

CATALOG  
-OF-  
**The Clemson**  
**Agricultural College**  
**Of South Carolina**

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STATE AGRICULTURAL AND MECHANICAL COLLEGE

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RECORD OF EIGHTEENTH YEAR

**1910-1911**

-AND-

ANNOUNCEMENTS FOR 1911-1912

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1910-1913

## 1911

JULY							SEPTEMBER							NOVEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	..	..	..	I	..	..	..	..	..	I	2	..	..	..	I	2	3	4
2	3	4	5	6	7	8	3	4	5	6	7	8	9	5	6	7	8	9	10	11
9	10	11	12	13	14	15	10	11	12	13	14	15	16	12	13	14	15	16	17	18
16	17	18	19	20	21	22	17	18	19	20	21	22	23	19	20	21	22	23	24	25
23	24	25	26	27	28	29	24	25	26	27	28	29	30	26	27	28	29	30	..	..
30	31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
AUGUST							OCTOBER							DECEMBER						
..	..	I	2	3	4	5	I	2	3	4	5	6	7	..	..	..	..	..	I	2
6	7	8	9	10	11	12	8	9	10	11	12	13	14	3	4	5	6	7	8	9
13	14	15	16	17	18	19	15	16	17	18	19	20	21	10	11	12	13	14	15	16
20	21	22	23	24	25	26	22	23	24	25	26	27	28	17	18	19	20	21	22	23
27	28	29	30	31	..	..	29	30	31	..	..	..	..	24	25	26	27	28	29	30
..	..	..	..	..	..	..	..	..	..	..	..	..	..	31	..	..	..	..	..	..

## 1912

JANUARY							MARCH							MAY						
..	I	2	3	4	5	6	..	..	..	..	..	I	2	..	..	..	I	2	3	4
7	8	9	10	11	12	13	3	4	5	6	7	8	9	5	6	7	8	9	10	11
14	15	16	17	18	19	20	10	11	12	13	14	15	16	12	13	14	15	16	17	18
21	22	23	24	25	26	27	17	18	19	20	21	22	23	19	20	21	22	23	24	25
28	29	30	31	..	..	..	24	25	26	27	28	29	30	26	27	28	29	30	31	..
..	..	..	..	..	..	..	31	..	..	..	..	..	..	..	..	..	..	..	..	..
FEBRUARY							APRIL							JUNE						
..	..	..	..	I	2	3	..	I	2	3	4	5	6	..	..	..	..	..	..	I
4	5	6	7	8	9	10	7	8	9	10	11	12	13	2	3	4	5	6	7	8
11	12	13	14	15	16	17	14	15	16	17	18	19	20	9	10	11	12	13	14	15
18	19	20	21	22	23	24	21	22	23	24	25	26	27	16	17	18	19	20	21	22
25	26	27	28	29	..	..	28	29	30	..	..	..	..	23	24	25	26	27	28	29
..	..	..	..	..	..	..	..	..	..	..	..	..	..	30	..	..	..	..	..	..

# COLLEGE CALENDAR

## Session 1911-1912

1911

- Sept. 13. Opening of the 19th session; exercises begin at 8:40 A. M.  
Sept. 14. Examinations for admission and for removal of conditions.  
Nov. 23. Thanksgiving: a holiday.  
Dec. 22. First day of Christmas recess.

1912.

- Jan. 3. Beginning of the Second Term, 8:40 a. m.  
Jan. 19. Lee's birthday; annual public exercises of the Columbian Literary Society in the evening.  
Feb. 22. Washington's Birthday; a holiday.  
Annual Public Exercises of the Palmetto Literary Society in the evening.  
Feb. 27. Stated meeting of the Board of Trustees.  
Mar. 18. Calhoun's Birthday: a holiday.  
Mar. 24. Annual Public Exercises of the Calhoun Literary Society in the evening.

1912.

- Mar. 25. Beginning of the Third Term, 8:40 a. m.  
June 9. Beginning of commencement exercises; baccalaureate sermon.  
June 10. Address of alumni orator.  
Contest of literary society representatives. Military exercises.  
June 11. Commencement Day; address to the graduating class.  
Graduating exercises; delivery of diplomas.  
July 9. Stated meeting of the Board of Trustees.

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### Reports to Parents.

Reports of class standing and discipline will be sent to parents for periods ending on the following dates:

October 28, and December 16,\* 1911; February 10, March 17,\* April 28, and June 2,\* 1912.

Dates marked with asterisk (\*) are approximate, depending upon the beginning of the respective term examinations.

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### Quarterly Dues.

Payable September 13, November 15, 1911; January 17, March 21, 1912.

17483

# CLEMSON COLLEGE

## BOARD OF TRUSTEES.

### Life Members.

---

HON. ALAN JOHNSTONE, President .. Newberry, Newberry Co.  
 HON. R. W. SIMPSON ..... Pendleton, Anderson Co.  
 SENATOR B. R. TILLMAN ..... Trenton, Edgefield Co.  
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 HON. W. W. BRADLEY ..... Abbeville, Abbeville Co.  
 HON. R. I. MANNING ..... Sumter, Sumter Co.

### Term Expires. 1912.

E. T. HUGHES, ..... Marion, Marion Co.  
 HON. JNO. G. RICHARDS, JR., ..... Liberty Hill, Kershaw Co.  
 HON. COKE D. MANN ..... West Union, Oconee Co.

### Term Expires 1914.

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 HON. B. H. RAWL ..... Lexington, Lexington Co.  
 HON. IVY M. MAULDIN ..... Pickens, Pickens Co.

---

## STANDING COMMITTEES OF THE BOARD\*

### Executive Committee.

Messrs. Donaldson, Bradley, Mann, Mauldin, Hughes.

### Finance Committee

Messrs. Simpson, Donaldson, Mauldin, Bradley, Manning.

### Agricultural Committee

Messrs. Tillman, Wannamaker, Manning, Evans, Rawl.

### Fertilizer Committee.

Messrs. Evans, Manning, Richards.

### Entomological Committee.

Messrs. Evans, Richards, Hughes.

### Veterinary Committee.

Messrs. Evans, Richards, Hughes.

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\*The President of the Board, Hon. Alan Johnstone, is ex officio a member of all committees.

Board of Visitors for Sessions 1911-'12: 1912-'13

Meeting First Wednesday in May

First District—Hon. Samuel G. Stoney, Charleston, S. C.

Second District—Dr. T. B. Whatley, Gillisonville, S. C.

Third District.—Hon. W. N. Graydon, Abbeville, S. C.

Fourth District—Hon. J. O. Wingo, Campobello, S. C.

Fifth District—Hon. J. H. Foster, Lancaster, S. C.

Sixth District—Hon. A. J. A. Perritt, Lamar, S. C.

Seventh District—Hon. A. F. Lever, Peak, S. C.

## CLEMSON COLLEGE

## ADMINISTRATIVE OFFICERS AND EMPLOYEES

WALTER MERRITT RIGGS, B. S., E. M. E., LL. D.  
President

PAUL HAMILTON EARLE SLOAN, M. D.  
Treasurer and Secretary Board of Trustees

MARCUS BUTLER STOKES  
Captain 10th Infantry, U. S. Army  
Commandant

ALEXANDER MAY REDFERN, B. S., M. D.  
Surgeon

MISS KATHERINE BOCQUET TRESHOT  
Librarian

MISS ANNE ALLSTON PORCHER  
Assistant Librarian

HUGH MILTON STACKHOUSE  
Secretary Board of Fertilizer Control

JOHN NATHAN HOOK  
Justice Clemson College Corporation

AUGUST SCHILLETTER  
Steward

JAMES PERCIVAL LEWIS  
Superintendent of College Farm

WILLIAM CALVIN TUCKER\*  
Bookkeeper

SAMUEL WILDS EVANS\*\*  
Bookkeeper

FLOYD LANDON CARROLL†  
Assistant Bookkeeper

W. P. WHITE  
Registrar

MISS MARGARET L. SADLER  
Secretary to the President

MISS MARGARET E. GASQUE  
Assistant to Secretary Board of Fertilizer Control

MISS ETTA M. SADLER  
Stenographer to Agricultural Department

JOHN McMILLAN GASQUE††  
Assistant to Commandant

JAMES GRIFFIN HILTON§  
Assistant to Commandant

JOSEPH HEWER  
Superintendent of Construction and Repairs

JOSEPH JAMES HINEKER  
Sergeant U. S. Army (retired)  
Quartermaster Sergeant

---

\*Resigned March 15, 1911. \*\*Assistant Bookkeeper until March 15, 1911. †After March 20, 1911. ††Resigned March 1, 1911. §After March 15, 1911.

OFFICERS OF INSTRUCTION\*

WALTER MERRITT RIGGS, B. S., E. M. E., L. L. D.  
President

Agricultural Department

WILLIAM ROBERT PERKINS, M. S.  
Director of Department  
Professor of Agronomy

FRED HARVEY HALL CALHOUN, Ph. D.  
Professor of Geology and Mineralogy

M. RAY POWERS, D. V. S.  
Associate Professor of Veterinary Science

ARCHIBALD SMITH  
Head of Animal Husbandry Division  
Associate Professor of Animal Husbandry and Dairying

DAVID OLIVER NOURSE, B. S.  
Associate Professor of Animal Husbandry and Dairying

HOMER C. THOMPSON, B. S.  
Associate Professor of Horticulture

JOHN GALENTINE HALL, M. A.  
Associate Professor of Botany and Forestry

ALBERT FREDERIC CONRADI, B. S. A.  
Associate Professor of Entomology and Bacteriology

JUNIUS MILTON BURGESS, B. S.  
Assistant Professor of Animal Husbandry and Dairying

JOHN McGUIRE NAPIER, M. S.  
Assistant Professor of Agronomy

WILSON P. GEE, M. S.  
Assistant Professor of Entomology

ROBERT OLIVER FEELEY, D. V. S.  
Assistant in Veterinary Science

ARTHUR BALLARD MASSEY, B. S.  
Instructor in Bacteriology

GUY CHESTER CRAMPTON, Ph. D.\*\*  
Assistant in Entomology

---

\*The names of the Officers of Instruction are arranged in groups in each department—Professors, Associate Professors, Assistant Professors, and Instructors.

\*\*Resigned April 1, 1911.

Engineering Department

---

SAMUEL BROADUS EARLE, A. M., M. E.  
Vice Director of Department  
Associate Professor of Mechanical Engineering

HALE HOUSTON, C. E.  
Professor of Civil Engineering

THOMAS GRAYSON POATS, M. E., E. E.  
Associate Professor of Physics

RUDOLPH EDWARD LEE, B. S.  
Associate Professor of Drawing

WILSON WIGHTMAN KLUGH, B. S.  
Assistant Professor of Drawing

FRANK TOWNES DARGAN, M. S.  
Assistant Professor of Electrical Engineering

JOHN WEEMS GANTT  
Assistant Professor of Forge and Foundry Work

STYLES TRENTON HOWARD, B. M. E.  
Assistant Professor of Machine Work

ANDREW BURCHELL GARDNER  
Assistant Professor of Woodwork

JOHN FRANKLIN ALLISON, B. S.  
Instructor in Forge and Foundry Work

JAMES CORCORAN LITTLEJOHN, B. S.  
Assistant in Mechanical and Electrical Engineering

FRANCIS RAYMOND SWEENEY, B. S.  
Instructor in Civil Engineering

GEORGE HAMILTON FOLK, B. S.  
Instructor in Woodwork

MAHLON THOMAS BIRCH, B. S.  
Instructor in Drawing

DAVID NIVIN HARRIS, B. S.  
Instructor in Drawing

**Department of Chemistry**  

---

RICHARD NEWMAN BRACKETT, A. B., Ph. D.

Acting Director of Department  
Acting Professor of Chemistry

MARK BERNARD HARDIN

Professor of Chemistry, Emeritus

DAVID HILL HENRY, B. S.

Acting Associate Professor of Chemistry

GUY FLEMING LIPSCOMB, B. S.

Assistant Professor of Chemistry

D. J. McADAM, Jr., Ph. D.\*

Assistant Professor of Chemistry

HERBERT J. SMITH, B. S. \*\*

Assistant Professor of Chemistry

BENJAMIN FREEMAN, B. S.

Assistant in Chemistry

**Department of Textile Industry**  

---

CHARLES STEBBINS DOGGETT

Director of Department

Professor of Textile Chemistry and Dyeing

CLAUDE WIGHTMAN McSWAIN, B. S.

Assistant Professor of Weaving and Designing

FRED TAYLOR

Assistant Professor of Carding and Spinning

**Academic Department**  

---

CHARLES MANNING FURMAN, A. B.

Professor of English

WILLIAM SHANNON MORRISON, A. B.

Professor of History and Political Economy

SAMUEL MANER MARTIN, B. S.

Professor of Mathematics

DAVID WISTAR DANIEL, M. A.

Associate Professor of English

---

\*Resigned Dec. 1910.    \*\*Appointed Feb. 1911.

## CLEMSON COLLEGE

AUGUSTUS G. SHANKLIN, B. S.  
Associate Professor of Mathematics

THOMAS WADLINGTON KEITT  
Assistant Professor of English

ARTHUR BUIST BRYAN, B. S., B. Litt.  
Assistant Professor of English

JOSEPH EVERETT HUNTER, B. S.  
Assistant Professor of Mathematics

MARK EDWARD BRADLEY, A. B.  
Assistant Professor of English

BURR HARRISON JOHNSTONE, A. B.  
Assistant Professor of Mathematics

ANDREW BRAMLETT, B. S.  
Assistant Professor of Mathematics

ALESTER GARDEN HOLMES, B. S.  
Assistant Professor of History

#### Military Department

---

MARCUS BUTLER STOKES  
Captain 10th Infantry, U. S. A., Commandant of Cadets  
Professor of Military Science and Tactics

#### Preparatory Class

---

LAWRENCE ANDREW SEASE, B. S.  
Headmaster of Preparatory Class  
Assistant Professor of English

BENJAMIN JOHNSTON WELLS, L. I., A. B.  
Instructor Preparatory Class

**STANDING COMMITTEES TO THE PRESIDENT**

The President is *ex-officio* a member of each committee.  
The first named in each instance is chairman.

**Re-Examinations and Promotions**

Martin; Brackett, Dargan, Doggett, Earle, Furman, Houston,  
Littlejohn, Morrison, Perkins

**Entrance Requirements**

Furman; Calhoun, Littlejohn, Martin, Morrison, Perkins, Sease

**Schedule**

Morrison; Brackett, Bramlett, Keitt, T. W., Lee, McSwain,  
Poats, Powers

**Extension Work**

Barrow; Barre, Barnett, Daniel, Doggett, Harper, Lee, Napier,  
Smith, A., Stackhouse

**Library**

Bryan; Calhoun, Earle, Henry, Keitt, T. E., Taylor

**Irregular Students**

Hunter; Klugh, Lipscomb, Napier, Poats

**Catalogue**

Doggett; Barre, Brackett, Bryan, Howard, Littlejohn, Powers

**Student Recreation**

Henry; Calhoun, Holmes, Houston, Lipscomb, Stokes

**Athletics**

Calhoun; Gantt, Johnstone, Poats, Shanklin

**Student Publications**

Keitt, T. W.; Bradley, Holmes

**Religious Services**

Earle; Bradley, Burgess, Holmes, Wells

**Chapel Music**

Daniel; McSwain, Taylor

**Chapel Entertainments**

Daniel; Houston, Johnstone, Martin, Powers

**State Fair**

Howard; Burgess, Conradi, Napier, McSwain, Stokes

**Campus**

Houston; Hall, Harper, Newman, Sweeney

**Reception**

Harper; Barrow, Brackett, Daniel, Perkins, Stackhouse, Stokes

**Alumni**

Lee; Bryan, Burgess, Henry, Klugh

**Museum Committee**

Calhoun; Barre, Gee, Hall, Napier

CLEMSON COLLEGE  
SOUTH CAROLINA  
AGRICULTURAL EXPERIMENT STATION

Station Staff

---

JOSEPH NELSON HARPER, B. S., M. S. A.  
Director and Agriculturist

CHARLES CARTER NEWMAN, B. S.  
Horticulturist

HENRY WALTER BARRE, M. S.  
Botanist and Plant Pathologist

ALBERT FREDERIC CONRADI, B. S. A., M. S.  
Entomologist and Zoologist

THOMAS ELLISON KEITT, B. S.  
Chemist

ENOCH BARNETT, D. V. M.  
Veterinarian and Animal Husbandman

W. A. THOMAS, B. S.  
Field Pathologist

L. P. BYARS, B. S.  
Assistant in Field Pathology

JOHN NATHAN HOOK  
Secretary and Librarian

WILLIAM D. GARRISON, B. S.  
Superintendent Coast Land Experiment Station

MISS HELEN C. BRADFORD  
Stenographer

BURNS GILLISON  
Foreman Experiment Station Farm

---

Division of Extension Work and Farmers' Institutes

Agricultural Department

DAVID NICHOLAS BARROW, B. S.  
Superintendent

CHRISTOPHER BRADSHAW HADDON, B. S.  
Assistant in Rural School Agriculture

WILLIAM H. MORGAN, B. S.\*  
U. S. Department of Agriculture  
Assistant in Dairy Husbandry

---

\*Resigned, Nov. 1910.

**Chemists of Fertilizer Control**

R. N. BRACKETT, Acting Chief Chemist  
 B. F. ROBERTSON, B. S. Chemist  
 J. H. MITCHELL, M. S., Assistant Chemist\*  
 C. V. W. CORNELL, B. S., Assistant Chemist.  
 CHARLES W. RICE, B. S. Assistant Chemist  
 JAMES EDWIN TOOMER, B. S., Assistant Chemist\*\*

**State Control Officers†**

Dr. R. N. BRACKETT, Acting State Chemist  
 A. F. CONRADI, State Entomologist  
 DR. M. RAY POWERS, State Veterinarian.  
 DR. R. O. FEELEY, Assistant Veterinarian.

**MINISTERS FOR SESSION 1910-1911**

**Resident Ministers**

Baptist . . . . . Rev. T. V. McCaul  
 Episcopal . . . . . Rev. L. E. Hubbard  
 Methodist . . . . . Rev. M. B. Kelly  
 Presbyterian . . . . . Rev. W. H. Mills

**Visiting Ministers**

Lutheran . . . . . Rev. S. C. Ballentine, Oct. 30, 1910  
 Lutheran . . . . . Rev. E. H. Kohn, Jan. 29, 1911  
 A. R. P. . . . . Rev. J. S. Moffatt, April 30, 1911

**Baccalaureate Sermon**

Pres. J. Henry Harms, D. D., Newberry College,  
 Newberry, S. C.

**Commencement Address**

Pres. Jas. K. Patterson, Ph. D., LL. D., F. S. A.  
 State University of Kentucky, Louisville, Ky.

\*Absent on leave. \*\*Substitute for Mr. Mitchell. †Appointed by the Board of Trustees under the State Laws requiring them to carry on the work indicated.

## CLEMSON COLLEGE

## REGIMENTAL ORGANIZATION

1910-'11.

## Commandant of Cadets

CAPTAIN M. B. STOKES

Tenth Infantry, United States Army

## REGIMENTAL STAFF

Jos. E. Jenkins . . . . . Captain and Adjutant

J. A. Dew . . . . . Captain and Quartermaster

## NON-COMMISSIONED STAFF

J. E. M. Mitchell . . . . . Sergeant-Major

H. T. Prosser . . . . . Quartermaster Sergeant

H. F. Rivers . . . . . Color Sergeant

J. T. Lazar . . . . . Color Sergeant

## FIRST BATALLION

MAJOR E. S. JENKINS

O. O. Dukes . . . . . Adjutant

T. C. Redfern . . . . . Sergeant-Major

## Co. A.

## Co. B.

## Co. C.

## Co. D.

## CAPTAINS

J. T. Crawford

J. K. Lawton

M. H. Epps

S. L. Britt

## LIEUTENANTS

W. M. Wiggins  
G. D. GarnerJno. E. Jenkins  
W. B. GettysL. S. Lindler  
T. D. WilliamsB. P. Folk  
C. R. Gilliam

## 1ST SERGEANTS

W. R. Gray

E. W. Tison

M. L. Hamer

A. P. Fant

## SERGEANTS

A. J. Brown  
J. H. Gage  
H. S. Covington  
B. J. TruesdaleJ. N. Striblitg  
D. T. Hardin  
J. M. Dreher  
S. A. MillerR. F. Ulmer  
J. A. Bates  
C. H. Stanton  
J. R. CrawfordL. S. David  
E. D. Mays  
A. G. Small  
T. S. Evans

## CORPORALS

S. W. Rabb  
C. K. Dunlap  
R. F. Davis  
W. D. Banks  
W. B. BrittM. Coles  
M. S. Lawton  
W. L. Smarr  
C. J. King  
J. N. WebbE. P. Steele  
W. H. Martin  
L. H. Massey  
J. Epps  
D. H. CovingtonJ. N. Todd  
J. M. Wilson  
C. S. Patrick  
H. G. Rogers  
W. E. Morrison

## SECOND BATALLION

MAJOR G. C. FURTICK

A. M. Salley . . . . . Adjutant

E. G. Littlejohn . . . . . Sergeant-Major

Co. E.

Co. F.

Co. G.

Co. H.

CAPTAINS

F. E. Schroder

L. B. Altman

G. E. Lachicatte

E. I. Davis

LIEUTENANTS

C. S. Lykes  
G. L. McCord

F. O. McCown  
J. A. Goodwin

F. M. Rast  
J. E. Kirby

W. C. Garrett  
H. P. Cooper

1ST SERGEANTS

O. Jacobs

J. A. Simpson

J. E. Wakefield

J. M. Workman

SERGEANTS

W. H. Privette  
E. P. Josey  
J. F. Ezell  
L. F. Yates

C. M. Hall  
W. D. Ezell  
W. S. Becker  
W. M. Byrd

F. Adams  
E. E. Hamlin  
B. R. Bacot  
D. L. Latimer

N. K. Rowell  
M. L. Cooper  
H. A. Adams  
S. M. Connor

CORPORALS

P. E. Myers  
F. H. Robertson  
S. Y. Tupper  
E. B. McLaurin  
J. C. Fitzsimmons

T. F. Davis  
A. H. Jackson  
J. A. McGill  
J. W. McLure  
H. G. Boyleston

J. W. Barnwell  
J. C. Culler  
J. Y. Scruggs  
A. J. Evans  
A. H. Lachicotte

T. F. Massey  
G. H. Pearce  
W. H. Frampton  
F. H. Lathrop  
E. M. Byrd

THIRD BATTALION

MAJOR J. B. KEITH

F. H. All . . . . . Adjutant  
A. B. Evans . . . . . Sergeant-Major

Co. I.

Co. K.

Co. L.

Co. M.

CAPTAINS

W. R. Connelly

F. H. Jeter

W. N. Henderson

L. D. Boone

LIEUTENANTS

L. C. Harrison  
J. S. Knox

O. P. McCord  
F. E. Rogers

J. C. Milling  
E. L. Sumner

J. M. Martin  
G. C. Fant

1ST SERGEANTS

W. H. Rentz

J. C. Caldwell

T. C. Adams

H. M. Hutson

SERGEANTS

R. B. Galphin  
H. W. Harvey  
O. B. Brodie  
T. Perry

H. S. Kenrerly  
G. L. Hardy  
A. K. Goldfinch  
D. B. Hill

T. E. Bell  
J. R. W. Lindler  
L. C. Gilstrap  
H. C. Jennings

G. H. Zerst  
D. McIntyre  
C. B. Faris  
O. F. McCrary

CORPORALS

J. O. Erwin  
R. Robison  
C. P. Youmans  
R. A. Alexander  
J. L. Hiers

T. C. Gentry  
D. L. Cannon  
A. D. Park  
F. W. Bouson  
P. M. Carpenter

J. H. Kangeter  
S. K. Brown  
S. E. Harrison  
W. T. Kyzer  
J. L. Seal

A. C. Turbeville  
L. D. Hutson  
A. P. Gandy  
L. R. Blackmon  
J. K. Boggs

## CADET BAND

R. S. Wolfe . . . . . 1st Lieut. and Chief Musician  
J. W. Blackwell . . . . . Drum Major

---

W. D. Bryant . . . . . Solo Bb Cornet  
C. Baker . . . . . First Bb Cornet  
J. A. Merritt . . . . . Second Bb Cornet  
R. S. Wolfe . . . . . Solo Bb Clarinet  
R. B. Waters . . . . . First Bb Clarinet  
E. E. Poag, . . . . . Piccolo  
E. A. McCreary . . . . . Baritone  
L. F. Wolfe . . . . . First Trombone  
H. L. Smith . . . . . First Eb Alto  
M. Coles . . . . . Second Eb Alto  
J. R. Lomax . . . . . Eb Bass  
H. S. Davis . . . . . Snare Drum  
P. L. Bissell . . . . . Bass Drum  
D. C. Beaty . . . . . Cymbals



## HISTORICAL SKETCH

Thomas G. Clemson, after whom the College is named, was born in Philadelphia in April, 1807, and died at the Fort Hill home April 6, 1888.

In 1823, then scarcely 16 years old, he ran away from home, and after spending some time in England, went to Paris, where he took up arms in the revolutions of that time. His gallantry brought him recognition and the friendship of prominent men, resulting in his being given a course in the celebrated School of Mines in Paris. In this school he remained for four years, graduating with high honors.

While he was in Europe, his father died, leaving nothing to him in his will. Soon after this, he returned to America and establishing himself in Washington, practiced his profession of Mining Engineer, and accumulated a comfortable fortune. It was here that he met Miss Anna Marie, the eldest daughter of John C. Calhoun, and married her. Two children resulted from this union—a daughter Floride, who afterwards became Mrs. Gideon Lee, of New York, and a son, John Calhoun Clemson.

Mr. Clemson was a strong advocate of the political doctrine of Mr. Calhoun, and when the war broke out, fearing arrest, he and his son escaped by night in a boat, and walking to Richmond, offered their services to President Davis. Mr. Clemson was assigned to the Trans-Mississippi Nitre Mining Department, where he served until the end of the war. His son was appointed a Lieutenant and assigned to active duty.

At the end of the war, Mr. Clemson with his family came to Pendleton and resided with Mrs. John C. Calhoun until her death in 1866.

Mr. Clemson was interested as far back as this date in the establishment of an Agricultural and Industrial College. In November, 1866, a Committee was appointed, con-

sisting of Hon. Thomas G. Clemson, Hon. R. F. Simpson and Col. W. A. Hayne, to appeal to their fellow citizens for "Aid to found an institution for educating our people in the Sciences, to the end that our Agriculture may be improved, our worn and improvised soils be recuperated, and the great natural resources of the South be developed."

In January 1867, at a meeting of the Pendleton Farmers' Society, Mr. Clemson addressed the body in "an able and most interesting and instructional discourse," and submitted in the form of a circular the appeal above referred to. The circular was written by Mr. W. H. Trescot, and closes with the words:

"Letters and contributions to be directed to the Hon. Thos. G. Clemson, LL. D., Chairman of the Committee, Pendleton, Anderson District, South Carolina."

Again in the minutes of the same Society, of which he was elected President in 1868, under date of Oct. 14, 1869, we find the following:

"The President, (Mr. Clemson), entertained the Society for half an hour on the subject of Scientific Agriculture, and the Importance of Scientific Agricultural Education."

These citations indicate an early interest on the part of Mr. Clemson in the great cause to which he later devoted his estate.

Previous to the war, Mrs. John C. Calhoun had sold the Fort Hill place and negroes to her son, Col. Andrew P. Calhoun, taking in payment his bond and mortgage for \$40,000. At her death, she left a will, which resulted in her daughter Mrs. Clemson, getting three-fourths of the value of this bond and mortgage, and her granddaughter, who at the time of Mrs. Calhoun's death was Mrs. Gideon Lee of New York, the remaining one-fourth.

Shortly after Mrs. Calhoun's death, which was followed by the death of Col. A. P. Calhoun, Mrs. Thomas G. Clemson, after considerable costly litigation foreclosed the mortgage on the Fort Hill place, and at the sale of property in Walhalla in January 1872, Mr. Clemson, as Trustee for his wife and daughter, bid it in for \$15,000\*, and he himself paid out

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\*See Title Book Oconee County, P. 177-f.

of his private funds \$8,000 to cover lawyer's fees, court cost, etc.

In 1871, Mr. Clemson's daughter, then Mrs. Lee, died, and seventeen days after, his only son, John Calhoun Clemson, was killed in a railroad accident at Seneca. Left childless, Mrs. Clemson willed to her husband, Thomas G. Clemson, all of her estate "absolutely and in fee simple."\*

Mr. Clemson, in his will, left to his granddaughter, Floride Isabella Lee, \$15,000 to free the property, which by the same will was donated to the State, from any claim in equity that the granddaughter might have. This was, of course, in addition to the one-fourth of the estate which descended to Miss Lee from her mother, who acquired it under the terms of the original will of Mrs. Calhun, and additional to the \$8,000 paid out by Mr. Clemson for fees, court costs, etc., when the entire estate was bought in.

Neither by intention, nor by donation, nor by any form of hereditary transmission does it anywhere appear that John C. Calhoun had anything to do with the founding of the College which bears Clemson's name.

In 1875 Mrs. Clemson died, and on April 6, 1888, Mr. Clemson followed her to the grave, and was buried in the Episcopal church yard at Pendleton.

Mr. Clemson's will was bitterly contested by the Lee family, but was finally fully sustained by the Supreme Court. After the settlement of the will, the Trustees of the College bought from Miss Floride Isabella Lee her one-fourth of the estate which adjoined the tract given to the State by Mr. Clemson.

The following extracts are made from Mr. Clemson's will\*\* in order to show clearly his purpose in offering his property to the State for the founding of the Clemson Agricultural College.

\* \* \* \* "Feeling a great sympathy for the farmers of this State, and the difficulties with which they have to contend in their

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\*See Judge of Probate's Office, Oconee Co., Apartment 26, Package 287. \*\* See Judge of Probate's Office, Oconee Co., Apartment 64, Package 671.

efforts to establish the business of agriculture upon a proper basis, and believing that there can be no permanent improvement in agriculture without a knowledge of those sciences which pertain particularly thereto, I have determined to devote the bulk of my property to the establishment of an Agricultural College upon the Fort Hill Place. My purpose is to establish an Agricultural College which will afford useful information to the farmers and mechanics; therefore it should afford thorough instruction in agriculture and the natural sciences connected therewith; it should combine, if practicable, physical with intellectual education, and should be a high seminary of learning in which the graduate of the common schools can commence, pursue and finish a course of studies terminating in thorough theoretic and practical instruction in those sciences and arts which bear directly upon agriculture. But I desire to state plainly, that I wish the Trustees of said institution to have full authority and power to regulate all matters pertaining to said institution, \* \* \* \* but to always bear in mind that the benefits herein sought to be bestowed are intended to benefit agriculture and mechanical industries." \* \* \* \*

"I therefore give \* \* \* \* the aforesaid Fort Hill place where I now reside, formerly the house of my father-in-law, John C. Calhoun, consisting of eight hundred and fourteen acres, more or less, in trust that whenever the State of South Carolina may accept said property as a donation from me, for the purpose of thereupon founding an Agricultural College, in accordance with the views I have hereinbefore expressed, (of which the chief justice of South Carolina shall be the Judge,) then my executor shall execute a deed of the said property to said State and turn over to the same all property hereinafter given as an endowment of said institution, to be held as such by the said State so long as it in good faith devotes said property to the purpose of the donation." \* \* \* \*

"The following named gentlemen, seven in number, shall be seven of the Board of Trustees, to wit R. W. Simpson, D. K. Norris, M. L. Donaldson, R. E. Bowen, B. R. Tillman, J. E. Wannamaker and J. E. Bradley; and the State, if it accepts the donation, shall never increase the Board of Trustees to a number greater than thirteen in all, nor shall the duties of said Board be taken away or conferred upon any other men or body of men. The seven Trustees appointed by me, shall always have the right, and the power is hereby given them and their successors, which right the Legislature shall never take away or abridge, to fill all vacancies which may occur in their number by death, resignation, refusal to act, or otherwise. But the Legislature may provide as it sees proper for the appointment or election of the other six Trustees, if it

accepts the donation \* \* \* \* The name of this Institution is to be "The Clemson Agricultural College of South Carolina."

