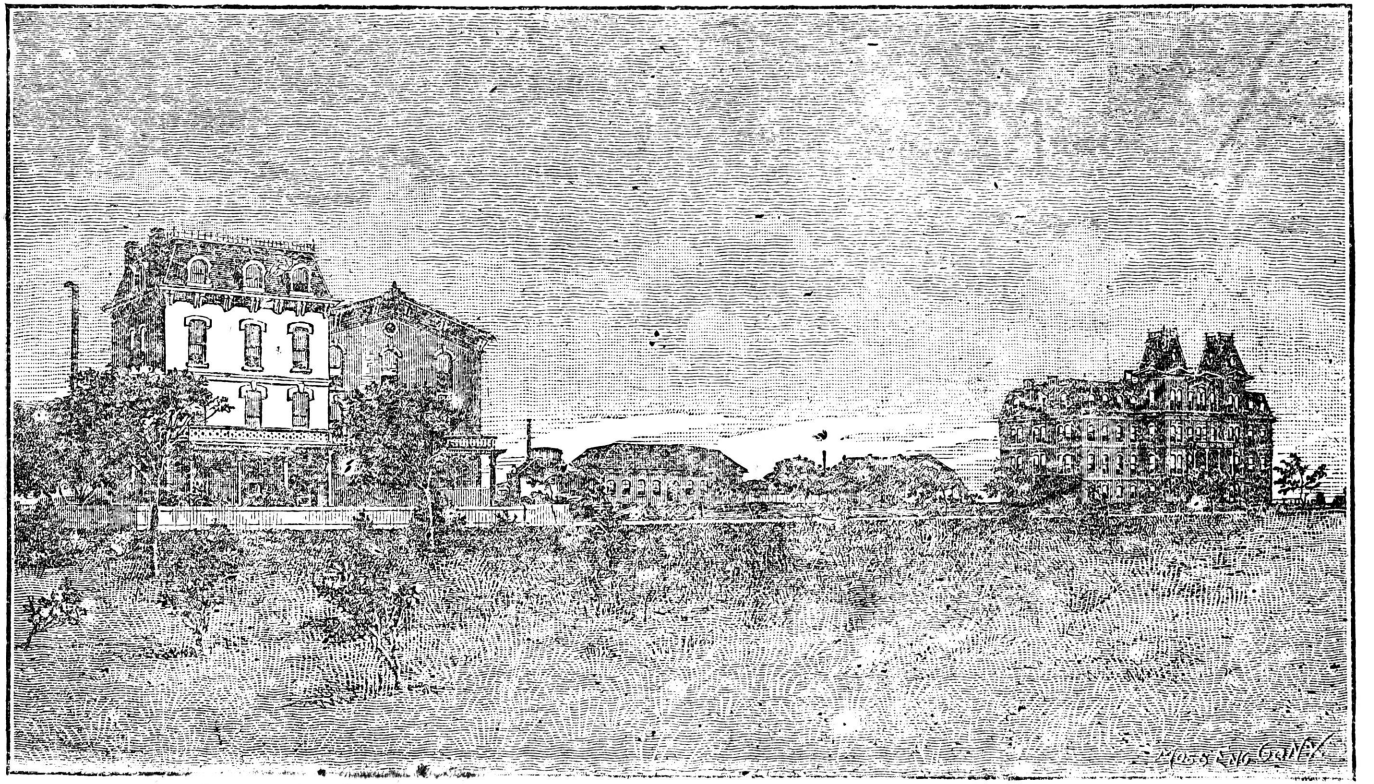


MESS HALL. MECHANICAL HALL. CARPENTER SHOP. MAIN BUILDING.

11th

CATALOGUE

OF THE

AGRICULTURAL AND MECHANICAL COLLEGE

OF TEXAS.

REGISTER FOR 1886-7; ANNOUNCEMENT FOR 1887-8.

RAILROAD DEPOT, EXPRESS AND MONEY ORDER OFFICE:

COLLEGE STATION, TEXAS.

BRYAN, TEXAS:
THE PILOT STEAM BOOK PRINT.
1887.

CALENDAR.

1887.

Fall Term begins Monday, September 5th.
National Holiday, November 24th.
Winter Terms begins December 6th.
Christmas Holiday December 23rd to Jan. 4th.

1888.

National Holiday, February 22nd.
Spring Term begins March 6th.
State Holiday, April 21st.
Final Examinations begin May 21st.
Commencement, Sunday, June 3rd.
Commencement Day, June 5th.

AGRICULTURAL & MECHANICAL COLLEGE OF TEXAS.

HISTORICAL.

THE Agricultural and Mechanical College of Texas owes its foundation and endowment to the act of the U. S. Congress, approved July 2, 1862, amended July 23, 1865, and to a joint resolution of the Legislature of Texas, approved November 1, 1866; an act of the same body approved April 17, 1871, all of which are appended to this catalogue.

Under these acts and the special laws of the Legislature growing out of them, the first board of directors met at Austin, July 16, 1875, and proceeded to organize the College.

At this time the reaction against exclusive study of the classics to the neglect of natural science had scarcely been felt in the South. There were but two or three institutions in all the Southern States that gave unqualified prominence to those studies which bear directly upon the manual occupations of men. The most learned and cultured citizens as a rule admitted but one course of training as proper for education, namely, that which leads through a thorough course of classical reading to the professions of law, medicine and divinity, or to a life of literary ease. With such a sentiment widely prevailing it is not surprising that this College was organized, like nearly all those created by the same act of Congress, as a classical and mathematical school. In the first faculty, consisting of a president and five professors, two of the professors alone were to teach those branches of science for the development of which the College was founded. The vast subject of agriculture, with its great and important adjuncts,

botany, zoology geology, etc., was placed as a subordinate subject under the care of the professor of chemistry.

Great as was this perversion of the College from its true objects it is probable that its able directors at that time could not have done otherwise than they did. Not only did the public notion of education demand such a school, but the College as the only existing branch of the State University was expected to do the work of that entire institution, and not to devote itself to any speciality.

Under such circumstances academic work commenced on the fourth of October, 1876. Students entered in large numbers; a career of unexampled prosperity seemed open to the well endowed and firmly established College. The military department, under its very efficient and earnest professor, soon became a prominent feature. The finely drilled, equipped and disciplined body of young men attracted the admiration of all who saw them. The number of students increased till temporary buildings were erected to accommodate them.

At one time six professors, with an assistant or two, were attempting to teach over 300 young men. This, too, without apparatus, agricultural or mechanical, chemical or physical. The students were crowded together. Discontent arose and complaints were heard. The attempt to accomplish impossibilities resulted in failure. Then it was that those who for various reasons sought grounds of complaint readily found them. Unfavorable criticism soon discovered the great perversion of the course of instruction. A hostile spirit was developed in the Legislature and in the newspapers. The College was named a nursery of military aristocracy. The farmers looked coldly upon it or pronounced it a "humbug." Students began to return to their homes.

Beset by complaints growing louder every day, the faculty, with no means at hand of remedying the evils complained of, fell into dissensions among themselves. These at last necessitated a meeting of the directors on the eighteenth of November, 1879, at which meeting the College was reorganized by the election of a new faculty. But no change was made at this time in the course of study. The old chairs were merely filled with new professors. Fortunately, however, the new president

saw clearly that nothing would permanetly restore the popularity of the College but a strict compliance with the objects of its foundation, and to this he at once addressed his energies. During the remainder of the session a plan of reorganization in the course of study was matured whose main features consisted in the abandonment of the elective systemfor close curricula from which the ancient and modern languages were excluded, being made optional. There were two courses established—the agricultural and mechanical—and a professor was elected for the leading departments in each of these. Provision was made for supplying the mechanical department with a building, machinery and tools. An appropriation was made also for equipping the agricultural department. The course of study at this time embraced four years.

These changes, involving numerous important details, at last determined the adoption by the College of its legitimate work as a school of practical science. But much remained to be done in the same direction. At the meeting of the new board of directors—which under a changed law had been appointed by the Governor—the chairs of ancient and modern languages were consolidated, the courses of instruction were reduced to a period of three years each, and provision was made for assigning to the two courses ninety-three State students (three from each senatorial district) for whose maintenance at the College the XVII Legislature had passed an appropriation. During the session ending in June, 1882, the agricultural and mechanical departments were both put in practical operation. The mechanical was especially successful. The agricultural, however, did not attract students. The causes of this were several, but chiefly the requirement in that department of uninstructive manual labor without compensation. It was found that students did not object to labor, however rough, provided it taught them anything adequate to its demands upon their time. The mechanical labor was all instructive and made attractive. The agricultural department consumed their time in such work as picking cotton and mending roads. That this was a very serious mistake in the policy of that department was soon seen, and at a special meeting of the directors in Februray, 1883, it was

ordered that labor thereafter in the agricultural department should be instructive only, excepting of couse such VOLUNTARY labor as students might perform for compensation.

At the meeting of the directors in June, 1883, much important business was presented. The president of the College had resigned in March; the professor of agriculture had signified his intention of resigning at the end of the session; the professor of languages had died in February. The Legislature had appropriated $40,000 for the maintenance of the College, and this was to be apportioned to the various objects for which it was greatly needed. During the meeting of the directors the professors of mechanics also tendered his resignation. These important matters, demanding unusual consideration, were not disposed of without a special meeting. This was held on the nineteenth of July. It having appeared that, in view of the labor and responsibility involved in superintending the improvements about to be made, there must be a division of the president's duties, it was finally determined that the office of president should be abolished, that a business agent of the board of directors should be appointed to superintend the improvements and manage the finances of the College, while the faculty should elect one of their number to discharge the academic duties pertaining to the presidency. The chair of physics was created and a professor elected to occupy it. The filling of the chairs of agriculture and mechanics was deferred to a meeting to be called subsequently. On the fifteenth of September, 1883, this meeting was held, and, by the election of professors to these chairs, the organization of the College was completed.

At the close of the session of 1884-5, the professor of English resigned his position, a new professor was elected to that chair and the department of physics was placed in charge of the professor of chemistry with an assistant.

During the session of 1886-7 it appeared that the increasing efficiency of the common schools throughout Texas and the consequent better preparation of students applying for admission, as well as the improved facilities of the College itself, demanded a revision of the courses of study. The faculty accordingly recommended to the Board of Directors

the abolition of the preparatory class and the expansion of the courses of study to four years. The Board at its meeting in January 1887 at Austin adopted these recommendations which are embodied in the curricula published in this edition of the catalogue.

Objects and Present Policy.

The act of Congress which established the State Agricultural and Mechanical Colleges defines their objects. But under that act there have been founded as many different schools as there are States. These institutions have presented a variety of educational schemes which have embraced nearly all gradations from the classical and mathematical college to the manual labor industrial school. In view of this fact it is proper to state as definitely as possible the interpretation given to the act of Congress by the authorities of this College, and the manner in which they are endeavoring to carry out its provisions.

Missapprehension of the present status of the College, founded upon its former reputation as a classical and military school, keeps alive a prejudice in the minds of many who are not fully aware of the radical changes that have taken place within the last five years. The following brief statements are therefore presented for the consideration of those who desire to be informed concerning these changes.

The general object of this College is to excite and foster in the minds of our people an enthusiastic appreciation of the attractiveness and value of those pursuits by which the material development of the country is advanced.

It is the business of this College to turn the attention of our young men from the overcrowded "learned professions" to those occupations which have brought abundant wealth and power to other States, and which are beginning now to attract and well repay the services of trained young men in Texas.

