FIFTY-EIGHTH ANNUAL REPORT

of the

BOARD OF TRUSTEES

of

The Clemson Agricultural College

to the

General Assembly of South Carolina

1947

RECORD

The Clemson Agricultural College

Published quarterly by The Clemson Agricultural College, Clemson, S. C. Entered as second class matter April 25, 1905, at the Post Office at Clemson, S. C., under the Act of July 16, 1894, now superseded by the Act of August 24, 1912.
THOMAS GREEN CLEMSON

(Reproduction of portrait by B. O. Williams)
SOME HISTORICAL FACTS CONCERNING THE DEVELOPMENT OF CLEMSON COLLEGE

THOMAS GREEN CLEMSON

July 1, 1807  Born in Philadelphia
1828-1832  Attended Royal School of Mines, Paris
1832  Received a diploma from and worked in the Royal Mint of France; had the best education as Chemical Engineer to be had in the world at the time
1833-1844  Practiced his profession successfully from Philadelphia or South Carolina
Nov. 13, 1838  Married Anna Maria Calhoun, daughter of our great statesman John C. Calhoun, at Fort Hill
1844-1852  United States Charge d'Affaires to Belgium
1852-1862  Farmed experimentally on his farm near Washington, D. C.
1860-1861  First Superintendent of Agricultural Affairs in the United States Government
1862-1865  Served as chemist in the Confederate service
1865-1871  Lived in Pendleton; served as President of Pendleton Farmers' Society
1872  With Mrs. Clemson moved to Fort Hill, which she had inherited
1875  Mrs. Clemson died, leaving Fort Hill to Mr. Clemson
Nov. 6, 1886  Date of final will which provided for a governing board of seven life trustees and six others to be chosen by the General Assembly and providing that no other body should control the proposed college. This was to be a "high seminary of learning."
April 6, 1888  Died at Fort Hill
May 2, 1888  Life trustees met at Fort Hill; accepted their obligation and organized
Dec. 4, 1888  Will submitted to General Assembly
Dec. 15, 1888 Bequest accepted by House; by the Senate a few days later designating Clemson as The Agricultural and Mechanical College of South Carolina

May 1889 U. S. Circuit Court declared the Clemson Will legal in the case of Lee vs. Simpson

Nov. 27, 1889 Governor Richardson signed the bill accepting the Clemson bequest

Dec. 6, 1889 Chief Justice of South Carolina Supreme Court declared that South Carolina had formally accepted the bequest

April 7, 1890 Supreme Court of United States upheld the Clemson Will

Let us be ever cognizant of what the Act of Acceptance of Mr. Clemson's bequest means:

1. The name of the college shall be "The Clemson Agricultural College."

2. It shall be a high seminary of learning.

3. Its Board of Trustees shall consist of seven life trustees, a self perpetuating group, and six trustees elected by the Legislature in any manner that body may determine.

4. This Board shall have full power to employ the staff and determine courses, aims, and objectives.

5. The duties of the Board shall never be taken away nor shall the Board be replaced by any other board or body.

Under this unique and excellent Board for fifty-four years the college has had phenomenal growth. It has followed the course designated by its founder and by the quality of its graduates has become an institution held in high esteem among the Land-Grant Colleges. It has served the people of the state by great service to agriculture and industry. It has developed the resources and has in its great program plans to perfect the clays and the products of the forests and fields. The traditions and achievements merit the vigilance of every former student and friend of the college in supporting and protecting the Clemson Will throughout all time. Only through repudiation and by breaking faith with the dead could changes be made in the present Board of Trustees and its special duties.
LETTER OF TRANSMITTAL

To the Members of the General Assembly
Columbia, South Carolina

Gentlemen:

The trustees of The Clemson Agricultural College are pleased to transmit herewith for your thoughtful consideration the Report of President R. F. Poole, for the fiscal year July 1, 1946 to June 30, 1947.

Members of the Board have reviewed the affairs of the several agencies of the college on three occasions during the past year and have found them entirely satisfactory.

Respectfully submitted,
W. W. Bradley
President, Board of Trustees

December 1, 1947.
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From R. F. Poole  
President, The Clemson Agricultural College

To The Honorable W. W. Bradley  
President, The Board of Trustees

Dear Sir:

I have the honor to present to you the fifty-eighth report of the President of Clemson College. Included are brief reports concerning the public service activities which are under the direction of Clemson College.

For the first time I am reporting on the work of the Chemistry, Engineering, and Textile Schools because these schools are conducting research projects which may well be considered as public service activities.

Each day it becomes clearer that the Faculty Council, composed of the Deans and Directors of the college, worked out a sound plan for student enrollment. To date this session 3251 students have enrolled for classes. Studies indicate that this enrollment will be maintained again next session.

Of the 3251 students currently in school 1373 are enrolled in the School of Engineering; 619 in Agriculture; 615 in Textiles; 322 in Arts and Sciences; 245 in Vocational Education; 41 in Chemistry and Geology; and 36 are Specials, Graduates, and Post-Graduates.

Today through the nation two policies are in vogue as to enrollment. Some institutions have held their enrollment to the number that could be educated properly. Clemson has been one of these institutions. Our students are enabled to
WHERE THE CLEMSON STUDENTS COME FROM
FIRST SEMESTER 1947-1948

SOUTH CAROLINA 2826
NORTH CAR. & GEORGIA 233
OTHER SOU. STATES 120
OTHER STATES 72
TOTAL ENROLLMENT 3251

SOUTH CAROLINA 86.9%
OTHER SOU. STATES 10.9%
OTHER SECTIONS 2.2%
take advantage of scholastic rules and register for maximum credit. This method will enable students to complete their work in the shortest possible time. The other policy has been to take a large number of students without considering the student load and as a result students in some cases have to be content with a small number of course assignments.

It is reasonable to believe that Clemson with 3251 students enrolled may actually graduate under better circumstances as many students as institutions with more than 4,000 enrolled.

Accommodations for Veterans

Clemson was one of the very first colleges to provide living quarters for married veterans. After many visits to wartime housing projects and after much negotiating with the Federal Public Housing Administration, the college was assigned 100 family units on condition that they be moved and erected without cost to the government.

The first project consisted of 50 duplex houses (100 units). The students pay $15 per month for quarters, cold water, and electric lights.

The number of requests for houses continued to increase so it was decided to ask for additional quarters under the provisions of a Federal Act which made available funds for moving and erecting the houses. Clemson was to provide the site, including roads and utilities. This second group of 248 small houses is located in an area suitable for the development of our future agricultural building program. Students pay $18 per month for these single units including cold water and electric lights.

The Public Housing Administration, in addition to the second group of 248 houses, erected three dormitory buildings which provide accommodations for 272 single veteran students. Rental of these rooms is in accordance with the amounts charged for other dormitory rooms.
In order to maintain the academic standards of the college it was found necessary to provide living quarters for the new members of the faculty who were unable to find places in the Village of Clemson. The government has ruled that thirty per cent of the pre-fabs may be used to house members of the college staff and five per cent of the total number may be non-veteran faculty members. Rental rates for faculty members range from $24 to $30 per month depending on the size of the unit.

**Scholastic Achievement of Veterans and Non-Veterans**

Although it is too early to give a comparison of the achievement of veterans and non-veterans for the present session there is every indication that veterans will continue to maintain superior scholastic records. Information is available concerning the superior achievement attained by veterans during the session 1946-1947.

Of the 2965 students who enrolled for the first semester, 1946-1947, 2804 students received grades at the end of the semester, and 434, or 15.4 per cent, of these qualified for honors. Three hundred and sixty-nine, or 18.0 per cent of the 2056 veterans, and 65, or 8.7 per cent, of the non-veterans made the honor list.

Fifteen students qualified for highest honors during the first semester by making a grade of “A” on all subjects taken; fourteen of these were veterans, with only one non-veteran being in this select group.

**The School of Chemistry** at Clemson serves a three-fold purpose. First, it provides instruction in one of the fundamental sciences to all students at Clemson. For some years all students at Clemson regardless of course of study have been re-
required to take an elementary course in chemistry. Until the advent of the Atomic Age, the wisdom of this requirement might have been open to question. Now it is realized that our very existence as a nation is dependent on our understanding of, and leadership in the fundamental sciences, particularly chemistry and physics. The language of chemistry is now the language of the day and even the leading larger northern universities are for the first time requiring that a fundamental science be taken by all students irrespective of courses, so Clemson is several years ahead of the majority in this respect.

The second function of the School of Chemistry is to provide more advanced courses of instruction for those students in agriculture, medicine, engineering or textiles who will utilize chemistry in their life work. These students include the agronomists, pre-medics, chemical engineers and textile chemists, many of whom eventually settle in South Carolina, so we are furnishing the necessary chemical training for the future professional men of the state.

The third function of the School of Chemistry is to train students in a four year course in chemistry for those who expect to make this science their life work. More and more chemical industries are entering South Carolina each year and with the Celanese Corporation planning on a multi-million dollar expansion in South Carolina the demand for trained chemists will increase many fold. Clemson is the logical place for the training of these men. Many of our chemistry graduates go into graduate work at other institutions, so they will be better fitted to take the lead in this profession. It is hoped that before too long a time we shall be able to give some of the graduate work at Clemson, but lack of proper building facilities is proving a serious drawback in this respect.

Not only is the School of Chemistry playing an important part in furnishing chemical training to future citizens of this state, but negotiations are under way towards instituting a naval research program at Clemson so that the State of South Carolina may do its part in fundamental research so necessary for the future safety of our country. This program must of
necessity be very limited at present because our old building is so over-crowded, and space for expanded activities is just not available.

The demand for information on chemical tests and studies has increased to the extent that many new studies should be made. Such matters as the chemistry of cotton seeds, new insecticides and fungicides, fertilizer mixtures, foods, and medical products for sick turkeys, chickens, and animals are important questions the chemist must solve.

The School of Engineering continues to offer courses in Architecture, Chemical, Civil, Electrical, and Mechanical Engineering. In addition, we are offering work in Ceramic Engineering which may be grouped under four classifications—field work, information service, research, and teaching.

The study of the clays of South Carolina, which are numerous and of great potential value, offers a worthy new service to the state. It is hoped that the rich clay deposits will be developed to the extent that the state will have new much-needed processing plants.

Field trips have been made with the object of acquainting the ceramic industries of the state with the ceramic work at Clemson, learning the problems of South Carolina ceramic industries and locating the ceramic or non-metallic mineral resources of the state. Notes prepared on the plants visited comprise the most complete collection of information on the ceramic industries of South Carolina.