In the codicil to his will, Item, 12, occurs the following significant statement:

"The desire to establish such a school or College as I have provided for in my said last will and testament, has existed with me for many years past, and many years ago I determined to devote the bulk of my property to the establishment of an Agricultural School or College. To accomplish this purpose is now the one great desire of my life."

In November 1889, the General Assembly of South Carolina passed the necessary acts authorizing the acceptance of the terms of Mr. Clemson's will, and the establishment of the College. The following extracts are taken from the State laws relating to the College:

Section 1300: "The Honorable Thomas G. Clemson having departed this life on the sixth day of April, A. D. 1888, leaving of force his last will and testament \* \* \* \* wherein he devised and bequeathed the Fort Hill plantation, as well as all his other property, both real and personal, except certain legacies in the said will mentioned and provided for, all in trust to convey to the State of South Carolina when the said State shall accept the same for the purpose of establishing and maintaining an Agricultural and Mechanical College upon the aforesaid Fort Hill plantation upon the terms and conditions of said will, the State of South Carolina hereby expressly declares that it accepts the devise and bequest of Thomas G. Clemson, subject to the terms and conditions set forth in his last will and testament.." \* \* \* \*

"Section 1302. The said College shall be under the management and control of a Board of Thirteen Trustees composed of the seven members nominated by said will and their successors and six members to be elected by the Legislature in Joint Assembly."

"Section 1304. That it shall require a two-thirds vote of said Board of Trustees to authorize the expenditure of any moneys appropriated to said College by the State, or to authorize the sale or transfer or re-investment of any property or moneys arising from the sale of any property under the provisions of this Act."

"Section 1319. All the privilege tax on fertilizers heretofore required to be paid to the Commissioner of Agriculture shall in the future be paid to the Treasurer of the State, subject to the order of the Board of Trustees of the Clemson Agricultural College of South Carolina; and so much of the money so received as shall be necessary to defray the expenses of the Board in performing the duties

now by this Act devolved upon them shall be thus used, and the balance shall go to the said College, for its erection and maintenance."

It will be seen from the above extracts that the State accepted in good faith the terms of Mr. Clemson's will, a feature of which was the maintenance of the College, and recognition of the self-perpetuating life membership appointed by Mr. Clemson.

One of the early official acts of the Board was the passage of a rule that nine votes be required not only to appropriate money, as required by the State Law, but to elect any officer of the College as well. This rule was adopted that there might be no just criticism of domination by the Life Trustees.

## HISTORY OF THE COLLEGE

The College was opened in July, 1893, with an enrollment of 446 students. The session extended from the third Thursday in February to the third Thursday in December, with the idea of giving all students in Agriculture an opportunity to be instructed in the practical phases of that subject during the crop growing season.

On the night of May 22, 1894, the main College building was burned, but the regular work continued, and the building was promptly re-built.

The first graduating exercises were held in December 1896, the graduating class numbering thirty-seven,—fifteen in the Agricultural Courses, and twenty-two in the Engineering Courses. In the fall of 1897, the session was changed to begin the second Wednesday in September and close the second Wednesday in June, as it had been found inadvisable to operate the College through the hot summer months. The exercises of the second commencement, which would normally have occurred in December, 1897, were held Feb. 6 to 9, 1898. The under-graduate classes were continued until June. It will be observed that, owing to the change from winter to summer vacation, there was no class graduated in 1897.

Since 1898 the annual commencement exercises have

been held regularly in June, but the closing day was afterwards changed to the first Tuesday, instead of second Wednesday, and in the session of 1910-1911 to the second Tuesday.

The College has been in continuous operation, and is now in its eighteenth session. During this time, the average enrollment has been 554, and the total, 9961, and the total number of graduates, (estimating the number for the present session at 88), is 767 distributed as follows:

In the Agricultural Courses 295; in the Engineering Courses, 389; in the Textile Courses 83.

The table on the following page gives accurate information as to the attendance, number of graduates, etc.

Session	Total Enrollment	GRADUATES BY COURSES							Total Graduates
		Agriculture	Agriculture & Chemistry	Agri. & Animal Industry	Mec h. & Electrical Eng	Civil Engineering	Chemistry and Geology	Textile Industry	
1893	446	0	0	0	0	0	0	0	0
1894	635	0	0	0	0	0	0	0	0
1895	370	0	0	0	0	0	0	0	0
1896	350	15	0	0	22	0	0	0	37
'97-'98	*449	15	0	0	10	0	0	0	25
'98-'99	446	6	0	0	7	3	0	0	16
'99-'00	461	12	0	0	12	0	0	4	28
'00-'01	483	9	0	0	13	0	0	9	31
'01-'02	500	12	0	0	28	2	0	17	59
'02-'03	539	7	0	0	28	5	0	20	60
'03-'04	605	4	0	0	26	2	0	5	37
'04-'05	637	5	0	0	21	8	1	5	40
'05-'06	652	18	0	0	20	15	0	7	60
'06-'07	658	28	0	0	25	15	0	1	69
'07-'08	690	53	0	7	12	12	1	0	85
'08-'09	648	9	8	10	17	8	3	0	55
'09-'10	653	13	10	10	22	19	1	2	77
'10-'11	703	19	7	18	18	9	4	13	88
Totals	9961	225	25	45	281	98	10	83	767

By an act of the State Legislature in the session of 1904, and amended in the session of 1907, 165 beneficiary scholarships were established, of the value of \$100 per annum each, and free tuition, apportioned among the counties in the same manner as the members of the Senate and House of Representatives. This number has since been increased to 167, by the creation of two new counties.

\*Feb. 8, to July 15, 1897 and Aug. 15, 1897, to June 8, 1898.

## ASSETS

The College property consists of a continuous tract of 1544 acres located at Clemson College, S. C., and 300 acres donated by the Southern Railway near Summerville, S. C.

The College received in addition to the property donated by the Clemson will, half of the Landscript Endowment, making the following total:

Clemson Endowment .. . . . . .	\$ 58,539
836 acres of land, (Fort Hill tract) .. . . . . .	41,800
John C. Calhoun mansion .. . . . . .	2,500
Paintings and personal property of Thos. G. Clemson .. .	

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\$102,839

Landscript Endowment (U.S.) .. . . . . .	95,900
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Total Original Assets .. . . . . . \$ 198,739

Since the establishment of the College, the Trustees have, out of the regular income, not only operated the College, but have accumulated in land, buildings and equipment, over a million dollars, distributed in round numbers, as follows:

Additional land purchased (708 acres) .. . . . . .	30,800
Volumes in Library .. . . . . .	36,000
Public Utilities .. . . . . .	65,000
Buildings .. . . . . .	644,000
Shop, Laboratory and Class room Equipment .. . . . .	360,500

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Total Added Value .. . . . . . \$1,136,300

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## INCOME AND EXPENDITURES

The College derives its principal income from an inspection tax of twenty-five cents per ton on all fertilizers sold within the borders of this State.

During the political campaign of 1888 when the advocates of Agricultural Education were endeavoring to establish Clemson College, they promised that if the farmers would give to the College the Fertilizer Inspection Tax, they would undertake, not only to protect the farmers against fraudulent fertilizers by an efficient system of inspection and analysis, but also to erect and maintain an industrial College to educate

without additional taxation, the young men of South Carolina. This proposition, by vote of the people, was agreed to.

The inspection tax, after deducting for refunded tags, has averaged during the 20 years ending July 1st, 1910, \$91,860.38. For the last fiscal year, which ended July 1st, 1910, the receipts were \$226,980.96.

The following summarized financial statement for the fiscal year ending July 1st, 1910, indicates clearly the sources of income.

Tag tax on fertilizers .. . . .	\$226,980.96
(\$244,770.82 less \$17,789.86 refunded)	
Interest on Clemson Bequest .. . . .	3,512.36
Interest on Landscript Fund .. . . .	5,754.00
Morrill & Nelson Funds .. . . .	20,000.00
Tuition from cadets .. . . .	2,470.00
Miscellaneous, (sales, interests, unexpended balances, etc)	10,492.61
Total .. . . .	<u>\$269,209.93</u>

This income is expended as follows:

1. In Public Work required by Law, and done in the interest of the agricultural development of the State. The moneys thus expended do not aid in operating the College as an educational institution, in the ordinary sense.

#### Details of Expenditures for Public Work

For Fertilizer Inspection and Analysis .. . . .	\$24,253.40
For Agricultural and Textile Scholarships .. . . .	17,222.06
For Coast Experiment Station .. . . .	8,145.90
For Tick Eradication .. . . .	8,166.09
For Veterinary Inspection .. . . .	1,686.80
For Entomological Inspection .. . . .	1,513.50
For Extension Work and Farmers' Institutes .. . . .	4,413.45
For Miscellaneous Travel .. . . .	56.75
Total .. . . .	<u>\$65,457.95</u>

2. In operating the College strictly as an educational institution, including the cost of operating utilities not ordinarily incurred by a College located within a city.

**Operating Cost of College**

Salaries of teachers and officers .. . . .	\$79,890.38
For normal operating expenses of the College—labor, materials, etc .. . . .	53,796.77
For additions to Laboratory, Library, Classrooms and shop equipment (permanent) .. . . .	9,974.34
Total .. . . .	<u>\$143,661.49</u>

**Permanent Improvements**

Permanent Improvements, as buildings, etc .. . . .	\$ 18,859.83
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**Deficit on Cadet Fund**

To make up deficit in cadet fund caused by increased cost of living, for session '08-'09, (paid '09-'10) ....	\$ 6,503.54
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**Condensed Summary of Expenditures**

For Public Work .. . . .	\$ 65,457.95
For Operating College .. . . .	143,661.49
For permanent Improvements .. . . .	18,859.83
For deficit on Cadet Fund .. . . .	6,503.54
Total Expenditure .. . . .	<u>\$234,482.81</u>
Balance Carried forward .. . . .	<u>34,727.12</u>
Total .. . . .	<u>\$269,209.93</u>

(The College is engaged in public service, the magnitude of which the people are slow to understand. For last year ending June 30, 1910, as above, the public service cost the College \$65,457.95, and the appropriations this year for the same and added lines of public work, amount to \$92,101.45, an increase of \$26,643.50.

We are often asked what disposition will be made of the increase in the fertilizer tax, which this year may go to \$260,000, an increase of about \$33,000 over last year.

It will be seen that after deducting the above increase in cost of public work, there remains an increase for the use of the College of less than \$7,000. This is barely enough to keep up wholesome growth).

**S. C. Agriculture Experiment Station.**

In addition to the amounts expended for public State work, the S. C. Experiment Station, supported by the Hatch & Adams fund of the National Government, spent for conducting agricultural experiments \$32,617.49.

# SUMMARY OF RECEIPTS, EXPENDITURES AND THE COST PER STUDENT

For the Period

Nov. 1889 to June 30, 1910, (Nearly 21 Years)

(Taken from Trustees' Annual Reports to Legislature)

## Total Received From S. C.

- |   |              |
|---|--------------|
| 1. From sale of property in Columbia, etc . . . . .   | \$ 25,782.27 |
| 2. From direct appropriation by Legislature . . . . . | 95,000.00    |
| 3. From inspection tax on fertilizers . . . . .       | 1,929,068.87 |

Total received from State . . . . .	2,049,851.14
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## EXPENDED

- |  |               |
|--|---------------|
| 1. Value of inventoried visible assets (not including donations from Thos. G. Clemson) . . . . . | \$ 922 344 16 |
| 2. Expended for Public Work and to comply with enactments of General Assembly as follows:        |               |
| (a) Fert. Inspec. and Analy. . . . .   | \$221,286.79  |
| (b) Ext. Work and Farmers' Institutes . . . . .  | 15,163.49     |
| (c) Vet. Inspec. and Tick Eradication . . . . .  | 29,570.04     |
| (d) Entomological Inspection . . . . .   | 8,521.41      |
| (e) Coast Experiment Station . . . . .   | 34,468.50     |
| (f) Agr. and Text. Scholarships . . . . .  | 80,831.54     |
| (g) Popular Bul'ts. and Fair Exhibits . . . . .  | 6,930.73      |
|  | 396,772.50    |
| 3. Operating expenses of College--17 sessions . . . . .  | 730,734.48    |

Total Expenditure of <u>State</u> Funds . . . . .	\$2,049,851.14
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Total Enrollment for Seventeen Sessions . . . . .	9,258
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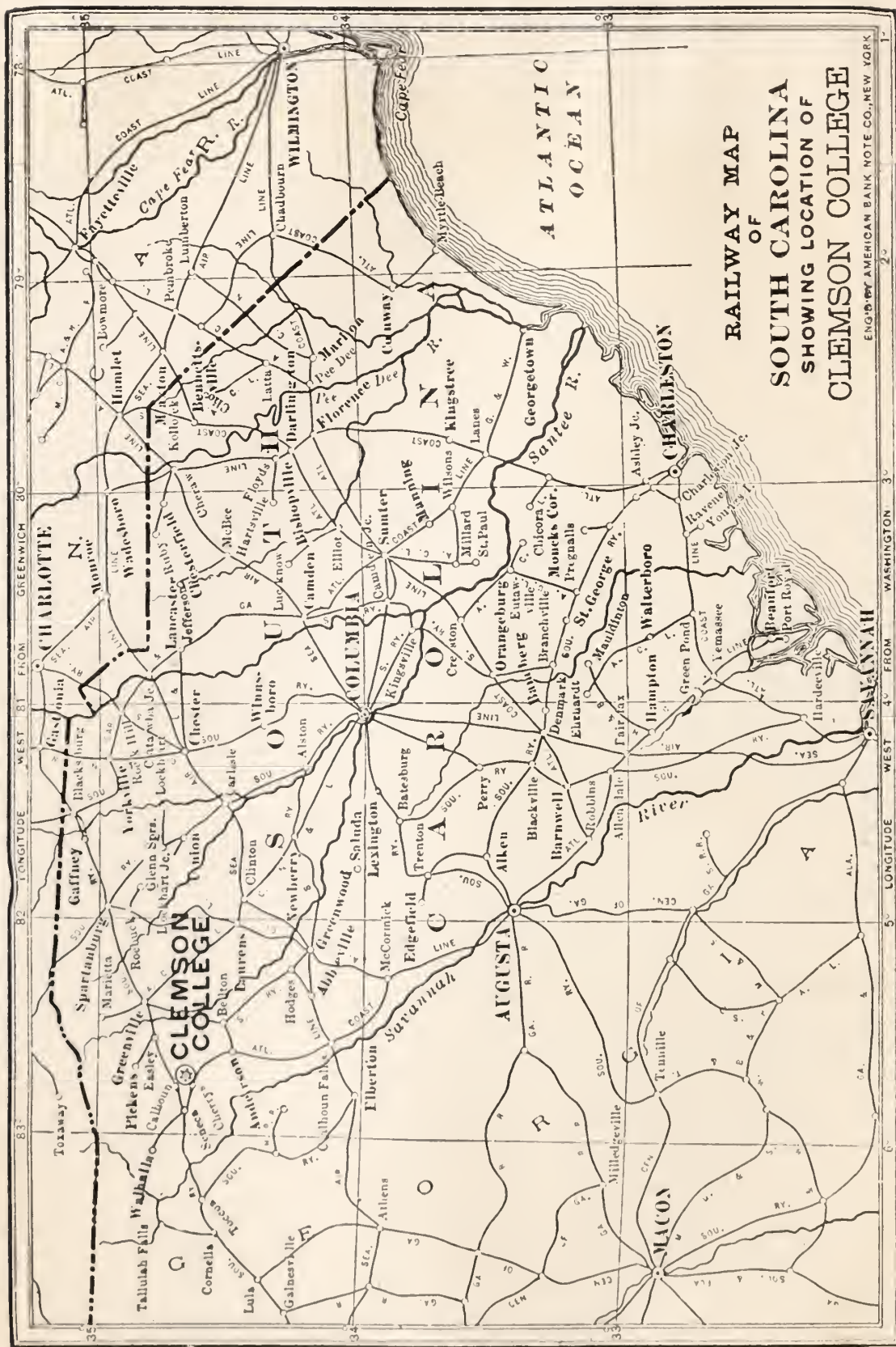
Cost per student per session, to South Carolina, (\$730,734.48 divided by 9,258) . . . . .	\$ 78 93
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## Income From all Sources Available for Operating College

- |  |                |
|--|----------------|
| 1. Amount contributed by State,<br>(See (3) above) . . . . .   | \$ 730,734.48  |
| 2. Federal funds (Morrill, Nelson and<br>Landscript) . . . . . | 375,000.00     |
| 3. Interest on Clemson bequest . . . . .                       | 71,437.30      |
| 4. Tuition . . . . .   | 33,276.41      |
|  | \$1,210,448.19 |

Cost per student per session to all sources . . . . .	\$130.7
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ENG. & AMERICAN BANK NOTE CO., NEW YORK



## GROUNDS, BUILDING AND EQUIPMENT

### Location

The College is located on the Fort Hill homestead of John C. Calhoun, on the dividing line between Oconee and Pickens Counties, in the picturesque foothills of the Blue Ridge. It has an elevation of 800 feet above sea level, and commands an excellent view of the mountains to the north and west, some of which attain an altitude of nearly five thousand feet. The climate is invigorating and healthful, and the surroundings are in every way favorable to the highest physical and mental development.

The College is one mile from Calhoun, a station on the main line of the Southern Railway, and two miles from Cherrys, on the Blue Ridge Railroad. By means of these roads and their connections, the College is easily accesible from all parts of the State. It is connected by telegraph and long distance telephone with all parts of the country. The post office is conveniently situated on the campus, and receives five daily mails.

### Campus and Farm

The College grounds occupy about 1544 acres of land, including the campus, sites of buildings and residences, the College farm, and the Experiment Station grounds. The campus, including about 200 acres, is laid out in walks, drives, and lawns, and is shaded by a beautiful grove of native forest trees.

### The Main Building, Barracks, Etc.

The Main Building is a three-story brick structure, 130 by 149 feet, trimmed with gray sandstone. It contains 22 rooms, including recitation rooms, library and reading room, literary society and Y. M. C. A. halls, physical laboratory, and the offices of the President, the Commandant, the Treasurer, and a reception room. Adjoining this building is Memorial Hall, the College Chapel, which has a seating capacity

of about one thousand. It is used for religious services and as an assembly room. In the tower of this building is a tower clock. The building is provided with steam heat and electric lights.

**The Cadet Barracks** comprise three large brick buildings. One is three stories high and contains 147 rooms for students, a dining hall 134 by 44 feet, and a kitchen 50 by 37 feet. The second building is 199 by 42 feet, and contains 104 rooms. The third building is 45 by 190 feet and contains 111 rooms. These buildings are heated by steam and lighted by electricity, and have an abundant supply of pure 'spring water. The rooms in the barracks are furnished with single-width iron cots and other necessary appointments. The dining hall is well supplied with table linen, silverware, and china, and the kitchen is furnished with modern culinary appliances.

The bathrooms and closets are located in brick buildings apart from the barracks and connected with them by covered gangways.

**The General Water Supply** is collected from springs and surface streams, and pumped from two stations into a stand-pipe one hundred feet high, having a capacity of 130,000 gallons. From this it is distributed through mains to the various College buildings and to all parts of the campus. This water is used for fire protection, sewerage, etc.

**The Drinking Water Supply** is pumped from a bold spring through the barracks, in a continuous stream. It is thus furnished fresh, pure and cold. This and all sources of water supply are kept under constant and strict surveillance,, and the waters are frequently analyzed as a precaution against contamination.

**The Sewer System.**—All of the larger buildings and most of the residences are connected with an adequate sewer system, which empties into the Seneca River more than half a mile from the campus.

**Light and Heat.**—All of the College buildings and most of the residences on the campus are lighted by electricity furnished from the central power station. The seven prin-

cial College buildings are heated by steam.

**Central Power and Heating Plant.**—This plant contains two 150 H. P. Stirling water-tube boilers, and two 100 H. P. Lombard return tubular boilers, with the necessary pumps, feed water heaters, and other auxiliary apparatus.

The power equipment consists of one 114 H. P. Fleming side-crank engine, direct connected to a 70 K.W. 2,300 volt, three-phase alternator with direct connected exciter, and one 122 H. P. Fleming four-valve engine direct connected to a three-wire 75 K. W. direct current generator.

A 75 K. W. rotary converter is used to convert from one kind of service to another.

The switchboard equipment consists of three standard blue Vermont panels, and three black enameled slate panels, all equipped with the latest and best electrical instruments and appliances. The alternator is connected to the rotary converter through three 25 K. W. transformers. All the machinery is of the General Electric Company's make.

The building is 40 by 80 feet, is a single story of brick and cement blocks, with metal roof.

The plant complete cost about \$25,000, and is in every way modern and up to date. It furnishes steam heat for the Barracks and other College buildings, and electric lights and power to every department of the College and the residences of the community. Two pumping stations, situated about one-half mile distant, are electrically operated from this plant. These pumping plants have both steam and electric pumps and an aggregate capacity of 1,200 gallons per minute.

### Agricultural Buildings and Equipments

**The Agricultural Hall** is a building 146 by 94 feet, in colonial style, and constructed of red side-cut brick, with columns and trimmings of oolitic limestone. It is furnished with a complete system of electric lights, water and sewer connections, and steam heat; and provides class rooms and laboratories for instruction in agriculture, horticulture, soil physics, botany and bacteriology, zoology and entomology,

dairying and animal husbandry, geology and mineralogy, and offices for the Experiment Station. It also contains a room 40 by 60 feet, with a gallery for a natural history museum, and a gymnasium hall of the same dimensions below.

**The Horticultural Grounds** embrace an area of thirty acres. Eight acres are devoted to apples for experiment purposes, six acres to peaches, two acres to grapes, two acres to pecans, one acre to plums, seven acres to experiments with small fruits and vegetables, and three acres to ornamental trees, shrubs and flowers.

**The Greenhouse** is 21 by 140 feet and is heated by hot water. It is used for class instruction in ornamental horticulture and for experiment work. The house now contains three thousand large pot plants of various kinds and nine thousand small plants used for bedding purposes on the College campus.

There is another greenhouse with a center building 30 by 30 feet, and two wings, each 20 by 30 feet.

**The Cannery** is a frame building 25 by 35 feet. It is equipped for canning fruits and vegetables of all kinds.

**The Veterinary Hospital** is a two-story frame building 48 by 65 feet, with basement 18 by 30 feet. It is furnished with electric lights, hot and cold water, and is heated by means of stoves. The basement contains a dissecting room and a small room for hot-water plant, coal and general storage. The class room, office, pharmacy and a well equipped clinic and operating room are on the first floor. The laboratory, general store room and attendants' room are on the second floor.

The stable, containing seven box stalls, grain room and hay room, are in an adjoining building.

There is a well-sodded lot containing about two acres connected with the hospital. It is fenced with woven wire and divided into four paddocks. In one of these is an open cattle-shed, 13 by 32 feet.

**The Dairy Building** is a wooden structure constructed

and equipped to illustrate the methods of dairy practice.

The Experiment Station Dairy Barn is a building, 110 by 38 feet, located on one of the highest elevations of the College property. It is a thoroughly modern structure from the standpoint of both convenience and sanitary conditions. It has a concrete floor, is lighted by electricity, and contains water in all parts of the building for washing floors, mixing foods, etc. It is fitted with 38 Taylor steel stanchions, which are both strong and comfortable. At one end of the building are four 50-ton silos. The second floor, which has a capacity of 50 tons of loose hay, is equipped with a hay-carrier that will elevate a load of hay at a time.

A number of paddocks and pastures have been provided to facilitate the management and to furnish sufficient pasturage for the stock.

**Farm Buildings.**—The College farm is provided with commodious barns and other farm buildings of modern design, which are described more fully in connection with the equipment for instruction in Agronomy.

### Division of Agronomy

The classroom, the laboratory and the office of the agronomy division are located on the first floor of Agricultural Hall. The laboratory is supplied with the necessary equipment for familiarizing students with the more important economic plant seed.

The College farm has a large storage barn provided with silos, a cow barn furnished with various forms of stanchions, a mule barn provided with the most improved forms of stalls and feedracks, implement and wagon sheds for storage of tools, etc., and two large cribs for storage of corn.

Among agricultural machinery and implements may be mentioned the following: self-binder, corn-harvester, Deering ball-bearing mower, Osborne mower, self-dumping rake, check-row corn-planter, Buckeye cultivator, B. F. Avery cultivator, Tower cultivator, disc-cultivator, spring-toothed harrow, smoothing harrows, various forms of pulverizers, ma-

nure spreading machines, fertilizer and grain drills, various forms of small fertilizer drills, Planet Jr. drill, two Planet Jr. plows, scientific mill, stone grist mill, Tornado ensilage cutter, small thresher, hand-gin, rock-crusher, road machine, three terrace levels, and a 10 K. W. electric motor.

### Division of Geology and Mineralogy

The division of geology and mineralogy occupies three rooms on the second floor of the agricultural building.

The systematic collections contain about 2500 labeled specimens of rocks, minerals and fossils. These are exhibited in glass cases in the laboratory and the museum, and are available to students and the public. A collection of the minerals and rocks of South Carolina is a prominent feature of the exhibit. There is also an unlabeled collection of minerals for practice in identifying the more important species at sight; and unlabeled collections of the most important minerals are provided for determinative work in the laboratory.

The laboratory is supplied with water and gas and all apparatus and reagents necessary for the determination of minerals by means of their chemical and physical properties. A chemical balance, a petrographic microscope, a photo-micrographic camera, and all important accessories, are also provided.

The classroom is supplied with large physical wall maps of the world and of all continents, a complete series of topographic contour maps, furnished by the United States Geological Survey, an 18-inch terrestrial globe, a 20-inch relief globe, a set of geological and geographical relief models, and several hundred lantern slides.

The geographical department of the College library contains the principal standard works of reference in geology and mineralogy, and receives all the publications of the United States Geological Survey as issued, including annual reports, monographs, geologic folios, and bulletins.

### Soil Physics

The soil physics laboratory is located on the ground floor of the Agricultural Hall and is provided with apparatus for the determination of water content, absorptive capacity, water holding power, and other physical properties of soils, and for performing experiments in evaporation, percolation, capillarity, etc., and making mechanical analyses.

### Division of Horticulture

The classroom of the horticultural division is located on the first floor of the Agricultural Hall. The greenhouse, the hotbeds and the cold-frames are located in the horticultural grounds, where the principal practical work is done. The gardens, orchards and the vineyards are field laboratories for instruction in horticulture.

### Division of Veterinary Science

The veterinary hospital has been described in the account of "Grounds and Buildings" on the preceding pages.

The classroom, the laboratory and the office of the veterinary division are located in the Veterinary Hospital. The laboratory is supplied with microscopes, incubators, sterilizers, chemicals, skeletons, anatomical specimens, plaster casts, and other equipment for technical work.

### Division of Zoology and Entomology

The laboratory, the recitation room and the office of this division are on the first floor of the Agricultural Hall. The laboratory is equipped with simple and compound microscopes, mitrotomes, dissecting instruments, photographic outfit, stereopticon, lantern slides and charts. The entomological cabinet contains a large number of injurious and beneficial insects.

The students have access to a small but carefully selected entomological library.

### Division of Dairying and Animal Husbandry

The dairy building is provided with steam plant and

water works, and everything for making butter and cheese. In this laboratory are located the leading makes of cream separators, churns, and milk-testers.

### **Division of Botany, Forestry and Bacteriology**

The laboratory and class room are located on the first floor of Agricultural Hall. They contain a good equipment for satisfactory work in botany, forestry and bacteriology, including 25 dissecting microscopes, 27 compound microscopes, microscopic slides, lantern slides and charts, Zimmerman microtome, embedding baths, balances, incubator, Arnold & Koch sterilizers, autoclave, dry ovens, anaerobic apparatus. The students have access to a small botanical library.

A creditable beginning has been made in collecting a herbarium. The herbarium has been installed in new insect-proof cases on the museum balcony. The general collection includes the Anderson herbarium of 2,500 mounted specimens, about 700 mounted specimens of American violets, and 1,000 mounted specimens of flowering plants of central New York, as well as a set of the F. V. Coville plants, of New York State. The South Carolina herbarium contains over 1,200 mounted specimens, representing the South Carolina flora, and is kept separate from the general herbarium.

### **Division of Extension Work and Farmers' Institutes.**

From its establishment until 1909 Clemson College had been occupied in educating in improved methods of Agricultural and Engineering practice the boys of this state who were able to attend. At that time the Board of Trustees decided that the time had come when this college could be of greater benefit to the people of the state. It recognized the fact that, though destined to follow agriculture in after life, many boys of the state are unable to attend the college. Then too, there are in the state many men actually engaged in agriculture, who can be helped by carrying to them the scientific facts of agriculture. In order that these classes might be reached and benefited, the Board established in the Agricultural Department the Division of Extension

Work and Farmers' Institutes.

The men of this division have nothing to do with the teaching in the college, but devote their whole time to helping the farmers and others of the state. The men of this division work in two ways:

First: They form the basis of a permanent institute corps to hold institutes at such times as the farmers of the state are at leisure to attend. The majority of these institutes will be held in the rural districts, where they will reach those farmers most in need of them.

Second: Each of these men selects a few farmers scattered over the state who are interested in their special line of work. These men are visited regularly and receive the benefit of the advice of the expert. An accurate account of all operations and their results is kept and will be published in bulletin form for the benefit of the others.

The Assistant in Rural School Agriculture encourages the teaching of agriculture in the rural schools. To this end he selects a few schools and visits them regularly, giving regular agricultural instruction. In addition he meets the teachers in their various organizations and, by pointing out to them subjects and methods, encourages them to teach agriculture themselves.

In addition, to this regular force, every man in the college and especially in the Agricultural Department and the Experiment Station is called upon to help in the work. Each paper in the state is supplied once a week with a short article by some member of the faculty giving useful information upon some pertinent subject. This constitutes a good reading course for farmers and others.

The Engineering Department has prepared a bulletin giving plans and specifications for building the simpler rural school houses and stands ready to extend similar help in other lines of rural construction.