These objects are sought to be attained—

By a thorough course of instruction in mathematics and natural science, with continual application of principles to

work in the shops, fields, gardens, vineyard, orchard, pastures, dairies and other laboratories.

By relying upon text books as little as possible and leading the students to seek information directly from observation and experiment.

By inculcating the dignity of intelligent labor—banishing the idea that the farmer or mechanic who is worthy of the name need be any less learned than the professional man.

By inducing in the mind of the student an enthusiastic love of nature and the study of natural laws, whereby agricultural mechanical processes become invested with absorbing interest, and are pursued in a spirit which leads to progress and success.

It will thus be seen that the authorities of this school adhere to the interpretation of the act founding it which has been given by the author of this act and which has been adopted by all the successful colleges of similar origin, namely; that this college is not a trade school designed to take the place of the old apprenticeship system, but an institution where young men may receive broad and liberal training in all those sciences and arts which contribute to useful citizenship in the pursuit of all productive industries.

Organization and Government.

THE government of the College is vested in a board of directors consisting of five members appointed by the Governor of the State. They are "selected from different sections of the State, and hold office for six years, or during good behavior, and until their successors are qualified."

The faculty, consisting of seven professors, each in charge of a department of instruction, is responsible for the academic work of the College.

BOARD OF DIRECTORS.

C. C. GARRETT, ESQ., President, - - - - - Brenham.
JAS. G. GARRISON, ESQ., - - - - - - - - - Tyler.
W. R. CAVITT, ESQ., - - - - - - - - - - - Bryan.
GEO. M. DILLEY, ESQ., - - - - - - - - - Palestine.
MAJ. A. J. ROSE, - - - - - - - - - - - - Salado.
Secretary, Prof. L. L. McInnis, - - - - College Station.

THE HON. GEORGE PFEUFFER, late President of the Board of Directors, died suddenly in the city of Austin, on the 16th day of September, 1886.

Liberal and broad in his opinions, careful but firm in his judgments, regardless of all personal interests while in the pursuit of duty, faithful to his friends, decisive in thought, indefatigable in action, brave and strong in all things, he has left a noble epitaph in the history of this College and a cherished memory in the hearts of his associates.

FACULTY.

H. H. DINWIDDIE,
Professor of Chemistry and Physics, Chairman.

L. L. MCINNIS, A. M.,
Professor of Mathematics, Vice-Chairman.

RUDOLPH WIPPRECHT,
Professor of Ancient and Modern Languages.

W. L. BRINGHURST, A. M., PH. D.,
Professor of English and History.

R. H. WHITLOCK, M. E.,
Professor of Engineering, Mechanics and Drawing.

GEO. W. CURTIS, B. S. A.,
Professor of Scientific and Practical Agriculture and Horticulture.

LT. GUY CARLETON, 2nd CAVALRY, U. S. A.,
Professor of Military Science and Commandant of Cadets.

R. F. SMITH,
Assistant Professor of Mathematics.

W. WIPPRECHT, B. S. A.,
Assistant Professor of Chemistry and Physics.

F. E. GIESECKE,
Assistant Professor of Mechanics.

W. B. PHILPOTT,
Assistant Professor of English.

DUNCAN ADRIANCE,
Assistant Professor of Agriculture and Horticulture.

PROF. WHITLOCK,
Secretary of the Faculty.

PROF. WIPPRECHT,
Librarian.

Professors of Horticulture and Drawing, respectively, are to be elected before the opening of the next session in September, 1887.

NON-ACADEMIC OFFICERS.

Col. T. M. Scott, - - - - Business Manager.
Prof. L. L. McInnis, - - - - - - - Treasurer.
J. D. Read, M. D., - - - - - - - - Physician.
B. Sbisa, - - - - - - - - - - - - - Steward.
A. Harbers, - - - - - - Foreman of Shops.
J. H. Alsworth, - - - - - Foreman of Farm.
J. S. Fowlkes, Esq., Bryan, - - - Fiscal Agent.

ENDOWMENT.

PERMANENT FUND.

In November, 1876, the Legislature formally accepted from Congress the gift of 180,000 acres of public land for the endowmen of an Agricultural and Mechanical College. This land was sold for $174,000, which sum was invested in seven per-cent. State bonds. As under the act of Congress neither principal nor interest of this money could be used for other purposes than the payment of officer's salaries, at the time of the opening of the College there was an addition to the fund, from accumulated interest, of $35,000. This was invested in six per cent. bonds of the State, thus furnishing an annual income of $14,280.

GROUNDS.

The County of Brazos donated to the College 2,416 acres of land lying on each side of the Houston and Texas Central Railroad, five miles from Bryan and ninety-five from Houston.

BUILDINGS.

These have been erected by successive legislative appropriations. Their approximate cost is as follows:—Main building, $100,000; Mess hall and adjuncts, $35,000; each of five professor's houses, $3,000; two wooden buildings (one of which is now the carpenter shop), $4,600 each.

Barn, sheds bath houses, cisterns, fences and all other improvements made previously to the year 1879 cost an additional sum of about $28,000.

The total amount appropriated by the Legislatures to meet these expenditures was $187,000.

During the years 1883-84 there were erected a new barn

costing about $1,800, cattle sheds $1,200, and brick machine-shop $4,500.

LEGISLATIVE APPROPRIATIONS.

1871—For buildings, &c.	$75,000 00
1874— " " "	40,000 00
1875— " " "	32,000 00
1876— " " "	40,000 00
1879—For library, apparatus, &c.	15,000 00
1881—Improvements.	4,987 44
1881-82—State students.	15,000 00
1883-84— " "	6,000 00
1883-84—Expense of land suit	800 00
1883-84—Repairs, improvements, &c.	40,000 00
1885-86—Repairs, Improvements, &c.	30,000 00
1887-88—Repairs, Improvements, &c.	35,000 00
	333,787 44.

Of this amount $21,000 was given to students who were beneficiaries of the State, and, although generally charged against the College, was of no benefit to it. Deducting this amount from the above, the total sum given to the College by the State to date is $312,787,44.

The entire endowment of the College may be summed up as follows:

Productive funds, $209,000; permanent improvements, $250,000; land, not less than $12,000.

Location and Description of Buildings.

LOCATION.

The College is situated at College Station, in the County of Brazos, five miles south of Bryan, and ninety-five miles northwest of Houston. The Houston and Texas Central Railroad runs through the grounds, daily trains stopping at the station about 800 yards from the main building.

POST-OFFICE.

This is College Station, not Bryan. It is important that correspondents should observe this, since letters are often delayed by going to the latter place. College Station is a money order office and there is an express office at this place.

MAIN BUILDING.

The main building stands on the highest point of the grounds. It is four stories high, made of brick, with mansard roof and towers. The rooms are all of high pitch and well ventilated. On the fourth story nearly half the space is occupied by the chapel. Two society halls, the armory, the athletic hall and three small rooms are also on this floor. On the third story are the mathematical section and instrument rooms and students' quarters.

On the second floor are the library, agricultural section room, chairman's office, chemical laboratory for qualitative work, and several students' rooms. On the first floor are physical and chemical section rooms, chemical balance room and dark room, section rooms of English languages and mechanics, offices of the commandant, business manager and treasurer, and janitor's room. There are broad halls running through each story at right angles to each other, and

two sets of stairways, one in the middle, the other at the end of the building. The external appearance of the main building is shown on the right of the frontispiece.

SHOPS.

Back of the main building (seen a little to the left of it in the picture) is the carpenter shop. It is of two stories, fitted with benches and wood-working tools in separate sets for students. Power is supplied in this shop by a 12-horse power vertical engine. The boiler house and blacksmith shop are in the rear of the building. The metal working shop is seen near the middle of the engraving. Its machinery is driven by a 20-horse power engine. The building is of brick.

MESS HALL.

This seen on the left of the other buildings. It is three stories high, and is attached to the house which was formerly the president's residence. The first floor is occupied by the hall, steward's office, store rooms, kitchen, &c. The second and third floors are occupied by students' rooms of which there are twenty in the building.

FARM BUILDINGS.

These are situated several hundred yards in the rear of the main building. They consist of two large barns, a milking shed and a piggery. One of the barns is new, and is fitted with stalls for the thorough-bred cattle, and storage rooms for implements and food. These buildings are supplied with water from a large tank, which is kept filled by a wind mill.

PFEUFFER HALL.

It is intended that a new building for the accommodation of additional students shall be ready for occupancy at the opening of the next session, September 5th, 1887. In honor of the late President of the Board of Directors this will be known as "Pfeuffer Hall."

NEW BUILDINGS.

Provision has been made for erecting at once Creamery buildings, a residence for the farm superintendent, a small infirmary and an extension of the shops for additional forges.

Appliances for Instruction.

GROUNDS, FARM AND STOCK.

The farm, garden, orchard, barnyards and campus are included in the inclosures to the east of the station. The farm comprises about 175 acres. This is devoted solely to experimental culture and the production of forage for stock. The orchard of eighty acres contains a large variety of young fruit trees more or less adapted to this climate. The garden affords experimental work to students and furnishes an abundance of vegetables to the mess hall. A young vineyard has been started; many of the vines are already bearing well.

Back of these are the piggery, calf lots, barns and pastures of about 400 acres.

The College now owns registered cattle, Dutch Frisians, Galloways and Jerseys, besides a number of high-grade shorthorns and common cows for present milk supply. The swine include Essex and Berkshires.

During the next session a creamery will be erected and arrangements perfected for giving instruction in butter making. On the west side of the railroad a pasture of 800 acres has been enclosed.

APPARATUS.

All departments of instruction are well supplied with implements and instruments of the latest and best forms. The agricultural department is equipped with hand tools, machinery and mules for farm work. The machine shops are well furnished with wood and metal working machinery and tools. The chemical and physical laboratories have recently received important accessions of apparatus.

The department of mathematics is supplied with three sets of surveying and engineering instruments.

Methods and Scope of Instruction.

The courses of instruction cover all that is comprised in the curricula of the best institutions of our time, except the ancient languages. The time usually devoted to these is here given to the application of principles in the fields, shops and laboratories. Mere text book study is regarded as comparatively of little value unless supplemented by intelligent practice in applied science. This practice occupies from six to eight hours per week.

EXPERIMENTAL WORK.

This furnishes the chief means of training students in accordance with this view and hence a most important subsidiary object of this institution is the discovery and dissemination of all sorts of information with regard to industrial pursuits.

The recent action of congress in setting aside $15,000 per annum for the establishment and maintenance of agricultural experiment stations in the several states will in a short time place at the disposal of the college the means for efficient experimental work and offer to students the great advantages of observation and participation in researches which promises important results for the benefit of the whole country.

MANUAL LABOR.

It is taken for granted that every farmer boy can learn at home such things as involve mere manual drudgery. It must therefore be understood that the student will not be required to waste valuable time in labor which is not instructive.

The education here given to young men is not intended to make mere laborers of them in the ordinary sense of the word. A student who graduates here may begin life as a field hand; but

it is expected that, by virtue of his superior training, he shall be able speedily to find promotion and easily fill the highest position of honor to which his ability may lead him.

MILITARY INSTRUCTION.

This is embraced by law in the objects of the College, and will be given such attention as is necessary for an honest compliance with the act of Congress.

MARKS AND EXAMINATIONS.

Records of the standing of each student are kept by the professors of the several departments. This standing is indicated by a system of marks based upon 100 as a maximum with decimal gradations.

Examinations are held from time to time during the session as special subjects of study may be completed and at the end of the session upon the general courses. The results of these combined with the daily recitation marks determine the final standing of the student.

