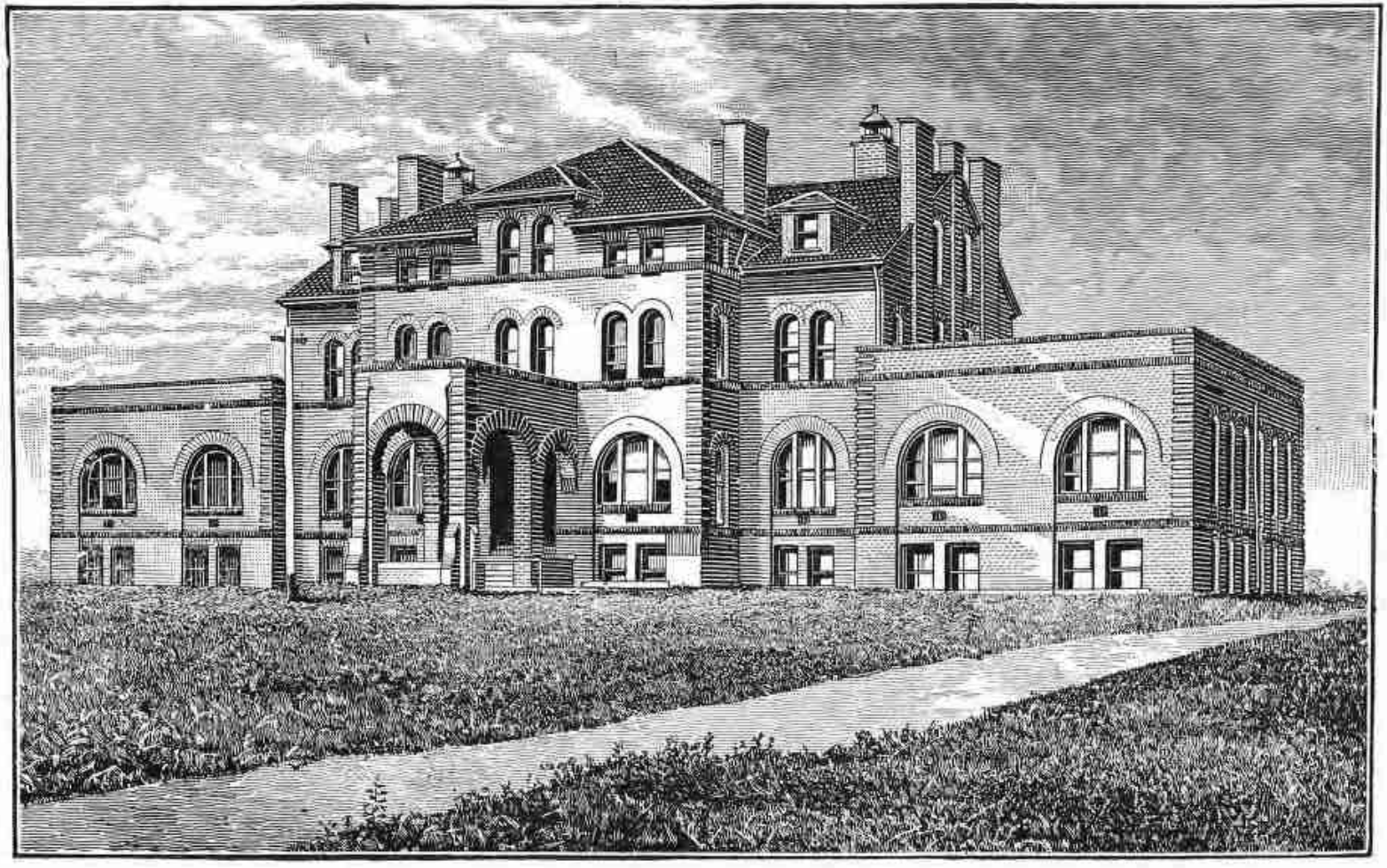
THIRD ANNUAL CATALOGUE

OF THE



NORTH CAROLINA COLLEGE OF AGRICULTURE AND MECHANIC ARTS.

TRUSTEES OF THE COLLEGE.

FACULTY AND OFFICERS.

ALEXANDER Q. HOLLADAY,
President.

JOS. R. CHAMBERLAIN, B. S.,
Professor of Agriculture.

W. F. MASSEY, C. E.,
Professor of Horticulture, Arboriculture and Botany.

W. A. WITHERS, A. M.,
ssor of Pure and Agricultural Chemistry.

D. H. HILL, A. M.,
Professor of English.

APRIL, 1892.

Fall Term Begins on September 1, 1892.

RALEIGH:
EDWARDS & BROUGHTON, PRINTERS AND BINDERS.
1892.

OFFICERS

OF THE

North Carolina Experiment Station

AND

STATE WEATHER SERVICE.

H. B. BATTLE, PH. D.....Director and State Chemist.
F. E. EMERY, B. S.....Agriculturist.
GERALD MCCARTHY, B. S .....Botanist and Acting Entomologist.
W. F. MASSEY, C. E.....Horticulturist.
C. F. VON HERRMANN.....Meteorologist.
(U. S. Weather Bureau)
B. W. KILGORE, B. S.....Assistant Chemist.
F. B. CARPENTER, B. S .....Assistant Chemist.
T. L. BLALOCK, B. S.....Assistant Chemist.
J. S. MENG, B. S .....Assistant Chemist.
ALEXANDER RHODES .....Assistant Horticulturist.
ROSCOE NUNN (U. S. Weather Bureau) Assistant Meteorologist.
J. L. CUNINGGIM, A. B.....Secretary.

STATION COUNCIL.

ALEXANDER Q. HOLLADAY, *Chairman.*
H. B. BATTLE, PH. D.
W. S. PRIMROSE.
ELIAS CARR.

----------*

*To be filled.

STUDENTS.

JUNIOR CLASS.* (20)

Name.	*County.*	*Admitted.*
ALLEN, ROBERT WILSON	Anson	1889.
ASBURY, SAMUEL ERSON	Gaston	1889.
BONITZ, HENRY EMIL	New Hanover	1889.
FLOYD, FRANK FULLER	Granville	1889.
FRANCKS, CHARLES DUFFY	Onslow	1889.
GIBBON, EDWARD MOORE	Mecklenburg	1889.
GRAY, GEORGE PENDER	Edgecombe	1889.
HOLLADAY, CHARLES BOLLING	Wake	1889.
LYTCH, WILLIAM MCNEILL	Richmond	1889.
MATHEWS, WALTER JEROME	Buncombe	1889.
MCKOY, JAMES WILLIAM	Buncombe	1889.
MEACHAM, FRANK THEOPHILUS	Wake	1889.
SAWYER, FRANK MCMURRAY	Duplin	1889.
SELLARS, CARL DEWITT	Alamance	1889.
SEYMORE, CHARLES EDGAR	Franklin	1889.
THORNE, BUXTON WILLIAMS	Halifax	1889.
TURNER, WILLIAM HARRISON	Montgomery	1889.
WILLIAMS, CHARLES BURGESS	Camden	1889.
YARBROUGH, LEWIS THOMPSON	Caswell	1889.
YOUNG, SAMUEL MARVIN	Wake	1889.

SOPHOMORE CLASS. 34

Name.	*County.*	*Admitted.*
ASHE, THOMAS MARTIN	Wake	1890.
BEST, WILLIAM ROBERT	Wilson	1890.
BOND, LEWIS	Bertie	1889.
BOSTICK, ORLANDO CEPHUS	Cleveland	1890.
BOYD, PASCHAL STRONG	Iredell	1890.
BROADHURST, JACK JOHNSON	Wayne	1890.
BROUGHTON, LORENZO JOSEPH	Union	1889.
CARROLL, JUDSON CLIFFORD	Wake	1890.
CORPENING, CHARLES EDGAR	Caldwell	1890.
COX, DAVID, JR	Perquimans	1890.
DOWD, CLEMENT, JR	Mecklenburg	1890.
FAISON, SHERWOOD BADGER	Wake	1890.
HARGROVE, PEYTON CLIFFORD	Edgecombe	1890.

*The College has been in operation only three years, hence has no Senior Class.

Name.	*County.*	*Admitted.*
HARRIS, JOHN ROBINSON	Mecklenburg	1890.
HINSDALE, SAMUEL JOHNSTON	Wake	1889.
HOWLE, FRED. KEMP	Wake	1890.
KIRBY, GEORGE HUGHES	Wayne	1890.
MURPHY, WILLIAM FAISON	Sampson	1890.
MURRILL, EDWARD WILLIAMS, JR	Onslow	1890.
PATTERSON, ROBERT DONNELL	Orange	1890.
PEARSON, CHARLES	Polk	1890.
PIGFORD, THOMAS	Sampson	1890.
POWELL, WALTER JUNIUS	Vance	1890.
PULLEN, CHARLES GARRETT	Halifax	1890.
ROGERS, ZEBBIE GEORGE	Person	1891.
SAUNDERS, JOHN HYER	Pitt	1891.
SPENCER, JAMES ANDREW	Franklin	1890.
STEWART, HAMPTON SMITH	Alabama (State)	1891.
WALTON, BENJAMIN FRANKLIN	Wake	1890.
WETMORE, THEOPHILUS BROADFOOT	Rowan	1890.
WHARTON, RUFUS WATSON	Beaufort	1890.
WILLIAMS, ROBERT MURPHY	Sampson	1890.
WILSON, JOHN MCCAMY	Mecklenburg	1890.
WORTHINGTON, SAMUEL WHEELER	Nash	1890.

FRESHMAN CLASS.

Name.	*County.*	*Admitted.*
ANTHONY, JULIUS ALEXANDER	Catawba	1891.
BAILEY, EDMUNDS LAMAR	Wake	1890.
BARBER, FREDERIC GEORGE	Guilford	1891.
BIZZELL, JAMIE ADRIAN	Cumberland	1891.
BLOUNT, JOHN ISAM	Sampson	1891.
BRAWLEY, JAMES WASHINGTON	Iredell	1891.
BRAWLEY, WILLIAM BURETTE	Iredell	1891.
BROUGHTON, JOHN FLETCHER	Wake	1891.
BULLOCK, GEORGE TARRY	Vance	1891.
BULLOCK, WALTER AUSTIN	Vance	1891.
CAPEHART, CAD	Bertie	1891.
CARTER, CHARLES ELIOTTE	Gates	1891.
CASTLEBURY, FRANK	Wake	1891.
CORBETT, GEORGE WASHINGTON, JR.	Pender	1891.
COWPER, LYMAN ATKINSON	Gates	1891.
DARDEN, EDWIN SPEIGHT	Greene	1891.
DAVIS, WILLIAM KERNEY	Franklin	1891.
DEY, JOSEPH CHARLES	Currituck	1891.

Name.	*County.*	*Admitted.*
DICKIE, DAVID HENRY	Vance	1891.
ENNETT, LEE BORDEN	Carteret	1891.
FAUST, ISAAC HENRY	Randolph	1891.
GOLD, CHARLES WYLLIS	Wilson	1891.
HAMILTON, CHARLEY EATON	Edgecombe	1891.
HARRISS, WILLIE HENRY	Warren	1891.
HAY, OSCAR PAYNE	Wake	1891.
HIGHSMITH, JERE EUSTUS	Sampson	1891.
HUGHES, CHRISTOPHER MILLER	Wake	1891.
HUNTER, MALCOLM BEALL	Mecklenburg	1891.
LAMBETH, EUGENE EDGAR	Chatham	1891.
LAUGHINGHOUSE, JOSEPH JOHN, JR	Pitt	1891.
LUCAS, DAVID MARTIN	Beaufort	1891.
MATHESON, WILLIAM LAFAYETTE	Alexander	1891.
MCEACHIN, ALBERT DOZIER	Richmond	1891.
MCKEOWN, SAMUEL CHRISTOPHER	South Carolina (State)	1891.
MCKETHAN, WILLIE MCLAURIN	Cumberland	1891.
NEWBERN, HORATIO DRINKWATER	Currituck	1891.
ORLEMAN, WALTER FLORENZIE	New York (State)	1891.
PATTERSON, MANN CABE	Orange	1890.
PENNY, EMIL OTIS	Wake	1891.
PIERCE, JAY	Columbus	1891.
PRINCE, ABRAM HINMAN	Vance	1891.
PRIVOTT, VICTOR VASHTI	Chowan	1891.
REED, MAURICE FRANKLIN	Buncombe	1891.
SANDERS, LUCIEN HENRY	Johnston	1891.
SIMMONS, WILLIAM	Onslow	1891.
SINCLAIR, JAMES	New Hanover	1891.
SPEIGHT, HENRY LEWIS	Edgecombe	1891.
SPURGEON, CHARLES EDGAR	Davidson	1891.
STAFFORD, FRANK CALDWELL	Cabarrus	1891.
WEST, WILLIAM SHAW	Wake	1891.
WILLIAMS, GEORGE DANIEL	Gates	1891.
WILSON, SAMUEL ALEXANDER	Mecklenburg	1891.
WISWALL, HOWARD, JR	Beaufort	1891.
WOOTEN, ABNER RICHARD	Greene	1891.
YARBROUGH, CHARLES GARRETT	Caswell	1891.
YELVERTON, WALTER JOYNER	Wayne	1891.