A Correspondence Course in Agriculture, designed primarily for the benefit of the rural school teachers, is also established. This will be followed later by a number of short

courses to be given at the college. Once a year during the summer a state institute, or farmers' congress, to last three or four days, will be held at the college.

### Engineering Buildings and Equipment

The Mechanical Engineering Building is a substantial brick structure containing about 35,000 square feet of floor space. On the first floor are mechanical laboratory, machine shop, wood shops, forge shop, and foundry. On the second floor are the offices and the drawing and designing rooms. The third floor is devoted to class rooms and to the division of civil engineering.

The Electrical Instrument Laboratory is a brick building of special design, arranged especially for delicate instrument work.

The Dynamo Laboratory is a modern brick structure 37 by 80 feet. Besides containing the dynamo electric machinery for instructional use, it also contains the electrical engineering lecture room.

### Division of Mechanical Engineering

This laboratory is situated on the ground floor of the Engineering Building, and occupies a room 51 by 45 feet, and contains the following equipment:

**For Steam Engineering.**—One 15 H. P. horizontal, locomotive type boiler; one 6-H. P. vertical boiler; one 6-H. P. Erie, plain slide valve steam engine, throttling governor; one 5-H.P. vertical engine built by students; 15-H.P. Payne high speed, automatic cut-off engine; one Corliss cross compound engine, arranged to run either condensing or non condensing and with either or both cylinders with high pressure steam; one 7-K.W. Curtis steam turbine non-condensing, direct connected to a two-pole direct current compounded generator; one Wheeler surface condenser, with combined air and circulating pumps; one set steam gauge testing apparatus; one Carpenter's Separating Calorimeter; two Carpenter's Throttling Calorimeters; six steam engine indicators of various makes; four injectors; two draft gauges; five steam gauges.

**For Hydraulic Engineering.**—One Power Triplex pump; one Pelton water motor; two hydraulic rams; three duplex pumps of different makes; one weir; one Hook Gauge; one altitude gauge.

**For Compressed Air.**—One Clayton air compressor, water jacketed; one improved air motor.

**For Fuel and Lubricants.**—One Carpenter's coal calorimeter with scales, balances and oxygen generating device; one standard viscosimeter; one Thurston friction tester.

**For Testing Materials.**—One 100,000-pound Olsen automatic vertical testing machine driven by 5-H. P. Westinghouse electric motor, and fitted for either tension or compression; one Fairbanks' cement testing machine; one Vicat needle with proper sieves and moulds; one graduated flask for determining specific gravity; one moist closet for storage; one 3,000-pound tranverse testing machine.

The laboratory also contains a 5-H. P. Otto gasoline engine; one Ericsson hot air engine; a 6-H. P. transmission dynamometer, graduated to read horse-power direct and built by students; four platform scales; four spring balances; seven mercury thermometers; one electrical resistance thermometer; two Bristol thermo-couples for reading temperature to 2,000 and 2,900 degrees F. respectively. All apparatus is so arranged that it may be used for separate or combined tests. Besides the apparatus in this room, the apparatus in the Power Station and the Pumping Stations are available for instruction and tests.

### Division of Electrical Engineering.

This division occupies two single-story brick buildings, heated by steam and lighted by enclosed arc and incandescent lamps.

**Electrical Instrument Laboratory.**—This is a separate building, especially designed for delicate electromagnetic work, no iron, steel or other magnetic substances having been used in its permanent construction. Its equipment contains the following instruments and apparatus: Leeds and Northup potentiometer with volt bed and standard resist-

ances for current measurement; Kelvin deka ampere balance; Weston laboratory standard voltmeter with multipliers; Becker analytical balance and weights; two 1-6-H.P. Crocker Wheeler motors; fifteen galvanometers, (including tangent, Kelvin, D'Arsonal and ballastic instruments); nine standard resistance sets; three standard resistance and Wheatstone Bridge sets; four meter-wire bridges; one magnetometer; two standard condensers; commercial condensers; Weston and Carhart-Clark standard cells; ammeters; voltmeters; rheostats; keys; switches; storage cells; primary cells; and other miscellaneous apparatus; also a quantity of special apparatus made in the College shops and laboratories.

The instruments in the above equipment are from such makers as Elliott Brothers, Nalder Brothers, Leeds and Northup, Queen and Company, Weston Electrical Instrument Company, etc.

**Dynamo Laboratory.**—This building is 37 by 80 feet, with basement. The main floor is divided into a lecture room 35 by 25 feet, and a laboratory 35 by 53 feet. The basement contains a supply room and a large dark room.

The lecture room has raised seats, and is equipped with instruments, illustration models and other demonstration apparatus, including an electro-magnet capable of supporting the weight of two tons.

The dynamo laboratory equipment contains the following instruments, machines and other apparatus: direct current instruments: voltmeters: two Weston portable; two Weston switchboard; one Jewel portable; ammeters; three Weston milli-voltmeters, with current shunts; four Weston switch-board; one Jewell portable; wattmeters; two Thomson recording, and two Weston indicating.

Direct current dynamos: 17-K. W. Lundell, 15-K. W. Mather, 2½-K. W. Crocker-Wheeler, two 2-K. W. Kester, 15-H. P. Kester, 10-H. P. Kester, ½-H. P. Kester.

Arc Lighting Apparatus: Brush and Thomson-Houston Generators, a General Electric Company constant current transformer, open and inclosed arc lamps.

Alternating Current Instruments: voltmeters: one Weston portable, one Whitney hot wire, five Thomson inclined coil, one Cardew, one Aryton and Perry, one Hoyt, one Kelvin electrostatic. Ammeters: one Westinghouse portable with current transformer, one Stanley hot wire, seven Thomson inclined coil, one Seimens electro-dynamometer. Indicating Wattmeters: two Weston, two General Electric Company.

Alternating Current Apparatus: 15-K. W. General Electric Company, single, two, three and six phase revolving field generator, complete with marble switch board and full set of indicating instruments. 7 ½-K. W. General Electric Company single, two and three phase rotary converter. 7-K. W. three-phase converter built by students. General Electric Company single, two and three-phase induction motor, three 3-K. W. and three 5-K. W. constant potential transformers. General Electric Company condensers, assortment of coils, models, etc.

Miscellaneous: 50-H. P. high speed McEwen automatic engine, 3-ton portable crane, two Schaeffer and Budenberg tachometers, prony brake, rheostats, circuit breakers, switches, fuse testing apparatus, lightning arresters, etc.

The Dark Room is equipped with apparatus for high potential, high frequency and X-Ray work, and a Deshler-McAlister central station photometer with rotating stand for incandescent lamp testing.

The machinery in the dynamo laboratory is driven by the 50-H. P. engine and by motors. Steam and electric power for these is furnished by the central power plant, described on another page. Students have access to this plant, and are thus enabled to see the practical workings of a combined electrical power, light, and heating plant, and to test its efficiency. The problem of power distribution and utilization can also be studied from a practical example.

### Division of Civil Engineering

The collection of field instruments contains the following:

One complete transit with solar attachments; three engineer's transits; four railroad compasses; two six-inch vernier compasses; one precise level; three twenty-inch wye levels; one dumpy level; two architect's levels; one convertible architect's level; one drainage level; one Locke hand level; one binocular hand level; two stadia hand levels, with a supply of self-reading and target rods. One complete plane table; a Price current meter, with steel boat and truck sextant; aneroid barometer; flag poles; tapes; chains and all necessary accessories.

The office equipment includes planimeter, slide rules and drafting instruments.

### Division of Physics

The physical lecture room and laboratory is situated in the main College building, is 33 by 60 feet, and is well equipped with apparatus for both the lecture and the experimental work of a general course in physics.

### Division of Drawing and Designing

This division is located on the second floor of the Engineering Building, and occupies seven rooms, two of which are used by the Freshman Class in Freehand Drawing, two by the Freshman Class in Mechanical Drawing, one large room by the Junior and Senior Classes in Mechanical Drawing and Machine Design, the other as an office.

These rooms were designed for the use of the division, and are of ample size, well lighted, and well equipped with individual lockers for about 500 students, and drawing tables for about 25 students at a time in each room.

They also contain a large number of models of various kinds; reference books and tables; and a display of catalogues and drawings from manufacturing firms and of the best student work, all of which are of great benefit to the student in his work. The more expensive and less used instruments are kept in the office for the use of any student needing them. Two blue print rooms adjoin the other rooms of the division and are well equipped with all necessary frames and appa

ratus for printing by electricity and sunlight. All students are required to furnish their own instruments, boards, T squares and other material. They are advised to buy these at the Cadet Exchange, where samples can be seen and wholesale prices obtained. All drawing tools used by students must be approved by the instructor in charge; second hand or inferior instruments will not be accepted. Students make a mistake in buying low-priced instruments, which appear to be of good quality, but are inferior and will not give good service, soon necessitating the purchase of another set.

### Division of Forge and Foundry

**Forge Shop.**—The forge shop is located in a wing of the Mechanical Engineering building, and occupies a room 37 by 44 feet. The equipment is installed under two separate systems. One system consists of 18 Buffalo down draft forges; 18 Eagle anvils equipped with small tools; a 60-inch exhaust fan; a No. 4 direct connected pressure blower; a drill press; an emery grinder; a bending cone; a Buffalo iron shear; two swage blocks; a vise and work bench. The other system consists of 18 Sturtevant down draft forges; 18 Eagle anvils, thoroughly equipped with small tools; a 60-inch exhaust fan, and a No. 4 pressure blower, both directly connected to electric motors.

**Foundry.**—This building occupies a space 43 by 76 feet, and is free from posts or other obstructions. It is equipped with a 26 Victor Calbion cupola, driven by a No. 7 pressure blower; a Millets core oven; a two-ton post crane; eight improved moulders' benches; hand, bull and truck ladles; and a full equipment of the moulders' tools.

The brass foundry is equipped with an 18-inch brass furnace, crucibles, tongs, drying stone, and other accessories.

### Division of Machine Work

The Machine Shop occupies the ground floor and part of the basement of the south-west wing of the Engineering Building, the main floor being 45 by 100 feet, lighted from one end and both sides, and steam heated.

The equipment is as follows: suitable benches and vises for chipping, filing, etc., and for assembling machines; one 18-inch 12-foot-engine lathe; one 18-inch 8-ft. engine lathe; eleven 14-inch six-foot engine lathes; one 10-inch four-foot turner's lathe; one 15-inch 8-foot speed lathe; two universal milling machines; two 18-inch vertical drilling machines; one 28-inch vertical drilling machine; one 22-inch 6-foot planer; one universal tool and cutter grinder; one 10-inch by 32-inch universal grinding machine; one 14-inch shaping machine; one 10-inch slotting machine; one 22-inch wet emery tool grinder; one twist drill grinder; one dry emery grinder; one 36-inch grind stone; one power hack saw; one fan blower; forge, anvil, and set of smith's tools.

Twelve sets of tools in portable cases are provided for the use of the students, each set containing an assortment of chisels, files, cutting tools for lathe work, hammer, monkey wrench, steel scales, screw driver, spring calipers, dividers, scribe, rule, center punch, center gauge, one inch micrometer caliper, oil can and cotton waste.

A tool room is located in one end of the shop, in which is kept an extensive assortment of tools, some of which are: a set of twist drills from 1-6 to 2 inches; a set of machinist hand reamers from 1-8-inch to 4 inches; a set of Morse standard taper reamers; a set of taper pin reamers; a set of internal and external caliper gauges from  $\frac{1}{4}$  inch to  $2\frac{1}{2}$  inches; a set of U. S. standard taps and dies from 1-16 to  $1\frac{1}{4}$  inches; a set of clamps, dogs, lathe, planer and shaper tools, milling machine cutters and emery wheels; a center grinder; standard gauges; and internal and external micrometer calipers from 0 to 6 inches.

A supply of steel and brass, and a large assortment of screws, bolts, nuts, etc., are kept in stock.

All of the machines are driven from one line shaft, running the full length of the shop, and driven by a 15-horse power electric motor that was built in the shop.

Artificial lighting is accomplished by means of four arc lamps.

### Division of Woodwork.

The Woodwork Division consists of two shops, both on the ground floor. The first, 37 by 100 feet, is divided into two class rooms, both of which are supplied from one well-equipped tool room.

The freshman class room contains eight turning lathes, and fifteen work benches, each supplied with a full set of tools.

The sophomore class room is equipped with eight turning lathes with tools, eighteen work benches, and ninety sets of bench tools, a separate set for each student. This room also contains a large pattern lathe, one 30-inch band saw, one jig saw, two grind stones, and one universal trimmer.

The other shop is equipped with planing mill machinery, consisting of a double-roll planer, one rip saw, one cross-cut table saw, one swinging cut-off saw, one lathe with 12-foot bed, one jointer, one moulding machine, one tenoning machine, one doubleheaded shaper, one single spindle carver and shaper, one mortising and boring machine, one re-saw, one swinging arm sand papering machine, and an assortment of benches, clamps, glue pots, etc.

This shop is 40 foot by 100 foot, and is driven by a 20-H. P. electric motor. Each class room also has its individual motor drive.

A lumber yard and steam dry kiln adjoins.

### Chemical Buildings and Equipment

The original chemical laboratory is a two-story brick building, 50 by 80 feet, covered with slate and finished inside with Southern pine. Overlapping this at one corner, and connected with it by a glass-enclosed passage, is a new somewhat similar building, 35 by 86 feet, of modern style and handsome design. This double building, which is well ventilated, heated by steam and lighted by electricity, constitutes a commodious structure adequate to all the needs of the department.

On the first floor of the old building, which is used for

academic work, there are five rooms. Three of these are employed as laboratories for agricultural seniors and juniors. Of the remaining rooms on this floor, one is a balance room, while the other is used as a class-room.

On the second floor of this building there are two large laboratories, one for the juniors in analytic chemistry, the other for the sophomores in general chemistry. A third, and smaller room, is used as a balance room.

The junior laboratory will accomodate 72 students, 36 at a time; the sophomore laboratory, 120 students, 60 at a time. The laboratories are all provided with hoods for carrying off noxious gases, convenient working tables, water, gas, electric lights, and all necessary appliances for experimental work.

The basement of the building is used for assaying, for the preparation of distilled water, and for storage. The air pump and the mixer of the gas machine for supplying the laboratories with gas are placed in this basement and connected with the generator, which is buried 85 feet from the building.

On the first floor of the new building there are nine rooms, all of which are appropriated to state analytical work and agricultural analysis. On one side of the wide hall, which extends the entire length of the building, are the rooms for the analysis of fertilizers. Three of these rooms are used, respectively, for the determination of phosphoric acid, nitrogen and potash; the fourth as a balance room; the fifth and last as a sample room. On the other side of the hall there are four rooms. The largest of these is used for agricultural analysis. Adjoining is a balance room, in which provision is made also for electrolytic apparatus. Of the remaining rooms, one is used for water analysis, the other as an office.

On the second floor of this building there are seven rooms; a lecture room, and six smaller rooms, which are used for recitations, cabinets, apparatus, chemicals, library, and professor's laboratory.

The lecture room will seat 170 students, the seats being arranged in tiers.

The hoods in both buildings are all connected by earthenware pipes with a tightly built room just under the roof, over each of which there is a large ventilator.

The rooms in the basement are used for assaying ores, and for storage. In one of these rooms there is a gas machine for supplying gas especially to the new building, though this machine and the one in the old building are so arranged that either may be used to furnish gas to both buildings in case of necessity.

### Textile Building and Equipment

The building is a brick structure of modern cotton mill design, 168 by 75 feet. It is of the slow burning type, built according to fire insurance regulations, after plans of an experienced mill engineer. The building, although designed for educational and experimental purposes, containing office, lecture-rooms and laboratories, retains the more prominent features of a typical Southern cotton mill. This affords the student an opportunity of gaining many points of valuable information in connection with mill construction, along with the manipulation of cotton fibres and the study of cotton mill processes and operations.

The first floor is occupied by the picking, carding and spinning machinery, a lecture room, the main office, an exhibit room and the departmental library. The machinery on this floor is driven by two electric motors, one a 30-H. P., 220-volt, direct current Westinghouse motor, driving the carding machinery, and a 20-H.P., 220-volt, direct current General Electric Company motor, driving the spinning machinery.

The second floor is occupied by two weave rooms, three lecture rooms, laboratory for organic chemistry, an office and two store rooms. The power looms on this floor are driven by a 20-H. P., 220-volt, direct current General Electric Company motor.

The basement, which is situated under the north end of the building is occupied by the dye-house and laboratory for industrial chemistry.

The building is equipped with a system of "Vortex" humidifiers from the American Moistening Company; steam-heating system and automatic fire-sprinklers from the D. A. Tompkins Company; shafting, pulleys and hangers from Jones & Laughlin, Ltd., and from T. B. Wood's Sons.

### Division of Carding and Spinning

The equipment of this division is as follows:

**Pickers.**—One Atherton automatic feeder; one Atherton breaker; one Atherton finisher lapper, with evener motion.

**Cards.**—One Saco & Pettee 40-inch revolving top flat; one Mason 40-inch revolving top flat; two traverse wheel grinders; two drum traverse grinders; stripping and burnishing rolls; two complete sets of carders' tools.

**Combing.**—One Mason sliver lap machine; one Mason ribbon lap machine; one Mason six-head combing machine.

**Railway Heads.**—One Saco & Pettee railway head, with evener motion, stop motions, and metallic rolls; one Mason railway head, with evener motion, stop motion, and metallic rolls.

**Drawing.**—Two Saco & Pettee drawing frames, four deliveries, stop motions, and metallic rolls; one Mason drawing frame, four deliveries, stop motions, and metallic rolls.

**Fly Frames.**—One Saco & Pettee 12-inch by 6-inch 40-spindle slubber, with latest differential motion; one Saco & Pettee 8-inch by 4-inch 60-spindle intermediate roving frame, with latest differential motion; one Woonsocket 6-inch by 2½-inch 96-spindle jack roving frame, with Daly's improved differential motion.

**Ring Spinning.**—One Saco & Pettee combination warp and filling ring spinning frame, 128 spindles; one Mason combination warp and filling ring spinning frame, 112 spindles; two Fales & Jenks combination warp and filling ring spinning frames, 80 spindles each, designed for spinning fine counts; two Whitin combination warp and filling ring spinning frames, 80 spindles each.

**Mule Spinning.**—One Mason self-acting spinning mule,

120 spindles, 1¾-inch gauge, with all latest improvements.

**Spooling.**—One Draper spooler, 40 spindles; one Saco & Pettee spooler, 72 spindles; one Barber & Coleman knotter.

**Twisting.**—One Draper combination wet and dry twister, 48 spindles; two Fales & Jenks wet twisters, combination filling and taper top wind; 70 spindles each.

**Winding.**—One Universal cone and tube winder.

**Reeling.**—One D. A. Tompkins Company adjustable reel, 50 spindles.

The division of carding and spinning is equipped with all necessary supplies, such as doff-boxes, roving-cans, bobbins, spools, cops, cones, tubes, and change gears for all machines.

### Division of Weaving and Designing

The equipment of this division is as follows:

**Winding.**—One W. W. Altemus & Son bobbin winder; one Atwood-Morrison Company bobbin winder; one Geo. W. Payne & Company skein winder.

**Dressing.**—One Davis & Furber dresser, one Davis & Furber jack spooler.

**Warping.**—One Draper section warper; one Draper ball warper.

**Beaming.**—One Entwistle beaming machine.

**Jacquard Card Cutting.**—One John Royle, French index, foot-power card-cutter.

**Hand Looms.**—Seventeen 15-inch hand looms with 4x4 box motions and 30 harness shedding engines, arranged for four beam work.

**Power Looms.**—One 40-inch Northop loom fitted with 16-harness Stafford dobby; one 28-inch Northop loom with steel harness warp stop motion; one 36-inch Mason Gingham loom with 4x1 box motion; one Mason 44-inch loom with Stafford 20-harness dobby; one Mason 40-inch cam loom, arranged for 2, 3, 4 and 5 harnesses; one Stafford 30-inch fancy cotton loom with 20-harness dobby and leno attachment; one Stafford 30-inch loom with Halton 624-hook, double lift,

single cylinder jacquard; one Crompton & Knowles 40-inch "Gem" loom, with 30-harness dobby and 4x4 box motion; one Crompton & Knowles 26-inch fancy towel loom with 16-harness dobby and 3x1 box motion; one Crompton & Knowles 64-inch loom, 4x1 box motion, fitted with 624-hook, double lift, single cylinder jacquard, tied for weaving damask; one Whitin 40-inch cam loom arranged for 2, 3, 4 and 5 harnesses; one Whitin 40-inch fancy cotton loom with 20 harness dobby; one Whitin heavy pattern duck loom; one Crompton & Knowles 30-inch fancy cotton loom with 16-harness dobby and 2x2 box motion; two Kilburn & Lincoln 38-inch cam looms; one Knowles 30-inch loom with 416-hook, single lift, swing cylinder jacquard tied for weaving napkins; one 28-inch "E" model Draper loom with steel harness stop motion; one 28-inch "E" model Draper loom with two thread warp stop motion; one 28-inch "E" model Draper loom with Lacy top rig and tape selvage motion, arranged for two, three, four and five harness work; one 28-inch "K" model Draper loom with 20-harness dobby, double filling fork and feeler, arranged for two beam work.

### Division of Textile Chemistry and Dyeing

The work in textile chemistry and dyeing is carried on in an experimental laboratory and a practical dyehouse. These are equipped with the necessary apparatus and chemicals for instruction in organic chemistry, scouring, bleaching, dyeing, mercerizing, printing, etc.

The experimental laboratory is fitted with appropriate work-tables, furnishing accommodations for 64 students, working by detachments. Each table is supplied with the necessary arrangements for gas and water, and drawers and lockers in which may be stored apparatus and unfinished experiments.

The Dye House contains nine dye vats, four fitted with copper heating coils, one for peroxide bleaching; one Schaum & Uhlinger self-balancing hydro-extractor; one model Vacuum dyeing machine with steam engine attached; one Birch sample

dyeing machine with electric motor attached; one calico printing machine; one mercerizing machine for yarn; one steaming and ageing box; one 20-gallon jacketed copper kettle; one drying closet.

### Department Library

For the use of students and instructors, a reading room in the textile building has been fitted up and is furnished with some of the more important books of reference relating to the textile industry, and also with the leading periodicals relating to the subject. All journals and periodicals are contributed. There is also in this room an exhibit of the work done by the students in the different divisions of the department, and an equipment of old machinery, illustrating the methods used before the introduction of power machinery. The room is open every week-day throughout the session.

### Office of Fertilizer Inspection

The main floor and half of the basement of the two-story brick building between the chemical and the engineering building are used for the office of the Board of Fertilizer Control. The Clemson College post-office is located in the other half of the basement, and the college printery occupies the second floor. The printery equipment is as follows:—One Babcock regular drum cylinder printing press, 22 by 27 inch bed; two Chandler & Price job presses; one Chandler & Price cutter; one Morrison stitcher; two perforators; one letter folder; two Hammond cabinets; two imposing stones; one No. 1 model linotype machine with supply of matrices for same; a supply of type, furniture, etc. All the machines are driven by individual motors. The college reports, bulletins and miscellaneous stationery are printed here, much of the work being done by students.

### Gymnasium

A large room in the basement of the Agricultural Hall has been set aside by the Board of Trustees for a gymnasium. This room is equipped with well-selected gymnasium appa-

tus, such as a horizontal bar, parallel bar, spring board, traveling rings, flying rings, climbing rope, horse, low parallels, floor mats, and take-off board.

The object of the gymnasium is to give training all the year round to those students interested in athletics, so that they may constantly be in good condition for work on the athletic teams. It is also designed for those students who do not take other forms of exercise, but depend upon the gymnasium for their only means of physical development. The work is not required, but is engaged in by a large number of students. A member of the faculty superintends the work and directs the exercises.

### Museum

On the first floor of the Agricultural Hall, the Museum of Natural History is located. During the past year the museum has been furnished with large cases, and the collections of the geologist, the entomologist and the botanist have been installed.

### Hospital

The Hospital, located about a quarter of a mile from the Barracks, is a wooden building, especially designed for the purpose. It is lighted by electricity, and has a thorough sewerage system. The hospital is in the immediate charge of the surgeon, who is assisted by an experienced matron and nurses, thus insuring the best personal attention to each patient.

### Laundry

The Laundry is a brick building especially constructed and fitted with the improved machinery of a modern steam laundry, and is operated exclusively for the students.

### Library

In the main building is a series of rooms especially constructed for the use of the Library. There are now upon the shelves 10,654 volumes, classified under the various heads of literature, history, biography, science and reference books. In addition to these in the general library, there are 1,493 volumes

in Experiment Station and department libraries of the College. There are also about 5,000 government publications and 200 reference books, together with about 6,000 pamphlets. The library is supported by an annual appropriation, and the number of books is added to each year.

In connection with the library there is a reading room in which the students have access to 35 of the leading monthly periodicals, 14 weekly, the principal daily papers of the State and many of the county papers.

### The Clemson Relics

A collection of thirty-seven oil paintings, collected by Mr. Clemson, chiefly in Holland, together with a number of additional portraits, may be seen in the reception room in the main building.

### The Calhoun Relics

Several pieces of furniture and other interesting relics, formerly the property of Mr. Calhoun, are carefully preserved in the Calhoun Mansion, where they may be seen by visitors to the College.

### Residences and Hotel

The Calhoun Mansion, the former residence of John C. Calhoun, is kept in honor of his memory, in accordance with the provisions of Mr. Clemson's will.

**Residences.**—Ten two-story brick buildings, nine six-room cottages, thirty-five smaller houses, all situated on the campus, furnish residences for professors and other officers of the College.

**Clemson Club Hotel.**—The College Hotel, a frame building with two eight-room annexes, situated on a hill overlooking the campus, is operated by several members of the Faculty. In addition to furnishing a home for the members of the club, it is open the entire year to a limited number of transients.

## ORGANIZATION OF THE COLLEGE

1. **Agricultural Department**
  - Agriculture
  - Geology and Mineralogy
  - Horticulture
  - Veterinary Science
  - Zoology and Entomology
  - Dairy and Animal Husbandry
  - Botany, Forestry and Bacteriology
  - Extension Work and Farmers' Institutes
2. **Engineering Department**
  - Electrical Engineering
  - Mechanical Engineering
  - Civil Engineering
  - Physics
  - Drawing and Designing
  - Forge and Foundry Work
  - Machine Work
  - Wood Work
3. **Chemical Department**
  - Chemistry
  - Metallurgy
4. **Textile Department**
  - Carding and Spinning
  - Weaving and Designing
  - Textile Chemistry and Dyeing
5. **Academic Department**
  - English
  - History and Political Economy
  - Mathematics
6. **Military Department**
  - Military Science and Tactics
7. **Agricultural Experiment Station**

### Organization and Mode of Government

Board of Trustees. This board assumes the legal responsibility of the institution, cares for its general interests, and

directs its course by the enactment of all necessary by-laws and regulations.

The President is the executive head of the College, and has general supervision of all matters within and pertaining to the College, and is charged with executing all rules and regulations passed by the Board of Trustees.

The College is divided into seven departments, namely: I. Agricultural, II. Engineering, III. Chemical, IV. Academic, V. Textile, VI. Military, VII. S. C. Agricultural Experiment Station. A Director is at the head of each department, and is responsible to the President for its conduct and success. The departments comprise the various divisions indicated on the opposite page. The divisions are in the immediate charge of the Professors, Associate and Assistant Professors, and Instructors of the respective departments. The President conducts all official business with each department through its Director.

The Directors and the full Professors constitute an advisory body to the President, known as the General Faculty, which meets periodically to confer upon all matters pertaining to the interests of the College and students.

In order to aid him in his executive duties the President appoints Committees from the Officers of Instruction, to which are assigned certain specified lines of work.

The Discipline Committee, established by the Board of Trustees, is composed of the President, the Directors and the full Professors. All important questions of discipline involving possible suspension or dismissal are considered by this body. The treatment of minor offenses rests with the Commandant.

The students are allowed wide latitude in carrying on affairs which concern themselves, such as athletic, literary, musical and social organizations. The aim of the Faculty is to assist in every possible way in making these interests helpful to the student body as a whole. In these matters the disposition is to allow a reasonable amount of time for recreation, and to contribute as far as possible towards making the

students contented and happy.

### Military Organization and Mode of Government

The following extracts from the Regulations for the Government of Cadets explain the organization and mode of government of the corps.

"1. The President of the College shall have the general command and government of the institution, watching over its administration, discipline and instruction."

"2. The Commandant of Cadets, under the President of the College, has immediate command and control of the corps of cadets in all that pertains to its organization, drill, military police, discipline and administration. He is charged with the instruction of the cadets in the theoretical military course and in all practical military exercises. He will prescribe the order in which the furniture, bedding, books, clothing, equipments, etc. shall be arranged throughout the barracks, and shall, in person, make a minute and thorough inspection of the rooms, furniture, arms and accoutrements, etc. of the cadets at least once each week, and make a report thereon to the President."

"3. For instruction in tactics and for military police and discipline the corps of cadets will be organized into one or more battalions of two or more companies each, and a band when practicable. In case the number of cadets will permit of the formation of two or more battalions, the organization will be regimental."

"4. The cadet officers and non-commissioned officers will be appointed by the Commandant of Cadets, subject to the approval of the President of the College. The selection for these positions will be made from those cadets who have been most studious and soldier-like in the performance of their duties and most exemplary in their general deportment. As a rule, the cadet captains and lieutenants will be selected from the senior class; the non-commissioned staff and the sergeants from the junior class; and the corporals from the sophomore class."

### Leave of Absence

All communications from parents, requesting leave of absence from the College for their sons, must be addressed directly to the President, not through the cadets.

A parent must remember that as long as their sons are students in the College they must submit to the rules made for the government of all.

A parent has the right to **withdraw** a son from College, but not to insist that he be given a leave of absence in violation of the rules or policy of the Institution. To obtain a leave of absence his reasons must be satisfactory to the President. In general no permits will be granted that interfere with regular work, including the study hours.

The rules governing in case of permits to visit home during the session of the College require that cadets who have accumulated more than eight demerits in any one term, and who have fallen below grade two in their studies on any report, will not be allowed to leave College during the term except in cases of extreme sickness or death in the family.

No leave of absence or honorable discharge will be granted during the last term, except for serious causes.

A student who has been granted leave of absence and who stays over the time allowed, unless for sickness or other good and valid reasons acceptable to the President, will lose his place in the College and will be required to file a new application for admission and pay the matriculation fee of \$5 again before being allowed to re-enter. In case he has been sick, a certificate from the attending physician must be submitted.

### General Regulations

The "Rules and Regulations for the Government of Cadets," a copy of which is furnished each cadet, contains the following:

Cadets must at all times be respectful in their bearing to professors and other officers of the College.

Cadets are subject to military discipline at all times, and

are required to take part in drill, guard duty and other military exercises.

All undergraduate students are required to board in the barracks, except those who live with their parents or relatives near enough to attend from their homes.

Those occupying a room are consulted before another student is assigned to that room. A student not satisfied with his room-mate has the privilege of applying for permission to move to another room, and such applications are granted when practicable.