The following mineral deposits were visited and sampled:

- Topaz
- Sedimentary Kaolin
- Common Clay
- Barite
- Corundum
- Sillimanite
- Feldspar
- Mica
- Vermiculite
- Kyanite
- Residual Kaolin
- Sericite Schist
- Quartz
- Pyrophyllite
In the performance of field work new deposits of sillimanite have been located and materials previously believed to be non-existent in South Carolina (pyrophyllite and ball clay) have been discovered. Five previously unexplored clay deposits have been drilled and sampled. The results of field work have been compiled with scattered published information to provide the latest and most complete directory of South Carolina ceramic minerals. This work has been published by the South Carolina Research, Planning, and Development Board.

In answer to over 50 inquiries, reports have been prepared identifying mineral samples, evaluating the quality of clays, or giving information on ceramic materials or processes. In addition, reports have been prepared for the ceramic industries of the state that have requested information on plant procedure.

Research programs have been instigated which are correlated to either the mineral resources of the state or the problems of the local ceramic industries. To permit performance of this work much progress has been made toward equipping a ceramic laboratory.

Much interest has been displayed in the establishment of brick plants in South Carolina but unfortunately no knowledge has been available on the occurrence and properties of clays suitable for this purpose. To correct this situation, the Ceramic Engineering Department is currently engaged in the locating and testing of South Carolina clays. Thirty clays from the Piedmont section have been subjected to complete firing tests and the data are in process of compilation. This work compares favorably with the only published report on North Carolina clays which includes tests on only 18 clays.

Consumers of this state are anxious to receive shipments of light-weight aggregate to be used in structural concrete. Several clays and shales exist in this area which will expand to produce a light-weight, non-absorbent aggregate. However, these materials are not suitable for processing by conventional methods. The Clemson laboratories have developed a successful process for producing light-weight aggregate from region-
al materials. It is interesting to note that this process was developed after the Bureau of Mines had failed in a similar attempt. As a result of this development, Clemson College has been the recipient of a continuous kiln suitable for pilot plant production of light-weight aggregate. The kiln is valued at approximately $1500 and is the first continuous kiln to be installed in a southern college.

No study has been made as to the total number of products which might be developed from our plants and forests. Through chemical engineering, which is underway, it is hoped that the way may be opened for more advantageous usage of these products throughout the state.

The School of Textiles must continue to give needed assistance to the cotton manufacturing industry in developing efficient means of maintaining its present prosperity. The cotton mills are a definite part of our agriculture and deserve the support of our splendid Textile School. The activities of the textile staff are being directed so as to educate men for the textile industry as well as solve the problems of industry.

It is not known now to what extent fibers such as rayon, flax, ramie, and hemp may become a part of South Carolina's agriculture but they may be more widely distributed under present world conditions. There is already great demand for information on the various fibers.

The J. E. Sirrine Textile Foundation with more than $800,000 has agreed to use the funds to substantially improve the School of Textiles at Clemson College. Plans call for helping members of the textile faculty improve their education as a means toward providing better and more efficient instruction. I feel confident that the fund will add worthy values to the entire school. The Foundation assumes that the state will provide and maintain modern machinery to the end that the graduates may become acquainted with the best in the textile industry.
J. E. SIRRINE TEXTILE BUILDING
The J. E. Sirrine Textile Foundation came about through contributions made by most of the textile plants in this state. The executive committee, headed by Mr. George Wright, is composed of outstanding leaders in the textile field. The college is indeed fortunate in having these able leaders as coworkers in the interest of textile education.

Conclusion

The problem of securing well-trained men for our staff is of much concern and there remains a great shortage not only in South Carolina but in other states as well. There is a disturbing bidding of states for good men and the young men especially are in great demand. I hope the Legislature will appreciate our difficulties and will bear with us in cases where positions are not filled promptly.

In the broad and varied activities of the public service units progress has been made during the year. The staff members have not been able to fulfill all requests but they have done good work.

During the summer period the public service activities were helpful to thousands of veterans from all parts of the state who came to Clemson to secure first hand information on agricultural matters. Numerous short courses and conferences were held here for agricultural workers.

I wish to commend the staff members for their loyalty and earnestness of purpose. The college appreciates the good work and realizes how valuable it is when passed on to farmers and leaders in industry. Valuable matters have been given to the public through the radio and the news. The column “Seen Along the Roadside” has been widely read by people in all walks of life. It received a first national award for being the best of its kind. Also, one of the teachers in the School of Agriculture has written a book on fertilizer materials and practices that is being used in many states and large universities.
The public service agencies are fully conscious of their obligations to the state. They are aware of the many needs and the demands of the public for solving their problems and supplying useful information.

I wish to maintain close contact with the members of the Legislature because the members are elected by the people and good understanding of the problems will enhance efficiency in effort and approach. We want members of the Legislature to have all the facts which our agencies may have available. Likewise these agencies would appreciate an opportunity to study proposed acts which involve their efforts and to attend conferences with committees concerned. I believe this is worthy of consideration for without close cooperation between the Legislature and the college in matters of public service unintentional misunderstandings may occur. I realize that members of the Legislature are busy and time for committee meetings is limited but I wish to state that members of our staff stand ready to be of service at any time.

[Signature]

President
REPORT OF THE TREASURER

Dr. R. F. Poole, President
The Clemson Agricultural College
Clemson, South Carolina

Dear Dr. Poole:

I have the honor of transmitting herewith the annual report of the financial affairs of the Clemson Agricultural College of South Carolina for the fiscal year July 1, 1946 to June 30, 1947 in accordance with the act of the General Assembly.

Respectfully submitted,
A. J. Brown,
Secretary-Treasurer

THE CLEMSON AGRICULTURAL COLLEGE

Collegiate Activities

FISCAL YEAR
JULY 1, 1946 TO JUNE 30, 1947

INCOME

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Appropriation</td>
<td>$515,000.00</td>
</tr>
<tr>
<td>Privilege Fertilizer Tax</td>
<td>$233,579.13</td>
</tr>
<tr>
<td>Less Cost Inspection and Analysis</td>
<td>$48,061.01</td>
</tr>
<tr>
<td>Federal Funds</td>
<td>$45,481.20</td>
</tr>
<tr>
<td>Tuition and Fees</td>
<td>$592,459.83</td>
</tr>
<tr>
<td>Endowment Funds</td>
<td>$10,549.36</td>
</tr>
<tr>
<td>Miscellaneous Funds</td>
<td>$92,240.75</td>
</tr>
</tbody>
</table>

Total Income Collegiate Activities: $1,441,609.26

Collegiate Activities

Expenditures July 1, 1946-June 30, 1947

A—Personal Service:

1—Salaries: $827,765.90
2—Wages: 71,624.78

Total Expenditures: $899,390.68
## Fertilizer Inspection and Analysis, Poison Analyses, Analyses of Water, Soils, Manures, Etc.

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1</td>
<td>Salaries</td>
<td>$26,665.05</td>
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<tr>
<td>A-2</td>
<td>Wages</td>
<td>2,100.00</td>
</tr>
<tr>
<td>A-3</td>
<td>Professional Services</td>
<td>500.00</td>
</tr>
<tr>
<td>B-1</td>
<td>Freight and Express</td>
<td>306.68</td>
</tr>
<tr>
<td>B-2</td>
<td>Travel</td>
<td>5,307.42</td>
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<tr>
<td>B-3</td>
<td>Telegraph and Telephone</td>
<td>255.04</td>
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<td>B-4</td>
<td>Repairs</td>
<td>147.49</td>
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<tr>
<td>B-5</td>
<td>Printing and Advertising</td>
<td>309.00</td>
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<tr>
<td>C-4</td>
<td>Office Supplies</td>
<td>565.68</td>
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<tr>
<td>C-11</td>
<td>Other Supplies</td>
<td>9,606.74</td>
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<tr>
<td>G-1</td>
<td>Office Equipment</td>
<td>705.40</td>
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<tr>
<td>G-4</td>
<td>Motor Vehicle Equipment</td>
<td>372.56</td>
</tr>
<tr>
<td>G-8</td>
<td>Other Equipment</td>
<td>1,219.95</td>
</tr>
</tbody>
</table>

Total                                          $48,061.01
## Smith-Lever Agricultural Extension Work

**Receipts:**

- Appropriations—Federal: $730,755.61
- State: $372,844.39

**Expenditures:**

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1</td>
<td>Salaries</td>
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<tr>
<td>A-2</td>
<td>Wages</td>
</tr>
<tr>
<td>A-2</td>
<td>Salaries</td>
</tr>
<tr>
<td>B-1</td>
<td>Travel</td>
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<td>B-2</td>
<td>Travel</td>
</tr>
<tr>
<td>B-3</td>
<td>Travel</td>
</tr>
<tr>
<td>B-4</td>
<td>Repair</td>
</tr>
<tr>
<td>B-5</td>
<td>Repair</td>
</tr>
<tr>
<td>B-6</td>
<td>Repair</td>
</tr>
<tr>
<td>C-11</td>
<td>Repair</td>
</tr>
<tr>
<td>D-1</td>
<td>Rent</td>
</tr>
<tr>
<td>G-8</td>
<td>Equipment</td>
</tr>
</tbody>
</table>

Total: $1,103,600.00

## Emergency Farm Labor Fund

**Receipts:**

- Federal Funds: $27,073.55
- Brought Forward July 1, 1946: $126,000.00

Total: $153,073.55

**Expenditures:**

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-2</td>
<td>Salaries</td>
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<td>A-2</td>
<td>Wages</td>
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<td>Wages</td>
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<td>B-1</td>
<td>Travel</td>
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<td>B-3</td>
<td>Travel</td>
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<td>B-4</td>
<td>Repair</td>
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<td>B-5</td>
<td>Repair</td>
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</tr>
<tr>
<td>D-1</td>
<td>Rent</td>
</tr>
<tr>
<td>G-8</td>
<td>Equipment</td>
</tr>
</tbody>
</table>

Total: $161,621.77

O/D * $8,548.22

* U. S. Treasury Check for $50,000.00 was received just too late to be included in June receipts.
## South Carolina Agricultural Experiment Station
### Federal Funds
(Adams, Hatch, Purnell and Bankhead-Jones)

#### Receipts:
Receipts from Treasurer of the United States:
- Hatch Fund: $15,000.00
- Adams Fund: $15,000.00
- Purnell Fund: $60,000.00
- Bankhead-Jones Fund: $64,344.59
Total Receipts: $154,344.59