REPRESENTATION BY COUNTIES.

Alamance	1	Johnston	1
Alexander	1	Mecklenburg	6
Anson	1	Montgomery	1
Beaufort	3	Nash	1
Bertie	2	New Hanover	2
Buncombe	3	Onslow	3
Cabarrus	1	Orange	2
Caldwell	1	Pender	1
Camden	1	Perquimans	1
Carteret	1	Person	1
Caswell	2	Pitt	2
Catawba	1	Polk	1
Chatham	1	Randolph	1
Chowan	1	Richmond	2
Cleveland	1	Rowan	1
Columbus	1	Sampson	5
Cumberland	2	Union	1
Currituck	2	Vance	5
Davidson	1	Wake	16
Duplin	1	Warren	1
Edgecombe	4	Wayne	3
Franklin	3	Wilson	2
Gaston	1		107
Gates	3	Alabama	1
Granville	1	New York	1
Greene	2	South Carolina	1
Guilford	1		110
Halifax	2		
Iredell	3		

SUMMARY BY CLASSES.

Juniors	20
Sophomores	34
Freshmen	56
Total	110

A SHORT HISTORY OF THE COLLEGE.

The Watauga Club, of Raleigh, in January, 1885, after having given the subject considerable thought, memorialized the Legislature as follows, viz.:

"1st. To establish an industrial school in North Carolina, a training place in the wealth-producing arts and sciences.

"2d. To be located at Raleigh in connection with the State Agricultural Department.

"3d. To erect a suitable building and provide proper equipment.

"4th. That the instruction be in woodwork, mining, metallurgy and practical agriculture.

"5th. That necessary shops and laboratories be erected adjoining the buildings of the Agricultural Department, and that an experimental farm in the vicinity of Raleigh be equipped.

"6th. That an industrial school is of prime importance and greatly in demand."

The committee on behalf of the Club also furnished such information as they had been able to secure regarding the scope and utility of such an institution.

Several bills were introduced in that Legislature, the one drawn by Hon. A. Leazar becoming a law on March 7th, 1885, by a vote of 51 to 11 in the House and 23 to 9 in the Senate.

The act provides, among other features, as follows:

"1st. That the Board of Agriculture should seek proposals of donations from the cities and towns of North Carolina, and when an adequate donation should be made by any city or town, there the school should be located, giving the place the preference which offered the greatest inducements.

"2d. That the school should be under joint control of the Board of Agriculture and directors from such town or city.

"3d. That the instruction should be in woodwork, mining, metallurgy, practical agriculture, and such other branches of industrial education as may be deemed expedient.

"4th. That the Board of Agriculture should be authorized to apply annually $5,000 of the surplus funds of their department to the establishment and maintenance of said school."

After successive advertisements and many meetings, in which the subject was fully discussed, the Board of Agriculture accepted an offer made by the city of Raleigh, and appropriated the sum of $5,000 for that year, 1886, pursuant to the terms of the act.

Before this result was attained, the earnest advocates of the measure met in mass-meetings on several occasions, at which committees were appointed to prepare full information and statistics. Prominent citizens of the State from various sections manifested a lively interest in the scheme, and matters were assuming a definite shape for the commencement of the school, as shown by the payment of the amount subscribed by the city of Raleigh, the purchase of a site, etc., when certain events gave a different and broader scope to the work designed to be accomplished.

Two large meetings of the farmers of North Carolina were held in Raleigh, respectively on the 18th and 26th of January, 1887. The first of these meetings, among other things, resolved that the farmers ought to have an agricultural college; and further, that the interest on the land scrip fund should be given for a part of its support. The second meeting, with representatives from forty counties, reiterated the resolution referred to as passed by the convention of January 18th, and also considered favorably a proposal of the city of Raleigh to combine the industrial school with the desired agricultural college, offering the funds already in hand, with whatever the Legislature might provide, for such an institution.

After an exciting discussion, a bill for such Agricultural and Mechanical College became a law in the Legislature of 1887, by a vote of 68 to 19 in the House of Representatives and 29 to 13 in the Senate.

Thus the scheme for the North Carolina College of Agriculture and Mechanic Arts was inaugurated, and the State took a most important and progressive step in behalf of agriculture and mechanical development.

OBJECT AND AIM OF THE COLLEGE.

The mission of the North Carolina College of Agriculture and Mechanic Arts can be gathered from a perusal of sections or synopsis of the State law and the Acts of Congress quoted in this pamphlet. But it will not be amiss to give here a brief statement of what it is designed to accomplish.

Its general purpose is so to teach the principles and applications of the sciences, illustrating sound theory by daily practice, as to make out of its students useful and successful men, instead of mere intelligent drones.

"One of the special objects of the college is to foster a higher appreciation of the value and dignity of intelligent labor and the worth and respectability of laboring men. A boy who sees nothing in manual labor but mere brute force, despises both the labor and the laborer. With the acquisition of skill in himself, comes the ability and willingness to recognize skill in his fellows. When once he appreciates skill in handicraft, he regards the workman with sympathy and respect."

The Jews in scriptural times taught each boy a trade, in addition to such mental training as they thought advisable. It was a wise provision.

Some of the very best thinkers of our own time, in this and other countries, have acknowledged the advantages of intelligent manual training of boys and young men in well equipped schools, and institutions of this kind are now being recognized as among the practical necessities of every commonwealth.

In all branches of industry the competition of the world is bringing about a closer margin of profits, and a demand is made upon men of every calling to study the very best methods and closer economy in first production. The whole trend of such instructions as we are now commencing is calculated to work out such economic results.

In an Agricultural and Mechanical College, the student is taught to know that work is honorable; and manual labor becomes a pleasant task when performed under the encouraging eye of teachers whom the students recognize as men of ability. The labor is diversified by a proper development of the thinking and reasoning powers, and the tasks *assigned* are not so long as to prove irksome.

There is no conflict between the technical education which will be given by the Agricultural and Mechanical College and the established colleges and the University of the State. Taking our College as one department of learning, and the above-named institutions as another, their spheres are widely different, and they should be of practical benefit each to the other and both to the commonwealth.

North Carolina is blessed by Providence with the underlying elements of prosperity in every direction; in all of the principal crops grown in the entire country; in the capabilities of so many sections for successful cattle-raising and the production of dairy products; in its trucking interests, fruit and small fruits; in its ores and minerals; its lumber and hard woods, and in its abundant facilities for manufacturing interests of various kinds.

Brains, skill and WORK are needed to develop these interests, and the College proposes to do its full part in the education of the youth of the State as far as it can reach them in these all-important factors.

To make agriculture profitable is one of the great problems of the age. With its collateral pursuits it not only has been, but always will be, the most important industrial calling of mankind.

As North Carolina is essentially an agricultural State, the Legislature has acted wisely in its conclusion to aid the interests of so large a class of its citizens by the creation of an Agricultural and Mechanical College, in which the very best methods and results can be studied and worked out practically as well as theoretically.

Full courses of everything relating to the economy of the farm, including, of course, the utilization of waste, will be thoroughly studied.

Then, too, the State therein lends a helping hand to such of its youth as may desire to engage in mechanical callings of all kinds.

The College is intended not to produce theorists, but practical young men, who will become intelligent farmers, horticulturists, cattle and stock-raisers, dairymen—men who will be interested in their work, and who will make their work profitable.

The State also has need of good mechanics, carpenters, draughtsmen, contractors, manufacturers, architects, civil and mechanical engineers, and the College will help to make them.

In conclusion, while the College will give practical instruction to as many of our youth as it can accommodate, it is made the duty, as it will be the pleasure, of the members of the Faculty of the College to take an active part in farmers' institutes, which are accomplishing so much of good in many States in the Union, and which have happily been inaugurated by the Board of Agriculture and by the farmers themselves in our own State.

The professors will be at the service of the farmers of the State whenever they can impart such special information as may be sought at their hands They will be glad to furnish the best methods of building and filling silos, of planning barns, stables, etc. They will also be expected to investigate and furnish thoroughly approved formulas for remedies in diseases of cattle, for destruction of insect pests, formulas for composting, etc.

COURSES OF INSTRUCTION.

The two general courses of study offered in this Institution are in Agriculture and in Mechanics.

In the Freshman year the work for the students in both courses is the same, and consists of Mathematics, English, Physics, Chemistry, History, Horticulture and Agriculture in the recitation-room, and practice work in the field, greenhouse, carpentershop and drawing-room.

While it is true that at the beginning of the Sophomore year the two courses divide and the student selects one or the other of the two, yet some studies are common to both through the entire course. In the Sophomore year both have Chemistry, English, Mathematics and History in common, while the Juniors are together in all these but Chemistry, which is not taken by the Mechanical students after the Sophomore year. The Agricultural Seniors do not have Mathematics, but the English and History is continued by all through the Senior year. With the higher classes, therefore, more and more time is devoted to the technical part of the work.

THE TECHNICAL WORK OF THE AGRICULTURAL COURSE.

This work occupies four hours per week of the recitation time of the Sophomore class, eight hours of the Juniors, and eleven of the Seniors, and all the practice work of these years. In the Senior year the student will be furnished special facilities for pursuing original work in preparing a graduating thesis which may be selected from original work in either Agriculture, Horticulture, Botany, or Agricultural Chemistry.

We endeavor to keep in view the fact that the course is not intended as a training school for farm laborers, but for

fitting young men for intelligent work in Agriculture, either on the practical side in directing the great army of uneducated muscle in the field or greenhouse, or on the more scientific, but none the less valuable, side as workers in the laboratories of Agricultural Chemistry or Botany.

The manual labor is performed during the practice hours, and is only such as is considered necessary and instructive, and does not consist of mere drudgery, of which most of the students know enough already before their admission. While taught that no labor is beneath the dignity of a thorough farmer, when necessary, the chief effort will be to form habits of close observation and economical administration, and to inculcate broad ideas as to the possibilities of American Agriculture, and thus send them out as *leaders in improvements*, instead of mere followers in ruts of other men's making.

THE TECHNICAL WORK OF THE COURSE IN MECHANICS.

This work occupies three hours per week of the recitation time of the Sophomore Class, seven hours of the Juniors and eleven of the Seniors, and all the practice work of these years.

This is not a trade school, and it is of course not expected that our students shall necessarily adopt a trade, but if any should desire to do so, the training given here in the principles underlying all mechanical trades, as well as in their application, will make smooth the way and give the right start to all students who can remain but one or two years, preferring then to take up a trade rather than to work on to the graduating degree, which will give them position as Civil or Mechanical Engineers.

An examination of the work for each year, as shown in the table at the end, will give an accurate idea of the qualifications of each student at any given point in the course,

whether his purpose may be to adopt a trade, or only to direct with intelligent skill operations of his own business, or to seek employment in the highest branches of engineering.

The graduating thesis shall have for its subject some part of the work in Mechanics, to be approved by the Professor of Mechanics and Applied Mathematics.

DEPARTMENTS OF INSTRUCTION.

DEPARTMENT OF AGRICULTURE.

PROF. CHAMBERLAIN.
ASSIST. PROF. EMERY.

The aim of this department is to make its pupils practical farmers, as well as thorough students. In order to accomplish this end, practice and theory must go hand in hand. Science is the foundation on which improved agriculture is based.

In the class-room we must study the Science of Chemistry, Physics, Botany, Zoology, Entomology, Physiology, etc. In the field we must study the laws of Nature, learn to observe and become familiar with the little details incident to agricultural pursuits, and apply our knowledge in agricultural practice.