No trunks, bags or boxes will be allowed in the rooms of cadets. Trunk rooms accessible at stated times will be provided for storing trunks.

The practice known as "hazing" is positively forbidden. All cadets upon matriculation are required to sign a pledge not to indulge in hazing or injuring in any form the person of any cadet or give countenance or encouragement thereto while a member of the corps of cadets. Any cadet indulging in this practice will be dismissed from the College.

If any cadet shall consider himself wronged by another, or by any officer of the College, he has the right to complain thereof in writing to the President, who will examine into the complaint and take such measures for redressing the wrong as he may deem proper.

All combinations of cadets for the purpose of censuring one of their number are prohibited; also all combinations to defeat the purpose of any regulation of the College.

Cadets are forbidden to keep in their possession any fire-arms or other weapons not issued by the proper authority.

The College rules require that all students be vaccinated, and parents are advised to have this done before sending their sons away from home.

Any cadet who leaves barracks without authority between retreat and reveille shall be dismissed.

Cadets are positively forbidden to use, or have in their possession, intoxicating liquors of any description.

Profanity and gambling are positively forbidden.

The smoking of cigarettes is positively forbidden. During the hours from 9:00 A. M., to 1:00 P. M., and from 2:00 P. M., to 5:00 P. M., cadets will not be permitted to smoke on the campus or in the college buildings.

Cadet "limits" is defined as all the college lands with certain excepted places. Cadets not otherwise prohibited are permitted during release from quarters to be on the above mentioned grounds without special permission.

Demerits will be awarded for every unremoved report, the number depending on the nature and the degree of the offense.

Any cadet receiving 67 demerits during any term shall be brought before the Discipline Committee, and shall be dismissed or less severely punished.

Cadets who receive no demerits during any calendar month will be given a credit of eight demerits to be applied in removing any demerits that may have been charged against them during any month of that term.

For infraction of rules cadets are punished according to the gravity of the offense.

Punishment consists of confinements (detention of cadet in his room), confinement to barracks or other specified limits, reprimands, extras, (walking equipped as sentinel), reduction to ranks ( for officers and non-commissioned officers), arrests, close arrests, suspension, and dismissal from college.

Punishments for offenses are awarded by the Commandant of Cadets, and for extraordinary or unusual offenses by the President or the Discipline Committee, according to the nature of the case.

The Commandant and his officers have the right to inspect anything in a cadet's room.

### Grades and Reports

Reports of class-standing and discipline are sent to parents at intervals of approximately one and one half months throughout the session. During 1911-1912 these reports will be made up for periods ending on the following dates, and

will usually be mailed to parents about one week later. October 28, 1911, December 16, \*1911, February 10, 1912, March 16,\* 1912, April 27, 1912, and June 8, 1912. Dates marked with the asterisk (\*) are approximate, depending upon the beginning of the respective term examinations.

The session is divided into three terms, ending December 21, 1911, March 22, 1912, and June 11, 1912, respectively.

### Rules for Re-Examination and Promotion

1. No re-examination shall be granted to a student in a subject in which he has made a class mark of less than 60 per cent. for the term, or an examination mark of less than 40 per cent.

No student shall be allowed re-examination who makes less than 60 per cent. on more than three term examinations during the session, or more than two examinations for one term, provided that if all three failures are in the same subject, he may be allowed re-examination in one additional subject for one term.

2. A student who fails on a re-examination or term class mark shall be required to take that work over with the class, and schedule it first.

3. A student, who for any reason, fails to take his re-examination at the scheduled time, shall not be allowed to take the examination except by permission of the general faculty.

4. All re-examinations, except for seniors, shall be held during the first five days of the session, provided however, that if a student has missed all term examinations on account of sickness he may be granted re-examinations at special times suitable to the faculty and to the instructor concerned.

5. Students who are granted special privileges to make up work shall be required to report at the next scheduled period after the privilege is granted, and a list of such delinquents shall be furnished each instructor concerned, and deficient subjects in the lower class shall be made up first.

6. A failure in practical work shall have the same weight as a failure in a theoretical subject.

7. A student below the Junior class shall not be granted an irregular course.

8. A student taking the class over forfeits all previous records in that class.

9. Each student shall be required to make up all deficiencies before he is given permission to change his course, or he must take these deficient subjects along with his new course, and he shall be classed as a conditioned student until these deficiencies are removed.

10. No student shall be promoted from one class to another who has a failure in more than one **subject** for the preceding year, and a student who is promoted with work behind shall be classed as a **conditioned** student, and shall be required to schedule first the subjects on which he is deficient.

11. No student who has work to make up shall be promoted to the Senior Class.

## COLLEGE INSTITUTIONS

### Religious Exercises

**Chapel Services.**—There is preaching in Memorial Hall every Sunday morning by ministers of the different denominations, and chapel services are conducted every morning by a resident minister or a member of the faculty. All students are required to attend these exercises unless specially excused.

**Sunday School.**—A Sunday school, at which attendance is voluntary, also meets every Sunday morning, and students are encouraged and urged to attend.

### Young Men's Christian Association

The College Young Men's Christian Association is fundamentally a Christian organization, with four great objects, which are as follows: To lead students to become disciples of Jesus Christ as their divine Lord and Savior; to lead

them to join the Church; to promote growth in Christian faith and character, and to enlist and train them in Christian service.

At Clemson the association has supervision and direction of all the religious activities of the College except the Sunday school, the Sunday morning services, and the daily chapel exercise. The activities include; a religious service on Sunday evening, a mid-week prayer-meeting on Wednesday evening, a daily prayer service just after breakfast, and a series of special evangelistic meetings from time to time. In November the Week of Prayer is appropriately observed conjointly with the college men of America.

The Bible department offers three courses of study; one on the life of Christ; one on the life of St. Paul; and one in the Old Testament. These classes meet on Sunday evening and are led by students, who are prepared for this work through training classes led by members of the faculty, the local ministers and the general secretary. During the past year 348 cadets were enrolled in 30 of these group classes. This department also conducts Bible institutes and special training conferences. A week's series of Bible lectures, delivered by some recognized Biblical scholar, does much to stimulate study and research in the Christian religion.

The department of missions has general supervision of all the missionary activities of the College, and, like the Bible department, is pursuing a broad educational policy. The conditions and needs of the non-Christian world, and how these conditions are being improved and the needs supplied, are brought to the attention of the students through addresses, literature, and study classes. A small but select library is kept in the office of the general secretary, where it is always accessible to the members.

This year the Association is uniting with two other College Associations in the support of a Missionary, Mr. E. B. Barnett, in the Foreign field.

The property of the association, the significance of membership, the social activities, the summer conferences, and the

rules for the use of the tennis courts, cannot be given in detail here.

In order to prosecute this work intelligently it has been found necessary and desirable to maintain a secretary, who has general supervision of all the work of the organization. This secretary has no official connection with the College; either as a disciplinarian or instructor; neither is he a College preacher. He is an older and more experienced student, employed by the students as their counsellor, their advisor, and the director of their religious work.

All students should know the secretary personally, for his unique position enables him to be of service to students in many ways. Owing to the change which is to be made in the location of the Y. M. C. A. quarters this year, the Secretary will be found in one of the rooms in the story that is to be added. Students are welcome to his room at all times; and he is there for their convenience.

Parents and students desiring further information should write to the General Secretary, R. L. Sweeney, at the College, or to the President, Cadet A. G. Small.

### Care of the Sick

The Surgeon is one of the regular officers of the College, and his special duty is to look after the health of the students. He also has charge of the hospital, and supervises all matters pertaining to the sanitation of barracks.

At a regular appointed time every day, students who so desire may consult the Surgeon, and those who are sick are cared for by experienced nurses in the College Hospital. In case of necessity students are allowed to consult the Surgeon at any time, or send for him, as may be required.

The Surgeon cannot undertake to notify parents every time a student reports to the hospital for medicine, or for rest on account of some slight complaint. However, they may rest assured that they will be promptly notified of sickness of any consequence. In case of serious illness the Surgeon will telegraph them.

### Student Labor

The College assumes no obligation to furnish employment to students for wages. Considerable manual labor, however, is necessary to carry on the various departments of the College; and when practicable, students are employed in this work. The number applying for work always exceeds the number that can be employed, and those who enter College late in the session are at a special disadvantage in securing work.

No student is allowed to undertake work that interferes with his College course.

### Literary Societies

Three literary societies, the Calhoun, the Columbian and the Palmetto, furnish a valuable supplement to the work of the College. These societies afford facilities for practice in debate, oratory, declamation and essay writing, and their members acquire valuable knowledge of parliamentary law and usage. The meetings are held weekly, on Saturday evenings. An annual contest is also held by each society, at which there are debates, orations and declamations by the students.

On these occasions a representative is chosen from each society to enter the contest for the 'Trustees' Medal at commencement. The societies themselves also award medals annually to the best debater, orator, and declaimer.

The societies occupy halls in the main College building, which are furnished with carpets and opera chairs, and are maintained entirely by the students. A small initiation fee is charged, and small monthly dues to meet running expenses. All students are advised to join one of these societies.

### State Oratorical Contest

The literary societies also send a representative to the annual contests of the South Carolina Intercollegiate Oratorical Association, which includes the following institutions: Furman University, Wofford College, Clemson Agricultural College, Presbyterian College of South Carolina, Erskine Col-

lege, Newberry College, South Carolina Military Academy, and University of South Carolina.

### Publications by the Students

The **Clemson College Chronicle**, a monthly magazine designed to encourage literary work among the students, is published jointly by the literary societies during the College session.

An **annual**, an illustrated volume, is published under the auspices of the senior class.

There is also **The Tiger**, published weekly, which is devoted largely to athletics.

### The Science Club

The Clemson College Science Club was organized for the purpose of promoting knowledge of the progress of the natural sciences, theoretical and applied. Public meetings are held every month, at which subjects of general scientific interest are discussed by members of the faculty and others.

### The Clemson Biological Club

This club is open to members of all the faculties of Clemson College and to all students. Its object is to stimulate interest in biological subjects, and to keep its members fully abreast of current biological work and thought.

A regular meeting is held once each week in the Agricultural Hall.

### Lecture Course

A lecture course, employing some of the best talent on the American platform, is provided every session. These lectures are delivered in Memorial Hall, at a cost to students of one dollar for the course. During the session of 1910-1911 the following lectures and concerts were given:

Hinshaw Grand Opera Company .....	Oct. 8
Bostonia Sextette .....	Oct. 29
Luther Manship .....	Nov. 19
DeWitt Miller .....	Dec. 23

Cambrian Glee Club .....	Jan. 7
Creator's Band .....	Feb. 9
The Spragues .....	Feb. 25
Festival Quartette .....	March 1
Byron Piatt .....	March 18
Karl Jansen .....	April 4
Burton McDowell .....	April 29
Lyric Glee Club .....	May 1

### Cadet Exchange

A Cadet Exchange is maintained, where students may purchase at wholesale prices necessary articles, such as books, stationery, collars, cuffs, underwear, etc.

### College Athletics

It is the policy of the College to sanction and encourage athletics so long as they do not interfere with studies and other duties. Football, baseball and track are the most popular sports, and it is assumed that parents are willing for their sons to participate in these games unless the President is definitely notified to the contrary. The athletic teams are permitted to take a few trips each season, usually on Saturday, to play intercollegiate games. The College is a member of the Southern Intercollegiate Athletic Association (S. I. A. A.) and of the South Carolina Intercollegiate Athletic Association (S. C. I. A. A.).

**Athletic Council.**—The Southern Intercollegiate Athletic Association has placed the athletic interests at each college under the supervision of an athletic Council, consisting of members of the Faculty and the student-body. This council consists of nine members—two members of the Faculty, the President and the secretary-treasurer of the local athletic association, elected by the students, and three members of the Faculty chosen by the Faculty, and the four class presidents.

**Intercollegiate Athletics.**—For the regulation of intercollegiate athletics, the Faculty has adopted the following rules:

1. Monthly Standing.—Any student who fails on more than two subjects during a collegiate month shall not be allowed to participate in match games during the ensuing month. If, by reason of absence or other cause, a grade on the month's work is lacking, the instructor shall give a temporary grade based upon the work done, and this temporary grade shall be used in determining the student's athletic standing until the regular grade is available.

2. Sessional Standing.—No student who is found to be deficient in more than one subject for a term shall be allowed to play in any match game during the next college year. Change from one course to another, or from a regular to an irregular or special course, shall not interfere with the operation of this rule.

3. Student Taking Class Over.—(a) That a student taking a class over be not allowed to play football who has any monthly failure in any subject.

(b) A student taking a class over shall not be allowed to play unless he passes in the first and second terms without any failures, and is otherwise eligible.

4. Graduate Students.—No graduate student shall participate in any match game unless he is taking at least twenty hours per week of graduate work; that is, work of a higher grade than is given in the regular College courses. Such student shall also conform to the rules of class standing as set forth in Sections 1 and 2. Further, no graduate student of more than one year's standing shall participate in any match game.

5. Irregular or Special Student.—No irregular or special student shall be allowed to represent the College in any match game unless taking at least twenty-four hours' work per week, of which not less than twelve hours shall be "theoretical" work.

6. No football player who leaves College before the end of the first term, except for reasons satisfactory to the Faculty Athletic Committee, shall be allowed to participate in match games during the next three College terms.

7. It shall be the duty of the Faculty Athletic Committee to see that the foregoing rules and regulations are strictly enforced.

8. No team shall be allowed to leave the College grounds to participate in any match game unless accompanied by a member of the Faculty, who shall be responsible to the Faculty for the conduct of the players and coaches while away from the College. Such representative shall be appointed by the chairman of the Faculty Athletic Committee, and his expenses shall be included in the expenses of the trip.

## ADMISSION OF STUDENTS COURSES OF STUDY, FEES, ETC.

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### Admission of Students

Candidates for admission must be sixteen years of age, Students desiring to enter college should apply to the President for application blanks, and these, properly filled out, should be returned to the President as early in the summer as possible, and in no case later than August 14th.

Certificates of good moral character are required of all candidates not known to members of the Faculty; and if the candidate comes from another college, this certificate must show that he was honorably discharged.

In selecting students who shall be admitted to the College subject to their passing the required examinations, the following rules, prescribed by the Board of Trustees, will govern:

1. Students must undergo a medical examination, and no student will be admitted who is not healthy and free from contagious diseases including tuberculosis.

2. Students will be apportioned among counties in proportion to representation in the House of Representatives, under the following rules and regulations:

- (a) Applicants prepared to enter College classes will have preference over those who enter only the preparatory class.

- (b) As between applicants of equal preparation, the oldest will have the preference.

- (c) Other things being equal, the first applicants will receive permission to enter.

- (d) When a county has not sent its quota, the places thus left shall be apportioned among the other applicants.

- (e) Provided a sufficient number of applicants from the State to fill the barracks do not apply, then students from other states may be admitted, and when so admitted, may continue in College until they complete their course.

(f) Applicants not entering within ten days after the opening of the session will have their rights in the place given to applicants next on the roll.

Students upon arrival at the College at the opening of the session must report at once to the President's office and matriculate before they will be assigned to quarters in the barracks. No student will be admitted to any of the classes or examinations of the College before matriculation and payment of fees. (See page 72).

Matriculation is equivalent to a pledge to conform to the rules of the College.

### Entrance Requirements

For admission into the Freshman class a thorough knowledge is required of arithmetic, elementary algebra, English grammar, geography, and history of the United States.

Candidates bringing a certificate from the principal of any State High School, showing that they have successfully passed the first two years work of that school, will be allowed to enter the Freshman class without examination. All others will be required to stand the entrance examinations.

**Arithmetic.**—The applicant is expected to have a thorough practical acquaintance with the ordinary principles and operations of arithmetic. Wentworth's Practical Arithmetic is recommended as a suitable text-book.

**Algebra.**—The detailed requirements are as follows: Definitions and notation, fundamental operations, including laws and signs, and the interpretation of negative results; use of parentheses; factoring; highest common factor; simple in-common multiple; single and complex fractions; simple integral and fractional equations with one unknown number, and problems leading to such equations; simultaneous equations of the first degree, with applications to solution of problems; involution of monomials, and polynomials; evolution of monomials and polynomials; theory of exponents with applications, radicals, including solution of equations involv-

ing rationalization; simple operations with imaginary expressions; pure and affected quadratic equations containing one unknown number, with application to problems.

The student should cover carefully the whole ground here specified, and should acquire a clear understanding not only of algebra processes, but of the principles and reasons involved in every operation. Students fail on entrance examinations more frequently because of imperfect knowledge of the subject matter passed over, than because they have not gone far enough in the text-book.

A satisfactory treatment of the topics in algebra may be found in Wentworth's New School Algebra (used in the public schools).

**English.**—Applicants are examined in spelling, sentence analysis, and oral reading, and are required to write short essays on an assigned subject.

**Geography.**—Applicants must possess a fair knowledge of general geography, such as may be obtained from a proper study of Frye's Advanced, Maury's Manual, Tarr and McMurry's Complete Geography, or other standard text books of equal grade. The following topics will be especially emphasized in the entrance examinations: Outlines and positions of the continents, and locations of the principal mountains, plateaus, river basins, and costal lowlands; influences of land forms and climate upon the life and industries of the inhabitants; locations and outlines of important countries, particularly those of America and Europe, and of the States in the United States; locations of great cities in all conditions favorable to the growth of cities.

**History.**—A School History of the United States, by White, is the text-book recommended. Any other school history may be used in place of the one named.

### Entrance Examinations

Entrance Examinations. are held during the first week of the opening session, September 14th to 16th, 1911, and all applications for admission are expected to report promptly

at the beginning of this period. Former students, also, who have conditions to remove or work to make up, are required to report at the same time.

Examinations on the subjects required for entrance will be held on the dates shown in the following schedules beginning at 9 a. m. :

#### **For Admission to the Freshman Class**

Arithmetic—Thursday, September 14, 1911, at 9 a. m.

Algebra—Thursday, September 14, 1911, at 2 p. m.

English—Friday, September 15, 1911, at 9 a. m.

Geography—Friday, September 15, at 2 p. m.

History—Saturday, September 16, 1911, at 9 a. m.

Examinations are held at the close of each term, and reports are sent to parents, giving the results of these examinations and also the averages of monthly grades in all subjects pursued by the student. The student must attain at least the pass-mark, 60 per cent. on both examination grade and term average in each term separately and in every subject in his course, in order to be entitled to promotion to the next higher class.

#### **For Admission to the Preparatory Class**

Arithmetic—Thursday, September 14, 1911, at 9 a. m.

English—Friday, September 15, 1911, at 9 a. m.

Geography—Saturday, September 16, 1911, at 9 a. m.

Upon passing satisfactorily the required examinations, the Committee on examination furnishes the applicant with a certificate to that effect, and upon presentation of this certificate at the President's office he is assigned to the class recommended by the Committee.

#### **For Admission to Advanced Standing**

For admission to advanced standing, applicants must be prepared to stand examinations on the subjects passed over by the lower classes, as indicated in the courses of study scheduled on the following pages. Such applicants should report with other new students during the regular examina-

tion period and arrange with their instructors for the necessary examinations before the opening of the session. Students admitted to advanced standing are allowed a reasonable length of time in which to make up shop work of the lower classes, in case they have not done equivalent work elsewhere.

### For Admission to State Scholarship

Examinations for admission into the beneficiary scholarships established at the recent session of the Legislature are held by the various county boards of education, and can not be given at the college. For further particulars in regard to these scholarships, see page 75.

### Fees and Expenses

The regular fees for the session, not including tuition, are as follows:

Incidental fee .....	\$ 5.00
Medical fee .....	5.00
Breakage fee .....	3.00
All uniforms .....	32.35*
Board, washing, heat, light etc. ....	76.52
<hr/>	
Total .....	\$121.87

\*This amount is approximate, depending upon the price of the uniforms.

These charges must be paid in quarterly installments as follows:

September 13, 1911 .....	<del>\$61.31</del> <del>\$6.44.5</del>
November 15, 1911 .....	19.13
January 17, 1912 .....	19.13
March 21, 1912 .....	19.13
<hr/>	
Total .....	\$121.87

Tuition students pay \$10.00 per quarter additional. Free tuition is allowed only to South Carolina students. Books and other necessary articles are to be had at the Cadet Exchange. Books used in the preparatory course cost \$7.65. For

the freshman class Agricultural Department for the first term: books, \$9.00; drawing instruments and note books, \$11.00. For the second term: books, \$4.00. For the third term: books, \$2.50. Freshman class Engineering Department for the first term: books, \$9.00; drawing instruments and note books, \$14.50 and upward, according to quality. For the second term; books, \$4.00. For the third term; books, \$2.50.

For the sophomore class, Agricultural Department: first term; books, \$11.25. For the second term, \$5.50. For the third term, \$1.00. For the sophomore class, Engineering Department: for the first term; books, \$11.25; drawing supplies, \$2.50. For the second term: books, \$7.00; drawing supplies, \$1.50. For the third term books, \$2.25; drawing supplies, \$1.00. These books and supplies can be most economically purchased through the Cadet Exchange. Each student must provide himself with four sheets, two blankets, one comfort, six towels, two pillow cases, one pillow and two single mattress covers.

### Settlement of College Fees

Remittances should be made in cash, by money order, New York exchange, or by local check, payable to Dr. P. H. E. Sloan, Treasurer, Clemson College, S. C.

The breakage fee is a deposit to cover damage or destruction of College property, and any amount remaining to the credit of a student at the end of the session will be returned to him. Whenever College property is damaged, the cost of repair is charged to the individual student, if the responsibility can be determined. Otherwise the cost is divided equally among all the students. Any student whose breakage account exceeds \$3.00 will be required to make another deposit.

### Rules Governing Refunds to Students

Refunds will be made to students under the following rules:

1. Out of the amount deposited for uniforms, a refund will be made for any garments that are accepted by the Com-

mandant as serviceable. Parents will be notified of the amount refunded under this rule.

2. The refund for board, laundry, heat, light and water will be at the rate of \$6.50 per month. No refund will be made for interruptions of less than one month.

3. A refund of all moneys, except 25c. per day for board, will be made to any student who leaves College within ten days of the date of his matriculation.

4. Any balance of the \$3.00 breakage fee at the end of the session will be sent to parents after the close of the session in June.

5. No refunds of medical or incidental fees will be made unless a student withdraws within ten days after the date of matriculation.

6. No refund of the quarterly tuition payment of \$10.00 will be made unless the student withdraws from College within ten days of the beginning of the quarter in which the fee is paid.

A fee of \$2.00 is charged for diploma, payable before graduation.

### Free Tuition

AN ACT to Require the Authorities of all Institutions of Learning Supported or Controlled in Whole or in Part by the State, to Report to the General Assembly the Names of All Students at Such Institutions and Whether They are Pay, Beneficiary or Scholarship Students; and to Require the Auditors of All the Counties to Keep a Record and File of All Affidavits of Inability to Pay Tuition Made Before Them, as Now Required by Law.

Section 1. Be it enacted by the General Assembly of the State of South Carolina, That from and after the approval of this Act, the authorities of all colleges or institutions of learning supported in whole or in part by the State, shall report to the General Assembly at its annual meeting the names of all students, with the post office address

of each, and whether such students are pay, beneficiary or scholarship students.

Sec. 2. That the Auditors of the several Counties of this State be required to keep a record and file of all affidavits made before them, as now required by law, of inability on the part of the parent, guardian or trustee to pay tuition.

Sec. 3. That all Acts and parts of Acts inconsistent with this Act be, and the same are hereby, repealed.

Approved the 24th day of February, A. D. 1906.

In accordance with this law, residents of South Carolina are granted free tuition upon presentation of a certificate, signed by father or guardian and the County Auditor.

Certificate blanks will be furnished upon application to the President.

### Statement of the State Laws and College Rules Governing The Award of Scholarships

1. Each county is allowed as many scholarships as it has representatives in the General Assembly. The total number for the State is one hundred and sixty-seven. The number of vacancies in any particular county can be learned by making inquiry of the President of Clemson College.

2. Scholarship students are required to take one of the Agricultural Courses, except that one scholarship per county is allowed in the Textile Course. Scholarship students are not permitted to take the Engineering Courses.

3. Each scholarship pays \$100.00 per session in cash, and allows free tuition, worth \$40.00 more. The scholarship is good for four consecutive years, unless terminated by the students' failure to maintain himself in his classes, and comply with the rules of the College.

4. The scholarships are awarded on competitive examinations. The examinations are conducted by the County Superintendents of Education at the county seats, on the second Friday in July, from 9 A. M. to 4 P. M.

5. The examination questions are prepared, and the

papers are graded, by the Clemson faculty. This faculty reports the winners by number to the State Board of Education, and the State Board makes the award in conformity with the above recommendations.

6. The examinations are on the common school branches. An applicant must meet the entrance requirements of the Freshman Class to pass.

7. The College has a right to reject any applicant, who in respect of age (16 years at the time of entering), examination papers, or in any other respect, fails to meet its requirements for admission.

8. The following are not eligible for scholarship appointments:

- (a) A person who during the current year has won or holds a scholarship at another State institution.
- (b) A person who has been in attendance at Clemson College or "any other institution of higher learning known as as a College or University," provided however, that this condition shall not apply if there are no other applicants for the scholarship.
- (c) A person who has forfeited a scholarship at Clemson College or any other State institution by failure to maintain himself.

9. No applicant shall be debarred from standing the examinations because he has failed to fill out the necessary certificate of financial inability as required by law, but this certificate must be in the hands of the President of Clemson College before the applicant can be considered eligible for a scholarship. (The blank certificate form can be obtained at any time from the President of Clemson College, or from the County Superintendent of Education on the day of the examinations.) It must reach the President not later than noon of August 1st, otherwise the applicant will be eliminated from the competition.

10. If a scholarship vacancy shall occur, and the county to which it belongs has no eligible applicant, the Clemson faculty may fill the vacancy by awarding the scholarship to

some eligible applicant from another county, or if the vacancy occurs after the opening of the session, to a student at the College. However, any such appointment shall last not longer than the current session.

Note.—Scholarship students will therefore have to deposit \$21.87 with the Treasurer at the beginning of the session. This amount is approximate, depending on the price of the uniforms.

### County Appointment

The one hundred and sixty-seven scholarships provided for in this institution by the Legislature are apportioned to the counties of the State according to law as follows:

Abbeville .. . . .	4	Greenwood .. . . .	4
Aiken .. . . .	5	Hampton .. . . .	3
Anderson .. . . .	6	Horry .. . . .	3
Bamberg .. . . .	3	Kershaw .. . . .	3
Barnwell .. . . .	4	Lancaster .. . . .	3
Beaufort .. . . .	4	Laurens .. . . .	4
Berkeley .. . . .	4	Lee .. . . .	3
Calhoun .. . . .	2	Lexington .. . . .	4
Charleston .. . . .	9	Marlboro .. . . .	4
Cherokee .. . . .	3	Marion .. . . .	3
Chester .. . . .	4	Newberry .. . . .	4
Chesterfield .. . . .	3	Oconee .. . . .	3
Clarendon .. . . .	4	Orangeburg .. . . .	5
Colleton .. . . .	4	Pickens .. . . .	3
Darlington .. . . .	4	Richland .. . . .	5
Dillon .. . . .	2	Saluda .. . . .	3
Dorchester .. . . .	2	Sumter .. . . .	4
Edgefield .. . . .	3	Spartanburg .. . . .	7
Fairfield .. . . .	4	Union .. . . .	3
Florence .. . . .	4	Williamsburg .. . . .	4
Georgetown .. . . .	3	York .. . . .	5
Greenville .. . . .	6		

### PREScribed COURSE OF STUDY

As briefly described and tabulated on the following pages, seven regular four-year courses are offered, each leading to

graduation with the degree of Bachelor of Science (B. S.,) the course pursued being designated on the diploma.

The three agricultural courses are alike in the freshman and sophomore years, and agricultural students are, therefore, required to choose between these at the beginning of the junior year. The other four courses are alike during the first two years, and choice between them is made at the beginning of the junior year. The descriptions accompanying the detailed schedules of studies in the various courses are intended to aid the student in arriving at an adequate estimate of the scope and purposes of each course, in order that he may the more intelligently choose between them.

### **COURSE I. AGRICULTURE**

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This is a broad educational course, covering the whole field of natural sciences that are tributary to the agricultural industry, together with a liberal amount of mathematics, English, physics, history and political economy, and a maximum amount of chemistry.

The division of the original course into (1) Agriculture (2) Agriculture and Animal Industry, and (3) Agriculture and Chemistry, described on the following pages, has been made in order to afford opportunity for election in these lines. In this course the student is given more special training in agriculture, horticulture, chemistry, botany, bacteriology and entomology; and thus is laid a foundation upon which he may readily specialize in any of these branches after graduation. The student is well equipped to take up farming, gardening, or fruit-growing as an occupation, or for the pursuit of investigational work in the United States Department of Agriculture or the various State Experiment Stations.

Each of the agricultural courses forms an excellent foundation for the study of other professions, particularly that of medicine.

## COURSE I. AGRICULTURE

## Freshman Class

	Hours per week			Hours per week		
	1st Term	2nd Term	3rd Term	1st Term	2nd Term	3rd Term
<b>THEORETICAL</b>						
Mathematics (520-521) .....	5	5	5	Wood Work (271) .....	3	2 2
English (501) .....	5	5	5	Freehand Drawing (240) .....	2	2 2
History (511-513) .....	3	3	3	Mechanical Drawing (243) ..	2	2 2
Agriculture (100) .....	2	2	2	Forge Work (252) .....	3	2 2
				Botany (171) .....	0	2 2
				Bookkeeping (540) .....	2	2 2
				Military Drill (602) .....	3	3 3

## Sophomore Class.

Mathematics (522) .....	5	0	0	Chemistry (301) .....	3	3 3
English (502) .....	3	3	3	Civil Engineering (531) .....	0	2 2
Chemistry (300) .....	3	3	3	Zoology & Entomology (140)	2	3 3
Agriculture (101) .....	0	0	2	Botany (172) .....	4	4 0
Physics (231-233) .....	2	3	3	Agriculture (101) .....	0	4 4
Civil Engineering (531) .....	0	2	3	Physiography (117) .....	3	0 0
Zoology & Entomology (140)	1	3	2	Military Drill (602) .....	3	3 3
Botany (172) .....	1	1	0			

## Junior Class.

English (503) .....	2	2	2	Chemical Lab. (303, 305) .....	3	3 3
History (514) .....	2	2	2	Horticulture (121) .....	2	0 2
Chemistry (304) .....	2	2	2	Agriculture (102) .....	0	2 4
Horticulture (120) .....	2	0	2	Dairying (162) .....	3	3 0
Animal Husbandry (150-152)..	0	2	2	Forestry (173, 175) .....	2	0 0
Dairying (161) .....	2	2	0	Animal Husbandry (154) .....	0	0 3
Agriculture (102) .....	0	2	2	Veterinary Science (130-131) ..	0	4 0
Veterinary Science (130-131) ..	2	2	2	Entomology (142) .....	2	0 0
Forestry (173) .....	2	0	0	Military Drill (602) .....	3	3 3
Military Science (600) .....	1	1	1			

## Senior Class.

Political Economy (515) .....	3	2*	0	Agriculture (103-105) .....	4	4 3
English (504) .....	0	2*	3	Horticulture (122) .....	2	2 2
Agriculture (103-105) .....	3	3	2	Animal Husbandry (160) .....	2	3 2
Animal Husbandry (157, 153)..	2	2	2	Bacteriology (177) .....	0	3 3
Horticulture (122) .....	2	2	3	Botany (176) .....	4	0 0
Geology (111-112) .....	2	3	2	Entomology (143) .....	0	0 2
Botany (176) .....	2	0	0	Military Drill (602) .....	3	3 3
Bacteriology (177) .....	0	2	2			
Military Science (601) .....	1	1	1			

\*Political Economy ends and Senior English begins at middle of second term.