#### Expenditures:
- A-1 Salaries: $114,154.84
- A-2 Wages: $12,302.79
- B-1 Freight and Express: $255.05
- B-2 Travel: $1,372.34
- B-3 Telephone and Telegraph: $966.89
- B-4 Repairs: $2,283.55
- B-5 Printing and Advertising: $900.69
- B-6 Water, Heat, Light and Power: $415.47
- C-11 Supplies: $11,439.03
- D-1 Rent: $1,437.00
- G Equipment: $8,816.94
Total Expenditures: $154,344.59

## South Carolina Agricultural Experiment Station
### State Funds
Paid by Warrants on Comptroller General of South Carolina

#### Agricultural Research
- A-1 Salaries: $50,003.45
- A-2 Wages: $10,785.63
- B-1 Freight and Express: $116.68
- B-2 Travel: $6,587.30
- B-3 Telephone and Telegraph: $888.33
- B-4 Repairs: $3,405.75
- B-5 Printing and Advertising: $571.74
- C-11 Supplies: $10,434.05
- G-8 Equipment: $2,207.07
Total State Funds: $85,000.00
## Crop Pests and Diseases

<table>
<thead>
<tr>
<th>Item</th>
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</thead>
<tbody>
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<td>A-1 Salaries</td>
<td>$7,500.00</td>
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<td>A-2 Wages</td>
<td>90.00</td>
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<td>B-2 Travel</td>
<td>1,339.41</td>
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<td>B-3 Telegraph and Telephone</td>
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<td>C-4 Office Supplies</td>
<td>45.70</td>
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<td>C-8 Motor Vehicle Supplies</td>
<td>471.58</td>
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<td>D-2 Insurance</td>
<td>2.34</td>
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<tr>
<td>G-4 Motor Vehicle Equipment</td>
<td>500.00</td>
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**Total: $10,000.00**

## Edisto Experiment Station

### Expenditures:

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<tr>
<th>Item</th>
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<tbody>
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<td>A-1 Salaries</td>
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<td>A-2 Wages</td>
<td>6,435.55</td>
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<td>B-2 Travel</td>
<td>207.25</td>
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<tr>
<td>B-3 Telegraph and Telephone</td>
<td>234.29</td>
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<tr>
<td>B-4 Repairs</td>
<td>788.94</td>
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<tr>
<td>B-6 Water, Heat, Light and Power</td>
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<td>C-4 Office Supplies</td>
<td>228.25</td>
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<tr>
<td>C-11 Other Supplies</td>
<td>5,465.61</td>
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<tr>
<td>D-2 Insurance</td>
<td>803.17</td>
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<td>G Equipment</td>
<td>1,134.23</td>
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<tr>
<td>H-3 Non-Structural Improvements</td>
<td>107.28</td>
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</tbody>
</table>

**Total: $40,000.00**

## Horticultural Products Laboratory

### Expenditures:

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1 Salaries</td>
<td>$3,413.34</td>
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<tr>
<td>A-2 Wages</td>
<td>3,752.91</td>
</tr>
<tr>
<td>B-2 Travel</td>
<td>61.40</td>
</tr>
<tr>
<td>B-4 Repairs</td>
<td>137.88</td>
</tr>
<tr>
<td>B-6 Water, Light, Heat and Power</td>
<td>67.40</td>
</tr>
<tr>
<td>C-4 Office Supplies</td>
<td>1.62</td>
</tr>
<tr>
<td>C-11 Other Supplies</td>
<td>1,621.89</td>
</tr>
<tr>
<td>G-7 Educational Equipment</td>
<td>943.56</td>
</tr>
</tbody>
</table>

**Total: $10,000.00**
Lime and Forage Investigations

Expenditures:

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1</td>
<td>Salaries</td>
<td>$3,200.00</td>
</tr>
<tr>
<td>A-2</td>
<td>Wages</td>
<td>2,865.71</td>
</tr>
<tr>
<td>B-7</td>
<td>Other Services</td>
<td>554.80</td>
</tr>
<tr>
<td>C-9</td>
<td>Agricultural Supplies</td>
<td>1,247.02</td>
</tr>
<tr>
<td>G</td>
<td>Equipment</td>
<td>1,435.12</td>
</tr>
<tr>
<td>H-3</td>
<td>Non-Structural Improvements</td>
<td>697.35</td>
</tr>
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</table>

Mechanical Cotton Picker Equipment and Operation

Expenditures:

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1</td>
<td>Salaries</td>
<td>$2,316.64</td>
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<tr>
<td>A-2</td>
<td>Wages</td>
<td>2,862.33</td>
</tr>
<tr>
<td>B-4</td>
<td>Repairs</td>
<td>1,964.07</td>
</tr>
<tr>
<td>C-8</td>
<td>Motor Vehicle Supplies</td>
<td>1,110.76</td>
</tr>
<tr>
<td>C-9</td>
<td>Agricultural Supplies</td>
<td>1,280.00</td>
</tr>
<tr>
<td>C-11</td>
<td>Other Supplies</td>
<td>55.37</td>
</tr>
<tr>
<td>G</td>
<td>Equipment</td>
<td>4,410.83</td>
</tr>
<tr>
<td>H-2</td>
<td>Buildings</td>
<td>6,000.00</td>
</tr>
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Land Use Project

Expenditures:

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1</td>
<td>Salaries</td>
<td>$4,523.33</td>
</tr>
<tr>
<td>A-2</td>
<td>Wages</td>
<td>1,844.73</td>
</tr>
<tr>
<td>B-1</td>
<td>Freight and Express</td>
<td>61.00</td>
</tr>
<tr>
<td>B-4</td>
<td>Repairs</td>
<td>2,025.83</td>
</tr>
<tr>
<td>B-7</td>
<td>Educational Supplies</td>
<td>8.88</td>
</tr>
<tr>
<td>C-3</td>
<td>Feed and Veterinarian Supplies</td>
<td>446.50</td>
</tr>
<tr>
<td>C-9</td>
<td>Agricultural Supplies</td>
<td>1,089.73</td>
</tr>
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---

$10,000.00

$20,000.00
THE CLEMSON AGRICULTURAL COLLEGE

Pee Dee Experiment Station

<table>
<thead>
<tr>
<th>Expenditures:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1 Salaries</td>
<td>$22,307.50</td>
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<tr>
<td>A-2 Wages</td>
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<tr>
<td>B-1 Freight and Express</td>
<td>14.40</td>
</tr>
<tr>
<td>B-2 Travel</td>
<td>97.35</td>
</tr>
<tr>
<td>B-3 Telegraph and Telephone</td>
<td>3.00</td>
</tr>
<tr>
<td>B-4 Repairs</td>
<td>605.95</td>
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<tr>
<td>B-6 Water, Heat, Light and Power</td>
<td>895.81</td>
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<td>C-4 Office Supplies</td>
<td>90.58</td>
</tr>
<tr>
<td>C-8 Motor Vehicle Supplies</td>
<td>701.91</td>
</tr>
<tr>
<td>G Equipment</td>
<td>722.13</td>
</tr>
</tbody>
</table>

\[ \sum \text{Expenditures} = \$30,000.00 \]

Truck Experiment Station

<table>
<thead>
<tr>
<th>Expenditures:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1 Salaries</td>
<td>$11,900.00</td>
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<tr>
<td>A-2 Wages</td>
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<td>B-2 Travel</td>
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</tr>
<tr>
<td>B-3 Telegraph and Telephone</td>
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<tr>
<td>B-4 Repairs</td>
<td>684.96</td>
</tr>
<tr>
<td>B-6 Water, Heat, Light and Power</td>
<td>153.86</td>
</tr>
<tr>
<td>C-4 Office Supplies</td>
<td>133.23</td>
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<tr>
<td>C-11 Other Supplies</td>
<td>3,224.06</td>
</tr>
<tr>
<td>G Equipment</td>
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<tr>
<td>H-2 Buildings</td>
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<tr>
<td>H-3 Non-Structural Improvements</td>
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</tbody>
</table>

\[ \sum \text{Expenditures} = \$35,000.00 \]

Livestock Sanitary Work Division

<table>
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<tr>
<th>Expenditures:</th>
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<tbody>
<tr>
<td>A-1 Salaries</td>
<td>$31,640.00</td>
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<tr>
<td>A-2 Wages</td>
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<tr>
<td>A-3 Special Payments</td>
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</tr>
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<td>B-2 Travel</td>
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</tr>
<tr>
<td>B-3 Telegraph and Telephone</td>
<td>348.03</td>
</tr>
<tr>
<td>C-3 Feed and Veterinarian Supplies</td>
<td>26.25</td>
</tr>
<tr>
<td>C-4 Office Supplies</td>
<td>408.13</td>
</tr>
<tr>
<td>D-3 Contributions</td>
<td>2,794.51</td>
</tr>
</tbody>
</table>

\[ \sum \text{Expenditures} = \$48,550.00 \]
Supplementary Reports

Cadet Funds

(These funds, paid by the students for their living and other expenses, are kept entirely separate. None of this money is used to pay the cost of teaching.)

Expenditures:

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1 Salaries</td>
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<td>A-2 Wages</td>
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<tr>
<td>B-3 Telegraph and Telephone</td>
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</tr>
<tr>
<td>B-4 Repairs</td>
<td>26,738.86</td>
</tr>
<tr>
<td>B-6 Water, Heat, Light and Power</td>
<td>50,598.66</td>
</tr>
<tr>
<td>B-7 Contractual Services</td>
<td>33,176.68</td>
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<tr>
<td>C Supplies</td>
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<tr>
<td>D Fixed Charges</td>
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</tr>
<tr>
<td>G Equipment</td>
<td>35,115.33</td>
</tr>
<tr>
<td>H-3 Non-Structural Improvements</td>
<td>152.40</td>
</tr>
<tr>
<td>E Athletic Department</td>
<td>19,155.86</td>
</tr>
<tr>
<td>E Concert Series</td>
<td>8,829.24</td>
</tr>
<tr>
<td>E Y. M. C. A.</td>
<td>10,326.60</td>
</tr>
<tr>
<td><strong>Total Expenditures</strong></td>
<td><strong>$1,240,897.83</strong></td>
</tr>
<tr>
<td><strong>Refunds to Students</strong></td>
<td><strong>39,640.67</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$1,280,538.50</strong></td>
</tr>
</tbody>
</table>

Student Banking Account

Balance on Hand July 1, 1946 $101,976.64
Deposits - Current Year 509,649.52 $611,626.16

Checks Paid Current Year $502,612.20
Balance June 30, 1947 109,013.96 $611,626.16
To The Board of Trustees
The Clemson Agricultural College
Clemson, South Carolina

Gentlemen:

Your Board of Visitors spent the three days of May 7, 8, and 9 on the Clemson College campus. It had the opportunity to visit all the major departments of the institution and to confer with deans, heads of departments, and administrative officials. The Board was tremendously impressed with the magnitude of the work at the institution, the wide variety of activities, and the high quality of instruction, research, and extension that is being done. It was also impressed by the many ways in which the work at Clemson touches important phases of the life of the state.