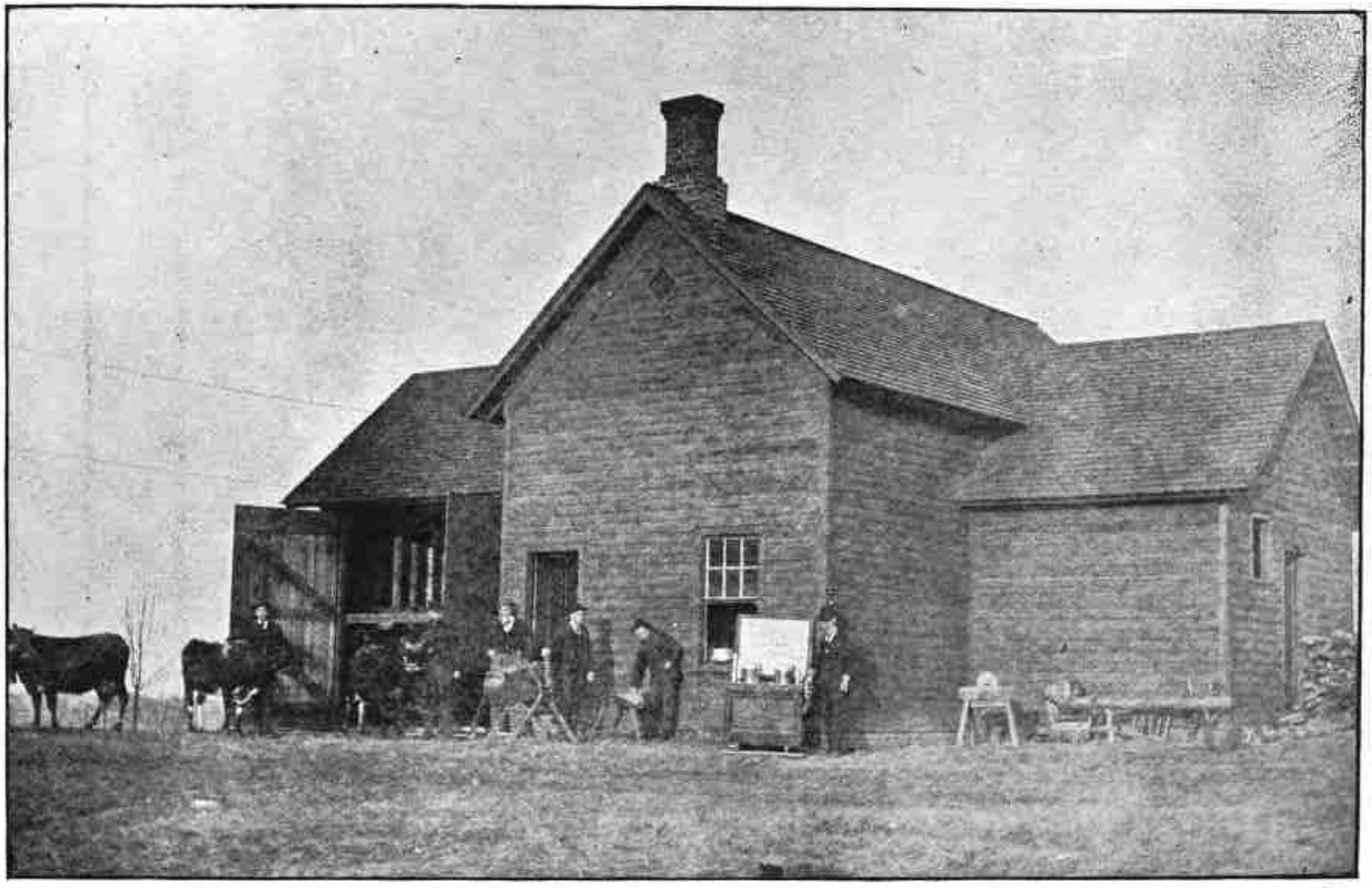
All the students in this course will be required to work in the farm workshops, in the barns and in the fields, under the direct supervision of the Professors of Agriculture.

The field and shop-work supplement the lectures and recitations in such a way that the application and value of the principles taught may be thoroughly understood and remembered by the students. As much time will be given to practical work as circumstances will permit.

FRESHMAN YEAR.

All students entering college will, during the Freshman year, give one hour a week to recitations or lectures, and two hours a week to practical work in the field.

Since many students who enter here can only remain one year, the course for the Freshman will be of a non-technical nature and will cover subjects easily comprehended by all. The class-room work will consist of forty-four lectures on the following subjects:



BARN AT EXPERIMENT STATION.

FALL TERM.—12 LECTURES.

1. Introduction.—Statement of outline of work for the year.
2. Wheat.—Short history and cause of different kinds.
3. Soil.—Preparation and cultivation.
4. Harvesting and marketing.
5. Corn.—Short history and cause of different kinds.
6. Soil.—Preparation and cultivation.
7. Harvesting and marketing.
8. Other cereals of the South.—General remarks.
9. Hay and its production.
10. Favorite soils.
11. Preparation of the soil for seed.—Kinds and how to sow.
12. Curing the crop and disposition of the hay.
13. Examination.

WINTER TERM.—20 LECTURES.

1. Stock on the farm—Importance of.
2. Cattle.—General remarks.
3. Importance of good ancestry.
4. Treatment of calves.—How to raise.
5. Jersey cattle.—Short history.
6. Characteristics.
7. Guernsey cattle.—Short history.
8. Characteristics.
9. Holstein cattle.
10. Characteristics.
11. Hereford cattle.—Short history.
12. Characteristics.
13. Short-horn cattle.—Short history.
14. Characteristics.
15. Sheep.—Various breeds; some general distinctions.
16. Care and selection.
17. Special needs, and how to manage.
18. Swine.
19. Treatment, care and management.
20. Production of pork, and curing.

SPRING TERM.—12 LECTURES.

1. Horses.—Short history.
2. Principal breeds.
3. Thorough-bred and standard-bred horses.
4. Coach and hackney horses.
5. Draft horses.
6. Breeding; like begets like; spontaneous variation.
7. Atavism.—How stock is improved.
8. Importance of pure-bred sires.
9. Herd books, and how to use them.
10. What the farmer in North Carolina should raise.
11. General system for adoption.
12. Review, and general remarks.

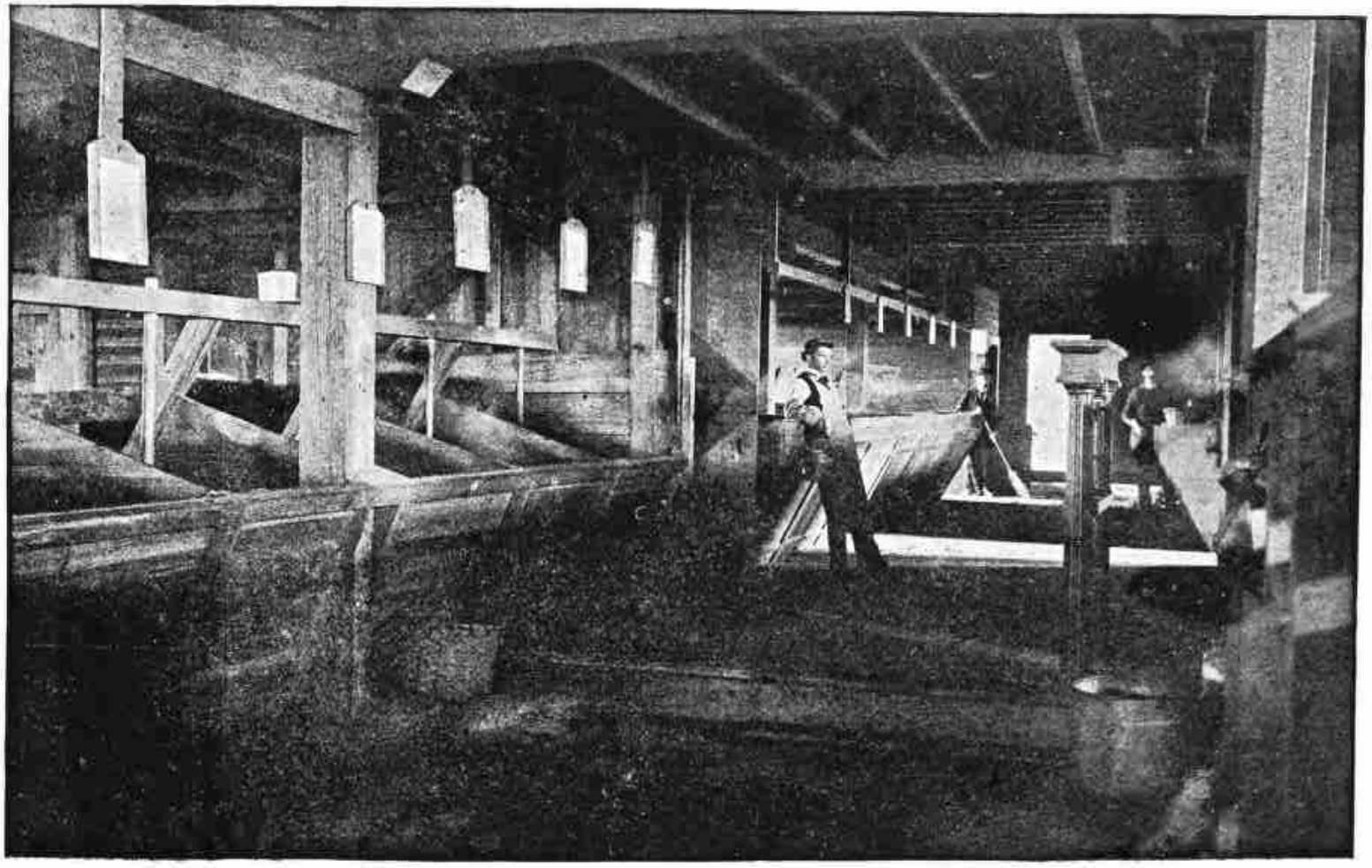
SOPHOMORE YEAR.

During the Sophomore year, students in the course in Agriculture will devote six hours a week to the study of Comparative Anatomy, Physiology and Hygiene of farm animals. Special study will be given the digestive tract, and the food required by different kinds of animals; the general laws of nutrition; the chemical composition of feeding-stuffs, with reference both to the feeding and manurial values; the feeding of farm animals; the effect of dry or succulent and concentrated or bulky foods; feeding rations for fattening, work, and dairy animals; the general laws of heredity, and principles of stock-breeding.

Blacksmithing, five months of the year, four hours per week.

JUNIOR YEAR.

Lectures and practical work seven hours a week in farm buildings, fences, implements and permanent improvements. The study of domestic animals, history and description of various breeds of horses, cattle, sheep and swine, with their



CATTLE STALLS AND TABLETS FOR RECORD OF FEED.

merits and demerits. General notes on care of stock and selection for specific purposes, whether for work, dairy or fattening, with special reference to their breeding and development. Dairy practice, the construction of dairy buildings and management of dairy machinery and equipment, the latest and most approved methods of conducting a dairy business; effect of food, exposure and treatment of cows on the quantity and quality of milk, utilization of the products of the dairy, packing and shipping of dairy products, and study of the peculiarities of markets.

SENIOR YEAR.

Lectures and practical work seven hours a week in farm surveying and leveling, plotting results and making profiles for the establishment of farm drainage, irrigation, road and bridge making; farm manures, their composition and value, best methods of application; chemical fertilizers, with their adaptation to certain soils and crops; soil renovation; planting, cultivating and harvesting of farm crops; various questions relating to farm accounts, buying and selling; general farm economy. Thesis.

DEPARTMENT OF HORTICULTURE, ARBORICULTURE AND BOTANY.

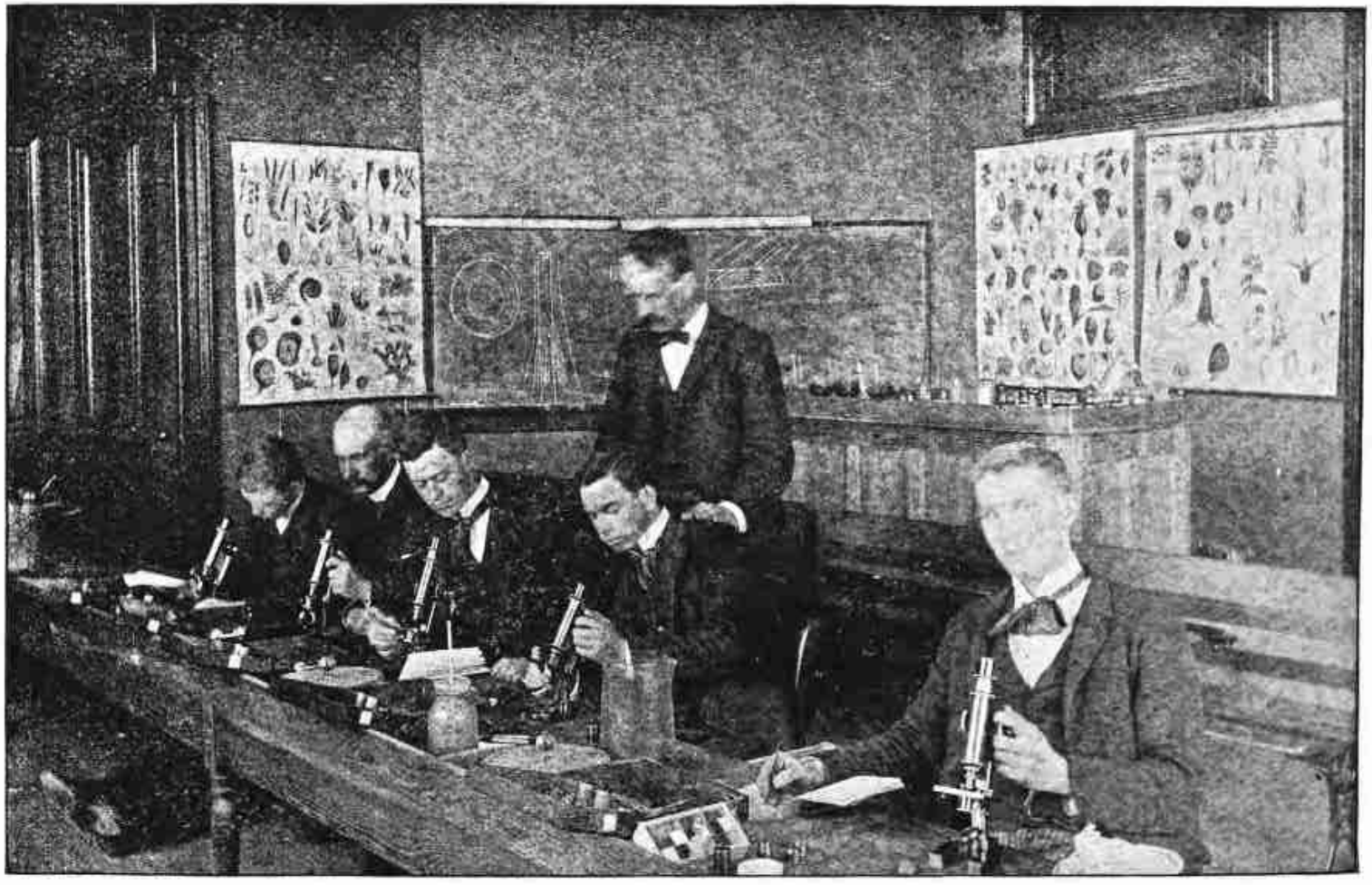
PROF. MASSEY.