A monthly report is mailed to the parent or guardian of each student showing his class standing, conduct and health.

GRADUATION.

A diploma of the college together with the degree corresponding to the course of study pursued will be conferred upon all students who complete either of the prescribed courses and pass satisfactory examinations on all the branches embraced therein.

Each candidate for graduation is required to submit to the professor in charge of the leading department of his course a graduation thesis; and he may be required to read this or some other essay, approved by the faculty, on commencement day as a part of the public exercises.

To every student who completes satisfactorily any one of the optional studies—German, Spanish, Latin,—a special diploma on that subject will be granted.

Each student receiving a diploma will be required to pay $5.00 therefor.

HONORS.

The three students most distinguished for scholarship and

deportment in each of the classes as determined by marks and examinations are known as honor men, and their names appear at the head of their several classes in the catalogue, though this rule may be modified if the number of the students in any class or their scholarship shall not warrant such distinction.

A valedictorian is elected by the members of the graduating class from their own number.

A member of the second class is chosen by his classmates to reply to the valedictorian.

Military promotion is an honor attainable by general good conduct and manly behavior as well as excellence in studies.

No academic honor will be conferred upon any student who may be deficient in conduct for the session.

Courses of Study.

There are two regular courses of study and practice leading to degrees and extending through four years each. They are identical for the first year, thus giving the student the advantage of elementary training in subjects that are of equal importance to every one and affording opportunity for intelligent choice between the courses as continued separately through the three succeeding years. In the last year or first class there is a still further specialization by which the student may in the Agricultural Course vary his studies with reference to obtaining either of two degrees, that is, Bachelor of Science (B. S.) or Bachelor of Scientific Agriculture (B. S. A.). In the Mechanical Course a similar specialization is provided for by which the student is given the choice between the degrees of Bachelor of Civil Engineering (B. C. E.) and Bachelor of Mechanical Engineering (B. M. E.).

Besides these regular courses the Directors have established the following special courses:

AGRICULTURAL: — Dairying, Horticulture, Agricultural Chemistry.

MECHANICAL:—Carpentry, Blacksmithing, Machinery.

Each of these six courses is intended to be short and eminently practical, and is not open to any student who may wish to enter it merely as a means of getting through with his education in as short time as possible. They are for the benefit of mature young men who may desire scientific instruction in the occupations to which these courses apply: young men who may have already received sufficient general elementary training to enable them to take up and pursue technical study in these occupations. Admission to the short courses will therefore be strictly at the discretion of the

Faculty and will depend upon the exceptional circumstances indicated above.

All regular students must pursue either the agricultural or the mechanical course, and there is no course of instruction which is not industrial.

The Latin language is optional and may be studied by any student who may have time for such extra study. German and Spanish are also optional except as is shown in the curricula and may be studied as subjects outside of the regular courses. There is no charge for any optional study.

In view of the great practical importance of the German and Spanish languages for business purposes in our State, special attention is given to these. A large number of the students are of German descent, and speak the language fluently.

By association with these, young men may have continual practice in conversation out of the class room as well as in it.

CURRICULA.

AGRICULTURAL COURSE.

FIRST YEAR—FOURTH CLASS.

FALL TERM—Arithmetic, Lectures on the kinds and care of stock, Language lessons in English, Composition, Declamation, Practice in the carpenter's shop, Free-hand drawing, Military drill.

WINTER TERM—Arithmetic finished, Algebra begun, Entomology, Language lessons completed, Composition, Declamation, English grammar begun, Practice in the carpenters shop, Free-hand drawing.

SPRING TERM—Algebra continued, Botany, English grammar completed, History of Texas, Composition, Declamation, Practice in carpenter's shop, Agricultural and Horticultural Practice, Military drill.

SECOND YEAR—THIRD CLASS.

FALL TERM—Algebra completed, Principles and practice of dairying, Physics begun, Essentials of English begun, Composition, Declamation, Horticulture, Free-hand drawing, Agricultural and horticultural practice, Infantry drill.

WINTER TERM—Geometry, Dairying continued, Physics continued, Essentials of English completed, United States history begun, Composition, Declamation, Horticulture, Free-hand drawing, Agricultural and horticultural practice.

SPRING TERM—Geometry completed, Plane trigonometry, Stock breeding, Physics completed, United States history completed, Composition, Declamation, Horticulture, Free-hand drawing, Agricultural and horticultural practice, Military drill.

THIRD YEAR—SECOND CLASS.

FALL TERM—Trigonometry completed, Surveying and Leveling, Descriptive inorganic chemistry, Ancient history, Composition, Declamation, Bookkeeping, Cattle feeding, Field practice in surveying, Laboratory work in qualitative chemical analysis, Drawing, Either German or Spanish language elective for the degree of B. S., German or Spanish language or business law elective for the degree of B. S. A., Infantry drill.

WINTER TERM—Analytical Geometry or Meteorology elective, Descriptive inorganic chemistry continued, Chemical theory, Mediaeval history, Composition, Declamation, Bookkeeping, Cattle feeding continued, Experimental agriculture, Laboratory work in quantitative analysis, Drawing, German, Spanish or business law as in fall term, Military tactics.

SPRING TERM—Analytical Geometry or Lectures on farm management elective, Chemistry of the carbon compounds, Cattle feeding continued, Modern history, Composition, Declamation, Horticulture, Horticultural practice, Laboratory work, in quantitative analysis, Drawing, German, Spanish or business law as in fall term, Infantry and artilery drill.

FOURTH YEAR—THIRD CLASS.

For the Degree of Bachelor of Scientific Agriculture.

FALL TERM—Calculus optional, Chemical philosophy, Geol-

ogy, Veterinary anatomy and Medicine, Devolopment of the English language, and literature, Essays, Laboratory work in agricultural chemistry, and microscopic botany, Logic, German or Spanish optional, Infantry drill.

WINTER TERM—Mechanics, Chemical Philosophy, Veterinary anatomy and medicine, Development of the English language and literature continued, Essays, Laboratory work in agricultural chemistry and microscopic botany, Logic, German or Spanish optional, Lectures on military science.

SPRING TERM—Mechanics, Descriptive geometry optional, Astronomy, Physiology, Governmental science, Veterinary anatomy and medicine, Development of the English language and literature, Essays, Criticism and lectures, Laboratory work in a ogricultural chemistry and microscopic botany, German or Spanish language optional, Infantry drill, Graduation theses.

For the Degree of Bachelor of Science.

FALL TERM—Calculus optional, Chemical philosophy Geology, Horticulture, Development of the English language and literature begun, Essays, Laboratory work in technical analysis, manufacturing chemistry and microscopic botany, Logic, German or Spanish language elective, Infantry drill.

WINTER TERM–Mechanics, Chemical philosophy, Vertebrate zoology, Development of the English language and literature continued, Essays, Laboratory work in mineralogy and microscopic botany, Logic, German or Spanish language elective, Lectures on military science.

SPRING TERM—Mechanics, Descriptive geometry optional, Astronomy, Physiology, Governmental Sciencs, Horticulture, Development of the English language and literature, Essays, Criticism and lectures, Laboratory work in mineralogy and microscopic botany, German or Spanish language elective, Infantry drill, Graduation Theses.

MECHANICAL COURSE.

FIRST YEAR—FOURTH CLASS.

Same throughout as in the Agricultural Course.

SECOND YEAR—THIRD CLASS.

Same as in the Agricultural Course with the following exceptions:

Mechanism, Mechanical drawing and Shop practice are substituted for Dairying, Agricultural and Horticultural practice, Horticulture and Free-hand drawing.

THIRD YEAR—SECOND CLASS.

FALL TERM.—Trigonometry completed, Surveying and leveling, Descriptive inorganic chemistry, Ancient History, Composition, Declamation, Steam engine, Shop practice, Mechanical drawing, Field practice in surveying, German or Spanish language elective, Infantry Drill.

WINTER TERM.—Analytical geometry, Descriptive inorganic chemistry continued, Chemical theory, Mediaeval history, Composition, Declamation, Steam engine finished, Engineering begun, Shop practice, Mechanical drawing, German or Spanish language elective, Military Tactics.

SPRING TERM.—Analytical geometry completed, Chemistry of the carbon compounds, Modern history, Composition, Declamation, Theory of equations, Engineering completed, Shop practice, Mechanical drawing, German or Spanish language elective, Infantry and artillery drill.

FOURTH YEAR—FIRST CLASS.

For the Degree of Bachelor of Civil Engineering.

FALL TERM.—Calculus, Geology, Development of the English language begun, Essays, Civil Engineering, Drawing, Field practice, Adjustment of instruments, Logic, German or Spanish language elective, Infantry drill.

WINTER TERM.—Analytical mechanics, Development of the English language and literature continued, Essays, Civil Engineering continued, Drawing, Laboratory work in mineralogy, Logic, German or Spanish language elective, Lectures on military science.

SPRING TERM.—Descriptive geometry, Astronomy, Physiology, Governmental Science, Development of the English language and literature continued, Essays, Criticisms and lectures, Engineering continued, Drawing, Laboratory work in mineralogy continued, German or Spanish language elective, Infantry drill, Graduation thesis.

For the Degree of Bachelor of Mechanical Engineering.

FALL TERM.—Same as for the degree of B. C. E. except that Material of construction, iron and steel, Shop practice, are substituted for Civil Engineering field practice and adjustment of instruments.

WINTER TERM.—Same as for the degree of B. C. E. except that Slide valve and link motion and laboratory work in mineralogy with special reference to iron and steel are substituted for Civil Engineering and drawing and laboratory work in mineralogy.

SPRING TERM.—Same as for the degree of B. C. E. except that Machine design, laboratory work in mineralogy with reference to iron and steel and shop practice are substituted for Engineering, Drawing and laboratory work in mineralogy.

In order to show definitely the manner in which the time of students is employed, the following schedule of daily work is appended :

Studies falling in the same hour are in different courses. Instructive work in the shops, fields, garden, laboratories or creamery is in this schedule designated as "practice." The larger classes are as necessity may arise divided into sections which may recite or work in the several departments at the same time under different instructors:

FIRST CLASS—FALL TERM.

Calculus	9 to 10 M., Tu., F.
Geology	10 to 11 M., W.
Chemical Philosophy	10 to 11 Tu., F.
English	11 to 12 Tu., Th.
Logic	11 to 12 W., F.
Civil Engineering	12 to 1 M., W., Th. F.
Veterinary Anatomy and Medicine	12 to 1 M. W. Th. F.
Mechanics	12 to 1 M., W., Th.
Horticulture	12 to 1 M., W., Th., F.

German - - - - - - - - - 2 to 3 Tu., Th.
Spanish - - - - - - - - - 3 to 4 Tu., Th.
Practice - - - - - - - - - 2 to 5 M., W.
Drawing - - - - - - - - - - 2 to 4 F.
Military Drill - - - - - - - - 4 to 5 Tu., F.

WINTER TERM.

Descriptive Geometry - - - - - 9 to 10 Daily.
Analytical Mechanics - - - - - - 9 to 10 Daily.
Chemical Philosophy - - - - 10 to 11 M., W., F.
Logic - - - - - - - - - 10 to 11 Tu., Th.
Mechanics - - - - - - 11 to 12 M., W., F.
English - - - - - - - 11 to 12 Tu., Th.
Civil Engineering - - - - - - 12 to 1 Daily.
Mechanics - - - - - - - - 12 to 1 Daily.
Veterinary Anatomy and Medicine - - 12 to 1 Daily.
Zoology - - - - - - - - - 12 to 1 Daily.
German - - - - - - - - - 2 to 3 Tu., Th.
Spanish - - - - - - - - - 2 to 3 Tu., Th.
Practice - - - - - - - - - 2 to 5 M., W.
Drawing - - - - - - - - - - 2 to 4 F.
Lectures on Military Science - - - - 4 to 5 Th.