The Board of Visitors wishes to commend the institution for the very fine spirit which prevails among faculty, students, and administration. There is a general atmosphere of understanding and good will that is so necessary in the maintenance and operation of a great educational institution.

The maintenance of buildings and grounds appears to be of the highest order and the business and financial operations are effectively and economically performed. In particular, the Board wishes to commend the efficient and economical operation of the Mess Hall. The quality and quantity of food is all that could be desired and the amount charged for board is extremely reasonable.

Clemson like all other institutions of higher learning in the country is faced with an inflated student enrollment and out of this situation arises a number of complicated problems relating to instructional staff, educational facilities, and equipment. The Board is convinced that the institution has met these problems effectively. We are convinced that the administration has been wise in limiting the student enrollment to a level consistent with available physical facilities and high quality of instruction.

After the three days of inspection and study the Board wishes to direct attention to certain specific phases of work for the consideration of the administrative authorities.

1. There appears to be some lack of coordination of the agencies dealing with agriculture. In particular, there appears some overlapping of the work of the County Agent and the high school Agricultural Vocational Educational Program which seemingly should be clarified. The Board recognizes that the coordinating of these activities should perhaps be done at the Federal level but it also recognizes that some progress in coordinating to prevent conflicts may be done on the state and local level.
1947 BOARD OF VISITORS

Left to right: George M. Wright, Winchester Smith, Bob Galloway, S. C. McMeekin, W. W. Smoak
2. The faculty at any educational institution is the very heart of the work in it. The quality of the work cannot rise above the quality of the faculty. Recognizing this fact, the Board recommends that salaries be adjusted upward so as to secure and hold men of high character and thorough preparation for teaching, research, and extension. From the information that the Board has it is evident that the salaries are not high enough to meet the competition of industry, Federal Government Agencies, and other educational institutions similar to Clemson.

In order to enable the instructional staff to keep abreast of developments in their respective fields the Board urges that a definite program be set up to allow members of the instructional staff to be granted leaves of absence with pay for further study.

3. There is a definite demand and need for advanced study in the fields which are given exclusively at Clemson College. The Board recommends that a definite program for graduate studies be established and fellowships and assistantships be set up to be awarded to young men of high scholarship. Such a program would enable the institution to train some of its own instructional staff and would in addition greatly stimulate the intellectual atmosphere of the institution.

4. Part of the problem of securing competent members of the teaching staff is that of providing satisfactory living quarters. The Board is convinced that it would be well for the institution to consider the construction of a faculty apartment building and faculty residences to be financed by the issuance of bonds and liquidated by rents collected. Such a facility would not only enable the institution to secure instructional staff more easily but it would promote a community of interest and understanding among faculty members.

5. The Board recognizes the predominant place of agriculture in the life of the state and the tremendous developments that are taking place in the mechanization of farming. The need for increased work in Agricultural Engineering is clearly obvious. To this end the Board directs attention to the altogether inadequate building and facilities which are now used to give this training. The Board feels that definite improvements should be made in this building and those facilities.

6. In order to care for the recreation and social life of the Clemson student body the Board is of the opinion that the present facilities under direction of the Y.M.C.A. should be increased. The unusual situation of Clemson, that is, being located away from any town of any size makes it extremely pressing that the college provide for the recreational and social activities of the students.
7. The Board wishes to repeat the recommendation of the 1946 Board, that is, the re-establishment of a Farmers' Week each summer at the college so that persons from all sections may get together and become acquainted with each other and with the fine work done at Clemson College.

These recommendations to the Board of Trustees are made with a view to the prospective industrial, agricultural, and commercial developments which are taking place in South Carolina. If the state is to realize its vast potentialities for economic and social progress more emphasis must be placed on providing educational facilities and personnel of the highest order.

The Board takes this occasion to commend the General Assembly for allocating the surplus in the State Treasury for making permanent improvements at state institutions. These improvements will enable Clemson to meet in part the demand for increased facilities.

The Board is pleased to recommend to the Trustees the appointment of Mr. Roddey Reid of Rock Hill as the hold-over member of the Board of Visitors for 1948.

The Board wishes to express its appreciation to Dr. R. F. Poole, and Mr. J. H. Woodward, and the other members of the staff for the many courtesies and attentions shown during the three days' visit. All members of the Board have enjoyed the period on the campus and they have been greatly stimulated by their conferences and study.

Respectfully submitted,

W. W. Smoak, Chairman
S. M. Derrick, Secretary
J. T. Anderson
C. F. Colbert
Bob Galloway
Mark Hawthorne

George M. Wright
C. P. Key
D. D. Lee
S. C. McMeekin
Roddey Reid
Winchester Smith
Joseph Walker
REPORT OF DIRECTOR OF DEPARTMENT OF FERTILIZER INSPECTION AND ANALYSIS

Dr. R. F. Poole, President
The Clemson Agricultural College
Clemson, South Carolina

Dear Dr. Poole:

I have the honor to transmit herewith the report of the Department of Fertilizer Inspection and Analysis for the fiscal year ending June 30, 1947.

Respectfully submitted,
H. P. Cooper, Director

INSPECTION AND ANALYSIS OF COMMERCIAL FERTILIZERS

The inspection and analysis of fertilizers is under the supervision of the Fertilizer Board of Control, a Committee of the Board of Trustees. The Department of Fertilizer Inspection and Analysis is a department of the Agricultural Experiment Station. Its duties are to collect official fertilizer samples for analysis and to check on the tagging, labeling and weighing of all fertilizers and fertilizer materials.

The chemical work consists of the analysis of commercial fertilizers as provided for in the Fertilizer Law of the State. This department also undertakes the analysis of waters, ores, minerals and other naturally occurring materials, portions of human bodies in cases of suspected poisoning (as provided for by law), and the analysis of home-mixed fertilizers. All the work of this department is done without charge.

The following is a brief summary of the activities of the department for the fiscal year 1946-1947:

Number of samples secured and analyzed ______________ 5,285
Percent of samples deficient ________________________ 3.8
Refunds to farmers on account of deficiencies ______ $ 8,181.56
Number bags found underweight ____________________ 18,258
Number human stomachs analyzed ________________ 12
REPORT OF DIRECTOR OF LIVESTOCK SANITARY DEPARTMENT

Dr. R. F. Poole, President
The Clemson Agricultural College
Clemson, South Carolina

Dear Dr. Poole:

The following report of the Clemson College Livestock Sanitary Department is a summary of our accomplishments during the fiscal year ending June 30, 1947.

Respectfully submitted,

R. A. Mays,
State Veterinarian

BANG'S DISEASE

Brucellosis (Bang's disease) in cattle has proved to be one of our most difficult problems. During the year 48,081 cattle blood samples were tested for Brucella infection and of this number 814 reactors were found. Indemnity was paid on all animals that were slaughtered in herds meeting the requirements of the federal rules and regulations.

TUBERCULOSIS

In cooperation with the Bureau of Animal Industry 17,866 animals were tested on 837 farms for Tuberculosis, and 166 reactors were found on 12 farms. These farms have been placed under state quarantine and satisfactory progress is being made by periodic testing of the herds and slaughtering of all infected animals.
HEMORRHAGIC SEPTICEMIA

Assistance in controlling and preventing Hemorrhagic Septicemia was rendered on 204 farms involving 3,379 head of cattle.

BLACK-LEG

Black-leg of cattle is found in some sections of the state, especially along the lowlands adjacent to small streams and rivers. Service was rendered on 440 farms in controlling black-leg in 4,137 cattle.

KERATITIS

Keratitis was found on 41 farms and 999 head of cattle were treated to assist in the control of this disease.

NECROTIC STOMATITIS

Several requests, covering practically every section of the state, have been received from cattle owners suspecting the presence of foot-and-mouth disease in their animals. Investigation of each case failed to reveal any indications of the presence of this disease. Practically all animals were affected with some type of necrotic stomatitis and foot rot.

LIVESTOCK AUCTION SALES

Services of this division are being extended as rapidly as possible in assisting with the control of contagious and infectious diseases of animals offered for sale at Livestock Auction Markets. This service includes treating hogs against cholera, testing breeding cattle for Bang’s disease and Tuberculosis and, when necessary, treating for Hemorrhagic Septicemia, pink eye and other contagious diseases.

HOG CHOLERA

During the year ending June 30, 1947, there were no serious outbreaks of hog-cholera within the state. The department was called upon to give assistance in connection with swine diseases on 10,188 farms consisting of 127,380 hogs.

SWINE ERYSIPelas

Studies of the division indicate that Swine Erysipelas is causing the loss of some hogs, especially on those farms where animals have been brought from outside the state. Infected animals have responded to the injection of swine erysipelas serum when administered in the early stages of the disease. It was discovered that hogs which recover from the disease may be a source of danger by infecting other susceptible swine.
RABIES

This disease affects animals and man. Stray dogs and wild foxes are the principal carriers of this disease. During the year 697 farms were visited in assisting with this disease and treatments were administered to 1,214 animals.

ENCEPHALOMYELITIS

Encephalomyelitis of horses and mules was encountered on 57 farms, principally, in the coastal areas and 108 animals were injected with the preventive treatment against this disease.

POULTRY DISEASES

Fowl Pox—Fowl pox virus vaccine is suspected of living on infested premises and in carrier birds from one year to another. In assisting poultry owners in controlling this disease, 57 premises were visited and 19,387 birds were treated with vaccine to prevent the disease. In rendering service to poultry owners in the control, prevention, and treatment of diseases among their birds, 76,037 specimens were examined under supervision of the department in laboratory and field work. The number of specimens handled included such diseases as pullorum, fowl cholera, fowl typhoid, black-head, trichomoniasis and hexamitiasis, internal and external parasites, range paralysis, Newcastle disease and miscellaneous common diseases.

It is found that one of the surest means of reducing and controlling turkey and animal diseases is through good and large feeding ranges.
LIVESTOCK EXHIBITED AT STATE AND COUNTY FAIRS

Animals assembled for exhibition or show purposes were tested for Bang's disease and Tuberculosis, and immunized against the common contagious and infectious diseases as a safeguard to the livestock industry. This work was done in cooperation with all allied agencies working in the state for the improvement and promotion of the livestock and poultry industry.