A thorough knowledge of the anatomy of plants and their physiological functions being the basis of all accurate knowledge of Horticulture, special effort will be made to give thorough instruction in these branches. Botany will be mainly studied as a branch of Biology, but systematic Botany will also receive due attention. It will not be taught by the mere memorizing of dry definitions, but by a practical study of the characteristics of plants upon which classification is founded. The student will prepare a series of progressive schedules of the characters of all parts of plants and flowers from a study of the plants themselves, thus training his powers of observation so that when he comes to the identification of plants for herbarium preservation, he will have no temptation to make "short cuts," as though the name was the only object sought.

The effort will be made to include in the first two years of the course those branches most essential to the Market Gardener, Fruit Grower and Florist, so as to give those students who do not remain longer with us a short practical course. The subsequent years will be devoted to advanced work in Cryptogamic Botany, Entomology, etc.

Those who complete the whole course will receive instruction in all the branches needed by a Professional Horticulturist, including greenhouse propagation, forcing of plants, flowers and vegetables under glass, landscape gardening, farm surveying, road working, the construction of horticultural buildings and forest improvement.

The new greenhouse at the College and the greenhouse and glass grapery at the Experiment Station, where exotic grapes are grown under glass, furnish means for practical study and illustration.



HORTICULTURAL LABORATORY.

COURSE OF STUDY.

FRESHMAN YEAR.

FALL TERM.

Lectures on the Elementary Combinations in Soils, Water and Air. Geological Origin of Soils. Cultivable Soils, their mechanical characters and improvement. How Plants Grow. Practical work in College Garden.

WINTER TERM.

Lectures on Garden Vegetables, with special reference to Truck Gardening in the South. Practice in Greenhouse and Frames.

SPRING TERM.

Lectures and practical study of Plant Structure from living forms collected by the student. Study of Floral Forms and Preparation of Schedules of Plant Organization. Practical work in Garden.

SOPHOMORE YEAR.

FALL TERM.

Lectures on the Application of the Study of Vegetable Life and Structure to the Culture of Fruit Trees in Nursery and Orchard. Practice in Greenhouse Propagation and Management. Pruning in Orchard and Vineyard.

WINTER TERM.

Advanced work in Structural Botany with Text-book and Microscopic Illustrations as needed. Practice in Greenhouse work and Grafting.

SPRING TERM.

Entomology begun with Text-book and Lectures. Laboratory work in Classification of Plants and Insects. Formation of Herbaria and Collections. Special study of Grasses.

JUNIOR YEAR.

FALL TERM.

Physiological and Cryptogamic Botany. Laboratory work in Vegetable Histology and study of Low Forms of Plant Life with Compound Microscope. Preparation and Mounting of Microscopic Objects.

WINTER TERM.

Lectures on the Application of the Principles of Physiological Botany to Forestry. Study of Woods and Timbers and Forest Products. Laboratory study of Cryptogams.

SPRING TERM.

Forestry continued. Classification of Cryptogams. Collection of Cryptogamic Plants.

SENIOR YEAR

FALL TERM.

Lectures on Landscape Art, Road-making and Horticultural Construction. Farm Surveying and Practice in use of Instruments.

WINTER TERM.

Lectures on Exotic Horticulture and Forcing of Fruits and Flowers under glass. Laboratory study of Parasitic Fungi on Cultivated Plants.

SPRING TERM.

Lectures on the Geological History of Plants, Origin of Cultivated Plants and Floral Structures. Laboratory study of Fungi continued.

GREENHOUSE FOR CLASS IN HORTICULTURE.

THESIS.

Students making their Thesis in this department must select the subject early in the year, with the advice of the Professor, and will be given every opportunity for doing good original work.

In the Junior and Senior years each student will be furnished with a compound microscope and must make a deposit, at the beginning of each year, of three dollars for materials and re-agents used, any unexpended balance of which will be refunded at end of the year. Instruments furnished by the College, but losses and breakage must be made good by student.

In the Freshman and Sophomore years a deposit of seventy-five cents is required for use of hand magnifier, to be refunded when the glass is returned in good order. Students intending to make Horticulture their profession will be given special opportunities in the Junior and Senior years to become experts in Greenhouse work and Propagation. The College and Station Greenhouses and Exotic Grapery give particular advantages for this.

DEPARTMENT OF PURE AND AGRICULTURAL CHEMISTRY.

PROF. WITHERS.

MR. MILLER.

This department occupies all the north-east wing of the first floor of the Main Building, and consists of five rooms, as follows: General Laboratory, Lecture Room, Store Room, Private Laboratory, and Office.

The Chemical Laboratory is 37 by 19 feet, and is well lighted. It is supplied with fume closets, evaporating baths, drying chamber, blast lamp, and extra tile-covered tables, and has accommodations for fifty-six students, twenty-eight of whom may work simultaneously. The analytical tables are of yellow heart-pine with oak tops. Each student is

provided with one large and two small drawers and one cupboard for keeping apparatus, and has three feet of working space. Each working space is provided with gas, water, a sink, and shelves supplied with re-agents.

The Chemical Library contains a carefully selected list of standard text and reference books—including those used by the department—and also the current numbers of the American Chemical Journal, Journal of Analytical and Applied Chemistry, Journal of the Society of Chemical Industry, Journal of the Chemical Society (London), Journal für Landwirthschaft, Fresenius' Zeitschrift für Analytische Chemie, Berichte der Deutschen Chemischen Gesellschaft, and others. This library has been placed in one of the rooms of the department adjacent to the Laboratory, and the student is encouraged to make free use of it.

The Chemical Museum contains specimens illustrating the work in pure and Agricultural Chemistry. It will be added to from time to time.

Instruction in this department begins with the third term of the Freshman year and continues through the Sophomore year for all students. It occupies a portion of the whole course of the agricultural students.

The following courses are offered:

I. INTRODUCTORY CHEMISTRY—FRESHMAN CLASS.

Recitations three hours weekly for second half year.

Some of the typical elements and their more common compounds are studied, with some of the simpler principles underlying the science. Full experiments are performed in the class-room. This course is aimed to give the student the chemical knowledge needed for beginning the work of other departments, and to prepare him for those courses which follow in this. For those students who are unable to pursue their college course beyond this point, it will be an aid for private reading and study of agricultural literature.

Text-book: Williams' Introduction to Chemical Science.

CHEMICAL LABORATORY

II INORGANIC CHEMISTRY—SOPHOMORE CLASS.

Lectures and Recitations three hours weekly—Laboratory Work two hours weekly.

This work is both descriptive and theoretical, instruction being given by lectures, recitations, and supplemented by experiments performed in the laboratory by the student. The common elements and their principal compounds are studied. Much stress is laid on the writing of equations of the solution of chemical problems, and class-room experiments.

As the work proceeds, the student is encouraged to make free use of the reference books in the Chemical Library.

In the laboratory the student records the results of his experiments in a note-book, for daily examination and correction.

Text-book: Remsen's Chemistry (Briefer Course).

Reference books: Roscoe and Schorlemmer, Wurtz, Richter.

III. AGRICULTURAL CHEMISTRY—JUNIOR CLASS.

Lectures and Recitations three times per week.

The work follows closely Mayer's Lehrbuch der Agrikulturchemie.

Attention is given to a con-ideration of—

The atmosphere as a plant feeder; the plant—its mineral and organic ingredients and their functions; the soil—its composition and origin, its physical and chemical properties, its agency as a storage reservoir and as a plant feeder; effect of drainage, tillage, burning and fallowing; amendments; fertilizers; farm manures; green manuring.

Foddering substances—their composition and valuation; ensilage.

Animal Chemistry; stock feeding; chemistry of butter, cheese and milk, etc., etc.

Reference books: Storer's Agriculture; Johnson's How Crops Grow, and How Crops Feed; Johnston and Cameron's Agricultural Chemistry.

IV. QUALITATIVE ANALYSIS—JUNIOR CLASS.

Laboratory Work six hours per week.

The student is brought to see the natural division of the elements into general groups. He is familiarized with general and individual re-actions, and taught by these to identify the presence of elements in unknown compounds. Some time is given each week to the writing of equations.

Text-book: Caldwell's Chemical Analysis (Qualitative portion.)

Reference books: Fresenius, Prescott and Johnson.

V. QUANTITATIVE ANALYSIS—SENIOR CLASS.

Laboratory work eight hours weekly.

The introductory work in this course consists of the gravimetric and volumetric estimation of iron, assay of limonite, estimations of sulphuric anhydride, acidmetry and alkalimetry, estimation of lead, of phosphoric anhydride and calcium. After this the student is given practice in the analysis of marls, mucks, feeding-stuffs, water, fertilizers, soils, and such other work as the Agricultural Chemist is usually called upon to perform.

Text-books: For the introductory work Caldwell's Chemical Analysis; quantitative portion.

Reference books: Fresenius, Sutton's Volumetric Analysis, Cairns, Caldwell's Agricultural Chemical Analysis, and Methods of the Association of Official Agricultural Chemists.

VI. ORGANIC AND THEORETICAL CHEMISTRY—SENIOR CLASS.

Lectures and Recitations three hours per week.

Students who can do so will, in addition to the recitation, devote about six hours per week to the preparation of organic compounds, supplementing the text-book by those of Levy Fischer and Cohen.

MECHANICAL CLASS AT FORGE WORK.

Text-books: Remsen's Organic Chemistry and Remsen's Theoretical Chemistry.

Reference books: Richter, Roscoe and Schorlemmer, Muir's Principles of Chemistry, Lothar Meyer's Modern Theories of Chemistry.

DEPARTMENT OF MECHANICS AND APPLIED MATHEMATICS.

PROF. KINEALY.

MR. PRITCHETT. MR. PARK.

In this department the aim is to combine the theoretical with the practical in such a manner as to fit the student to do the work of an engineer and designer, of a builder, or of a mechanic, according to his ability and proficiency in the course. From the beginning of the Sophomore year until the end of the course, the time of the student is divided almost equally between intellectual or class-room work and practical work. By class-room work is meant work in those subjects of general education given to the student in all the departments, and also the theoretical discussion and investigation of those subjects that pertain particularly to matters of mechanics and engineering. In the class-room work of this department it will be necessary to use text-books to a great extent, but they will always be supplemented by explanations and lectures.

The course, as laid out, is intended to give to those who complete it such a general and broad knowledge of the subject of mechanics and engineering, and such skill in the use of tools and instruments, and in the management of machinery, as will enable a graduate to be prepared to enter upon and make a specialty of any line of work pertaining to mechanics or engineering that he may choose. No specialty, as yet, is made either of mechanical engineering, civil engineering or architecture; but those fundamental

principles which underlie, and form the bases of all, are taught to the student.

In addition to his theoretical training, the student is given a most thorough and careful practical training in the use and care of tools and machinery. He is made a good workman in both iron and wood. His greater or less degree of skill will, of course, depend largely upon his natural ability.

The class-room work in this department will be as follows:

SOPHOMORE YEAR.

Mechanics.—This includes the study of the different methods of transmitting motion and force from one machine, or part of a machine, to another by means of gear-wheels, belts and pulleys and shafting. The students will be taught how to proportion gear-wheels and pulleys, in order to obtain certain velocity ratios, and to "lay out" and put up a line of shafting.