## COURSE II. AGRICULTURE AND ANIMAL INDUSTRY

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This is a differentiation of the original Course in Agriculture for the purpose of affording students specially interested in general animal industry, dairying and veterinary medicine an opportunity to receive more instruction in these lines than was formerly practicable. There is a growing interest in animal industry throughout the State, and this course is intended to meet the demand for more specialized training in this phase of agriculture. In order to afford more time for instruction in these branches, some important, but less essential, studies have been omitted. English, history and civics are retained throughout the course. Drawing the first year, physics the second year, geology the last year, and chemistry the last three years, but slightly reduced and changed to meet the demands of this new course. Botany, bacteriology, zoology and entomology are so planned as to begin the first year of the course and thereby contribute to clearer knowledge of farm crops, live stock, dairying, sanitation and animal disease. General agriculture is taught during the first two years, horticulture the third year and veterinary medicine the last three years; while live stock and dairying are taught throughout the course. The live stock work embraces the study of the breeds of horses, cattle, sheep, hogs and poultry, and includes judging, breeding, feeding and care and management of flocks and herds. In the dairy course are taken up the production, handling, manufacture and marketing of whole milk, cream, ice cream, butter, and cheese.

## COURSE II. AGRICULTURE AND ANIMAL INDUSTRY

### Freshman Class

	Hours per week				Hours per week		
	1st Term	2nd Term	3rd Term		1st Term	2nd Term	3rd Term
THEORETICAL				PRACTICAL			
Mathematics (520-521) .....	5	5	5	Wood Work (271) .....	3	2	2
English (501) .....	5	5	5	Freehand Drawing (240) .....	2	2	2
History (511-513) .....	3	3	3	Mechanical Drawing (243) ....	2	2	2
Agriculture (100) .....	2	2	2	Forge Work (252) .....	3	2	2
				Botany (171) .....	0	2	2
				Bookkeeping (540) .....	2	2	2
				Military Drill (602) .....	3	3	3

### Sophomore Class

Mathematics (522) .....	5	0	0	Chemistry (301) .....	3	3	3
English (502) .....	3	3	2	Civil Engineering (531) .....	0	2	2
Chemistry (300) .....	3	3	3	Zoology & Entomology (140).....	2	3	3
Agriculture (101).....	0	0	2	Botany (172).....	4	4	0
Physics (230).....	2	3	3	Agriculture (101) .....	0	4	4
Civil Engineering (531) .....	0	2	2	Physiography (117) .....	3	0	0
Zoology & Entomology (140).....	1	3	2	Military Drill (602) .....	3	3	3
Botany (172).....	1	1	0				

### Junior Class

English (503) .....	2	2	2	Chemical Lab. (303, 305) .....	3	3	3
History (514) .....	2	2	2	Horticulture (121) .....	2	0	2
Chemistry (304) .....	2	2	2	Agriculture (102).....	0	2	4
Horticulture (120) .....	2	0	2	Dairying (162) .....	3	3	0
Animal Husbandry (150, 152)..	0	2	2	Forestry (173, 175).....	2	0	0
Dairying (161) .....	2	2	0	Animal Husbandry (154).....	0	0	3
Agriculture (102) .....	0	2	2	Entomology (142).....	2	0	0
Veterinary Science (130-131)..	2	2	2	Veterinary Science (130-131)..	0	4	0
Forestry (173) .....	2	0	0	Military Drill (602) .....	3	3	3
Military Science (600) .....	1	1	1				

### Senior Class

Political Economy (515) .....	3	2	0	Animal Husbandry (160).....	3	2	2
English (504) .....	0	2	3	Veterinary Science (136).....	3	3	3
Animal Husbandry (157,155,153)	4	2	2	Bacteriology (178).....	0	3	4
Veterinary Science (134-135)...	2	2	3	Dairying (162).....	2	0	0
Geology (111-112) .....	2	3	2	Agriculture (103, 105).....	4	4	3
Agriculture (103-104-105) .....	3	3	2	Military Drill (602) .....	3	3	3
Bacteriology (177).....	0	2	2				
Military Science (601) .....	1	1	1				

\*Political Economy ends and Senior English begins at middle of second term.

### COURSE III. AGRICULTURE AND CHEMISTRY

This is a differentiation of the original course in Agriculture for the purpose of affording students specially interested in chemistry, mineralogy and bacteriology an opportunity to receive more instruction in these subjects than is offered by the other agricultural courses. There is a growing demand for well-trained chemists, and the students who propose to select the profession of chemistry will find that this course is well arranged to give them a good foundation in the science and at the same time furnish them a liberal education.

## COURSE III. AGRICULTURE AND CHEMISTRY

## Freshman Class

	Hours per week				Hours per week		
	1st Term	2nd Term	3rd Term		1st Term	2nd Term	3rd Term
THEORETICAL				PRACTICAL			
Mathematics (520-521) .....	5	5	5	Wood Work (271) .....	3	2	2
English (501) .....	5	5	5	Freehand Drawing (240) .....	2	2	2
History (511, 513) .....	3	3	3	Mechanical Drawing (243) ....	2	2	2
Agriculture (101) .....	2	2	2	Forge Work (252) .....	3	2	2
				Botany (171) .....	0	2	2
				Bookkeeping (540) .....	2	2	2
				Military Drill (602) .....	3	3	3

## Sophomore Class

Mathematics (522) .....	5	0	0	Chemistry (301) .....	3	3	3
English (502) .....	3	3	3	Civil Engineering (531) .....	0	2	2
Chemistry (300) .....	3	3	3	Zoology & Entomology (140)...	2	3	3
Agriculture (101) .....	0	0	2	Botany (172) .....	4	4	0
Physics (230) .....	2	3	3	Agriculture (101) .....	0	4	4
Civil Engineering (531) .....	0	2	2	Physiography (117) .....	3	0	0
Zoology & Entomology (140) .....	1	3	2	Military Drill (602) .....	3	3	3
Botany (172) .....	1	1	0				

## Junior Class

English (503) .....	2	2	2	Chemistry (303) .....	6	6	6
History (514) .....	2	2	2	Mineralogy (111) .....	0	2	2
Chemistry (304) .....	2	2	2	Forestry (173, 175) .....	2	0	0
Mineralogy (111) .....	2	2	2	Horticulture (121) .....	2	0	2
Botany (172) .....	2	0	0	Agriculture (102) .....	0	2	2
Horticulture (120) .....	2	0	2	Dairying (162) .....	0	2	0
Agriculture (102) .....	0	2	2	Entomology (142) .....	2	0	0
Dairying (161) .....	2	2	0	Military Drill (602) .....	3	3	3
Animal Husbandry (150-152) ..	0	2	2				
Forestry (173) .....	2	0	0				
Military Science (600) .....	1	1	1				

## Senior Class

Political Economy (515) .....	3	2	0	Chemical Lab. (305) .....	6	6	6
English (504) .....	0	2	3	Horticulture (122) .....	2	0	3
Chemistry (302) .....	2	2	2	Bacteriology (177) .....	0	3	3
Horticulture (122) .....	2	0	3	Animal Husbandry (160) .....	0	3	0
Agriculture (103-105) .....	3	3	0	Botany (176) .....	4	0	0
Geology (111-112) .....	2	3	2	Drill (602) .....	3	3	3
Bacteriology (177) .....	0	2	2				
Botany (176) .....	2	0	0				
Animal Husbandry (157, 153) .....	0	2	2				
Military Science (601) .....	1	1	1				

\*Political Economy ends and Senior English begins at middle of second term.

## COURSE IV. CHEMISTRY AND GEOLOGY

This course is intended to equip the student for engaging in manufacturing operations involving metallurgy or other branches of inorganic chemistry, or for employment as assayer or chemist in connection with mining operations. It also furnishes a basis upon which he may readily specialize in mining or geology, with a view to conducting actual mining enterprises or to employment in responsible positions on state or national surveys.

The student is well grounded in the principles of chemistry, physics, mechanics, geology and mineralogy, but the principal stress is laid on geology and metallurgical chemistry. He also acquires a valuable practical knowledge of surveying, mechanical engineering, foundry practice, drawing and designing, in addition to the pursuit of courses in English, history, political economy, and other subjects of general educational value.

The first two years of the course are the same as in the engineering courses. The third and fourth years differ chiefly in the substitution of advanced work in chemistry and metallurgy, and in geology and mineralogy for technical engineering work.

## COURSE IV. CHEMISTRY AND GEOLOGY

## Freshman Class

	Hours per week				Hours per week		
	1st Term	2nd Term	3rd Term		1st Term	2nd Term	3rd Term
THEORETICAL				PRACTICAL			
Mathematics (520, 521) .....	5	5	5	Wood Work (270) .....	3	3	3
English (501) .....	5	5	5	Freehand Drawing (240) .....	3	3	3
History (511-513) .....	3	3	3	Mechanical Drawing (242) ....	3	3	3
Agriculture (101) .....	2	2	2	Forge Work (250) .....	3	3	3
				Military Drill (602) .....	3	3	3

## Sophomore Class

Mathematics (522, 4-5) .....	5	3	3	Foundry (251) .....	2	3	3
English (502) .....	3	3	3	Pattern Making (272) .....	2	3	3
History (514) .....	2	2	2	Mechanical Drawing (284).....	2	2	2
Chemistry (300) .....	3	3	3	Chemical Laboratory (301)....	3	2	2
Physics (231).....	2	2	2	Descriptive Geom. (530) .....	3	0	0
Civil Engineering (531) .....	0	2	2	Civil Engineering (531) .....	0	2	2
				Military Drill (602) .....	3	3	3

## Junior Class

Mathematics (525-527) .....	4	4	4	Assaying (303) .....	2	2	2
English (503) .....	2	2	2	Chemical Lab. (303) .....	4	4	4
Chemistry (306) .....	2	2	2	Mechanical Drawing (247) ....	2	2	2
Mineralogy (111) .....	2	2	2	Mineralogical Lab. (111).....	2	2	2
Physics (232).....	2	2	2	Physical Lab. (233).....	2	2	2
Mechanism (220) .....	2	0	0	Military Drill (602) .....	3	3	3
Mechanics (221) .....	0	2	2				
Military Science (601) .....	1	1	1				

## Senior Class

English (504) .....	0	2	3	Chemical and Metallurgi- cal Laboratory (311) .....	6	6	6
Political Economy (515) ....	3	2	0	Practical Geology (116) .....	3	3	3
Chemistry (302) .....	2	2	2	Mechanical Lab. (215) .....	3	3	3
Metallurgy (310) .....	2	2	2	Military Drill (602) .....	3	3	3
Economic Geology (115) .....	2	3	4				
Geology (113).....	2	2	3				
Mechanical Eng. (213) .....	3	3	0				
Military Science (601) .....	1	1	1				

\*Political Economy ends and Senior English begins at middle of second term.

## COURSE V. MECHANICAL AND ELECTRICAL ENGINEERING

This course is designed to fit young men for positions in the various departments of these professions. It attempts, by practical and theoretical instruction, to lay a solid scientific foundation upon which the student may build rapidly after graduation. The experience necessary to make a successful engineer can not be acquired in a college course, but the technical graduate usually distances his uneducated competitors in the acquirement of practical knowledge and experience.

Within the department are taught physics, mechanics, and mechanical and electrical engineering. Along with the theoretical instruction in these subjects, practice is given in well equipped laboratories.

Shop instruction is given in carpentry, turning, and pattern-making; in moulding; chipping and filing, and the use of machine tools. The purpose of this instruction is not to turn out skilled artisans, but to train those faculties of mind which can best be reached through the work of the hand.

The work in drawing is made one of the features of the course.

Graduates from this course are filling responsible positions in various lines of mechanical and electrical engineering and in drawing.

## COURSE V. MECHANICAL AND ELECTRICAL ENGINEERING

### Freshman Class

	Hours per week				Hours per week		
	1st Term	2nd Term	3rd Term		1st Term	2nd Term	3rd Term
THEORETICAL				PRACTICAL			
Mathematics (520-521) .....	5	5	5	Wood Work (270) .....	3	3	3
English (501) .....	5	5	5	Freehand Drawing (240) .....	3	3	3
History (511-513) .....	3	3	3	Mechanical Drawing (242) ..	3	3	3
Agriculture (100) .....	2	2	2	Forge Work (250) .....	3	3	3
				Military Drill (602) .....	3	3	3

### Sophomore Class

Mathematics (522-4-5) .....	5	3	3	Foundry (251) .....	2	3	3
English (502) .....	3	3	3	Pattern Making (272) .....	2	3	3
History (514) .....	2	2	2	Mechanical Drawing (244)....	2	2	2
Chemistry (300) .....	3	3	3	Chemical Laboratory (301)....	3	2	2
Physics (231).....	2	2	2	Descriptive Geometry (530)....	3	0	0
Civil Engineering (531) .....	0	2	2	Civil Engineering (531) .....	0	2	2
				Military Drill (602) .....	3	3	3

### Junior Class

Mathematics (525-527) .....	5	5	5	Mechanical Drawing (245) ....	3	3	3
English (503) .....	2	2	2	Machine Shop (260) .....	3	3	3
Physics (232).....	2	2	2	Physical Lab. (233).....	3	3	0
Electrical Eng. (200) .....	3	3	3	Electrical Lab. (201) .....	3	3	3
Mechanism (210) .....	2	0	0	Mineralogical Lab. (111).....	0	0	3
Mechanics (211) .....	0	2	2	Military Drill (602) .....	3	3	3
Military Science (600) .....	1	1	1				

### Senior Class

English (504) .....	0	2	*3	Machine Shop (261) .....	3	3	0
Political Economy (515) .....	3	2	*0	Drawing & Designing (238)...	3	3	3
Electrical Eng. (202) .....	5	5	5	Electrical Lab. (203) .....	3	3	3
Mechanical Eng. (213) .....	3	3	5	Mechanical Lab. (214) .....	3	3	6
Mechanics (212) .....	2	2	0	Military Drill (602) .....	3	3	3
Geology (112) .....	1	2	1				
Military Science (601) .....	1	1	1				

\*Political Economy ends and Senior English begins at middle of second term.

## COURSE VI. CIVIL ENGINEERING.

This course is intended to prepare young men for entrance upon professional practice in some of the many branches of civil engineering, and also to meet the needs of those who, having been engaged in engineering work without a course of instruction, desire to equip themselves for more successful competition with those who have had such instruction.

In connection with the technical studies, liberal training is given in English, history, economics, pure mathematics, and the physical sciences. The course will also be found to embrace about the same amount of drawing, shop work, mechanical engineering and mechanical laboratory practice as the other engineering course.

The distinctive work pursued by students in this course includes the study of land surveying and plotting, topographic surveying and mapping; location, construction, and maintenance of roads, railroads, streets, and pavements; strength of materials, masonry construction, foundations on land and in water; analytic and graphic investigations of stresses in girders, roofs and bridges, and the design of these structures; the principles of hydraulics as applied to dams, reservoirs, canals, municipal water-works, and the development of water power.

For fuller details, see descriptions of instruction in these subjects.

## COURSE VI. CIVIL ENGINEERING

## Freshman Class

	Hours per week				Hours per week		
	1st Term	2nd Term	3rd Term		1st Term	2nd Term	3rd Term
THEORETICAL				PRACTICAL **			
Mathematics (520-521) .....	5	5	5	Wood Work (270) .....	3	3	3
English (501) .....	5	5	5	Freehand Drawing (240) .....	3	3	3
History (511-513) .....	3	3	3	Mechanical Drawing (242) ...	3	3	3
Agriculture (101) .....	2	2	2	Forge Work (250) .....	3	3	3
				Military Drill (652) .....	3	3	3

## Sophomore Class

Mathematics (522-4-5) .....	5	3	3	Foundry (251) .....	2	3	3
English (502) .....	3	3	3	Pattern Making (272) ..	2	3	3
History (514) .....	2	2	2	Mechanical Drawing (244a)...	2	2	2
Chemistry (300) .....	3	3	3	Chemical Lab. (301) .....	3	2	2
Physics (231).....	2	2	2	Civil Engineering (531) .....	0	2	2
Civil Engineering (531) .....	0	2	2	Descriptive Geom. (530) .....	3	0	0
				Military Drill (602) .....	3	3	3

## Junior Class

Mathematics (525-527) .....	5	5	5	Mechanical Drawing (246).....	3	3	3
English (503) .....	2	2	2	Machine Shop (260) .....	3	3	3
Physics (232).....	2	2	2	Physical Lab. (233).....	3	3	0
Civil Engineering (532, 534) ..	3	3	3	Civil Eng. Field (532, 534) ....	3	3	3
Mechanism (210) .....	2	0	0	Mineralogical Lab. (110) ....	0	0	3
Mechanics (211) .....	0	2	2	Military Drill (602) .....	3	3	3
Military Science (600) .....	1	1	1				

## Senior Class

English (504).....	0	2*	3	Machine Shop (261) .....	3	3	0
Political Economy (515) .....	3	2*	0	Drawing & Designing (249)...	3	3	3
Civil Engineering (535) .....	5	5	5	Mechanical Lab. (214) .....	3	3	3
Mechanical Eng. (213) .....	3	3	5	Civil Eng. Field (536-538) ....	3	3	6
†Mechanics (212) .....	2	2	0	Military Drill (602) .....	3	3	3
Geology (112) .....	1	2	1				
Military Science (601) .....	1	1	1				

\*Political Economy ends and Senior English begins at middle of second term.

\*\*Other practical work may be substituted.

†Practical Electrical Engineering may be given in place of 2nd term Mechanics.

## COURSE VII. TEXTILE INDUSTRY

The course in Textile Industry is designed to give the student sound training, both theoretical and practical, in the sciences upon which manufacturing processes are based. The curriculum of the course recognizes that in a profession of so many aspects a broad general cultivation, a liberal training in design, and a thorough knowledge of the underlying principles are necessary for its successful practice.

The first two years are taken up with a broad general training along scientific and mechanical lines, while from the beginning of the junior year the work takes on a distinctly professional character. The practical work is carried on for the purpose of developing in the student habits of accurate observation, and of bringing to his consideration not only methods of fundamental importance, but questions of economy of time, precision of results, and attention to details. Effort is made to develop self-reliance in the student, so that he may be fitted to make his way without assistance.

This course does not presume to fit one for the management of a mill, but the graduate is in possession of such information, and has acquired such experience and knowledge that he may look forward to a successful career as manufacturer, mill architect or technical chemist, provided he has the necessary energy, application and tact, and a willingness to begin at the bottom.

## COURSE VII. TEXTILE INDUSTRY

## Freshman Class

	Hours per week				Hours per week		
	1st Term	2nd Term	3rd Term		1st Term	2nd Term	3rd Term
THEORETICAL				PRACTICAL			
Mathematics (520-521) .....	5	5	3	Wood Work (270) .....	3	3	3
English (501) .....	5	5	5	Freehand Drawing (240) .....	3	3	3
History (511-513) .....	3	3	3	Mechanical Drawing (242) ....	3	3	3
Agriculture (101) .....	2	2	2	Forge Work (250) .....	3	3	3
				Military Drill (602) .....	3	3	3

## Sophomore Class

Mathematics (522-4-5) .....	5	3	3	Foundry (231) .....	2	3	3
English (502) .....	3	3	3	Pattern Making (272) .....	2	3	3
History (514) .....	2	2	2	Mechanical Drawing (244)....	2	2	2
Chemistry (300) .....	3	3	3	Chemical Lab. (301) .....	3	2	2
Physics (231) .....	2	2	2	Descriptive Geometry (230) ..	3	0	0
Civil Engineering (531) .....	0	2	2	Civil Engineering (531) .....	0	2	2
				Military Drill (602) .....	3	3	3

## Junior Class

Mathematics (525-527) .....	5	5	5	Machine Shop (260) .....	3	3	3
English (503) .....	2	2	2	Chem. Lab. (303) .....	3	3	0
Textile Chemistry (420) .....	1	1	2	Dyeing Lab. (420) .....	0	0	3
Designing (412) .....	2	2	2	Weaving (410-411) .....	3	3	3
Carding and Spin'g (400-406)..	2	2	1	Carding and Spin'g (400-406)..	3	3	3
Mechanism (210) .....	2	0	0	Military Drill (602) .....	3	3	3
Mechanics (211) .....	0	2	2				
Military Science (600) .....	1	1	1				

## Senior Class

English (504) .....	0	2	3	Mechanical Lab. (215) .....	0	3	3
Political Economy (515) .....	3	2	0	Carding & Spinning (400, 406).....	5	3	3
Mechanical Eng. (213) .....	3	3	0	Dyeing (421) .....	3	3	3
Carding and Spin'g (407-409)..	2	2	2	Weaving (410, 411) .....	4	3	3
Textile Chemistry (421) .....	2	2	2	Military Drill (602) .....	3	3	3
Designing (412) .....	2	2	2				
Cloth Analysis (414) .....	1	2	2				
Weaving (410-411) .....	1	1	1				
Jacquard Designing (413) ....	0	2	2				
Military Science (601) .....	1	1	1				

\*Political Economy ends and Senior English begins at middle of second term.

### Special Courses

Besides students in the regular undergraduate courses, there may be farmers and others of mature age, including graduates of other institutions, who desire to avail themselves of the special privileges offered by the College. To such persons the opportunity is offered, under the advice of the director of the department in which work is contemplated, to pursue special lines of study or investigation in any of the subjects taught in the College, provided attention can be given to them without detriment to the regular classes. Such special students will be admitted after they have satisfied the director of the department that they are qualified to pursue the work with profit.

Special students are excused from military duty, but are subject to the general regulations of the College requiring good conduct and diligent prosecution of course selected. They are not admitted to barracks, but rooms and board may be secured in the community at reasonable rates. They will be required to pay the usual fees, except the price of the uniform and board in barracks.

### Special Course in Electrical Engineering

Students desiring to take a special course in electrical engineering should remember that no one can hope to become an electrical engineer who has not the necessary foundation in mechanical engineering, to which electrical engineering is a superstructure. Two-thirds of an electrical engineer's training must be mechanical.

No special classes will be formed.

Students desiring to enter the junior class will be expected to be prepared on elementary mechanical drawing physics and chemistry, and on mathematics through plane trigonometry. They will be expected to take with the junior class, in addition to their electrical studies, physics, mechanics, mathematics, mechanical drawing and machine shop work.

Without these additional branches the student will not be prepared for the more strictly engineering work of the senior year.

To enter the senior class, a student must be proficient in the work of the junior year, in which physics and calculus are completed.

In addition to the electrical subjects prescribed for the senior year, he must take—unless he is proficient along these lines—mechanics, mechanical engineering and laboratory, machine shop, drawing, and machine design.

Students who are not prepared, or unwilling to take the other subjects necessary to the successful study of electrical engineering, will not be permitted to take a special course in this line.

### Special Cotton Grading Course

This course begins with the winter term, January 4, 1912, and continues for four weeks. All of the important cottons of the world are studied, but most of the practice is with the varieties grown in the United States, and especially those grown in South Carolina. Constant practice is given with a full line of samples—including the tinges and stains. A set of arbitration samples is used for reference and comparison. The physical properties of the fibre are studied with a microscope, and its diameter, length, strength and other spinning qualities determined. The students are given the results of experiments made by the textile students with various grades.

### Special Textile Course

To meet the demands of southern conditions for a class of young men trained in the finer details of cotton manufacture, a special two-year course has been arranged to accommodate a limited number of students who may not be in a position to take the regular four-year textile course, as scheduled and described on the preceeding pages.

The course includes mathematics (beginning algebra),

English, freehand and mechanical drawing, carding, spinning, weaving and designing, and is thoroughly practical and allows the greater portion of the student's time to be devoted to the pursuit of textiles in its several branches.

To pursue this course successfully the student must be well grounded in arithmetic, and should be capable of expressing his thoughts clearly in writing. The student seeking admission to this course must present himself at the College during the regular entrance examination period, September 13 to 16, 1911, and satisfy his instructors that he is prepared to undertake the work. No student will be admitted after that time. Students must be at least 18 years of age, and must have had at least one year's experience in some cotton mill. They will not be required to perform military duty, but will be subject to the general rules and regulations of the College. Students who have failed in the regular College courses will not be allowed to change to this course. No diploma is conferred upon the completion of this work, but the student receives a certificate showing that he has finished the course.

## Course of Study

## First Year

## HOURS PER WEEK

1st term 2nd term 3rd term

Mathematics (begins algebra) .....	5	5	5
Freshman English .. . . . . .	5	5	5
Carding and Spinning (theory) .. . . .	2	2	2
Carding and Spinning (practical) .. . .	3	3	3
Mechanical Drawing .. . . . . .	3	3	3
Designing .. . . . . .	3	3	3
Weaving .. . . . . .	6	6	6
Freehand Drawing .. . . . . .	3	3	3
	<hr/> 30	<hr/> 30	<hr/> 30

## Second Year

Mathematics (complete geometry) .. . .	5	0	0
Sophomore English .. . . . . .	3	3	3
Chemistry .. . . . . .	3	3	3
Carding and Spinning (theory) .. . . .	2	2	2
Carding and Spinning (practical) .. . .	6	6	6
Chemical Laboratory .. . . . . .	2	2	2
Designing .. . . . . .	2	3	3
Cloth Analysis and Jacquard Designing	2	3	3
Weaving .. . . . . .	5	8	8
	<hr/> 30	<hr/> 30	<hr/> 30

### Special Post Graduate Textile Course

This course is, in general, a continuation of the regular course with the addition of such subjects as will lead to a proper understanding of industrial affairs. Frequent discussion of the subjects treated, and wide reading on assigned topics will be special features of the course. The subjects taken up will include combing, mule spinning, mill construction and organization, assembling of machinery, Jacquard weaving, building of Jacquard harnesses, loom fixing, designing, dyeing, manufacture and technical analysis of chemicals and other products used in the textile industry, and sociology in so far as it touches upon mill life, welfare work and labor problems.

### Farmers' Short Course in Agriculture

A short course in agriculture, continuing four weeks, is offered during the month of January. This course is planned especially for farmers and farmers' sons who wish to devote a short time to the study of this subject. The work will consist mainly of Agronomy and Animal Husbandry subjects, with a small amount of Horticulture, Dairying, Veterinary Science, and Entomology.

Agronomy subjects will include: plant growth, soil, fertilizers, tillage, implements, and farm crops.

Animal Husbandry subjects: breeds of animals, breeding, feeding, care of animals, and stock judging.

Any one wishing to do special work in dairying, horticulture, or cotton grading will be given the opportunity.

### Two-Year Course in Agriculture

To meet a growing demand for special agricultural work the following course is outlined. This course includes the greater portion of the agriculture given to the four year students and may be scheduled with the regular classes. No English or mathematics is required in the course, but are optional and may be taken with the regular classes if the work is desired.

During the second year special attention will be given to practical work in the field, dairy, and with live stock.

### Course of Study

#### First Year

##### First, Second, and Third Terms

##### Theoretical

Agriculture.....	2	2	2
Farm Machinery.....	0	0	2
Economic Entomology	0	0	2
Horticulture.....	2	0	2
Dairying.....	2	2	0
Animal Husbandry...	0	2	2
Veterinary Science ..	2	2	0
Ex. Botany.....	2	0	0

##### Practical

Woodwork.....	3	3	3
Bookkeeping.....	2	2	2
Farm Machinery.....	0	0	4
Economic Entomology	0	0	3
Physiography.....	3	0	0
Dairying.....	3	3	0
Animal Husbandry....	0	0	4
Veterinary Science....	3	3	3*
Horticulture.....	2	0	2

#### Second Year

##### First, Second, and Third Terms

##### Theoretical

Agriculture.....	3	3	2
Horticulture.....	2	2	3
Animal Husbandry....	2	2	2
Veterinary Science....	0	0	3
Economic Botany.....	2	0	0
Bacteriology.....	0	2	2

##### Practical

Agriculture.....	4	4	3
Horticulture .....	2	2	0
Animal Husbandry...	2	3	2
Veterinary Science....	3	3	3

\*Optional

### Irregular Courses

Every student is required to pursue one of the regular courses, as scheduled on the preceding pages, unless for special reasons, this seems inadvisable or impracticable. In such cases an irregular course may be granted by the Faculty on the following conditions:

1. The course applied for must be such as to fully and profitably occupy the student's time.

2. The application must be accompanied by the written approval of parent or guardian and of instructors in all subjects included in the course.

3. Irregular courses are not granted to students in the preparatory class.

4. Diplomas are not issued to students in irregular courses, but a certificate of proficiency will be given when the work completed is deemed worthy of it.

A student who desires to take an irregular course will be referred to a member of the Faculty, who will advise him in reference to the character of work that is best for him to pursue. After the course has been thus arranged and approved by the Faculty, no other changes will be allowed without the endorsement of his adviser.

### Preparatory Courses

If a boy is not sufficiently advanced to enter the freshman class and the President concludes that said boy has not had, and can not get, sufficient school facilities at or near his home to prepare him to enter the freshman class, then he will be allowed to enter the preparatory class. In this class thorough instruction is given in the elements of English, mathematics, history, and geography.

If a boy has had or can get sufficient school facilities at or near his home, then he must stand his examination for one of the College classes, and failing to pass the required examination for the freshman class, will not be allowed to enter the preparatory class, but must return home.

The instruction in this department is under the immediate supervision of the Headmaster, and is closely articulated with the work in the Academic Department.

The course of study is as follows:

Arithmetic, 4 hours a week; Algebra, 4 hours a week; English Grammar and Composition, 4 hours a week; Reading and Spelling, 4 hours a week; Geography, 2 hours a week; History, 2 hours a week; Penmanship, 1 hour a week.

### ENGLISH GRAMMAR

#### Assistant Professor Sease

The course in English Grammar aims to give to the student a comprehensive knowledge of the principles of the language, and acquaints him with the elementary rules and practices of composition.

Text-book: 1910-'11: Carpenter's English Grammar. Text-book: 1911-'12: Kinard's The English Language. Book 2.

In connection with the course in English Grammar and Composition, the students of the class are also instructed in Spelling, Reading, and the Elementary English Classics.

Text-books: Gilbert's School Studies in Words. Hill's Fifth Reader; and such classics as the instructor may from time to time select: Written review work and compositions are required at stated periods throughout the session.

## HISTORY

Assistant Professor Sease

The Preparatory course in History is designed to acquaint the student with the chief events in the History of the United States thereby preparing him for his work in this subject in the College classes.

Text-book: White's School History of the United States.

## MATHEMATICS

Instructor Wells

In order to pursue this course successfully the student should have a good working knowledge of arithmetic through fractions.