MISCELLANEOUS SERVICES

While serving the farmers in connection with the control of contagious and infectious diseases of swine, much assistance was given in connection with the control of internal and external parasites and also many common diseases of hogs. Three hundred and eight swine specimens were examined in the diagnostic laboratory in making a correct diagnosis of hog diseases. Other miscellaneous specimens received at the laboratory were from sheep, goats, horses, mules, dogs, pet birds and cats. The miscellaneous services rendered included the testing of cattle and swine in connection with breeders' sales, assisting owners in meeting the health requirements of other states and also enabling prospective buyers to know the health status of the animals they are planning to buy. Individual health certificates are issued for each animal consigned to a breeders' sale, so that an out-of-state purchaser may transport to his farm an animal purchased without further examination. A careful check is made on all animals coming into the state to see that they meet health requirements that will protect the livestock industry.

Two hundred and forty-two farms were visited in making special investigations to assist the livestock owners in determining the causes of illness among their animals.
Dear Dr. Poole:

I have the honor to transmit herewith the Annual Report of the Crop Pest Commission for the fiscal year ending June 30, 1947.

Respectfully submitted,

H. P. Cooper, Director

The South Carolina State Crop Pest Commission is required by an Act of the Legislature to enforce such just and reasonable rules and regulations as may be deemed necessary for the control and eradication of insect pests and plant diseases new to and not widely disseminated in South Carolina, and to exclude pests from other states through the enforcement of these regulations in so far as possible. In fulfillment of this responsibility the following activities were performed by this Commission during the year.

**Nursery Inspections.** It is necessary that nursery stock be inspected and certified free of injurious plant pests before shipments are made. This is a requirement of all states and is done to prevent the spread of insect pests and plant diseases. The regulations require that at least one inspection be made annually. The nursery inspections were begun in early July and completed the latter part of August. Small infestations of the common pests were found in some nurseries, but not in such numbers that proper clean up could not be effected before the shipping season began. It is necessary to continually remind growers of the importance of using proper insecticides and equipment, and it is sometimes advisable to make additional inspections to be sure that the proper clean up has been made.
No serious pests were found in any of the nurseries, with the exception of a small nursery at Winnsboro, where a light infestation of the white-fringed beetle was found late in the season. Fortunately, this nursery shipped very little stock so the hazard of spreading the beetle was not great. This nursery is now under quarantine and no stock will be allowed to move until there is no longer danger of spreading the beetle.

The number of nurseries varies from year to year, depending upon the amount of labor and capital available. In 1946 there were inspected 126 nurseries one or more of which were located in each of 40 counties. The acreage of these nurseries totaled 460, which is slightly less than for the previous year. New nurseries are being started and indications are that there will be an increase next year.

Cooperative work with the U. S. Bureau of Entomology and Plant Quarantine in inspecting peach trees within a mile radius of nurseries growing peach stock was continued. These inspections must be made prior to June 30 of the year in which the stock is to be sold, in order that the virus disease known as “phony peach” may not be spread. Last year five nurseries growing 187,500 trees required this inspection. To clear these nurseries for certification, it was necessary to inspect 75,725 peach trees.

**Greenhouse Inspections.** It is required that greenhouses be inspected annually in order that pests common to plants grown in these establishments may not be disseminated through the sale of stock.

Small and scattered infestations of some of the more common pests were found in most of the houses. In one case a common scale insect occurred in numbers sufficient to affect certification, and it was necessary that the plants be cleaned of the pest before shipments could be made. The number of greenhouses in the state inspected and certified was the same as for last year (52), with an area of approximately 598,650 square feet.

**Sweet Potato Inspections** For a number of years this commission has required the inspection of sweet potatoes of growers who wish to sell seed potatoes and plants. This requirement was promulgated primarily for the purpose of helping the growers to produce plants and seed sweet potatoes that would be free from black rot, wilt, and any other serious disease. Those growers who have systematically carried on the prescribed recommendations for the control of diseases have had very little trouble with either field or storage diseases. Black rot is seldom found on the potatoes of the growers who have the regular inspections. Wilt occurs throughout South Carolina but is rarely severe enough to prevent certification. The regulations permit a tolerance of ten hills per acre. Only two growers last year had enough wilt to prohibit certification.

One of the most serious diseases now present in South Carolina is a virus disease known as “internal cork.” Its presence is indicated by black
corky areas inside the sweet potato. These corky areas may range in size from small spots to areas involving one-fourth or more of the potato. The disease is not always obvious in green sweet potatoes, but may develop in storage. The origin of the disease is not known, but it is now wide spread in South Carolina and occurs in many of the other sweet potato growing states. Unless control measures can be developed this virus may become a serious and injurious disease of the sweet potato. Some states prohibit the shipment of seed potatoes and plants from South Carolina because of this virus.

During the period covered by this report one field, one storage and one plant bed inspection were made for 116 growers. This is a total of 348 inspections in 28 counties.

A small amount of soft rot was found in most storage potatoes. There were also traces of charcoal rot in a couple of houses. Traces of black rot were found in two plant beds.

**Seed Irish Potatoes.** The shipment of seed Irish potatoes into Charleston County began earlier this season than usual, in order that an advance in freight rates effective on February 1 might be avoided. Shipments began coming in the latter part of December and were completed during the month of January. Inspections were begun on January 8 and completed January 22. All potatoes were shipped by rail, and while it was impossible to see every carload that came into the County, a good percentage of the total was examined during the inspection period. Because of the nature of the shipments and the manner of storage, it was impossible to see a great quantity of the potatoes in each shipment but it was felt that the sample was sufficiently representative to provide a fairly accurate criterion of the diseases present. Ninety-seven carloads were examined during the inspection period. The origin of the shipments received was as follows: Canada 71 cars, Maine 3, Minnesota 7, Michigan 15, Nebraska 1. It is interesting to note that the growers chose almost entirely Canadian seed rather than Maine seed of the Irish Cobbler and Katahdin varieties. Ninety-five percent or more of these seed were certified. There were 43 cars of Irish Cobbler, 20 cars of Katahdin, 17 of Pontiac, 13 of Sebago, 3 of White Rose and 1 of Bliss Triumph.

No diseases were in excess of the tolerances permitted by the regulations, though scab occurred in 43 cars, rhizoctonia in 41, late blight in 7 and soft rot in 8. There was very little cold injury.

**Apiary Inspections.** Six thousand three hundred and fifty-six colonies of bees located in twenty-three counties were inspected during the season. Ninety-four property owners were visited with bees in an undetermined number of yards and locations. Two hundred sixteen colonies were found to be diseased. The diseases and the number of colonies infected were as follows: American foulbrood 132, European foulbrood 37, nosema 12, sac
brood 32, paralysis 2, and an undetermined disease 1. American foulbrood, the more serious of the diseases, was more prevalent in the Piedmont area, though it may and does occur throughout the state. The only known satisfactory remedy, and the one that other states insist upon as a basis for certification, is the destruction by burning of all infected colonies.

Good beekeeping methods play an important role in disease control. It is, therefore, almost impossible for the inspector in the course of his regular inspection and control program not to do some work that borders closely on extension work. Therefore, to be of most service to the beekeeper, the inspector during the inspections has given demonstrations on queeninig, feeding, treating with sulfa drugs, removing bees from houses, assembling equipment, burning diseased bees and equipment, and extracting and packaging honey.

Beekeeping as a whole is an important industry in South Carolina, and the efforts spent in disease control are quite worthwhile.

**Phony Peach Inspections.** South Carolina has one of the fastest growing peach industries in the Southeast located in the Piedmont and Ridge areas of the state. The older and smaller of the two areas is the Ridge section, comprising parts of Aiken, Barnwell, Edgefield and Saluda Counties. In this area more than 318,552 trees were inspected in 1946 and 342 "phony" trees were found. Almost half of these were found in one large commercial orchard in Edgefield County. The disease incidence in this particular orchard has shown a consistent increase ever since the phony inspections were started in 1936. No explanation can be given for this increase though this orchard is a subject of special study by the Bureau of Entomology and Plant Quarantine.

In the Piedmont area, which comprises Cherokee, Greenville and Spartanburg Counties, there has been a rapid expansion in commercial peach production during the past 10 years. Spartanburg County probably has more commercial peach trees than any other county in the southeast and is reported to be the largest producer of fresh peaches in the United States with 3,000,000 peach trees and 223 packing sheds.

Approximately two-thirds of the peach trees in Spartanburg County were inspected in 1946 and about two-thirds of the area covered. Facilities have never been available to make a complete inspection of Spartanburg County in any one year. During the last three years an effort has been made to inspect all of the trees of commercial importance in the county by working a section each year and by reinspecting all previously infected and adjacent properties. Incipient infections are now so widespread that this is becoming more difficult each year. In 1946, 1,918 properties were inspected in Spartanburg County. These properties contained a total of 1,868,193 trees. Forty-six properties were found infected with a total of 72 "phony" trees.
Only previously infected properties were inspected in Greenville and Laurens Counties. Greenwood County qualified for release from the Phony Peach Quarantine.

Altogether inspections were made in eight counties, though the greater part of the work was in Spartanburg County. A total of 2,248,136 trees on 2,432 properties was inspected and 427 trees on 85 properties were found infected with the phony disease. All infected trees were removed.

Counties now under quarantine in South Carolina and in which control and eradication work is being done are: Aiken, Barnwell, Edgefield, Greenville, Laurens, Saluda and Spartanburg.

A few trees infected with yellows were found in the Spartanburg area again this year and these were removed.

**Japanese Beetle.** The cooperative work with the Bureau of Entomology and Plant Quarantine in scouting for the Japanese beetle was continued. Traps were set as follows: Tucapau 25, Lyman 25, Duncan 25, Taylors 50, Travelers Rest 10, Marietta 10, Slater 10, Greenville 10, Landrum 20, Campobello 10, Gramling 10, Inman 25, Chesnee 20, Glendale 25, Pacolet Mills 25, a total of 300 traps.

It was felt that the northwestern part of South Carolina had been sufficiently surveyed during the past several seasons, but that it would be well to conduct a supplemental survey in the smaller towns near the North Carolina boundary and the Spartanburg peach growing area.

Only two Japanese beetles were trapped in the state in 1947. One male beetle was trapped at Chesnee, which was the first record at this location, and one female beetle at the Greenville Army Air Base. This is the smallest number of beetles trapped in South Carolina in several years.

**White-fringed Beetle.** Mention of the fact was made in the 1946 report that in July of that year a small infestation of this insect had been found in the grounds of a nursery dealer in Columbia. Since that time a rather thorough inspection has been made in the City of Columbia and spot inspections in practically all of the nurseries in South Carolina. Other nurseries were found infested in Georgia last year, and all the stock coming to South Carolina from these nurseries has been traced and inspections made. The U. S. Bureau of Entomology has had ten or twelve men in the state for a year, and this Commission furnished the service of one man for about three months. At the present time the beetle is known to occur at four locations in Columbia and at one in Winnsboro.