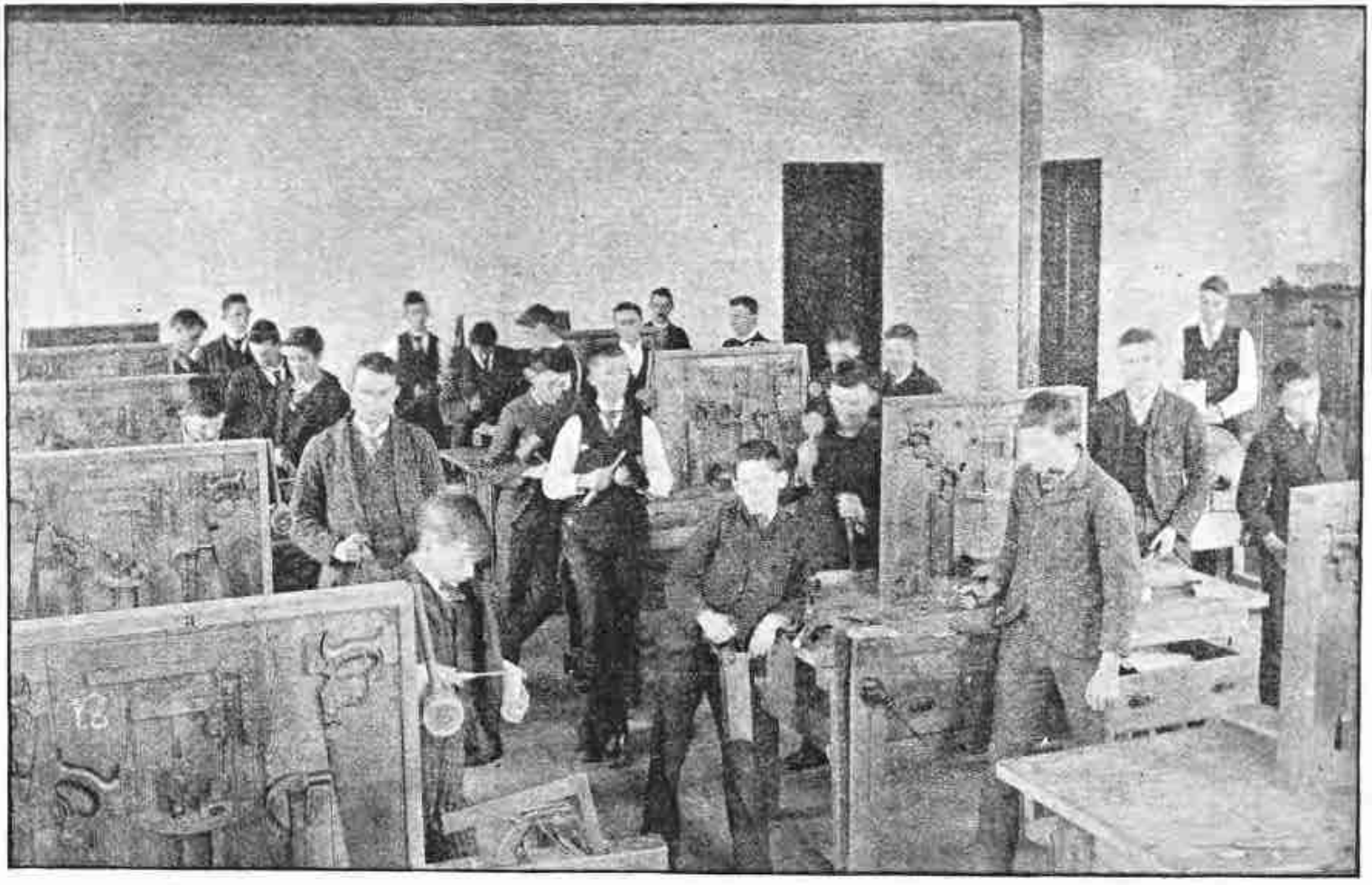
As far as possible, this subject will be made clear and plain by explanations in the shop building.

Building and Building Materials.—This is lectures upon buildings and structures and the materials which enter into them. The students are taught the names of the different parts, and the correct methods of making and fixing each in its relations to the others. They are also taught to make estimates and bills of materials.

JUNIOR YEAR.

Steam and Steam Machinery.—This is a study of engines and boilers, and steam-plants in general. A text-book will be used. Work will be done with the engine and boiler. The students will learn to fire the boiler and tend the engine.

Graphic Statics.—The student learns to determine the stresses in framed structures, bridge and roof trusses by the graphic methods. This study is a prelude to the subject of Bridges and Roofs in the next year, and is taught entirely by lectures.



CLASS IN CARPENTRY.

Surveying.—During the Winter the students will confine their attention to a theoretical study of the principles of surveying, and in the Spring they will be taken into the field and made to make a practical application of their theoretical knowledge by surveying and laying off land. They will in this way become thoroughly familiar with the theory and practical use of surveying instruments.

Each student will be required to plot and work up his field-notes.

SENIOR YEAR.

Applied Mechanics.—This is the application of the mathematical knowledge of the student to the investigation of the effect of forces upon bodies and structures, and the resistance of engineering materials to stresses of various kinds.

Bridges and Roofs.—The students are here taught the analytical methods of determining the stress of the various members of a roof or bridge-truss when subjected to varying loads. They are also taught the methods of proportioning the members of a truss so as to resist the stresses with the least expenditure of material.

Lectures.—During the year one hour per week will be devoted to lectures upon the Strength of Materials and Designing, with special attention to the Designing of Structures and Plants for particular purposes. And, if possible, some time will be devoted to Water-works, Sewerage, etc.

PRACTICAL WORK IN THE DEPARTMENT OF MECHANICS AND APPLIED MATHEMATICS.

During the Summer of 1890 a large shop building was erected.

The building is a two-story building, and contains on the first floor, a Machine Shop, 30 x 40 feet; a Forge Shop, 30 x 40 feet; an Office and Class-room, 23 x 24 feet, and a Wash-room, 10 x 23 feet. On the second floor is a Wood-turning

Shop, 30 x 40 feet; a Carpenter Shop, 30 x 40 feet, and a Drawing-room, 23 x 35 feet.

After the building was completed the Carpenter Shop, Forge Shop and Drawing-room were fitted up.

The Carpenter Shop is equipped with thirty carpenter-benches and all the necessary tools for each bench.

Each bench is provided with a cross-cut saw, rip-saw, back-saw, try-square, T-bevel, steel square, nail-hammer, mallet, marking gauge, screw-driver, oil-stone, zinc oiler, and a brush for dusting off the bench.

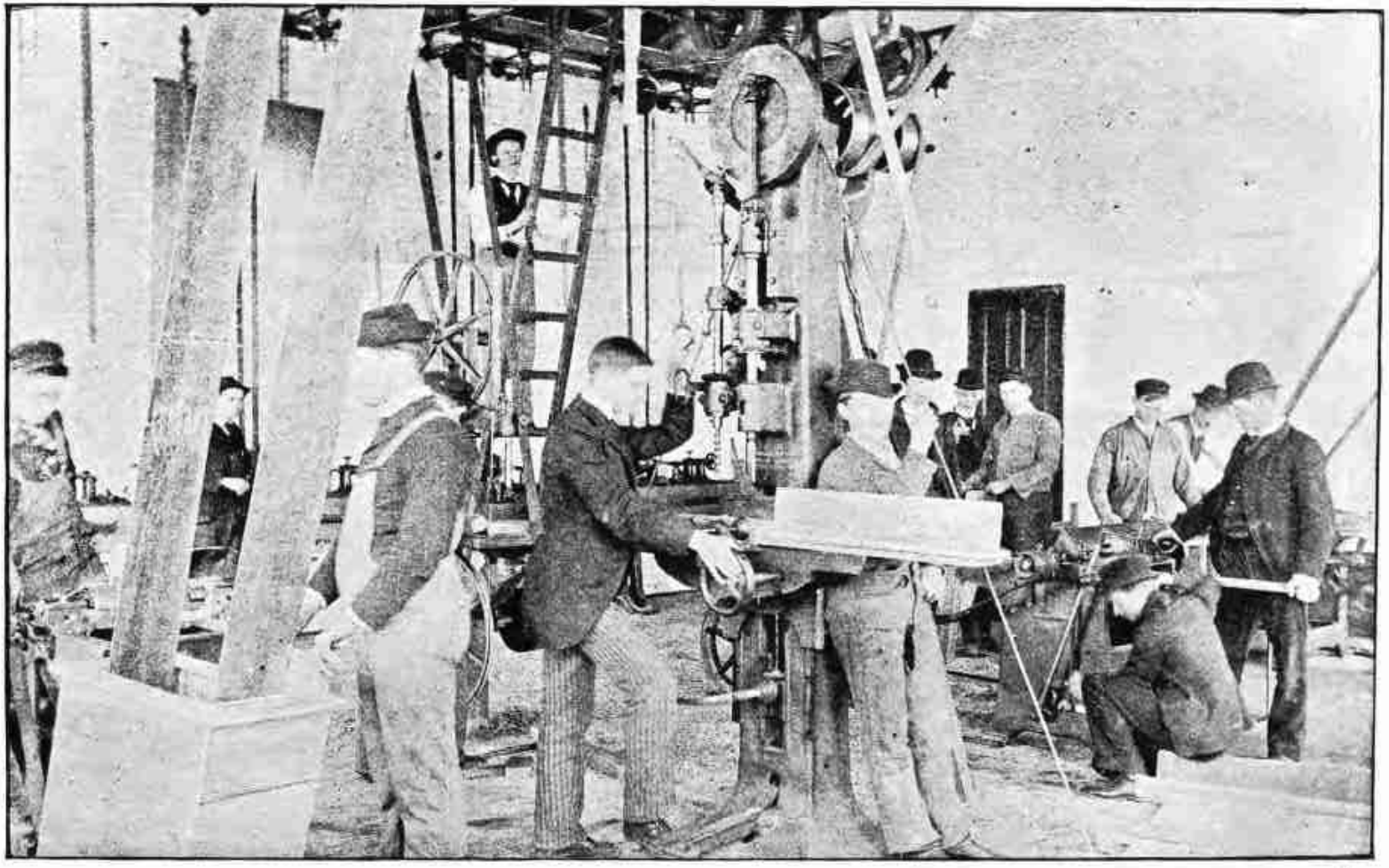
These tools stay on the bench, and are used by any student who works at the bench. Only one student works at a bench at any one time.

In addition to the tools named above, each student, upon entering, has issued to him a jack-plane, $\frac{3}{4}$-inch chisel, $\frac{1}{2}$-inch chisel, $\frac{1}{4}$-inch chisel, and a slip-stone. These tools are used only by the student to whom they are issued, and he is held responsible for them. He is required to keep them sharp and in good order, and upon leaving college to return them to either the professor or his assistant.

The work in the Carpenter Shop consists of a number of exercises by which the student is taught the use of carpenters' tools.

The Forge Shop is fitted up with twenty forges. Each forge is equipped with a water-tank, shovel and poker. For each forge there are provided the following tools: an anvil, hammer, steel square, tongs and hardy. In addition to these, there will be sledges, swedges, fullers, flatters, and hot chisels for general use in the shop.

The work in the Forge Shop consists of a number of graded exercises by which the students are taught to work in iron and steel. The students begin by forging simple shapes out of lead, in order that they may acquire skill in the use of the various tools, and may learn to work fast. They are then taught how to build and tend the fire, and to heat iron. When they can do this, they forge simple shapes out of hot



MECHANICAL CLASS IN WOOD TURNING ROOM.

iron They learn to "bend," to "draw," to make "scarfs," and to weld round or rectangular pieces of iron.

After they have acquired some skill in working with iron, they are taught to work with steel and to temper it, and are given a short course in tool-making.

The course of work in the Forge Shop for the students in the Agricultural Course is shorter than that for the mechanical students and is laid out specially for them.

During the summer of 1891 a boiler-house was built and the Wood-turning Shop was equipped.

The equipment of this shop consists of ten 12-inch swing lathes, one saw and Dado machine, one 20-inch pony planer, one mortising and boring machine, one 30-inch band saw, one 6-inch "sticker," one grindstone, one mitering machine, and four benches equiped with iron vises and all necessary hand tools for pattern-making.

Each lathe is equipped with the necessary turning chisels and tools.

The Junior Class works ten hours per weeek in this shop. They work with each machine in turn and learn to use all well. They take turns in tending to the machinery, shafting and belting, and are given a course in pattern making the last part of the year.

To run these machines and the machines that will be put in the machine-shop, there is a 25 horse-power Woodbury engine, made by the Stearns Manufacturing Company. It is of the high speed automatic type. Steam is supplied by a 30 horse-power boiler in the boiler-house.

The students of the Junior Class take turns in firing and tending to the boiler, and also in tending to the engine. Whenever the class is at work in the shop, one of the students is firing and tending the boiler and another is looking after the engine.

In addition to the regular course of exercises, the students of the Junior Class are called upon to make boxes, cupboards,

shelves, drawing-boards, &c., and to do such work as may be necessary for the department or the College.

During the coming summer of 1892 a machine-shop will be equipped with all the necessary machines and tools for working in iron.

It must be remembered that all the exercises in the different shops are designed simply for the instruction of the students. Nothing is made for sale.

All work is done from drawings. A drawing of the exercise to be made is hung up in the shop, and each student makes a copy of it, putting on it all the necessary dimensions and notes.

This copy is then submitted to the instructor, who makes such corrections and alterations as are necessary and then returns it to the student, who proceeds to make the exercise from this drawing without having seen the object that the drawing represents.

