificates covering the importation of 18,207 horses and mules, 2,063 cattle, 4,312 hogs, 293 sheep and 5 goats. Of 3,000 head of cattle tested for tuberculosis, 326 were condemned and destroyed. Over 5,000 doses of black leg vaccine and over 250,000 cubic centimeters of hog cholera vaccine were prepared and shipped to citizens of the State. In connection with the control of hog cholera the State Veterinarian makes acknowledgement of the valuable assistance rendered by the County Demonstration Agents under Mr. Long.

5. Branch Experiment Stations:

It is the purpose of the College to have three Experiment and Demonstration Stations in addition to the parent station at Clemson. One is already located in the coastal plain near Summerville, one in the Pee Dee Section at Florence, and another is later to be established in the Sand Hill Section of the State. Since the Station at Clemson is in the red clay lands of the Piedmont, it is expected that the four stations will be fully representative of the soil and climatic conditions of the State. To multiply these stations unduly would be too expensive, and would dissipate the energies of our Experiment Station Staff.

Splendid scientific work is being done at both branch stations, work of great value to the sections of the State in which the stations are located.

It is to be greatly regretted that the financial outlook puts
the establishment of the Sand Hill Station into the distant future.

An interesting report of the work of these stations is attached to this report and commended to your consideration.

6. Agricultural and Textile Scholarships:

In obedience to law, the college offers 168 four-year scholarships in agriculture and textile engineering, and fifty-one one-year scholarships in agriculture for young farmers over eighteen years of age. Of the total scholarships in force, session 1915-1916, 127 were held by farmers' sons, and 65 by the sons of clerks, lawyers, ministers, merchants, etc.

No appropriation is made by the Legislature to cover the cost of these scholarships, now amounting to about $22,000. The cost comes out of the current income to the College from the fertilizer tax.

In the 16 years since the establishing of these scholarships the College has paid out approximately $198,330.99. No doubt this expenditure was at first justified by turning young men to the agricultural courses at a time when these were not popular. But to-day the opportunities ahead of agricultural graduates are so attractive, and the demand for trained experts so great, that these courses no longer need to be subsidized.

If it be admitted that a technical education adds to a young man's earning power, (and surely such an education represents a capital of at least $20,000.00) then any young man should be willing to accept a loan rather than a gift of $400.00 to help him to obtain it. The history of such loans elsewhere is that they are eagerly sought by the really needy, and invariably repaid.

If the $22,000 per year could be loaned instead of given away to scholarship students, in a few years the College would be relieved from an interminable drain upon its resources, and more young men could be aided and help furnished where help is really needed. Many who are willing to accept a gift would be unwilling to assume a debt for their education, and hence would not compete on examination with those whose only chance to get an education depends on their ability to get help. These scholarships benefit only about one-fourth of the students.
of the college, and because of the heavy cost to the college, the scholarship students along with the other three-fourths of the students are being deprived of additional equipment and facilities whereby the value of their precious four years in college would be enhanced. To give help to one-fourth of our students at the expense of all is a phase of the question which a reduced financial support immediately suggests. If the scholarships are to be continued they should be supported by a direct appropriation. The college is no longer able to bear the burden without injustice to its student body as a whole.

The College will likely apply to enter the "Reserve Officers Training Corps." In that case during two years of the college course a student willing to take a small additional amount of military training, would receive practically $100.00 per session. This in itself would render less necessary a continuance of present scholarship benefits.

7. Miscellaneous:

In addition to the principal lines of public service already enumerated and described, the college, under the state law, manufactures and sells at cost state flags. A suitable equipment to comply with the law has been installed in the Textile Department.

In the Drawing Division of the Engineering Department, plans for rural schools are prepared for the use of the State Department of Education.

The four-week Summer School is held at the College in August. Last session there were 148 in attendance.

PART VI. COOPERATIVE WORK WITH THE U. S. DEPT. OF AGRICULTURE

Several divisions of the Agricultural Department of the College are working in cooperation with Bureaus of the Federal Department as follows:

(a) With Bureau of Plant Industry—Division of Botany:
Cotton wilt work, root knot investigations, plant disease surveys.
(b) With Bureau of Forestry—Division of Botany:
Forestry experimental work at Coast Experiment Station.

(c) With Bureau of Entomology:
Slender wire worm investigations.

(d) With Bureau of Plant Industry—Division of Agronomy:
At Pee Dee Station: Sweet potato investigations, breeding of peanuts, testing varieties of peanuts, fertilizer experiments with peanuts, methods of establishing bermuda sods.

The principle lines of cooperation are however in Extension and Demonstration Work, and in Cattle Tick Eradication. These two important projects involve the necessity of appropriations by the General Assembly, and will therefore be discussed at greater length.

Cooperative Extension and Demonstration Work:

The report of the Director of Extension, Mr. W. W. Long, is attached to this report and gives a complete outline of the activities of his Division. It shall be my purpose to show the organization and fiscal side of the extension and demonstration work under the Agricultural Extension Act.

The Agricultural Extension Act, commonly and properly styled "The Lever Bill," received the approval of the President of the United States on May 8, 1914, and thus became a law.

The principal terms of the Act are in brief as follows:

1. Only a college receiving the benefits of the Land Grant Act of 1862 can be selected by the Legislature to supervise the expenditure of the funds arising under the Act. Clemson College and the negro college at Orangeburg are the only institutions in South Carolina eligible to administer the funds.

(The Legislature has designated the Clemson Agricultural College to carry on this work.)

2. The funds arising under the Act cannot be used for educational work done at the College, but can be used only in giving instruction and practical demonstrations in agriculture and home economics to persons not attending the College. The College is merely the agent to administer the fund—not the beneficiary of it.

3. For the maintenance of the work, there is permanently appropriated $480,000 per annum, or $10,000 for each State which accepts the provisions of the Act. In addition, there is
appropriated $600,000 for the second fiscal year of operation, and for each year thereafter for seven years $500,000 additional, until a total of $4,100,000 is reached, which, with the $480,000, makes a total of $4,580,000, and continues as a permanent annual appropriation. Unlike the initial appropriation of $480,000, these additional appropriations are not equally divided among the States, but are to be allotted annually to each State in the proportion which its rural population bears to the total rural population of the United States. They are also conditional upon the provision by the States of an equal sum for maintenance of the work.

For South Carolina, which gets 2.61 per cent. of the additional appropriation, the Act would provide approximately the following funds:

<table>
<thead>
<tr>
<th>Year</th>
<th>Federal Appropriation</th>
<th>State Appropriation</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1914-1st</td>
<td>10,000.00</td>
<td>00,000.00</td>
<td>10,000.00</td>
</tr>
<tr>
<td>1915-2nd</td>
<td>25,691.25</td>
<td>15,691.15</td>
<td>41,382.30</td>
</tr>
<tr>
<td>1916-3rd</td>
<td>38,767.11</td>
<td>28,767.11</td>
<td>67,534.22</td>
</tr>
<tr>
<td>1917-4th</td>
<td>51,843.07</td>
<td>41,843.07</td>
<td>93,686.14</td>
</tr>
<tr>
<td>1918-5th</td>
<td>64,919.03</td>
<td>54,919.03</td>
<td>119,838.06</td>
</tr>
<tr>
<td>1919-6th</td>
<td>77,994.99</td>
<td>67,994.99</td>
<td>145,989.98</td>
</tr>
<tr>
<td>1920-7th</td>
<td>91,070.95</td>
<td>81,070.95</td>
<td>172,141.90</td>
</tr>
<tr>
<td>1921-8th</td>
<td>104,146.91</td>
<td>94,146.91</td>
<td>198,293.82</td>
</tr>
<tr>
<td>1922-9th</td>
<td>117,222.87</td>
<td>107,222.87</td>
<td>224,445.74</td>
</tr>
</tbody>
</table>

4. The Act further states that the extension work authorized is to be carried on in such manner as may be mutually agreed upon by the Secretary of Agriculture and the Colleges. Before the funds appropriated become available, plans for the work must be submitted to the Secretary and receive his approval.

The Trustees of Clemson have entered into an agreement with Winthrop College, whereby that institution will become a co-agent to administer the home economics work and spend thereon 25 per cent. of whatever funds result from appropriations made by the Legislature or other agency than Clemson College.

In addition to the funds provided under the Extension Act, the U. S. Department of Agriculture contributes liberally from its funds, and a small additional amount is contributed by counties and chambers of commerce.
The first appropriation made by the Legislature was at the 1915 session, $15,691.00. This fund was available during the fiscal year, July 1, 1915 to June 30, 1916, the period covered by this report. The second appropriation, $31,380.00 made at the 1916 session, will be used during the fiscal year beginning with July 1, 1916. This second appropriation was $2,612.89 more than was required under the terms of the Lever Act, an error having been made by me in reporting the amount to the Ways and Means Committee. The small additional amount can be used to very great advantage, but if the Legislature thinks the mistake should be corrected, the excess amount can be deducted from the amount required under the terms of the Act for this year.

The following is a complete financial statement for the fiscal year July 1, 1915 to June 30, 1916.

RESOURCES

1. Federal Smith-Lever Fund .................................. $25,691.15
2. State Smith-Lever Fund ................................... 15,691.00
4. Clemson College Contribution ............................... 20,602.20
5. County Appropriations, etc. ............................... 5,569.04*

Total ........................................................ $110,150.77

DISBURSEMENTS

Summary of Expenditures by "Projects" Showing Sources of Funds

<table>
<thead>
<tr>
<th>Projects</th>
<th>Total</th>
<th>From Smith-Lever</th>
<th>From State</th>
<th>From College</th>
<th>From Dept. Ag. (Counties)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Administration ..................</td>
<td>$18,718.62</td>
<td>$3,477.69</td>
<td>$1,274.12</td>
<td>$6,767.27</td>
<td>$2,169.54</td>
</tr>
<tr>
<td>2. Print'g &amp; Distrib. of Publications</td>
<td>2,924.60</td>
<td>1,284.55</td>
<td>738.10</td>
<td>603.95</td>
<td></td>
</tr>
<tr>
<td>3. County Agents ....................</td>
<td>63,369.77</td>
<td>9,194.46</td>
<td>6,537.44</td>
<td>11,681.06</td>
<td>30,387.77</td>
</tr>
<tr>
<td>4. Home Economics (Winthrop Col.)</td>
<td>13,325.14</td>
<td>4,514.06</td>
<td>2,813.81</td>
<td>8.50</td>
<td>6,188.77</td>
</tr>
<tr>
<td>5. Mill Village Work ...............</td>
<td>1,044.55</td>
<td>694.55</td>
<td>350.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Negro Wk (Colored Nor.&amp;Ind. In.)</td>
<td>2,005.75</td>
<td>472.50</td>
<td>302.50</td>
<td></td>
<td>1,230.75</td>
</tr>
<tr>
<td>7. Livestock ..........................</td>
<td>1,572.13</td>
<td>741.58</td>
<td>177.07</td>
<td>653.48</td>
<td></td>
</tr>
<tr>
<td>8. Dairying ..........................</td>
<td>1,947.01</td>
<td>1,250.64</td>
<td>449.13</td>
<td>217.24</td>
<td></td>
</tr>
<tr>
<td>9. Agronomy ...........................</td>
<td>1,499.19</td>
<td>770.71</td>
<td>687.50</td>
<td>10.98</td>
<td></td>
</tr>
<tr>
<td>10. Horticulture ......................</td>
<td>3,053.23</td>
<td>1,366.66</td>
<td>1,145.81</td>
<td>590.76</td>
<td></td>
</tr>
<tr>
<td>11. Poultry ............................</td>
<td>1,830.84</td>
<td>1,068.37</td>
<td>633.51</td>
<td>110.96</td>
<td></td>
</tr>
<tr>
<td>12. Marketing ...........................</td>
<td>1,367.39</td>
<td>802.05</td>
<td>565.34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Mill Village Work (J.L.Carbery)</td>
<td>703.95</td>
<td>33.33</td>
<td>16.67</td>
<td>743.95</td>
<td></td>
</tr>
<tr>
<td>14. Boy's Club Work ..................</td>
<td>1,976.60</td>
<td></td>
<td></td>
<td>1,976.60</td>
<td></td>
</tr>
<tr>
<td>Totals ..........................</td>
<td>110,150.77</td>
<td>$25,691.15</td>
<td>$15,691.00</td>
<td>$20,602.20</td>
<td>$42,597.38</td>
</tr>
</tbody>
</table>

* (Aiken, Anderson, Charleston, Chesterfield, Florence, Greenville, Greenwood, Marion, Marlboro, Spartanburg.)
### Summary of Expenditures by "Items" Showing Sources of Funds

<table>
<thead>
<tr>
<th>Items</th>
<th>Total</th>
<th>From Smith-Lever</th>
<th>From Federal</th>
<th>From State</th>
<th>From U.S.</th>
<th>From College</th>
<th>From Dept. Ag. (Counties)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Salaries</td>
<td>$90,121.47</td>
<td>$15,934.46</td>
<td>$12,610.55</td>
<td>$16,917.71</td>
<td>$39,089.71</td>
<td>$5,569.04</td>
<td></td>
</tr>
<tr>
<td>2. Labor</td>
<td>210.02</td>
<td>199.60</td>
<td>10.42</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Print'g &amp; Distrib. of Publications</td>
<td>2,924.56</td>
<td>1,284.55</td>
<td>738.10</td>
<td>601.95</td>
<td>28.42</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Stationery and Small Printing</td>
<td>392.55</td>
<td>278.66</td>
<td>76.08</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Postage, etc.</td>
<td>607.88</td>
<td>285.40</td>
<td>5.61</td>
<td>271.77</td>
<td>46.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Heat, Light, Rent, etc.</td>
<td>48.00</td>
<td>48.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Supplies</td>
<td>203.78</td>
<td>147.28</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Library</td>
<td>34.25</td>
<td>34.25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Tools, etc.</td>
<td>31.51</td>
<td>31.51</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Furniture and fixtures</td>
<td>633.74</td>
<td>500.74</td>
<td>133.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Scientific Apparatus, etc.</td>
<td>2.14</td>
<td>2.14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Traveling Expenses</td>
<td>15,260.83</td>
<td>7,003.17</td>
<td>2,127.76</td>
<td>2,725.78</td>
<td>3,404.12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>110,150.77</td>
<td>$25,691.15</td>
<td>$15,691.00</td>
<td>$20,602.20</td>
<td>$42,597.38</td>
<td>$5,569.04</td>
<td></td>
</tr>
</tbody>
</table>

The Extension Work is organized as a Division of the Agricultural Department, and Mr. W. W. Long is the Director of the Division. His entire staff of workers, including forty-four County Agents, is shown on Page 80 of this report.

As a leader of the Extension forces, Mr. Long has shown himself possessed of sound judgment, originality and tact, and he is a man of great zeal and consecration to the cause he serves. He has proved highly acceptable not only to the College, but what is equally important, to the farmers and business men of the State as well.

**Cattle Tick Eradication:**

This work was begun in the upper counties of the State in 1907. That year the Bureau of Animal Industry, United States Department of Agriculture, contributed $5,125.00 and the College $1,860.00, making a total of $6,985.00. From this small beginning the work has grown until in 1913 the Bureau was contributing $16,146.00 and the College $9,369.00. By April 1st, 1914, after seven years of effort, only about one-fourth of the State had been cleared of ticks.

In 1914 the Federal Department proposed a more active campaign than had been possible up to that time, and indicated a willingness to put up $30,000 or more if the State would provide a like amount. The College not having the funds to meet this proposition, carried the opportunity to the General Assembly, which in 1914 made the first appropriation of $30,000. In 1915 a second, and in 1916 a third appropriation of like amounts were made. The Federal Department more than carried out its part by expending in South Carolina in 1914 $23,143.00, and in 1915, $35,479.84. This calendar year, (1916) up to the time of writing this report, November 1st, the expenditure from
State funds is $25,193.93, and from Federal funds, $30,499.19.

The following statement shows the expenditures from various sources from 1907 to November 1, 1916.

**Expenditures for Tick Eradication in South Carolina**

<table>
<thead>
<tr>
<th>Year</th>
<th>U.S. Dept. of Agri.</th>
<th>Clemson College</th>
<th>State Appropria’n</th>
<th>County Appropria’n</th>
</tr>
</thead>
<tbody>
<tr>
<td>1907</td>
<td>$ 5,125.00</td>
<td>$ 1,860.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1908</td>
<td>15,207.00</td>
<td>4,535.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1909</td>
<td>19,367.00</td>
<td>8,524.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1910</td>
<td>15,915.00</td>
<td>9,960.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1911</td>
<td>12,674.00</td>
<td>10,051.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1912</td>
<td>14,537.00</td>
<td>8,308.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1913</td>
<td>16,146.00</td>
<td>9,369.00</td>
<td></td>
<td>1,083.00</td>
</tr>
<tr>
<td>1914</td>
<td>23,443.00</td>
<td>1,497.00</td>
<td></td>
<td>30,000.00</td>
</tr>
<tr>
<td>1915</td>
<td>35,479.84</td>
<td></td>
<td></td>
<td>30,000.00</td>
</tr>
<tr>
<td>1916</td>
<td>30,499.19</td>
<td></td>
<td></td>
<td>25,193.93</td>
</tr>
<tr>
<td>(to Nov. 1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

When the first State appropriation was made in 1914, the College entered into a memorandum of understanding with the Federal Bureau of Animal Industry for the joint conduct of the work.

Dr. W. K. Lewis, D. V. S., was selected as the joint representative of the College and the Bureau. No better choice of a leader could have been made. With tact and firmness, Dr. Lewis has carried the work forward and has gotten results unequalled in any other State. A full statement of the personnel of the tick eradication forces working in the State will be found on page 79 of this report.

The maps of progress which appear in Dr. Lewis’ report show more clearly than can any argument the desirability of continuing the tick appropriation. In one or two years more the State will be entirely free of ticks and the business of animal husbandry will then take its proper place in the diversified agriculture which must be practiced by our people when the boll weevil infests the State.
PART VII. THE PRESENT SESSION 1916-1917

The year covered by this report ended June 30, 1916. At this time, November 1st, we are in the midst of another session and another fiscal year. Perhaps a brief statement concerning the present session may be added to the full report of last session without impropriety.

Enrollment:

The demand for admission to the College was greater this session than ever before. After accepting 843, we have a waiting list the end of which we have not yet been able to reach. This increasing demand for admission will embarrass us more and more each succeeding year until we provide additional facilities, or eliminate a number of applicants by raising the standards of admission. With the great recent improvement in the rural schools, perhaps the latter would be the best present expedient. It would cost at least $200,000 to provide the necessary dormitory, shop, laboratory and other facilities necessary to enroll 1,000 students, a capacity we will be compelled to meet within the next few years. A possible raising of admission standards, tending to reduce the number of eligible applicants, would probably be more than offset by the financial inducements of the Federal Government open to students when the College establishes the Reserve Officers Training Corps. An explanation of the advantages accruing to the College and its students in this connection is made later in this report.

Vital Statistics:

The following data on 843 students enrolled in College this session will be of interest:

(1) Average age, 19 years, 5 months.
(2) Average height, 5 feet, 9 inches.
(3) Types—blondes 391, brunettes 455, or 53.7 per cent.
(4) Living in country and small towns, 600 or 71 per cent.
(5) Living in cities and towns over 2500 population, 246 or 29 per cent.
(6) Born in the country, 553 or 65.4 per cent.
(7) Averaging 14 years on the farm, 610 or 72 per cent.
(8) Sons of parents who are now, or have been, farmers, 706 or 83.5 per cent.
(9) 245 students now in college have had 338 brothers to attend, of whom 121 graduated.

Classification:

The 843 students who have been enrolled this session are distributed among the classes as follows:

- Seniors 111
- Juniors 150
- Sophomores 189
- Freshmen 332
- One Year Agricultural 32
- Irregulars 26
- Post Graduates 3

The distribution of students by courses is as follows:

- Agricultural courses 473 or 56.1 per cent.
- In all other courses 370 or 43.9 per cent.

Scholarships:

There are in effect this session 145 regular four-year county scholarships and 17 one-year scholarships from the State at large to fill county vacancies. There are also 24 scholarships in the “One Year Agricultural Course.”

These “One Year Agricultural Scholarships” given only to young farmers eighteen years old or over, partake of the nature of extension service, and I think they should be retained. The writer’s opinion in regard to the regular scholarships is fully set forth on pages 36 and 37 of this report.

Of the total number holding scholarships, 162 are taking agricultural courses and 24 textile courses. Under the law, not more than one man per county can take the textile course.

Of the total number holding scholarships, 133 or 71½ per cent. are farmers’ sons, and 53 or 28½ per cent. are sons of merchants, lawyers, etc. Some of the latter are in the textile course, for which mill experience rather than farm experience is desirable.
Free Tuition:

As a probable result of referring to the State Board of Charities and Corrections the question of financial eligibility, the amount paid in at the opening of the College by students in applying for free tuition was 84.1 per cent. greater than the amount paid in the session previous.

Three hundred and seventy-four students applied for free tuition, and were referred to the State Board of Charities and Corrections for examination. Of these, the Board recommended that 188 be not required to pay tuition, and that 156 be required to pay. The Board found that the parents of thirty other students were well able to pay, but under the ruling of the Attorney General were exempted because twenty-one years of age, and over. The total amount that will be collected from tuition this session will probably be $9,000 more than the average of previous sessions. An exact statement cannot be made until the fiscal year is closed, as the tuition is paid in four installments during the session.

At the opening of the session all who presented auditor's certificates of inability to pay tuition were exempted, pending a final determination of the question by the Board of Trustees. In all cases of adverse decision, the student affected will be required to pay the tuition or withdraw from College.

A Fiscal Statement:

The College entered this fiscal year, July 1, 1916, with cash on hand of $31,452.40, and with $40,888.56 still due on the loan of $62,400.00 made by authority of the Legislature to supplement the fertilizer tax that had been greatly reduced through the effects of the European War upon the agriculture of the State. During the first year of the war, 1914-15, the fertilizer tax dropped off $121,140.24 from the figures of 1913-14, and the second year, 1915-16, the year covered by this report, $104,981.48 from the same standard.

The first of these two years found the College with a reserve of $67,192.84 which had been husbanded up from previous years. With rigid economy and the cutting off of building and equipment, this reserve was made to cover the shrinkage,
and carry the College through 1914-15 without the necessity of borrowing.

With no substantial surplus on hand at the opening of the second year of the war, 1915-16, it was necessary either to drop most of the public work, ask for an appropriation from the Legislature, or get authority from the Legislature to borrow $62,400.

For twenty-four years the Trustees had not asked for or received a dollar by appropriation to supplement the fertilizer tax, the balance of which after paying the cost of inspection and analysis, was set aside by law to build and operate the College. Therefore no request for an appropriation was made, but a request for authority to borrow.

The Legislature readily granted permission to borrow the necessary $62,400.

Supposing that the European War would surely terminate within a year, the College pledged for the repayment of the loan all of the fertilizer tax over $147,836.14, an amount which added to the $62,400 represented the income from these sources necessary to carry out the usual program of College and public work.

With a continuation of the war, the College came to the 1916 Legislature praying that the terms of the agreement as to payment of the loan be deferred five years, the College of course to pay all interest charges. This prayer was granted. However, the act extending the time was found defective by the State Treasurer, and the terms of payment originally proposed were carried out.

Having the borrowed funds, it did not embarrass the College to pay the excess over $147,836.14 from the tax. However, this payment left us at the mercy of the next year instead of with a substantial balance to provide against contingencies. With a continuation of the war and the necessary period of readjustment, accompanying the coming of the boll weevil, I think it will be the part of wisdom to again ask the Legislature to extend for five years the time in which we are required to pay the balance due on the loan. If the fertilizer tax reaches unexpected heights within the five year period, gradual payment could be made without entirely putting aside things that are very necessary to be done.
Pressing Needs:

As before stated, the shops and laboratories are badly in need of additional equipment, and in some departments additional instructors are necessary to make the class work more efficient.

A cadet hospital and a satisfactory water supply are being urged upon us by the State Board of Health, and must be speedily provided. The cost of these will approximate $30,000.

A greatly needed addition to the Engineering Building stands partly completed awaiting a further expenditure of $6,000 to finish it. The Agricultural Building is now congested and additional class rooms and laboratories must soon be provided.

A College of this size without a gymnasium, when the physical side of the student may be given attention is an anomaly—such a feature is a real necessity, and yet the proper plant cannot be provided for less than $50,000.

There are many other needs, but I have listed only some that are most obvious.

The Reserve Officers Training Corps:

As referred to elsewhere in this report, Clemson College is eligible to enlist in the Senior Division of the Reserve Officers Training Corps, and to have established here such arms of the service as the War Department may approve.

The result of such a step would be to greatly increase in efficiency, although not in amount, the military instruction which the cadets now receive. The College would be entitled to receive three army officers and eight enlisted sergeants as military instructors. At present the instruction of over 800 men is given by a single officer. As an accruing benefit, the enlisted sergeants could be distributed through barracks and be of material assistance in maintaining order and discipline therein.

During the first two years, Freshman and Sophomore classes, a cadet would not assume any obligations or take any more military instruction than he now gets. He would receive each session free one uniform outfit, which would slightly reduce his aggregate necessary expenditure.

In the Junior and Senior years, a cadet could continue to
take three hours per week of military instruction as he does now, or at the beginning of the Junior year, if regarded as fit physically and otherwise by the College President and the Professor of Military Instruction, he could enter the Advanced Course, which would require one hour per week more military work during the Junior year, and two hours more per week during his Senior year. As a part of the course he would also be required to put in during his vacations two four-week camp periods under Federal supervision. At graduation he would be expected, though not required, to enlist in the Officers Reserve Corps for a period of ten years, during which time he would be subject to call for fifteen days of instruction during each year, and in case of war or threatened hostilities, he could be called into service, but only as an officer of the grade held in the Officers Reserve Corps.

As a compensation for these duties and obligations, a cadet choosing to take the Advanced Course would receive one complete uniform outfit per session, $9.00 per month as commutation of subsistence, and traveling and all other expenses to and while in camp during the four-week periods required.

If called on for the fifteen days service during his term of enlistment in the Officers Reserve Corps, he would receive all expenses and the salary and allowance of his rank as do army officers.

Also, after graduation from the Advanced Course, a cadet can if he desires, obtain an appointment as Second Lieutenant for six months for purposes of further instruction, with the pay of that rank amounting to $100.00 per month and allowances.

Aside from patriotic considerations, the Reserve Officers Training Corps places yet closer to every poor boy in South Carolina the possibilities and benefits of a technical education. It means that for two years, at least any student who is physically fit and otherwise satisfactory can obtain help practically equal to that now offered by State scholarships.

Conclusion:

This report will pass through your hands to the General Assembly of South Carolina, that Legislative body which has never yet in the history of the College extending now over twenty-seven years—passed a bill hostile or inimical to the interests of the institution. On the contrary, it has always
stood ready to give aid and constructive assistance to all worthy plans looking to increasing the usefulness of the College to the farmers of the State, and destructive assistance by defeating unwise measures which from time to time have been introduced before the body.

The College comes to the General Assembly in no means as a suppliant, but as a co-worker in a great constructive task.

It is not asking for any appropriation for the College itself, but expresses the hope that the appropriations of $30,000 necessary to continue the State-wide campaign of cattle tick eradication, and $41,843.07 to meet the provisions of the Lever Extension Act, will be made. These appropriations represent investments in the highest sense—not merely expenditures. They will bring definite and substantial returns in the increased prosperity of our agricultural people.

Respectfully submitted,

W. M. RIGGS,
President, Clemson Agricultural College.

Clemson College, S. C.
November 1, 1916.

P. S. As required by law, I present herewith a list giving names of students who pay tuition, those who do not, and those who hold scholarships.

I attach also the following exhibits:

(1) Report of Treasurer of the College.
(2) Report of the Auditor.
(3) Report of Board of Visitors.
(4) Report on Experiment Station.
(5) Report on Branch Experiment Stations.
(7) Report of the Secretary of the Fertilizer Board.
(9) Report of the State Entomologist and State Pathologist.
Report of The Treasurer For The Fiscal Year Ending
June 30, 1916

RESOURCES

Balance brought forward from June 30, 1915 $ 9,701.04

Income—

Privilege Fertilizer Tax $149,189.88
Morrill & Nelson Fund (U. S.) 25,000.00
Interest on Landscrip 5,754.00
Interest on Clemson Bequest 3,512.36
Tuition from Cadets 4,670.00
State Loan 62,400.00
Sales, Interest, Rents, Refunds 7,634.96

Total $258,161.20

EXPENDITURES

Public State Work—

CR.