A very rigid control program was initiated in South Carolina, when the first infestation was discovered in 1946. This program included a 5-pound DDT emulsion spray application, followed by ten one-half pound applications at approximately ten day intervals depending, to some extent, on
rainfall and other factors. However, with the finding of the additional infestations, the program was changed from one of eradication to one that will suppress the population of the beetle and prevent further spread. At the end of June, the following had been accomplished: 131 acres treated with a 5-pound DDT concentrated emulsion spray, 71 acres treated with a 1-pound DDT concentrated emulsion spray, and 1½ acres treated with a 10-pound DDT concentrated emulsion spray.

The Bureau of Entomology and Plant Quarantine has furnished most of the manpower for this work, but the State Crop Pest Commission has agreed to replace the DDT used in the control work. Although this is a cooperative project, the Bureau has borne most of the expense so far. The white-fringed beetle is capable of causing serious damage to various farm crops, and it is believed every effort should be made to eradicate it in South Carolina, if possible.

**Sweet Potato Weevil.** In October 1946, the Crop Pest Commission, cooperating with the Bureau of Entomology and Plant Quarantine, began rather intensive inspections in the Charleston area to delimit an infestation of this insect which had been found on seaside morning glory on the Isle of Palms. The results of these inspections along the beaches revealed rather heavy infestations of the insect. Further inspections were made of sweet potatoes planted in proximity to these areas both on the islands and on the mainland. Light infestations were found in the sweet potatoes of 34 property owners, mostly Negro farmers. All of these infestations occurred in a rather limited area of Charleston County.

Inspection work was continued until the latter part of May, 1947. Field, storage and plant bed inspections were made throughout the state with negative results, except in Charleston County. It is felt, therefore, that infestations now occur only in that county. In order to prevent the spread of this insect and to protect other counties in South Carolina, it was deemed advisable to place a quarantine on the infested areas regulating the production and shipment of potatoes and to inaugurate additional appropriate control measures at the proper time. It is felt that the sweet potato weevil can be controlled and eradicated if the proper cooperation can be had from the growers. No serious trouble is anticipated but constant supervision and help from the State Crop Pest Commission and the U. S. Bureau of Entomology will be needed.

A program to eradicate the weevil on seaside morning glory and to eradicate the morning glory itself was begun in September. A clean up campaign and the enforcement of non-potato zones within a mile of known infestations will be inaugurated at the same time.

There are two large growers within the regulated area and strict supervision will be given to the shipment by them of any potatoes to northern markets.
Dear Dr. Poole:

I submit below a report of some of the investigations carried on by the South Carolina Experiment Station. Only brief statements regarding the various projects are given since most of them are reported in detail in the Annual Report of the Station. Copies of the latter are available upon request.

Respectfully submitted,

H. P. Cooper, Director

During the past year new impetus has been given to the activities of the South Carolina Agricultural Experiment Station through the filling of long vacant positions, through the acquisition of much-needed equipment and other facilities which were not available during the war period, and by the initiation of research projects designed to answer questions constantly arising in the business of farming. Recently some expansion of the agricultural research program has become possible through funds provided by the General Assembly for investigations of problems of fruit and nut production, and through an appropriation under the new federal Research and Marketing Act.

The increased cost of carrying on experimental work under present conditions offsets to some extent the new funds available, however, a number of new experiments are being started. One symptom of the increasing cost of research is the prospective loss of certain members of the experiment station staff to other agencies which are in a better position than the South Carolina Experiment Station to bid for their services. Unfortunately, when offers of positions are made by other agencies, they are usually made to the outstanding men in the organization and the vacancies thus created are increasingly more difficult to fill at the prevailing salary scale of this station. Apparently some adjustments will be necessary to meet this situation.
Branch Experiment Stations

The South Carolina Experiment Station has five branches, or substations, located at Florence, Charleston, Summerville, Blackville and near Columbia. A large number of experiments are underway at these stations.

At Florence, work with cotton and tobacco is emphasized and includes studies of breeding, cultural methods, fertilization, and insect and disease control. At Charleston, research on the breeding, production, insects and diseases of vegetable crops is underway. The station at Summerville is concerned primarily with beef cattle and swine production, pastures, and forage crops.

Investigations at the Edisto Station near Blackville include studies of the problems of producing melons, cucumbers, sweet potatoes, and general farm crops. An important phase of the research at this station is the cotton mechanization work described below.

At the Sandhill Station, near Columbia, studies of plant nutrition with emphasis upon the minor plant nutrients are being made. The work there also includes experiments with general field crops, peaches and grapes.

Mechanical cultivation of young cotton with sweeps and rotary hoes attached to the front cultivator gangs
Cotton Mechanization

Cotton is the most important money crop in South Carolina and as such deserves major consideration in the research program. If it is to maintain its position in the economy of the South, costs of production, it is generally agreed, must be reduced. The most promising approach to this problem is apparently through mechanization.

In 1946, the production of 100 acres of cotton at the Edisto Station was entirely mechanized (with minor exceptions), using tractor-drawn planting, cultivating, and harvesting equipment. A yield of 54.7 bales was produced, which, with the seed, sold for $9,536.00. The total cost of production, including fixed costs and land rental, amounted to $4,628.00, leaving a profit of $4,908.00, or about $49.00 per acre. The labor required was equivalent to that of one man. At the time of preparing this report the figures for a similar study in 1947 were not available.

In the mechanization of any crop it is important to know the range in size of farms or scale of operations within which mechanization will be profitable. Studies along this line have been made and show that one tractor can furnish the power needed by farms of 100 to 150 acres in size, whereas the cost of using a tractor on less than 80 acres of crop land is excessive unless the operator is able to do a substantial amount of custom work.

Rear view of the two-row mechanical cotton chopper thinning cotton
Studies are also being made of the cost of using mechanized equipment where the total time it is in use during the year varies. The extent to which mechanization displaces or replaces labor on farms is also being investigated. This may be a question of considerable consequence in the case of an extensively grown crop such as cotton.

Land Use Project

The Land Use Project area comprises some 30,000 acres of government-owned land under lease to the Clemson Agricultural College. Objectives of the work being done on this area are the rehabilitation and development of all the natural resources within the area, and the demonstration of proper land use.

Forestry. As a demonstration of good forestry practice, encouragement has been given the development of a 25 acre school forest by the Pendleton High School Chapter of the Future Farmers of America. On other portions of the Land Use area, demonstration plots have been established to show the effect of tree spacing on quantity and quality growth of various pine species; proper methods and age of stands for economic thinning on areas of varying productivity; and, correct methods of harvest cuttings to insure proper and adequate pine and hardwood regeneration.

Harvest cuttings of overmature and mature pine and hardwood trees, in addition to the cutting of diseased, defective, and poor quality trees are in progress at present. Timber stand improvement work is also being carried out in immature forest stands.

Plantings have been made of slash pine, longleaf pine, and white pine, as well as cork oak, black walnut varieties, ash, yellow poplar, Asiatic chestnut, and white mulberry. Studies are being made of the conversion of low grade hardwood stands to stands of more desirable pine and hardwoods, and release cuttings are being carried out in white pine stands for the purpose of eliminating competition and insuring rapid growth.

The timber on the area is utilized for the construction and repair of buildings and other structures needed by the college, for pasture fence posts, and for fence posts used in the research project designed to develop the best treatment for increasing the effective life of such posts.

Pastures. Experimental pastures have been established on the Land Use Project area to determine the best combinations of pasture plants, and the most effective procedure in preparation, planting, and maintenance.

Good pastures for dairy and beef cattle, particularly during the winter, are an important factor in the successful handling of these classes of livestock. Italian rye grass and crimson clover were found to provide an excellent combination which could be grazed from December 1 to early May.
The feed replacement value of this pasture for one season amounted to nearly $119.00 per acre, whereas the cost of producing it was only $44.00 per acre.

**Soil Management Demonstration.** An area of 400 acres, which can be enlarged to 600 or 700 acres, is being devoted to this demonstration. This area, as is true of most of the government-owned land, is marginal or sub-marginal in character but with proper management may be brought back into profitable cultivation.

The work in connection with this demonstration has included the following: terracing of 240 acres, planting of kudzu and Lespedeza sericea on approximately 50 acres having a slope of 12 percent or more, strip cropping of 125 acres, removing bushes from 50 acres where poor management had allowed them to grow, applying five car loads of lime and repairing and painting residences and outbuildings.

**Miscellaneous Work on Land Use Project Area.** The area provides land and other facilities for various investigations being carried on by the Experiment Station. Among these are experiments on the following: utilization of mulches to control soil erosion; the use of equipment developed to plant and cultivate crops where mulches are used; the value of sprinkler and furrow irrigation, and the use of newly developed equipment for the mechanization of cotton and sweet potatoes. The area provides space for tests of varieties of field crops, for the planting of new types of plants which have not been tested in South Carolina, and for use in teaching farm machinery courses where it is desirable that students have actual practice in operating the different types of equipment.

An 18 acre peach orchard is being maintained on hilly land for the purpose of determining the effectiveness of various cover crops and cultural practices in preventing erosion. A considerable area is devoted to breeding work with grapes, blueberries, okra, pepper and sesame. Work is also being done on Turkish tobacco, and small fruits, and studies of the value of irrigation for horticultural crops is contemplated.

**Horticultural Products Laboratory**

This laboratory was established several years ago to investigate the processing of South Carolina peaches, other fruits, and vegetables. The canned peaches processed in the laboratory have been widely praised and the labor-saving methods used have been successfully followed by commercial canneries at Spartanburg, Greer, Easley, and Greenville.

Thirty-five varieties of peaches have been thoroughly tested for their suitability for freezing. Selection of the proper varieties plus the use of correct procedures is necessary if a desirable frozen product is to be obtained.
Work has been started on utilizing sweet potatoes for canning and freezing. Canned sweet potatoes similar to canned pumpkin are now possible. Further experimentation on this product is necessary before recommendations for its commercial processing can be made.

A Frozen Food Workshop School was held at the Horticultural Products Laboratory the past summer which was attended by operators, home demonstration agents, agricultural and home economics teachers, commercial representatives and other interested persons. Facilities of the laboratory were also used for the Convention of the South Carolina Frozen Food Locker Association in September.

**Turkey Experimental Work**

Experimental work with turkeys includes breeding, feeding, and disease control.