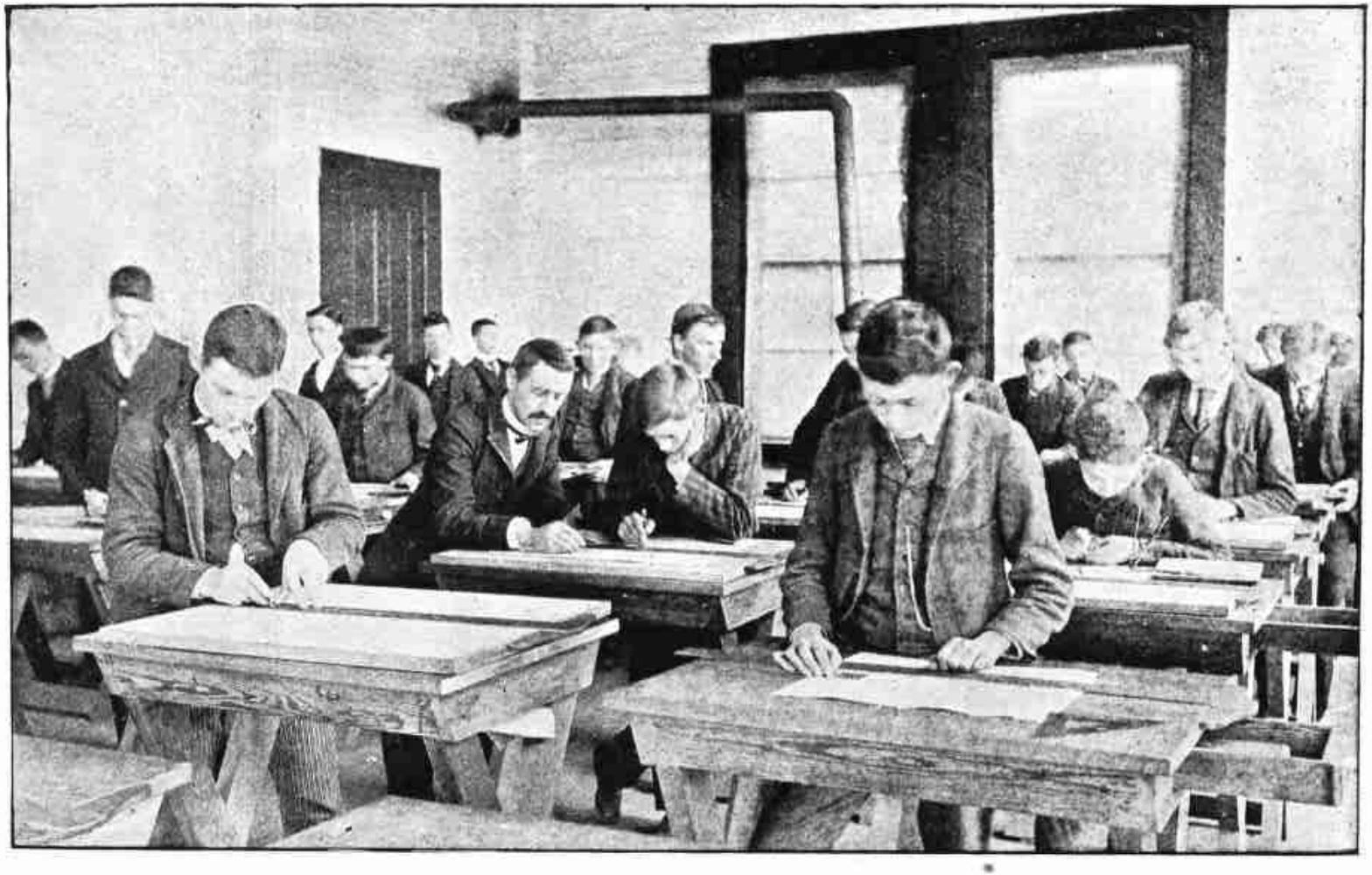
In the beginning of the course the instructor explains to the class the meaning of the various conventional signs on the drawings, and also shows each student how to "lay out" his work from the drawing. As the students acquire facility in reading the working drawings, and skill in "laying out" work, and in handling tools, the exercises are made more difficult.

When an exercise is given to the class, the instructor explains where and how the work illustrated by that particular exercise is used in practical construction.

DRAWING.

During the Freshman year all the students in the College take a course in drawing. The drawing of this year consists of a little free-hand sketching, a course in lettering, and the elements of mechanical drawing.

After the Freshman year each student taking the Mechanical Course will have drawing one hour a day, or what will be equivalent to that time. Each student will be taught to make complete and full plans, elevations, sections and details



CLASS IN MECHANICAL DRAWING.

of work and machinery already built and set up. The students will be taught the conventional signs and symbols used in drawing, and all drawings will be marked, lettered and finished as if they were to be used in a regular manufacturing establishment. Students will be required to make tracings of some of their drawings, and from the tracings they will take blue prints. After the student has entered the Senior Class he will then be required to make drawings of one or more original designs.

As far as possible the work in the drawing-room and in the shop are made to supplement one another. In the shop the students make objects from drawings, and in the drawing-room they for a long time confine their attention to making drawings of objects that already exist.

In this way they will be taught not only to work from and understand drawings, but also to express clearly their own ideas in the conventional language of the draughtsman.

DEPARTMENT OF MATHEMATICS.

ADJUNCT—PROF. YATES

The course in Mathematics begins at the beginning of the Freshman year, and continues during the whole four years for mechanical students. Agricultural students drop the study of Mathematics after having finished Geometry.

FRESHMAN CLASS.

During this year it is our purpose to give the young men a thorough and practical knowledge of Arithmetic and begin the study of Algebra.

This class recites by sections, each section five times a week.

To enter this class the student must have a thorough knowledge of Arithmetic through fractions.

SOPHOMORE CLASS.

Five Recitations a week.

Applicants for this class will be examined on the work of the Freshman year.

This class completes Algebra and begins Geometry. In the teaching of Algebra every effort is directed to lead students to pursue the study without feeling that it is characterized by arbitrary laws and mysterious processes; in other words, to work by reason, and not by rules.

JUNIOR CLASS.

Four Recitations a week.

The completion of Geometry, followed by a course in Analytical Geometry, will occupy this year.

In the study of Geometry much additional work is insisted on, in the way of original exercises. No efforts are spared to compel students to think, and invent new methods and demonstrations.

Trigonometry will be taken by the mechanical students with surveying during this year.

SENIOR CLASS.

Five Recitations a week.

The course in Analytical Geometry will be completed. Much exercise work will be done since it is only by solving problems which require some degree of original thought, that any real mastery of the study can be gained.

During the Senior year the class will also take a course in Differential and Integral Calculus. It is designed to give the students a sufficient knowledge of this subject for all practical purposes.

During this year agricultural students will take Trigonometry, with Surveying.

ENGLISH DEPARTMENT.

PROF. HILL.

It will be the endeavor of this department to give to each student such a practical familiarity with the English language that he will speak and write his mother-tongue with accuracy and with ease, and be an intelligent reader of its literature. In addition to the regular text-books, standard prose and poetic writers will be critically read and discussed through the whole course.

The department is this year adding a reference library that will be at all times accessible to students.

The course in English begins in the Freshman year, and continues through the whole four years, and is required of both Agricultural and Mechanical students.

FRESHMAN CLASS.

This class recites by sections; each section four times a week.

The first part of the year is spent upon a review and drill on the forms and syntactical laws of the language. This work is made as practical as possible. The second half of the year is devoted to the fundamental principles of composition and their application. Constant exercises are required, but, in this year, the student is assisted in his accumulation of material for these exercises, so that his attention may be given almost entirely to correctness of expression.

Text-books: Meiklejohn's Grammar, Lockwood's Lessons in English. Parallel for 1892–'3: The Sketch-Book, Twice Told Tales, Poe's Poems.

SOPHOMORE CLASS.

Three Recitations a Week.

The work for this year begins with the History and Development of the English Language. This will be followed by

a course in the elements of Rhetoric. In this course in Rhetoric, special attention will be paid to the analysis of themes and their subsequent elaboration step by step. Much of this work will be done in the lecture-room, and no pains will be spared in the attempt to develop the student's imaginative and constructive powers.

Text-books: Lounsbury's English Language, Clark's Practical Rhetoric. Parallel for 1892–'3: For class-room, De Quincey's Essays on the Poets; for examination, Carlyle's Burns.

JUNIOR CLASS.

Three Times a Week.

The first part of this year will be spent upon Logic and Logical Praxis. Afterwards, the class will take up Higher Rhetoric, Rhetoric as it has to do with Invention. In order to make this study of Invention more fruitful, an analysis of the methods of some of our best writers will be carried along with it. A short course in Linguistics will also be given.

Text-books: Jevons's Logic, Gregory's Practical Logic, Genung's Rhetoric, Lectures. Parallel for 1892–'3: Macaulay's Frederick, Ruskin's Modern Painters, Garnett's English Prose from Elizabeth to Victoria.

SENIOR CLASS.

Three Times a Week.

Literature, English and American, will occupy the year. Historical periods will first be studied, and then the literature of the periods. But some parts of the year's work will be done topically. The Elizabethan Drama is taken up critically. Parallel for 1892–'3: Marlowe's Jew of Malta, Shakespeare's Tempest and Cæsar will be assigned for class work. The members of this class will be required to take a prescribed course of reading, but each course will be marked off individually.

Text-books: Minto's Literature, Welsh's Literature, Hawthorne and Lemmon's American Literature, Garnett's English Selections from Elizabeth to Victoria, Hudson's Tempest, Rolfe's Cæsar, Browne's Shakespeare's Versification, Gummere's Hand-Book of Poetics.

DEPARTMENT OF BOOKKEEPING.

ADJUNCT—PROF. YATES.

Both Agricultural and Mechanical students take Bookkeeping in the Freshman and Sophomore classes. In the Spring and Summer Terms of the Freshman year, Single-Entry is studied. The work in the text-book will be supplemented by numerous original examples and sets for practice. This class recites twice a week.

The Sophomore class will recite twice a week during the Spring and Summer Terms. The time of this class will be given entirely to Double-Entry, and to a practical application of the principles of Bookkeeping to branches of business that are not strictly mercantile.

DEPARTMENT OF HISTORY.

PRESIDENT HOLLADAY.

In this course students will be given a familiar knowledge of the history of their own country and State, and an outline of general history, both ancient and modern. They will be taught, as far as possible, to note the progress of civilization, the development of constitutions and tendency of political systems rather than to memorize isolated facts—in other words, the chief effort will be directed towards teaching students how to read, and to think, rather than to recite.

Instruction will be partly by lectures and partly by standard text-books, such as Moore, Stephens, Swinton, Myers, and Green.

Students will also be encouraged and guided to outside readings on special subjects, for which the College Library will afford ample conveniences.

DEPARTMENT OF PHYSICS.*

Instruction in Elementary Physics is given to the members of the Freshman Class during the Fall and Winter Terms, attention being given to the consideration of Energy, Force, Properties and Constitution of Matter, Gravitation, Friction and Machines, States of Matter, Heat, Light, Sound, Magnetism and Electricity. The recitations are illustrated by full experiments in the class-room.

Text-book: Avery's Elements of Natural Philosophy.

*At present this Department is under the direction of the Professor of Chemistry.

LOCATION.

The College site and farm, in all comprising a tract of about sixty-two acres, were donated by Mr. R. S. Pullen, of Raleigh, to the State of North Carolina for the purposes of industrial education. The gift is a noble one, and the name of the donor will be linked with the history of the College.

Situate on a commanding eminence, on the Hillsboro road, one of the principal highways into Raleigh, at a distance of three-fourths of a mile from its corporate limits, the site is, in all respects, a suitable one. The ground slopes from the building in every direction, giving almost perfect drainage, as well as handsome views of the College buildings from every direction.

The water is unusually good and the supply abundant.

A healthy location is one of the absolutely essential prerequisites for such an institution, and the Trustees feel assured that this is secured in the site given by Mr. Pullen.

Indeed, it is a matter of history that Raleigh, N. C., and Aiken, S. C., were chosen by a commission of eminent medical experts during the late war as perhaps the most suitable places for sanitariums in the South.

The farm has been carefully cultivated for about three years, and the land is being brought up mainly by judicious vegetable manuring. More land would be desirable, but cannot at present be purchased, owing to the pressing need of more buildings,

BUILDINGS.

The present building is of North Carolina brick, made and donated by the State Penitentiary by direction of the Legislature of 1887. The granite used is from the Rolesville

quarry, in Wake County, and the brownstone from Wadesboro, Anson County

The building is 170 by 60 feet, part one story and basement, and part three stories and basement.

Every precaution has been taken for good sanitary arrangement. The class-rooms and dormitories are large and well lighted, and the remaining rooms, such as dining-rooms, chapel, reading-rooms, etc., are well arranged.

A carefully planned brick workshop, two stories high, has been erected, and in use since September, 1890. This building contains a machine-shop, forge shop, woodworking shop, carpenter shop; class-room, office and wash-room, and is equipped for thorough work in every particular.

It is intended to erect, during the summer of 1892, barns, silos, stables and the like, which shall be models of their kind. Meanwhile, for all purposes of instruction, students will have the use of the large buildings for such purposes, already erected on the Experiment Station Farm, near by the Agricultural and Mechanical College.

In the basement of the main College building every convenience has been provided for housekeeping, and no facility is lacking in the boarding department The cost of tableboard alone will, under no circumstances, exceed eight dollars per month, and it is in contemplation to arrange for a mess system under which students, assisted by a steward and well equipped kitchen, store-rooms and dining-hall, all provided by the College, may regulate their own expenses, and by coöperation perhaps effect some further reduction of cost.

The dormitory rooms in the second and third stories of the College are well ventilated, wholesome and comfortable, with convenient bath-rooms on the second floor.

DIVISION OF SESSION.

The session is divided into three terms, designated as the Fall, the Winter, and the Spring Term. All students found deficient at Christmas, the close of the Fall Term, will be sent home.