Salaries, Labor, Coal, Materials, etc. $21,459.63
Fertilizer Inspection and Analysis 25,467.02
Coast Experiment Station 4,476.55
Co-operative Experiment Work 1,294.07
Crop Pest Commission 2,185.22
Extension and Demonstration Work 20,602.20
Miscellaneous Public Work 2,785.88
Pee Dee Experiment Station 2,364.42
Veterinary Inspection 4,767.96

Total $85,402.95

Additions to Plant—

Additional Shop, Library and Laboratory Equipment, etc. 1,051.34
Buildings and Permanent Improvements, etc. 4,258.31 $ 5,309.65

Unexpended—

Balance carried forward into July, 1916 $ 31,452.40

Total $267,862.24
The following is a more detailed statement, showing the Expenditures and Cost of the Public State Work, and each Department and Division of the College, under the items appropriated by the Board of Trustees:

**PUBLIC STATE WORK DEPARTMENT**

<table>
<thead>
<tr>
<th>Scholarship and Advertisements</th>
<th>$21,459.63</th>
<th>$21,459.63</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Analysis</td>
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<tr>
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<tr>
<td>Apparatus</td>
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<td>Chemicals</td>
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<tr>
<td>Gasoline</td>
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<td>Record-books, Postage, Stationery, etc.</td>
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<tr>
<td>Charcoal</td>
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<td></td>
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<tr>
<td>Incidents</td>
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<tr>
<td>Labor—Janitor</td>
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<tr>
<td>Extra Help in Laboratory and Office</td>
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<td>Additional Supplies, Labor, etc.</td>
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<tr>
<td>Internal Lab'y Changes and Additions</td>
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<td>$10,808.51</td>
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<td>Coast Experiment Station</td>
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<td></td>
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<td>Salary of Superintendent</td>
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<td>Forestry Experiments</td>
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<tr>
<td>Orchards and Vineyard Experiments</td>
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<tr>
<td>Ditch of Platt's Branch</td>
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<td>Salaries</td>
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<tr>
<td>Seeds and Field Supplies for Wilt Work</td>
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<td>Crop Pest Commission</td>
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<td>Salaries</td>
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<td>Expenses of Entomologist</td>
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<tr>
<td>Expenses of Pathologist</td>
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<tr>
<td>Office Fixtures and Lab'y Equipment</td>
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## Extension and Demonstration Work

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<td>Salaries</td>
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<tr>
<td>Field Demonstration</td>
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<tr>
<td>Extension Work—Farmers' Institutes and Boys Corn Club Work</td>
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<tr>
<td>Postage, Stationery and Publications</td>
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<td>Office and Clerical Assistance</td>
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<td>Contribution to Demonstration Work</td>
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Total: $20,602.20

## Fertilizer Inspection

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<td>Salaries</td>
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</tr>
<tr>
<td>Labor—Janitor</td>
<td>$240.00</td>
</tr>
<tr>
<td>Tags and Printing</td>
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</tr>
<tr>
<td>Pay and Travel of Inspectors</td>
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</tr>
<tr>
<td>Printing and Mailing Weekly Bulletins</td>
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</tr>
<tr>
<td>Freight, Postage and Incidentals</td>
<td>$728.26</td>
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<tr>
<td>Legal Services</td>
<td>$251.15</td>
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<tr>
<td>Condensed Fertilizer Bulletin</td>
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<tr>
<td>Inspector Cases, Trunks, etc.</td>
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<tr>
<td>Repairs to Elevator, Interior, etc.</td>
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<tr>
<td>Reğalecteral Public Work Expenditures</td>
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</table>

## Miscellaneous Public Work

<table>
<thead>
<tr>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>State Fair Exhibit</td>
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<tr>
<td>Travel and Entertainment of Legislative Committees, etc.</td>
<td>$351.70</td>
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<tr>
<td>Popular Bulletins</td>
<td>$152.28</td>
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<tr>
<td>Textile Extension Work</td>
<td>$153.43</td>
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<tr>
<td>Contribution to Expenses of Local School</td>
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</tr>
<tr>
<td>Agricultural Journal</td>
<td>$36.95</td>
</tr>
<tr>
<td>Summer School</td>
<td>$175.80</td>
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<tr>
<td>Interest on State Loan</td>
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<tr>
<td>State Fair Exhibit</td>
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## Pee Dee Experiment Station

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
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</thead>
<tbody>
<tr>
<td>Salary of Superintendent</td>
<td>$1,699.93</td>
</tr>
<tr>
<td>Tools and Implements</td>
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<tr>
<td>Horticultural Work</td>
<td>$184.43</td>
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<td>Total</td>
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## Veterinary Inspection

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<tr>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Salaries</td>
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<tr>
<td>Travel, Printing and Office Expenses</td>
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</tr>
<tr>
<td>Legal Expenses</td>
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## Public State Work Expenditures

<table>
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<tr>
<th>Description</th>
<th>Cost</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>$85,402.95</td>
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</table>
### COLLEGE WORK

#### ACADEMIC DEPARTMENT

<table>
<thead>
<tr>
<th>Division</th>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>English Division</strong></td>
<td>Printing Exercises and Examinations</td>
<td>$2.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$2.00</td>
</tr>
<tr>
<td><strong>History Division</strong></td>
<td>Periodicals for Class Room</td>
<td>$46.95</td>
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<tr>
<td></td>
<td></td>
<td>$46.95</td>
</tr>
<tr>
<td><strong>Office and Unclassified Division</strong></td>
<td>Labor—Janitors</td>
<td>$563.40</td>
</tr>
<tr>
<td></td>
<td>Chalk, Erasers, Brooms, Stationery</td>
<td>$137.61</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$701.01</td>
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<tr>
<td><strong>Physics Division</strong></td>
<td>Laboratory Supplies and Repairs</td>
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<tr>
<td></td>
<td>Student Assistant</td>
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<td>$426.86</td>
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<tr>
<td><strong>Salaries</strong></td>
<td>Salaries—Professors and Assistants</td>
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<tr>
<td><strong>Department Expenditures</strong></td>
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#### AGRICULTURAL DEPARTMENT

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<tr>
<th>Division</th>
<th>Description</th>
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<tr>
<td><strong>Agronomy Division</strong></td>
<td>Freight on Loaned Machinery</td>
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<tr>
<td></td>
<td>Cement, Gasoline and Oil</td>
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<td>Seeds, Score Cards, etc.</td>
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<tr>
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<td>Repairs and New Parts for Machines</td>
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<td>Materials for Class Work</td>
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<td>Tools, Implements and Machinery</td>
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<td>$500.55</td>
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<tr>
<td><strong>Animal Husbandry and Dairying Division</strong></td>
<td>Freight and Repairs</td>
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<tr>
<td></td>
<td>Glass Ware and Chemicals</td>
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<tr>
<td></td>
<td>Janitor</td>
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<td>$2,084.68</td>
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<td><strong>Botany and Bacteriology Division</strong></td>
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<td></td>
<td>Glass Ware and Laboratory Supplies</td>
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<td>$716.26</td>
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### Department Expenditures

<table>
<thead>
<tr>
<th>Division</th>
<th>Labor</th>
<th>Repairs to Instruments</th>
<th>Chemical and Laboratory Supplies, etc.</th>
<th>Seed, Plants, etc.</th>
<th>Greenhouse Supplies and Repairs</th>
<th>Coal for Greenhouse</th>
<th>Spray Apparatus and Materials</th>
<th>Graduate Student Assistant</th>
<th>Feed for Mules</th>
<th>Janitor's Supplies</th>
<th>Traveling Expenses of Director</th>
<th>Attending Conventions, etc.</th>
<th>Stationery, Postage, etc.</th>
<th>Upkeep of Building</th>
<th>Student Labor</th>
<th>Gasoline</th>
<th>Stationery, Postage, etc.</th>
<th>Coal</th>
<th>Lab'y Supplies for Class Work</th>
<th>Animals for Dissecting</th>
<th>Gasoline for Gas Machine</th>
<th>Supplies and Small Apparatus, etc.</th>
<th>Salaries—Professors and Assistants</th>
<th>Department Expenditures</th>
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<tbody>
<tr>
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<td>$480.00</td>
<td>$99.65</td>
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<td>$21.51</td>
<td>$149.83</td>
<td>$90.88</td>
<td>$576.71</td>
<td>$54.18</td>
<td>$198.23</td>
<td>$41.61</td>
<td>$442.83</td>
<td>$256.05</td>
<td>$70.63</td>
<td>$42.01</td>
<td>$41.61</td>
<td>$99.94</td>
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<tr>
<td>Geology and Mineralogy Division</td>
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<td></td>
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<td>$74.73</td>
<td>$71.06</td>
<td>$23.10</td>
<td>$20.63</td>
<td>$480.00</td>
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<td>$1,200.00</td>
<td>$21.51</td>
<td>$149.83</td>
<td>$90.88</td>
<td>$576.71</td>
<td>$54.18</td>
<td>$198.23</td>
<td>$41.61</td>
<td>$442.83</td>
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<td>$41.61</td>
<td>$99.94</td>
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<tr>
<td>Horticultural Division</td>
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<td>$74.73</td>
<td>$71.06</td>
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<td>$149.83</td>
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<td>$576.71</td>
<td>$54.18</td>
<td>$198.23</td>
<td>$41.61</td>
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<td>$99.94</td>
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<tr>
<td>Office and Unclassified Division</td>
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<td>$480.00</td>
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<td>$1,200.00</td>
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<td>$149.83</td>
<td>$90.88</td>
<td>$576.71</td>
<td>$54.18</td>
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<td>$41.61</td>
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<td>$1,200.00</td>
<td>$21.51</td>
<td>$149.83</td>
<td>$90.88</td>
<td>$576.71</td>
<td>$54.18</td>
<td>$198.23</td>
<td>$41.61</td>
<td>$442.83</td>
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<td>$70.63</td>
<td>$42.01</td>
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<tr>
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<td>$71.06</td>
<td>$23.10</td>
<td>$20.63</td>
<td>$480.00</td>
<td>$99.65</td>
<td>$1,200.00</td>
<td>$21.51</td>
<td>$149.83</td>
<td>$90.88</td>
<td>$576.71</td>
<td>$54.18</td>
<td>$198.23</td>
<td>$41.61</td>
<td>$442.83</td>
<td>$256.05</td>
<td>$70.63</td>
<td>$42.01</td>
<td>$41.61</td>
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<td>$21,621.70</td>
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<tr>
<td>Salaries—Professors and Assistants</td>
<td></td>
<td></td>
<td>$21,621.70</td>
<td>$74.73</td>
<td>$71.06</td>
<td>$23.10</td>
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<td>$1,200.00</td>
<td>$21.51</td>
<td>$149.83</td>
<td>$90.88</td>
<td>$576.71</td>
<td>$54.18</td>
<td>$198.23</td>
<td>$41.61</td>
<td>$442.83</td>
<td>$256.05</td>
<td>$70.63</td>
<td>$42.01</td>
<td>$41.61</td>
<td>$99.94</td>
<td>$21,621.70</td>
</tr>
</tbody>
</table>
## CHEMICAL DEPARTMENT

### Chemistry Division—
- **Apparatus** ~ $308.32
- **Chemicals** ~ $335.32
- **Gasoline** ~ $194.17
- **Books and Journals** ~ $50.13
- **Binding Books and Journals** ~ $12.96
- **Repairs to Hoods, Flumes, and Furnaces** ~ $16.04
- **Incidentals** ~ $50.80
- **Labor—Janitor** ~ $120.00
- **Overhauling Plumbing** ~ $62.37
- **Charcoal** ~ $10.00 — $1,160.11

### Salaries—
- **Salaries—Director and Assistants** ~ $6,790.67 — $6,790.67

### Department Expenditures

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>$7,950.78</td>
</tr>
</tbody>
</table>

## ENGINEERING DEPARTMENT

### Civil Engineering Division—
- **Class Materials, etc.** ~ $38.31
- **Repairs and Replacement to Instruments and Furniture** ~ $74.72 — $113.03

### Drawing Division—
- **Materials, as Ink, Paper, etc.** ~ $50.13
- **Repairs and Renewals of Apparatus** ~ $55.72
- **Subscriptions to Magazines** ~ $47.35 — $153.20

### Electrical Engineering Division—
- **Junior Laboratory Supplies** ~ $49.17
- **Senior Laboratory Supplies** ~ $59.93
- **Repairs and Renewals to Inst. App. and Machinery** ~ $104.94
- **Class and Laboratory Notes for Students** ~ $29.16
- **Student Assistant** ~ $360.00 — $603.20

### Forge and Foundry Division—
- **Labor—Helper in Forge and Foundry** ~ $313.13
- **Iron and Steel for Forge Shop** ~ $196.48
- **Repairs and Replacements of Machinery and Apparatus** ~ $70.28
- **Supplies, as Plumbago, Flour, etc.** ~ $49.91
- **Coal for Forge Shop** ~ $100.00
- **Pig Iron and Brass for Foundry** ~ $149.73
- **Moulding Sand** ~ $57.00
- **Coke for Foundry** ~ $64.08 — $1,000.61
Machine Shop Division—
Labor—Machinist
Repairs and Replacements of Tools and Machinery
Shop Materials

Mechanical Engineering Division—
Laboratory Supplies
Data Blanks
Repairs and Replacements

Office and Unclassified Division—
Labor—Janitor
Office and Janitor Supplies
Attending Conventions

Wood Shop Division—
Labor
Supplies, as Lumber, Hardware, etc.
Repairs and Replacements

Salaries—
Salaries—Director and Assistants

Department Expenditures

MILITARY DEPARTMENT
Office and Unclassified Division—
Postage, Stationery, Record-books
Cadet Officers’ Insignia
Premium on Ordinance Bond
Military Supplies
Up-keep of Band

Salaries—
Commandant, and Assistants

Department Expenditures

TEXTILE DEPARTMENT
Carding and Spinning Division—
Cotton for Class Use
Repairs and Supplies
Materials for Cotton Grading

Dyeing Division—
Chemicals and Dye Stuffs
Glass Ware and Laboratory Materials
Misc. Small Laboratory Apparatus
### Office and Unclassified Division
- Janitor and Engineer $399.63
- Gasoline $41.64
- Stationery, Postage, etc. $43.02
- Freight on Donated Machinery $23.33
- Student Labor $99.67
- Mill Boy Helper $359.80

### Weaving Division
- Warp and Filling Yarn $106.54
- Loom Supplies and Repairs $129.42

### Salaries
- Salaries—Director and Assistants $5,805.38

### Department Expenditures
$7,723.41

---

### PUBLIC UTILITIES DEPARTMENT

#### Construction and Repair Division
- Office Supplies, Postage, Files, etc. $44.43
- Repairs and Renewals of Apparatus $10.14
- Tools and Implements $16.55
- Repairs to Slate Roofs $33.21
- Painting Tin Roofs $480.27
- Miscellaneous Unforeseen Repairs to Buildings $446.83
- Water Proofing Dairy Walls $99.98
- Repairs to Barracks No. 1 Toilet Bldg. $102.49
- Roof and Steps, Commandant's Servant House $38.77
- Repairs to Dairy Barn $55.56
- Reinforcement 1st Barracks Toilet Bldg. $2.10
- Gangway Eng. Bldg. to Fert. Bldg. $99.93
- Salary—Supt. C. and R. $1,069.92
- Brick for Hospital $232.62
- Brick for Engineering Department $22.54
- Fire Escapes $138.75

Total: $2,894.09

#### Campus and Roads Division
- Labor—Campus Gardener $301.51
- Work on Roads and Campus $1,018.49
- Completing Athletic Field $3,500.00
- Salary—Supt. Campus and Roads $1,200.00

Total: $6,020.00

#### College Hauling Division
- Teamster $480.00
- Two Drivers $576.00
- Feed for Six Mules $844.00
- Shoewing and Repairing $50.00

Total: $1,950.00
### Heat, Light and Water Division

- Labor: $2,930.00
- Materials, Repairs and Extensions: $1,520.66
- Coal: $4,688.86
- Steam Line to Dairy Building: $299.90
- Sewer Line from Schilletter's Residence: $64.50 ($9,503.92)

### Printery Division

- Mailing Catalogues and Bulletins: $14.46 ($14.46)

### Night Watchmen Division

- Salary of Two Night Watchmen: $960.00
- Watchmen Supplies: $20.79 ($980.79)

### Department Expenditures

Total: $21,363.26

### MISCELLANEOUS DEPARTMENT

#### Executive and Clerical Salaries Divisions

- Salaries, President, Secretary, Treasurer, Bookkeepers, Registrar, etc.: $11,170.51

#### Library Division

- Books: $292.16
- Magazines: $184.00
- Binding: $200.00
- Supplies, as Cards, Stationery and Stacks: $41.04
- Membership Dues to Societies: $25.00
- Salaries: $1,619.88 ($2,362.08)

#### Miscellaneous Items Division

- Expenses of Trustees and Board of Visitors: $666.65
- Insurance Sinking Fund: $3,000.00
- Contingent and Incidental Expenses: $743.47
- Salaries of Ministers: $2,089.83
- Y. M. C. A. Secretary Salary: $416.65
- Sunday School Literature: $18.32
- College Catalogue: $450.00
- Annual Report to Legislature: $180.78
- Lyceum, Lectures and Entertainments: $402.50
- Commencement Expenses: $308.70
- Trustees Medal: $25.00
- Dues to A. A. C. E. S.: $47.37
- Supplies for Museum: $11.80
- Supplies and Repairs for Gym: $61.61
- Repairs to Trustees' Carriages: $58.95
- Upkeep of Telephone System: $99.31
- Telephone and Telegraph Operator: $82.75
- Chapel Lecture Series: $98.89
| Membership of College in Nat. Association | 12.00 |
| Memorial Tablets to J. S. Newman and P. H. E. Sloan | 45.00 |
| Foundation Class 1914 Fountain | 55.37 |
| Unforeseen Necessary Equipment | 508.87 | $2,322.82 |

**President’s Office Division—**
- Stamps, Stationery, Supplies, etc. | $620.03 |
- Traveling Fund | $481.79 |
- Emergency Student Labor | $108.21 | $1,210.03 |

**Treasurer’s Office Division—**
- Record Books, Postage, Stationery | $405.04 |
- Emergency Assistance | $150.00 |
- Premium on Treasurer’s Bond | $62.50 |
- Treasurer’s Annual Report | $197.42 |
- Audit of Treasurer’s Books | $318.75 |
- Re-arranging Vault | $50.00 | $1,183.71 |

**Department Expenditures** | $25,249.15 |
Report of Auditor

To the Honorable Chairman and Members of the Board of Trustees,
Clemson Agricultural College (through the President, Dr. W. M. Riggs),
Clemson College, South Carolina.

Gentlemen:
I have made an audit of the books, vouchers and accounts in the office of Samuel W. Evans, Treasurer of Clemson Agricultural College, in accordance with your instructions. This audit covers the period commencing with the date July 1st, 1915, and ending with the close of business June 30th, 1916 (which period constitutes your past fiscal year) and including also an audit of the cash accounts to the close of business Thursday, October 5th, 1916.

Certified at Columbia, in the county of Richland, South Carolina, this 25th day of October, A. D., 1916.

Report herewith
Respectfully submitted,

L. A. SEARSON,
Certified Public Accountant.

SPECIAL COMMENTS AS TO TREASURER'S OFFICE
(Samuel W. Evans, Treasurer.)

The Purpose and Scope of This Audit:

It appears that the Trustees of Clemson College have very wisely adopted a policy of having annual audits made of the books and records in this office. The report attached, therefore, although it emanates from an absolutely independent source, in fact, represents the regular annual audit, which, through custom, has become a well established rule.

The primary purpose of this work is to ascertain whether or not a correct accounting has been made of the various funds for which the Treasurer is held responsible. The audit covers cash receipts and disbursements only, and does not purport to show the assets or liabilities of the institution.

After a thorough examination of the Treasurer's work in all its details, I beg to report an accurate accounting for all funds of record received through this office during the period covered by such examination. It further gives me pleasure to inform your honorable body that it has never been my experience to audit any records which were kept in such satisfactory manner as a general proposition. The Treasurer and his assistants have exhibited both skill and judgement in a marked degree which merits the writer's humble praise and a continuance of your confidence.

Books and Records:
I have added and proven the books after checking forward the balances on hand at the close of the fiscal year, ended June 30, 1915,
as indicated by the auditor's report for that year. The figures were absolutely accurate. In view of the fact that the Treasurer's books show the various classifications in such convenient form, I do not consider any further analysis of the expenditures necessary in this report. The Treasurer gives these classifications in his annual statement.

VOUCHERS

Approved bills and voucher checks are filed in a most systematic manner just as the items appear on the books of account. I have carefully examined these vouchers and have checked them against the several accounts. I find that each expenditure is covered by an itemized bill approved by the proper department and division head.

Duplicate receipts are kept for all items of income. I have also checked these items against the books and find that the funds received have been properly entered and distributed to the accounts for which they were intended.

Borrowed Money:

Under the provisions of a Joint Resolution of the General Assembly 1916, the State was authorized to borrow for the College the sum of $62,400.00. This amount was applied to the general college fund for the purpose of paying current expenses. The records show that, notwithstanding the decrease in fertilizer tax income, the college authorities have reduced this indebtedness in the sum of $21,511.44 and have paid interest (4 percent) in advance on the balance of $40,888.56, which amount is covered by a renewal note maturing December 1, 1916.

Closing Comments:

Concluding, I desire to thank your honorable body for the compliment bestowed upon me in trusting this work to my judgment—and through these comments I would likewise express my appreciation of the courtesies extended to me by the President of the College, the Treasurer and others with whom my engagement brought me into contact at Clemson College. I respectfully submit the report which follows.

REPORT ON COLLEGE FUNDS

Sources of Revenue:

The total net revenue to be applied directly to the General College Account was $195,761.20, of which $149,189.88 was collected by the State Treasurer on account of the privilege fertilizer tax. (The total from this source was in fact $170,481.02, but the sum of $21,511.44 was held by the State Treasurer and applied to a loan, discussed in another section of this report.) The sum of $25,000.00 was received from the Federal government and the remainder of the total income from various sources as described in statement on page 62, of this report. (The figures above do not include balance July 1, 1915 or borrowed money.)
APPROPRIATIONS

It will be noted that the general college statement on pages 63-64, of this report, shows the departmental appropriations and balances unexpended at the close of the fiscal year.

Statement of Expenditures:

The statement on pages 63-64, of this report, shows the amounts expended for various purposes in each division of the college work—and the figures are so arranged that the amounts appropriated appear against the total cost in such divisions. A recapitulation by departments is given on page 65, the grand total expenditures being $236,409.84.

Balance Unexpended:

At the close of the fiscal year, June 30, 1916, the records show an unexpended balance of $31,452.40, of funds directly applicable to the college account, to be carried forward to the next year's books. This balance is accounted for on page 72, of this report.

CONDENSED STATEMENT SHOWING SOURCES OF COLLEGE REVENUE AND AMOUNTS EXPENDED

(Fiscal Year Ending June 30, 1916)

INCOME

Balance brought forward July 1, 1915 ____ $ 9,701.04

Sources of Revenue:

<table>
<thead>
<tr>
<th>Source of Revenue</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest on Clemson Bequest</td>
<td>$ 3,512.36</td>
</tr>
<tr>
<td>Interest on Landscrip</td>
<td>5,754.00</td>
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<tr>
<td>Morrill and Nelson Fund (U. S.)</td>
<td>25,000.00</td>
</tr>
<tr>
<td>Privilege Fertilizer Tax</td>
<td>149,189.88</td>
</tr>
<tr>
<td>Sales, Interest, Rents, Refunds</td>
<td>7,634.96</td>
</tr>
<tr>
<td>Tuition from Cadets</td>
<td>4,670.00</td>
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<tr>
<td>Borrowed Money</td>
<td>62,400.00</td>
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</table>

Total to Account for _____________ $267,862.24

EXPENDITURES

<table>
<thead>
<tr>
<th>Public State Work:</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coast Experiment Station</td>
<td>$ 4,476.55</td>
</tr>
<tr>
<td>Co-operative Experiment Work</td>
<td>1,284.07</td>
</tr>
<tr>
<td>Crop Pest Commission</td>
<td>2,185.22</td>
</tr>
<tr>
<td>Extension and Demonstration Work</td>
<td>20,602.20</td>
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<tr>
<td>Fertilizer Inspection and Analysis</td>
<td>25,467.02</td>
</tr>
<tr>
<td>Miscellaneous Public Work</td>
<td>2,785.88</td>
</tr>
<tr>
<td>Pee Dee Experiment Station</td>
<td>2,364.42</td>
</tr>
<tr>
<td>Scholarships and Advertisements</td>
<td>21,459.63</td>
</tr>
<tr>
<td>Veterinary Inspection</td>
<td>4,767.96</td>
</tr>
<tr>
<td>College Operating Expenses</td>
<td>85,402.95</td>
</tr>
<tr>
<td>Additions to Plant</td>
<td>145,697.24</td>
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<tr>
<td>Unexpended June 30, 1916</td>
<td>5,309.65</td>
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Unexpended June 30, 1916 ____________ 31,452.40

Total _____________ $267,862.24
### GENERAL STATEMENT OF COLLEGE FUND

(Fiscal Year Ending June 30, 1916)

<table>
<thead>
<tr>
<th>Public State Work Department:</th>
<th>Appropriations</th>
<th>Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beneficiary Scholarship Division</td>
<td>$22,500.00</td>
<td>$21,459.63</td>
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<tr>
<td>Chemical Analysis Division</td>
<td>$12,962.50</td>
<td>$10,808.51</td>
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<tr>
<td>Coast Experiment Station Division</td>
<td>4,363.85</td>
<td>4,476.55</td>
</tr>
<tr>
<td>Co-operative Experiment Work</td>
<td>2,475.00</td>
<td>1,294.07</td>
</tr>
<tr>
<td>Crop Pest Commission</td>
<td>2,310.00</td>
<td>2,185.22</td>
</tr>
<tr>
<td>Extension and Demonstration Work</td>
<td>21,080.00</td>
<td>20,602.20</td>
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<tr>
<td>Fertilizer Inspection Division</td>
<td>22,395.00</td>
<td>14,658.51</td>
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<tr>
<td>Miscellaneous Public Work Division</td>
<td>2,735.37</td>
<td>2,785.88</td>
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<tr>
<td>Pee Dee Experiment Station Division</td>
<td>2,450.00</td>
<td>2,364.42</td>
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<tr>
<td>Veterinary Inspection Division</td>
<td>5,020.00</td>
<td>4,767.96</td>
</tr>
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</table>

**Excess of Appr'n over Expenditures:** $98,291.72

<table>
<thead>
<tr>
<th>College Work—Academic Department:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>English Division</td>
<td>$61.00</td>
</tr>
<tr>
<td>History Division</td>
<td>50.00</td>
</tr>
<tr>
<td>Mathematics Division</td>
<td>10.00</td>
</tr>
<tr>
<td>Office and Unclassified Division</td>
<td>716.00</td>
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<tr>
<td>Physics Division</td>
<td>435.00</td>
</tr>
<tr>
<td>Salaries</td>
<td>25,495.00</td>
</tr>
</tbody>
</table>

**Excess of Appr'ns over Expenditures:** $26,767.00

<table>
<thead>
<tr>
<th>Agricultural Department:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Agronomy Division</td>
<td>$530.66</td>
</tr>
<tr>
<td>Animal Husbandry—Dairying Division</td>
<td>2,085.00</td>
</tr>
<tr>
<td>Botany and Bacteriology Division</td>
<td>751.00</td>
</tr>
<tr>
<td>Entomology and Zoology Division</td>
<td>250.00</td>
</tr>
<tr>
<td>Geology and Mineralogy Division</td>
<td>75.00</td>
</tr>
<tr>
<td>Horticultural Division</td>
<td>2,155.00</td>
</tr>
<tr>
<td>Office and Unclassified</td>
<td>1,650.00</td>
</tr>
<tr>
<td>Veterinary Science Division</td>
<td>1,358.00</td>
</tr>
<tr>
<td>Soils Division</td>
<td>100.00</td>
</tr>
<tr>
<td>Salaries</td>
<td>22,193.33</td>
</tr>
</tbody>
</table>

**Excess of Appr'ns over Expenditures:** $31,147.99

<table>
<thead>
<tr>
<th></th>
<th>Appropriations</th>
<th>Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$31,147.99</td>
<td>$29,968.09</td>
</tr>
<tr>
<td></td>
<td>$31,147.99</td>
<td>$31,147.99</td>
</tr>
</tbody>
</table>
### Chemical Department:

<table>
<thead>
<tr>
<th>Division</th>
<th>Appropriations</th>
<th>Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry</td>
<td>$1,630.00</td>
<td>$1,160.11</td>
</tr>
<tr>
<td>Salaries</td>
<td>$6,957.50</td>
<td>$6,790.67</td>
</tr>
<tr>
<td>Excess of Appr'ns over Expenditures</td>
<td>$8,587.50</td>
<td>$8,750.78</td>
</tr>
</tbody>
</table>

### Military Department:

<table>
<thead>
<tr>
<th>Division</th>
<th>Appropriations</th>
<th>Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office and Unclassified Division</td>
<td>$923.93</td>
<td>$885.00</td>
</tr>
<tr>
<td>Salaries</td>
<td>$3,425.00</td>
<td>$3,424.80</td>
</tr>
<tr>
<td>Excess of Appr'ns over Expenditures</td>
<td>$4,348.93</td>
<td>$4,309.80</td>
</tr>
</tbody>
</table>

### Engineering Department:

<table>
<thead>
<tr>
<th>Division</th>
<th>Appropriations</th>
<th>Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civil Engineering Division</td>
<td>$115.00</td>
<td>$113.03</td>
</tr>
<tr>
<td>Drawing Division</td>
<td>$175.00</td>
<td>$153.20</td>
</tr>
<tr>
<td>Electrical Engineering Division</td>
<td>$605.00</td>
<td>$603.20</td>
</tr>
<tr>
<td>Forge and Foundry Division</td>
<td>$1,017.00</td>
<td>$1,000.61</td>
</tr>
<tr>
<td>Machine Shop Division</td>
<td>$750.00</td>
<td>$750.00</td>
</tr>
<tr>
<td>Mechanical Engineering Division</td>
<td>$150.00</td>
<td>$99.20</td>
</tr>
<tr>
<td>Office and Unclassified Division</td>
<td>$510.00</td>
<td>$437.05</td>
</tr>
<tr>
<td>Wood Shop Division</td>
<td>$865.00</td>
<td>$850.04</td>
</tr>
<tr>
<td>Salaries</td>
<td>$23,868.33</td>
<td>$23,850.97</td>
</tr>
<tr>
<td>Excess of Appr'ns over Expenditures</td>
<td>$28,055.33</td>
<td>$27,857.30</td>
</tr>
</tbody>
</table>