### Arithmetic

Thorough instruction is given in all the essential principles and methods of arithmetic.

The class room is supplied with apparatus for teaching compound quantities and measurements.

Text book: for 1911-'12: Colaw and Ellwood's Advanced Arithmetic.

### Algebra

The work in Algebra extends through quadratics.

Text book: Wentworth's New School Algebra.

## GEOGRAPHY

Instructor Wells

Thorough instruction is given in the essential principles of geography.

Text book: Redway and Hinman's Natural Advanced Geography.

Students who satisfactorily complete this course will be advanced to the freshman class. Those who fail to pass to the higher class may review the course the next session. Upon recommendation of the instructors of the department, a student in the preparatory class may be permitted, at any time during the session, to stand examinations for admission to the freshman class.

### Degrees, Medals and Honors

The degree of Bachelor of Science (B. S.) will be conferred on any student who satisfactorily completes one of the prescribed four-year courses of study, as tabulated on the preceding pages, and submits an approved thesis not later than June 1st of his senior year. The course pursued is indicated on the diploma.

**Distinguished Students.**—Students who make an average grade of 90 per cent. or over for any session are designated as distinguished; provided, however, that the minimum grade on any subject shall not be less than 80 per cent. Their names are published in the Catalogue of the succeeding year. This honor was won by R. W. Freeman, '11; C. F. Inman, '10; F. H. Jeter, '11.

**Trustees' Medal.**—The Board of Trustees has established a gold medal, to be awarded annually to the best speaker among the representatives of the literary societies at Commencement. These representatives are chosen by judges selected by the societies at the annual public exercises in Memorial Hall. The medal is awarded by judges selected by the Faculty. Won in 1910 by H. S. Johnson, '10.

**Literary Society Medal.**—It is customary for the three literary societies to award gold medals annually for excellence in debate, oratory, and declamation. The medals for excellency in debate were won by B. H. Deason, '11, Calhoun; John E. Jenkins, '11, Columbian; J. M. Workman, '12, Palmetto.

In oratory by J. T. Crawford, '11, Calhoun; F. H. All, '11, Columbian; O. O. Dukes, '11, Palmetto.

In declamation, by F. L. Ross, '12, Calhoun; M. W. Wall, '11, Columbian; T. C. Haddon, '14, Palmetto.

**The Chronicle Medals.**—The **Chronicle**, the monthly magazine published by the literary societies, also usually awards three gold medals, for the best story, the best poem, and the best essay contributed by students during the year.

**A Blue Silk C. A. C. Flag** is awarded in June of each year to the best drilled company, and is carried by it during the succeeding year.

**R. W. Simpson Medal.**—A gold medal thus designated is awarded annually to the best drilled cadet in the freshman, sophomore and junior classes. This medal was won in 1910 by Cadet L. R. Blackmon, '13.

**Norris Medal.**—"I give \$500, face value, Norris Cotton Mill stock, to the Trustees of Clemson Agricultural College of South Carolina, on condition, the dividend thereon shall be applied annually to the purchase of a gold medal, to be known as the 'Norris Medal,' to be awarded to the student of Clemson College meriting the same at graduation, under such rules and conditions as may be prescribed by the said Board of Trustees, and which medal shall have engraved on it '**Honos habet onus**' (Honors bring responsibilities)."

The medal was awarded in 1910 to W. M. Albergotti, '10.

**Publication in Official Army Register.**—The names of the three graduates most distinguished in the Military Department each year are published in the **Official Army Register** of the succeeding year.

The Commandant is also required to report annually to the War Department the names of the three cadets most eligible for appointment as officers in the United States Army.

**Second Lieutenancy United States Army.**—General Orders, No. 39, War Department, contains the following paragraph:

"The reports of the regular inspections of the colleges and schools to which officers of the army are detailed in pursuance of law as principals or instructors will annually here-

after be submitted to the general staff for its critical examination and the chief of staff will report to the Secretary of War, from the institutions which have maintained a high standard, the six institutions whose students have exhibited the greatest interest, application, and proficiency in military training and knowledge. The President authorizes the announcement that an appointment as second lieutenant in the regular army from each one of the said six institutions will be awarded to an honor graduate who has taken a military course thereat, provided that sufficient vacancies exist after caring for the graduates of the Military Academy at West Point and the successful competitors in the annual examination of enlisted men."

The term "honor graduate" signifies any graduates who would rank as one of the first five of his class.

**DETAILED DESCRIPTION OF COURSES****1. Agricultural Department**

Agronomy (100-108)

Geology and Mineralogy (110-117)

Horticulture (120-122)

Veterinary Science (130-137)

Zoology and Entomology (140-144)

Dairying and Animal Husbandry (150-162)

Botany and Forestry (170-176).

**2. Engineering Department**

Electrical Engineering (200-203)

Mechanical Engineering (210-215)

Civil Engineering (530-538)

Physics (230-232)

Drawing and Designing (240-249)

Forge and Foundry Work (250-252)

Machine Work (260-261)

Woodwork (270-272)

**3. Chemical Department**

Chemistry (300-306)

Metallurgy (310-311)

**4. Textile Department**

Carding and Spinning (400-409)

Weaving and Designing (410-414)

Textile Chemistry and Dyeing (420-421)

**5. Academic Department**

English (500-504)

History and Political Economy (510-515)

Mathematics (520-527)

Bookkeeping (540)

**6. Military Department**

Military Science and Tactics (600-602)

## AGRICULTURAL DEPARTMENT

Prof. Perkins, Director

## AGRONOMY

Prof. Perkins

Assistant Professor Napier

## 100. Elementary Agriculture

Freshman Class; First, Second and Third Terms

This course is outlined to serve as an introduction to the regular Agricultural Course and especially to give a comprehensive view of the subject to students in the Textile and Engineering Departments and to those who will not be in College longer than one year. The object is to familiarize the students with the simpler principles of plant growth, soils, fertilizers, farm crops, and animal husbandry.

## 101. Farm Mechanics

Sophomore Class; Third Term

Courses I, II, III

A detailed study of the farm implements, the history of their development, material of which manufactured, work accomplished. The object of this course is to familiarize the students with the latest improvements in farm machinery and especially to impress upon them the saving of labor effected by its use. This will be given both in field and in laboratory.

## 102. Soil Physics

Junior Class; Second and Third Terms

Courses I, II, III

A study of the physical properties of soils embracing a consideration of the physical composition of soil, soil texture, soil structure, aeration, temperature, and action towards the water supply, with all modifications of these properties by farm practice: given by text book, lecture and in laboratory.

## 103. Soil Fertility

Senior Class; First Term

Courses I, II, III

A study of the plant food requirements of soil, farm manures, commercial fertilizers and crop rotations in their relations to soil fertility, with practical work in the field and laboratory.

**104. Farm Crops****Senior Class; First Term****Courses I, II, III**

A study of cotton and cereal crops, their growing, handling, and breeding. Laboratory and field work.

**105. Farm Management****Senior Class; Third Term****Courses I, II**

This course will include such topics as "the choice of lands for farming;" "location and character of buildings;" "kinds of farming;" "methods of controlling labor;" "stocking a farm" and other economic questions affecting southern agriculture.

**106. Farm Crops****Junior Class; Third Term****Courses I, II, III**

A course in the study of the principal legumes and grasses, their growing, handling, and improvement. Seed-testing.

**GEOLOGY AND MINERALOGY****Prof. Calhoun****110. Elementary Mineralogy****Junior Class; Courses IV, V**

This course consists of laboratory study of the common economic and rock-making minerals, the common rocks, and the various natural structural materials. The physical properties of minerals will be studied and practice will be given in determination of unknown specimens of both minerals and rocks.

**111. Mineralogy****Junior Class; Courses II, IV**

A comprehensive course in crystallography, physical and chemical mineralogy, and systematic descriptive and determinative mineralogy. Crystallography is taught by lectures and text-book, with laboratory work on the collections of models and natural crystals; also physical, optical, and chemical properties of minerals, and descriptive mineralogy, covering the more important mineral species. Much of the laboratory work is devoted to the determination of minerals by means of their physical and chemical properties, by comparison with labeled specimens of the systematic collection, and by the use of unlabeled collections for practice in identifying minerals at sight. This course gives a sufficient knowledge of mineralogy for the geologist, metallurgist, mining engineer, or chemist, and will enable the student to readily identify all but the rarer minerals.

**112. Elementary Geology****Senior Class; Courses I, II, III, V, VI**

In courses I, II and III the influence of geologic phenomena on man is emphasized, particularly in the study of rock decomposition, formation of soils, processes of erosion and deposition and the resultant topographic forms. Topographic, geologic, and soil maps are studied and throughout the course the relation of geology to agriculture is emphasized. In courses V and VI the relation of geology to engineering problems is presented. Special emphasis is laid upon dynamic and structural geology. Geological maps, folios, and models are used. Structural materials such as clays, sands, building stones, etc., are given careful attention.

**113. General Geology****Senior Class; Course IV**

A broad course in the elements of general geology. Special stress is laid on structural and dynamical geology in their relations to the formation of rocks and rock-structures, the metamorphism of rocks, and the deposition of minerals and ores. In historical geology special attention is given to the development of the North American continent.

**114. Economic Geology****Senior Class; Course IV**

A general survey of geological products of value, including metallic and non-metallic minerals, and building stones; their origin and nature, distribution, modes of occurrence, and methods of exploitation. The course deals particularly with the economic deposits of North America, with briefer reference to those of other countries for purposes of comparison and for the elucidation of problems of origin, exploitation, etc. The student is required to read and prepare abstracts of the more important monographs and reports.

**115. Practical Geology****Senior Class; Course IV**

Field study and reports of geological process and phenomena, rocks and rock-structures, both original and secondary, accompanied by laboratory exercises by means of specimens, models, photographs, maps and sections; interpretation and representation of geologic phenomena, and training in the principles and methods of geological surveying, the construction of geological maps and sections, and the preparation of reports.

**117. Physiography**

**Sophomore Class; Courses I, II, III**

A laboratory course designed to give the student an adequate conception of the use of the meteorological instruments, weather maps, soil making minerals and rocks, soil types of state, and various other elementary meteorological and geological principles.

For description of equipment, see page 34.

**HORTICULTURE**

**Associate Professor Thompson**

Instruction is given in the Junior and Senior Classes. The theoretical work is illustrated by practical exercises in the garden, orchard, vineyard, greenhouse, and ornamental grounds of the College. These practical exercises enable the student to become familiar with all details of the work.

**120. Principles of Horticulture and Plant Propagation**

**Junior Class; Courses I, III**

In this course instruction is given both by lectures and text book, and special attention is given to the practical work. The subjects considered are seed sowing, seed testing, propagation by cuttings, layers, budding, grafting, and pruning.

**121. Olericulture—Vegetable Gardening**

**Junior Class; Courses I, II, III**

The work in this course covers all phases of garden work, but special emphasis is given to the home garden. The subjects considered are the following: construction, care, management, and uses of hot beds and cold frames, laying out gardens, preparation of soil, fertilizing, seed sowing, transplanting, cultivation, and treatment for diseases and insects. Text-book: Newman's Southern Gardener's Practical Manual.

**122. Landscape Gardening**

**Senior Class; Courses I, II**

The subjects considered in this course are propagation and care of flowering plants, bedding plants, shrubs, and laying out and planning home grounds, school grounds, parks, etc.

**123. (a) Principles of Horticulture. (b) Fruit Growing**

**Junior Class; Course II**

This course is planned for those students who do not devote much time to horticultural subjects. The work includes general principles of horticulture, the selection of site, the preparation of land

buying trees, and general cultural methods applied for the home orchard.

**124. Pomology—Fruit Growing**

**Senior Class; Courses I, III**

The subjects included in this course are: selection of site for both commercial and home orchards, the laying out of orchards, preparation of soil, selection of varieties, methods of culture, fertilizing, pruning, spraying, and a study of the fruit. It is the aim of this course to give the student instruction on all the common fruits of the temperate zone.

**125. Greenhouse Construction, Greenhouse Management, and Floriculture**

In this course lectures are given on the construction and care of hot beds and cold frames, construction, heating of, and care of greenhouse, the propagation, soil requirements, and general care of all greenhouse and house plants.

For description of buildings, grounds and equipments, see page 32.

**VETERINARY SCIENCE**

**Associate Professor Powers**

**Assistant Professor Feeley**

**130. Veterinary Anatomy**

**Junior Class; Course I, II.**

An elementary course including study of the skeleton, principal articulations, muscles of locomotion, etc., arranged as an introduction to the study of the principles of stock judging and physiology.

**131. Physiology**

**Junior Class; Course I, II**

This course includes the physiology of the circulatory, respiratory, digestive, urinary and generative organs; the lymphatic circulation and nervous system.

**133. Physiological Demonstrations**

**Junior Class; Course I, II**

A laboratory course in chemical physiology.

Text-book: A. Fish's "Exercises in Physiology."

**134. Sporadic Animal Diseases**

**Senior Class; Course II**

A brief course in the non-contagious diseases of farm animals, special attention being given to cause prevention.

**135. Contagious Animal Diseases****Senior Class; Course II**

In this course the relation of diseases of animals to the health of man is considered, and the bacteriology, modes of transmission, symptoms, cause, prevention, and treatment of the diseases common to man and animals are studied. Especial attention is given to the contagious diseases most common in this state.

**136. Veterinary Clinics****Senior Class; Course II**

A free clinic is held at the veterinary hospital every Monday afternoon of the session. These clinics are liberally patronized by the stockmen of the surrounding country, and the material thus secured affords practical work in the surgery and the treatment of diseases. Many patients are kept in the hospital for treatment.

**ZOOLOGY AND ENTOMOLOGY**

Associate Professor Conradi

Assistant Professor Gee

The work of instruction in this division consists of lectures, recitations, laboratory and field work. The work of the first two terms consists of general zoology, and is intended to be a foundation course upon which the following work in applied zoology is based.

Owing to the varied activities of this Division, including the Station laboratory and field work, the State entomological and plant quarantine work, and the systematic work of the museum, the student has ample opportunity to become familiar with the methods with which these various activities are operated. It enables the student to obtain an insight into practical field, orchard, garden and forest entomology. Ample opportunity is offered the student to familiarize himself with organization and investigation methods.

**140. General Zoology****Sophomore Class; Courses I, II, III**

This course consists of a study of the fundamental principles of life, including structure, habits and life history of invertebrate and vertebrate animals. Special emphasis is given the economic aspect, lectures and laboratory dissensions of type forms.

**141. Economic Entomology****Sophomore Class; Courses I, II, III**

The work of this term consists of lectures and laboratory work. Lectures are given on the general principles of insect control, and consist of a study of vulnerable points in insect structure and habits,

a study of mechanical control methods and spraying, and a full consideration of farm, garden and orchard management for controlling injurious insects. The lectures are supplemented in the laboratory with the careful study of insect structure and transformations, and the study of insecticides and spray machinery.

**143. Economic Entomology**

Junior Class, Courses I, II and III (Fall term.)

A practical study of field crop insects and the methods for controlling them.

**142. Economic Entomology**

Senior Class, Course I

A practical study of orchard and garden insects and the methods for controlling them.

## ANIMAL HUSBANDARY AND DAIRYING

Associate Professor Smith

Associate Professor Nourse

Assistant Professor Burgess

**150. Types of Cattle, Horses and Mules**

Junior Class; Courses I, II, III

Market and breed types of dairy and beef cattle; their origin and history. Types and breeds of horses and mules.

**152. Types of Sheep and Hogs**

Junior Class; Courses I, II, III

Breed and market types of sheep and hogs; their origin and history.

**153. Principles of Breeding**

Senior Class; Courses I, II, III

Principles of breeding, including selection; heredity; atavism; variation; fecundity; methods of breeding; in and in breeding; line breeding, etc.

**154. Stock Judging and Pedigree Work**

Junior Class; Courses I, II, III

Judging dairy and beef cattle, sheep, hogs, horses, and mules, and score card practice.

**155. Care and Management of Farm Animals**

Junior Class; Course II

Care and management, housing and feeding farm animals.

**157. Stock Feeding**

**Senior Class; Courses I, II, III**

Stock feeding, including composition and digestibility of feeding stuffs; their preparation, use and cost; nutritive ratio; digestion, etc. The available food stuffs of the South are discussed at length.

**160. Compounding Rations**

**Senior Class; Courses I, II, III**

**161. Milk and its Products**

**Junior Class; Courses I, II, III**

It is the object of this course to give the student thorough knowledge of the sanitary conditions necessary to produce and handle milk; pasteurization; milk testing; dairy machinery; manufacture of butter, cheese and ice cream, and marketing.

**162. Practical Work in Creamery**

**Junior Class; Courses I, II, III**

Cream separation and ripening; pasteurization of milk and cream; bottling milk; butter and cheese making; milk testing; butter and cheese scoring.

**163. Practical Work in Animal Husbandry and Dairying**

**Senior Class; Course II**

In order that students may learn every detail pertaining to the practical working of the dairy and feeding problems, all members of the Animal Husbandry section of the senior class will be required to act as foreman of the barns and dairymen and butter makers at the dairy building, for a period of at least one week, details of which will be arranged to meet requirements of the seasons, and the number of students that may be required in each squad.

The students will be expected to perform all operations incidental to these duties, with the regular herdsman and dairyman present to make suggestions and answer suggestions.

**BOTANY, FORESTRY AND BACTERIOLOGY**

**Associate Professor Hall**

**Instructor Massey**

**171. Elementary Phanerogamic Botany**

**Freshman Class; Courses I, II, III**

A preliminary practical phanerogamic course consisting of the morphological study of Angiosperms. The students have access to a very full line of fresh and preserved botanical material when the course demands its use.

**Text-book: Bergen & Davis' "Principles of Botany."**

**172. Elementary Cryptogamic Botany****Sophomore Class; Courses I, II, III**

A course in the study of Algae, Fungc, Bryophytes, Pteridophytes and Gymnosperms. The work is almost entirely microscopical. The students will secure some material from the field for study, although much will be furnished in the laboratory.

Text-book: Chamberlain's Methods.

**174. Systematic Botany****Sophomore Class; Courses I, II, III**

A course in the taxonomic and ecological features of this region with a laboratory and field study of the main types of Angiosperms. From 50 to 100 plants are here identified and classified.

Text-book: Gray's New Manual of Botany.

**175. Elements of Forestry****Junior Class; Courses I, II, III**

A lecture, field, and laboratory course dealing with the general principles of forestry, together with the practical methods applied in lumbering, forest propagation and conservation.

Text-book: Green's Principles of American Forestry.

**176. Plant Pathology****Senior Class; Courses I, III**

A systematic study of fungi with special reference to species causing diseases of economic plants. The students are taught to recognize the more common diseases, particularly in the early stages; and the whole question of prevention and practicable remedies is fully discussed. Methods of isolating artificially cultivating, and inoculating with disease causing organisms will be considered.

**177. Introductory Bacteriology****Senior Class; Courses I, II, III**

A brief study of the general character, habits and work of bacteria is followed by practical work in growing, mounting and determining them. Soil and dairy bacteria are given special attention. The principal bacterial contagious diseases and methods of prevention are considered briefly in the class work.

**178. Animal Bacteriology****Senior Class; Courses I, II, III**

This course treats of dairy bacteriology more in detail, and in addition some time is spent in the study of disease producing forms. The principal contagious bacterial diseases of animals are studied.

This course is open only to those who have completed the introductory course in Bacteriology.

## ENGINEERING DEPARTMENT

Vice-Director Earle

## ELECTRICAL ENGINEERING

President Riggs

Assistant Professor Dargan

### 200. Electricity and Magnetism

#### Junior Class; Course V

Principles of Electricity and Magnetism, instruments, wiring calculations, incandescent lighting, direct current motors and generators, etc.

Text-books: Thompson's "Elementary Lessons in Electricity and Magnetism." Jackson's "Elementary Electricity and Magnetism." Riggs' and Dargan's "Mimeographed Notes and Problems."

### 201. Electrical Laboratory

#### Junior Class; Course V

Experimental verification of the fundamental laws of Electricity and Magnetism, including the measurement of current, resistance, electromotive force, capacity, permeability, the tests and calibration of instruments, operation of direct current motors and generators, etc.

Text-book: Riggs, Kyser and Dargan's "Electrical Laboratory Experiments."

A number of the best books on laboratory practice are available for reference.

The student is required to study the theory as well as the manipulation of the experiments, and to express his complete study of each experiment in a carefully prepared written report.

### 202. Dynamo Electric Machinery

#### Senior Class; Course V

First Term: Study of the design of direct current dynamo-electric machinery. Second and third terms: Study of alternating currents and their application to light and power. Special attention is directed to polyphase system and apparatus.

Text-books: Franklin and Esty's Elements of Electrical Engineering; Franklin's Alternating Currents and Alternating Current Machinery; Riggs' Dynamo Design.

Note.—A complete dynamo design, with full set of drawings, is

required as part of Course 202 in Electrical Engineering, and Course 238 in Mechanical Drawing.

### 203. Electrical Laboratory

**Senior Class; Course V**

Care, management and testing of arc and incandescent generators, direct current generators, motors and of single and polyphase machinery and apparatus.

Text-book: Riggs' Electrical Engineering Experiments.

For description of buildings and equipment, see page 38.

## MECHANICAL ENGINEERING

Associate Professor Earle

### 210. Mechanism

**Junior Class; Course IV, V, VI, VII**

Spur, bevel, and screw gearing, belt gearing; lobed and elliptic wheels; epicyclic trains; escapements; ratchet motions; link motions; quick return motions; cam motions.

Text-book: Stahl and Wood's Mechanism.

### 211. Mechanics

**Junior Class; Course IV, V, VI, VII**

Motion, force, velocity, force system, moments of force, general principles and methods of solving problems both analytically and graphically.

Text-book: Maurer's Technical Mechanics.

### 212. Mechanics

**Senior Class; Courses V, VI**

Two hours per week during the first two terms are given to the study of pure mechanics, center of gravity, moments of inertia, work, energy, power, elasticity, resilience, strength of engineering materials, and hydraulics.

Text-book: Maurer's Technical Mechanics.

Note: Two hours practical Electrical Engineering may be given in place of second term Mechanics.

### 213. Mechanical Engineering

**Senior Class; Courses IV, V, VI, VII**

Study of the design and construction of steam boilers, heaters, pumps and injectors; theory of simple, compound and triple expansion steam engines; gas and gasoline engines; hot air engines; air compressors and motors; ice and refrigerating machinery; transmission of power; specifications and the law of contracts. Theory

of the strength of engineering materials. Graphical and analytical solution of problems.

Text-book: Creighton's Steam Engine and Other Heat Motors.

#### 214. Mechanical Laboratory

##### Senior Class; Courses V, VI

Study, use and calibration of water-meters, weirs steam gauges, indicators, dynamometers, calorimeters; tests of fuel and lubricants; tests of building materials, as iron, wood, brick, cement, etc.; setting the valves of the plain slide-valve and automatic cut-off steam engines; indicator practice; horsepower and efficiency of steam, gasoline and hot-air engines and air-compressors and motors; efficiency trials of steam boilers; duty trial of steam pump and of College pumping engines.

Reference Books: Carpenter's Experimental Engineering; Smart's Engineering Laboratory Practice; Thurston's Steam Engine.

#### 215. Mechanical Laboratory

##### Senior Class; Courses IV, VII

Study, use and calibration of steam gauges; indicators; calorimeters; tests of building material, as iron, wood, brick, cement; setting the valves of plain and slide-valve and automatic cut-off engines. Practice in running and testing water motors; steam engines; gasoline engines; pumps, firing and testing of steam boilers.

Reference Books: Carpenter's Experimental Engineering; Smart's Engineering Laboratory Practice; Thurston's Steam Engine.

### CIVIL ENGINEERING

Professor Houston

Assistant Professor Sweeney

#### 530. Descriptive Geometry

##### Sophomore Class; Courses IV, V, VI, VII

Study of the representation of points, lines, planes, surfaces and solids, and of their relations; tangencies, intersections and developments; numerous original exercises.

Text-book: Low's Practical Solid or Descriptive Geometry.

#### 531. Plain Surveying

##### Sophomore Class; All Courses

This course includes the general principles and fundamental operations of surveying with compass, level, and transit. The field work includes actual surveys of tracts of land, of which the acres

are computed and plats are drawn. Experience is given in problems of laying out and dividing up land, and in locating irregular boundaries. Practice is also had in section and differential leveling.

Text-book: Breed and Hosmer's Vol. 1. Principles and Practice of Surveying.

### 532. Higher Surveying

#### Junior Class; Course VI

Use and adjustment of transit, stadia, solar compass, and plane-table topographic surveying with transit and stadia; railroad topography; triangulation; city and hydraulic surveying; mine surveying; geodetic surveying; map and plan drawing; topographical symbols; photographic surveying, etc.

Text-book: Breed and Hosmer's Vol. 1. Principles and Practice of Surveying.

### 533. Railway Engineering

#### Junior Class; Course VI

Preliminary and location surveys; location from contour maps; laying out of simple and compound curves; setting of slope stakes; computation of earthwork; switches, turnouts; theory of economic location; effects of grades, curves and length upon the cost of operation.

### 535.-538. General Civil Engineering

#### Senior Class, Course VI

This course includes a study of building materials, mechanics of construction, derivation of practical formulas, masonry construction, foundations on land and in water, stability of walls and arches, analytical investigation of stresses in various forms of roof trusses and bridges, the field and office work in railroad construction, location and construction of country roads and city pavements, hydrostatics, motion of water in pipes and channels, determinations of discharge of streams by current meter and weirs, water power developments, water supply and the disposal of sewerage. In addition, the student is required to hand in a thesis on some engineering work. This necessitates additional field work, and outside study. The College Library furnishes valuable books of reference.

Text-books: Fiebeger's Civil Engineering. Merriman and Jacoby's Roofs and Bridges, Vol. 1. Railway Construction.

## PHYSICS

Associate Professor Poats

The study of physics is begun in the Sophomore year, and completed in that year by students taking agricultural and textile industry.

All other students take physics, both theoretical and practical, in the Junior year.

The teaching is by lectures and experiments interspersed with quizzes, exercises, and monthly reviews.

In the physical laboratory the student makes for himself the experiments of a general laboratory course. These experiments serve to further impress the theoretical principles upon the mind and to show the bearing of the subject upon practical matters in general.

**230. Principles of Physics****Sophomore Class; Courses I, II, III**

A complete course in the principles of physics with applications to things in nature and the arts.

Text-book: Millikan & Gale's First Course in Physics.

**231. General Physics****Junior Class; Courses IV, V, and VI**

Properties of matter, physical measurements, mechanics of solids fluids, and molecules, work, mechanical energy, and heat.

Text-books: Millikan & Gale's First Course in Physics, Professor's Lectures and Notes.

**232. General Physics****Junior Class; Courses IV, and V**

Electricity and magnetism, heat, sound, and light.

Text-books: Reed & Guthe's College Physics, Professor's Lectures and Notes.

**233. Physical Laboratory****Junior Class; Courses IV, and V**

Experimental investigation of the physical properties of matter, and the verification of the laws of mechanics, heat, sound, light, electricity and magnetism.

For description of equipment, see page 42.

## DRAWING AND DESIGNING

Associate Professor Lee  
Assistant Professor Klugh  
Instructor Birch  
Instructor Harris

Throughout the course the best methods of work pursued in the drafting rooms of workshops and manufacturing establishments are given.

## 420. Freehand Drawing

Freshman Class; All Courses

Graded exercises in sketching from geometrical models, plaster casts, machine parts and other objects in pencil and ink, particular attention being paid to outlines and perspective.

## 242. Mechanical Drawing

Freshman Class; Courses IV, V, VI, VII

Exercises in the use of drawing instruments; lettering; geometrical problems; projections; conventional section and shade lines; working drawings of simple parts of machines, from sketches and models, tracing and blue printing.

## 243. Mechanical Drawing

Exercises in the use of drawing instruments; lettering; geometrical problems; projections; plans and elevations of farm buildings, tracing and blue printing.

## 244. Mechanical Drawing

Sophomore Class; Courses IV, V, VII

Orthographic projection; intersection and development of surfaces; isometric drawing; perspective; shades and shadows; working drawings of machines or parts of machines from sketches and specifications. Elementary principles of machine design; construction and screw threads; proportioning of bolts and nuts, tracing and blue printing.

## 244a. Mechanical Drawing

Sophomore Class; Course VI

Orthographic projection; intersection and development of surfaces; isometric drawing; perspective; shades and shadows; working drawings of machines; topographical drawing.

## 245. Mechanical Drawing

Junior Class; Course V

Practical problems in mechanism. Lobed and elliptic wheels; spur and bevel gearing; cams; link motion; quick return motion;

belt gearing; coupling; riveting, etc.; tracing and blue printing.

246. Mechanical Drawing

Junior Class; Course VI.

First half same as Course 245; platting; topographical drawing; tinting; railroad and map drawing; plans and details of buildings.

247. Mechanical Drawing

Junior Class; Course IV

First half same as Course 245. Second half, drawing of furnace designs and other metallurgical appliances.

248. Machine Design

Necessary drawings for work under construction in the shops; details of steam and gas engine and electrical machinery. Design drawing required in graduation thesis.

249. Mechanical Drawing

Senior Class; Course VI

Railroad and map drawing; plans and details of bridges and buildings. Design drawing required in graduation thesis.

FORGE AND FOUNDRY

Assistant Professor Gantt

Instructor Allison

250. Forge Work

Freshman Class; All Courses

Study of Buffalo down-draft forges; graduated exercises, embracing fundamental operations of forging, such as upsetting, bending, punching, twisting, welding, etc. Part of third term is devoted to working with tool steel, involving processes of annealing, hardening, tempering, etc.

251. Foundry Work

Names and uses of molders' tools; tempering and working of molding-sand; making and patching of molds. Work with patterns of various shapes and sizes, illustrating the principles of venting, gating, coring, etc. Grading and mixing of iron; charging and operating cupola. Several weeks are devoted to work in brass molding. The practical instruction is supplemented by a course of lectures covering the various phases of foundry work.

252. Forge Work

Freshman Class; Courses I, II, III

Study of Buffalo down-draft forges. Short course, embracing fundamental operations of forging.

For description of equipment, see page 45.

## MACHINE SHOP

Assistant Professor Howard

## 260. Machine Shop

## Junior Class; Courses V, VI, VII

Bench work in chipping, filing, scraping, and polishing is begun first. Students are given instruction in the proper handling of the hammer and chisel, grinding the chisel and chipping cast iron.

They are then required to work a casting to dimensions and quality of finish indicated on a drawing furnished them.

After this chipping is completed, the same casting is filed to flat surfaces, which process is followed by scraping to surface plate and by polishing:

Students are next advanced to lathe work, simple pieces of lathe work being given first.

Practice is given in turning, boring, threading, filing, and polishing, very accurate measurements with both spring and micrometer calipers being required.

From lathe work, the student progresses through the various processes of drilling, shaping, planing, milling and grinding.

Each student is required to do his own tool grinding.

## 261. Machine Shop

## Senior Class; Courses V, VI

The work in the Senior year consists in the building of small machines, such as gasoline engines, electric motors, generators, etc., from carefully worked out designs supplied to the students, this work being done under the close supervision of the instructor in charge.