SPRING TERM.

Physiology - - - - - - - - 10 to 11 M.
Astronomy - - - - - - - - 10 to 11 W., F.
Governmental Science - - - - 10 to 11 Tu., Th.
Mechanics - - - - - - 11 to 12 M., W., F.
English - - - - - - - - 11 to 12 Tu., Th.
Civil Engineering - - - - - - 12 to 1 Daily.
Mechanics - - - - - - - - - 12 to 1 Daily.
Veterinary Anatomy and Medicine - - 12 to 1 Daily.
Horticulture - - - - - - - - 12 to 1 Daily.
German - - - - - - - - - 2 to 3 Tu., Th.
Spanish - - - - - - - - - 2 to 3 Tu., Th.
Practice - - - - - - - - - 2 to 5 M., W.
Drawing - - - - - - - - - 2 to 4 F.
Military Drill - - - - - - - - 5 to 6 W., F.

SECOND CLASS.—FALL TERM.

Chemistry - - - - - - - - - 9 to 10 Daily.

Cattle Feeding	10 to 11 M., W., F.
Mechanics	10 to 11 M., W., F.
Business Law	10 to 11 Tu., Th.
German	10 to 11 Tu., Th.
English	11 to 12 M., W., F.
Spanish	11 to 12 Tu., Th.
Surveying	12 to 1 Daily.
Bookkeeping	3 to 4 Tu., Th.
Mechanics	3 to 4 Tu.
Practice	2 to 5 M., W.
Drawing	2 to 4 F.
Military Drill	5 to 6 M., W.

WINTER TERM.

Chemistry	9 to 10 Daily.
Cattle Feeding	10 to 11 M., W., F.
Business Law	10 to 11 Tu., Th.
Mechanics	10 to 11 M., W., F.
German	10 to 11 Tu., Th.
English	11 to 12 M., W., F.
Spanish	11 to 12 Tu., Th.
Meteorology	12 to 1 M., W., F
Analytical Geometry	12 to 1 Daily.
Bookkeeping	3 to 4 Tu., Th.
Mechanics	3 to 4 Tu.
Practice	2 to 5 M., W.
Drawing	2 to 4 Th., F.
Military Tactics	4 to 5 Tu., Th.

SPRING TERM.

Chemistry	9 10 Daily.
Horticulture	10 to 11 M., W., F.
Business Law	10 to 11 Tu., Th.
Mechanics	10 to 11 M., W., F.
German	10 to 11 Tu., Th.
English	11 to 12 M., W., F.
Spanish	11 to 12 Tu., Th.
Analytical Geometry	12 to 1 Daily.
Meteorology	12 to 1 M., W., F.
Cattle Feeding	3 to 4 Tu., Th.

Mechanics - - - - - - - - - 3 to 4 Tu.
Practice - - - - - - - - - 2 to 5 M., W.
Drawing - - - - - - - - - 2 to 4 Th., F.
Military Drill - - - - - - - 5 to 6 M., W., F.

THIRD CLASS.—FALL TERM.

Practice - - - - - - 8 to 10 M., Tu., Th., F.
English - - - - - - - 10 to 11 M., Tu., W., Th.
Algebra - - - - - - - - - 11 to 12 Daily.
Physics - - - - - - - 12 to 1 Tu., W., Th., F.
Stock-breeding - - - - - - 3 to 4 M., W., F.
Horticulture - - - - - - - - 3 to 4 Tu., Th.
Mechanics - - - - - - - 3 to 4 M., W., F.
Military Drill - - - - - - - 4 to 5 Daily.

WINTER TERM.

Practice - - - - - - 8 to 10 M., Tu. Th., F.
English - - - - - - - 10 to 11 M., Tu., W., Th.
Geometry - - - - - - - - 11 to 12 Daily.
Physics - - - - - - - 12 to 1 Tu., W., Th., F.
Dairying - - - - - - - - 3 to 4 M., W., F.
Horticulture - - - - - - - - 3 to 4 Tu., Th.
Mechanics - - - - - - - 3 to 4 M., W., F.

SPRING TERM.

Practice - - - - - - - - 8 to 10 Daily.
English - - - - - - - 10 to 11 M., Tu., W., Th.
Trigonometry - - - - - - - - 11 to 12 Daily.
Physics - - - - - - - 12 to 1 Tu., W., Th., F.
Dairying - - - - - - - 3 to 4 M., W., F.
Horticulture - - - - - - - 3 to 4 Tu., Th.
Mechanics - - - - - - - 3 to 4 M., W., F.
Military Drill - - - - - - - 4 to 5 M., W., F.

FOURTH CLASS.—FALL TERM.

Practice - - - - - - - 8 to 10 M., W., F.
Arithmetic - - - - - - - - 10 to 11 Daily.
Stock Lectures - - - - - - - 11 to 12 Daily.
English - - - - - - - - - 3 to 4 Daily.
Military Drill - - - - - - - - 4 to 5 Daily.

WINTER TERM.

Practice - - - - - - - - 8 to 10 Daily.

Arithmetic and Algebra	10 to 11 Daily.
Entomology	11 to 12 Daily.
English	3 to 4 Daily.

SPRING TERM.

Practice	8 to 10 Daily.
Algebra	10 to 11 Daily.
Botany	11 to 12 Daily.
English	3 to 4 Daily.
Military Drill	4 to 5 M., W., F.

Post-Graduate Courses.

Although the new curricula will include some of the studies of these courses in the first class, the post-graduate studies remain for the present unchanged for the benefit of those who have completed the old curricula or their equivalent and who may wish to study for degrees.

POST-GRADUATE CURRICULA FOR DEGREES.

Civil Engineer—C. E.

ENGINEERING—Machinery and Mill-Work, *Rankine*; Drawing, Architectural. Reference: Steam Engine, *Rankine;* Bridges and Roofs, *Wood;* Civil Engineering, *Wheeler;* Field Book, *Searles.*

MATHEMATICS—Descriptive Geometry, *Church;* Differential and Integral Calculus, *Church;* Analytical Mechanics, *Wood;* Surveying and Leveling, *Gillespie;* Curve Tracing.

MINERALOGY AND GEOLOGY—Laboratory work in analysis of minerals; *Dana's* Texts, with reference to standard books in library and to periodicals.

ENGLISH—*Green's* History of the English People; Lectures. One Modern Language.

Bachelor of Scientific Agriculture---B. S. A.

AGRICULTURE---Structural and Economic Botany; Use of Microscope; Veterinary Medicine; Farm management.

CHEMISTRY—Chemical Philosophy; Analytical Work in Soils, Fertilizers and Agricultural Products; Original Research in Agricultural Chemistry. Text and Reference Books: *Cooke's* Chemical Philosophy, Standard Books in Library, Journals.

MATHEMATICS—Elementary Mechanics, Liquids and Gases; Surveying and Leveling—selected portions.

ENGLISH—*Green's* History of the English People; Lectures.

PHYSICS—Meteorology.

ONE MODERN LANGUAGE—Optional.

Bachelor of Science—B. S.

AGRICULTURE—Systematic and Structural Botany, Zoology and Entomology.

CHEMISTRY—Chemical Philosophy, Organic Chemistry, General Analysis, Original Research on any Chemical subject. Text and Reference Books: *Cooke's* Chemical Philosophy; Standard books in library; Journals.

MATHEMATICS—Differential Calculus, *Byerly;* Integral Calculus, *Byerly.*

ENGLISH—*Green's* History of the English People; Lectures.

PHYSICS—Same course as for the degree of M. E.

One Modern Language.

Mechanical Engineer—M. E.

MECHANICAL ENGINEERING–Steam Engine, *Rankine;* Bridges and Roofs, *Wood;* Practice in Shops, Drawing, Mechanical; Original Designing. Reference Books: Machinery and Mill-Work, *Rankine;* Strength of Materials, *Wood;* Proportions of the Steam Engine, *Marks;* Elements of Machine Design, *Unwin;* Mechanical Drawing, *McCord, Minifee;* Mechanical Dictionaries and Periodicals.

MATHEMATICS—Differential and Integral Calculus, *Loomis* or *Peck;* Analytical Mechanics, *Wood;* Descriptive Geometry, *Church.*

PHYSICS—Advanced Discussion of Statics and Dynamics; Molecular Constitution of Matter; Correlation of Forces;

Applications, with study of the construction and use of apparatus. Text and Reference Books: *Daniels*, Standard Books in Library, Periodicals.

ENGLISH—*Green's* History of the English People; Lectures.

One Modern Language.

It is required for admission to study for these degrees that the candidate be a graduate in one of the courses, or pass satisfactory examinations upon subjects embraced in them.

Students for these degrees are under the general regulations of the College, but are not subjected to military discipline; they may, however, be required to assist in keeping order in the barracks.

Information Concerning Admission.

REQUISITES OF ADMISSION.

To enter the College an applicant must be in his sixteenth year, or at least must have attained a degree of physical and mental advancement corresponding to that age. He must be free from contageous or infectious disease or any deformity or defect that would unfit him for the performance of his duties as a student of this College. He may be required to furnish evidences that he has not been dismissed from another institution of learning and that his moral character is good.

The mental attainments necessary for entering upon the courses of study comprise a fair knowledge of arithmetic as far as proportions, of descriptive geography and of elementary English grammar and composition.

The reputation of this College for good discipline has caused parents in some instances to apply for admission for boys that had proved unmanageable and thoroughly vicious at other institutions. It is desired that such applications be not in the future presented.

MATRICULATION.

Upon arrival at the College young men intending to enter will report as soon as possible to the chairman of the faculty. From him they will go to the treasurer, to whom they will pay their prescribed entrance fees, and then to the several professors for enrollment in classes, and to the commandant for assignment to company and quarters.

Upon entering the College every student may be required to state upon honor that he has no fire arms or other deadly weapons in his possession, or if he has such to deposit them with the chairman of the faculty.

As there is no hotel at the station, and the College is nearly half a mile distant, new students or other strangers would be saved much embarrassment by arriving on a day train.

Persons stopping in Bryan can readily obtain conveyance by carriage to the college, and there is a telephone by which messages can be sent.

Prepaid telegraphic dispatches are forwarded to the college by telephone.

EXPENSES FOR SESSION OF NINE MONTHS.

Incidental fee	$ 5.
Physician's fee	5.
Maintenance, Fall Term	45.
Maintenance, Winter Term	50.
Maintenance, Spring Term,	45.
Total	$150.

Maintenance includes board, fuel, washing, lights, room-rent, bedsteads, mattresses, pillows, tables, washstands, chairs, wardrobes, buckets, basins and slop cans, all of which the college furnishes.

In addition to the above a deposit of $5 will be required to cover possible damage to the college property, and the cost of chemicals and other material used by students.

Incidental and physician's fees are payable on entrance, whether at the beginning of or during the session, and cannot be refunded.

Payment for each term must be made in advance, but a student entering during a term will be charged maintenance for the remainder of that term only.

A student once entered for the term and having paid for that term or the balance of it, as required by resolution of the Board of Directors, shall forfeit all claim to said payment in case of voluntary withdrawal from the college before the expiration of said term, except in case of sickness.

If on any account the prompt payment of dues should be

delayed, the treasurer will mail to the parent or guardian of the student the following notice:

NOTICE TO PARENTS AND GUARDIANS.