The best time to enter college is at the beginning of the scholastic year with the Fall Term. Students desiring to enter as late as the Spring Term will find it impossible to pass the necessary examination, unless they have already attended similar colleges, and had best wait till the beginning of another session.

Any student desiring to enter the Sophomore, or other higher class, omitting the earlier classes, will be required to stand such examination as will show ample preparation for such higher classes as he may wish to undertake.

DEGREES.

Two degrees will be conferred. Upon those who have successfully passed their examinations in the various schools of the Agricultural course at the end of four years will be conferred the degree of Bachelor of Science in Agriculture (B. S. Agr.). Upon those who, through four years, have done likewise in the Mechanical course, the degree of Bachelor of Engineering (B. E.) will be conferred.

YOUNG MEN'S CHRISTIAN ASSOCIATION.

A majority of the students are consistent church members, and have united in a Young Men's Christian Association, which meets once each week. Its meetings are well attended, and exert a most beneficial influence.

LITERARY SOCIETIES.

There are two literary societies in the College, the Pullen and the Leazar, and both are sustained with energy and spirit. They afford abundant opportunity for improvement in declamation, debate, parliamentary law and composition, and students will find in either congenial associations.

There is also an Agricultural Society, which is full of life and energy.

LIBRARY.

The Library, like the College itself, is in its infancy, containing about fifteen hundred volumes. It will be steadily increased by the purchase of standard works, and, subject to necessary regulations, students will have free use of the books for general reading and for purposes of reference.

LABOR.

On the farm and about the College certain work can be performed by the students. For all such labor, not instructive and a part of the College course, students who perform it will be paid *seven* cents per hour.

PRIZES.

A gold medal, of the value of ten dollars, will be given to the student who most distinguishes himself in the agricultural course, and a second medal (or the money value thereof, ten dollars), to the student who, in addition to his class work, earns most money by his skill in agricultural labor outside.

DISCIPLINE.

There must be order and family decorum throughout the College, though the methods of securing both will appeal to the self-respect of the student, rather than to the dread of penalties.

For minor deficiencies or irregularities, proportional demerit marks will be noted on the reports sent to parents or guardians at the end of each term, and it is hoped that parents will inquire into the cause of such evidences of demerit, and hold their sons to strict account for them, since, if a student is thoroughly in earnest, it is quite possible for him to pass through his course without incurring one deficiency mark. Some of our students have so passed through two entire sessions.

Students who persist in grave misconduct will not be permitted to remain in the College.

The indolent and vicious are not wanted, will not be tolerated, and had best not attempt to enter where a student must work or leave, as there is no room in our system for idlers.

STUDENTS.

AGE AND QUALIFICATIONS OF APPLICANTS.

Applicants must be at least fourteen years of age; must furnish evidence of good moral character and physical development; must understand the forms and laws of their own language fairly well, and must be familiar with arithmetic, including the practical rules of the same, through fractions, and have a fair knowledge of geography and State history.

MODE OF ADMISSION.

On the second Thursday in July and September, or such other days as may be decided on by the County Boards of Education, applicants (said applicants to be restricted to the provisions of section 8, chapter 410, Laws of 1887 *), for admission to the College will present themselves before the County Superintendent of Education, and submit to an examination by written questions, which will be prepared and furnished by the President of the College to the said Superintendent, who is requested to make sure that candidates receive no help in their examinations.

The Superintendent will please forward all completed examinations to the President of the College *without delay*, in order that there may be sufficient time for their careful perusal by a committee of the Faculty appointed for that duty; after such perusal the County Superintendent will be promptly informed which papers meet the College requirements, and he, with his Board of Education, will, as soon as possible, select their appointees from the successful candidates, and issue certificates to as many as their county has members of the House of Representatives. All candidates so chosen will be notified of their appointment, and must present themselves at the College at such time as may be designated by the President.

The same educational qualifications will be required of all other applicants, and their examination conducted by the Faculty upon arrival.

Students after arriving in Raleigh must report at the College at once.

*See Sec. 8 on page 52 of this Catalogue.

GENERAL RULES.

Every young man, on becoming a member of the College, thereby pledges his obedience to its rules, a printed copy of which will be furnished him, and to a diligent performance of his duties.

Students are expected, at all times, to demean themselves in a quiet, gentlemanly manner, and no student will be allowed to remain in the institution who, by misconduct or indolence, shows himself unworthy of its benefits.

All students will be required to attend morning prayer in the chapel.

On the Sabbath, students must attend the churches in Raleigh, subject to regulation of the President and Faculty, whenever service is not held in the College building.

Each occupant of a dormitory will be expected to keep his room, or section of a room, in good order, and ready for inspection at any time.

CLOTHING, ETC.

No uniform suit is required. Each student should bring a bag in which to send washing to the laundry, and must make out washing-lists on blanks, which will be furnished by the Matron, who will see that all articles delivered to her will be safely handled and returned. Each student should bring a hair-brush and comb, and, if possible, a change of clothes for rough work on the farm, or in the workshop; in any event, a pair of overalls for such work.

TUITION.

The cost of tuition will be $20 per scholastic year, except to county appointees, who are entitled to tuition and lodging *free of cost.*

BOARD AND LODGING.

Board and lodging will be furnished all county students at $8 per month. To all other students who may desire it, and to the extent of our accommodations, board will be furnished at $8 per month and lodging as below stated.

Each student living in the College must bring with him a change of sheets and pillow cases and four towels, plainly marked.

It is understood that none except county students are expected to lodge and board in the College buildings. There not only is no objection, but it may be more convenient and desirable that regular pay students obtain board and lodging outside the College building—such boarding places to be subject to the approval of the Faculty.

Two well-built brick dormitories have been erected during the session of 1891–'92, and a third is now in process of building under contract to be finished September 15, 1892. Each of these buildings will give comfortable and wholesome lodging to twenty students, and with the original rooms provided in the main College building, will suffice for the needs of the coming year.

COLLEGE CHARGES PER SESSION.

I. COUNTY STUDENTS.

1. Tuition free.	
2. Board at $8 per month, per session 10 months	$ 80 00
3. Washing at 75 cents per month	7 50
4. Fuel and medical attendance, but not medicine, for entire session	7 50
Total	$ 95 00

II. FOR OTHER STUDENTS.

1. Tuition per session	$ 20 00
2. Board at $8 per month, 10 months	80 00
3. Washing at 75 cents, term 10 months	7 50
4. Books, fuel and medical attendance, but not medicine, for entire session	7 50
5. For lodging in College building, room, furniture, bedding, etc	10 00
Total	$125 00

Each student must also deposit on entering a contingent fee of $1, of which all not needed to pay for unnecessary damage to property will be returned.

Each student in Chemistry must make good all apparatus, etc., he breaks, and for this purpose must make a deposit at the beginning of the year. These breakages are seldom over fifty cents per year for each hour per week spent in the laboratory.

For deposit in Horticultural laboratory see that department.

All students must furnish their own oil, lamp chimneys, books, stationery, drawing pencils, thumb-tacks, and medicines, and arrangements will be made for them to get these at lowest cost.

ACTS OF LEGISLATURE AND CONGRESS IN RELATION TO THE COLLEGE.

The act under which the College was established became a law on the 7th day of March, 1887, and reads as follows:

AN ACT SUPPLEMENTAL TO CHAPTER 308, LAWS OF 1885, ENTITLED "AN ACT TO ESTABLISH AND MAINTAIN AN INDUSTRIAL SCHOOL."

The General Assembly of North Carolina do enact:

SECTION 1. That the Industrial School provided for in chapter 308, Laws of 1885, shall be denominated "The North Carolina College of Agriculture and Mechanic Arts," and shall be located on the lands offered to be donated, in accordance with the provisions of said law, by R. Stanhope Pullen, of Raleigh, Wake County, lying west of and near the city of Raleigh.

SEC. 2. The leading object of this College shall be, without excluding other scientific and classical studies, to teach such branches of learning as are related to agriculture and the mechanic arts, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life.

SEC. 3. The management and control of the said College and the care and preservation of all its property shall be vested in a Board of Trustees to be composed of the Board of Agriculture of North Carolina, and five other persons who shall be appointed by the Governor, by and with the consent of the Senate, who shall have power to appoint its President, instructors, and as many other officers or servants as to them shall appear necessary and proper; and shall fix their salaries and prescribe their duties; they shall also prescribe rules for the management and preservation of good order and morals at the said College, as are usually made in such institutions, and are not inconsistent with the Constitution and laws of the State; have charge of the disbursement of its funds, and have general and entire supervision of the establishment and maintenance of the said College. And the President and instructors in the said College, by and with the consent of the said Board of Trustees, shall have the power of conferring such certificates of proficiency, or marks of merit, as are usually conferred by such colleges: *Provided*, that the Board of Trustees shall be composed half of each political party.

SEC 4. The certificate of indebtedness of this State for one hundred and twenty-five thousand dollars, issued for the principal of the Land Scrip Fund to the Trustees of the University of North Carolina, and

bearing interest at six per cent. per annum, shall be transferred, on the thirtieth day of June, eighteen hundred and eighty-eight, or as soon thereafter as it shall appear that the Agricultural and Mechanical College is ready to receive the interest on the Land Scrip Fund, and that the principal of the fund will not in any way be compromised by such a transfer to the said Board of Trustees for the benefit of the said North Carolina College of Agriculture and Mechanic Arts, and the interest thereon shall thereafter be paid to them by the Treasurer, semi-annually, on the first day of July and January in each year, for the purpose of aiding in the support of the said College in accordance with the provisions of the act of Congress, approved July 2, 1862, entitled "An act donating public lands to the several States and Territories which may provide colleges for the benefit of agriculture and mechanic arts."

SEC. 5. That the Directors of the North Carolina State Penitentiary shall be required to furnish all brick and stone requisite for the erection of the necessary buildings of the said College, and to furnish convict labor for preparation of the grounds and the foundations, the erection of the said buildings, and for such other purposes in connection with the establishment of the said College as they may be able, such material and labor to be free of charge to said College: *Provided*, that the work required of the Penitentiary shall not interfere with any contracts upon which the Penitentiary may be engaged, and that the work by the Penitentiary shall be limited to two years from date.

SEC. 6. That the Board of Agriculture shall turn over to the Board of Trustees of said College, as provided in this act, to be applied to the establishment, maintenance and enlargement of the said College, all funds, land, material and other property which may have accumulated in their hands, for the establishment of an Industrial School, under chapter 308, Laws of 1885, and annually thereafter the whole residue of their funds, from licenses on fertilizers remaining over and not required to conduct the regular work of that department. The Agricultural Experiment and Fertilizer Control Station, already established under the management of the said Board of Agriculture, shall be connected with the said College, and the Board of Agriculture may turn over to the said Trustees, in whole or part, for the purposes of said College, any buildings, lands, laboratories, museums or other property which may be in their possession, as in their judgment may be thought proper. The said Board of Trustees are empowered to receive any donations of property, real or personal, which may be made to the said College of Agriculture and Mechanic Arts, and shall have the power to invest or expend the same for the benefit of said College. The said Board of Agriculture shall have power to accept, on behalf of this State, donations of property, real or personal, and any appropriations which may be made by the Congress of the United States to the several States and Territories for the benefit of Agricultural Experiment Stations, and they shall expend the whole

amount so received for the benefit of the aforesaid Agricultural Experiment Station, and in accordance with the act or acts of Congress in relation thereto.

SEC. 7. The use of the three hundred acres of land, more or less, known as the Camp Mangum tract, belonging to the State of North Carolina, and situated one-half mile west of the State Fair Grounds, is hereby given to the said Board of Trustees for the benefit of said College of Agriculture and Mechanic Arts, or of the Experiment Station connected therewith.

SEC. 8. The Board of Trustees shall admit to the benefits of the said College, free of any charge of tuition, upon proper evidence of good moral character and of their inability or the inability of their parents or guardians to pay their tuition, a certain number of youths, to be determined by them, not to be more than one hundred and twenty, and shall apportion the same to the different counties applying, according to their relative number of members in the House of Representatives of North Carolina. The said board are hereby empowered to make the necessary regulations for carrying this into effect and for the admission of other students.

SEC. 9. Every student in this College of Agriculture and Mechanic Arts shall be required to take a course of manual training or labor, together with the other courses of study and exercise, as the Board shall direct.

SEC. 10. All laws and sections of laws in conflict with this act are hereby repealed.

SEC. 11. This act shall be in force from and after its ratification.

In the General Assembly read three times, and ratified this the 7th day of March, 1887.

THE LAND SCRIP ACT.

The Land Grant Act of the Congress of the United States, passed in 1862, to promote the establishment and provide for the maintenance of agricultural and mechanical colleges in the various States of the Union:

AN ACT DONATING PUBLIC LANDS TO THE SEVERAL STATES AND TERRITORIES WHICH MAY PROVIDE COLLEGES FOR THE BENEFIT OF AGRICULTURE, MECHANIC ARTS AND MILITARY TACTICS, KNOWN AS THE MORRILL ACT.

SECTION 1. *Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled,* That there be granted to the several States for the purposes herein mentioned an amount of public land, to be apportioned to each State a quantity equal

to thirty thousand acres for each Senator and Representative in Congress to which the States are respectively entitled by the apportionment under the census of eighteen hundred and sixty: *Provided*, that no mineral lands shall be selected or purchased under the provisions of this act.