Trapnesting and pedigree breeding work is being carried on with both the Broad Breasted Bronze and the Beltsville Small White varieties. Selection for improved meat type, increased egg production during the breeding season, higher fertility and hatchability, and more salable poults per breeding hen, are the chief factors under study. Work is also being done to establish a strain of small turkeys that meets the demand of the average consumer. A hormone known as thyroxin, or protomone, gives some promise of stimulating egg production by turkeys during their second year of laying, when fewer eggs are normally produced. If this promise is realized, it would aid in hastening the turkey breeding program.

Feeding experiments under way involve the use of oats, grain sorghums and forages to determine the value of these locally grown feeds for turkey production.

Disease control work with turkeys is being carried on to find effective measures for trichomoniasis, fowl pox, and blackhead. Studies of trichomoniasis show that it can be controlled by a vitamin treatment, cod liver oil and brewer's yeast.

**General Research Program**

In addition to the foregoing, a large number of research projects are being carried on by the experiment station at Clemson and at other points in the state. Brief statements as to some of these follow. No attempt is made to cover all the projects here. A more comprehensive discussion of the research program will be found in the Annual Reports of the Station.

**Cotton, Corn, and Forage Crops.** Investigations of cotton problems other than mechanization include those on breeding varieties for longer staple, better spinning quality, and less waste, which will make competition
Response of close-spaced, field corn to high nitrogen fertilization. At the left — no nitrogen. At the right — 90 pounds of nitrogen per acre. Both plots received adequate phosphorus and potassium

with synthetic fibers less difficult to meet; studies of the nutrition of the cotton plant as it affects susceptibility to the wilt disease; and considerable work on seedling diseases and the boll weevil. In the experiments on the boll weevil, new insecticides such as benzene hexachloride, (with DDT) and a cheaper compound, Chlorinated Camphene, gave excellent control of the weevil and other insects. A material called Chlorodane was apparently also effective against the boll weevil, including those in fallen squares.

Tests have been made during the last three or four years of many varieties of hybrid corn which have proven so valuable in the middle west. A few of these are adapted to South Carolina conditions and produce yields
consistently larger than the commonly grown varieties. Among the best yielding hybrids are Funks G-714, Greens 2-W, North Carolina 27, and Woods Golden Prolific 2-20. The breeding of hybrid corn specifically for South Carolina conditions has been started by the experiment station.

Another apparent improvement in corn production is the use of close spacing, in conjunction with high nitrogen fertilization, to obtain larger yields.

The experiment station is constantly looking for promising new crops which offer possibilities to South Carolina farmers. Recently attention has been called to the Mount Barber variety of subterranean clover, Alta fescue and Kentucky 31 fescue, all promising pasture plants, and to Dixie Wonder pea, a variety superior to Austrian Winter peas as a cover crop.

Livestock and Poultry. A number of livestock and poultry problems are being investigated. One project has as its objective the improvement of dairy cattle through the selection of bulls and cows whose records indicate that they are superior to the average animals of the respective breeds. In making the selections a large number of records of the performance of animals in the different breeds have been accumulated, thus making possible a comparison of the records of newly tested individuals with those of others. Along with this project, a new breeding project has been started in which the possibilities of crosses between different breeds will be investigated.

Experiments to reduce losses of pork products when stored on the farm indicate that the temperature of the storage is not important in the case of hams, since those stored at ordinary temperatures were as good as the ones stored under refrigeration (36°F). In the case of bacon, the samples held under refrigeration were superior at the end of the storage period to those kept under ordinary temperatures.

The forced moulting of chicken hens has been investigated to determine whether such treatment might result in greater egg production when egg prices are highest. So far, the results have been inconclusive, due perhaps to the fact that the recent price trend has been different from that which normally obtained during the pre-war years.

The value of raw and processed sweet potatoes for feeding swine has been studied for the last three or four years. It has been found that when the sweet potatoes are blanched before being dehydrated, the product has a feeding value equivalent to corn, whereas when dehydrated, but not blanched, their value is much less. Cooked sweet potatoes are nearly twice as valuable as the raw product for hog feeding, a fact which may be used to advantage where only small quantities are involved.
New Type of Sweet Potato Transplanter

Plants or vine cuttings are dropped across the top of the ridge by hand, then pressed into the soil by a circular disc. Water is applied between the planting disc and pack wheel.

Sweet Potatoes. The use of sweet potatoes for feeding may be stimulated by experiments now under way to mechanize their production. Considerable progress is being made toward improving methods of preparing and fertilizing the land prior to planting, in reducing the cost of cultivation, and in developing improved planting and harvesting equipment. A new type sweet potato plant setter has been devised with which planting may be done rapidly and satisfactorily. Work is also being done to reduce the cost of producing plants for field setting and to determine the best methods of handling and storage. One result of the latter is the development of a miniature storage structure shown in the accompanying illustration. Some of these experiments should help to lower the cost of growing sweet potatoes so that they may be more profitably utilized for stock feeding.

Insects and Diseases. Insects and diseases take a large toll from the farmer and investigations which may help to lessen this toll are an important part of the research program. Recent studies have been concerned with such insects as corn earworms, the squash bug, the pickle worm, which attacks cucumbers, squashes and melons, weevils in stored grain, and lice on tobacco. Some of the new insecticide materials are quite effective in controlling these, except the lice on tobacco for which no control is yet known.
Research on plant diseases has dealt with blue mold of tobacco, internal breakdown and internal cork of sweet potatoes, mildew of cucumbers, late blight of potatoes, cotton wilt and seedling diseases (already mentioned) and rootknot (nematodes) of a number of crops. Often the breeding of resistant varieties is the most effective method of combatting plant diseases, and efforts are being made to do this in the case of cucumbers, melons, peppers, potatoes and tobacco. In other instances treatment of plant beds, as is done for blue mold of tobacco, seed treatment, as in the case of cotton seedling diseases, or the use of sprays, soil fumigation, etc., may be the best methods of control.

Miscellaneous. Other investigations on which reports have recently been prepared include those on grape breeding and production, harvesting hay with pickup balers, killing weeds with chemicals, beekeeping, ditching with dynamite, use of boron and other minor plant nutrients in fertilizers, testing varieties of various crops for their adaptation to South Carolina conditions, and soil fertility problems.

In line with the desires of Congress as expressed at the hearings and in the debates attending the passage of the Research and Marketing Act, the funds available to this station under this act will be used to investigate problems in cotton production, marketing of agricultural commodities, rural housing, and human nutrition, and second, for other work considered to be of importance to the agricultural industry of the state.
Experiments indicate increase of corn with boron fertilization. Plat A received no boron, Plat B 5 pounds, and Plat C 10 pounds per acre.

The corn on each plat was divided into first quality in first pile, imperfect ears in center, and nubbins in last pile.

As indicated earlier in this report, considerable effort has been devoted during the past few years to cotton mechanization and breeding as well as to other production problems. The work financed with the new funds will supplement this. Several marketing projects have been outlined and will be furthered as rapidly as possible. Some study has already been made of rural housing and human nutrition and additional investigations in these fields are being initiated.

Altogether the research program of the South Carolina Experiment Station covers a wide range of subjects and the information which has been, and which will be, obtained from the studies should prove of much value to the farmers of the state.
Dr. R. F. Poole, President
The Clemson Agricultural College
Clemson, South Carolina

Dear Dr. Poole:

I am enclosing a copy of the annual report of the Extension Service in summary form. This division publishes a complete report which will be mailed to those requesting copies.

Respectfully submitted,
D. W. Watkins, Director

The Staff of Agricultural Extension Workers includes a director, an assistant director, three district supervisory agents, a chief clerk, 46 county agents—one in each county, 36 assistant county agents, one farm labor program supervisor, 32 farm labor assistants, and 49 agricultural specialists in agricultural economics and farm management, agricultural engineering, beekeeping, boys 4-H club work, crop insects and diseases, dairying, field crops, forestry, food improvement, fruit and truck crops, livestock, marketing, poultry, publications, rural electrification, soil conservation, and visual instruction.

The Extension Home Demonstration Staff includes a state home demonstration agent, an assistant state agent, three district supervisors, 46 county home demonstration agents—one in each county, 30 assistant county home demonstration agents, and eight home demonstration specialists in food production and conservation, clothing, girls 4-H club work, home management, marketing, nutrition, and poultry.

The Staff of Negro Extension Workers includes a supervisory agent and an assistant supervisory agent for agricultural work, a supervisory agent for home demonstration work, 29 Negro agricultural agents, and 27 Negro home demonstration agents.

Peace Time Farming in South Carolina

The year 1946 was one of readjustment for South Carolina farmers. For the first time in five years they were free from war pressure in planning and carrying out their farming operations. For the first time in five years they could again plan and work for efficient production of high-qual-
ity products at low cost, rather than all-out volume production to meet the needs of the nation at war. For the first time in five years they could resume plans for balanced farm organization, soil conservation and soil improvement, farm mechanization, home improvement, and other long-time objectives to improve the efficiency of their farms and farming operations, and the satisfactions of farm life.

However, while the pressure of war was over, many of the wartime difficulties still remained to handicap the farmers of the state in their efforts to readjust to peace-time farming. Farm labor remained scarce and inefficient. Farm labor costs continued to increase. Much of the farm machinery and equipment on hand was old and worn. New machinery and equipment remained scarce and high priced. Fertilizers were short of needs. Production costs were high. Building materials were scarce and high.

On the other hand, the farmers were asked by the government to maintain the high levels of production they had reached during the war. They had gained experience during the war years in the use of labor-saving methods and equipment; demand and prices for farm products remained high; and consequently, the production of all crops, livestock, and livestock products was maintained at approximately the high wartime levels.

The 1946 Extension Program of Work

The 1946 program of extension work in South Carolina was directed toward helping farm people adjust their farming programs from the all-out volume of production needed in wartime to efficient, low-cost production of quality products to meet peacetime needs, and competition from other production areas; and to develop and improve the welfare of the farm people of the state.

The year 1946 was a year of adjustment for the Extension Service as well as for the farmers of the state. Thirty-five extension workers returned from the armed services during the latter part of 1945 and in 1946, and many other changes were made in extension personnel. Training schools for extension workers were held throughout 1946 to familiarize them with the extension program, their responsibilities in carrying it out, and to bring them up to date on technical information. Constant contact was maintained between the office of the director and the specialists and county workers, and the program was adjusted from time to time to meet changing conditions.