### Textile Department:

<table>
<thead>
<tr>
<th>Division</th>
<th>Appropriations</th>
<th>Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carding and Spinning Division</td>
<td>$385.00</td>
<td>$384.78</td>
</tr>
<tr>
<td>Dyeing Division</td>
<td>$400.00</td>
<td>$330.00</td>
</tr>
<tr>
<td>Office and Unclassified Division</td>
<td>$1,045.00</td>
<td>$967.29</td>
</tr>
<tr>
<td>Weaving Division</td>
<td>$350.00</td>
<td>$235.96</td>
</tr>
<tr>
<td>Salaries</td>
<td>$5,805.00</td>
<td>$5,805.38</td>
</tr>
<tr>
<td>Excess of Appr'ns over Expenditures</td>
<td>$7,985.00</td>
<td>$7,723.41</td>
</tr>
</tbody>
</table>

---

**Total Appropriations:** $78,113.30  
**Total Expenditures:** $76,894.10  
**Excess of Appropriations over Expenditures:** $1,219.20
### SUMMARY BY DEPARTMENTS

<table>
<thead>
<tr>
<th>Department</th>
<th>Appropriations</th>
<th>Expenditures</th>
<th>Excess of Appropriations over Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public State Work Dept.</td>
<td>$85,404.95</td>
<td>$29,986.09</td>
<td>$55,418.86</td>
</tr>
<tr>
<td>College Wk. Academic Dept.</td>
<td>$26,767.00</td>
<td>$13,315.00</td>
<td>$13,452.00</td>
</tr>
<tr>
<td>Military Department</td>
<td>$4,348.93</td>
<td>$2,362.08</td>
<td>$1,986.85</td>
</tr>
<tr>
<td>Engineering Department</td>
<td>$311,479.99</td>
<td>$21,363.26</td>
<td>$290,116.73</td>
</tr>
<tr>
<td>Agricultural Department</td>
<td>$3,541.35</td>
<td>$2,362.08</td>
<td>$1,179.27</td>
</tr>
<tr>
<td>Chemical Department</td>
<td>$28,055.33</td>
<td>$11,205.00</td>
<td>$16,850.33</td>
</tr>
<tr>
<td>Miscellaneous Department</td>
<td>$28,790.50</td>
<td>$7,724.15</td>
<td>$21,066.35</td>
</tr>
<tr>
<td>President's Office Division</td>
<td>$12,888.77</td>
<td>$7,724.15</td>
<td>$5,164.62</td>
</tr>
<tr>
<td>Treasurer's Office Division</td>
<td>$28,790.50</td>
<td>$23,366.26</td>
<td>$5,424.24</td>
</tr>
<tr>
<td>Miscellaneous Items Division</td>
<td>$52,131.50</td>
<td>$1,500.00</td>
<td>$50,631.50</td>
</tr>
<tr>
<td>Expenditures as distributed on Books of Account</td>
<td>$236,409.84</td>
<td>$20,341.16</td>
<td>$216,068.68</td>
</tr>
<tr>
<td>Total</td>
<td>$256,008.13</td>
<td>$236,409.84</td>
<td>$19,598.29</td>
</tr>
</tbody>
</table>

### Cash Balance

- **Cash Balance July 1, 1916:** $9,701.04
- **Cash Receipts:** $2,158.07
- **Miscellaneous Incl. d Receipts:** $1,54.11
- **Balance on June 30, 1916:** $11,854.11

### Total

- **Total Cash to Close Accounts:** $267,862.24

---

**Public Utilities Department:**
- **Construction and Roads Division:** $3,451.66
- **Campus Housing Division:** $2,841.69
- **Heating, Light and Water Division:** $985.00
- **Primeriy Division:** $953.72

---

**Miscellaneous Department:**
- **Executive and Clerical Salaries:** $12,000.00
- **Medical and Hospital Maintenance and Equipment:** $5,000.00
- **Miscellaneous Office Division:** $1,500.00
- **Miscellaneous Items Division:** $1,100.00
- **Miscellaneous Items Division:** $28,790.50

---

**Total Appropriations:** $98,291.72

---

**Total Expenditures:** $85,402.95

---

**Excess of Appropriations over Expenditures:** $12,888.77
REPORT ON FUNDS NOT DIRECTLY CONNECTED WITH COLLEGE

General Comments:

As all funds are handled by the Treasurer under the same accounting methods, it is unnecessary to discuss the accounts reported under this section except in a general way. I have carefully audited these accounts, however, and present general statements of receipts and disbursements for the following funds, to wit:

Re-investment Fund, page 66.
Cadet Fund, page 67.
Farm Products Fund, page 68.
Adams Fund, page 68.
Smith-Lever Fund, page 69.
Hatch Fund, page 69.

Federal Appropriations:

The Smith-Lever, Adams and Hatch Funds from the Federal Treasury are available, under Acts of Congress, only for purposes for which such appropriations are made.

Re-investment and Cadet Funds:

The Cadet funds are not available for use of the college. The Re-investment Fund, although it covers numerous transactions and appears large in volume, represents only $7,634.96 as a net income to the college.

GENERAL STATEMENT OF RE-INVESTMENT FUND
(Fiscal Year Ending June 30, 1916)

<table>
<thead>
<tr>
<th>Item</th>
<th>Receipts</th>
<th>Disbursements</th>
<th>Excess Receipts Over Expenditures</th>
<th>Excess Expenditures Over Receipts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal Husbandry and Dairying</td>
<td>$8,641.41</td>
<td>$9,824.81</td>
<td>$1,183.40</td>
<td></td>
</tr>
<tr>
<td>Board of Health</td>
<td>276.13</td>
<td>294.34</td>
<td>18.21</td>
<td></td>
</tr>
<tr>
<td>Beef Cattle</td>
<td>16,829.72</td>
<td>15,038.17</td>
<td>1,791.55</td>
<td>966.22</td>
</tr>
<tr>
<td>Coast Station</td>
<td>1,989.81</td>
<td>2,956.03</td>
<td></td>
<td>966.22</td>
</tr>
<tr>
<td>Farm</td>
<td>6,199.02</td>
<td>9,009.11</td>
<td>2,810.09</td>
<td></td>
</tr>
<tr>
<td>Hauling</td>
<td>6,197.80</td>
<td>8,923.82</td>
<td>2,726.02</td>
<td></td>
</tr>
<tr>
<td>Hog Cholera Serum</td>
<td>4,118.17</td>
<td>4,700.27</td>
<td>582.10</td>
<td></td>
</tr>
<tr>
<td>Work</td>
<td>14,541.43</td>
<td>13,462.71</td>
<td>1,078.72</td>
<td></td>
</tr>
<tr>
<td>Insurance</td>
<td>38.06</td>
<td>38.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iselin Fund</td>
<td>539.75</td>
<td>226.86</td>
<td>312.89</td>
<td></td>
</tr>
<tr>
<td>Laundry</td>
<td>60.52</td>
<td>294.82</td>
<td>234.30</td>
<td></td>
</tr>
<tr>
<td>Manufacture State</td>
<td>40.30</td>
<td>40.14</td>
<td>.16</td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>Receipts</td>
<td>Disbursements</td>
<td>Excess Receipts Over Expenditures</td>
<td>Excess Expenditures Over Receipts</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>------------</td>
<td>---------------</td>
<td>----------------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>Pee Dee Station</td>
<td>6,354.00</td>
<td>6,893.96</td>
<td>539.96</td>
<td></td>
</tr>
<tr>
<td>Printery</td>
<td>485.86</td>
<td>827.37</td>
<td>341.51</td>
<td></td>
</tr>
<tr>
<td>Summer School</td>
<td>2,071.58</td>
<td>2,401.48</td>
<td>329.90</td>
<td></td>
</tr>
<tr>
<td>Truck Garden</td>
<td>676.56</td>
<td>459.30</td>
<td>217.26</td>
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</tr>
<tr>
<td>Upkeep of Residences</td>
<td>3,043.18</td>
<td>3,159.92</td>
<td>116.74</td>
<td></td>
</tr>
<tr>
<td>Wood Shop</td>
<td>417.02</td>
<td>459.13</td>
<td>42.11</td>
<td></td>
</tr>
<tr>
<td>Y. M. C. A. Building</td>
<td>49.39</td>
<td>48.49</td>
<td>.90</td>
<td></td>
</tr>
<tr>
<td>Class '14 Fountain</td>
<td>223.95</td>
<td>223.95</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Co-operative Creamery S. F.</td>
<td>416.08</td>
<td>216.08</td>
<td>200.00</td>
<td></td>
</tr>
<tr>
<td>Engineering Build'g</td>
<td>116.96</td>
<td>116.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>$73,326.70</strong></td>
<td></td>
<td><strong>$3,718.44</strong></td>
<td></td>
</tr>
<tr>
<td>Excess of Expenditures over Rec'pts</td>
<td><strong>6,172.12</strong></td>
<td></td>
<td><strong>6,172.12</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>$79,498.82</strong></td>
<td><strong>$79,498.82</strong></td>
<td><strong>$9,890.56</strong></td>
<td><strong>$9,890.56</strong></td>
</tr>
</tbody>
</table>

**GENERAL STATEMENT OF CADET FUND**

(Fiscal Year Ending June 30, 1916)

**Receipts:**
- Balance July 1, 1916 .................................. $2,298.68
- Total Cash Receipts All Sources .................. $116,988.11
- Total to Account For ................................ $119,286.79

**Disbursements:**
- Breakage .............................................. $1,205.52
- Heat, Light and Water ................................. 6,597.83
- Hospital .............................................. 4,395.65

**Incidentals:**
- President's Office .................................. $3,240.54
- Treasurer's Office .................................. 790.62
- Barracks ............................................ 326.60
- Diplomas ............................................ 168.26
- Refunds ............................................. 15.00
- Southern Railway Scholarship ....................... 8,284.25
- Laundry ............................................. 91.40
- Miscellaneous ...................................... 61,490.05
- Subsistence .......................................... 27,947.05
- Uniforms ............................................

**Total Expenditures as per Vouchers**
- Audited .............................................. $114,757.34
- Balance June 30, 1916 ................................. $4,529.45
- **Total** ............................................. $119,286.79
GENERAL STATEMENT OF FARM PRODUCTS ACCOUNT
(Fiscal Year Ending June 30, 1916)

Receipts:
Balance July 1, 1915 ........................................... $ 13.00
Sale of Farm Products ........................................... 2,211.95

Total to Account For ........................................... $ 2,224.95

Disbursements:
Freight and Express ........................................... $ 17.92
Feed Stuffs ......................................................... 28.91
Library ............................................................... 30.83
Labor ................................................................. 507.56
Publications ......................................................... 422.30
Postage and Stationery ......................................... 7.02
Salaries ............................................................... 705.58
Seeds, Plants, Supplies ......................................... 220.16
Tools, Machinery, Appliances ................................ 21.45
Traveling Expenses ............................................... 241.91

Total Expenditures as per vouchers audited ............... $ 2,203.64
Balance June 30, 1916 ........................................... 21.31

GENERAL STATEMENT OF ADAMS FUND
(Fiscal Year Ending June 30, 1916)

Receipts:
U. S. Treasury Warrant No. 410 ................................. $ 3,750.00
U. S. Treasury Warrant No. 3813 ............................... 3,750.00
U. S. Treasury Warrant No. 7972 ............................... 3,750.00
U. S. Treasury Warrant No. 12431 ............................. 3,750.00

Total to Account For ........................................... $ 15,000.00

Disbursements:
Building and Land ................................................. $ 73.52
Chemicals and Laboratory Supplies ............................ 814.60
Freight and Express ............................................. 72.07
Fertilizers ......................................................... 275.81
Furniture and Fixtures .......................................... 57.50
Heat, Light and Power ........................................... 140.43
Labor ................................................................. 4,172.37
Library ............................................................... 40.16
Postage and Stationery ......................................... 100.75
Salaries .............................................................. 7,846.31
Seeds, Plants, etc. ............................................... 306.04
Scientific Apparatus, Specimens, etc. ........................ 750.40
Tools, Machinery, etc. .......................................... 327.64
Traveling Expenses ............................................... 22.40

Total Expenditures as per Vouchers Audited ............... $ 15,000.00
## GENERAL STATEMENT OF SMITH-LEVER FUND
**(Fiscal Year Ending June 30, 1916)**

### Receipts:
<table>
<thead>
<tr>
<th>Description</th>
<th>Federal</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>U. S. Treasurer's Warrant</td>
<td>$12,845.57</td>
<td>$15,691.00</td>
</tr>
<tr>
<td>State Treasurer's Warrant No. 1179</td>
<td></td>
<td></td>
</tr>
<tr>
<td>U. S. Treasurer's Warrant No. 8513</td>
<td>$12,845.58</td>
<td></td>
</tr>
<tr>
<td><strong>Total to Account For</strong></td>
<td>$25,691.15</td>
<td>$15,691.00</td>
</tr>
</tbody>
</table>

### Disbursements:
<table>
<thead>
<tr>
<th>Description</th>
<th>Federal</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries Paid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Books, Stationery and Printing</td>
<td>$278.05</td>
<td>76.08</td>
</tr>
<tr>
<td>Furniture and Fixtures</td>
<td>$500.74</td>
<td>133.00</td>
</tr>
<tr>
<td>Labor</td>
<td>$199.60</td>
<td></td>
</tr>
<tr>
<td>Library</td>
<td>$24.25</td>
<td></td>
</tr>
<tr>
<td>Postage, Telephone &amp; Telegraph, Freight and Express</td>
<td>$285.40</td>
<td>5.51</td>
</tr>
<tr>
<td>Publications</td>
<td>$1,284.55</td>
<td>738.10</td>
</tr>
<tr>
<td>Supplies</td>
<td>$147.28</td>
<td></td>
</tr>
<tr>
<td>Scientific Apparatus</td>
<td>$2.14</td>
<td></td>
</tr>
<tr>
<td>Traveling Expenses</td>
<td>$7,003.17</td>
<td>2,127.76</td>
</tr>
<tr>
<td>Tools, Machinery and Appliances</td>
<td>$31.51</td>
<td></td>
</tr>
<tr>
<td><strong>Total as per Vouchers Audited</strong></td>
<td>$25,691.15</td>
<td>$15,691.00</td>
</tr>
</tbody>
</table>

## GENERAL STATEMENT OF HATCH FUND
**(Fiscal Year Ending June 30, 1916)**

### Receipts:
<table>
<thead>
<tr>
<th>Description</th>
<th>Federal</th>
</tr>
</thead>
<tbody>
<tr>
<td>U. S. Treasury Warrant No. 410</td>
<td>$3,750.00</td>
</tr>
<tr>
<td>U. S. Treasury Warrant No. 3813</td>
<td>$3,750.00</td>
</tr>
<tr>
<td>U. S. Treasury Warrant No. 7972</td>
<td>$3,750.00</td>
</tr>
<tr>
<td>U. S. Treasury Warrant No. 12431</td>
<td>$3,750.00</td>
</tr>
<tr>
<td><strong>Total to Account For</strong></td>
<td>$15,000.00</td>
</tr>
</tbody>
</table>

### Disbursements:
<table>
<thead>
<tr>
<th>Description</th>
<th>Federal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building and Land</td>
<td>$46.94</td>
</tr>
<tr>
<td>Chemicals, Laboratory Supplies</td>
<td>$638.91</td>
</tr>
<tr>
<td>Contingent Expenses</td>
<td>$20.00</td>
</tr>
<tr>
<td>Freight and Express</td>
<td>$95.70</td>
</tr>
<tr>
<td>Fertilizers</td>
<td>$722.00</td>
</tr>
<tr>
<td>Feed Stuff</td>
<td>$871.17</td>
</tr>
<tr>
<td>Furniture and Fixtures</td>
<td>$25.75</td>
</tr>
<tr>
<td>Heat, Light, Water and Power</td>
<td>$148.75</td>
</tr>
<tr>
<td>Labor</td>
<td>$3,896.26</td>
</tr>
<tr>
<td>Library</td>
<td>$112.64</td>
</tr>
<tr>
<td>Live Stock</td>
<td>$50.49</td>
</tr>
</tbody>
</table>
Publications ................................................. 571.19
Postage and Stationery .................................. 205.31
Salaries ................................................... 6,568.43
Seeds, Plants and Supplies .............................. 638.91
Scientific Apparatus and Appliances .................. 10.85
Tools, Machinery and Appliances ...................... 297.61
Traveling Expenses ....................................... 715.70

Total Expenditures as per Vouchers Audited .......... $15,000.00

REPORT ON CADET DEPOSITS

Depository for Cadets:
This department is merely a private banking business operated for convenience of the college cadets. The individual accounts are carried on a regular bank ledger of the "Rand" system, and a controlling account appears on the Treasurer's general ledger to represent the funds received from this source. A condensed statement, in this connection will be found on page 70, of this report.

GENERAL STATEMENT OF CADET DEPOSITS

(Individual Ledger)

Deposits:
Balance July 1, 1915 ......................... $ 733.54
Individual Deposits July 1, 1915-June 30, 1916 53,732.28

Total Cash to Account For ..................... $54,465.82

Checks:
Total Checks Paid from July 1, 1915 to June 30, 1916, inclusive ..................... $55,146.24
Overdraft against actual Fund in Hand .......... 680.42

( $54,465.82 )

(July 1, 1916 to October 5, 1916)

Deposits:
Individual Deposits July 1, 1916 to Oct. 5, 1916 ........................................ $16,475.31

Checks:
Overdrafts July 1, 1916 ......................... $ 680.42
Total Checks Paid July 1, 1916 to Oct. 5, 1916 9,660.63 10,341.05

Balance on Hand October 5, 1916 ............... $ 6,134.26
REPORT ON CASH ACCOUNTS AND AUDIT OF CASH ON HAND

Cash on Hand June 30, 1916:

On page 71, of this report, is a combined statement of cash received from all sources showing the amounts applied to the various funds, and crediting the expenditures, as per vouchers audited. The calculations show cash balances in the aggregate sum of $29,150.62 to be accounted for under date of June 30, 1916. The statement on page 72, shows how the Treasurer has accounted for the above stated cash balance at the close of business on the date named.

Audit of Cash on Hand October 5, 1916:

At the close of business, Thursday, October 5, 1916, I carefully counted all cash and examined all cash items in the Treasurer's office, after proving the cash balances as indicated by the books up to this date. The statement on page 73, describes how I determined the amount of cash to be accounted for.

In separate statements, pages 73 and 74, I present herewith my report on cash and items counted as cash in the office, and my audit of the bank accounts, which are covered by certified statements from the cashiers of such banks.

COMBINED CASH STATEMENT

(All Funds)

<table>
<thead>
<tr>
<th>Fund</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>College Account</td>
<td>$267,862.24</td>
</tr>
<tr>
<td>Cadet Fund</td>
<td>119,286.79</td>
</tr>
<tr>
<td>Cadet Deposits Account</td>
<td>54,465.82</td>
</tr>
<tr>
<td>Adams Fund</td>
<td>15,000.00</td>
</tr>
<tr>
<td>Hatch Fund</td>
<td>15,000.00</td>
</tr>
<tr>
<td>Farm Products Account</td>
<td>2,224.95</td>
</tr>
<tr>
<td>Re-investment Account</td>
<td>73,326.70</td>
</tr>
<tr>
<td>Smith-Lever Fund (Federal)</td>
<td>25,691.15</td>
</tr>
<tr>
<td>Smith-Lever Fund (State)</td>
<td>15,691.00</td>
</tr>
<tr>
<td><strong>Grand Total to Account For (July 1, 1915 to June 30, 1916)</strong></td>
<td><strong>$588,548.65</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fund</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>College Account</td>
<td>$236,409.84</td>
</tr>
<tr>
<td>Cadet Fund</td>
<td>114,757.34</td>
</tr>
<tr>
<td>Cadet Deposits Account (Checks Paid)</td>
<td>55,146.24</td>
</tr>
<tr>
<td>Adams Fund</td>
<td>15,000.00</td>
</tr>
<tr>
<td>Hatch Fund</td>
<td>15,000.00</td>
</tr>
<tr>
<td>Farm Products Account</td>
<td>2,203.64</td>
</tr>
<tr>
<td>Re-investment Account</td>
<td>79,498.82</td>
</tr>
</tbody>
</table>
Smith-Lever Fund (Federal) 25,691.15
Smith-Lever Fund (State) 15,691.00

Grand Total Expenditures as per Vouchers Audited
(July 1, 1915 to June 30, 1916) $559,398.03
Cash Balance to Account for June 30, 1916 29,150.62

$588,548.65

GENERAL CASH STATEMENT
(Showing General Balances and Audit of Bank Account)

Balances to Account for June 30, 1916:
- Cash due College Fund $31,452.40
- Cash Due Cadet Fund 4,529.45
- Cash due Farm Products Fund 21.31

$36,003.16

Less Overdrafts:
- Re-investment Fund $6,172.12
- Cadet Deposits Fund 680.42 6,852.54

Total Net Balance to Account For $29,150.62

Accounted for as follows:
- Bank of Anderson $5,000.00
- Farmers Bank, Abbeville 4,000.00
- Farmers and Merchants Bank, Anderson 5,000.00
- National Bank of Newberry 2,000.00
- Pickens Bank 9,000.00
- National Bank of Abbeville 2,500.00
- National Bank of Sumter 5,000.00
- Peoples Savings Bank, Abbeville 2,500.00
- American Bank, Greenville 5,000.00
- Bank of McCormick 2,000.00
- Exchange Bank, Newberry 5,000.00 47,000.00
- Bank of Pendleton 5,944.81

Total as shown by Bank Certificates Audited $52,944.81

Less Checks Outstanding June 30, 1916:
- College and Cadet Funds $19,211.47
- Re-investment Fund 788.07
- Hatch Fund 12.00
- Adams Fund 1,255.26
- Farm Products Fund 522.93
- Smith-Lever Federal Fund 923.81
<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smith-Lever State Fund</td>
<td>400.23</td>
</tr>
<tr>
<td>Total Net Bank Balances, as audited</td>
<td>29,831.04</td>
</tr>
<tr>
<td>Less overdraft Cadet Deposits (Office Cash)</td>
<td>680.42</td>
</tr>
<tr>
<td>Total Net Cash Accounted For</td>
<td>29,150.62</td>
</tr>
</tbody>
</table>

**STATEMENT SHOWING PROOF OF CASH BOOK**
(July 1, 1916 to October 5, 1916 Inc.)

**ALL FUNDS**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash Balance to Account for July 1, 1916</td>
<td>$29,150.62</td>
</tr>
<tr>
<td>Cash Received from July 1, 1916 to Oct. 5, 1916 as per records audited</td>
<td>180,620.94</td>
</tr>
<tr>
<td>Total to Account for</td>
<td>$209,771.56</td>
</tr>
<tr>
<td>Expenditures July 1, 1916 to October 5, 1916 as per vouchers and other records audited</td>
<td>136,010.78</td>
</tr>
<tr>
<td><strong>Balance on hand October 5, 1916:</strong></td>
<td></td>
</tr>
<tr>
<td>Cash in Banks (See Statement page 73)</td>
<td>$63,270.70</td>
</tr>
<tr>
<td>Cash in Office (See Statement page 74)</td>
<td>10,490.18</td>
</tr>
<tr>
<td></td>
<td>73,760.78</td>
</tr>
<tr>
<td></td>
<td>$209,771.56</td>
</tr>
</tbody>
</table>

**GENERAL STATEMENT OF CASH IN BANKS**
(Close of Business, Thursday, October 5, 1916)

<table>
<thead>
<tr>
<th>Bank Statement</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank of Anderson</td>
<td>$5,000.00</td>
</tr>
<tr>
<td>Exchange Bank, Newberry</td>
<td>5,000.00</td>
</tr>
<tr>
<td>Pickens Bank</td>
<td>5,000.00</td>
</tr>
<tr>
<td>Farmers Bank, Abbeville</td>
<td>4,000.00</td>
</tr>
<tr>
<td>National Bank of Sumter</td>
<td>5,000.00</td>
</tr>
<tr>
<td>American Bank, Greenville</td>
<td>5,000.00</td>
</tr>
<tr>
<td>Peoples Savings Bank, Abbeville</td>
<td>2,500.00</td>
</tr>
<tr>
<td>Bank of Abbeville</td>
<td>2,500.00</td>
</tr>
<tr>
<td>National Bank of Newberry</td>
<td>4,877.00</td>
</tr>
<tr>
<td>Bank of McCormick</td>
<td>2,000.00</td>
</tr>
<tr>
<td>Farmers and Merchants Bank, Anderson</td>
<td>5,000.00</td>
</tr>
<tr>
<td>Bank of Pendleton</td>
<td>33,459.73</td>
</tr>
<tr>
<td><strong>Total as per Cashiers' Certificates</strong></td>
<td>$79,336.73</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank of Pendleton, Oct. 5, 1916</td>
<td>16,066.03</td>
</tr>
<tr>
<td><strong>Total Net Cash in Banks Oct. 5, 1916</strong></td>
<td>$63,270.70</td>
</tr>
</tbody>
</table>
Summary of Ledger Balances covered by Cash in Banks:
- College and Cadet Funds: $49,504.80
- Adams Fund: $419.24
- Smith-Lever State Fund: $25,348.00

Less Overdrafts Ledger Accounts as follows:
- Smith-Lever Federal Fund: $8,268.80
- Smith-Lever Direct Appropriation: $308.34
- Farm Products Fund: $475.93
- Re-investment Fund: $2,650.98
- Hatch Fund: $297.29

Total Net Balances all funds combined: $75,272.04

October 5, 1916: $63,270.70

GENERAL STATEMENT OF CASH ON HAND
(Close of Business, Thursday, October 5th, 1916)

ACTUAL CASH IN OFFICE:
National Currency and Legal Tender:
- Twenty-dollar bills: $460.00
- Ten-dollar bills: $1,380.00
- Five-dollar bills: $1,205.00
- Two-dollar bills: $158.00
- One-dollar bills: $95.00
- Gold Coin: $5.00

Silver and Minor Coin:
- Dollars: $40.00
- Halves: $41.00
- Quarters: $137.50
- Dimes: $26.80
- Coppers: $2.58

Total Actual Cash (Counted): $3,566.98

Checks and Other Items:
- Checks for Deposit: $1,850.69
- Trav. Expenses Advanced: $870.00
- Sept. Pay Roll Items: $4,342.86
- Rent Receipt: $4.00
- Extensions Granted to students on entrance fees: $210.40
- Cadet Uniform Refund: $1,781.70