This machine building involves general machine work, and covers the whole field of operations.

The parts of these machines are very carefully checked, and work falling outside the close limits of error is rejected.

These machines become the property of their builders by payment of the price of material used in their construction.

## WOODWORK

Assistant Professor Gardner

Instructor Folk

The course in woodwork does not aim to make the student a skilled workman, but rather to teach the proper use of tools, at the

same time training the hand and the eye, to impress the importance of marking the exact dimensions, and to induce the proper reasoning necessary to reach a desired end.

The course covers two years, advancing through elementary principles and practice to pattern making, where a series of exercises teaches the fundamental principles. Then large patterns of machines under construction are undertaken, giving the student opportunity to learn commercial shop methods, and to apply intelligently all the principles of pattern making.

#### 270. Woodwork

##### Freshman Class; Courses IV, V, VI, VII

Use, care and sharpening of tools, exercises to teach use of planes, saws, chisels, squares, etc.

Advanced exercises involving dove-tailing, glueing and polishing. Also full course with face plate and chucking work.

#### 271. Woodwork

##### Freshman Class; Courses I, II, III

The work is given for two terms only, and is very much the same as course 270, except that general principles are substituted for some of the details.

#### 272. Woodwork—Pattern Making

##### Sophomore Class; Courses IV, V, VI, VII

The principles of pattern making are taught with special exercises. Then large and complicated patterns of machines under construction are undertaken, and the large machines in the planing shops are explained and used as needed. Cabinet and furniture making are taken up to gain the use of machines not needed in pattern work.

## CHEMICAL DEPARTMENT

R. N. Brackett, Acting Director

### CHEMISTRY

Acting Professor Brackett

Acting Associate Professor Henry

Assistant Professor Lipscomb

Assistant Professor Smith

#### 300. General Chemistry

##### Sophomore Class; All Courses

Inorganic Chemistry.

Text-book: Newell's Inorganic Chemistry for Colleges.

**301. Chemical Laboratory****Sophomore Class; All Courses**

Introductory work and qualitative analysis.

Text-book: Jones' Junior Course in Practical Chemistry.

**302. Industrial Chemistry****Senior Class; Courses III and IV**

The applications of chemistry in the more important arts and manufactures. Among the subjects studied are: sulphuric acid; soda chlorine; potash salts; fertilizers; lime; mortar and cements; glass; porcelain; illuminating gas; coal tar; mineral oils; vegetable and animal oils; soap; fermentation industries, etc.

Text-book: Thorp's Outlines of Industrial Chemistry.

**303. Chemical Laboratory****Junior Class; Courses I, II, III, IV, VII**

Qualitative and quantitative analysis. Assaying is given in the metallurgical course.

Books used: Jones' Junior Course in Practical Chemistry; Fresenius' Qualitative and Quantitative Analysis; Lincoln and Walton's Quantitative Analysis; Notes on Assaying.

**304. Agricultural and Organic Chemistry****Junior Class; Courses I, II, III**

The composition of plants, the sources of plant food, the composition of soils, the improvement of soils by chemical means, the composition and manufacture of fertilizers; and the leading facts and principles of organic chemistry.

Text-books: Johnston's Elements of Agricultural Chemistry, edited by Cameron and Aikman. Moore's Outline of Organic Chemistry.

**305. Chemical Laboratory****Junior Class; Courses I and II -****Senior Class; Course III**

Quantitative analysis of fertilizers, soil, ashes of plants, water cattle foods and dairy products.

Books used: Bulletins of United States Department of Agriculture, containing analyses adopted by the Association of Official Agricultural Chemists; Lincoln and Walton's Quantitative Analysis.

**306. Physical Chemistry****Junior Class; Course IV**

Text-book: Jones' Introduction to Physical Chemistry.

## METALLURGY

Acting Associate Professor Henry

## 310. Metallurgy

Senior Class; Course IV

Text-books: Sexton's Elementary Text-book of Metallurgy. Hi-orn's Mixed Metals; Notes on Alloys.

## 311. Chemical and Metallurgical Laboratory

Senior Class; Course IV

For description of buildings and equipment, see page 45.

## DEPARTMENT OF TEXTILE INDUSTRY

Professor Doggett Director

## CARDING AND SPINNING

Assistant Professor Taylor

## 400. Raw Material; Cotton Grading

Junior Class; Course VII

Study of the physical properties of cotton to ascertain the grade, length of staple, and general spinning qualities. The effects of temperature and humidity on fibers.

## 401. Opening and Mixing

Junior Class; Course VII

Reasons for opening and mixing. When and how to open and mix. Effects of blending on the resultant yarn.

## 402. Picker Room

Junior Class; Course VII

Arrangement of machinery; construction; setting and speeds for various lengths of fibers; calculations.

## 403. Carding

Junior Class; Course VII

Purpose of carding; construction and comparison of different types; grinding, with practice in making all settings; erections and calculations for changing yarns and speeds.

## 404. Railway Heads and Drawing Frames

Junior Class; Course VII

Purpose, use, construction; comparison of the leather covered rolls with the metallic rolls. Settings and calculations.

**405. Fly Frames****Senior Class; Course VII**

Slubber, intermediate, fine roving, and jack frames; construction, care and operation. Calculations for draft, twist, lay tension and other gears.

**406. Yarn Manipulation****Senior Class; Course VII**

Twisting, reeling, spooling, beaming, and slashing; the mixing of size for various kinds of yarns.

**407. Combing****Senior Class; Course VII**

Silver lap machine; ribbon lap machine; comber; construction, operation and care of each, with practice in adjusting and tuning.

**408. Spinning Frames****Senior Class; Course VII**

Construction, comparison and operation of the leading types of modern ring spinning frames; coarse, medium, and fine numbers spun; calculations for the various change gears and constants.

**409. Spinning Mules****Senior Class; Course VII**

A study of the construction; practice in operating and adjusting; uses of mule spun yarns; calculations for all necessary changes.

Text and Reference Books: Monie's Sizing and Sizing Compounds; Nasmith's Student Cotton Spinner; Taggart's Cotton Spinning; Tompkins' Cotton Mill Processes and Calculations.

**WEAVING AND DESIGNING****Assistant Professor McSwain****140. Hand Loom Weaving****Junior Class; Course VII**

The work in hand-loom weaving is parallel with the course in designing for the first term of the session. The student is required to produce on the loom most of the elementary designs made in designing.

**411. Power Loom Weaving****Junior and Senior Classes; Course VII**

Power loom weaving is taken up at the beginning of the second term in the Junior year, and includes a study of the construction and "fixing" of cam looms for two, three four and five harness work. A study is also made of the construction and operation of

automatic looms, Dobby shedding engines, box motions, leno attachments and Jacquards.

#### 412. Designing

##### Senior Class; Course VII

The course in designing includes the study and construction of the foundation, derivation and combination weaves used for the construction of single and double cloths; and the making of drawing-in and chain drafts for the same.

Instruction is also given in color designing for textile fabrics; chenille, swivel, lappet and pile fabric designing and weaving.

#### 413. Jacquard Designing

##### Senior Class; Course VII

Method of building Jacquard harness for straight-through, point and combination tie-ups for fabrics of different design and construction; methods of laying out figures and enlarging sketches for design.

#### 414. Cloth Analysis

##### Senior Class; Course VII

Methods of finding the counts of yarn in any sample of cloth; determining the construction, weave and weight of any samples so as to produce the same or to find the cost of material in the fabric.

Text and Reference Books: Fox's Mechanism of Weaving; Holmes Cotton Cloth Designing; Ivey's Loom Fixing; Posselt's Technology of Textile Design; Posselt's Jacquard Machine Analyzed and Explained.

### TEXTILE CHEMISTRY AND DYEING

Professor Doggett

#### 420. Textile Chemistry

##### Junior Class; Course VII

Manufacture, properties, technical analysis and application of the more important inorganic chemicals used in the textile industry; general principles of synthetic organic chemistry.

The processes used in the laboratory course in illustration are based so far as possible upon the methods used on the large scale.

Text-book: Olney's Textile Chemistry and Dyeing.

#### 421. Dyeing

##### Senior Class; Course VII

Chemistry of textile fibres; bleaching, dyeing, printing and finishing; Synthetic dyestuffs, their manufacture, properties, identi-

fication, application. The laboratory course includes bleaching, dyeing, calico printing; the preparation of representatives of the different classes of dyestuffs.

Text-books: Cohen's Theoretical Organic Chemistry; Doggett's Laboratory Notes on Textile Chemistry.

Reference Books: Schultz and Julius' Organic Coloring Matters; Allen's Commercial Organic Analysis; Georgievic's Chemical Technology of Textile Fibers; Knecht, Rawson and Rosenthal's Manual of Dyeing; Matthews' Laboratory Manual of Dyeing and Textile Chemistry.

## ACADEMIC DEPARTMENT

### ENGLISH

Professor Furman

Associate Professor Daniel

Assistant Professors Keitt, Bryan, Bradley

The purpose of the course in English is to enable the student to acquire the power to express his thoughts with clearness, precision and force; and to cultivate in him a taste for good literature. Elementary English grammar and the rudiments of composition are taught in the preparatory class.

#### 501. English Grammar

##### Freshman Class; All Courses

A review of the subject of grammar introduces the work of this class. Constant drill is given in theme writing, pupils being expected to make use of the College Library under direction of instructors. Methods of using dictionaries, encyclopaedias, and other reference books are explained practically to the students. Full supplementary readings are required, and practice is given in the writing of abstracts of books so read.

Text-books: Emerson-Lockwood's Composition and Rhetoric; Buehler's Practical Exercises in English; Webster's Academic Dictionary, and such English classics as may be assigned.

#### 502. Composition, Rhetoric, American Literature

##### Sophomore Class; All Courses

The study of composition and rhetoric is pursued throughout the year, with special emphasis laid on practical composition. Carefully written themes are required weekly. The course in American literature includes a consideration of the development of American literature, brief biographies of the leading authors, and a careful

study of selections from their chief works. The course of parallel reading is taken from both American and English writers.

Text-books: Wooley's Hand-Book of Composition, and Painter's Introduction to American Literature.

### 503. English Literature

#### **Junior Class; All Courses**

The work in the Junior class begins with the critical study of Macauley as an essayist. This is followed by a general course in English literature. Pancoast's English Literature is the textbook, this work being supplemented by lectures. Monthly essays are required, and frequent oral readings, embracing selections from the principal English authors from Chaucer to the present time.

### 504. Studies in Shakespeare

#### **Senior Class; All Courses**

This class is given instruction in the principles of literary criticism. A somewhat full course in Shakespeare study is furnished. Several plays are read in class, the students being orally examined on all questions, grammatical, historical and ethical, which arise in the study of this author. Monthly essays are required.

## **HISTORY AND POLITICAL ECONOMY**

### **Professor Morrison**

### **Assistant Professor Holmes**

The course includes South Carolina History, Commercial Geography, General History, United States History, Civics, and Political Economy.

The method of instruction is a combination of the text-book and lecture methods, with parallel reading as far as practicable under the instructor's direction. The class rooms are supplied with globes, charts, maps, and works of reference, in the use of which the young men are carefully trained. The students make liberal use of the many volumes of poetry, historical romance, biography and history found in the College Library.

The history of the State, of the South, and of the United States receive special attention. "A people that takes no pride in the noble achievements of a remote ancestry will never achieve anything worthy to be remembered by remote descendants."

### 511. South Carolina History

#### **Freshman Class; All Courses**

Text-book: Weber's History of South Carolina.

**512. Commercial Geography****Freshman Class; All Courses**

Text-book: Olin's Commercial Geography.

**514. General History****Sophomore Class; Courses IV, V, VI, VII****Junior Class; Courses I, II, III**

Text-books: Wolfson's Essentials in Ancient History; Harding's Essentials in Mediaeval and Modern History.

**United States History****Sophomore Class; Courses IV, V, VI, VII****Junior Class; Courses I, II, III**

Text-book: Hail's Essentials in American History.

**513. Civics****Sophomore Class; Courses IV, V, VI, VII****Junior Class; Courses IV, V, VI, VII**

Text-book: Smith's Training for Citizenship.

**515. Political Economy****Senior Class; All Courses**

Text-book: Seager's Economics, Briefer Course.

**MATHEMATICS****Professor Martin****Associate Professor Shanklin****Assistant Professors Hunter, Johnstone, Bramlett**

This course presupposes a thorough knowledge of arithmetic and algebra through elementary quadratics. (See requirements for admission, page 69.)

**520. Algebra****Freshman Class; All Courses**

Review of involution, evolution, theory of indices and quadratics; simple indeterminate equations; inequalities; proportion and variation; logarithms.

Text-books: Well's Text-book in Algebra.

**521. Geometry****Freshman Class; All Courses**

Rectilinear figures; circles; similar figures; comparison and

measurement of surfaces of polygons; regular polygons and circles. Plain and solid angles; polyhedrons; cylinders and cones; spheres, spherical polygons and pyramids; volume. Special attention is given to the formation, on the part of students, of the habit of clear and accurate reasoning and concise expression.

Text-book: Durell's Plane and Solid Geometry.

## 522. Trigonometry

### Sophomore Class; All Courses

Measurements of angles; trigonometric functions; right triangle; general formulas; multiple angles; inverse functions; trigonometric equations; oblique triangles; trigonometric solutions of cubic equations; spherical trigonometry; general formulas; right spherical triangle; oblique spherical triangle; applications.

Text-book: Crawley's Plane and Spherical Trigonometry.

## 524. Higher Algebra

### Sophomore Class; Courses IV, V, VI, VII

Progressions; binomial theorem; theory of limits; convergency; divergency; and summation of series; undetermined coefficients; continued fractions; determinants; theory of equations.

Text-book: Well's Text-Book in Algebra.

## 525. Analytic Geometry

### Sophomore Class; Courses IV, V, VI, VII

#### Junior Class; Courses IV, V, VI, VII

Cartesian and polar systems of co-ordinates; discussion and construction of loci; the straight line; transformation of co-ordinates; circle; parabola; ellipse; hyperbola; general equation of second degree involving two variables; higher plane curves; solid analytic geometry; systems of co-ordinates; equation of the plane; the straight line in space; surfaces of the second order.

Text-book: Nichol's Analytic Geometry (Revised Ed.)

## 526. Differential Calculus

### Junior Class; Courses IV, V, VI, VII

Differentiation of algebraic functions; transcendental functions; successive differentiation and development of functions; functions of two variables; tangents and asymptotes; envelopes.

Text-book: Snyder and Hutchinson's Differential and Integral Calculus.

## 527. Integral Calculus

### Junior Class; Courses IV, V, VI, VII

Elementary forms of integration; rational fractions; integration

of irrational fractions; successive reduction; integration of functions of two variables; lengths of curves; areas of plane curves; rectification of curves; cubature of volumes.

#### 540-541. Bookkeeping

##### Courses I, II, III

The course in Bookkeeping is designed to give the students a good working knowledge of the subject. It has been introduced with a special view to enable Agricultural students to keep neat and accurate accounts of all business transactions relative to the farm.

The course seeks to familiarize the student with business methods in keeping accounts with parties, firms, banks, etc., and he is given abundant practice in making out business papers, of ordinary occurrence, and in making trial balances, balance sheets, statements.

Text Used: Sadler and Rowe's "Commercial and Industrial Bookkeeping.

#### MILITARY DEPARTMENT

Captain M. B. Stokes, U. S. Army, Director. Commandant of Cadets  
Military Science and Tactics  
Captain Stokes

The course in military instruction, as prescribed and followed, is both theoretical and practical.

In addition to the benefit which the general government derives from the military instruction given at this and other colleges, it is believed that the discipline enforced, the habits of obedience and punctuality inculcated, the improvement in bearing and appearance of those instructed, and also the practice in directing and commanding others, which nearly all in the course of time get, is of immense benefit to the student individually.

##### Theoretical

600. Tactics and Elements of Military Science  
Junior Class; All Courses

The theoretical instruction, consisting of talks and lectures, includes the following, as prescribed by the War Department: Infantry Drill Regulations, Small Arms Firing Manual, Field Service Regulations, and Manual of Guard Duty.

601. Military Science

Senior Class; All Courses

Lectures on military history, the military system, and the military policy of the United States.

Practical

602. Military Drill

Required of all Cadets

Infantry drill, including close and extended order; advance and rear guards and outposts; marches; the ceremonies of review, inspection, parades, guard mounting, and escort of the colors; gallery practice; guard duty.

603. Target Practice

Senior Class

Complete course of instruction in rifle practice on target range.

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## THE SOUTH CAROLINA AGRICULTURAL EXPERIMENT STATION

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### Station Staff

JOSEPH NELSON HARPER, B. S., M. S. A.  
Director and Agriculturist

CHARLES CARTER NEWMAN, B. S.  
Horticulturist

HENRY WALTER BARRE, M. S.  
Botanist and Plant Pathologist

ALBERT FREDERIC CONRADI, B. S. A., M. S.  
Entomologist and Zoologist

THOMAS NELSON KEITT, B. S.  
Chemist

ENOCH BARNETT, D. V. M.  
Veterinarian and Animal Husbandman

W. A. THOMAS, B. S.  
Field Pathologist

L. P. BYARS, B. S.  
Assistant in Field Pathology

JOHN NATHAN HOOK  
Secretary and Librarian

WILLIAM D. GARRISON, B. S.  
Superintendent Coast Land Experiment Station

MISS HELEN C. BRADFORD  
Stenographer

BURNS GILLISON  
Foreman Experiment Station Farm

The Agricultural Experiment Station of South Carolina is a department of Clemson Agricultural College. By action of the Board of Trustees the Station work was separated from the College work in order to enable the Station investigators to give their entire time to experiments and research problems relating to the agriculture of South Carolina. The Experiment Station is supported entirely by funds provided by acts of Congress known as the Hatch and Adams Acts, and its object is, according to the law providing for its

establishment, to aid in acquiring and diffusing among the people useful and practical information; to conduct scientific investigations with reference to the principles and applications of agricultural science; to rectify experiments already made; to examine into the physiology of animals and plants that remedies may be provided for the several diseases to which they are subject: to conduct such other researches relating to agricultural industry; and to make reports of progress or of results obtained, to be distributed to the farmers of the State, who may request the same.

The following divisions are operating in the Station:—Agronomy and Soils, Animal Husbandry and Veterinary Science, Zoology and Entomology, Chemistry, Horticulture, and Botany and Plant Pathology. The offices and laboratories occupy a portion of the Agricultural Hall, while the Station experimental farm, consisting of about 200 acres, is located east of and adjoining the College campus, and is equipped with the necessary buildings, including foreman's residence, barn for the proper housing of tools, live stock, etc., the horticulturist's laboratory, and the dairy barns and silos. On this farm experiments are constantly in progress covering a large range of agricultural subjects and these experiments are accessible to the inspection of the College students.

Since the Station was organized, 154 bulletins and 23 annual reports have been issued. Nothing so readily gives practical value and general importance to Experiment Station work as an extended dissemination of the reports of its progress and accomplishment in the solution of agricultural problems. The work of distributing analyses of commercial fertilizers among the farmers of this State is continued. A leaflet of four pages containing the analyses is published at the College and mailed from the office of the Station secretary once a week for twenty-two weeks in editions of 17,000 copies. These leaflets are distributed with weekly regularity upon as many farms in the State. The purpose of this wide diffusion of the records of the chemical analysis is for the pro-

tection to the farmer against the purchase of fraudulent fertilizer. The total number of bulletins issued from this Station during the past fiscal year, including the fertilizer leaflets, amounted to 404,000 copies. A striking evidence of the growing interest in all matters pertaining to the publications of this Station is in the statement of the fact that the accession of 1,600 names to the permanent mailing list was made within the past year.

Some of the characteristics of the organization and work that give special importance to the South Carolina Experiment Station as a leading and influential department of Clemson Agricultural College are: The effective support of the Board of Trustees, well equipped laboratories, a good experimental farm, a corps of specialists conducting and directing the prosecution of research work in the various divisions, and supervising a correspondence that embraces and pervades every agricultural community in the State.

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**ALUMNI ORGANIZATION****Clemson College Alumni Association**

D. H. HENRY, '98, President.

R. E. LEE, '96, First Vice-President.

H. C. TILLMAN, '03, Second Vice-President.

B. H. RAWL, '00, Third Vice-President.

H. W. BARRE, '05, Secretary,

J. E. HUNTER '96, Treasurer.

D. H. HILL, '05, Alumni Orator of 1911;

D. B. PUERIFOY, '07, Alternate.

There are Alumni Chapters in each of the following cities:—

New York, N. Y.

Pittsburgh, Pa.

Washington, D. C.

Schenectady, N. Y.

Greenville, S. C.

Charleston, S. C.

Rock Hill, S. C.

Pittsfield, Mass.

**Register of Graduates and Former Students**

As soon as the necessary information is at hand a Register of Graduates and Former Students will be published as a separate bulletin. Graduates, former students, and friends of the institution are requested to co-operate in making this record as nearly complete as possible. The following is the information desired: name, address, year of graduation, or of attendance at the College, and occupation. This should be sent to the Secretary of the Clemson College Alumni Association.

DEGREE OF  
BACHELOR OF SCIENCE WITH DIPLOMA

W. M. Albergotti	Mech. Elec.	Orangeburg
W. Allen	Agri. III	Spartanburg
F. R. Baker	Civil	Charleston
W. A. Barnette	Agri. II	York
W. D. Barnett	Text.	Oconee
P. A. Baxley	Agri. II	Barnwell
A. J. Becker	Agri. III	Spartanburg
H. F. Bethea	Agri. I	Marion
L. C. Boone	Civil	Orangeburg
B. D. Boyken	Agri. I	Kershaw
W. J. Brockington	Agri. II	Williamsburg
D. C. Britt	Mech. Elec.	Abbeville
J. M. Buckner	Agri. III	Barnwell
G. A. Burton	Civil	Newberry
N. E. Byrd	Civil	Orangeburg
J. N. Crothers	Agri. III	York
D. B. Clayton	Mech. Elec.	Fairfield
H. R. Clinkscales	Agri. III	Fairfield
L. A. Coleman	Mech. Elec.	Florence
W. C. Crum, Jr.	Civil	Orangeburg
K. Easterling	Mech. Elec.	Marlboro
S. E. Evans	Agri. II	Clarendon
G. T. Floyd	Civil	Williamsburg
T. Fulmer	Mech. Elec.	Saluda
F. B. Green	Mech. Elec.	Richland
A. Grier	Mech. Elec.	Sumter
R. P. Henderson	Agri. II	Greenwood
V. B. Higgins	Civil	Pickens
J. L. Hill, Jr.	Civil	Abbeville
F. W. Chapman	Mech. Elec.	Newberry
J. H. Earle	Civil	Pickens

NAME	COURSE	COUNTY
F. L. Gandy	Agri. I.	Darlington
J. T. Stephenson	Mech. Elec.	Oconee
W. M. Hodge	Agri. III	Clarendon
O. A. Hydrick	Civil	Orangeburg
C. F. Inman	Agri. III	Cherokee
H. S. Johnson	Agri. II	Florence
S. O. Kelley	Mech. Elec.	Americus, Ga.
L. L. LaRoche	Chem. and Geol.	Charleston
P. E. Lee	Mech. Elec.	Spartanburg
W. J. Marshall	Agri. II	Greenwood
E. C. Martin	Agri. I	Pickens
A. McDavid	Civil	Abbeville
A. A. McKeown	Agri. II	Chester
C. McLaurin	Agri. I	Sumter
C. F. Middleton	Mech. Elec.	Charleston
J. D. Murray	Text.	Colleton
R. E. Nickles	Agri. I	Abbeville
S. O. Pegues	Agri. I	Marlboro
E. H. Pinckney	Agri. I	Charleston
H. D. Plenge	Mech. Elec.	Charleston
J. S. Pyatt, Jr.	Agri. I	Georgetown
H. L. Reeves	Agri. I	Marion
J. C. Reid	Mech. Elec.	Spartanburg
J. M. Ridgill	Agri. I	Clarendon
C. M. Robbs	Civil	Cherokee
C. P. Roberts, Jr.	Civil	Greenwood
W. A. Robinson	Civil	Pickens
L. D. Rogers	Agri. III	Darlington
G. D. Ryan	Mech. Elec.	Sumter
T. R. Salley	Mech. Elec.	Orangeburg
W. E. Seabrook	Civil	Charleston
K. B. Shuler	Civil	Lexington
J. J. D. Shuler	Agri.	Lexington
M. D. Sims	Mech. Elec.	York



## STUDENTS 1910-1911

## Senior Class

NAME	COURSE	COUNTY
T. L. Alford	Text.	Marion
F. H. All	Agri. II	Barnwell
s L. B. Altman	Agri. I	Horry
M. W. Arthur	Mech. Elec.	Union
D. C. Beaty	Agri. I	Union
L. D. Boone	Agri. III	Orangeburg
S. L. Britt	Agri. II	Abbeville
s G. T. Cassels	Agri. II	Fairfield
s A. D. Chapman	Agri. I	Pickens
s W. R. Connelly	Text.	Chester
H. P. Cooper	Agri. II	Fairfield
s J. T. Crawford	Text.	Laurens
E. I. Davis	Mech. Elec.	Greenwood
B. H. Deason	Agri. I	Abbeville
s J. A. Dew	Agri. I	Greenville
s O. O. Dukes	Agri. II	Dorchester
s H. C. Eagerton	Agri. I	Berkeley
s M. H. Epps	Text.	Florence
G. C. Fant	Chem. Geol.	Anderson
s J. R. Fizer	Text.	Orangeburg
s B. P. Folk	Agri. II	Newberry
s W. W. Foster	Text.	Cherokee
s R. W. Freeman	Agri. I	Darlington
s H. Fulmer	Agri. II	Saluda
G. C. Furtick	Mech. Elec.	Calhoun
G. D. Garner	Text.	Eatonton, Ga.
s W. C. Garrett	Text.	Pickens
s B. W. Gettys	Agri. II	Kershaw
C. R. Gillam	Civil	Bamberg
F. V. Gilmer	Mech. Elec.	Greenville

s—Scholarship Student

NAME	COURSE	COUNTY
J. L. Gilmore	Agri. I	Orangeburg
W. N. Ginn	Mech. Elec.	Hampton
W. S. Goodman	Civil	Oconee
s J. A. Goodwin	Agri. II	Greenville
s O. H. Grahm	Agri. II	Williamsburg
W. H. Hancckel	Agri. II	Charleston
L. H. Hardin	Mech. Elec.	Cherokee
B. B. Harris	Agri. II	Anderson
J. W. Harrison	Mech. Elec.	Oconee
s L. C. Harrison	Agri. III	Oconee
s L. C. Haskell	Agri. III	Abbeville
W. M. Haynsworth	Agri. II	Florence
N. O. Head	Civil	Aiken
s W. N. Henderson	Agri. III	Newberry
s E. S. Jenkins	Agri. I	Charleston
s Jno. E. Jenkins	Agri. II	Richland
Joe. E. Jenkins	Agri. II	Berkeley
s F. H. Jeter	Agri. I	Union
s J. B. Keith	Agri. I	Florence
J. E. Kirby	Civil	Spartanburg
s B. T. Knight	Text.	Chesterfield
s J. S. Knox	Agri. I	Oconee
s G. E. Lachicotte	Agri. II	Georgetown
B. F. Lawrence	Mech. Elec.	York
J. K. Lawton	Chem. Geol.	Hampton
s L. S. Lindler	Agri. II	Lexington
s C. S. Lykes	Agri. III	Richland
s F. W. Lykes	Text.	Richland
J. M. Martin	Civil	Marion
G. L. McCord	Chem. Geol.	Abbeville
O. P. McCord	Mech. Elec.	Greenwood
F. O. McCown	Mech. Elec.	Anderson
E. A. McCreary	Text.	Aiken
L. C. McLure	Mech. Elec.	Chester

s—Scholarship Student

NAME	COURSE	COUNTY
s W. W. Mickle	Agri. II	Kershaw
J. C. Milling	Mech. Elec.	Greenwood
F. F. Parker	Mech. Elec.	Spartanburg
s F. M. Rast, Jr.	Agri. I	Calhoun
J. E. Redden	Civil	Anderson
s J. A. Riley	Agri. I	Bamberg
F. E. Rogers	Mech. Elec.	Darlington
A. M. Salley	Agri. I	Orangeburg
O. T. Sanders	Agri. I	Sumter
F. E. Schroder	Civil	Charleston
E. N. Sitton	Text.	Anderson
R. G. Stevens	Mech. Elec.	Greenville
s J. P. Stickley	Agri. III	Beaufort
W. E. Stokes	Agri. III	Bamberg
E. L. Sumner	Chem. Geol.	Darlington
L. P. Tobin	Mech. Elec.	Barnwell
R. H. Walker	Mech. Elec.	Barnwell
s M. W. Wall	Agri. I	Marion
s W. M. Wiggins	Agri. I	Marion
T. D. Williams	Mech. Elec.	Matthews, N.C.
R. S. Wolfe	Agri. I	Orangeburg
H. M. Woodward	Civil	Spartanburg
L. T. Wyndham	Civil	Berkeley

## JUNIOR CLASS

F. Adams	Agri. I	Lancaster
s H. A. Adams, Jr.	Text.	Edgefield
T. C. Adams	Text.	York
R. U. Altman	Chem. Geol.	Marion
s J. N. Ancrum	Agri. III	Kershaw
H. W. Anderson	Text.	Colleton
B. R. Bacot	Civil	Charleston
s J. A. Bates	Agri. III	Calhoun
W. S. Becker	Mech. Elec.	Spartanburg