Your attention is respectfully directed to the following resolution passed by the Board of Directors of the Agricultural and Mechanical College of Texas:

RESOLVED, That it shall be the duty of the Treasurer to notify parents and guardians ten days after the date upon which a term payment is due, that if same is not paid within twenty days thereafter (thirty days from time the payment was due), the student so in arrears will be dismissed.

LOUIS L. MCINNIS, Secretary of the Board.

Payment due....188... Notice sent....188...

Limit expires....188...

All communications in reference to accounts of students should be addressed to Prof. L. L. McInnis, treasurer.

UNIFORM, BOOKS AND STATIONERY.

A neat uniform of cadet grey cloth is furnished here at a cost of from $15 to $18, depending upon size.

These uniforms are made by contract, and students are required to purchase from the contract tailor in order that uniformity may be secured in the cut and quality of the clothing, and that parents may be protected from imposition by irresponsible persons. The contract suits are carefully inspected by the commandant of cadets, and thus the full value of the money expended for them is secured.

Books and stationery may be obtained here. They will probably cost about $5 to $8 per session.

RECAPITULATION OF EXPENSES.

All College charges as above	$150.
Deposit, for damages, &c.	5.
Uniform about	20.
Books, stationery, &c., about	10.
Total	$185

for session of nine months.

BEGINNING OF THE SESSION.

The twelfth annual session will open on Monday, September 5th, 1887, and close on Tuesday, June 5th, 1888.

Students should not arrive at the college earlier than Saturday, September 3rd.

Miscellaneous Information.

MILITARY ORGANIZATION AND DISCIPLINE.

For the purpose of maintaining good order and discipline, as well as for the proper execution of the law of Congress requiring military instruction of the students, they are organized into a battalion of two or more companies. The battalion is under the immediate command of the commandant. The Officers, commissioned and non-commissioned, are students taken for the most part from the first and second classes. They are appointed by the chairman of the faculty upon the recommendation of the commandant, and their appointment and rank is made to depend upon the active and soldierly performance of their duties, their sense of duty and responsibility, and their general good conduct and class standing.

These officers, not merely at drill, but at all times when on duty, assist in keeping good order in and around the buildings. In their various positions of graduated responsibility they not only aid most efficiently in maintaining discipline, but continually practice and are trained in the exercises of the highest qualities involved in obedience and command.

HYGIENE.

The buildings of the College stand upon the crest of a "divide," from which there is sufficient slope to carry off all drainage.

The soil is sandy, and mud and water disappear within a few hours after a rain. An extensive open prairie surrounds the College on all sides. There is a constant breeze—usually very strong. The water used by students is obtained from cisterns, supplied from high, clean roofs.

The rooms of the students are inspected at least twice a day, and are required to be kept neat and well ventilated.

Students have the use of bath rooms supplied with cistern water.

There is in the vicinity of the College apparently nothing to produce malarial sickness, and as a matter of fact there is very little of it here. All serious sickness has been in the form of pneumonia and measles which do not depend on local causes.

The food served in the mess hall is admitted by all to be abundant, palatable and wholesome. It is therefore very desirable that parents should refrain from sending boxes of delicacies to their sons. The practice of eating from these between meals is undoubtedly very injurious to the health of the young men, and the surgeon has traced more sickness and consequent loss of time to this one cause than to any other.

Instruction in Physiology and Hygiene is regarded as of the utmost importance, and is given as shown in the curricula.

The drill, farm and shop practice, and athletic sports furnish abundant and wholesome exercise for the students.

HOSPITAL.

Ample and comfortable quarters are provided for the sick, and the surgeon living on the grounds will give his attention to all students without charge other than the regular medical fee of five dollars paid by each student upon entrance.

RELIGIOUS AND MORAL CULTURE.

Every Sunday there will be service in the Chapel and all students must be present unless excused by special requests of parents or guardians. The faculty will try by all the means in their power to protect and develop good morals in those committed to their charge.

The situation of the College is peculiarly favorable for the preservation of the morals of students. The nearest town is distant five miles, and it is almost impossible for any student to go to Bryan, even for a short time, without his absence be-

coming known to the authorities. All the temptations that beset young men in cities are entirely absent here. No student is ever permitted to visit Bryan at night except by request of his parent or guardian.

LITERARY SOCIETIES.

There are two literary societies in the College, the Austin and the Calliopean. They meet weekly in their respective halls for practice in debate, literary composition and declamation. Public debates are held frequently during the session, and speakers are invited to deliver addresses.

LIBRARY AND READING ROOM.

A valuable library and reading room have been provided for the use of students, and additions will be annually made.

The library now comprises standard works of history, biography, agriculture, mechanics, engineering, mathematics, natural sciences, law and political economy, mental and moral philosophy, poetry, general literature and reference.

Gifts of books and magazines will be thankfully received. Back numbers of literary and scientific periodicals will be especially useful in completing files.

GENERAL REGULATIONS.

It is understood that every student upon entering the College pledges himself to an honest effort to observe the regulations, and sustain the authorities in the maintenance of discipline.

The strictest attention to study, and the most exact punctuality in attendance on recitations and other duties, will be made the condition of every student's continuance at the College; and any student who without authority absents himself from recitation or any other duty, deserts his class, or refuses to attend when warned, shall be dismissed, or less severely punished, at the discretion of the faculty.

Students are forbidden to enter into combinations under any pretext whatever. One who shall begin, excite, cause or join in any boisterous or riotous conduct, or become a

party to any agreement to avoid or violate any regulation, to hold no intercourse with a comrade, or to do any act to the prejudice of good order and military discipline, shall be dismissed.

Students are prohibited, under penalty of dismission, from having in their possession ammunition, weapons or arms not issued for the performance of military duty; nor shall these be retained loaded in quarters under any pretext.

A student who shall drink, or bring, or cause to be brought within the cadet's limits, or have in his room, or otherwise in his possession, any fermented or intoxicating liquor, or fruits or viands preserved in intoxicating liquor, shall be dismissed or otherwise punished at the discretion of the faculty.

No student shall have in his possession, or play at, cards, or games of chance, engage in a raffle, or in any manner wager money or other things, on penalty of dismission.

Permission to attend private parties or places of public amusement, will not be granted during the term.

No cadet can be granted a leave of absence during a term of twenty weeks, without an urgent necessity.

No student is allowed to leave the College during the session without permission of the chairman of the faculty on application through the commandant.

A student who shall cut, mark, or otherwise injure or deface the buildings, furniture or appurtenances; the trees, shrubbery, green-sward, grounds, fences, stables, or outhouses; or who shall lose, injure, destroy, or improperly dispose of the arms, accoutrements, or other property of the College, shall make good all damage, and be dismissed or otherwise punished, according to the nature of the offense.

When the responsibility for the destruction of State property cannot be fixed upon any one, the amount of the damage will be assessed against the occupants of a room or division, or the entire body of students, as the case may require.

Students receive the admonition and counsel of the chairman of the faculty before being subjected to any penalty, except in case of flagrant offenses. Those who are habitually

neglectful of their duties, or who do not regularly attend their classes, will be required to withdraw from the College.

To each recorded delinquency a number of from one to ten proportional to the degree of the offense in a moral and military view, is assigned to express demerit.

Any student receiving demerits as follows shall be declared deficient in conduct and subject to dismissal: In the first class 100 in a session or 34 in a term; in the second class 150 in a session or 50 in a term; in the third class 200 in a session or 66 in a term; in the fourth class 250 in a session or 84 in a term.

TO PARENTS AND GUARDIANS.

The necessity for uninterrupted attention to their studies on the part of students can not be too strongly urged. It is impossible for a young man to become interested in his work here if he is permitted to leave the College whenever any special amusement is advertised in our neighboring towns or cities.

It is therefore respectfully asked that those who send their sons or wards here do not, except in the most pressing emergencies, request permission for them to eave their studies for any purpose whatever.

Whenever a parent or guardian shall leave the application for special permits to the discretion of the son or ward, the College authorities will judge of the propriety of granting such permits.

INTERIOR OF QUALITATIVE CHEMICAL LABORATORY.

Departments of Instruction.

DEPARTMENT OF CHEMISTRY.

PROFESSOR H. H. DINWIDDIE.
ASSISTANT, W. WIPPRECHT, B. S. A.

This subject will be introduced by the study of Inorganic Chemistry, passing into a brief course of Organic Chemistry. The attention of students will be directed to the historical development of the science and to the phases of chemical theory which have successively obtained among scientists.

During this part of the course there will be constant practice in the use of symbols and chemical calculations. As far as possible illustrative experiments will be made by the students themselves. Special study will be given to technical processes and the construction, arrangement and working of apparatus for the manufacture of chemicals for commerce.

After a fair knowledge of general principles has been acquired Practical Chemistry will be taken up, and the instruction will consist of actual work in the laboratory. It will commence with the use of the blowpipe, simple glass working and fitting up of apparatus, continuing as far as time will permit through a course of analysis, wet and dry, qualitative and quantitative, gravimetric and volumetric.

Advanced students will be required to investigate specialties, to keep careful notes of their work and to present results more or less original in the form of memoirs to be read before the class or handed to the professor. Agricultural students will devote their time mainly to analysis of soil, manure and

plants. Mechanical students may take up any subject directly connected with manufacturing chemistry.

It will be the object of this department to equip its graduates with such practical knowledge and skill as will be available at once upon leaving College.

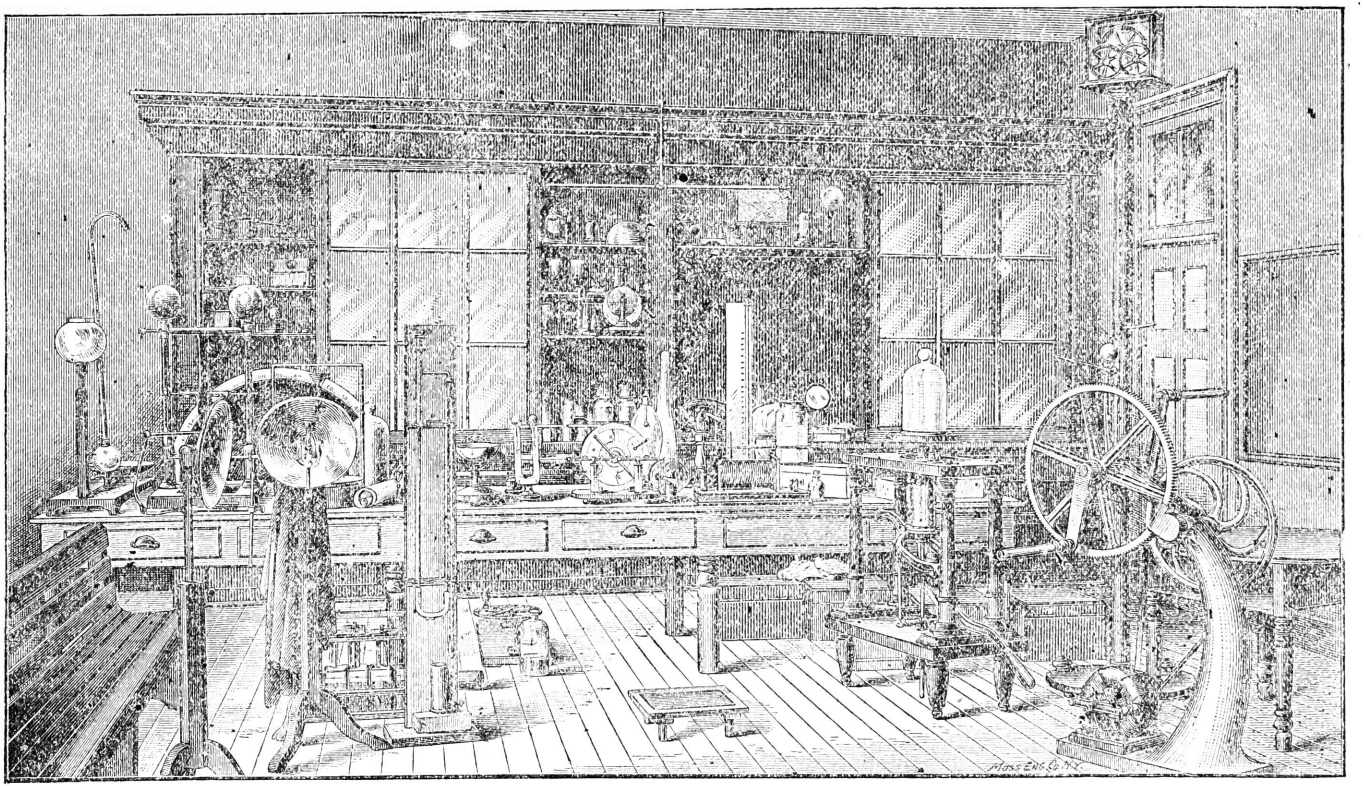
The laboratory consists of four rooms, two of which are large (46x22 1-2 ft.) and capable of accommodating each about twenty students at their desks. One is fitted up for this number of students in qualitative analysis: the other, which is on the first story, has a cement floor and is used for furnace work, and generally by the more advanced students in quantitative analysis. Adjoining this is a balance room in which the balances are secured from fumes and firmly supported, and various pieces of delicate apparatus are kept.