Voluntary Farm and Home Leadership

County extension programs were planned in each county by the county agent and home demonstration agent in cooperation with the County Agricultural Committee of leading farmers and farm women. A total of 2,153 farmers and farm women, elected from the communities of each county,
served on the 46 county agricultural committees, which meet with the county agents from time to time to plan and act upon matters of interest to the farm people of the county, and it is with the advice and counsel of these leaders that the extension program is planned and carried out.

In addition to the county agricultural committees, 5,210 farmers and farm women served as voluntary community and neighborhood leaders and cooperated in many ways in planning and carrying out the extension program in their respective communities and neighborhoods.

Extension Activities and Results

In carrying out the 1946 program of extension work, county agents, home demonstration agents and assistant agents made a total of 121,023 farm and home visits to 64,723 different farms and homes. They prepared 13,003 newspaper articles, distributed 616,998 bulletins, and made 1,114 radio talks in their program to carry farm and home information to the farm people of the state. They held 29,528 educational and demonstration meetings, which were attended by 609,339 farm people. Educational motion pictures and slides were shown at 536 meetings, which were attended by 29,393 farm people. A total of 165,480 farm people visited county extension offices, and 122,875 others made telephone calls for information and assistance.

Agricultural Economics and Farm Management: Work included furnishing farmers with outlook and other economic information to assist them in adjusting their farming operations to meet rapidly changing conditions; assisting farmers in keeping complete farm records for study and analysis; farm planning demonstrations, and program to improve the farm tenancy system in the state.

Agricultural Engineering work was important in the rapid mechanization of the agriculture of the state, and included schools for farmers on selection, operation, care and repair of farm machinery and electrical equipment, plans and assistance to farmers in construction and repair of farm structures, construction and maintenance of terraces, irrigation and drainage demonstration, and assistance to ginners in improving equipment and methods.

Field Crops, Fertilizers, and Soils work emphasized soil conservation, soil building, efficient use of commercial fertilizers, and the improvement in yields and quality of field crops through demonstrations of recommended varieties and methods of production, harvesting and handling cotton, corn, tobacco, small grains, hay crops, and the improvement of pastures and forage crops. Farmers reached new high records of production per acre with corn, oats, and wheat. Demonstrations conducted throughout the state in use of lime, commercial fertilizers and soil building crops. Substantial progress made in establishing year 'round grazing systems on livestock farms.
Grain sorghums are helping produce feed for livestock on a rapidly increasing number of South Carolina farms.

**Dairying** extension work stressed the use of selected purebred sires. Survey by county agents shows a new high record of 2,102 purebred dairy bulls in use in the state. Assistance was given in the development and operation of milk routes, cream stations, and processing plants for dairy products, and in marketing dairy cattle. Four-H club boys and girls grew out 1000 dairy calves under supervision of extension workers. South Carolina dairy cows reached a new high record of production with an average of 3,670 pounds of milk each in 1946.

**Crop Insects and Disease** work was aimed at helping farmers prevent and control insect and disease damage to crops, and parasites on livestock. Intensive programs were carried out to familiarize farmers with the use of DDT and other new insecticides and fungicides.

**Beekeeping** work included demonstrations in transferring bees to modern hives, requeening with purebred queens, shipping package bees, and bee-yard management.

**Farm Labor Program** resulted in the placement of 58,975 farm workers on 5,870 farms, and the training of 3,955 farm workers for farm work.
Crowds watching demonstration with efficient agricultural machinery on methods of making and storing silage

Farm Forestry work included demonstrations and assistance to farmers in timber estimating, thinning timber stands for pulpwod and fuelwood, marketing farm timber and pulpwod, farm forest insect and disease control, and reforestation of cut-over and idle lands best suited to trees.

Four-H Club Work: A total of 39,897 farm boys and girls was enrolled in 4-H club work in all 46 counties in 1946. Four-H club members featured food production, 8,917 acres of crops including small grains, corn, peanuts, cotton, potatoes, gardens, and fruits. In livestock production they grew 400,000 head of poultry, 6,000 hogs, 1,200 beef calves and 1,000 dairy calves.

Fruit and Vegetable crops activities consisted of demonstrations and assistance to farmers in efficient production of high quality truck crops, sweet potatoes, Irish potatoes, peaches, apples, and other horticultural crops.

Livestock: Extension workers assisted farmers in obtaining purebred beef bulls and boars to improve the quality of their herds. County agents report a new high record of 2,361 purebred beef bulls in use on farms of the state. Meat cutting and curing demonstrations were given in all counties. Four-H Club members grew out 1,200 beef calves and 6,000 hogs.
Marketing work with farmers stressed the selection of right varieties and kinds of crops and livestock, approved methods of production, assembling, grading, packing, processing and marketing of farm products. Help was given in improving and increasing marketing and storage facilities.

Poultry: Extension work included demonstrations and assistance to farmers in poultry and turkey flock management, feeding, housing, disease and parasite control, and assistance to poultry breeders and hatcheries in improving poultry breeding stock.

Soil Conservation program included demonstrations of establishment and maintenance of soil conservation practices, and educational meetings of farmers to further the adoption of soil and water conservation.

Food Improvement work consisted of assistance to corn millers in obtaining equipment and enrichment materials to improve the food value of home-ground corn meal and grits and, also, general educational work aimed at increasing the production and use of fresh fruits, vegetables, milk, meat and other foods needed to improve the diets of many farm people of South Carolina.

Information Material included the publication of bulletins, newspaper articles, and letters on timely farm and home information, and the broadcasting of such information through the radio stations in the state.

Visual Instruction: A motion picture projector was placed in the office of each county agent for showing educational films. Extension workers also used slides, filmstrips, photographs, models, and exhibits in the extension educational program.

Home Demonstration Work reached farm families with demonstrations and assistance in food production, canning, drying, freezing, and other methods of conservation; home marketing, home poultry flocks, home management and house furnishings, nutrition, girls 4-H work, clothing, health, sanitation, and recreation.

Negro Extension Work included assistance to Negro farm families in efficient production and marketing of crops and livestock, home food and feed production, home improvement, health, and nutrition.

The 1947 Program of Extension Work

The 1947 Program of Extension Work was summarized in a 15-point statement headed "1947 Agricultural Program for South Carolina", and given wide publicity through newspaper articles and advertisements, radio broadcasts, discussions, etc., in February, 1947.
Home demonstration workers held pressure cooker clinics at which pressure cookers were tested for farm women. Labor-saving and efficient methods have attracted the attention of many women.

This program is given as follows:

1947 Agricultural Program for South Carolina

1. **Plan the farm** to make the best use of land, labor, and equipment, and to meet changing conditions.

2. **Soils**: Improve soils through proper fertilization, liming, and adequate soil conservation and soil building practices.

3. **Equipment**: Extend the efficient use of improved farm machinery and farm and home equipment, and rural electrification.

4. **Food**: Continue to improve home food production and conservation for better nutrition.

5. **Feed**: Increase acreage of improved permanent pastures and annual grazing crops. Produce higher yields per acre of corn, oats, hay, silage, and other feed crops.
6. **Livestock and Poultry:** Continue to develop a larger permanent income from hogs, beef cattle, dairy products, chickens and turkeys through better breeding stock, closer culling, and improved feeding and marketing.

7. **Cotton:** To meet competition from other areas and other fibers, produce higher yields per acre at lower cost per pound. Improve staple length and quality. Improve ginning. Expand grade and staple service in marketing.

8. **Tobacco:** Increase yields per acre of high quality tobacco at lower cost per pound. Improve curing and grading practices.

9. **Fruits and Vegetables:** Improve methods of production and marketing of peaches, sweet potatoes, Irish potatoes, and other fruit and truck crops.

10. **Forestry:** Take care of the farm woodlands, and do a better job in marketing the products. Reforest lands best suited to trees.

11. **Seeds and Plants:** Increase production and distribution of high quality seeds and plants, including certified seed, for additional income and to aid in efficient crop production.

12. **Diseases and Insects:** Use up-to-date methods in fighting crop and livestock insects, diseases and parasites; household insects, rats and other pests.

13. **Farm Buildings:** Plan and improve farm homes and other buildings for health and efficiency.

14. **Farm Boys and Girls:** Further develop 4-H club work to train South Carolina farm boys and girls in improved farming, homemaking, health and citizenship.

15. **Health and Recreation:** Develop more adequate rural health and recreational facilities.

**New Projects Underway**

**Farm Labor Saving Show:** This show consisted of an assembly of equipment, models, and demonstrations on labor saving methods on the farm and in the farm home. The exhibit was transported on trucks and set up and shown in 24 counties in March and April, 1947, with an attendance of 40,554 people. This show will be given in the remaining counties of the state in the near future.

**Irrigation:** Interest in irrigation of field crops, orchards, pastures, etc., is developing rapidly. The Extension Service is working to assemble up-to-date information and assist farmers through field demonstrations.
Seed Certification: The Extension Service is cooperating with the South Carolina Crop Improvement Board in advancing the seed certification program under the State Law recently enacted.

Artificial Breeding of dairy cows is a growing practice. Five county artificial insemination associations have been organized and are now functioning. Others will be organized as the program develops.

New Insecticides and Fungicides are bringing revolutionary developments in the control of crop insects and diseases and livestock parasites, and the Extension Service is conducting demonstrations of their use in every county of the state, and making every effort to give farmers the best up-to-date information on their use.

New Pasture, Feed and Forage Crops, such as grain sorghums, Ladino clover, fescue, hybrid corn, and others promise great benefit to South Carolina farmers in economical production of high quality feed. Demonstrations of these crops are being conducted throughout the state.

Minor Elements are proving important in the fertilization of many crops on the farms of the state. Demonstrations are being put on throughout the state, and close study of results is being made.

Studies in the washing and waxing of sweet potatoes with good equipment indicate increases in the market value of this crop.
High Nitrogen Fertilizer promises to increase corn yields substantially in South Carolina. Demonstrations of varying amounts per acre are in progress.

The Use of Weed Killers is scarcely beyond the experimental stage. However, field demonstrations promise definite results of value to farmers.

Shipping Tree-Ripened Peaches: Demonstrations of packing and shipping tree-ripened peaches on quick hauls from orchard to market are being studied.

Processing Equipment, such as washing equipment for Irish potatoes, washing and waxing equipment for sweet potatoes, and similar equipment for other products is growing in use, and adding market value to South Carolina products.

Labor Efficiency studies are being made in handling peaches and tobacco.

"Chicken of Tomorrow": The Extension Service is cooperating in this program aimed at the development of a more desirable type of chicken for meat and egg production.

Note: A complete report of the work of the Clemson College Extension Service may be had by writing the Division of Publications, Clemson, South Carolina, for a copy of the publication entitled "Peacetime Farming in South Carolina, 1946".