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s—Scholarship Student

NAME	COURSE	COUNTY
T. E. Bell	Agri. II	Lee
J. W. Blackwell, Jr.	Mech. Elec.	Darlington
E. E. Blount	Agri. I	Barnwell
A. J. Brown	Mech. Elec.	Pickens
G. W. Byars	Agri. I	Cherokee
W. M. Byrd	Mech. Elec.	Darlington
Jno. C. Caldwell	Civil	Spartanburg
s R. D. Caldwell	Agri. III	Cherokee
S. M. Connor	Agri. I	Colleton
s M. L. Cooper	Agri. I	Fairfield
s H. S. Covington	Agri. II	Marlboro
J. R. Crawford	Civil	Laurens
L. S. David	Civil	Greenville
J. B. Davis	Civil	Pickens
J. C. DeWitt	Agri.	Darlington
J. M. Dreher	Chem. Geol.	Lexington
A. B. Evans	Mech. Elec.	Charleston
s T. S. Evans, Jr.	Agri. I	Chesterfield
s J. F. Ezell	Agri. I	Spartanburg
s W. D. Ezell	Agri. III	Spartanburg
s A. P. Fant	Agri. I	Anderson
s C. B. Faris	Agri. I	York
O. B. Brodie	Civil	Oconee
J. H. Bull	Civil	Sumter
s C. S. Folk	Agri. I	Bamberg
s J. B. Free	Agri. III	Union
s H. A. Freeman	Agri. III	Laurens
J. H. Gage	Mech. Elec.	Union
s R. W. Galphin	Agri. I	Orangeburg
s L. C. Gilstrap	Agri. II	Pickens
s A. K. Goldfinch	Text.	Horry
s W. R. Gray	Agri. I	Laurens
s C. M. Hall	Agri. I	Anderson
s E. E. Hall	Agri. I	Lancaster

s—Scholarship Student

NAME	COURSE	COUNTY
R. R. Hall	Mech. Elec.	Chester
M. L. Hamer	Agri. I	Marlboro
E. E. Hamlin	Civil	Anderson
s D. T. Hardin	Agri. I	Abbeville
s G. L. Hardy	Text.	Edgefield
J. G. Harris	Agri. II	Laurens
J. E. Hartley	Mech. Elec.	Lexington
s H. W. Harvey	Agri. I	Berkeley
s C. J. Hayden	Agri. III	Orangeburg
s J. H. Hayden	Agri. II	Orangeburg
s W. H. Hayes	Agri. I	Spartanburg
M. S. Haynsworth	Mech. Elec.	Darlington
s G. J. Hearsey	Agri. III	Marlboro
D. B. Hill	Mech. Elec.	Bamberg
s H. M. Hutson	Agri. III	Aiken
O. Jacobs	Agri. III	Newberry
H. C. Jennings	Agri. I	Orangeburg
s R. M. Jeter	Agri. III	Richland
W. F. Johnson	Mech. Elec.	Bamberg
E. P. Josey	Agri. II	Darlington
H. O. Kaigler	Civil	Calhoun
H. S. Kennerly	Agri. I	Greenwood
W. R. LaMotte	Mech. Elec.	Darlington
s D. L. Latimer	Text.	Abbeville
s J. G. Lawton	Agri. III	Hampton
s J. T. Lazar	Agri. I	Barnwell
J. R. W. Lindler	Civil	Lexington
E. G. Littlejohn	Mech. Elec.	Union
J. H. Mappus	Agri. II	Charleston
E. D. Mays	Agri. I	Greenwood
s O. F. McCrary	Agri. I	Greenville
D. McIntyre	Mech. Elec.	Marion
R. J. McIntosh	Mech. Elec.	Richland

s—Scholarship Student

NAME	COURSE	COUNTY
S. A. Miller	Text.	Lexington
J. E. M. Mitchell	Mech. Elec.	Charleston
W. W. Newman	Mech. Elec.	Chesterfield
B. F. Owens	Agri. II	Barnwell
T. M. Parker	Mech. Elec.	York
s B. F. Pennell	Agri. III	Abbeville
W. G. Perry	Civil	Greenville
s T. Perry	Text.	Greenville
W. C. Petrie	Mech. Elec.	Spartanburg
W. H. Privette	Agri. II	Darlington
s H. T. Prosser	Agri. I	Williamsburg
T. C. Redfern	Agri. II	Anderson
s T. R. Reid	Agri. III	Greenville
W. H. Rentz	Civil	Hampton
s F. W. Risher	Agri. I	Colleton
s T. R. Risher, Jr.	Agri. III	Colleton
H. F. Rivers, Jr.	Mech. Elec.	Charleston
F. L. Ross	Agri. II	Cherokee
s N. K. Rowell	Agri. I	Marion
J. A. Simpson	Mech. Elec.	Anderson
s A. G. Small	Agri. I	Horry
E. A. Sompayrac	Mech. Elec.	Darlington
s C. H. Stanton	Agri. III	Marlboro
J. N. Stribling	Civil	Oconee
E. W. Tison	Mech. Elec.	Hampton
s D. Tompkins	Text.	York
B. J. Truesdale	Mech. Elec.	Kershaw
s R. F. Ulmer	Agri. III	Hampton
J. B. Wakefield	Text.	Abbeville
s J. H. S. Wessinger	Agri. II	Lexington
s J. M. Workman	Text.	Sumter
s L. F. Yates	Text.	Darlington
s G. H. Zerbst	Agri. III	Charleston

s—Scholarship Student

## SOPHOMORE CLASS

NAME	COURSE	COUNTY
R. A. Alexander	Agri.	Chester
G. M. Anderson	Agri.	Abbeville
J. P. Anderson	Eng.	Abbeville
L. K. Anderson	Eng.	Spartanburg
s D. H. Arthur	Text.	Union
s I. D. Auld	Agri.	Charleston
J. A. Aull	Agri.	Anderson
W. D. Banks	Agri.	Calhoun
J. W. Barnwell, Jr.	Eng.	Charleston
G. D. Barr	Eng.	Greenville
J. A. Barre	Agri.	Lexington
A. H. Barrington	Agri.	Marlboro
W. O. Benson	Eng.	Spartanburg
M. D. Berry	Eng.	Greenville
J. E. Beard	Eng.	Anderson
P. S. Bethea	Agri.	Dillon
I. L. Bigham	Eng.	Chester
L. R. Blackmon	Eng.	Lancaster
J. K. Boggs	Eng.	Pickens
H. J. Bomar	Eng.	Spartanburg
s F. W. Bouson	Agri.	Charleston
W. E. Bowers	Agri.	Kershaw
s H. G. Boylston	Agri.	Barnwell
W. B. Britt	Eng.	Abbeville
s J. E. Brodie	Agri.	Aiken
S. K. Brown	Eng.	Florence
W. D. Bryant	Eng.	Orangeburg
E. M. Byrd	Eng.	Darlington
s D. L. Cannon	Agri.	Spartanburg
s P. M. Carpenter	Agri.	Greenville
J. L. Carson, Jr.	Eng.	Spartanburg
J. T. Cochran	Eng.	Pickens

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s—Scholarship Student

NAME	COURSE	COUNTY
H. H. Collier	Eng.	Charleston
M. Coles	Agri.	Jacksonville, Fla.
J. E. Cottingham	Agri.	Dillon
A. Covar	Eng.	Edgefield
s D. H. Covington	Agri.	Marlboro
B. A. Cromer	Agri.	Anderson
s J. C. Culler	Agri.	Orangeburg
W. H. Daniel	Eng.	Richland
R. F. Davis	Eng.	Greenwood
s T. F. Davis	Agri.	Richland
C. K. Dunlap	Eng.	Anderson
s L. R. Elliott	Text.	Lancaster
James Epps, Jr.	Eng.	Williamsburg
J. O. Erwin, Jr.	Eng.	Spartanburg
s A. J. Evans, Jr.	Text.	Dillon
R. W. Fant	Agri.	Anderson
s C. G. Faris	Agri.	York
s C. L. Faris	Agri.	York
s W. H. Frampton	Agri.	Charleston
s G. E. Frick	Text.	Lexington
A. P. Gandy	Eng.	Darlington
H. L. Gandy	Agri.	Darlington
T. C. Gentry	Eng.	Clarendon
W. C. Gilmore	Eng.	Union
H. A. Hagood	Eng.	Spartanburg
A. B. Haight	Eng.	Charleston
G. W. Hairston	Eng.	Newberry
J. D. Hall	Eng.	Pickens
s J. E. Hannahan	Text.	Charleston
E. Hanvey	Agri.	Abbeville
S. E. Harrison	Eng.	Greenville
M. Heldman	Eng.	Spartanburg
H. A. Heriot	Eng.	Lee
s J. L. Hiers	Agri.	Hampton

s—Scholarship Student

NAME	COURSE	COUNTY
s J. R. Hill	Agri.	Darlington
J. C. FitzSimons	Eng.	Charleston
G. W. Fleming	Eng.	Florence
P. S. Hale	Agri.	Charleston
s W. W. Herbert	Agri.	Newberry
s F. Hodges	Agri.	Greenwood
s L. D. Hutson	Agri.	Aiken
A. H. Jackson	Eng.	Abbeville
A. C. Jenkins	Agri.	Oconee
J. W. Johnson	Eng.	Florence
B. M. Jones	Eng.	Newberry
I. B. Jones, Jr.	Eng.	Lancaster
J. H. Kangeter	Eng.	Charleston
s C. J. King	Agri.	Lancaster
s W. T. Kyzer	Agri.	Lexington
A. H. Lachicotte	Eng.	Georgetown
W. F. Lachicotte	Eng.	Georgetown
M. A. Laney	Agri.	Chesterfield
B. T. Lanham	Eng.	Edgefield
M. S. Lawton	Eng.	Barnwell
s F. H. Lathrop	Agri.	Orangeburg
H. O. Lindler	Eng.	Lexington
J. R. Lomax	Agri.	Abbeville
s W. H. Martin	Agri.	York
L. H. Massey	Eng.	York
T. F. Massey	Eng.	York
T. D. McAlhany	Eng.	Dorchester
J. W. McClure, Jr.	Eng.	Union
H. S. McGee	Eng.	Anderson
J. A. McGill	Agri.	Abbeville
E. B. McLaurin	Agri.	Marlboro
s W. G. McLeod	Agri.	Lee
s F. M. Mellette	Agri.	Sumter
J. A. Merritte	Eng.	Edgefield

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s—Scholarship Student

NAME	COURSE	COUNTY
G. A. Middleton	Text.	Charleston
H. G. Miley	Agri.	Hampton
W. E. Morrison	Eng.	Chester
s P. E. Myers	Agri.	Berkeley
s H. F. Padgett	Agri.	Saluda
A. D. Park	Eng.	Fairfield
s C. S. Patrick	Agri.	Cherokee
G. H. Pearce	Agri.	Edgefield
J. F. Pearson	Eng.	Orangeburg
s F. B. Pennell	Agri.	Anderson
s R. E. Pennel	Text.	Anderson
s J. W. Perrin	Agri.	Lee
E. T. Provost	Eng.	York, Neb.
S. W. Rabb	Eng.	Greenville
W. E. Redden	Eng.	Anderson
s J. C. Rich	Agri.	Colleton
F. H. Robertson	Eng.	Charleston
R. Robison	Text.	Greenville
H. G. Rogers	Agri.	Marlboro
R. C. Rowell	Eng.	Bamberg
s W. A. Rowell	Agri.	Marion
J. Y. Scruggs	Eng.	York
s J. L. Seal	Agri.	Greenwood
s W. O. Seigler	Text.	Greenwood
D. M. Sloan	Eng.	Greenville
W. L. Smarr	Agri.	York
L. F. Sollee	Eng.	Lexington
J. R. Sprott	Eng.	Clarendon
E. P. Steele	Agri.	York
s T. E. Rector	Agri.	Spartanburg
W. H. Rochester	Eng.	Greenville
M. F. Sanders	Eng.	Greenwood
J. G. Smith	Eng.	Barnwell
Y. H. Sponcler	Eng.	Newnam, Ga.

s—Scholarship Student

NAME	COURSE	COUNTY
C. E. Stokes	Agri.	Laurens
C. E. Stoudemire	Eng.	Lexington
s J. L. Thomas	Agri.	Chester
J. N. Todd	Eng.	Oconee
s A. C. Turbeville	Agri.	Williamsburg
s S. Y. Tupper	Agri.	Charleston
R. B. Vance	Eng.	Laurens
R. B. Water	Text.	York
R. N. Watkins	Agri.	Anderson
s J. N. Webb	Agri.	Anderson
s T. W. Weeks	Text.	Aiken
B. A. Weinberg	Agri.	Sumter
J. M. Wilson	Eng.	Lee
s M. A. Wilson	Agri.	Laurens
T. B. Wilson	Eng.	Aiken
s J. T. Witherspoon	Agri.	Clarendon
L. F. Wolfe	Eng.	Orangeburg
s B. F. Yeargin	Agri.	Laurens
s C. P. Youmans	Agri.	Barnwell

## FRESHMAN CLASS

F. K. Altman	Agri.	Marion
s L. C. Altman	Agri.	Barnwell
J. W. Anderson	Eng.	Anderson
L. N. Anderson	Eng.	Chester
s G. M. Armstrong	Agri.	Barnwell
R. J. Aycock	Agri.	Clarendon
C. W. Baker	Agri.	Marion
D. K. Banks	Eng.	Calhoun
J. C. Barksdale	Agri.	Laurens
B. P. Barron	Eng.	York
F. H. Barnwell	Eng.	Colleton
W. N. Beaty	Agri.	Union

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s—Scholarship Student

NAME	COURSE	COUNTY
J. A. Berley	Agri.	Newberry
C. E. Berry	Eng.	Sabot, Va.
R. Berry	Agri.	Dillon
Homer Bethea	Agri.	Dillon
B. J. Blume	Agri.	Orangeburg
s M. B. Boulware	Agri.	Fairfield
s S. P. Bowles	Agri.	Newberry
W. L. Bowman	Eng.	Abbeville
A. R. Boyd	Agri.	Abbeville
W. F. Brawley	Eng.	Chester
P. L. Breeden	Eng.	Marlboro
J. W. Britt	Eng.	Abbeville
B. W. Brown	Eng.	Cherokee
G. H. Brown	Eng.	York
J. Brown	Agri.	Charleston
C. A. Bruce	Agri.	Oconee
s E. P. Bruce	Agri.	Oconee
V. F. Bryant	Eng.	Orangeburg
E. D. Buckley	Eng.	Charleston
X. O. Bunch	Eng.	Orangeburg
F. M. Cain	Agri.	Sumter
R. A. Calhoun	Eng.	Greenwood
s G. E. Campsen	Agri.	Charleston
s Ellison Capers	Agri.	Clarendon
W. W. Carpenter	Eng.	Spartanburg
H. G. Carson	Agri.	Orangeburg
T. M. Cathcart	Agri.	Fairfield
K. G. Caughman	Eng.	Richland
W. W. Caughman	Agri.	Lexington
s R. G. Causey	Agri.	Berkeley
H. E. Chambliss	Eng.	Hardinsburg, Ky.
H. L. Chaplin	Agri.	Orangeburg
J. R. Clark	Agri.	Lexington
W. L. Clarke	Eng.	Berkeley

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s—Scholarship Student

NAME	COURSE	COUNTY
R. D. Cothran	Eng.	Greenville
A. B. Covar	Eng.	Edgefield
P. M. Covington	Agri.	Marlboro
R. E. Cox	Agri.	Abbeville
F. P. Crawford	Eng.	Saluda
W. D. Crawford	Agri.	Union
L. F. Crenshaw	Eng.	Pickens
H. M. Crum	Eng.	Bamberg
F. C. Dantzler	Agri.	Orangeburg
M. A. Dantzler	Eng.	Calhoun
J. T. Darby	Eng.	Richland
W. R. Davis	Eng.	Oconee
C. E. DesChamps	Eng.	Sumter
M. M. DeWitt	Agri.	Darlington
Mark Dickson	Eng.	Oconee
s J. E. Dunlap	Agri.	Darlington
J. B. Douthit	Eng.	Anderson
P. M. Dwight	Eng.	Sumter
A. L. Edwins	Eng.	Orangeburg
G. W. Eleazer	Eng.	Lexington
J. M. Eleazer	Agri.	Lexington
C. R. Emerson	Eng.	Greenwood
W. C. Epps	Eng.	York
R. E. Ernst	Eng.	Greenville
J. W. Erwin	Eng.	Spartanburg
R. B. Ezell	Agri.	Spartanburg
W. C. Farmer	Agri.	Barnwell
L. W. Felder	Eng.	Clarendon
s L. L. Ferebee	Agri.	Beaufort
B. G. Field	Agri.	Pickens
J. E. Fletcher	Eng.	Marlboro
s J. C. Foster	Agri.	Spartanburg
L. R. Free	Agri.	Barnwell
M. W. Funk	Eng.	Williamsburg

s—Scholarship Student

NAME	COURSE	COUNTY
S. A. Gandy	Agri.	Darlington
E. B. Gary	Eng.	Abbeville
E. R. Gilmore	Agri.	Union
J. H. Gilreath	Eng.	Spartanburg
E. Glover	Eng.	Orangeburg
N. E. Graham	Eng.	Greenwood
F. Grant	Agri.	Abbeville
S. L. Greene	Agri.	Barnwell
T. C. Haddon	Agri.	Greenwood
E. W. Haile	Eng.	Kershaw
R. M. Halliburton	Agri.	Lewis, Ky.
F. L. Hardin	Agri.	Chester
R. H. Harleston	Agri.	Charleston
G. D. Harris	Agri.	Cherokee
T. G. Harris	Agri.	Laurens
J. F. Harrison	Agri.	Spartanburg
G. E. Hightower	Agri.	Bamberg
E. D. Hodge	Agri.	Clarendon
J. L. Holcomb	Agri.	Spartanburg
J. H. Hollingsworth	Eng.	Edgefield
C. E. Holroyd	Eng.	Greenville
R. S. Hood	Eng.	Sumter
I. B. Hughes	Eng.	York
M. W. Hunter	Eng.	Pickens
F. B. Hutto	Agri.	Bamberg
D. E. Hydrick	Eng.	Spartanburg
s B. G. Hyrne	Text.	Colleton
s B. M. Jackson	Agri.	Sumter
R. Jackson	Eng.	Spartanburg
B. M. James	Eng.	Greenville
R. F. Jenkins	Agri.	Richland
F. J. Jervey	Eng.	Charleston
F. P. Johnson	Eng.	Greenwood
J. B. Johnson	Eng.	Saluda
s F. S. Johnston	Agri.	Florence

s—Scholarship Student

NAME	COURSE	COUNTY
s C. R. Jones	Agri.	Colleton
W. H. Kelley	Eng.	Oconee
R. G. Kennedy	Eng.	Orangeburg
P. R. Kilgo	Eng.	Florence
C. H. Kimbrell	Eng.	York
L. H. Koger	Agri.	Colleton
A. S. Lachicotte	Eng.	Georgetown
T. E. LaGrone	Agri.	Saluda
J. G. Leland	Eng.	Charleston
B. R. Lever	Eng.	Lexington
A. P. Lewis	Agri.	Oconee
F. M. Lindfors	Agri.	Waynesville, N.C.
S. M. Major	Eng.	Anderson
S. P. Marshall	Eng.	Greenwood
R. F. Martin	Eng.	Anderson
B. O. Mauldin	Eng.	Greenville
W. D. Mayfield	Agri.	Bamberg
R. W. Maynard	Eng.	Anderson
s J. N. McBride	Agri.	Florence
F. H. McDonald	Eng.	Charleston
J. W. McDonald	Eng.	Edgefield
R. E. McElveen, Jr.	Eng.	Lee
J. M. McIntosh	Agri.	Richland
W. C. McIver	Agri.	Darlington
D. L. McLure	Agri.	Lee
s G. F. McMillan	Text.	Bamberg
C. S. Merritte	Eng.	York
L. I. Metts	Eng.	Bamberg
J. E. Miley	Agri.	Hampton
C. F. Mitchell	Eng.	Laurens
W. E. Mitchell	Eng.	Marlboro
D. P. Moore	Eng.	Sumter
S. P. Morrah	Agri.	Abbeville
H. C. Moses	Eng.	Sumter

NAME	COURSE	COUNTY
C .E. Neese	Agri.	Orangeburg
W. R. Nelson	Eng.	Kershaw
H. J. Nettles	Agri.	Darlington
C. A. Newnham	Eng.	Richland
H. H. Nickels	Eng.	Greenwood
J. E. Norris	Agri.	Orangeburg
J. G. O tzel	Eng.	Union
s W. W. Padgett	Agri.	Saluda
s H. L. Parker	Agri.	Spartanburg
L. C. Pearlstine	Eng.	Calhoun
J. W. Peeples	Eng.	Colleton
P. P. Peeples	Eng.	Hampton
E. E. Poag	Eng.	York
H. B. Ponds	Agri.	Colleton
s E. H. Pressley	Agri.	Chester
s W. A. Reeves	Agri.	Fairfield
Z. C. Reeves	Eng.	Colleton
C. A. Rice	Eng.	Richland
W. H. Rice	Agri.	Bamberg
G. C. Richey	Eng.	Laurens
s R. H. Ridgill	Agri.	Clarendon
W. J. Rivers	Eng.	Richland
J. L. Rochester	Eng.	Greenville
A. F. Rodgers	Eng.	Williamsburg
C. B. Rogers	Eng.	Darlington
s T. B. Rogers	Text.	Williamsburg
s F. P. Salter	Agri.	Edgefield
A. F. Sanders	Eng.	Spartanburg
I. L. Sanders	Agri.	Sumter
A. E. Schilletter	Agri.	Oconee
W. A. Schilletter	Agri.	Oconee
J. N. Schroder	Agri.	Charleston
W. N. Scoville	Eng.	Orangeburg
E. H. Segars	Eng.	Darlington

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s—Scholarship Student

NAME	COURSE	COUNTY
M. F. Sessions	Agri.	Charleston
G. J. Sheppard	Eng.	Abbeville
R. L. Sherwood	Eng.	Dillon
G. C. Shirley	Agri.	Anderson
R. C. Shiver	Agri.	Oconee
C. A. Simmons	Eng.	Laurens
J. W. Simmons	Eng.	Laurens
J. W. Sims	Agri.	York
C. O. Smith	Agri.	Spartanburg
s G. W. Smith	Agri.	Anderson
H. L. Smith	Eng.	Anderson
J. D. Smith	Eng.	Union
Jas. M. Smith	Eng.	Newberry
Joe M. Smith	Eng.	Anderson
J. R. Smith	Eng.	Barnwell
M. R. Smith	Eng.	Anderson
W. W. Smith	Agri.	Pickens
J. M. Spears	Eng.	Union
s W. T. P. Sprott	Agri.	Clarendon
A. G. Stanford	Eng.	Charleston
L. H. Stello	Eng.	Charleston
H. R. Stender	Agri.	Charleston
S. J. Sturgeon	Eng.	Williamsburg
M. N. Sturkey	Eng.	Edgefield
W. A. Taylor	Eng.	Dadeville, Ala.
H. M. Thomas	Agri.	Clarendon
J. L. Thomas	Agri.	Chester
W. P. Thomas	Eng.	Spartanburg
s J. M. Thompson	Agri.	Chesterfield
C. C. Thornton	Eng.	Laurens
T. W. Thornhill	Eng.	Dorchester
D. D. Tinsley	Eng.	Spartanburg
J. R. Todd	Eng.	Abbeville
C. I. Truluck	Agri.	Sumter

s—Scholarship Student

NAME	COURSE	COUNTY
C. A. Turner	Agri.	Grover, N.C.
A. B. Usher	Agri.	Marlboro
F. O. Varn	Eng.	Orangeburg
J. D. Varn	Eng.	Orangeburg
J. D. Verner, Jr.	Eng.	Oconee
W. C. Wadsworth	Agri.	Darlington
s J. M. Walker	Agri.	Charleston
G. W. Wannamaker	Agri.	Calhoun
L. B. Wannamaker	Agri.	Calhoun
A. H. Ward	Agri.	Florence
A. R. Ward	Eng.	Georgetown
J. Ward	Eng.	Georgetown
C. W. Watkins	Agri.	Edgefield
J. H. S. Wells	Agri.	Spartanburg
C. T. Weston	Agri.	Richland
D. L. White	Eng.	Chesterfield
F. W. Whitten	Eng.	Oconee
C. O. Williams	Eng.	Union
F. M. Williams	Eng.	Greenville
L. E. Williams	Eng.	Charleston
J. W. Willis	Agri.	Saluda
R. H. Wingo	Eng.	Spartanburg
s J. T. Woodward	Agri.	Aiken
W. D. Wood	Agri.	Greenville
s V. B. Wright	Agri.	Chester
J. T. Zeigler	Agri.	Orangeburg

### Preparatory Class

NAME	COUNTY
B. B. Axon . . . . .	Orangeburg
F. H. Bailey . . . . .	Spartanburg
E. S. Blanchard . . . . .	Charleston
L. R. Bodie . . . . .	Lexington

s—Scholarship Student

NAME	COUNTY
W. M. Bomar . . . . .	Spartanburg
P. R. Brown . . . . .	Oconee
T. B. Burdette . . . . .	Laurens
R. C. Chapman . . . . .	Greenville
*W. Chavis . . . . .	Marlboro
J. M. Cothran . . . . .	Greenville
H. B. Derrick . . . . .	Saluda
O. M. Doyle . . . . .	Pickens
S. M. Earle . . . . .	Brevard, N. C.
L. T. Emanuel . . . . .	Sumter
D. M. Evans . . . . .	Clarendon
C. J. Felder . . . . .	Orangeburg
T. C. Felder . . . . .	Orangeburg
B. C. Fitch . . . . .	Williamsburg
G. D. Foxworth . . . . .	Marion
E. R. Furtick . . . . .	Calhoun
J. A. Gandy . . . . .	Darlington
J. R. Golson . . . . .	Calhoun
E. B. Greene . . . . .	Florence
M. A. Hagood . . . . .	Fairfield
H. V. Hale . . . . .	Charleston
G. B. Hammond . . . . .	Aiken
T. B. Hardin . . . . .	Chester
M. Hendricks . . . . .	Pickens
G. P. Hoffman . . . . .	Fairfield
B. O. Hook . . . . .	Lexington
A. J. Howle . . . . .	Darlington
E. L. Hubster . . . . .	Colleton
M. C. Hunter . . . . .	Anderson
S. E. Jeffords . . . . .	Florence
J. E. Jones . . . . .	Kershaw
L. B. Jones . . . . .	Kershaw
W. S. Jones . . . . .	Lexington
J. E. Kaminer . . . . .	Lexington

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\*Died Feb. 12, 1911.

NAME	COUNTY
I. F. Kelley . . . . .	Florence
T. B. Kelley . . . . .	Oconee
D. M. Kennedy . . . . .	Abbeville
S. E. Kimbrell . . . . .	York
E. G. Kittles . . . . .	Hampton
W. B. Laurence . . . . .	Pickens
G. W. LeMaster . . . . .	Cherokee
S. L. Lindler . . . . .	Lexington
R. E. Lumpkin . . . . .	Fairfield
S. K. Martin . . . . .	Anderson
C. W. Masters . . . . .	Anderson
W. O. Merck . . . . .	Pickens
C. Mims . . . . .	Clarendon
J. T. Mims . . . . .	Edgefield
J. W. Mims . . . . .	Clarendon
A. L. Moore . . . . .	Spartanburg
R. W. Moore . . . . .	Sumter
S. L. Newman . . . . .	Oconee
T. R. Norris . . . . .	Spartanburg
F. L. Oates . . . . .	York
J. K. Pegues . . . . .	McFarlan, N. C.
E. S. Pinckney . . . . .	Charleston
F. L. Richardson . . . . .	Williamsburg
O. J. Richardson . . . . .	Marion
S. L. Roberts . . . . .	Dillon
S. R. Roberts . . . . .	Marion
F. B. Rogers . . . . .	Marlboro
R. A. Rogers . . . . .	Marion
J. A. Singley . . . . .	Newberry
J. C. Smith . . . . .	Saluda
M. A. Smith . . . . .	Clarendon
G. B. Taylor . . . . .	Lexington
G. I. Thomson . . . . .	Spartanburg
L. M. Tolbert . . . . .	Greenwood
J. W. Truluck . . . . .	Sumter

NAME	COUNTY
W. M. Turbeville . . . . .	Clarendon
C. W. Ward . . . . .	Florence
E. H. Wilkins . . . . .	Cherokee
B. N. Williams . . . . .	Greenwood
H. E. Williams . . . . .	East Nashville, Tenn.
W. G. Williams . . . . .	York
J. K. Witherspoon . . . . .	Anderson

### Six Weeks Course in Agriculture

J. H. Barnett . . . . .	Oconee
W. L. Bedenbough . . . . .	Newberry
Clarence Bishop . . . . .	Union
Ballard Brezeal . . . . .	Oconee
C. C. Cely . . . . .	Anderson
J. T. Claffy . . . . .	Calhoun
H. N. Darby . . . . .	Calhoun
W. A. Dickson . . . . .	Oconee
J. P. Fellers . . . . .	Newberry
J. M. Kuemmerer . . . . .	Oconee
D. M. Lever . . . . .	Richland
L. G. Lever . . . . .	Richland
A. W. Lowry . . . . .	Chester
C. L. McManus . . . . .	Lancaster
J. W. Merchant . . . . .	Saluda
J. A. Robinson . . . . .	Pickens
W. L. Wier . . . . .	Laurens
T. M. Wolfe . . . . .	Orangeburg
J. W. Whitworth . . . . .	Richland

### Special Students

D. D. Barr . . . . .	Lexington
D. Boggs . . . . .	Anderson
K. Nims . . . . .	York

### Two-Year Textile Course

G. A. Hamrick . . . . .	Richland
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NAME

COUNTY

Irregular Students

s H. C. Beaty . . . . .	Georgetown
A. S. Beddell . . . . .	Greenville
P. L. Bissell . . . . .	Charleston
F. Black . . . . .	Pelham, N. Y.
H. S. Davis . . . . .	Charleston
A. T. Haynsworth . . . . .	Sumter
W. F. B. Haynsworth . . . . .	Sumter
W. H. Williford . . . . .	Sumter

SUMMARY

CLASS	AGRICULTURAL COURSES				ENGINEERING COURSES					TOTALS
	AGRICULTURE	AGRI. & CHEM.	AGRI. & ANI. IND.	TOTAL	MECH. & ELEC.	CIVIL	TEXTILE	CHEM. & GEOL.	TOTAL	
SENIOR	19	7	18	44	18	9	12	4	43	87
JUNIOR	28	18	12	58	24	13	12	2	51	109
SOPHOMORE				70					83	153
FRESHMAN				113					130	243
SPECIAL				3						3
IRREGULAR				1	2	1	2	2	7	8
SHORT COURSE				19			1		1	20
PREPARATORY										80
TOTALS	47	25	30	308	44	23	27	8	315	703

## By Counties in South Carolina

Abbeville .. . . .	25
Aiken .. . . .	9
Anderson .. . . .	37
Bamberg .. . . .	14
Barnwell .. . . .	17
Beaufort .. . . .	2
Berkeley .. . . .	7
Calhoun .. . . .	14
Charleston .. . . .	42
Cherokee .. . . .	10
Chester .. . . .	15
Chesterfield .. . . .	6
Clarendon .. . . .	15
Colleton .. . . .	13
Darlington .. . . .	26
Dillon .. . . .	7
Dorchester .. . . .	3
Edgefield .. . . .	13
Fairfield .. . . .	10
Florence .. . . .	14
Georgetown .. . . .	7
Greenville .. . . .	28
Greenwood .. . . .	19
Hampton .. . . .	11
Horry .. . . .	3
Kershaw .. . . .	9
Lancaster .. . . .	7
Laurens .. . . .	18
Lee .. . . .	7
Lexington .. . . .	24
Marion .. . . .	14
Marlboro .. . . .	15
Newberry .. . . .	12
Oconee .. . . .	26
Orangeburg .. . . .	33

Pickens .. .. .	17
Richland .. .. .	19
Saluda .. .. .	10
Spartanburg .. .. .	38
Sumter .. .. .	20
Union .. .. .	17
Williamsburg .. .. .	10
York .. .. .	26
<hr/>	
Total South Carolina .. .. .	688

### By States

South Carolina .. .. .	688
North Carolina .. .. .	5
Kentucky .. .. .	2
Georgia .. .. .	2
New York .. .. .	1
Nebraska .. .. .	1
Virginia .. .. .	1
Tennessee .. .. .	1
Alabama .. .. .	1
Florida .. .. .	1
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Total .. .. .	703

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