Total: $3,566.98
<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadet Refund Checks Miscellaneous (See refund book)</td>
<td>714.10</td>
</tr>
<tr>
<td></td>
<td>2,495.80</td>
</tr>
<tr>
<td>Total Items Counted as Cash (As Audited)</td>
<td>$9,773.75</td>
</tr>
<tr>
<td></td>
<td>$9,773.75</td>
</tr>
<tr>
<td>Grand Total Cash and Items Counted as Cash</td>
<td>13,340.73</td>
</tr>
<tr>
<td>Less amount advanced by bank for pay roll, included</td>
<td>2,850.55</td>
</tr>
<tr>
<td>Cash Balance as per Cash Book, Oct. 5, 1916</td>
<td>$10,490.18</td>
</tr>
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**SEGREGATION OF CASH BALANCE OCTOBER 5, 1916**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Cadet Deposits</td>
<td>$6,134.26</td>
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<tr>
<td><strong>Other Funds in Office:</strong></td>
<td></td>
</tr>
<tr>
<td>Tuition</td>
<td>$2,600.00</td>
</tr>
<tr>
<td>Miscellaneous Funds</td>
<td>280.94</td>
</tr>
<tr>
<td>Cadet Fund</td>
<td>1,474.98</td>
</tr>
<tr>
<td><strong>Total Cash</strong></td>
<td>$10,490.18</td>
</tr>
<tr>
<td>Position</td>
<td>Name</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>1. President</td>
<td>W. M. Riggs</td>
</tr>
<tr>
<td>2. Director of Agricultural Dept. and Experiment Station</td>
<td>J. N. Harper</td>
</tr>
<tr>
<td></td>
<td>S. B. Earle</td>
</tr>
<tr>
<td>3. Director of Engineering Dept.</td>
<td>C. S. Doggett</td>
</tr>
<tr>
<td>4. Director of Textile Department</td>
<td>R. N. Brackett</td>
</tr>
<tr>
<td>5. Director of Chemical Dept.</td>
<td>R. A. Jones</td>
</tr>
<tr>
<td>6. Director of Military Dept. (part salary)</td>
<td>W. W. Long</td>
</tr>
<tr>
<td>7. Director of Extension Dept.</td>
<td>D. W. Daniel</td>
</tr>
<tr>
<td>8. Professor of English</td>
<td>W. S. Morrison</td>
</tr>
<tr>
<td>9. Professor of History and Political Economy</td>
<td>S. M. Martin</td>
</tr>
<tr>
<td></td>
<td>T. G. Poats</td>
</tr>
<tr>
<td>10. Professor of Mathematics</td>
<td>F. H. H. Calhoun</td>
</tr>
<tr>
<td>11. Professor of Physics</td>
<td>R. O. Feeley</td>
</tr>
<tr>
<td>12. Professor of Geology and Mineralogy</td>
<td>A. F. Conradi</td>
</tr>
<tr>
<td>13. Professor of Veterinary Science and State Veterinarian</td>
<td>R. L. Shields</td>
</tr>
<tr>
<td>14. Professor of Entomology and Zoology</td>
<td>H. W. Barre</td>
</tr>
<tr>
<td>15. Professor of Animal Husbandry and Dairying</td>
<td>C. C. Newman</td>
</tr>
<tr>
<td>16. Professor of Botany and Bacteriology</td>
<td>W. L. Hutchinson</td>
</tr>
<tr>
<td></td>
<td>T. E. Keitt</td>
</tr>
<tr>
<td>17. Professor of Horticulture</td>
<td>Hale Houston</td>
</tr>
<tr>
<td>18. Professor of Agronomy</td>
<td>R. E. Lee</td>
</tr>
<tr>
<td>19. Professor of Soils</td>
<td>F. T. Dargan</td>
</tr>
<tr>
<td>20. Professor of Civil Engineering</td>
<td>A. B. Bryan</td>
</tr>
<tr>
<td>21. Professor of Drawing and Architecture</td>
<td>A. G. Shanklin</td>
</tr>
<tr>
<td>22. Professor of Electrical Engineering</td>
<td>D. H. Henry</td>
</tr>
<tr>
<td>23. Associate Professor of English</td>
<td>F. M. Rolfs</td>
</tr>
<tr>
<td>24. Associate Professor of Mathematics</td>
<td>F. J. Crider</td>
</tr>
<tr>
<td>25. Associate Professor of Chemistry</td>
<td>J. M. Burgess</td>
</tr>
<tr>
<td>26. Associate Professor of Botany and Bacteriology</td>
<td>S. R. Rhodes</td>
</tr>
<tr>
<td>27. Associate Professor of Horticulture</td>
<td>W. W. Routten</td>
</tr>
<tr>
<td>28. Associate Professor of Dairying</td>
<td>J. W. Gantt</td>
</tr>
<tr>
<td>29. Associate Professor of Mech. and Elec. Engineering</td>
<td>S. T. Howard</td>
</tr>
<tr>
<td>30. Asst. Professor of Wood Shop</td>
<td>W. G. Blair</td>
</tr>
<tr>
<td>31. Assistant Professor of Forge and Foundry</td>
<td>C. W. McSwain</td>
</tr>
<tr>
<td>32. Assistant Professor of Machine Shop</td>
<td>G. F. Lipscomb</td>
</tr>
<tr>
<td>33. Assistant Professor of Carding and Spinning</td>
<td>J. H. Mitchell</td>
</tr>
<tr>
<td>34. Assistant Professor of Weaving and Designing</td>
<td>M. E. Bradley</td>
</tr>
<tr>
<td>35. Asst. Professor of Chemistry</td>
<td>L. A. Sease</td>
</tr>
<tr>
<td>36. Asst. Professor of Chemistry</td>
<td></td>
</tr>
<tr>
<td>37. Assistant Professor of English</td>
<td></td>
</tr>
<tr>
<td>38. Assistant Professor of English</td>
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</tr>
<tr>
<td>Position</td>
<td>Name</td>
</tr>
<tr>
<td>----------</td>
<td>--------------------</td>
</tr>
<tr>
<td>39.</td>
<td>Assistant Professor of Mathematics</td>
</tr>
<tr>
<td>40.</td>
<td>Assistant Professor of Mathematics</td>
</tr>
<tr>
<td>41.</td>
<td>Assistant Professor of Mathematics</td>
</tr>
<tr>
<td>42.</td>
<td>Assistant Professor of History</td>
</tr>
<tr>
<td>43.</td>
<td>Asst. Professor of Agronomy</td>
</tr>
<tr>
<td>44.</td>
<td>Assistant Professor of Entomology and Zoology</td>
</tr>
<tr>
<td>45.</td>
<td>Assistant Professor of Drawing</td>
</tr>
<tr>
<td>46.</td>
<td>Assistant Professor of Civil Engineering</td>
</tr>
<tr>
<td>47.</td>
<td>Instructor in Mathematics</td>
</tr>
<tr>
<td>48.</td>
<td>Instructor in Architectural Engineering</td>
</tr>
<tr>
<td>49.</td>
<td>Instructor in English</td>
</tr>
<tr>
<td>50.</td>
<td>Instructor in English</td>
</tr>
<tr>
<td>51.</td>
<td>Instructor in Woodwork</td>
</tr>
<tr>
<td>52.</td>
<td>Instructor in Forge and Foundry</td>
</tr>
<tr>
<td>53.</td>
<td>Instructor in Drawing</td>
</tr>
<tr>
<td>54.</td>
<td>Instructor in Drawing</td>
</tr>
<tr>
<td>55.</td>
<td>Instructor in Physics</td>
</tr>
<tr>
<td>56.</td>
<td>Instructor in Botany and Bacteriology</td>
</tr>
<tr>
<td>57.</td>
<td>Instructor in Chemistry</td>
</tr>
<tr>
<td>58.</td>
<td>Assistant in Entomology</td>
</tr>
<tr>
<td>59.</td>
<td>Assistant in Chemistry</td>
</tr>
<tr>
<td>60.</td>
<td>Assistant in Agronomy and Farm Machinery</td>
</tr>
<tr>
<td>61.</td>
<td>Assistant in Botany</td>
</tr>
<tr>
<td>62.</td>
<td>Assistant in Agronomy</td>
</tr>
<tr>
<td>63.</td>
<td>Assistant in Animal Husbandry</td>
</tr>
<tr>
<td>64.</td>
<td>Assistant in Chemistry</td>
</tr>
<tr>
<td>65.</td>
<td>Professor Emeritus Chemistry</td>
</tr>
<tr>
<td>66.</td>
<td>Professor Emeritus English</td>
</tr>
<tr>
<td>67.</td>
<td>Agricultural Publicist</td>
</tr>
<tr>
<td>68.</td>
<td>Secretary-Treasurer</td>
</tr>
<tr>
<td>69.</td>
<td>Chief Bookkeeper</td>
</tr>
<tr>
<td>70.</td>
<td>Bookkeeper</td>
</tr>
<tr>
<td>71.</td>
<td>Assistant to President and Registrar</td>
</tr>
<tr>
<td>72.</td>
<td>Librarian</td>
</tr>
<tr>
<td>73.</td>
<td>Assistant Librarian</td>
</tr>
<tr>
<td>74.</td>
<td>Mailing Clerk to Station</td>
</tr>
<tr>
<td>75.</td>
<td>Secretary Fertilizer Board</td>
</tr>
<tr>
<td>76.</td>
<td>Chemist Fertilizer Analysis</td>
</tr>
<tr>
<td>77.</td>
<td>Assistant Chemist Fertilizer Analysis</td>
</tr>
<tr>
<td>78.</td>
<td>Assistant Chemist Fertilizer Analysis</td>
</tr>
<tr>
<td>79.</td>
<td>Assistant Chemist Fertilizer Analysis</td>
</tr>
<tr>
<td>80.</td>
<td>Assistant State Veterinarian</td>
</tr>
<tr>
<td>81.</td>
<td>Assistant Veterinarian</td>
</tr>
<tr>
<td>82.</td>
<td>Superintendent Coast Experiment Station</td>
</tr>
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</table>
### SALARIES OF TEACHERS AND OFFICERS 1915-1916—(Continued)

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>83. Superintendent Pee Dee Experiment Station</td>
<td>R. E. Currin</td>
<td>1,700.00</td>
</tr>
<tr>
<td>84. Experimental Field Entomologist</td>
<td>Vacant</td>
<td>1,070.00</td>
</tr>
<tr>
<td>85. Poultry Husbandsman</td>
<td>F. C. Hare</td>
<td>2,000.00</td>
</tr>
<tr>
<td>86. Experimental Field Pathologist</td>
<td>C. A. McLendon</td>
<td>1,000.00</td>
</tr>
<tr>
<td>87. Quartermaster</td>
<td>H. A. Sloan</td>
<td>1,050.00</td>
</tr>
<tr>
<td>88. Military Assistant</td>
<td>T. P. Duckett</td>
<td>1,070.00</td>
</tr>
<tr>
<td>89. Steward (Cadet Department)</td>
<td>A. Schilllette</td>
<td>1,700.00</td>
</tr>
<tr>
<td>90. Matron (Cadet Department)</td>
<td>M. E. Middleton</td>
<td>695.00</td>
</tr>
<tr>
<td>91. Surgeon (Cadet Department)</td>
<td>A. M. Dedfern</td>
<td>2,000.00</td>
</tr>
<tr>
<td>92. Superintendent Laundry (Cadet Department)</td>
<td>J. E. England</td>
<td>1,200.00</td>
</tr>
<tr>
<td>93. Foreman College Farm</td>
<td>L. B. Brandon</td>
<td>1,585.00</td>
</tr>
<tr>
<td>94. Foreman Experiment Station Farm</td>
<td>B. Gillison</td>
<td>1,200.00</td>
</tr>
<tr>
<td>95. Superintendent Construction and Repairs</td>
<td>J. Hewer</td>
<td>1,070.00</td>
</tr>
<tr>
<td>96. Superintendent Campus and Roads</td>
<td>J. P. Lewis</td>
<td>1,200.00</td>
</tr>
<tr>
<td>97. Stenographer (President's Office)</td>
<td>M. L. Sadler</td>
<td>855.00</td>
</tr>
<tr>
<td>98. Stenographer (Experiment Station)</td>
<td>H. C. Bradford</td>
<td>855.00</td>
</tr>
<tr>
<td>99. Stenographer (Agricultural Department)</td>
<td>Etta Clarkson</td>
<td>600.00</td>
</tr>
<tr>
<td>100. Stenographer (Fertilizer Department)</td>
<td>M. E. Gasque</td>
<td>855.00</td>
</tr>
<tr>
<td>101. Stenographer (Engineering Department)</td>
<td>Marguerite Bonneau</td>
<td>673.33</td>
</tr>
<tr>
<td>102. Stenographer (Extension Div.)</td>
<td>Belle Sayre</td>
<td>600.00</td>
</tr>
<tr>
<td>103. Clerk (Commandant's Office)</td>
<td>S. C. Kennett</td>
<td>855.00</td>
</tr>
<tr>
<td>104. Y. M. C. A. Secretary (part salary)</td>
<td>Roy John</td>
<td>500.00</td>
</tr>
<tr>
<td>105. Presbyterian Pastor (part salary)</td>
<td>W. H. Mills</td>
<td>500.00</td>
</tr>
<tr>
<td>106. Methodist Pastor (part salary)</td>
<td>J. M. Steadman</td>
<td>500.00</td>
</tr>
<tr>
<td>107. Baptist Pastor (part salary)</td>
<td>T. V. McCaul</td>
<td>500.00</td>
</tr>
<tr>
<td>108. Episcopal Pastor (part salary)</td>
<td>R. M. Marshall</td>
<td>500.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>$159,548.33</strong></td>
</tr>
</tbody>
</table>

### Sources Paid From

- (a) Hatch & Adams Fund (U. S.) for S. C. Expt. Station $15,120.32
- (b) Morrill & Nelson Funds (U. S.) for Teaching $25,000.00
- (c) Fertilizer Tax, etc., for Teach'g and College Operation $74,456.79
- (d) Fertilizer Tax, etc., for Public Service $28,587.22
- (e) U. S. Dept. of Agriculture for Demonstration Work $1,750.00
- (f) Cadet Fund $6,295.00
- (g) Farm and Serum Sales $2,585.00
- (h) Interest on Landscript Fund $5,754.00

**Total** $159,548.33
Note.—Nos. 5, 7, 13, 14, 15, 16, 25, 35, 36, 44, 58, 59, 67, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 101, 102, are engaged in public service work as well as College and Station work.

Nos. 2, 14, 15, 16, 17, 18, 19, 26, 27, 44, 61, 62, 63, 64, 68, 74, 86, 95, 98, are officers of the South Carolina Experiment Station as well as of the College.

Nos. 89, 90, 91, 92, and $200 on No. 71, and $500 on No. 87, are paid from Cadet Funds.

No. 93 is paid from results from sales, also $1,000.00 on No. 81.

The following increases are authorized for 1916-1917:

No. 3, $250; No. 27, $100; No. 45, $200; No. 50, $200; No. 51, $100; No. 53, $100; No. 63, $230; No. 64, $200; No. 68, $200; No. 71, $200; No. 87, $200; No. 97, $145.

FERTILIZER INSPECTION AND ANALYSIS
(Paid from Fertilizer Tax)

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Secretary Board Fertilizer Control</td>
<td>H. M. Stackhouse</td>
<td>$1,700.00*</td>
</tr>
<tr>
<td>2. Chief Chemist</td>
<td>R. N. Brackett</td>
<td>2,500.00+</td>
</tr>
<tr>
<td>3. Fertilizer Chemist</td>
<td>B. F. Robertson</td>
<td>1,700.00*</td>
</tr>
<tr>
<td>4. Assistant Fertilizer Chemist</td>
<td>C. F. Inman</td>
<td>1,285.00*</td>
</tr>
<tr>
<td>5. Assistant Fertilizer Chemist</td>
<td>C. S. Lykes</td>
<td>1,285.00*</td>
</tr>
<tr>
<td>6. Assistant Fertilizer Chemist</td>
<td>J. T. Foy</td>
<td>1,275.00*</td>
</tr>
<tr>
<td>7. Assistant Chemist—Miscellaneous</td>
<td>Benjamin Freeman</td>
<td>1,300.00*</td>
</tr>
<tr>
<td>8. Clerk and Stenographer</td>
<td>M. E. Gasque</td>
<td>800.00*</td>
</tr>
</tbody>
</table>

Fertilizer Inspectors for Season 1915-1916

Fertilizer inspectors at $135.00 per month for time employed:

Force in Tick Eradication Work
(Paid jointly by State of South Carolina and U. S. Dept. of Agri.)

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Inspector in Charge</td>
<td>W. K. Lewis</td>
<td>$2,500.00</td>
</tr>
<tr>
<td>2. Veterinary Inspector</td>
<td>W. L. Cohenour</td>
<td>1,800.00</td>
</tr>
<tr>
<td>3. Veterinary Inspector</td>
<td>Clarke Hedley</td>
<td>1,800.00</td>
</tr>
<tr>
<td>4. Veterinary Inspector</td>
<td>H. B. Hood</td>
<td>1,800.00</td>
</tr>
<tr>
<td>5. Veterinary Inspector</td>
<td>F. S. Hope</td>
<td>1,800.00</td>
</tr>
<tr>
<td>6. Veterinary Inspector</td>
<td>J. W. Murphy</td>
<td>1,800.00</td>
</tr>
<tr>
<td>7. Veterinary Inspector</td>
<td>C. A. Krause</td>
<td>1,740.00</td>
</tr>
<tr>
<td>8. Veterinary Inspector</td>
<td>Z. C. Boyd</td>
<td>1,400.00</td>
</tr>
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<td>9. Veterinary Inspector</td>
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<td>11. Clerk</td>
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* Already reported on list of teachers and officers.
† Also engaged in teaching.

**FORCE IN DEMONSTRATION AND EXTENSION WORK**

**During Fiscal Year, 1915-1916**

(Paid Jointly by Clemson College, the U. S. Department of Agriculture, Chambers of Commerce, etc.)

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Note.—All demonstration agents are not employed for the entire year.
The Honorable Board of Trustees of Clemson Agricultural College, Clemson College, S. C.

The undersigned, as Board of Visitors, would respectfully report:

That on the 3rd and 4th days of May, 1916, they spent the major portion of two days in the inspection of the College and Experiment Station.

The time in hand was insufficient, of course, for a detailed, minute inspection of any portion of the institution, and our report necessarily must be broad generalizations of the impressions made upon us.

In the beginning we wish to state that these impressions are favorable. There is a rub about the entire institution and all of its departments an appearance of order, system and neatness that would indicate close, careful attention on the part of the heads of departments and those responsible for the control and direction of its affairs. The different departments seem to be co-ordinated and to work well together. The members of the faculty with whom we came in contact seem to be earnest, conscientious and enthusiastic, and these are very needful qualities in the education and development of the minds of the young men of the State.

The Y. M. C. A. Building is a beautiful structure, both inside and out, and is fully and completely fitted up and adapted to the needs of the young men who seem to appreciate its advantages. We learned with great pleasure of the gift of Mr. John D. Rockefeller of $50,000 for this building, and also of the splendid act of the faculty in giving and raising $15,000.00 additional. In this way a splendid plant costing $78,000.00 was obtained at very small cost to the College.

The discipline and demeanor of the students was all that could be desired, and we think the Commandant, Col. Cummins, is to be commended for his work.

While it may be beyond the scope of our duties, yet we feel that it is proper to express our opinion to the effect that the College should have some more steady and regular source of income than the Fertilizer Tag Tax. The tremendous decrease in the past two years and the great fluctuations from time to time of this source of revenue made this course, in our opinion, imperative. An institution of this kind cannot afford to lay up money to any great extent in prosperous years, and if this is not done work is apt to be begun that will be injured by a decreased expenditure made necessary by times of adversity.

We note with pleasure the large proportion of students taking the Agricultural course; the same constitutes about one-half of the total.
The system of records and bookkeeping seems to be comprehensive and complete. The President, Dr. Riggs, seems to have a clear grasp not only of the large questions of administration, but also of the minute details of its operation, and we think to his wise and careful efforts much of its success is due.

Respectfully submitted,
(Signed) Jas. M. Moss
W. I. John
W. P. Odom
J. Howard Moore
Charlton DuRant, Chairman.

Dr. W. M. Riggs, President,
Clemson College, S. C.

Dear Sir:

I have the honor of submitting herewith the Twenty-ninth Annual Report of the South Carolina Experiment Station for the fiscal year ending June 30, 1916.

This Station continues to make progress in its work. The following is a list of the projects that are now being prosecuted:

**Division of Agronomy**

Experiments to determine the relation that exists between soil types and the length of cotton fiber.

Test of about thirty varieties of cotton.

Experiments to determine the effect of pollen from barren stalks of corn on the yield of corn.

Variety tests with corn.

Improvement of corn by the ear-to-row method of breeding.

Test with forage crops and grasses.

Experiments to determine the limiting factor in crop production.

Experiments to determine the value of various rotations and the value of winter cover crops.

Barley breeding experiments.

Tests with varieties of wheat, oats, cowpeas, rye, soy beans, velvet beans, etc.

Experiments to determine relative cost of production of cotton, corn, oats and peas.

Variety tests with sweet potatoes.

Variety tests with peanuts.

Experiments to determine the effect of applying large amounts of fertilizer on the yield and on the physiology of the cotton plant.

Tobacco breeding experiments.

Experiments with hog grazing crops.

Fertilizer test with peanuts.

Fertilizer test with Irish potatoes.

A study to determine the influence of soil type on the chemical composition of certain plants, in cooperation with division of Soils and Chemistry.

**Division of Soils and Chemistry**

Fertilizer experiments with cotton.

Experiments to determine the value of the different forms of lime in connection with incorporating organic matter at different times.
Fertilizer experiments with crops in rotation.  
Study of methods for determining nitrogen in manure.  
Study of methods for determining soil potash.  
Methods of determining a practical way of saving potash from the ashes of wood and sawdust.  
Miscellaneous analytical work.

Division of Botany

Experiments for control of Anthracnose in cotton.  
Experiments to determine the value of treating cotton seed with hot water for preventing Anthracnose.  
Study of seed and seedlings in their association with the angular leaf spot.  
Study of experiments to determine the best method of controlling angular leaf spot of cotton.  
The breeding of varieties of cotton resistant to cotton wilt.  
Experiments to determine the causes of the shedding of cotton.  
Breeding of strains of cotton resistant to drought.  
Breeding of early maturing varieties of cotton with which to fight the boll weevil.  
Study of the plant diseases of South Carolina with a view of determining conditions influencing outbreaks and distribution of same, etc.  
Experiments in forestry with a view of determining best methods of reforesting the coastal region of the state.  
Experiments to determine relation of temperature and moisture to insect activity.  
Investigations of wireworm and methods of controlling same.  
Experiments to control the heavy armored scale insects, with oil emulsions.  
Experiments to determine methods of controlling cabbage bug, bud worm, tobacco horn worm, cotton root louse, cottony cushion scale by lady birds, argentine ant, etc.

Division of Horticulture

Experiments with apples: breeding new varieties, effect of summer pruning on fruit buds, budding and grafting in its relation to crown gall and hairy root, variety tests and effect of different methods of planting.  
Pears: cultural methods as a means of controlling blight and testing new varieties.  
Quinces: testing varieties.  
Persimmons: testing Japanese varieties, collecting desirable native varieties and the top working of native varieties with Japanese and also desirable native varieties.  
Peaches: variety tests, tests of extreme method of pruning on early production, etc.  
Plums: testing American and Japanese varieties.
Grapes: experiments to determine effect of foreign pollen on productiveness of rotundifolia type, also to determine those that are self sterile, pruning experiments and variety tests, etc.

Strawberries: variety tests, fertilizer tests and tests of cultural methods.

Blackberries and Raspberries: variety and pruning tests.

Variety and cultural tests with salsify, cauliflower, cabbage, lettuce, celery, lima beans, egg plant, pepper.

Breeding of rust resistant varieties of muskmelons.

Asparagus: fertilizer test and test to determine the comparative yield from male and female plants.

Pecans: variety tests, studies to determine variability of seedlings, different methods of pruning and test of standard varieties.

Division of Animal Husbandry

Experiments to determine cause of inferior texture common to southern butter.

Experiments to determine to what extent different feeds effect the quality of butter.

Comparison of different carbohydrates as supplements to cotton seed meal in milk production.

Testing the comparative value of lint and lintless seed hulls as part of roughage in dairy ration.

Grading up herd by use of Hereford bull and native scrub cows as foundation stock.

Testing forage crops for pork production.

Comparison of corn meal and rice meal in pork production.

Experiments to determine value of cotton seed meal as part of ration for horses and mules.

Grading up of mares for mule production by use of Percheron stallion on native mares.

Pee Dee Station

The work of the Pee Dee Station is in splendid shape and we have made a number of improvements during the past year. We have continued the experiments begun a year or two ago and in addition have established the most complete hog grazing experiments to be found anywhere in the south.

Coast Experiment Station

I am pleased to report that the Coast Station has been greatly improved during the year, and since we have erected a dike preventing the overflow of water from Rumph's creek and the consequent flooding of the farm, I believe that we will be able to produce good crops.

During the year, some of the station officers assisted the Extension Division in conducting farmers' institutes, and as heretofore the
station officers wrote many thousands of letters in answer to ques-
tions asked them by the farmers of the state.

The station continues to cooperate in experimental work with the
Department of Agriculture along a number of lines.

The following are some of the outstanding results of the year's
work:

The Chemical Division has found that there is an error in the
official method for determining soil potash, the same holding true for
other soil bases, and this Division has found a better and quicker
method for determining soil potash.

The Botany Division made progress with its work on cotton shed-
ding, bacterial diseases and cotton anthracnose. While the hot water
treatment for anthracnose does not entirely eliminate the disease,
it does, however, effectively lessen the amount of the disease. Soil
moisture was found to be the principal factor in causing cotton
shedding. The plants all throw off a part of the fruit when beginning
to suffer from lack of soil moisture. In the bacterial disease work
it was found that Bacillus malvacearum, previously supposed to cause
injury to cotton, was the cause of several serious diseases in seed-
lings. In many instances 50 to 90 percent of the plants in the field
were infected, and in many cases the plants were killed. It was
found that cotton can be successfully sprayed with Bordeaux mixture
and other spray solutions and that spraying may play an important
part in the control of cotton diseases in the future.

The Agronomy Division has found that barrenness in corn is
largely due to environment rather than to hereditary causes.

The Entomological Division has found that the presence of moisture
in the soil, influences, to a certain extent, the life history of the
various species of wireworm.

Respectfully submitted,
J. N. HARPER,
Director.
Report of Branch Experiment Station


President W. M. Riggs,
Clemson College, S. C.

Dear Sir:

I have the honor to submit a special report of the work at the Pee Dee Station, the Coast Station, and the College Farm, for the year 1915-16.

Pee Dee Station

We are continuing our fertilizer work at the Pee Dee Station under the supervision of Professor T. E. Keitt. This is the most elaborate fertilizer test being conducted in the South, and we are getting most interesting results from this test, which will be far reaching in their effect.

We planted a small area of about two acres in alfalfa last fall and have gotten two excellent cuttings from this patch. We believe with proper treatment alfalfa growing will be successful on the Orangeburg sandy loam type of soil. There is a considerable area of this soil type found throughout the Coastal Plain of this state.

The work that we are doing in root-knot control at the Pee Dee Station is worthy of mention. The soils of the Coastal Plain, especially in the Pee Dee Section, are badly infested with worms that cause root-knot. The only way that we can fight this pest is by propagating plants, more or less immune, to their attack. We have two acres of land planted in a great variety of plants with the object of testing out those which promise to be more or less immune to these nematodes.

We have now at the Station a considerable area planted in grapes, peaches, and plums. All of this horticultural work, under the supervision of Professor Newman, is being conducted in a proper manner by Mr. Currin, the superintendent.

The fruit trees are in excellent shape, and while they have little fruit this season on account of the very late freeze in the spring, everybody who visits the Station compliments the manner of pruning and general upkeep. All of the varieties of grapes promise a good yield this season, and they have been properly sprayed and attended to.

The young strawberries and asparagus plants are growing nicely. The cabbage crop grown at the Pee Dee Station was the best one in the Pee Dee Section, and we obtained as much as three hundred dollars per acre from our cabbage patch. The Irish potato crop was fair, and is now being sold at good prices.

The peanut work, in cooperation with the United States Department of Agriculture, commenced last year, has been greatly enlarged.
in area and in the number of experiments conducted. The Govern-
ment experts say that this is the most extensive work along this line
ever conducted in the South. The growing of peanuts is quite profi-
table, and the cultivation of this crop is gradually being extended in
this state. Very few tests have been made as to the fertilizer re-
quirements of this plant. We are now conducting fertilizer tests with
peanuts at this Station.

We have a promising field of tobacco, something like six acres.
The crop is late, however, due to the late freeze and the loss of our
tobacco plants in the bed. Our important problem with tobacco is
the breeding of a type that will cure uniformly.

We have now growing at this Station practically every forage plant
grown in the country that promises to be of any value to the Coastal
Plain of our state. Our breeding work with corn and wilt resistant
cotton is as complete as our conditions will warrant. The variety
of corn that is most promising for that section is one that we have
named "Pee Dee No. 5." It has obtained quite a reputation in the
Pee Dee Section of the state, and our wilt resistant variety of cotton,
obtained from seed developed by Professor Barre, is in great demand.

I wish in this report to especially call your attention to our ex-
periment in the keeping of sweet potatoes. We had last year about
twenty-seven varieties of potatoes. These we stored in a specially
designed potato house which we had constructed. This house was
built last summer, and so far it has proved to be what we have long
wanted in this state. The interest taken in our work by potato
planters has been wide-spread, and has caused a general extension
of sweet potato growing around Florence. I am quite sure that a
number of potato houses will be constructed from the plans of our
potato house.

Another new project commenced this year is that of experimenting
with hog grazing crops. We did not get our plans perfected until
the early spring, but we have been able to complete the lots and
pastures, and have started the most extensive test to be found any-
where with hog grazing crops. This has been financed by funds
from the sale of potash salts.

Our grain crops of oats, wheat, and rye at the Pee Dee Station
were badly injured by droughts this spring. The rye crop, however,
in spite of the droughts, did exceedingly well. I am unable to report
the yields from these cereals as they have not yet been thrashed.

All of the buildings on the place are in fair condition. However,
the barn and one or two other buildings need painting.

A full and detailed report of this Station will be published in the
annual report of the South Carolina Experiment Station.

Coast Station

All of the land, now consisting of about thirty-four acres, was
plowed deeper than it has ever been plowed before. We had a fairly
good crop but it was damaged by the drought.
We now have at this Station about eight acres in soy beans planted after oats. We have established a splendid variety of soy beans that is well adapted to the Coastal Plain, and we are advocating the cultivation of this legume. It is a great soil builder and nitrogen gatherer, and promises to be a profitable money crop because of the fact that a number of oil mills are introducing machinery to extract the oil from soy beans. This oil is now being used, mixed with linseed oil, as a filler for paint.

We have only four acres in cotton. This is in our fertilizer and variety work. We are continuing our fertilizer tests begun several years ago at the Coast Station.

We also have two acres planted to forage crops and we have something like forty or fifty varieties of forage crops and grasses in these tests. We have one acre devoted to variety work with peanuts, an acre on which we are testing the fertilizer requirements of peanuts. We have several acres planted to peanuts as a commercial crop.

The barn, fertilizer house, and implement shed have been painted. We have whitewashed the stable, chicken house, wagon sheds, and most of the fencing around the yard. The poultry yard has been rebuilt. All of the missing places in the pecan orchard have been planted with trees, and the grape orchard has been considerably extended, in that one row of grapes has been planted between the old rows which were too wide.

The ditch and dike east of the farm, as laid out by Mr. Eason, have been completed. The ditch from Platt's Branch with the exception of a few hundred feet, has also been finished.

All of the stubble land not planted in soy beans has been planted in peas. The bud worm was unusually severe this year, and it has damaged our corn somewhat.

All of the fencing for the hog grazing crops is about complete. We have at the Coast Station the same extensive plan for hog grazing crops as we have at the Pee Dee Station. However, we are not using quite as much land for this work.