The rooms are supplied with gas. A small Shipman steam engine raises water from a large underground cistern, and this is distributed under a head of about 25 feet for filter pumps &c. The same engine furnishes power for a dynamo and for various other purposes.

A fourth room is small and has no window and is used for a store room and photographic dark room.

In order to present definitely the facilities for practical work and experimental instruction in this department, the following list of more important pieces of apparatus is given: Two fine analytical balances, three ordinary ones, gas holders and generators, filter pumps, full supply of retorts, receivers, flasks, lamps, evaporating dishes, burettes, hydrometers, volumetric glassware, glass-blowers' table, gas closets, tanks and sinks, two assay furnaces with muffles, crucibles, etc., combustion furnaces, stock of chemicals and collection of minerals. Among new pieces may be mentioned a large Geissler pump, Hempel's gas apparatus. A Soleil–Laurent saccharimeter, an Elliot's gas apparatus, colorimeter, Sprengel's pump, a large digester, a still, a water bath, a photographic outfit complete, and a fine Fuess' goniometer. In short, the laboratory is well prepared for any work in well established methods of analysis.

Remsen's Text Books are used and there is a small library



INTERIOR OF PHYSICAL LABORATORY.

of standard reference books constantly accessible to students working in the laboratories.

PHYSICS.

Work in this department will commence with the study of elementary Physics in the Third Class, passing to a more advanced course in the Second Class.

The apparatus of the department is excellent and extensive, being sufficient for illustration and experiment throughout the entire course. Besides, the shops of the Mechanical Department will be most useful as a laboratory for practical applications of the study of Physics. With this aid students may construct special pieces of apparatus for illustration of any subject.

The following are some of the pieces of apparatus found in the Physical Laboratory: Powerful air-pump, Atwood's Machine, 3-inch spark induction coil, telegraphic apparatus, galvanometer, plunge battery, Grove's battery, other batteries, dielectric machine, magneto-electro machine, electro-magnetic machine, Toepler-Holtz machine, jars, electro-magnetic engine, dynamo machine, Geissler's tubes, siren, Crouch's best binocular microscope and fittings, polariscope and accessories, spectroscope, radiometer, hydraulic ram, hydrostatic and hydrodynamic apparatus, models of machines and mechanical powers, etc.

DEPARTMENT OF MATHEMATICS.

PROFESSOR L. L. M'INNIS, A. M.

ASSISTANTS, { R. F. SMITH, GUY CARLETON.

Instruction in this department will have for its aim, to lead the student into the habit of thoroughly analyzing every subject. He will be taught to accept nothing as true in mathematical science, unless rigidly demonstrated, and he will be required so to demonstrate all rules and principles before applying them to the solution of problems. He will be made to realilze the importance of this science in the practical affairs

of life, as well as its value in strengthening and disciplining the intellectual powers, by carefully selected and original problems throughout the course, involving the application of its principles to the arts, industries and applied sciences of to-day.

The principles enunciated and established in the texts will be constantly supplemented by oral and written lectures tending to show their application.

In the application of mathematics to mechanics the student will be taught the doctrine of forces—their composition and resolution, laws of gravity, laws of motion, etc. A series of lectures on the History, Utility and Philosophy of Mathematics will be given.

In surveying and leveling much attention will be devoted to making the student familiar with the practical work.

He will have explained to him the construction, principles, and use of all the instruments employed in this useful branch of mathematics. He will be instructed in Rectangular, Compass, Transit and Plane Table surveying, and will be required to use these instruments in the field in laying out and dividing land, and will draw accurate plots and maps of his work. He will also have practice with the solar compass with which lines are run by the sun independent of the needle.

In leveling he will have practice in determination of difference of level, section leveling, leveling for section, cross section work, drainage leveling and determination of volume of excavation and embankments.

EQUIPMENT.

Special attention is invited to the complete equipment of this Department with Surveying and Engineering Instruments, which include the following:

Engineer's Transit.
Surveyor's Transit with Solar Attachment.
Plane Table, complete.
Burt's Improved Solar Compass.
Railroad Compass.
Vernier Compass.
Engineer's Level.

Farmer's Level for Drainage.

Chains, Leveling Rods, Poles, etc., etc.

For instruction in geometry, plane, solid, spherical, descriptive and analytical, the department is supplied with a complete set of Schrœder's mathematical models, imported from Germany for this institution.

TEXT AND REFERENCE BOOKS.

Arithmetic, Venable and Robinson, Brooks' Philosophy of Arithmetic; Algebra, Schuyler, Wentworth, Davies; Geometry, Schuyler, Wentworth, Venable; Trigonometry and Mensuration, Schuyler and Davies; Surveying, Schuyler, Wentworth, Davies and Gillespie; Analytical Geometry, Church, Peck, Bowser, Howison and Wood; Calculus, Church, Bowser, Byerly and Peck; Mechanics, Wood, Peck, Smith and Bartlett; Descriptive Geometry, Church and Warren; Davies Dictionary of Mathematics, Bledsoe's Philosophy of Mathematics.

LOGIC AND GOVERNMENTAL SCIENCE.

Students of the First Class have two recitations per week during the Fall and Winter Terms in Logic, and during the Spring Term in Governmental Science.

Text and Reference Books.—Logic, Jevon, Schuyler, McCosh; Governmental Science, Townsend, Nordhoff. Lectures.

DEPARTMENT OF LANGUAGES.

PROFESSOR RUDOLPH WIPPRECHT.

This department comprises Latin as an optional study and either the German or Spanish languages as elective or optional as shown in the curricula.

Second Class—German or Spanish.—Grammar, together with translation, both oral and in writing. Conversational exercises.

First Class—German or Spanish.—Studies of the second class to be continued. Reading of select authors. Outlines of literature of either language.

The course in general will be rendered instructive by lectures to be interspersed: on the philosophy of language; on comparative philology as far as the English is concerned; on geographical, historical, ethnological, biographical, and other congenial subjects, both interesting in themselves, and of importance for any well trained College-student to be conversant with.

DEPARTMENT OF ENGLISH LANGUAGE, LITERATURE, AND HISTORY.

PROFESSOR W. L. BRINGHURST, A. M., PH. D.
ASSISTANT, W. B. PHILPOTT,

The general aim of instruction in this department is to make thorough, practical English scholars.

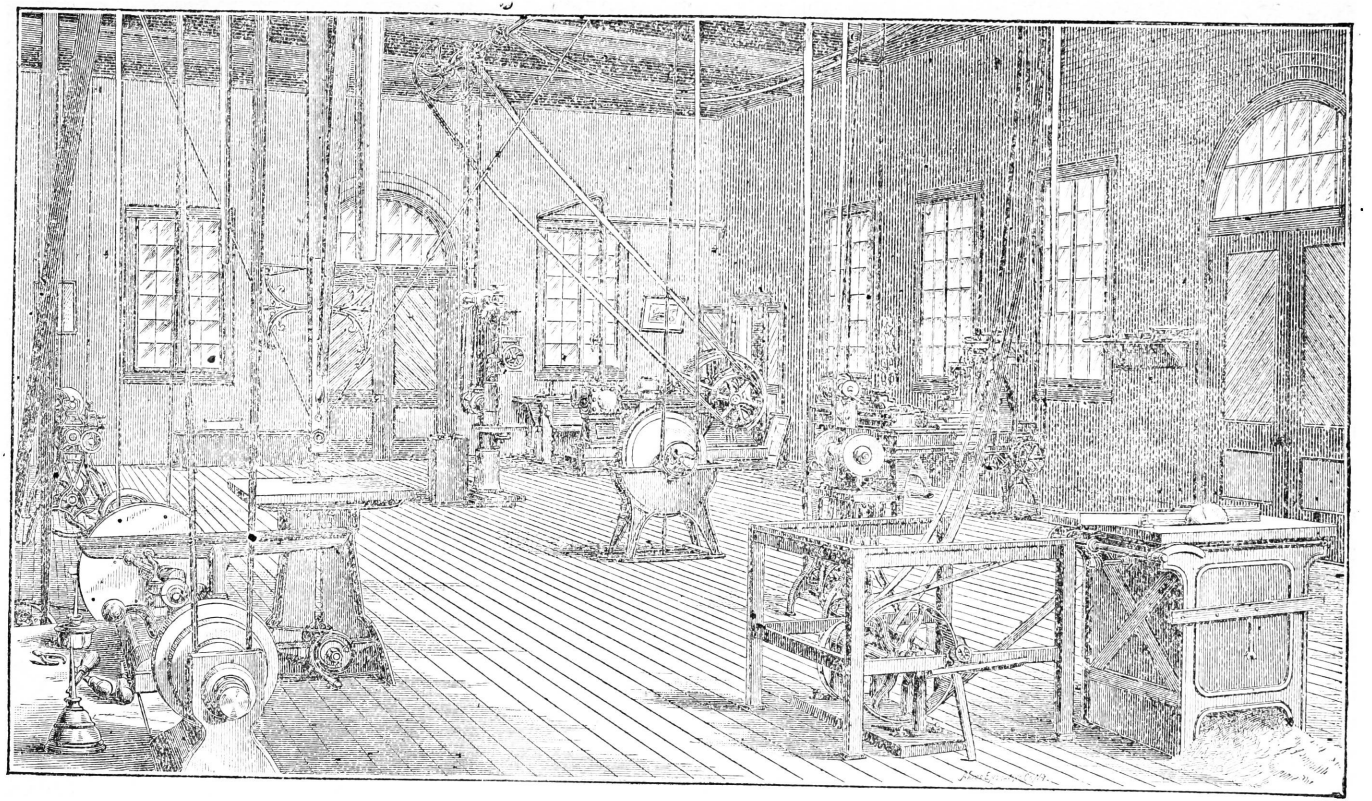
The following subjects are taught:

I. *English Language and Literature.*—Embracing the grammatical and rhetorical structure of the language, its history and development, synonyms and comparative philology. That the student may thoroughly master the principles of his mother tongue, daily recitations are accompanied with practical exercises on the blackboard in writing, spelling, analyzing and criticising. Constant practice in declamation and composition is required.