SEC. 2. *And be it further enacted*, That the land aforesaid, after being surveyed, shall be apportioned to the several States in sections or subdivisions of sections not less than one-quarter of a section; and whenever there are public lands in a State subject to sale at private entry at one dollar and twenty-five cents per acre, the quantity to which the State shall be entitled shall be selected from such lands within the limits of such State, and the Secretary of the Interior is hereby directed to issue to each of the States in which there is not the quantity of public lands subject to sale at private entry at one dollar and twenty-five cents per acre, to which said State may be entitled under the provisions of this act, land scrip to the amount in acres for the deficiency of its distributive share; said scrip to be sold by said States and the proceeds thereof applied to the uses and purposes prescribed in this act, and for no other use or purpose whatsoever: *Provided*, that in no case shall any State to which the land scrip may thus be issued be allowed to locate the same within the limits of any other State, or of any Territory of the United States; but their assignees may thus locate said land scrip upon any of the unappropriated lands of the United States subject to sale at private entry at one dollar and twenty-five cents or less per acre: *And provided further*, that not more than one million acres shall be located by such assignees in any one of the States: *And provided further*, that no such location shall be made before one year from the passage of this act.

SEC. 3. *And be it further enacted*, That all the expenses of management, superintendence and taxes from the date of selection of said lands previous to their sales, and all expenses incurred in the management and disbursement of the moneys which may be received therefrom shall be paid by the States to which they may belong, out of the treasury of said States, so that the entire proceeds of the sale of said lands shall be applied, without diminution whatever, to the purposes hereinafter mentioned.

SEC. 4. *And be it further enacted*, That all moneys derived from the sale of the lands aforesaid by the States to which the lands are apportioned, and from the sale of land scrip hereinbefore mentioned provided for, shall be invested in stocks of the United States, or of the States, or some other safe stocks, yielding not less than __ per centum per annum upon the par value of said stocks, and that the moneys so invested shall constitute a perpetual fund, the capital of which shall remain forever undiminished (except so far as may be provided in section 5 of this act), and the interest of which shall be inviolably appropriated by each State which may take and claim the benefit of the act to the endowment, support and maintenance of at least one college, where the leading object

shall be, without excluding other scientific and classic studies, *and including military tactics*, to teach such branches of learning as are related to agriculture and the mechanic arts in such manner as the Legislatures of the States may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life.

SEC. 5. *And be it further enacted*, That the grant of land and land scrip hereby authorized shall be made on the following conditions, to which, as well as to the provisions hereinbefore contained, the previous assent of the several States shall be signified by legislative acts:

First—If any portion of the funds invested as provided by the foregoing section, or any portion of the interest thereon, shall by any action or contingency be diminished or lost, it shall be replaced by the State to which it belongs, so that the capital of the fund shall remain forever undiminished, and the annual interest shall be regularly applied, without diminution, to the purposes mentioned in the fourth section of this act, except that a sum not exceeding ten per centum upon the amount received by any State under the provisions of this act may be expended for the purchase of lands for sites or experimental farms whenever authorized by the respective Legislatures of said States.

Second—No portion of said fund, nor the interest thereon, shall be applied, directly or indirectly, under any pretence whatever, to the purchase, erection, preservation or repair of any building or buildings.

Third—Any State which may take or claim the benefit of the provision of this act shall provide, within five years, at least, not less than one college as described in the fourth section of this act, or the grant to such State shall cease, and said State shall be bound to pay the United States the amount received of any lands previously sold, and that the title to purchase under the State shall be valid.

Fourth—An annual report shall be made regarding the progress of each college, recording any improvements and experiments made, with their costs and results, and such other matters, including State, industrial and economical statistics, as may be supposed useful, one copy of which shall be transmitted by mail free, by each to all other colleges which may be endowed under the provisions of this act, and one copy to the Secretary of the Interior.

Fifth—When lands shall be selected from those which have been raised to double the minimum in price, in consequence of railroad grants, they shall be computed to the States at the maximum price, and the number of acres proportionately diminished.

Sixth—No State, while in a condition of rebellion or insurrection against the Government of the United States, shall be entitled to the benefits of this act.

Seventh—No State shall be entitled to the benefits of this act unless it shall express its acceptance thereof, by its Legislature, within two years from the date of its approval by the President.

SEC. 6. *And be it further enacted*, That the land scrip issued under the provisions of this act shall not be subject to location until after the first day of January, one thousand eight hundred and sixty-three.

SEC. 7. *And be it further enacted*, That the land officers shall receive the same for locating land scrip, issued under the provisions of this act, as is now allowed for the location of military bounty land warrants under existing laws: *Provided*, their maximum compensation shall not be thereby increased.

SEC. 8. *And be it further enacted*, That the Governors of the several States to which scrip shall be issued under this act shall be required to report annually to Congress all sales made of such scrip, until the whole amount shall be disposed of, the amount received for the same, and what appropriation has been made of the proceeds.

Approved July 2, 1862.

THE HATCH ACT.

A copy of an Act of the United States, passed March 2, 1887, known as the "Hatch Act":

AN ACT TO ESTABLISH AGRICULTURAL EXPERIMENT STATIONS IN CONNECTION WITH THE COLLEGES ESTABLISHED IN THE SEVERAL STATES UNDER THE PROVISIONS OF AN ACT APPROVED JULY 2, 1862, AND OF THE ACTS SUPPLEMENTAL THERETO.

SECTION 1. *Be it enacted by the Senate and House of Representativss of the United States of America, in Congress assembled*, That in order to aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and applications of agricultural science, there shall be established, under direction of the college or colleges, or agricultural department of colleges, in each State or Territory established, or which may hereafter be established, in accordance with an act approved July 2, 1862, entitled "An Act donating lands to the several States and Territories which may provide colleges for the benefit of agriculture and the mechanic arts," or any of the supplements to said act, a department to be known and designated as an "Agricultural Experiment Station": *Provided*, that in any State or Territory in which two such colleges have been, or may be, so established, the appropriation hereinafter made to such State or Territory shall be equally divided between such colleges, unless the Legislature of such State or Territory shall otherwise direct.

SEC. 2. That it shall be the object and duty of said experiment stations to conduct original researches or experiments on the physiology of plants

and animals; the diseases to which they are severally subject, with the remedies for the same; the chemical composition of plants at their different stages of growth; the comparative advantages of rotative cropping as pursued under a varying series of crops; the capacity of new plants or trees for acclimation; the analysis of soils and water; the chemical composition of manures, natural or artificial, with experiments designed to test their comparative effects on crops of different kinds; the adaptation and value of grasses and forage plants; the composition and digestibility of the different kinds of food for domestic animals; scientific and economic questions involved in the production of butter and cheese; and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varying conditions and needs of the respective States and Territories.

SEC. 3. That in order to secure, as far as practicable, uniformity of methods and results in the work of said stations, it shall be the duty of the United States Commissioner of Agriculture to furnish forms, as far as practicable, for the tabulation of results of investigations or experiments; to indicate from time to time such lines of inquiry as to him shall seem most important, and, in general, to furnish such advice as will best promote the purposes of this act. It shall be the duty of each of said stations, annually, on or before the first day of February, to make to the Governor of the State or Territory in which it is located, a full and detailed report of its operations, a statement of receipts and expenditures, a copy of which report shall be sent to each of said stations, to the Commissioner of Agriculture, and the Secretary of the Treasury of the United States.

SEC. 4. That bulletins or reports of progress shall be published at said stations at least once in three months, one copy of which shall be sent to each newspaper in the States or Territories in which they are respectively located, and to such individuals actually engaged in farming as may request the same, and as far as the means of the station will permit. Such bulletins or reports, and the annual reports of said stations, shall be transmitted in the mails of the United States free of charge for postage, under such regulations as the Postmaster General may from time to time prescribe.

SEC. 5. That for the purpose of paying the necessary expenses of conducting investigations and experiments and printing and distributing the results as hereinbefore prescribed, the sum of $15,000 is hereby appropriated to each State, to be specially provided for by Congress in the appropriations from year to year, and to each Territory entitled under the provisions of section eight of this act, out of any money in the treasury proceeding from the sales of public lands, to be paid in equal quarterly payments, on the first day of January, April, July and October in each year, to the treasurer or other officer duly appointed by the governing

board of said college to receive the same, the first payment to be made on the first day of October, 1887: *Provided, however*, that out of the first annual appropriation so received by any station an amount not exceeding one-fifth may be expended in the erection. enlargement or repair of a building or buildings necessary for carrying on the work of such station; and thereafter an amount not exceeding five per centum of such annual appropriation may be so expended.

SEC. 6. That whenever it shall appear to the Secretary of the Treasury, from the annual statement of receipts and expenditures of any of said stations, that a portion of the preceding annual appropriation remains unexpended, such amount shall be deducted from the next succeeding annual appropriation to such station, in order that the amount of money appropriated to any station shall not exceed the amount actually and necessarily required for its maintenance and support.

SEC. 7. That nothing in this act shall be construed to impair or modify the legal relation existing between any of the said colleges and the government of the States or Territories in which they are respectively located.

SEC. 8. That in States having colleges entitled under this section to the benefits of this act, and having also agricultural experiment stations established by law separate from said colleges, such States shall be authorized to apply such benefits to experiments at stations established by such States; and in case any State shall have established, under provisions of said act of July 2 aforesaid, an agricultural department or experimental station in connection with any university, college or institution not distinctively an agricultural college or school, and said States shall have established or shall hereafter establish a separate agricultural college or school which shall have connected therewith an experimental farm or station, the Legislature of such State may apply in whole or in part the appropriation by this act made to such agricultural college or school; and no Legislature shall, by contract expressed or implied, disable itself from so doing.

SEC. 9. That the grants of moneys authorized by this act are made subject to the legislative assent of the several States and Territories to the purposes of said grants: *Provided*, that payments of such installments of the appropriation herein made as shall become due to any State before the adjournment of the regular session of the Legislature meeting next after the passage of this act shall be made upon the assent of the Governor thereof, duly certified to the Secretary of the Treasury.

SEC. 10. Nothing in this act shall be held or construed as binding the United States to continue any payments from the treasury to any or all of the States or institutions mentioned in this act; but Congress may at any time amend, suspend or repeal any or all of the provisions of this act.

Approved March 2, 1887.

TABLE OF STUDIES.

FOR THE FOUR YEARS OF THE COURSE IN AGRICULTURE.

FRESHMAN YEAR.

Recitations.	*Hours.*	*Practice.*	*Hours.*
Mathematics	5	Agriculture or Horticulture	4
English	4	Shop Work	4
Physics	2	Drawing	3
Chemistry	1		
History	2		
Horticulture	1		
Agriculture	1		
	16		11

SOPHOMORE YEAR.

Recitations.	*Hours.*	*Practice.*	*Hours.*
Agriculture	2	Agriculture, four months	4
Horticulture	2	Horticulture	4
Mathematics	5	Chemical Laboratory	2
English	3	Blacksmithing, five months	4
Inorganic Chemistry	3		
History	1		
	16		10

JUNIOR YEAR.

Recitations.	*Hours.*	*Practice.*	*Hours.*
Mathematics	4	Agriculture	4
Agriculture	3	Horticulture	4
Horticulture	2	Analytical Chemistry	6
Agricultural Chemistry	3		
English	3		
History	1		
	16		14

SENIOR YEAR.

Recitations.	*Hours.*	*Practice.*	*Hours.*
Agriculture	4	Agriculture	4
Horticulture	4	Horticulture	4
Organic Chemistry	3	Analytical Chemistry	8
English	3		
Trigonometry and Surveying— (winter and spring term)	3		
History	1		
	15		16

FOR THE FOUR YEARS OF THE COURSE IN MECHANICS.

FRESHMAN YEAR.

Recitations.	*Hours.*	*Practice.*	*Hours.*
Mathematics	5	Agriculture and Horticulture	4
English	4	Shop Work	4
Physics	2	Drawing	3
Chemistry	1		
History	2		
Horticulture	1		
Agriculture	1		
	16		11

SOPHOMORE YEAR.

Recitations.	*Hours.*	*Practice.*	*Hours.*
Mathematics	5	Shop Work	8
English	3	Drawing	5
Mechanics, two-thirds of year	3	Chemical Laboratory	2
Building and Materials for one-third year	3		
Inorganic Chemistry	3		
History	1		
	15		15

JUNIOR YEAR.

Recitations.	*Hours.*	*Practice.*	*Hours.*
Mathematics	4	Shop Work	10
English	3	Drawing	5
Graphic Statics, one-third of year	3		
Surveying, two-thirds of year	3		
Steam and Steam Machinery	4		
History	1		
	15		15

SENIOR YEAR.

Recitations.	*Hours.*	*Practice.*	*Hours.*
Mathematics	5	Shop Work	10
Applied Mechanics	3	Drawing	5
Bridges and Roofs	2		
Lectures on Mechanics	1		
English	3		
History	1		
	15		15

Thesis.

CALENDAR.

The College session begins on the first Thursday in September.

The First or Fall Term ends at Christmas.

The Second or Winter Term ends March 31st.

The Third or Spring Term ends with the session on the second Wednesday in June.

Commencement Day, June 14, 1892.

3 First graduation

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