Considerable work of an important nature has been done in the way of clearing out bushes along the fences, and a good deal of undergrowth has been taken out in the pastures. We have built a new lot and have sodded it with Bermuda grass. There is about one acre in this lot.

Mr. Garrison has taken hold of this work with vim and energy, and I am pleased to report that he is getting on nicely with his work.

Clemson College Farm

In making an annual report of the Clemson College Farm, I regret to report that during the year we have had to sustain one of the greatest losses that we have met with in years. The overflow that we had last July caused us a damage of several thousand dollars. I estimate that our loss was at least 4,500 bushels of corn, and we
had to go to the expense of making a second crop which cost us in the neighborhood of two thousand dollars. The second crop was a poor one. Our cotton crop, however, was good. We made about a bale to the acre.

The alfalfa crop was excellent. We harvested in the neighborhood of four tons of hay per acre.

After we harvested our corn we planted our bottom lands in oats to the extent of about two hundred acres. We have harvested between eight thousand and ten thousand bushels of oats from this land. We planted the Goodman field in wheat and although it was badly damaged by a drought, still I believe that we will thrash out at least one thousand bushels.

We have obtained two cuttings already from our alfalfa field. Both of these were good. The estimated yield is about three-fourths ton per acre.

Our present crops are in excellent condition, and bid now to give us fine yields.

During the year we have done considerable improvement work in the way of building a cement bridge over Hunnicutt Creek, cutting out undergrowth back of Fort Rutledge Hill and deepening a good many of the ditches in the bottoms.

Considering the set-back we had, caused by the overflow, I think we have done exceptionally well and I take pleasure in commending Mr. Brandon for his faithfulness and diligence.

Yours most respectfully,

J. N. HARPER,
Director.
Report on Extension and Demonstration Work


Dr. W. M. Riggs, President,
Clemson College, S. C.

Dear Sir:

The slogan of the demonstration work in South Carolina has always been Soil Building for we realize that without a fertile soil agriculture is not only disappointing but hopeless. The results obtained by the agents in the different counties this year in preaching the doctrine of soil building have been unusually successful. In fact there is a greater area seeded to clover and vetch and the winter soil building legumes than any time in the history of the State. As an evidence of this fact, the agent in Laurens County had one shipment of 12 tons of clover seed and the reports generally from all the agents show an increased interest in winter legumes and consequently the largest acreage of these crops in the history of the State has been seeded this season.

The idea of soil building of course necessarily carries with it the idea of intelligent diversification and in any well balanced system of diversification livestock must have a place, and the results obtained by our beef cattle experts have been exceedingly gratifying. There is a general interest manifested throughout the State in developing the livestock industry. As an evidence of this fact our agents have organized in the different counties twenty-one county livestock associations. They brought in a cooperative shipment of one hundred and twenty-one head of purebred breeding stock and they were instrumental in bringing in a great many more through individual farmers.

Our agents during the winter of 1915 had under their supervision the feeding of 5,000 head of beef cattle. This was the first attempt on the part of any extension agency to develop a state-wide system of feeding cattle. In order that the agents might follow up the feeding of so large a number and be able to give definite instructions, the State was divided into three districts and with the assistance of the county agents, who visited the different farms and reported to the specialists, the specialists were able to keep in close touch and to have first hand information as to how each bunch of feeding cattle was thriving. Had it not been for the very high price of cotton seed meal this season, I have every reason to believe that there would have been a greater number of cattle fed in South Carolina this fall than any time in its recent history.

The specialists not only had supervision of the feeding of the number of cattle mentioned above but they, in a large measure, made very satisfactory sales of these cattle. Cattle sales were held at Rock Hill, Greenwood and Aiken. $16,000 worth of cattle were sold at Rock Hill and $6,000 worth at Greenwood. Total sales of beef
cattle for which the agents were responsible amounted to something over $70,000. The significant feature of these sales was that they were attended by many of the largest buyers from the large markets of New York, Philadelphia, Baltimore, and Richmond and the prices obtained were most satisfactory. Prices ranged from 5 cents to 9 cents per pound. One farmer received for seven steers 9 cents per pound which netted him $833.58.

Our specialists have assisted in bringing into the State a great many purebred hogs. For instance, 125 Duroc-Jerseys were brought into Greenville County, 115 into Anderson County and 120 into York County. While these were the largest importations into any single counties, yet a great many purebred hogs have been introduced into the different counties as a result of the livestock work of our agents.

Recognizing the necessity of a market every day in the year for beef cattle and hogs that might be raised by the farmers of South Carolina, the extension agents busied themselves in interesting business men and farmers in the cities of Orangeburg and Greenville in the establishment of two packing houses. The establishment of these packing houses was advocated principally from the standpoint of the establishment of a market for the livestock of the farmers of the State. As an evidence of the interest and spirit of cooperation of the business men in these two cities, $200,000 was subscribed for the establishment of a packing house at Orangeburg and $100,000 for the establishment of a packing house at Greenville. The business men and bankers of those two cities have guaranteed sufficient working capital, other than the amount stipulated in the charters.

The establishment of these packing houses not only means a market every day in the year for the livestock of the State, but it means a market for the surplus hay and grain, for it is a well known fact in agriculture that all surplus hay and grain should be fed to livestock and marketed through them.

We are very hopeful that the establishment of these packing houses will, in a large measure, assist in solving the problem of marketing the livestock for South Carolina farmers. We believe that the establishment of these two packing houses will take care of the marketing problem and, therefore, we are not endeavoring to encourage the establishment of additional packing houses at this time.

The work with the creameries, of course, is a part of the livestock problem. As has been stated before, there are four creameries in operation within the State and notwithstanding the very high price of cotton and the consequent high price of cotton seed meal, these creameries are all on a paying basis. The output of the creameries at Clemson, Spartanburg, Darlington and Rock Hill at this time is about 25,000 pounds of butter per month, which means a return to the farmer of practically $8,000 per month for butterfat.

The creameries have stimulated an interest in dairying, especially in the Pee Dee section of the State in those counties adjacent to the County of Darlington. As an evidence of this fact some 300 head of purebred and grade Guernsey cattle have been bought by the far-
mers of those counties, representing an expenditure of some $15,000 or $20,000.

The work of the extension specialists in horticulture has been exceedingly gratifying. Under the supervision of the two horticulturists there have been developed in the State, in cooperation with the county agents, 221 home orchards. These orchards are so located in the different counties that they are object lessons to the farmers of the different communities and serve as demonstration orchards. Field meetings are held in these orchards and instructions in pruning, spraying, cultivation and proper handling of the fruit are given by our specialists. The horticulturist of the College informs me that his correspondence seeking information in reference to horticultural problems has increased within the last year at least 33 1-3 per cent., showing the great interest that our people are manifesting in endeavoring to produce good fruit for home consumption.

Our marketing agent has had an exceedingly successful year in organizing associations for the handling and marketing of asparagus, strawberries and the melon crop of the State. Although the fact is not generally known, South Carolina grows and ships considerable asparagus. In quality this asparagus compares favorably with the best that is found upon the market. The greatest set back to the industry has been the poor way in which the crop has been handled and the disastrous way in which it has been marketed. Appreciating this fact we organized the Asparagus Growers' Association of the State and we had our marketing agent to visit the markets of the north and east to ascertain just what was required in the way of grading and packing the asparagus for these markets. At the same time that he was in the north ascertaining the facts in reference to the different markets, arrangements were perfected with the North American Fruit Exchange of New York. This Exchange has salaried representatives in all of the important markets. These representatives keep the main office carefully posted on all the markets and they in turn are kept posted by the main office. Since this Exchange does no buying and operates only for commissions and not for speculation, a very favorable connection was made. In other words, it is to the interest of such an agency to make the highest sales possible in order than they can obtain the most commission.

As an evidence of the success of this undertaking, there were shipped through our agency 46,000 crates of asparagus, or figuring 460 crates per car, 96 cars. The prices averaged from $1.50 to $3.50 per crate as against 50 cents to $1.50 the year previous. The trade was very much pleased with the way the asparagus was handled and packed and for the first time South Carolina asparagus obtained prices equal to those of the asparagus shipped from California. The growers were so well pleased with their association and the new method of marketing that they are increasing their acreage instead of plowing up their fields as they have been doing for the past few years.
South Carolina was at one time considered a very important strawberry producing state but in latter years the acreage has fallen off very noticeably. The strip in Horry County along the Atlantic Coast from Myrtle Beach to Chadbourn, N. C., includes the important strawberry shipping points of South Carolina. All conditions contribute ideally to the growing of strawberries in this section. The strawberries come in on the market when the prices are profitable yet the growers have not been receiving those prices that they should have received. Up to last season the growers were not only at the mercy of some of the commission merchants but also of the various combinations of the buyers on the tracks at the local shipping points. While this is true in reference to the buyers, the fault was not altogether with the commission merchants and the track buyers, as the growers were exceedingly careless in grading and sorting the berries and there was very little spirit of cooperation and practically no knowledge of market prices and market conditions.

Our market agent made his temporary headquarters at Chadbourn and worked out from that point. The Office of Markets and Rural Organization, through its representatives in the various markets, supplied our agent with code messages daily relative to markets, which were in turn sent out to the growers. Our agent frequently visited the growers and instructed them in grading and sorting. As a result of these instructions a far superior class of berries was offered and the commission merchants and track buyers were very anxious to secure these inspected berries.

The growers were organized into local shipping associations. One car often contained the berries of a dozen growers. After each crate was carefully inspected and loaded, the car was opened for bids. If the bid did not come up to the market prices the car was ordered to be rolled to the market. The best commission houses were selected. This arrangement automatically broke up local combinations, toned up the prices on the track, and at the same time injected competition not only among the track buyers but between the commission merchants and the f. o. b. buyers.

Four hundred and ninety-two cars were shipped and the growers received an average of $2.50 to $4.00 per crate under our marketing system as against $1.00 to $2.00 during former seasons. It is not necessary to mention that our agent is having no trouble whatever in further organizing the growers for next year's operation.

After the marketing of the berries the question of marketing the cantaloups and melons in the lower counties was undertaken. Our market agent was located at Blackville and operated in Bamberg, Barnwell, Hampton, Jasper and a part of Aiken counties. Here again the great trouble among the growers was their careless sorting and grading, lack of cooperation, and the ignorance of market prices and market conditions. The cantaloups were handled very roughly in the field, were picked too green and were put up in crates not only in an ununiform manner but in a bruised condition. There was no fault with the quality of the cantaloups. The melons were loaded into the car in mixed lots with all kinds of sizes. This carelessness,
both for the cantaloupes and watermelons, had to be eliminated before the growers could enjoy better prices.

In order to make a gradual step toward better methods and greater cooperation, the Fairfax watermelon growers were organized into a local association. The success of this local association was used as an example and demonstration. It showed what could be done when better methods were adopted and when the growers were organized. The prices in the different markets throughout the country were furnished our agent by the Office of Markets and Rural Organization and he informed the growers each day of market conditions.

Seventy-three carloads of cantaloupes and one thousand five hundred and fifty-one cars of melons were shipped out of this section. The prices for the cantaloupes ranged from 50 cents to $1.50 per crate and the melons sold for $100 to $125 per car on track as against $50 and $65 last year.

There is a great interest aroused among the growers of melons and we will have no trouble next spring in organizing all of the melon growers in South Carolina into a state organization, growing out of the success of our marketing demonstrations this last season.

I have given you a brief report of certain activities being carried on in this division. The annual report will give this data in greater detail.

Respectfully,

W. W. LONG,

Director.
Report of the Secretary of the Fertilizer Board

Dr. W. M. Riggs, President,
Clemson College, S. C.

Dear Sir:

I respectfully submit the following brief report of the Fertilizer Department for the fiscal year ending June 30th, 1916.

Due to the prevalence of war conditions, the trade in fertilizers has been more irregular and exacting than any former year. The inability of manufacturers to secure the usual supply of sacks, and the scant supply of potash made it impossible for them to meet former legal requirements as to grades, brands, etc. Only by the special acts of the last Legislature was the trade and Department able to meet the conditions thus imposed. Then too a feeling of uncertainty on part of the buyers was created, so that the fertilizer trade is this year only exceeded by thirteen per cent. that of last. The demands for analysis however were nearly doubled. With the efficient aid of Director Long's agents in each County, more than twice the farmers availed themselves of the special law made for their benefit in the matter of "farmers' samples".

For purposes of comparison, the following exhibit is submitted, viz:

<table>
<thead>
<tr>
<th></th>
<th>1915-1916</th>
<th>1914-1915</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fertilizers other than meal sold</td>
<td>541,886 Tons</td>
<td>468,512 Tons</td>
</tr>
<tr>
<td>Cotton seed meal sold</td>
<td>128,724 Tons</td>
<td>112,000 Tons</td>
</tr>
<tr>
<td>Number fertilizer samples collected</td>
<td>1,808 Tons</td>
<td>1,454 Tons</td>
</tr>
<tr>
<td>Number farmers samples collected</td>
<td>426 Tons</td>
<td>295 Tons</td>
</tr>
</tbody>
</table>

Analysis

The analyses of entire season have been compiled in Bulletin No. 187, and 20,000 copies mailed to those requesting them. Rather smaller number of samples have been found deficient below guarantee than usual. A few cases of short weights were found and reported, and all these were promptly adjusted to the satisfaction of buyers.

We are advised that dealers in fertilizers generally claim and collect from manufacturers amount of rebates due on account of deficiencies found on analysis; but we do not know whether individual farmers usually get their pro rata share of these rebates to which they also are entitled. These individual buyers are of course unknown to this Department, and we can only invite their attention to our bulletins of analyses which may give them the necessary information upon which to make their claim.
Inspection

The sale and movement of fertilizers opening a month sooner than last year, the inspectors entered loyally on their work on January 20th, and out of some 2000 samples collected, only one has been shown incorrectly or carelessly taken. One of these inspectors was sick the last two weeks of the season, and his District was apportioned and added to the contiguous Districts.

During the autumn or fall months, half the number of inspectors were engaged visiting the Oil Mills and incidentally any lots of fertilizers found being marketed at that season of the year.

The dual use of cotton seed meal for stock-feed and fertilizer leads to complication and much confusion both to the mills and to the buyers for one or the other of these purposes. Much meal of lower grade has been this season shipped into this from other States, and buyers who did not understand these feed-stuff guarantees, bought it for fertilizer purposes and paid the price of good "Standard Meal." One judgment has been obtained in court by our attorney against the seller for such violation and other prosecutions may follow.

The total expenses of the Department for the fiscal year will appear in the itemized statement of our Treasurer, to which I respectfully refer.

Respectfully submitted,

H. M. STACKHOUSE,
Secretary Fertilizer Department.
Report of Chief Chemist on the Analytical Work of the Chemical Department, 1915-1916


Dr. W. M. Riggs, President,
Clemson College, S. C.

Dear Sir:

I respectfully submit the following report of the work on commercial fertilizers, waters, etc., done for the Board of Fertilizer Control, and for the citizens of the State, during the year ending June 30th, 1916. For the sake of comparison the figures for last year are given side by side with this year:

<table>
<thead>
<tr>
<th></th>
<th>1914-1915</th>
<th>1915-1916</th>
</tr>
</thead>
<tbody>
<tr>
<td>Official samples of Fertilizers</td>
<td>1229</td>
<td>1598</td>
</tr>
<tr>
<td>Farmers' samples of Fertilizers</td>
<td>201</td>
<td>427</td>
</tr>
<tr>
<td>Ashes (Wood)</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>Limestones and Marls</td>
<td>78</td>
<td>17</td>
</tr>
<tr>
<td>Ground Oyster Shells</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Lime</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Waters</td>
<td>104</td>
<td>136</td>
</tr>
<tr>
<td>Assays for Gold and Silver</td>
<td>10</td>
<td>21</td>
</tr>
<tr>
<td>Copper Ores</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Manganese Ores</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Iron Ores</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Clays and Ochers</td>
<td>22</td>
<td>24</td>
</tr>
<tr>
<td>Ores, minerals, rocks, etc., for identification</td>
<td>54</td>
<td>88</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>8</td>
<td>34</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1724</strong></td>
<td><strong>2370</strong></td>
</tr>
</tbody>
</table>

An examination of these two tables shows that there has been an increase in the total number of samples of about 37.5 per cent., due largely to an increase of about 30 per cent. in the number of official fertilizer samples and of about 112 per cent. in the number of farmers' fertilizers received this year as compared with last year. It will also be noted that there was an increase of about 30.75 per cent. in the number of waters, of over 50 per cent. in the number of assays for gold and silver, of about 63 per cent. in the number of materials for identification, and of over 300 per cent. in the number of miscellaneous samples this year as compared with last year.
Classification of Official Fertilizer Samples

<table>
<thead>
<tr>
<th>1914-1915</th>
<th>1915-1916</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete fertilizers</td>
<td>774</td>
</tr>
<tr>
<td>Home Mixtures</td>
<td>3</td>
</tr>
<tr>
<td>Special Mixtures (Phosphoric acid and ammonia)</td>
<td>19</td>
</tr>
<tr>
<td>Acid Phosphates</td>
<td>150</td>
</tr>
<tr>
<td>Acid Phosphates with Potash</td>
<td>69</td>
</tr>
<tr>
<td>Cotton seed meals</td>
<td>90</td>
</tr>
<tr>
<td>Kainits</td>
<td>5</td>
</tr>
<tr>
<td>Muriate of potash</td>
<td>2</td>
</tr>
<tr>
<td>Nitrate of soda</td>
<td>71</td>
</tr>
<tr>
<td>Dried Blood</td>
<td>6</td>
</tr>
<tr>
<td>Fish</td>
<td>5</td>
</tr>
<tr>
<td>Tankage</td>
<td>1</td>
</tr>
<tr>
<td>Sulphate of Ammonia</td>
<td>1</td>
</tr>
<tr>
<td>Bone meal</td>
<td>0</td>
</tr>
<tr>
<td>Basic slag</td>
<td>0</td>
</tr>
<tr>
<td>Whale guano</td>
<td>1</td>
</tr>
<tr>
<td>Fertilizing materials (Stuckey Law)</td>
<td>15</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>17</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1229</strong></td>
</tr>
</tbody>
</table>

Deficient Samples

Of the 1598 samples above classified, seventy-eight are omitted from the discussion which follows. These seventy-eight samples are:

- One each: granite screenings; oyster shell lime; ground limestone; sulphate of potash; fish guano without guarantee; Sea Island cotton seed meal; Peruvian bat guano; bone meal; nitrate of soda mixed with cyanamid; tailings; home mixture.
- Two each: marl; castor bean meal; peanut meal; cotton seed meals without guarantee.
- Five phosphate rocks.
- Fifty-four fertilizing materials, collected under the Stuckey Law.

Of the remaining 1520 samples 252 fell below the commercial value based on the guarantee. They were as follows:

| In available phosphoric acid | 72 |
| In ammonia | 124 |
| In potash | 4 |
| In available phosphoric acid and ammonia | 36 |
| In available phosphoric acid and potash | 2 |
| In ammonia and potash | 11 |
| In available phosphoric acid, ammonia and potash | 3 |
| **Total** | **252** |
Last season, out of 1197 samples, 288 or 24.06 per cent. were deficient in commercial value based on guarantee, while this season the number so deficient is only 16.57 per cent.

The extent to which these 252 samples fell below the guaranteed analysis in per cent. is as follows:

<table>
<thead>
<tr>
<th></th>
<th>0-0.1</th>
<th>0.1-0.25</th>
<th>0.25-0.50</th>
<th>0.50-1</th>
<th>1 and over</th>
</tr>
</thead>
<tbody>
<tr>
<td>In available phosphoric acid</td>
<td>21</td>
<td>26</td>
<td>23</td>
<td>30</td>
<td>13</td>
</tr>
<tr>
<td>In ammonia</td>
<td>43</td>
<td>26</td>
<td>51</td>
<td>32</td>
<td>20</td>
</tr>
<tr>
<td>In potash</td>
<td>6</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>7</td>
</tr>
</tbody>
</table>

70 54 78 63 40

Of the 252 samples which fell below the commercial value based on guarantee, ninety-two fell three per cent. or more below that value. They are as follows:

<table>
<thead>
<tr>
<th></th>
<th>0-0.1</th>
<th>0.1-0.25</th>
<th>0.25-0.50</th>
<th>0.50-1</th>
<th>1 and over</th>
</tr>
</thead>
<tbody>
<tr>
<td>In available phosphoric acid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In ammonia</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In potash</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In available phosphoric acid and ammonia</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In available phosphoric acid and potash</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In ammonia and potash</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In available phosphoric acid, ammonia and potash</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

92

Last season, out of 288 samples which were deficient in commercial value based on guarantee, 143 or 49.65 per cent. were three per cent. or more deficient, while this season only 36.50 per cent. are so deficient.

The extent to which these ninety-two samples, deficient three per cent. or more in commercial value based on guarantee, fell below the guaranteed analysis in per cent. is as follows:

<table>
<thead>
<tr>
<th></th>
<th>0-0.1</th>
<th>0.1-0.25</th>
<th>0.25-0.50</th>
<th>0.50-1</th>
<th>1 and over</th>
</tr>
</thead>
<tbody>
<tr>
<td>In available phosphoric acid</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>16</td>
<td>11</td>
</tr>
<tr>
<td>In ammonia</td>
<td>7</td>
<td>5</td>
<td>17</td>
<td>28</td>
<td>20</td>
</tr>
<tr>
<td>In potash</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

11 9 21 45 36

In addition to the 252 samples which were deficient in commercial value based on guarantee, there were 378 samples below guarantee in one or more ingredients, the deficiency being made up, however, by an excess of other constituents. They are as follows:

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>In available phosphoric acid</td>
<td>177</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In ammonia</td>
<td>130</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In potash</td>
<td>54</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In available phosphoric acid and ammonia</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In available phosphoric acid and potash</td>
<td>9</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>In ammonia and potash</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

378
The extent to which these 378 samples fell below guaranteed analysis in per cent. is as follows:

<table>
<thead>
<tr>
<th>Category</th>
<th>0-0.1</th>
<th>0.1-0.25</th>
<th>0.25-0.50</th>
<th>0.50-1</th>
<th>1 and over</th>
</tr>
</thead>
<tbody>
<tr>
<td>In available phosphoric acid</td>
<td>48</td>
<td>56</td>
<td>47</td>
<td>27</td>
<td>4</td>
</tr>
<tr>
<td>In ammonia</td>
<td>86</td>
<td>45</td>
<td>7</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>In potash</td>
<td>37</td>
<td>16</td>
<td>13</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

Total: 171 117 67 33 5

Last season, out of 1197 samples, 333 or 27.81 per cent. were deficient in one or more ingredients, while this season the number so deficient is 24.86 per cent., or 378 out of 1520.

In connection with the subject of deficient samples, the following results of some analyses this season as compared with last season are interesting:

**Acid Phosphates**

<table>
<thead>
<tr>
<th>Guaranteed 16 per cent.</th>
<th>1914-1915</th>
<th>1915-1916</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deficient</td>
<td>136</td>
<td>194</td>
</tr>
<tr>
<td>Deficient three per cent. or more</td>
<td>19 (13.97%)</td>
<td>39 (20.10%)</td>
</tr>
</tbody>
</table>

| Guaranteed 14 per cent. | | |
|-------------------------| | |
| Deficient              | 9         | 6         |
| Deficient three per cent. or more | 1 (9.09%) | 1 (16.66%) |

**Acid Phosphates with Potash**

<table>
<thead>
<tr>
<th>Guaranteed 10-0-4</th>
<th>1914-1915</th>
<th>1915-1916</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deficient</td>
<td>24</td>
<td>0</td>
</tr>
<tr>
<td>Deficient three per cent. or more</td>
<td>19 (79.18%)</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Guaranteed 10-0-2</th>
<th>1914-1915</th>
<th>1915-1916</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deficient</td>
<td>32</td>
<td>6</td>
</tr>
<tr>
<td>Deficient three per cent. or more</td>
<td>23 (71.87%)</td>
<td>4 (66.66%)</td>
</tr>
</tbody>
</table>

One sample with a guarantee of 14-0-2 was analysed and found deficient in potash, but not three per cent. These results show that, while the number of deficient acid phosphates is somewhat greater this season than last, the number of samples deficient three per cent. or more is much smaller. The great shortage of potash is shown by the absence of any samples guaranteed 10-0-4 and only six of even 10-0-2.

In connection with the potash deficiencies not only in acid phosphates with potash, but also in other mixed goods, the following summary for the last twelve years is interesting. It is to be noted that none of the deficient samples quoted were definite in relative commercial value:
This summary shows that of the samples deficient in one or more ingredients, but not deficient in commercial value, a very large percentage are deficient in potash only. This deficiency was especially large during the years 1909 to 1912, inclusive. There was a marked drop in the years 1913 and 1914, but in 1915 the percentage deficiency was the same as in 1905. The low percentage deficiency this season is not very significant on account of the comparatively small number of samples containing potash.

**Top Dressers:**

On the whole the top dressers analysed this season seem to be of a better quality than those met with last season. Of the twenty-five samples discussed last season, 84 per cent. were deficient and 52 per cent. were three per cent. or more deficient; while this season, out of the forty-seven samples discussed below, 70.21 per cent. were deficient and only 27.65 per cent. were three per cent. or more deficient in commercial value based on guarantee.

One each of the following guarantees were analysed, with the results indicated: 4-7½-2½, deficient in ammonia and more than three per cent. in commercial value; 4-6½-0, found up to its guarantee; 4-9-0, deficient in ammonia, but not three per cent.; 5½-10-0, deficient in ammonia, but not in commercial value; 6-10-0, found up to its guarantee.

Three of the guarantee 4-7½-1, of which two were deficient in ammonia, but not three per cent., and one was deficient in ammonia, but not in commercial value.

Two of the guarantee 4½-7½-0, of which one was found up to its guarantee; and the other deficient in ammonia, but not in commercial value.

Fourteen samples of the guarantee 4-7½-0:—fifty per cent. of these, or seven samples, were found up to their guarantee; of the remaining seven, six were deficient in ammonia. Of these six, one was not deficient in commercial value, four were deficient in commercial value, but not three per cent., and one was deficient three per cent.
in commercial value. The remaining deficient sample was deficient in phosphoric acid, but not in commercial value.

Fifteen samples of the guarantee 5-10-0 were analysed this season: eighty per cent., or twelve out of the fifteen were deficient; seven of the twelve were three per cent. or more deficient in commercial value, and of these seven, six were deficient in ammonia, and one in phosphoric acid and ammonia. Of the remaining five deficient samples, one was deficient in phosphoric acid, but not in commercial value; two were deficient in ammonia, but not three per cent.; and two were deficient in phosphoric acid and ammonia, but not three per cent. in commercial value.

Eight samples were analysed with the guarantee 0-9-3, of which seven were deficient, and four were three per cent. or more deficient in commercial value. The four three per cent. deficient samples were deficient in both ammonia and potash, and two of them contained less than 0.50 per cent., and two only 0.56 and 0.57 per cent. of potash, respectively. Of the three remaining deficient samples, one was deficient in potash, but not in commercial value; two were deficient in potash, but not three per cent. in commercial value. Only one of the eight samples was up to its guarantee in potash, while three samples contained less than 0.50 per cent., three contained between 0.50 and 0.70 per cent., and one showed over two per cent. of potash.