The historical development of English literature is carefully traced, and the student is made as familiar with the works of our great authors in poetry, history, philosophy, fiction, science, etc., as the time allotted will permit. Lectures are delivered to the classes, and original reviews, essays and compositions are required.

Text Books.—Patterson's English Grammar, Whitney's English Grammar, Quackenbos's Composition, Welsh's Essentials of English, Welsh's Development of English Language and Literature.

II. *History.*—The object of this course is to give the student a thorough knowledge of the history of his own country and of England, and an outline of the world's history, ancient and modern. Special attention is given to the history of the



INTERIOR OF MACHINE SHOP.

people, and of the gradual development of the civilization, power, laws, constitution and political system of our republic. The department is well supplied with wall-maps, globes, etc.

Text Books.—Stephen's History of the United States, Fisher's Outlines of Universal History.

For reference and private reading, the College Library supplies an admirable collection of histories, dictionaries, biographies and encyclopedias, besides works of poetry and general literature.

DEPARTMENT OF MECHANICAL ENGINEERING.

PROFESSOR R. H. WHITLOCK, M. E.
ASSISTANT, F. E. GIESECKE.

This department is intended so to combine theory and practice that, after deriving a theoretical knowledge of a subject from the text books of standard writers, the students may go into the shop and apply that knowledge in a thoroughly practical manner. With this theoretical preparation the mind grasps the salient points, and avoids the difficulties of the more practical part of the work. The work is carried on by the aid of practice in the shops and drawing room, and by text books and lectures.

ENGINEERING.

This subject being one which contains many minor divisions, the text book is often superceded by lectures. These are generally so chosen as to enlarge on some topic introduced in the text, but which needs a detailed discourse to enable the student to fully master the subject. Some of the important topics treated are :

Strength of Materials.—Treating of the strength of the different materials used in construction when they are subjected to the different strains which must necessarily be brought upon them when they are in actual use.

Masonry.—Giving full descriptions of materials used, with the chemical and physical properties of the ingredients, the different styles. etc.

Foundations.—Describing the best practice in laying and preserving foundations, and giving particular attention to such soils as necessitate extraordinary precautions being taken for the preservation of the structure.

Roadways.—Their location and details, including railroads, and the methods of laying them out.

Shafting.—Its strength and uses, with calculations of sizes required under certain circumstances.

Pulleys.—Speed, transmission of power, with methods of decreasing or increasing speed by their uses.

Before graduating from this department each student must place in the hands of the Professor in charge, a thesis which treats of some mechanical subject, and which shall be declared satisfactory by him.

MECHANICAL DRAWING.

This subject is taken up when the student has little or no knowledge of the instruments used, and but little idea of the benefits to be derived from a thorough skill in their manipulation. At the start the principal object is to train the mind, eye and hand to work in unison. In order to accomplish this, the first drawings consist of problems, which, though very simple, contain principles which will be of use all through the course of drawing. Thus the mind is trained as well as the hands, and after proceeding in this manner until all difficulties are surmounted, the nature of the problems gradually changes until that point is reached where they may be applied to mechanical work. First the screw, then the teeth of the wheels, and so on, gradually drawing out the skill of the embryo draughtsman until he can make a "working drawing" of the most complicated pieces of machinery. This, like the preceding subject, is intimately connected with actual practice, as shown by the fact that we take our measurements from machines which are the results of the best practice of the age. Again, in drawing toothed or gear wheels, we compare theory with practice in such a manner as to point out the desirability of combining them in our work. The fear of being able merely to copy other drawing is avoided from the beginning as each drawing is made from the measurements taken by the

student, and is finished up as if the machine was to be actually constructed. In time the designing of machinery will be taken up, thus enabling the student to put his own ideas in such a shape as to show others what he thinks, and in such a manner as to admit of the construction of the machine from his drawings. Each student must provide himself with a set of drawing instruments, and is advised not to make his purchase before entering the College, as arrangements have been made with reliable makers to furnish instruments on advantageous terms.

SHOPS AND SHOP WORK.

SUPERINTENDENT, PROF. R. H. WHITLOCK.

FOREMAN, A. HARBERS.

The present shops are situated in a two-story frame building, 83x34 feet, and have a boiler room attached. In addition to this there is a one-story brick building, 80x35 feet, in which are placed new tools, of the latest patterns, which represent the best practice of the age. Here the student receives practical and systematic instruction, beginning with the simplest exercises and gradually working up to those of a more difficult character which involve greater skill. Each of these, when finished, must reach a certain standard of perfection before the learner can pass on to the next, thus insuring a knowledge of the principles by which the work is accomplished. The wood-working department is subject to the same requirements, and here, as in iron-working, the first exercises are of the simplest character, while the later ones demand increased skill on the part of the workman. The only tools necessary for the student to purchase are a pair of calipers, a two-foot-rule; also, a pair of overalls, all of which

DEPARTMENT OF AGRICULTURE.

PROFESSOR GEO. W CURTIS, B. S. A.
ASSISTANT, DUNCAN ADRIANCE.

The design of the course in agriculture is to furnish—not only close, practical instruction in all branches of progressive farming—but also a broad and liberal education, fitting the student for the higher demands of agricultural industry and the full responsibilities of educated citizenship. For a complete outline of studies pursued, see curricula on preceding pages; the more important branches are briefly noticed below.

In the study of Domestic Animals, careful attention is given to the merits and demerits of different breeds—origin, description and characteristics being discussed specifically for each breed, with general notes on care, management, &c., pertaining to all.

Dairying and Creamery Work, as a paying branch of agriculture, is rapidly gaining in favor. With the new creamery building now under way, a special course in this important study is inaugurated. Members of the Third and Second classes will perform the work—under supervision of the Professor or his Assistant, thus fitting the students to take charge of and successfully conduct, co-operative creameries which may hereafter be established.

In Stockbreeding, the aim is to acquire familiarity with the principles of selection, feeding, &c., to change or perpetuate characters, and the laws governing the transmission of qualities. Especial attention is given to the breeding, selection and management of dairy stock.

The study of Cattle Feeding is pursued in the natural order of topics discussed; taking up first, the general laws of animal nutrition; second, the chemical composition of feeding stuffs; third, the feeding of farm animals. In this way a thorough knowledge is acquired of the principles and reasons upon which profitable cattle feeding is based, either upon the range or in the yard.

Veterinary Anatomy and Medicine is taken up during the fourth year (1st class)—the lectures on anatomy being supple-

mented by a complete skeleton of the horse, prepared and mounted by students under supervision of the Professor of Agriculture. A short synopsis is given of various classes of drugs and their action—both physiological and therapeutical. The injuries and diseases to which horses and cattle are most commonly subject, and their treatment, are thoroughly studied by means of lectures—the class assisting in dressing and treating cases which occur from time to time. The object of this branch of instruction is to protect our students in after life from the numerous quacks who infest the country, by enabling them to diagnose and properly treat all ordinary cases without the aid of a skilled veterinarian.

The Study of Farm Management, includes Fertilization; Rotative and Successive Cropping; Drainage and Irrigation, with suggestions on economizing labor; Management of hands; selection and care of farm machinery, &c. Practice.

The only way to fix knowledge in the mind is by a constant application of the principles learned in the class room; with this idea in view, students are given regular practice on the farm (a field has been set aside for this purpose to be controlled and worked entirely by students under immediate direction of the Professor or his Assistant), in the creamery, and in feeding and field experiments, as set forth in our Bulletins.

We would call especial attention to the supplementary studies found in the Agricultural course—among them Horticulture, Botany, Entomology, Agricultural Chemistry, Surveying and Leveling, Bookkeeping, Laws of Business and Meteorology.

The Library is well supplied with standard works of reference on all branches, which students may consult at any time, in addition to the regular text books used in the course.

DEPARTMENT OF MILITARY SCIENCE AND TACTICS.

PROFESSOR GUY CARLETON, SECOND CAVALRY, U. S. A.

The instruction in this department is in conformity with the act of Congress, which in endowing this and similar in-

stitutions, stipulates that military tactics shall be taught.

An officer of the regular army is detailed by direction of the President of the United States to carry out this requirement of the act in question, and the necessary arms, accoutrements and ammunition are furnished by the General Government without cost to the College.

The military instruction given is confined to Infantry and Artillery drills, a limited amount of target practice, and the duties of sentinels. Also, lectures on technical subjects will be occasionally delivered.

The military system is also used here as the principal means of enforcing discipline and securing regularity in the performance of academic duties. The Professor of Military Science is, under the Chairman of the Faculty, charged with the preservation of discipline, with the title and powers of Commandant.

It will be the special aim of the present Commandant in the future, as it has been in the past, to inculcate in the students that manliness of character and habit of truthfulness in all things that characterize young men as gentlemen the world over.

DEPARTMENT OF CIVIL ENGINEERING AND DRAWING.

ADJUNCT PROFESSOR J. H. KINEALY, D. E.

DEPARTMENT OF HORTICULTURE.

ADJUNCT PROFESSOR T. L. BRUNK, B. S.

These two new departments have been established by the Board of Directors and will be in operation under their respective professors who have been elected while this catalogue was in press and too late for the insertion of their names in the list of the Faculty. They will develop and extend studies which have heretofore been attached to the departments of Mechanical Engineering and Agriculture respectively.

Roll of Students, with Postoffices.

ABNEY, A., Denton.
ABNEY, W. L., Denton.
ADRIANCE, C. F., Galveston.
ADRIANCE, D., Columbia.
AIKEN, J. P., Galveston.
ALLEN, L. E., Marlin.
ALLEN, W. H., Marlin.
AMSLER, L. D., Hempstead.
AMSLER, W. H., Brenham.
ARMSTRONG, J. F., Buckhorn.
BAKER, J. W., Salado.
BAKER, J. B., Richmond.
BECKER, M., San Antonio.
BERING, J. H., Houston.
BETHANY, J. C., Bellville.
BIRD, G. Y., Gainesville.
BLACKSHEAR, E. D., Navasota.
BOEDEKER, C., Columbus.
BONDS, J. M., Pilot Point.
BRAUN, P., San Antonio.
BREUSTEDT, O., New Braunfels.
BRINGHURST, A. H., College Station.
BROWN, H. P., Galveston.
BUCKMAN, C. A., Denison.
BURKS, W. D., Pilot Point.
BURNS, R., Houston.
CALLIS, J. F., Richmond.
CAMP, L. B., San Antonio.
CARSON, W., Red Oak.
CARTER, H. G., Marlin.
CAREY, McC., Beaumont.

CERF, J. C., Waxahachie.
COLLINS, K., Buckhorn.
CONNOR, R. M., Madisonville.
COOPER, J. W., Cade.
COTTINGHAM, G. R., Thomaston.
CUMMINS, A. J., Sherman.
CUSHING, D., San Antonio.
D'AGUILAR, A. L., New Braunfels.
DAVIS, P. W., Montgomery.
DE'LOACH, R. S., Hochheim.
DEFREESE, W. B., Houston.
DEUTZ, C., Laredo.
DIETERT, R. H., Kerrville.
DRISDALE, W., Flatonia.
DUGGAN, T. J., San Angelo.
DYER, H. L., Richmond.
EIKEL, W., New Braunfels.
ECHOLS, F. H., Bryan.
FAGAN, W. R., Ingersoll.
FEARHAKE, J., Huntsville.
FISCHER, H. F., New Braunfels.
FISHER, W. P., New Waverly.
FLAKE, S. E., Galveston.
FLEMING, J. H., Victoria.
FLEMING, W. N., Victoria.
FORDTRAN, F. L., Flatonia.
FORKE, L., New Braunfels.
FREEMAN, J. H., Seguin.
FREEMAN, R. R., Seguin.
FRENCH, T. A., Beaumont.
GARRETT, J. F., Wills Point.
GEORGE, E., Houston.
GILLESPIE, C. C., Dallas.
GOODSON, W., Hallettsville.
GRABER, W. J., Brenham.
GREEN, G. O., Temple.
GREEN, J. F., San Antonio.
GREEN, N. O., San Antonio.
GROOS, O., San Antonio.
GRUENE, E., New Braunfels.