The worst showing among top dressers was made by the goods guaranteed 0-9-3 and 5-10-0.
### Averages of Analyses

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acid Phosphates</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Available phosphoric acid</td>
<td>16.30</td>
<td>15.78</td>
<td>16.88</td>
<td>15.94</td>
</tr>
<tr>
<td>Insoluble phosphoric acid</td>
<td>0.52</td>
<td>0.48</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total phosphoric acid</td>
<td>16.82</td>
<td></td>
<td>16.40</td>
<td></td>
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<tr>
<td><strong>Acid Phosphates with Potash</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Available phosphoric acid</td>
<td>10.75</td>
<td>10.07</td>
<td>10.72</td>
<td>10.60</td>
</tr>
<tr>
<td>Insoluble phosphoric acid</td>
<td>0.71</td>
<td></td>
<td>0.95</td>
<td></td>
</tr>
<tr>
<td>Total phosphoric acid</td>
<td>11.46</td>
<td></td>
<td>11.67</td>
<td></td>
</tr>
<tr>
<td>Potash soluble in water</td>
<td>2.69</td>
<td>2.77</td>
<td>2.12</td>
<td>2.00</td>
</tr>
<tr>
<td><strong>Complete Fertilizers</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Available phosphoric acid</td>
<td>8.91</td>
<td>8.27</td>
<td>8.73</td>
<td>8.12</td>
</tr>
<tr>
<td>Insoluble phosphoric acid</td>
<td>0.90</td>
<td></td>
<td>0.92</td>
<td></td>
</tr>
<tr>
<td>Total phosphoric acid</td>
<td>9.81</td>
<td></td>
<td>9.65</td>
<td></td>
</tr>
<tr>
<td>Ammonia</td>
<td>2.96</td>
<td>2.98</td>
<td>3.42</td>
<td>3.24</td>
</tr>
<tr>
<td>Potash soluble in water</td>
<td>2.70</td>
<td>2.58</td>
<td>1.49</td>
<td>1.39</td>
</tr>
<tr>
<td><strong>Cotton Seed Meals</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Available phosphoric acid</td>
<td>2.46</td>
<td>1.51</td>
<td>2.31</td>
<td>1.51</td>
</tr>
<tr>
<td>Ammonia</td>
<td>7.21</td>
<td>7.03</td>
<td>7.05</td>
<td>7.00</td>
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<tr>
<td>Potash soluble in water</td>
<td>1.56</td>
<td>1.01</td>
<td>1.51</td>
<td>1.01</td>
</tr>
<tr>
<td><strong>Kainits</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potash soluble in water</td>
<td>13.51</td>
<td>12.00</td>
<td>13.44</td>
<td>12.00</td>
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<tr>
<td><strong>Muriate of Potash</strong></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Potash soluble in water</td>
<td>50.17</td>
<td>48.00</td>
<td>0.00</td>
<td>0.00</td>
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<tr>
<td><strong>Sulphate of Potash</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Potash soluble in water</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>Nitrate of Soda</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ammonia (equivalent)</td>
<td>18.56</td>
<td>18.03</td>
<td>18.53</td>
<td>18.01</td>
</tr>
</tbody>
</table>

The following table shows the yearly averages of fertilizers from the time the Board of Trustees of the Clemson Agricultural College of South Carolina took charge of the fertilizer inspection down to the present time, or from 1891 to 1916, inclusive:
<table>
<thead>
<tr>
<th>Season</th>
<th>Acid Phosphates</th>
<th>Acid Phosphate with Potash</th>
<th>Complete Fertilizer</th>
<th>Cotton Seed Meals</th>
<th>Kainita</th>
<th>Muriate Potash</th>
<th>Nitrate of Soda</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of Samples</td>
<td>Available Phosphoric Acid Per Cent.</td>
<td>Number of Samples</td>
<td>Available Phosphoric Acid Per Cent.</td>
<td>Number of Samples</td>
<td>Available Phosphoric Acid Per Cent.</td>
<td>Number of Samples</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1890-1</td>
<td>49</td>
<td>13.02</td>
<td>19</td>
<td>11.84</td>
<td>1.65</td>
<td>173</td>
<td>9.34</td>
</tr>
<tr>
<td>1891-2</td>
<td>29</td>
<td>12.92</td>
<td>16</td>
<td>11.50</td>
<td>1.49</td>
<td>122</td>
<td>8.83</td>
</tr>
<tr>
<td>1892-3</td>
<td>48</td>
<td>12.32</td>
<td>25</td>
<td>11.63</td>
<td>1.21</td>
<td>150</td>
<td>9.00</td>
</tr>
<tr>
<td>1893-4</td>
<td>46</td>
<td>13.24</td>
<td>22</td>
<td>12.01</td>
<td>1.51</td>
<td>183</td>
<td>9.27</td>
</tr>
<tr>
<td>1894-5</td>
<td>46</td>
<td>13.55</td>
<td>15</td>
<td>12.09</td>
<td>1.66</td>
<td>87</td>
<td>9.42</td>
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<tr>
<td>1895-6</td>
<td>42</td>
<td>13.43</td>
<td>26</td>
<td>11.99</td>
<td>1.39</td>
<td>115</td>
<td>9.31</td>
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<tr>
<td>1896-7</td>
<td>59</td>
<td>13.61</td>
<td>34</td>
<td>12.06</td>
<td>1.61</td>
<td>117</td>
<td>9.55</td>
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<tr>
<td>1897-8</td>
<td>63</td>
<td>13.67</td>
<td>50</td>
<td>11.54</td>
<td>2.06</td>
<td>141</td>
<td>9.15</td>
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<td>1898-9</td>
<td>73</td>
<td>13.74</td>
<td>68</td>
<td>11.77</td>
<td>1.99</td>
<td>134</td>
<td>9.32</td>
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<td>1899-1900</td>
<td>73</td>
<td>13.58</td>
<td>63</td>
<td>11.58</td>
<td>2.00</td>
<td>124</td>
<td>9.50</td>
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<tr>
<td>1900-1</td>
<td>56</td>
<td>14.00</td>
<td>55</td>
<td>11.49</td>
<td>2.65</td>
<td>130</td>
<td>9.40</td>
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<td>1901-2</td>
<td>45</td>
<td>14.11</td>
<td>51</td>
<td>11.09</td>
<td>2.55</td>
<td>141</td>
<td>9.39</td>
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<td>1902-3</td>
<td>51</td>
<td>13.74</td>
<td>55</td>
<td>10.94</td>
<td>2.65</td>
<td>139</td>
<td>9.02</td>
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<td>1903-4</td>
<td>59</td>
<td>13.82</td>
<td>75</td>
<td>11.12</td>
<td>2.61</td>
<td>180</td>
<td>9.12</td>
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<tr>
<td>1904-5</td>
<td>51</td>
<td>13.61</td>
<td>85</td>
<td>10.70</td>
<td>2.07</td>
<td>250</td>
<td>9.19</td>
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<tr>
<td>1905-6</td>
<td>57</td>
<td>14.95</td>
<td>94</td>
<td>10.97</td>
<td>3.30</td>
<td>375</td>
<td>9.34</td>
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<td>1906-7</td>
<td>111</td>
<td>14.95</td>
<td>72</td>
<td>10.76</td>
<td>3.21</td>
<td>390</td>
<td>8.91</td>
</tr>
<tr>
<td>1907-8</td>
<td>91</td>
<td>14.71</td>
<td>64</td>
<td>10.57</td>
<td>3.54</td>
<td>363</td>
<td>9.17</td>
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<tr>
<td>1908-9</td>
<td>188</td>
<td>15.02</td>
<td>80</td>
<td>10.55</td>
<td>2.93</td>
<td>396</td>
<td>9.26</td>
</tr>
<tr>
<td>1909-10</td>
<td>159</td>
<td>15.18</td>
<td>74</td>
<td>10.16</td>
<td>3.54</td>
<td>599</td>
<td>8.89</td>
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<tr>
<td>1910-11</td>
<td>187</td>
<td>15.39</td>
<td>101</td>
<td>10.62</td>
<td>3.48</td>
<td>942</td>
<td>9.00</td>
</tr>
<tr>
<td>1911-12</td>
<td>183</td>
<td>15.42</td>
<td>116</td>
<td>10.68</td>
<td>3.49</td>
<td>961</td>
<td>9.17</td>
</tr>
<tr>
<td>1912-13</td>
<td>176</td>
<td>15.63</td>
<td>85</td>
<td>10.48</td>
<td>3.63</td>
<td>1199</td>
<td>8.86</td>
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<tr>
<td>1913-14</td>
<td>229</td>
<td>16.10</td>
<td>91</td>
<td>10.63</td>
<td>3.93</td>
<td>1533</td>
<td>8.79</td>
</tr>
<tr>
<td>1914-15</td>
<td>150</td>
<td>16.30</td>
<td>69</td>
<td>10.75</td>
<td>2.69</td>
<td>773</td>
<td>8.91</td>
</tr>
<tr>
<td>1915-16</td>
<td>200</td>
<td>16.40</td>
<td>7</td>
<td>10.72</td>
<td>2.19</td>
<td>385</td>
<td>8.73</td>
</tr>
</tbody>
</table>

**YEARLY AVERAGE OF ANALYSES FROM 1891 TO 1916, INCLUSIVE.**
In this table, as in the preceding ones, the ammonia yielded by the nitrogen in fertilizers is given instead of the nitrogen itself, as in the trade goods are still bought and sold on the ammonia basis. The per cent. of nitrogen is readily calculated, as fourteen-seventeenths of the ammonia is practically the per cent. of the nitrogen it contains.

It is interesting to note in this connection, that, on account of the shortage of potash, there were on the market a very large number of fertilizers, special mixtures, containing available phosphoric acid and nitrogen only. There were analysed this season 555 samples of such special mixtures. The average per cents. of available phosphoric acid found and guaranteed were respectively, 8.85 and 8.46. The average per cents. of total and insoluble phosphoric acid were respectively, 9.90 and 1.05. The average per cents. of ammonia found and guaranteed were respectively, 3.71 and 3.60.

Grades

In the following table the number of acid phosphates, acid phosphates with potash, complete fertilizers, cotton seed meals, and special mixtures, containing available phosphoric acid and ammonia only, of each grade, according to guarantee, is placed side by side with the number found on analysis to belong to that grade, fertilizers having commercial values equal to those of schedule grades being placed in those grades:

<table>
<thead>
<tr>
<th></th>
<th>High</th>
<th>Standard</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Claimed</td>
<td>Found</td>
<td>Claimed</td>
</tr>
<tr>
<td>Acid phosphates (200)</td>
<td>200</td>
<td>199</td>
<td>0</td>
</tr>
<tr>
<td>Acid phosphates with potash (7)</td>
<td>1</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Complete fertilizers (385)</td>
<td>132</td>
<td>174</td>
<td>176</td>
</tr>
<tr>
<td>Cotton seed meals (245)</td>
<td>1</td>
<td>5</td>
<td>238</td>
</tr>
<tr>
<td>Special mixtures (555)</td>
<td>212</td>
<td>276</td>
<td>259</td>
</tr>
<tr>
<td><strong>Total (1392)</strong></td>
<td><strong>546</strong></td>
<td><strong>655</strong></td>
<td><strong>679</strong></td>
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</table>

These results are due to the following changes in grade ascertained by analysis:

<table>
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<tr>
<th></th>
<th>Low to High</th>
<th>Low to Standard</th>
<th>High to Standard</th>
<th>High to Low</th>
<th>Standard to Low</th>
<th>No Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acid phosphates (200)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Acid phosphates with potash (7)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Complete fertilizers (385)</td>
<td>3</td>
<td>35</td>
<td>43</td>
<td>6</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Cotton seed meals (245)</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>0</td>
<td>38</td>
<td>200</td>
</tr>
<tr>
<td>Special mixtures (555)</td>
<td>2</td>
<td>32</td>
<td>66</td>
<td>4</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total (1392)</strong></td>
<td><strong>5</strong></td>
<td><strong>70</strong></td>
<td><strong>113</strong></td>
<td><strong>11</strong></td>
<td><strong>0</strong></td>
<td><strong>51</strong></td>
</tr>
</tbody>
</table>

This shows that, out of 1392 samples, 1142 were of the grade claimed for them, 188 were of a higher grade, and 62 were of a lower grade than that claimed for them. Last season, 85.95 per cent. of
the samples were of the grade claimed for them, 6.37 per cent. were of a higher grade, and 7.67 per cent. were of a lower grade than that claimed for them. The comparative percentages for this season are 82.04, 13.50 and 4.45, respectively, showing a considerable improvement over last season, though lower than in 1913-1914. In round numbers, 98 per cent. of the samples were of the grade claimed or higher in 1913-1914, while the number for 1914-1915 was 92 per cent., and in this season 95.50 per cent.

In order to compare the results of this season’s grades with those of last season, the following summary is given:

<table>
<thead>
<tr>
<th>Grade</th>
<th>1914-1915</th>
<th>1915-1916</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acid phosphates</td>
<td>149</td>
<td>199</td>
</tr>
<tr>
<td>Acid phosphates with potash</td>
<td>49</td>
<td>6</td>
</tr>
<tr>
<td>Complete fertilizers</td>
<td>657</td>
<td>293</td>
</tr>
<tr>
<td>Cotton seed meals</td>
<td>75</td>
<td>200</td>
</tr>
<tr>
<td>Special mixtures</td>
<td>444</td>
<td>100</td>
</tr>
</tbody>
</table>

The large number of low grade Cotton Seed Meals this season is noteworthy.

**Nitrogen:** Deficiencies, sources and availability.

In connection with the subject of deficiencies in nitrogen, or equivalent ammonia, the following table is interesting. It is to be noted that none of the deficient samples here given are deficient in relative commercial value:

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Samples</th>
<th>Deficient in One or More Ingredients</th>
<th>Deficient in Nitrogen only</th>
<th>Deficient in Nitrogen Per cent.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1905</td>
<td>522</td>
<td>165</td>
<td>61</td>
<td>36.96</td>
</tr>
<tr>
<td>1906</td>
<td>655</td>
<td>201</td>
<td>87</td>
<td>43.28</td>
</tr>
<tr>
<td>1907</td>
<td>743</td>
<td>153</td>
<td>81</td>
<td>52.94</td>
</tr>
<tr>
<td>1908</td>
<td>713</td>
<td>161</td>
<td>77</td>
<td>47.82</td>
</tr>
<tr>
<td>1909</td>
<td>805</td>
<td>197</td>
<td>74</td>
<td>37.56</td>
</tr>
<tr>
<td>1910</td>
<td>1188</td>
<td>235</td>
<td>79</td>
<td>33.61</td>
</tr>
<tr>
<td>1911</td>
<td>1605</td>
<td>393</td>
<td>107</td>
<td>27.22</td>
</tr>
<tr>
<td>1912</td>
<td>1689</td>
<td>380</td>
<td>71</td>
<td>18.68</td>
</tr>
<tr>
<td>1913</td>
<td>1922</td>
<td>389</td>
<td>190</td>
<td>48.84</td>
</tr>
<tr>
<td>1914</td>
<td>2537</td>
<td>534</td>
<td>257</td>
<td>48.13</td>
</tr>
<tr>
<td>1915</td>
<td>1227</td>
<td>333</td>
<td>145</td>
<td>43.54</td>
</tr>
<tr>
<td>1916</td>
<td>1598</td>
<td>378</td>
<td>130</td>
<td>34.39</td>
</tr>
</tbody>
</table>

This summary shows a marked improvement in the percentage deficiency in nitrogen only in those samples deficient in one or more ingredients, but not deficient in commercial value, as compared with the results obtained during the last four seasons.

The nitrogen availability standards for this season, and which will be in force during the season 1916-17, are as follows:

"1st. The Modified Neutral Permanganate Method of Street is still in force."
"2nd. An unmixed fertilizing material furnishing organic nitrogen must show an availability of 85 per cent. of the total organic nitrogen.

"3rd. The water-insoluble organic nitrogen in mixed fertilizers must show an availability of 75 per cent., by Street's method, if the water-insoluble organic nitrogen amounts to one-third or more of the total nitrogen found on analysis."

All of the mixed fertilizers analysed this season, in which the water-insoluble organic nitrogen amounted to one-third or more of the total nitrogen found on analysis, have been examined as to availability, in accordance with provision 3rd above. Of the 511 samples thus examined, only thirty-eight, or 7.44 per cent. fell below the availability requirement of section 3rd., and in the following table these samples are given along with the name of the brand, the name and address of the Manufacturer, and the per cent. availability of the water-insoluble organic nitrogen:

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>Brand Name of Fertilizer</th>
<th>Name and Address of Manufacturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>484</td>
<td>Anderson Best</td>
<td>Anderson Phos. &amp; Oil Co., Anderson, S. C.</td>
</tr>
<tr>
<td>927</td>
<td>No. 640</td>
<td>Acme Mig. Co., Wilmington, N. C.</td>
</tr>
<tr>
<td>944</td>
<td>Blood and Bone Mixture</td>
<td>Read Phosphate Co., Charleston, S. C.</td>
</tr>
<tr>
<td>1295</td>
<td>No. 810</td>
<td>Acme Mig. Co., Wilmington, N. C.</td>
</tr>
<tr>
<td>1446</td>
<td>Ammoniated Superphosphate</td>
<td>Palmetto Guano Corp., Columbia, S. C.</td>
</tr>
<tr>
<td>581</td>
<td>King Cotton</td>
<td>Armour Fert. Works, Atlanta, Ga.</td>
</tr>
<tr>
<td>1757</td>
<td>Cotton Special</td>
<td>Venable Fertilizer Co., Richmond, Va.</td>
</tr>
<tr>
<td>1476</td>
<td>Irish Potato Compound</td>
<td>Palmetto Guano Co., Columbia, S. C.</td>
</tr>
<tr>
<td>126</td>
<td>High Grade</td>
<td>Armour Fert. Works, Atlanta, Ga.</td>
</tr>
<tr>
<td>460</td>
<td>Georgia Potash Formula</td>
<td>Georgia Chemical Works, Augusta, Ga.</td>
</tr>
<tr>
<td>1750</td>
<td>Hunter</td>
<td>Powhatan Chemical Co., Richmond, Va.</td>
</tr>
<tr>
<td>1289</td>
<td>Ammoniated Phosphate</td>
<td>Tuscarora Fert. Co., Wilmington, N. C.</td>
</tr>
<tr>
<td>891</td>
<td>Corn Harvest</td>
<td>Swift Fertilizer Works, Atlanta, Ga.</td>
</tr>
<tr>
<td>1290</td>
<td>Ammoniated Phosphate</td>
<td>Armour Fert. Works, Atlanta, Ga.</td>
</tr>
<tr>
<td>1306</td>
<td>High Grade</td>
<td>Southern Cotton Oil Co., Charleston, S. C.</td>
</tr>
<tr>
<td>1482</td>
<td>Cotton Compound</td>
<td>Palmetto Guano Corp., Columbia, S. C.</td>
</tr>
<tr>
<td>1356</td>
<td>Special Mixture</td>
<td>Combahee Fertilizer Co., Charleston, S. C.</td>
</tr>
<tr>
<td>140</td>
<td>No. 882</td>
<td>Armour Fertilizer Works, Atlanta, Ga.</td>
</tr>
<tr>
<td>316</td>
<td>Cotton Special</td>
<td>Tuscarora Fertilizer Co., Wilmington, N. C.</td>
</tr>
<tr>
<td>274</td>
<td>Palmetto Cotton</td>
<td>Palmetto Guano Corp., Columbia, S. C.</td>
</tr>
<tr>
<td>454</td>
<td>Fish and Vegetable Compound</td>
<td>McCabe Fert. Co., Charleston, S. C.</td>
</tr>
<tr>
<td>1479</td>
<td>Corn and Cotton</td>
<td>Swift Fert. Works, Atlanta, Ga.</td>
</tr>
<tr>
<td>975</td>
<td>North State</td>
<td>Powhatan Chemical Co., Richmond, Va.</td>
</tr>
<tr>
<td>1796</td>
<td>Tip Top</td>
<td>Richmond Guano Co., Richmond, Va.</td>
</tr>
<tr>
<td>1441</td>
<td>Blood and Bone Mixture</td>
<td>Read Phos. Co., Charleston, S. C.</td>
</tr>
<tr>
<td>183</td>
<td>No. 781</td>
<td>Macalwraith Co., Charleston, S. C.</td>
</tr>
<tr>
<td>171</td>
<td>Special Mixture</td>
<td>Combahee Fert. Co., Charleston, S. C.</td>
</tr>
</tbody>
</table>

The results of the nitrogen availability work this season are quite satisfactory, and show that in the main the manufacturers are using ammoniates of good quality in their mixed goods. These results certainly also justify the standards adopted by the Board of Fertilizer Control, since 92.5 per cent. of the samples met the requirements, and even in the case of those samples which failed to meet the requirements over 50 per cent. of them were within two to five points of the
standard, giving an availability of from 70 to 73 per cent. of the water-insoluble organic nitrogen.

In view of the feeling of unrest among the consumers of commercial fertilizers with regard to the undoubted widespread use by manufacturers of the so-called "cheaper" ammoniates, especially the various leather preparations or tankages, it seems proper and appropriate to quote here certain statements published in the Clemson Agricultural College Weekly News Notes, Vol. 1, No. 9, May 16, 1914, under the caption "Use of Leather as a Nitrogen Source":

"Dr. R. N. Brackett, chief chemist of Clemson College, after careful investigation of the subject, has given out this statement:

"There is no doubt whatever that many fertilizers now on the market contain as one, and probably the chief source of ammonia, a leather preparation, or leather tankage of some kind. We find many such samples. These leather preparations are on the market under various names: Nitrogenous manure, nitrogenous material, organic manure, nitrolene, azotin, Munro's azotin, Alpha tankage, Kanona tankage, leather meal, etc. They are often misnamed 'tankage,' or even 'high grade tankage,' without any qualifying term, which practice is calculated to mislead the purchaser, though the price should usually indicate whether or not the 'tankage' is an animal tankage.

"So far as my experience of many years extends, there are now no manufacturers using ground or burnt leather, nor has this been done for many years. The leather preparations now on the market are no more to be classed as 'leather' than an acid phosphate is to be classed as phosphate rock. Both have been so treated as to render them available to plants.

"Many of these leather preparations have been tried in the field, and have been found to undergo nitrification quite readily. One is, therefore, in error in classing such materials as worthless. While untreated hair, leather scrap, wool waste, and such materials are worthless as fertilizers, after treatment with sulphuric acid, they are well known to be very valuable and useful fertilizing materials. Provided the substance is not a poison, as cyanides are, it matters not at all what the original source of the nitrogenous material is in judging of its value as a fertilizer. The question of importance is this: Is the ammonia in available form, or in a form which will become available to the crop during its period of growth? If the answer is yes, then it matters not how humble or despised its origin.

"In consequence of this situation, we are determining the availability of the ammonia in all mixed fertilizers and in all unusual raw materials as a protection to the consumer. The Board of Fertilizer Control, at my suggestion, fixed a standard for availability in raw materials and mixed fertilizers. The standard for this season is higher than for the last and is higher than any other State in the South. The Fertilizer Department, will, of course, publish in the final bulletin for the year all manufacturers and mixers whose goods fall below the required standard."
“Since these leather preparations cost less than do the old standard ammoniates, mixed fertilizers containing them should be sold at a lower price and the consumer given the benefit of the lower cost, but only because they cost less and not because they may not be just as valuable agriculturally as fertilizers.”

The figures given in the following table are the results of the determination of the nitrogen availability of a few nitrogenous materials examined by Street’s Modified Neutral Permanganate Method during the past season:

### PER CENT. OF NITROGEN

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal Tankage</td>
<td>5.31</td>
<td>0.34</td>
<td>1.68</td>
<td>2.79</td>
<td>0.50</td>
<td>90</td>
<td>85</td>
</tr>
<tr>
<td>Animal Tankage</td>
<td>5.47</td>
<td>0.26</td>
<td>0.95</td>
<td>3.75</td>
<td>0.51</td>
<td>90</td>
<td>88</td>
</tr>
<tr>
<td>Cattle Tankage</td>
<td>5.51</td>
<td>0.14</td>
<td>2.37</td>
<td>2.55</td>
<td>0.45</td>
<td>92</td>
<td>85</td>
</tr>
<tr>
<td>Cattle Tankage</td>
<td>5.92</td>
<td>0.14</td>
<td>2.90</td>
<td>2.17</td>
<td>0.71</td>
<td>88</td>
<td>75</td>
</tr>
<tr>
<td>Stockyard Tankage</td>
<td>8.14</td>
<td>0.06</td>
<td>0.00</td>
<td>7.21</td>
<td>0.88</td>
<td>89</td>
<td>89</td>
</tr>
<tr>
<td>Whale Guano</td>
<td>7.48</td>
<td>0.20</td>
<td>1.94</td>
<td>4.71</td>
<td>0.63</td>
<td>91</td>
<td>88</td>
</tr>
<tr>
<td>Meat Meal</td>
<td>9.25</td>
<td>0.14</td>
<td>1.02</td>
<td>7.61</td>
<td>0.48</td>
<td>95</td>
<td>94</td>
</tr>
<tr>
<td>Peruvian Guano</td>
<td>10.53</td>
<td>3.90</td>
<td>0.02</td>
<td>6.47</td>
<td>0.14</td>
<td>98</td>
<td>98</td>
</tr>
</tbody>
</table>

These results afford still further confirmation of the position we have held for several years, that good raw materials furnishing organic nitrogen should show an availability of at least 85 per cent. of the total organic nitrogen they contain.

Attention has been called in all of our reports for several years to the improper use of the term “tankage” for any kind of tank-rendered material, instead of restricting its use to packing-house products. It is, therefore, gratifying to note that manufacturers are from year to year giving distinctive names to the numerous tank-rendered materials on the market, which are not packing-house by-products. The registrations show quite frequently the names: Kanona tankage, Rhemsdorff tankage, nitrogenous material, etc., in place of the unqualified term “tankage” so much used a few years ago. This practice on the part of the manufacturers would appear to indicate that the popular prejudice against these various newer tank-rendered materials is gradually disappearing.

**Farmers’ Samples of Fertilizers:**

In addition to the official samples of fertilizers collected by Inspectors, there have been analysed this season 427 samples for individual purchasers, as provided for in Section 1540 of the Fertilizer Law.

**Ashes (Wood):**

The continued shortage of potash appears to have increased the interest in sources of potash, as shown by the fact that we have received and analysed eleven samples of wood ashes this season, which is about twice the number of samples sent in last season.
Limestones, Marls, Ground Oyster Shells, and Lime:

That there has been no falling off in the interest of the citizens of the State in the subject of “liming the soil” appears to be borne out by the fact that we have analysed twenty-one samples of such materials this season, against twenty-two last season. Of these twenty-one samples, seventeen were limestones and marls, two were ground oyster shells, and two samples of lime.

Waters:

There have been analysed this season 136 samples of waters. Of these, 124 were sanitary examinations, 109 being of waters from various parts of the State, eleven were monthly analyses of Barracks Spring Water, and four were made for Engineering Department. Heat Light and Water Division of this College, sent for analysis by Professor S. B. Earle, Director. The remaining twelve analyses were complete mineral analyses of samples of waters sent by citizens from different parts of the State.

Ores and Minerals:

Of the 119 analyses and examinations listed under these heads, or which may be properly included, twenty-one were assays for gold and silver, one copper ore, four iron ores, five manganese ores, and the remaining 88 were examinations of minerals, rocks, etc., sent in by citizens from various parts of the State for identification only.

Clays and Ochers:

Twenty-four samples of such materials were analysed this season as compared with twenty-two last season. The senders of the ochers were chiefly interested in finding out whether or not the samples represented materials suitable for use as mineral paints. Some of the clays were supposed to contain commercial quantities of potash.

Miscellaneous:

The thirty-four analyses classified under this head were of the following materials: Five “abattoir products”; four portions of human bodies in cases of suspected poisoning; three samples of laundry supplies examined for the College Laundry; two each: Composts, Ground cow peas, and Phosphate rock; one each: “Agricultural salt”, Castor bean meal, Chicken manure, Cotton mill waste, Fertilizer sweepings, Fish (“Home Made”), Hog feed, Lima beans (ground), Mill sweepings, Muck, Mud, Peanut meal with hulls, specimen for Poultry Division of the College, Rice straw ashes, “Red Devil Lye” (supposed to contain potash), “Rockarian Ashes” (a mixture of carbonate and sulphate of potash, prepared from brine lakes in Nebraska, and containing about 24 per cent. of potash soluble in water).

Distribution of the Work:

The fertilizer analyses were made by Messrs. Robertson, Lykes and Foy, with some help, as time permitted, from Mr. R. E. Pennell.
Mr. Pennell prepared nearly all of the samples for analysis, with occasional help from one or the other of the assistants above named, but more especially from Mr. Foy. During the sickness of Mr. Pennell, nearly two weeks, Mr. Foy prepared the fertilizer samples for analysis.

All of the miscellaneous work, other than fertilizer analyses, has been performed by Mr. Freeman, with the exception of a few sanitary water analyses made by Mr. Henry during Mr. Freeman's absence from the College, on leave in June. An exception should also be made of the toxicological cases, of which one was performed by Mr. C. F. Inman, and the other three by Dr. G. F. Lipscomb.

The nitrogen availability work on mixed goods and fertilizing materials has been done this season by Dr. Lipscomb, with material assistance from Messrs. Lykes and Freeman.

In closing this report, it gives me much pleasure to be able to say that all of the assistants have done faithful, conscientious and efficient work throughout the year, and that harmony has prevailed.

Very respectfully,

R. N. BRACKETT,
Director.
Report of State Entomologist and State Pathologist

Prof. J. N. Harper, Dean,
Agricultural Department,
Clemson College, S. C.

Dear Sir:

We beg to submit the annual report of the South Carolina State Crop Pest Commission for the fiscal year ending June 30, 1916.

I. Boll Weevil Quarantine

This feature of the service has experienced a year of unusual harmony. The Act of 1912 and the regulations of the Commission are better understood and there have been no very serious violations. The most serious violation consisted of a shipment of contraband farm products from boll weevil territory. The shipment was not discovered until the car had been unloaded. All the material was confiscated and destroyed, the customary iron-clad precautions being taken in this operation. There was no probable chance for weevils, if any were present, to survive the treatment on the premises, especially under existing weather conditions. At this writing we have no reason to suspect that an infestation was produced. In one instance the Commission was appealed to by citizens with the request that cotton lint be quarantined for fear that it might introduce weevil. The appeal was based on extensive cotton movements in the fall of the year which careful examination by the officers of the Commission proved to be apparent and not real. Another appeal was made requesting that cotton seed meal be declared contraband on the ground that it carried weevil. This could not be shown by most careful investigations and no action was taken in either case. All suspected cases of boll-weevil and contraband shipments were investigated by the officers of the Commission and there is no evidence of this pest having become established in the State.

An unusual migration of the weevil took place during September and October 1915 and was due in a great measure at least to the course of the New Orleans storm. At this writing it appears that the pest has become established over most of the territory over which it advanced. Unless such an unusual condition repeats itself, the pest will follow its eastward course at the usual rate and will reach South Carolina at approximately the time predicted for several years.

2. Nursery Quarantine

This feature of the work, both interstate and international has proceeded with unusual regularity. The following constitutes a list of Nurseries that shipped stock into this State. According to circumstantial evidence, infested stock appears to be shipped into the
State. These infestations consist of San Jose Scale. To attempt to make such shipments impossible would require an expense on the part of this State that is not warranted, especially owing to the certainty with which this pest can now be controlled. Furthermore, this will be overcome as the good relationship between the people and this Commission continues to grow. Then the purchasers will cooperate so closely with this Commission when purchasing stock that any violation would be discovered and proper action taken against the shipper.

The following Nurseries shipped stock into this State during the past year:

**Alabama**

Florida Nursery and Trading Co., Lockhart.
Chase Nursery Co., Chase.
Griffing Bros., Grand Bay.

**Florida**

Glen Saint Mary Nursery Co., Glen Saint Mary.
Simpson Nursery Co., Monticello.
Griffing Bros., Macclenny.
Summit Nurseries, Monticello.

**Georgia**

Excelsior Nurseries, Rome.
Concord Nurseries, Concord.
P. J. Berckmans & Co., Augusta.
Georgia Nursery Co., Concord.
Barnwell Pecan Orchard Co., Baconton.
J. B. Wight, Cairo.
Southern Nut Tree Nurseries, Thomasville.
Hartwell Nurseries, Hartwell.
J. B. Miller, Baconton.
Excelsior Nurseries, Rome.
G. M. Bacon Pecan Co., Dewitt.
B. W. Stone & Co., Thomasville.
Parrott Nurseries, Parrott.
Magnolia Nursery, Cairo.
P. J. Berckmans Co., Augusta.
Glousier Pecan Co., Baconton.
Tuck Bros., Thomasville.
Tanner Nursery, Milledgeville.

**Kansas**

Willis Nurseries, Ottawa.

**Kentucky**

J. F. Donaldson, Sparta.
Maryland
Westminster Nursery, Westminster. 
Harrison Nurseries, Berlin. 
Franklin Davis Nursery Co., Baltimore. 

Mississippi
Lewis' Orchards and Nurseries, Pascagoula. 
L. E. Bass & Sons, Lumberton. 

Missouri
Stark Bros. Nursery & Orchard Co., Louisiana 

New Jersey
North Jersey Nurseries, Millburn. 
Peter Henderson, Jersey City Heights. 
Henry A. Dreer, Riverton. 

New York
Lewis Roesch, Fredonia. 
Kelly Bros. Wholesale Nurseries, Dansville. 
T. S. Hubbard, Fredonia. 
Josselyn Nursery Co., Fredonia. 
Richland Nurseries, Rochester. 
Ellwanger & Barry, Rochester. 
Jackson & Perkins Co., Newark. 
F. W. Brow Nursery Co., Rose Hill. 

North Carolina
Catawba County Nursery, Newton. 
Valdesian Nurseries, Bostic. 
Killian Nursery, Newton. 
Biltmore Nurseries, Biltmore. 
Continental Plant Co., Kittrell. 
J. Van Lindley Nursery Co., Pomona. 
Newton Nursery Co., Newton. 
Throneburg Nursery, Newton. 
Audubon Nurseries, Wilmington. 
Valdesian Nurseries, Bostic. 

Ohio
Storrs & Harrison Co., Painesville. 
W. N. Scarff, New Carlisle. 

Pennsylvania
Thomas Meehan & Sons, Dresher. 
Andorra Nurseries, Chestnut Hill. 
Thomas Meehan & Sons, Germantown
South Carolina

Anderson Floral Co., Anderson.
Jude Robinson, Rowesville.
Oakway Nursery, Westminster.
Geo. Baldwin, Columbia.
R. F. Vann, Columbia.
M. O. Dantzler, Orangeburg.
Greenville Nursery Co., Greenville.
P. B. Day, Trenton.
DeWitt House, Florence.
W. D. Woods, Darlington.

Tennessee

Knoxville Nursery Co., Knoxville.
J. C. Hale Nursery Co., Winchester.
Southern Nursery Co., Winchester.
Marble City Nursery Co., Knoxville.
Howell Nurseries, Knoxville.
Cedar Hill Nursery & Orchard Co., Winchester.
Forest Nursery & Seed Co., McMinnville.
Easterly Nursery Co., Cleveland.
Tennessee Nursery Co., Cleveland.
A. M. and J. E. Lee, Soddy.

Virginia

Old Dominion Nurseries, Richmond.
Virginia Nurseries, Richmond.
The following constitutes a list of seed permits issued by the Commission during the past fiscal year:

Seed

J. A. W. Moore, Bennettsville.
G. L. Toole, Aiken.
Jno. A. Drake, Drake.
J. R. Register, Lamar.
Pedigreed Seed Farm, Hartsville.
J. A. Russell, Society Hill.
L. A. Wolfe, Orangeburg.
B. W. Segars, Sumter.
B. F. Holley, Aiken.
A. H. Rogers, Society Hill.
J. C. C. Brunson, Florence.
W. T. Hite, Augusta.
L. B. Brandon, Clemson College.
A. L. Easterling, Bennettsville.
J. P. Hodges, Brownsville.
J. L. Napier, Blenheim.
Latta Farm, Yorkville.
R. Cosby Newton, Bennettsville.
W. R. Elliott, Winnsboro.
S. E. Evans, Bennettsville.

Foreign Shipments

It appears that the European War had no appreciable effect on this industry as most of the stock originates in Holland. About the usual number of foreign shipments entered this State and the stock was in unusually good condition. The list of foreign importations follows:

<table>
<thead>
<tr>
<th>FROM</th>
<th>KIND OF STOCK</th>
<th>CONSIGNED TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>France</td>
<td>Roses, Farniers</td>
<td>E. Bovey, Greenville.</td>
</tr>
<tr>
<td>Holland</td>
<td>Erica, Buxus, Spirea</td>
<td>E. Bovey, Greenville.</td>
</tr>
<tr>
<td>Belgium</td>
<td>Azaleas</td>
<td>F. J. and F. L. Aichele, Charleston.</td>
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A few shipments were received from Moth Areas of the Northeast. These were properly certified by the Federal Horticultural Board.

Insect Outbreaks

The past year furnished its full quota of insect outbreaks, and in some respects, has been unusual. The season opened with an unusual outbreak of cut-worms, Agrotis malefida. It was general over the State, making it necessary to replant crops in many instances. This insect has one generation a year. They become partially grown as cut-worms and in this stage they pass the winter. They come forth therefore in the spring with ravenous appetites and in the best possible condition to digest a hearty meal. We found that they become fully grown approximately May 17, when they enter the resting or pupal stage. This ends their period of damage and is a very important factor in control because many farmers bear this in mind and regulate their planting accordingly. Furthermore, this period fairly closely coincides with that of the bud-worm and therefore serves two very important purposes.

Like the cut-worm, the white grubs have been on the increase for the last three years. The cut-worm movement, we believe, will have to a great extent spent itself in the spring of 1917. The white-grub on the other hand will probably continue its damage through 1917 and reach its turning point in the summer of 1918.

The cowpea pod-weevil made its appearance on young cotton with the regularity of a duty. Its principal stage of action is the fall-line
diagonally across the State. As was predicted, the army worm appeared sporadically, while an isolated outbreak of cotton caterpillar occurred in Charleston county. The chinch-bug became unusually active in some localities in the Eastern portion of the State.

Of unusual interest was an outbreak of the American Mole Cricket* in Charleston county last fall. The outbreak continued this spring and is at present under observation and treatment.

**New Introductions into State**

Two very important introductions were discovered in the past year, viz, the Cottony Cushion Scale and the Argentine Ant. The former was sent for identification from Ashley Hall, and vicinity, Charleston. Investigations show it to be established. Immediate arrangements were made for colonizing the Vedalia Lady Bird Beetle, imported through the courtesy of the Florida State Plant Board. Mr. J. A. Berley of this Commission, an expert on scale insects, took charge of this project and his report follows:

"The first occurrence of Cottony Cushion Scale** in South Carolina was brought to the attention of the Division of Entomology on December 14, 1915, when Mr. Burbidge of Charleston sent in specimens for identification, which he had found affecting his boxwood hedge. Several days later another shipment containing specimens of the same insect was received from Miss M. V. McBee of Charleston. Steps were immediately taken for temporary control during the winter months, and recommendations made accordingly. This was merely to hold the insect in check until spring, when experiments could be begun with the colonization of the Vedalia lady bug which appears to be by far the best and most practical means of control."

"On May 6 the writer went to Charleston to look over the situation and at the same time colonize three colonies of Vedalia that had been sent from Haines City, Florida. A careful survey of the city was made, but no infestation was found except on Rutledge Avenue, at Ashley Hall and vicinity."

"At Ashley Hall this insect was found attacking various host-plants on the lawn, but more especially the laurels. No information was obtainable as to how this pest was introduced, but it is presumed that it was brought in on nursery stock."

"The lady-bugs which totaled about thirty, were shipped in three salve boxes, of one colony each. Each colony was liberated on a badly infested limb, and covered with fine mosquito-netting to keep out birds or other intruders that might be anxious to sample the newcomers. These coverings were left on for four days and were examined at intervals to see how the work was progressing. When liberated, they immediately began feeding on the scale insect, and were noticed doing this upon each examination thereafter."

---

* Gryllotalpa borealis.
** Icerya purchasi.
Another trip was made to Charleston on May 17, to ascertain the status of the work, and although no lady bugs were found, evidence of their work was plainly seen. We have every reason to believe that the colony is well established,* but as to how it will survive the winter we cannot say, since this is the highest latitude that it has ever been colonized in. Three more colonies are enroute from Florida at this writing.

The Cottony Cushion Scale was originally imported from Australia, probably about 1868, and became established in California where up to 1888 it did tremendous damage and threatened with annihilation the citrus industry of that State. In 1888 Mr. Albert Koebele was sent on his historical mission to Australia to study conditions with a view of finding effective natural enemies. Of the number of parasitic and predaceous enemies imported, one, the Australian lady bug, *Vedalia cardinalis*, proved a giant foe, and in a few years brought the great pest into subjection. Although Charleston is in a comparatively high latitude, we hope that this insect-friend may be able to survive the winters and serve our State as it has others.

The Argentine Ant was discovered by Mr. E. R. Barber of the Bureau of Entomology in St. Michael's church yard, Charleston. Immediate action was taken, the infested territory determined and recommendations were made for control. Prof. W. A. Thomas of this Commission whose experience with ants and aphid is notable, took charge of this project and his report follows:

"INVESTIGATION OF ARGENTINE ANT AT CHARLESTON,

Oct. 12, 1915.

(Iridomyrmex humulis)"

"The writer with Mr. M. E. Barber of the Bureau of Entomology, first visited St. Michaels Church Yard and there found a very heavy infestation. The ants were first noticed crawling across the side conspicuous. One colony has been colonized against an infestation of Cottony Cushion Scale discovered in Magnolia Gardens. walk along the junction of two pieces of cement. The trail led directly to a tree in the edge of the street. From there it passed up the trunk of the tree along a definite line as far as observation could be made. On the inside of the church yard the same conditions were observed on the trees, but in addition, the clumsily formed nests were covered with a thin mound of earth which sloped up to the trunk of the tree. Very often the trails leading up the trees were covered with particles of soil plastered together, making a very effective obstacle for shutting out the light. Invariably, as these ants passed up the trees they carried various stages of young. In every knot-hole, sheltered crotch, or cavity in an infested tree a new colony or branch colony was being formed. Another favorite nesting place of these ants is the rotten weather boarding of houses where it

* Since this writing the good work of the lady-bugs has become
comes in contact with the side walk. On examining the nests at the base of the trees, they were found to be heavily populated with all stages of young and thousands of workers with several queens to each nest. When disturbed the workers seized the stages and hustled off to cover, leaving the females or queens to take care of themselves. The females did not attempt to care for the stages, but exerted every effort towards self-preservation."

"Under the stone slabs leading from the church to the small chapel in the church yard several very large colonies were found. The largest of these were found at the corner of the chapel. When these slabs were raised, nothing but a mass of seething ants was seen. In certain areas under some of these, the ground could not be seen, owing to the mass of ants. Here also all stages were present, together with females and workers. Around the grave-stones of many graves the ants had developed thrifty colonies. One grave near the center of the yard, covered with a large marble slab, seemed to be a very favorite place for nesting. A bunch of lily-like plants at one edge of the slab was partially covered with excavated earth, and their activities about the roots of these plants had been such that an individual plant was lifted from its anchorage with only slight effort. The soil about the roots of these plants was so thick with the stages that spoonfuls of them could have been collected practically free from earth. As far as examination could be made, the same conditions existed under the large slab. Under this slab there seemed to be little or no earth over the workers or stages, but they merely filled a cavity immediately beneath the slab. Mr. King, the keeper of the church and grounds, is authority for the statement that the ants entered the church and after travelling by a circuitous route half way across it, took up their abode by the millions under the kneeling place in front of the altar, and from this position they disturbed the worshippers by crawling over them."

"A favorite run of these ants is between the edge of the side walk and adjacent buildings, and fences, especially where such places are protected from the direct rays of the sun. No matter where they are found a well-defined trail is nearly always followed. After such a trail leading over white paint on woodworks has been used for some time, it is clearly marked by a dirty, brownish yellow band, which has a slightly greasy appearance. Housekeepers were seen in several sections of the city and without exception they report that the ant is a nuisance about the kitchen, pantry, and refrigerator, where they infest eatables, rendering some of them absolutely unfit for food. In a few cases it was reported by these parties that the ants were nesting about the hearth and woodwork of the houses, and in some cases even entering the beds to the annoyance of the sleepers. One lady reports that nearly all of her young chickens were killed by these ants as they were hatching, and occasionally being so numerous as to make the hen quit her nest. Mr. Barber reports that two residences adjoining St. Michael's church yard have been vacated as a result of being overrun by these ants. He also reports
that a four-months old baby in Augusta as it lay in its crib at night came very near being killed by a horde of these ants. They were found in its eyes, mouth, nose, and ears, besides covering all parts of the body. It is reported that in New Orleans several babies have been killed by these ants. Aside from its pestiferous habits, this ant is in constant attendance upon the scale insects and plant-lice, both of which are very abundant in Charleston. By their constant care upon these insects, they are rapidly increasing in their destructiveness to the trees of Charleston."

"The area of infestation as far as determined, extends North and South from the Battery to Montague St., and East and West from East Bay St., to the Ashley River."

"We suspect that the original infestation occurred in St. Michael's Church Yard, and may have been brought there with a corpse or pot-flowers, and that the other infestations spread from this. The native ants are conspicuously absent where the Argentine Ant occurs. From every indication the migratory season is now on, since in the stream of ants pouring into the houses and cavities of trees are found all stages of the worker and adult females."

"It appears that a wet spell has a tendency to cause the ants to move into the houses and cavities of trees for protection from too much moisture."

The Bureau of Entomology has been investigating the pest in other states for the purpose of finding control measures, and one of their poisoned bait formulas is now being tried:

"15 lbs. Granulated Sugar.
7 1-2 lbs. Water.
1-4 oz. Tartaric Acid (Crystalized)."

"Boil these ingredients together slowly for 30 minutes and allow to cool. Next thoroughly dissolve 3-4 oz. Sodium Arsenite, Merk. (NaAsO2) in 1-2 pint of hot water. Allow to cool then add to the syrup stirring it thoroughly. Add 8 per cent. pure honey to syrup."

"For satisfactory results it is advisable to place this syrup out in tin cans. The ordinary one-pound baking powder cans are desirable, but any size can will do so long as it has a friction cover. If two sides of the can are indented deeply and the lid or cover replaced, it will be observable that there will be ample space between the top of the can and the cover for entrance of the ants, and the can, if kept in an upright position, will be weather proof. About a gill of syrup to the can will be ample for several months. It is very advisable to place a fairly large piece of sponge in the can which will float on the syrup and allow the ants to get at it in large numbers. Take a piece of thin wire about 6 inches long and bend for a handle, bending a hook at each end. The hooks may now be attached under the lid of the can where it projects (on either side) over the part that has been indented. This forms a handle by which the can may be hung on a tree, fence, or wall of buildings, etc. The ants prefer to climb after their food and it is preferable to hang the cans on any ant-trails seen going up trees and fences. It is very necessary to hang cans in the shade for the hot sun will evaporate the syrup,"
thus raising the poison percentage of the syrup. From this fact, it is very necessary that the poison be weighed out with very accurate balance and it would be the surer plan to have the syrup made by a druggist.''

"Eight to ten of these cans should be sufficient to place around an ordinary city house and lot. If the grounds are large, more cans will be required. It is not necessary to place any cans within the house for as long as there is syrup in the cans the ants will be satisfied to continuously eat it and they will be gradually killed."

On May 19, Mr. Berley and the Entomologist met with the Charleston Chamber of Commerce and Mr. C. F. Niven, the County Agent of Charleston County, and the entire project was presented. It is believed that important control work will follow this action as the Chamber of Commerce is giving its support to the problem.

This service intimately linked with the Station research laboratories and the Extension service, is so substantially growing in effectiveness that the outlook is most encouraging. The officers of this Commission are indebted to the Station Laboratories for invaluable results enabling us to recommend control measures hitherto unknown. The cooperative spirit of the Extension Division is of invaluable help both as an intelligence agency and as a means of obtaining results through effective application of control measures discovered. Of great value in the prosecution of this work is the excellent co-operation given by the Government Bureaus, especially the Section of Southern Field Crop Insects of the Bureau of Entomology, United States Department of Agriculture.

We wish to acknowledge your courteous and executive support in the execution of this work.

Respectfully yours,

H. W. BARRE,  
Plant Pathologist.

A. F. CONRADI,  
Entomologist.
Report of State Veterinarian

Clemson College, S. C., July 1, 1916.

Dr. W. M. Riggs, President,
Clemson College, S. C.

Dear Sir:

I have the honor to submit herewith my report for the period beginning July 1, 1915 and ending June 30, 1916.

Glanders:
This office has investigated twelve cases reported by citizens to be glanders, but on investigation only two of these animals were found to be affected with glanders. The affected animals were condemned and destroyed in accordance with the law.

Tuberculosis:
During the past year this office has tuberculin tested three thousand head of cattle, three hundred and twenty-six head of which were found to be tubercular and were condemned and destroyed in accordance with the law.

Blackleg:
Outbreaks of this disease were investigated in several counties and all exposed animals were vaccinated. No less than one hundred and fifty letters were received from cattle owners requesting information regarding this disease.
This office has prepared for use and shipped to citizens five thousand doses of Black-leg Vaccine.

Hog Cholera:
This disease is prevalent throughout the State. Veterinarians of this office have investigated twenty-two outbreaks of this disease and in each case administered the serum to the exposed animals.
This office has furnished farmers of the State over two hundred and fifty thousand C.C.'s of Anti-Hog Cholera Serum at cost.
Prof. W. W. Long and his agents deserve great credit for the valuable assistance rendered this office in fighting cholera. The State Veterinarian has answered not less than two hundred letters received from farmers requesting information regarding this disease.

Forage Poisoning:
This office has investigated fifteen outbreaks of this disease during the year. I have answered not less than fifty letters from farmers requesting information regarding this disease.

Hemorrhagic Septicemia:
Outbreaks of this disease were investigated in five counties and in every case where the owner of the cattle carried out the Veter-
inarian's instructions, there was no further loss from the disease.

Miscellaneous:
This office received during the year thirty-five reports of outbreaks of contagious diseases, but on investigation these proved to be non-contagious diseases.
This office has received during the year health certificates covering the shipment into this State of 18,207 head of horses and mules; 2,063 head of cattle; 4,312 head of hogs; 293 head of sheep; and 5 goats.

Respectfully submitted,
R. O. FEELEY,
State Veterinarian
Dr. W. M. Riggs, President,
Clemson College, S. C.

Dear Sir:

I have the honor of submitting herewith a report of Tick Eradication, conducted co-operatively between Clemson Agricultural College and the Bureau of Animal Industry, United States Department of Agriculture, in the State of South Carolina, from January 1, 1916, to October 31, 1916, inclusive:

Territory Worked:

Work was conducted in twenty-six counties embracing a total area of 19,871 square miles.

Classes of Work:

In this report the following terms will be used to define the class of work in the different counties, viz: "Preliminary Work," "Systematic Work," and "Clean-Up Work." Under each will be shown the names of counties in which that particular class of work was conducted, their total area, results obtained and a brief explanation of these terms.

Preliminary Work:

Preliminary work was conducted in eight counties, viz: Beaufort, Berkeley, Colleton, Dorchester, Georgetown, Hampton, Horry and Jasper, embracing an area of 7,048 square miles.

The counties in this group are known as the "free range" counties, i. e., the cattle are not under fence. The only practical method for disinfecting cattle in these counties is by use of dipping vats. Our work, therefore, has been the supervision of the construction of these vats (the vats being built by the cattle owners), instructing the owners the proper manner for handling their cattle at the vats, and supervising the regular disinfection of their cattle when possible. Vat construction will be continued in these counties during the winter months in order to have a sufficient number of them in operation by next spring so we can establish the work systematically at that time.

Systematic Work:

Systematic work was conducted in ten counties and a portion of one county, viz: Bamberg, Barnwell, Calhoun, Charleston, Clarendon, Edgefield, Florence (portion), Lexington, Orangeburg, Saluda and Williamsburg, embracing an area of 7,316 square miles.
Work in the above counties consisted of a farm to farm inspection of all cattle by our cattle inspectors, all tick infested and exposed cattle were located, placed under quarantine, instructions were given the cattle owners how to free their cattle and premises of ticks, and regular inspections were maintained on such premises for a sufficient time to see that instructions were followed. As a result six of the above counties and a portion of one were released from State and Federal quarantine, viz: Calhoun, Florence (portion), Lexington and Saluda were released March, 1916. Bamberg, Barnwell and Edgefield were released September, 1916. These six counties and a portion of one county embrace an area of 3,777 square miles. Two-thirds of the territory in the counties of Clarendon, Charleston, Orangeburg and Williamsburg have been freed of ticks, embracing an area of 2,350 square miles.

Clean-Up Work:
Clean-up work was conducted in seven counties and a portion of one county, viz: Aiken, Chesterfield, Fairfield, Florence (portion), Kershaw, Lancaster, Marion and Richland, embracing an area of 5,507 square miles.

This class of work is practically completed at this date in the above counties. On March 10, 1916, the counties of Calhoun, Florence (South of Lynches River), Lexington and Saluda were released from State and Federal quarantine, and on September 15, 1916, the counties of Bamberg, Barnwell and Edgefield were released from quarantine. Clean-up work was conducted in these counties from those dates and at this time it is practically completed.

By “Clean-Up Work” is meant work in counties that have been released from State and Federal quarantine, in which a few premises remain under local quarantine. The cattle on such premises are disinfected every fourteen days under the supervision of the cattle inspectors until such time as it is ascertained that the cattle and premises are entirely free of ticks.

Summary of Results:
In addition to the territory released from quarantine this year, we will release approximately 2,000 square miles of territory next spring. This will make a grand total of 20 counties, embracing an area of 13,141 square miles released from State and Federal quarantine since April, 1914, at which time the present system of conducting the work was inaugurated co-operatively between Clemson Agricultural College and the Bureau of Animal Industry, U. S. Department of Agriculture.

It is extremely gratifying to relate that greater progress has been made in Tick Eradication in the State of South Carolina since April, 1914, than has been made in any State in which the work is being conducted.

The general improvement in both quality and condition of cattle
is very appreciable; greater interest is being taken in their breeding and care than ever before. This is more noticeable year by year in direct proportion to the area freed of ticks. A cow is not looked upon as a mere cow as formerly, she is now regarded as an asset, and a very valuable one at that. The farmer of today realizes as never before that the principal fundamental of successful farming is good cattle, and that cattle and ticks are incompatible.

Prospects:

The territory released this year and the area to be released next spring practically completes the work in the “Stock law” counties. We will, therefore, be in position to establish “Systematic work” next year in every county that still remains under quarantine. This will include all of the coast counties in which cattle are permitted “free range” and as a consequence are of a more or less wild nature. Thorough and regular disinfection of all cattle in these counties will be more difficult of accomplishment than cattle in “Stock law” counties; however, from the hearty co-operation we are receiving from the cattle owners and public-spirited citizens, we do not anticipate other than satisfactory results. Owing to the floods and excessive rainfall in this territory during the summer months, our vat construction work was greatly interfered with, but a sufficient number will be in shape for operation by next spring to justify us in establishing “Systematic Work” in every county.

U. S. Bureau of Animal Industry Expenditures

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$25,204.98 $5,294.21 $30,499.19

Salaries:

Expenditures under this heading includes salaries of Inspector in Charge, supervising veterinarians, a clerk and cattle inspectors.

Incidentals:

Expenditures under this heading include traveling expenses of Inspector in Charge, supervising veterinarians and maintenance of office in Columbia, South Carolina.
Number of U. S. Bureau Men Employed and Designation

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<th>Clerk</th>
<th>Total</th>
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State Expenditures

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$22,637.84 $2,556.09 $25,193.93

Salaries:
Expenditures under this heading include salaries of Inspector in Charge, a clerk and cattle inspectors.

Incidentals:
Expenditures under this heading includes chemicals (for preparing arsenical solution to disinfect cattle), utensils and containers for same, printing regulations, quarantine and permit books, etc., also traveling expenses of Inspector in Charge.
Number of State Men Employed and Designation

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<th>Clerk</th>
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<td>May</td>
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<td>41</td>
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<td>June</td>
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<td>July</td>
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<td>August</td>
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<td>September</td>
<td>1</td>
<td>15</td>
<td>1</td>
<td>17</td>
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<tr>
<td>October</td>
<td>1</td>
<td>17</td>
<td>1</td>
<td>19</td>
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</tbody>
</table>

The Inspector in Charge is employed jointly by the State and the U. S. Bureau of Animal Industry, each paying one-half his salary and alternate monthly traveling expenses.

Respectfully,

W. K. LEWIS,
Inspector in Charge.
Quarantine Status
April 1, 1914

SOUTH CAROLINA
SCALE: STATUTE MILES
- Free
- Quarantined
Quarantine Status
September 1914

SOUTH CAROLINA

SCALE - STATUTE MILES

- Free
- Quarantined
Quarantine Status
Effective March 1, 1915.

SOUTH CAROLINA

- Free
- Approved Lines Work
- Work not Established
Quarantine Status
Effective October 31, 1915

SOUTH CAROLINA

Free
Approved Lines Work
Preliminary Work
Quarantine Status
Effective October 31, 1915

SOUTH CAROLINA

- Free
- Approved Lines Work
- Preliminary Work
## CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS

### Abbeville County.

<table>
<thead>
<tr>
<th>Free Tuition—</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allen, R. G., Lowndesville.</td>
</tr>
<tr>
<td>Baskin, J. L., Lowndesville.</td>
</tr>
<tr>
<td>Covin, M. S., Willington.</td>
</tr>
<tr>
<td>Ellis, A., Abbeville.</td>
</tr>
<tr>
<td>Graves, C. C., Abbeville.</td>
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<tr>
<td>Grant, F., Mt. Carmel.</td>
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<tr>
<td>Hardin, A., Lowndesville.</td>
</tr>
<tr>
<td>Harper, J. K., Lowndesville.</td>
</tr>
<tr>
<td>Haskell, A. W., Abbeville.</td>
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<td>Kennedy, P. B., Abbeville.</td>
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<td>Leslie, F. H., Abbeville.</td>
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<td>Leslie, W. E., Jr., Abbeville.</td>
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<tr>
<td>Link, J. C., Abbeville.</td>
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<tr>
<td>Magill, W. K., Abbeville.</td>
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<td>McMillan, W. L., Abbeville.</td>
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<tr>
<td>Tolbert, T. P., Abbeville.</td>
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<tr>
<td>Thornton, R. F., Abbeville.</td>
</tr>
</tbody>
</table>

| Pay Tuition—                         |
| Bradley, W. W., Jr., Abbeville.      |

| Scholarship—                         |
| Anderson, F. C., Abbeville.          |
| Britt, J. A., McCormick.             |
| Carwile, A. B., Abbeville.           |
| Graves, H. E., Abbeville.            |

### Aiken County.

| Free Tuition—                         |
|Gallegly, J. M., Ellenton.             |
| Glover, C. B., Augusta.               |
| Grohman, C. E., Aiken.                |
| Hammond, G. B., Kathwood.             |
| Hankinson, J. C., Windsor.            |
| Harley, J. B., Ellenton.              |
| Morrison, E. C., Salley.              |
| Parker, J. E., Graniteville.          |
| Priest, J. W., Augusta.               |
| Quattlebaum, H. H., Aiken.            |
| Sawyer, W. S., Monetta.               |
| Shuler, J. H., Aiken.                 |
| Tyler, G. R., Windsor.                |
| Wiehl, E. A., Aiken.                  |

| Pay Tuition—                          |
| Atkinson, F. W., North Augusta.       |
| Courtney, B. O., Aiken.               |
| Croft, G. M., Aiken.                  |
| Henderson, E. P., Bath.               |
| Whitlock, W. A., Kitchings Mill.      |
| Williams, L. J., North Augusta.       |

| Scholarship—                          |
| Adams, J. B., North Augusta.          |
| Biss, R. E., Aiken.                   |

### Brodie, M. L., Kitchings Mill.

### Anderson County.

| Free Tuition—                         |
| Acker, E. G., Anderson.               |
| Bannister, S. A., Starr.              |
| Bolt, W. H., Anderson.                |
| Brown, W. E., Starr.                  |
| Burns, G. M., Anderson.               |
| Burns, P. M., Anderson.               |
| Burriss, H. L., Anderson.             |
| Campbell, E. U., Anderson.            |
| Craig, J. M., Pendleton.              |
| Eskew, W. T., Anderson.               |
| Gambrell, S. C., Pendleton.           |
| Gaines, H. E., Honea Path.            |
| Garrison, L. C., Pendleton.           |
| Garrison, W. H., Pendleton.           |
| Glenn, B. F., Anderson.               |
| Hall, J. B., Anderson.                |
| Hall, S. W., Pendleton.               |
| Harris, G. G., Belton.                |
| Herron, W. C., Starr.                 |
| Hillhouse, E. L., Anderson.           |
| Hunter, J., Pendleton.                |
| King, J. L., Anderson.                |
| Lay, J. F., Pendleton.                |
| Latimer, J. R., Honea Path.           |
CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF
TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

Martin, J. R.,
Anderson.
Masters, W. R.,
Anderson.
Mays, R. A.,
Pendleton.
McConnell, H. S.,
Anderson.
McCown, F. A.,
Anderson.
McFall, R. E.,
Anderson.
Parks, F. L.,
Anderson.
Pepper, E. F.,
Easley.
Pettigrew, J. E.,
Starr.
Pickens, W. A.,
Easley.
Pratt, V. O.,
Starr.
Richardson, L. P.,
Anderson.
Robinson, J. E.,
Easley.
Shearer, W. A.,
Anderson.
Simpson, J. W.,
Anderson.
Sitton, B. G.,
Pendleton.
Sitton, J. J.,
Pendleton.
Smith, E. R.,
Anderson.
Smith, F. L.,
Starr.
Smith, G. W.,
Townville.
Smith, P. N.,
Pendleton.
Snellgrove, W. K.,
Anderson.
Stephens, D. F.,
Anderson.
Tripp, H. B.,
Easley.
Watson, R. G.,
Anderson.
Whitten, W. C.,
Pendleton.
Wright, C. R.,
Honea Path.

Pay Tuition—
Durham, G. H.,
Honea Path.
McCue, C. M.,
Anderson.
Tollison, P. L.,
Belton.
Webb, R. W.,
Anderson.

Scholarship—
Cannon, L. B.,
Honea Path.
Cannon, W. M.,
Honea Path.
Davis, W. M.,
Honea Path.
Hamlin, J. C.,
Anderson.
Major, C. S.,
Anderson.
Martin, G. H.,
Anderson.
O'Neal, R. M.,
Pendleton.
Reed, M.,
Belton.
Simpson, D. M.,
Oxford, N. C.
Watkins, C. S.,
Belton.

Bamberg County.
Free Tuition—
Faust, J. B.,
Denmark.
Folk, J. C.,
Denmark.
Morris, C. C.,
Olar.
Rhoad, J. S. C.,
Branchville.
Rowell, R. C.,
Bamberg.

Pay Tuition—
Martin, D.,
Bluffton.

Scholarship—
Bruce, E. C.,
Bamberg.
Rowell, S. T.,
Bamberg.
Zeigler, O. J.,
Ehrhart.

Barnwell County.
Free Tuition—
Anderson, C. S.,
Donora.
Black, E. W.,
Williston.
Dicks, W. H.,
Dunbarton.
Free, C. B.,
Blackville.
Hankinson, R. A.,
Elko.
Pate, J. G.,
Barnwell.

Scholarship—
Still, K. M.,
Blackville.
Walker, J. M.,
Blackville.

Beaufort County.
Free Tuition—
Neil, W. H.,
Chisholm.

Pay Tuition—
Marscher, J. F.,
Beaufort.
Varn, R. L.,
Beaufort.

Scholarship—
Bostick, E. M.,
Beaufort.
Neil, J. M.,
Chisholm.
Walker, H.,
Beaufort.
### Berkeley County.

**Free Tuition—**
- Avinger, L. R., Cordesville.
- Harmon, H. M., Summerville.
- Marion, E., Pineville.
- Porcher, P. R., Pinopolis.
- Stevens, J. G., Monck's Corner.
- Vardell, W. G., Oakley Depot.

**Scholarship—**
- Smith, D. P., Ridgeville.
- Thornley, S. E., Monck's Corner.

### Charleston County.

**Free Tuition—**
- Amme, D. A., Charleston.
- Brown, E. T., Charleston.
- Campsen, G. E., Charleston.
- DuGar, F. W., Charleston.
- Ferguson, J. R., Charleston.

**Scholarship—**
- Burgess, J. A., Fort Motte.
- Stack, D. A., St. Matthews.

**Pay Tuition—**
- Beisley, H. W., Charleston.
- Cogswell, V., Charleston.
- Hacker, F. H., Charleston.
- Henderson, J. R., Charleston.
- Jessen, H. H., Charleston.
- Lieberman, E. S., Charleston.
- Ridgeway, F. J., Charleston.
- Rivers, E. L., Charleston.
- Schirmer, W., Charleston.
- Sellers, A. R., Charleston.
- Stender, B., Charleston.
- Stender, C. H., Charleston.
- Wieters, A. W., Charleston.

### Calhoun County.

**Free Tuition—**
- Fairey, J. K., St. Matthews.
- Haigler, S. W., Cameron.
- Owen, A. C., St. Matthews.

**Pay Tuition—**
- Banks, B. C., St. Matthews.
- Banks, D. H., St. Matthews.
- Sanders, W. H., St. Matthews.

**Scholarship—**
- Burgess, J. A., Fort Motte.
- Stack, D. A., St. Matthews.

### Cherokee County.

**Free Tuition—**
- Cash, C. B., Gaffney.
- Cash, F. G., Gaffney.
- Hester, T. J., Gaffney.
- Hobsbs, K. O., Blacksburg.
- Moore, L. F., Blacksburg.
- Poole, E. C., Gaffney.
- Pridmore, R. M., Gaffney.
- Wilkins, R. T., Gaffney.
CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

Pay Tuition—

Jeffries, W. N., Pacolet.

Scholarship—

Brown, H. F., Gaffney.
Camp, W. B., Gaffney.
Wilson, B. F., Gaffney.

Chester County.

Free Tuition—

Jeffries, W. N., Pacolet.

Chesterfield County.

Free Tuition—

Harrall, J. P., Cheraw.
Harrall, H. C., Cheraw.
McArn, D. H., Cheraw.
McArn, T. A., Cheraw.
Poston, S. B., Chesterfield.
Thrower, J. R., Cheraw.

Scholarship—

Brown, H. F., Gaffney.
Camp, W. B., Gaffney.
Wilson, B. F., Gaffney.

Colleton County.

Free Tuition—

Boynton, J. R., Green Pond.
Hubster, E. G., Walterboro.
Kinar, J. I., Smoaks.
Kinsey, J. W., Smoaks.
Marvin, B., White Hall.
Marvin, J. P., White Hall.
Marvin, R., White Hall.
Mixson, A., White Hall.
Padgett, G. D., Walterboro.
Smith, R. E., Walterboro.

Pay Tuition—

Stone, J. P., Chester.
Worthy, H. C., Union.

Clarendon County.

Free Tuition—

Brailsford, A. P., Summerton.
Burgess, R. L., Manning.
Burgess, T. H., Summerton.
Cantey, J. S., Summerton.
Montgomery, I. P., Mayesville.
McFaddin, E. A., Sardinia.

Scholarship—

Breland, B., Ruffin.
Carter, M. O., Smoaks.
Garris, J. M., Round.
Kinsey, H. M., Smoaks.

Darlington County.

Free Tuition—

Allen, O. B., Darlington.
Dick, J. B., Hartsville.
Ellis, C. H., Hartsville.
Gandy, O., Dovesville.
Henderson, J. E., Hartsville.
Hicks, R. C., Hartsville.
<table>
<thead>
<tr>
<th>County</th>
<th>Free Tuition</th>
<th>Scholarship</th>
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<tr>
<td>Dillon County</td>
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<td>McGregor, R., Dillon.</td>
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<td>Oliver, R. S., Hamer.</td>
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<td>Pay Tuition—</td>
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<td>McMillan, N. A., Latta.</td>
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<td>Stackhouse, M. S., Dillon.</td>
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<td>Campbell, A., Summerville.</td>
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<td>Howell, V. M., St. George.</td>
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<td>Cordes, H. D., Summerville.</td>
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<td>Campbell, A. J., Ridgeville.</td>
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<td>Edgefield County.</td>
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<td>Norris, R. H., Edgefield.</td>
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<td>Parks, W. H., Parksville.</td>
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<td>Padgett, J. L., Edgefield.</td>
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<td>Free Tuition—</td>
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<td>Blair, J. D., Strother.</td>
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<td>Brown, H. W., Winnsboro.</td>
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<td>Lyles, J. D., Rockton.</td>
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<td>McEachern, J. J., Longtown.</td>
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McMeekin, A. H.,
Monticello.
Reeves, E. E.,
Longtown.
Reeves, F. M.,
Ridgeway.
Roberts, E. R.,
Monticello.
Robertson, W. D.,
Winnsboro.
Shedd, R. R.,
Monticello.
Sloan, E. D.,
Winnsboro.

Pay Tuition—
Heath, S. W.,
White Oak.

Scholarship—
Dixon, W. W.,
Winnsboro.
Elliott, H. M.,
Winnsboro.
Glenn, H. Y.,
Wallaceville.
Mackin, F. E.,
Rion.

Florence County.

Free Tuition—
Anderson, J. R.,
Timmonsville.
Clarke, T. A.,
Florence.
Cole, W. P.,
Ebenezer.
Conyers, J. W.,
Timmonsville.
Hill, G. O.,
Timmonsville.
Jeffords, A. C.,
Florence.
Jeffords, J. E.,
Florence.
Matthews, J. D.,
Coward.
McKenzie, D. W.,
Lake City.
Ward, C. W.,
Timmonsville.

Pay Tuition—
Cook, W. S.,
Timmonsville.

Scholarship—
Bostick, A. H.,
Forestville.
Graham, S. W.,
Coward.
Graham, W. C.,
Coward.
Moore, J. H.,
Florence.
McCown, M. T.,
Florence.
Sansbury, L. S.,
Bannockburn.
Truett, E. C.,
Timmonsville.
Truett, L. T.,
Timmonsville.

Georgetown County.

Free Tuition—
Doar, E. M.,
Georgetown.
Rosa, W. E. S.,
Georgetown.
Tarbox, H. G.,
Georgetown.
Webber, C. P.,
Georgetown.
Wilcox, C. A.,
Murrells Inlet.

Pay Tuition—
Ford, R. M.,
Georgetown.
Pyatt, E. N.,
Georgetown.
Tarbox, J. G.,
Georgetown.

Scholarship—
Cribb, E.,
Rhems.
Dubrowsky, J. L.,
Georgetown.

Greenville County.

Free Tuition—
Bellotte, T. R.,
Greenville.
Bentz, J. L. R.,
Greenville.
Berry, F. O.,
Greenville.
Berry, J. F.,
Greenville.
Black, W. L.,
Green.
Boggs, J. L.,
Greenville.
Brown, S. R.,
Piedmont.
Bryant, W. H.,
Greenville.
Bull, D. J.,
Greenville.
Chapman, C. F.,
Pelzer.
Duckett, J. G.,
Fountain Inn.
Goodwin, E.,
Travellers Rest.
Hoke, G. M.,
Greenville.
James, L. C.,
Greenville.
McHugh, F.,
Greenville.
West, W. D.,
Greenville.
Wingo, R. A.,
Campobello.

Pay Tuition—
Allison, W. A.,
Greenville.
Cody, E. D.,
Greenville.
Cooper, J. L.,
Piedmont.
Jones, P. G.,
Fountain Inn.
Kilgore, J. H.,
Simpsonville.
Peden, H. B.,
Fountain Inn.
Perry, J.,
Greenville.
Jones, C. J.,
Fountain Inn.
Goodyear, C. M., Greenville.

Scholarship—
Bomar, W. E., Greer.
Bryan, G., Greenville.
Green, M. C., Greenville.
Harrison, D., Simpsonville.
Padgett, T. D., Greenwood.
Robertson, J. H., Greenville.

Greenvoo County.

Free Tuition—
Bell, H. D., Greenwood.
Blake, R. S., Ninety-Six.
Burnett, D. E., Greenwood.
Burnett, G. N., Greenwood.
Clinkscales, S. M., Greenwood.
Davis, G. H., Troy.
Duncan, D. T., Ninety-Six.
Jones, D. R., Greenwood.
Metts, J. C., Gaines.
McCord, A. S., Hodges.
Reynolds, H. L., Greenwood.
Seal, J. H., Greenwood.
Sheppard, J. P., Greenwood.
Taylor, W. A., Greenwood.
Williams, C. W., Greenwood.

Pay Tuition—
Aldrich, R., Greenwood.
Sproles, J. B., Greenwood.

Scholarship—
Bradford, Z. B., Greenwood.
Chatham, F. W., Ninety-Six.
Dominick, A. A., Gaines.
Haddon, F. M., Hodges.
Kennerly, W. J., Greenwood.

Hampton County.

Free Tuition—
Clarke, P. H., Estill.
Kittles, T. J., Garnett.
Lawton, W. H., Garnett.
Peeples, C. L., Estill.
Varn, W. C., Varnville.
Whatley, V., Earley Branch.
Williamson, A. W., Yemassee.
Zeigler, E. A., Estill.

Pay Tuition—
Mauldin, J., Hampton.
Mauldin, W. H., Hampton.

Scholarship—
Bowers, J. T., Hampton.
Frampton, L., Varnville.
Lightsey, O. P., Brunson.

Horry County.

Free Tuition—
Altman, D. M., Gallivants.
Baxter, C. L., Garnett.
Derham, J. H., Green Sea.
Hardee, F. W., Conway.
Lupo, G. M., Green Sea.
Worley, S., Tabor, N. C.

Pay Tuition—
Allsbrook, J. G., Allsbrook.
Butler, G. R., Loris.
Sessions, C. J., Conway.

Scholarship—
Ayers, T. L., Tabor, N. C.
Derham, J. P., Green Sea.
Floyd, F. E., Tabor, N. C.
Stanley, S. C., Loris.

Jasper County.

Free Tuition—
Jenkins, J. H., Ridgeland.

Scholarship—
Manuel, J. L., Gillisonville.
Thompson, J. W., Ridgeland.
CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

Kershaw County.

Free Tuition—
Heath, J. P.,
Camden.
West, T.,
Camden.
Williams, F. B.,
Camden.

Pay Tuition—
Zemp, J. D.,
Camden.

Scholarship—
Gaskin, H. B.,
Kershaw.
Lenoir, J. W.,
Camden.
Magill, A. R.,
Kershaw.
Richards, A. J.,
Liberty Hill.
Rush, J. D.,
Camden.
Williams, C. L.,
Camden.

Laurens County.

Free Tuition—
Burdette, L. W.,
Clinton.
Cox, M. E.,
Gray Court.
Freeman, G. E.,
Honea Path.
Garrett, C. S.,
Laurens.
Hunter, G. W.,
Clinton.
Johnson, D. W.,
Clinton.
Koon, J. W.,
Cross Hill.
Martin, A. F.,
Laurens.
Philpot, L. A.,
Laurens.
Scurry, R. L.,
Chappell.
Sullivan, D. H.,
Laurens.
Wofford, J. W.,
Laurens.
Wood, J. B.,
Ware Shoals.
Wright, W. F.,
Laurens.

Pay Tuition—
Dial, J. C.,
Laurens.
Scaife, W. M.,
Clinton.

Scholarship—
Armstrong, F. E.,
Owings.
Brown, C. J.,
Mountville.
Poole, R. F.,
Gray Court.
Taylor, R.,
Laurens.
Thornton, S. F.,
Mountville.
Washington, W. H.,
Ware Shoals.
Young, E. C.,
Clinton.

Lee County.

Free Tuition—
Clark, J. D.,
Lynchburg.
Williams, M. L.,
Bishopville.

Scholarship—
Lemmon, W. T.,
Elliott.
McCoy, J. E.,
St. Charles.
McLeod, W. T.,
Lynchburg.
Welsh, E. A.,
Elliott.

Lancaster County.

Free Tuition—
Cook, J. L.,
Taxahaw.
Craig, J. W.,
Lancaster.
Culp, W. C.,
Lancaster.
Hough, J. T.,
Lancaster.
Sowell, H. E.,
Lancaster.
Williamson, S.,
Lancaster.

Scholarship—
Blackmon, J. F.,
Lancaster.
Caskey, A. J.,
Lancaster.
Horton, F. B.,
Kershaw.
Sowell, L. C.,
Lancaster.

Lexington County.

Free Tuition—
Barre, M. L.,
Lexington.
Cullum, U. X.,
Batesburg.
Fulmer, J. W.,
Chapin.
Hartley, J. B.,
Batesburg.
Kaufman, J. E.,
Lexington.
Lever, F. M.,
Chapin.
Steadman, M. S.,
Batesburg.
Wingard, H. H.,
Lexington.
Woods, E. T.,
New Brookland.

Scholarship—
Harman, C. C.,
Lexington.
Hughes, H. C.,
Steedman.
Kramer, E. D.,
Lexington.
Lyles, N. P.,
Steedman.
Miller, J. C.,
Lexington.
Parler, J. W.,
Batesburg.
CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

Marion County.

Free Tuition—
Herring, L. C., Oakton.
Montgomery, H. D., Marion.
Rogers, W. B., Mullins.
Tenhut, J. N., Marion.

Pay Tuition—
Monroe, D. E., Marion.
Reaves, G. H., Mullins.

Scholarship—
Blackwell, W. M., Marion.
Rogers, L. F., Mullins.
White, W. T., Centenary.

Marlboro County.

Free Tuition—
Bingham, I. W., McComb.
Breeden, E. G., McColl.
Fitts, F. M., Clio.
Harris, E. B., McComb.
McIntyre, J. M., Clio.
McLaurin, J. L., Clio.
McLaurin, L. W., Clio.
Pegues, V. R., Kollok.
Rogers, J. P., Bennettsville.
Tatum, W. F., McComb.
Thomas, H. R., Bennettsville.
Townsend, W. B., Bennettsville.

Pay Tuition—
Fletcher, C., McComb.
Jackson, J. M., Jr., Bennettsville.
Odom, R. J., McComb.

Scholarship—
Heiss, G. K., Clio.
Heiss, M. W., Clio.
Sherrill, C. I., Bennettsville.

Newberry County.

Free Tuition—
Derrick, E. L., Little Mountain.
Dominick, E. L., Prosperity.
Douglas, F. K., Whitmire.
Duncan, J. B., Prosperity.
Fellers, L. H., Prosperity.
Hunter, W. E., Prosperity.
Quattlebaum, H. L., Prosperity.
Sanders, C. W., Silver Street.
Singly, L. K., Prosperity.
Wallace, D. R., Kinards.
Wright, R. F., Newberry.

Pay Tuition—
Berly, R. H., Pomaria.
Suber, F. L., Whitmire.

Scholarship—
Aull, G. H., Pomaria.
Folk, M. H., Pomaria.
Hawkins, J. F., Newberry.
Herbert, J. E., Newberry.
Long, E. W., Prosperity.

Oconee County.

Free Tuition—
Barker, C. E., Mountain Rest.
Gordon, W. W., Clemson College.
Lewis, R., Clemson College.
Meares, W. A., Westminster.
Middleton, J. A., Clemson College.
McHugh, M. L., Clemson College.
McMahan, D. J., Richland.
Norman, A. L., Seneca.
Shiver, H. E., Clemson College.
Steadman, B. K., Clemson College.
Stribling, B. H., Richland.
Stribling, S. C., Richland.
Sylvester, J. C., Clemson College.
Verner, L. W., Seneca.
Wilbanks, W. C., Clemson College.
Wood, H. E., Seneca.

Pay Tuition—
Austin, W. L., Seneca.
Bancroft, J., Clemson College.
Brackett, N. C., Clemson College.
Furman, J. C., Clemson College.
Morrison, W. A., Clemson College.
CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

Scholarship—
King, W. C., Tomasee.
Singleton, G. H., Westminster.
Stribling, J. W., Seneca.
Freeman, W. T., Orangeburg.
Myers, F. O., Orangeburg.
Patrick, W. T., Bowman.
Whisenhunt, L., Orangeburg.
Williams, W. C., Eutawville.

Orangeburg County.
Free Tuition—
Albrecht, C. H., Orangeburg.
Boliver, T. E., Orangeburg.
Felder, H. H., Vance.
Gilmore, L. H., Holly Hill.
Hayden, O. L., Cope.
Herbert, W. C., Orangeburg.
Matheny, N. W., Holly Hill.
Noble, W. M., Branchville.
Robinson, A. J., Rowesville.
Smith, L. W., Holly Hill.
Way, J. W., Orangeburg.
Wannamaker, H. C., Orangeburg.
Walter, E. R., Cope.
Wright, T. W., Branchville.
Zeigler, L. M., Cope.
Boggs, O. B., Pickens.
Chapman, H. R., Liberty.
Edens, A. H., Pickens.
Folger, D. F., Central.
Folger, T. A., Central.
Gaines, R. G., Central.
Hutchings, J. M., Liberty.
Hutchins, W. D., Liberty.
Johnson, W. B., Easley.
Kelley, S. C., Central.
Leppard, B. T., Calhoun.
Leppard, J. E., Calhoun.
Peters, S. G., Clemson College.
Rowland, H. R., Central.
Rogers, F. N., Easley.
Williams, R., Liberty.
Williams, B. O., Easley.
Wyatt, J. L., Easley.

Pickens County.
Free Tuition—
Kay, L. R., Easley.
Prince, G. E., Easley.
Kay, L. R., Easley.

Scholarship—
Ellison, R. J., Easley.
Jones, S. C., Easley.
O'Dell, D. G., Liberty.

Richland County.
Free Tuition—
Dwight, F. M., Eastover.
Eleazer, J. A., Columbia.
Eleazer, J. M., Chapin.
Hollis, A. F., Columbia.
Hunter, J. E., Columbia.
Lowman, J. M., Ballentine.
Madden, A. A., Columbia.
Quattlebaum, W. M., Columbia.
Rice, C. A., Columbia.
Rodgers, W. S., Columbia.
West, C. T., Columbia.
Zobel, C. D., Columbia.

Pay Tuition—
Chambliss, P. B., Clemson College.
Clayton, W. H., Central.

Scholarship—
Bull, N. M., Vance.
Byers, W. V., Orangeburg.

Pay Tuition—
Daly, B. T., Columbia.
Haltiwanger, D., Columbia.
Hoefer, F. S., Columbia.
Mather, E. W., Columbia.
Zobel, J. H., Columbia.
CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS—(Continued)

Scholarship—
Brown, J. M., Bookman.
Bush, J. G., Hopkin.
Chappell, P. C., Lykesland.
Cheatham, R. J., Eastover.
Gee, J. G., Columbia.
Lever, A. L., Blythewood.
Price, G. W., Columbia.
Watkins, J. S., Columbia.

Saluda County.
Pay Tuition—
Edwards, V. M., Saluda.
Pitts, R. C., Saluda.

Scholarship—
Bodie, D. D., Batesburg.
Etheredge, M. P., Saluda.
Wise, J. R., Saluda.

Spartanburg County.
Free Tuition—
Alverson, R. O., Spartanburg.
Anderson, L. W., Spartanburg.
Barnes, W. M., Spartanburg.
Brown, C. C., Woodruff.
Caldwell, A. J., Campobello.
Camp, S. W., Inman.
Campbell, C. D., Inman.
Campbell, J. H., Inman.
Carson, J. A., Spartanburg.
Clement, D. T., Inman.
Gowan, W. G., Inman.
Gray, J. L., Woodruff.
Hagood, T. R., Spartanburg.
Hellams, J. R., Spartanburg.
Heldman, J. M., Spartanburg.
Martin, V. T., Cowpens.
Mabry, W. L., Landrum.
Sams, R. H., Spartanburg.
Vernon, J. E., Spartanburg.
Wall, R. L., Landrum.
West, H. B., Spartanburg.
Wingo, J. W., Spartanburg.
Zimmerman, M. L., Spartanburg.

Pay Tuition—
Carpenter, J. B., Landrum.
Herring, J. W., Spartanburg.
Johnson, H. W., Spartanburg.

Scholarship—
Bonner, W. C., Chesnee.
Carrington, G. C., Spartanburg.
Carver, W. A., Fairforest.
Cox, G., Woodruff.
Finger, B. L., Fingerville.
Hall, R. A., Fairforest.
Harris, C. G., Spartanburg.
Robertson, T. B., Spartanburg.
Tallevast, W. D., Spartanburg.
Willis, H. H., Clifton.

Sumter County.
Free Tuition—
Cain, D. J., Sumter.
Douglas, J. R., Mayesville.
Edens, T. A., Dalzell.
Gill, J. C., Rembert.
Grier, R. L., Mayesville.
Jones, A. C., Sumter.
Randle, E. L., Sumter.
Rembert, A., Rembert.
Sanders, E. P., Dalzell.
Siddall, T. H., Sumter.
Truluck, W. E., Motbridge.
Weinberg, H. J., Wedgefield.
Young, G. F., Rembert.

Pay Tuition—
Brogdon, J. A., Sumter.
Purdy, W. H., Sumter.
Robinson, J. H., Oswego.
Shaw, W. H., Sumter.

Scholarship—
Kolb, E. C., Sumter.
Mellett, R. R., Sumter.
McLeod, D. R., Sumter.
Sanders, H. L., Hagood.
## Classification of Students as Regards Payment of Tuition and Holding of Scholarships—(Continued)

### Union County.

**Free Tuition—**
- Askew, W. F., Mt. Tabor.
- Harris, H., Union.
- Jeter, J. M., Jr., Santuck.
- Jeter, J. P., Jr., Santuck.
- Jeter, R. R., Santuck.
- Jones, J. E., Union.
- Johnson, M. T., Union.
- Littlejohn, S., Jr., Jonesville.
- McDaniel, G. D., Union.
- Poole, W. R., Union.
- Thomson, W. E., Union.
- Wallace, F. M., Union.

**Pay Tuition—**
- Drew, H. S., Union.

**Scholarship—**
- Littlejohn, C. E., Jonesville.
- Rice, C. A., Union.
- Wallace, W. H., Union.

### Williamsburg County.

**Free Tuition—**
- Brockington, B. O., Morrisville.
- Gamble, J. P., Greeleyville.
- Snow, J. J., Henry.
- Strong, H. H., Kingstree.

**Scholarship—**
- Clements, D. T., Greeleyville.
- McConnell, R. M., Kingstree.

### York County.

**Free Tuition—**
- Barron, A. A., York.
- Bass, R. E., Rock Hill.
- Boyd, P. O., Fort Mill.
- Brandon, T. B., McConnellsville.
- Buice, J. L., Hickory Grove.
- Campbell, T. A., Tirzah.
- Garrison, E. H., Rock Hill.
- Graham, N. T., Rock Hill.
- Hay, W. S., Rock Hill.
- Kuykendal, C. M., Rock Hill.
- Kuykendal, F. R., Rock Hill.

**Scholarship—**
- Brandon, J. D., McConnellsville.
- Feemster, R. S., Bullocks Creek.
- Garrison, E. B., York.
- Howell, W. F., Rock Hill.
- Kendrick, J. B., Clover.
- Kirkpatrick, M. H., Sharon.
- Plaxico, R. S., Rock Hill.
- Suggs, G. W., York.
- Whitesides, N. D., Filbert.
- Young, E. B., Rock Hill.

**Matthews, G. R., Rock Hill.**
**Matthews, W. A., Clover.**
**Miller, W. C., Rock Hill.**
**Nicholls, W. B., Rock Hill.**
**Plaxico, L. R., York.**
**Poag, L. M., Rock Hill.**
**Suggs, H. L., York.**
**Waters, R. B., Rock Hill.**
**Williams, K. A., York.**

**Pay Tuition—**
- Finley, R. M., York.
- Finley, S. R., York.

**Scholarship—**
- Brandon, J. D., McConnellsville.
- Feemster, R. S., Bullocks Creek.
- Garrison, E. B., York.
- Howell, W. F., Rock Hill.
- Kendrick, J. B., Clover.
- Kirkpatrick, M. H., Sharon.
- Plaxico, R. S., Rock Hill.
- Suggs, G. W., York.
- Whitesides, N. D., Filbert.
- Young, E. B., Rock Hill.
NON-RESIDENT STUDENTS

Pay Tuition

Agnew, E. H.,
Canon, Ga.
Allen, R. C.,
Lavonia, Ga.
Allison, H.,
Brevard, N. C.
Arthur, H. T.,
Richmond, Va.
Bangs, P. C.,
Atlanta, Ga.
Bogard, W. P.,
St. Louis, Mo.
Bowen, R. A.,
Macon, Ga.
Bruce, J. M.,
Avalon, Ga.
Burch, H. L.,
Dublin, Ga.
Burch, W. E.,
Dublin, Ga.
Duggan, I. W.,
Clayton, Ga.
Ellis, L. C.,
Grover, N. C.
Fain, P.,
Murphy, N. C.
Flournoy, J. E.,
Macon, Ga.
Jackson, T. S.,
Thomaston, Ga.
Laidlaw, R. E.,
Marion, N. C.
Lee, W. D.,
Minas, Brazil.
Mailory, W. W.,
Savannah, Ga.
Moorhead, H. A.,
Buckhead, Ga.
Moore, E. K.,
Saluda, N. C.
McGougan, J. M.,
Tabor, N. C.
Planes, W. B.,
Guantanamo, Cuba.
Pride, W. L.,
Norfolk, Va.
Rawl, J. H.,
Plains, Ga.
Rivera, R. E.,
Mayaguez, P. R.
Rothell, C.,
Lexington, Ga.
Seabrook, E. M.,
Savannah, Ga.
Short, W. J.,
Buena Vista, Ga.
Tate, T. H.,
Union Mills, N. C.
Vincent, C. A.,
Shinnston, Va.