Halbert, B. M., Corsicana.
Hall, E. T., Laredo.
Handel, W. G. F., Laredo.
Hanschke, R., San Antonio.
Hare, H. C., Sherman.
Harvey, J. W., Caldwell.
Hellman, H., Kyle.
Hellman, S., Kyle.
Hereford, J. B., Dallas.
Hereford, J. S., Dallas.
High, R. G., Waxahachie.
Hill, E., Maynard.
Hill, J. E., Allen Farm.
Hill, W. J., San Felipe.
Hoffman F. C., New Braunfels.
Hummel, F. M., San Antonio.
Jackson, W. T., Wolf City.
Johnson, H. L., Moore's Station.
Jonas, H. F., San Antonio.
Jonas, W. S., San Antonio.
Jones, W. T., Austin.
Josey, N. L., Luling.
Josey, R. A., Huntsville.
Knittel, R., Burton.
Knolle, A. P., Industry.
Knolle, E. R., Industry.
Knolle, W. H., Industry.
Koy, G. F., Cat Springs.
Kuehne, J., Austin.
Lee, E., Waxahachie.
Leggett, W., Fort Elliott.
Lingo, H. W., Denison.
Long, C. A., Devine.
Lowry, E. B., Forest, Miss.
Mabry, R., Fort Worth.
Manly, W. M., Nelsonville.
Manning, W. R., Bellville.
Marburger, W. L., Cistern.
Martin, C., Hinkle's Ferry.
Mason, J. T., Brownsville.

McDANIEL, J. T., Lytle.
McLANE, A. H., Laredo.
McNAIR, H. J., Navasota.
MERRIWETHER, W. T., Pearsall.
MIDDLEBROOK, E. S., Columbus.
MILES, J. S., Richmond.
MONTGOMERY, F. L., Sherman.
MONTGOMERY, W. B., Pilot Point.
MOSELEY, H. H., Bryan.
MUELLER, C. W., New Braunfels.
NESS, H., College Station.
NICHOLS, J. F., Giddings.
NICHOLS, J. R., Giddings.
NIGGLI, G. F., San Antonio.
PEARSON, D. R., Richmond.
PEYTON, J. E., Fate.
PFEUFFER, U. S., New Braunfels.
PFEUFFER, W., New Braunfels.
PHILPOTT, H., Bryan.
POWARS, W., Houston.
QUINAN, C., Hungerford.
QUINAN, W., Hungerford.
RENNERT, F., New Braunfels.
RICH, B. M., Houston.
ROGERS, B. F., Jefferson.
ROGERS, G. A., Jefferson.
ROCHELLE, E. S., Texarkana.
ROONEY, F., Fort Stockton.
ROOS, A. S., San Antonio.
SCHMIDT, C. L., Laredo.
SCHUMACHER, J. W., Navasota.
SCHUMACHER, R. H., Navasota.
SHIRLEY, M. W., Anna.
SHIRLEY, Z. M., Melissa.
SMITH, E. J., Woodford, Ind. Ter.
SMYTH, J. B., Beaumont.
SMITH, R. B., Waxahachie.
STRICKLIN, W. L., Lampasas.
STEEDMAN, W. B., Sherman.
STALLWORTH, S. J., Marlin.

STINNETT, W. A., Sherman.
STOWE, J. N., Galveston.
STUART, J. L., Marlin.
STEWARD, W. W., Steward's Mills.
SWAIN, M. S., Austin.
TATUM, W. M., San Antonio.
TENDICK, C. H., San Antonio.
THATCHER, J. R., Eagle Lake.
TILSON, P. S., Texarkana.
TROUSDALE, C. F., La Grange.
VIDOR, W., Galveston.
VINES, P. C., Jefferson.
VINSON, C. L., Houston.
WANGEMANN, A., New Ulm.
WEHRHAHN, A., San Antonio.
WHEALAN, J., College Station.
WEST, T. B., Columbus.
WIESS, P. H., Beaumont.
WILLIAMS, A. E., Maysfield.
WILLIAMSON, E. C., Cat Springs.
WITHERS, A. W., Lockhart.
WOOD, W. M., Hillsboro.
WURZBACH, C. J., San Antonio.
WURZBACH, W. A., San Antonio.
YARBOROUGH, J. L., Yarborough.

These were distributed by classes as follows:

First Class	10
Second Class	33
Third Class	73
Fourth Class	18
Irregular and Preparatory	42
Total	176

Roll of Students by Classes.

With Their Relative Class Standing in General Merit, Marks in Each Department and Total Marks.

EXPLANATION—Each Department includes the various studies belonging to it as shown elsewhere.

Names not included in this roll are those of students who have failed to pass into the higher class either on account of having entered late, failure to finish some study, absence from examination or want of preparation otherwise.

The first three students in each class are reported to the Board of Directors as "honor men" and their names marked thus *.

Students of the second class who have failed to attain the passing mark on any one study will be permitted to continue their courses in all other studies as irregulars or special students, but cannot receive degrees until they shall have made up all deficiencies. The passing mark is 66.

In general, students of lower classes who are deficient must make up their deficiencies before going on in the courses.

FIRST CLASS—GRADUATES.

Order of General Merit.	NAMES.	Chemistry and Physics.	Mathematics.	English.	Mechanics.	Agriculture.	Conduct.	Total Mark.	REMARKS.
*1	Rogers	86.25	91.59	87	84.42		100	449.26	Fourth Captain.
*2	Fordtran	82.68	86.29	88	.....	93	99	448.97	First Lieutenant.
*3	Freeman	79.99	92.27	85	85.35		100	442.61	Second Captain.
4	McNair	86.63	85.66	80	83.9		100	436.19	First Lieutenant.
5	West	82.12	83.82	78	84.45		100	428.39	Third Captain.
6	Allen, L.	71.43	90.28	83	82.15		100	426.86	Quartermaster.
7	Knolle	69.03	81.69	79	81.5		100	411.22	First Lieutenant.
8	Hereford	63.86	76.92	76	78.1		100	394.88	First Captain.
9	Hare	62.64	75.68	73	76.35		100	387.67	Adjutant.
10	Gruene	64.63	71.17	66	77.5		99	378.30	First Lieutant.

SECOND CLASS.

Order of General Merit.	NAMES.	Chemistry.	Mathematics.	English.	Mechanics.	Agriculture.	Conduct.	Total Mark.	REMARKS.
*1	Allen, W.	82.71	93.5	92.5	....	94.7	100	463.41	First Sergeant.
*2	Braun.	85.15	93.9	93	89.4	....	100	461.45	Second Sergeant.
*3	Tilson.	76.18	93.4	90	....	93.8	100	453.38	First Sergeant.
4	Josey, N.	92.75	72	86	....	92.9	99	442.65	
5	Smith, E.	80.27	83.5	84	....	88.2	100	435.97	Second Sergeant.
6	Dietert.	75.53	88.7	83.6	87.1	....	100	434.93	First Sergeant.
7	Forke	81.77	84.7	83	84	....	96	429.47	
8	Pfeuffer.	79.52	73.6	84	....	89.7	100	426.82	Third Sergeant.
9	Wurzbach	72.82	89.3	83	80.3	....	100	425.42	Third Sergeant.
10	Rennert.	69.23	83	81.5	....	89.1	100	422.83	Second Sergeant.
11	Hoffman	73.84	85	81.5	84.8	....	97	422.14	Second Sergeant.
12	Schumacher	73.13	74.7	81	75.8	....	100	404.63	
13	Deutz	58.97	80.9	73	86.3	....	100	399.17	Fourth Sergeant.
14	High	65.58	78	71	81.5	....	100	396.08	Qr.-M. Sergt., passed in
15	Jonas	71.09	70.5	71	81.4	....	100	393.99	First Srgt. [Chemistry.
16	Swain.	55.63	74.7	83.5	....	80	100	393.83	Sergeant Major.
17	Sherley, Z.	68.29	78.2	66	80.2	....	99	391.69	Third Sergeant.
18	Knolle, A.	65.05	72.4	83.3	80.9	....	89	390.65	
19	Wood	81.40	77.1	85	75.8	....	69	388.3	
20	Knolle, W.	54.71	70.7	82.5	78.7	....	100	386.61	Third Sergeant.
21	Steward	53	68.7	72	79.5	....	100	373.2	Second Sergeant.

THIRD CLASS.

Order of General Merit.	NAMES.	Physics.	Mathematics.	English.	Mechanics.	Agriculture.	Conduct.	Total Mark.	REMARKS.
*1	Eikel.	88.8	95.1	96	....	93.8	100	473.7	Corporal.
*2	Cottingham.	92.3	91.7	95.6	....	91.6	100	471.2	
*3	Montgomery, L.	91.2	95	94.5	....	92.2	98	470.9	Corporal.
4	Nichols, F.	84.7	91.9	99	....	90	100	465.6	Corporal.
5	Wangemann.	90.2	94	96.2	....	90.2	95	465.6	
6	Montgomery, W.	86	94.3	94	....	87.6	99	460.9	
7	Hill, E.	92.8	88	91	83.1	....	100	454.9	Corporal.
8	Fearhake	82.7	94.3	91.6	82.4	....	100	451	Corporal.
9	Abney, A.	88.1	84.5	87.6	85.8	100	....	446	
10	Rogers, B.	88.4	89.5	93.5	79.4	....	94	444.8	
11	Fagan.	86.1	83.7	92.6	83.3	....	96	441.7	
12	Josey, R.	91.1	84	94	73.8	....	97	439.9	
13	Kuehne	79.6	94.8	78.5	86.3	....	100	439.2	Corporal.
14	Mabry	86.3	85.4	93.3	75	....	98	438	Corporal.
15	Peareson.	86.6	90	86.5	74.4	....	100	437.5	Corporal.
16	Dridsale	76.6	81.2	91.5	....	85.4	100	434.7	Corporal.
17	Jones	82.7	78.5	89	77.7	....	99	426.9	
18	Abney, W.	82.5	88.7	74	81.4	....	100	426.6	
19	Stinnett	83.7	84.5	76.5	80.2	....	100	424.9	Corporal.
20	Blackshear	67.8	80.9	91	74.8	....	100	414.5	
21	Nichols, R.	62.9	73.2	90.2	....	83.8	100	410.1	Passed in Physics.
22	Amsler	70.8	73	86.5	77.4	....	100	407.7	Corporal.
23	Middlebrook.	77.7	76.5	74	76.5	....	99	403.7	Corporal.
24	Breustedt.	68.6	77	87.3	77.6	....	92	402.5	
25	Leggett.	83	84.5	90	73.9	....	71	402.4	
26	Bonds.	79.6	72	73	70.5	....	100	395.1	
27	Connor.	63.5	71.5	86	....	78.8	75	394.8	Passed in Physics.
28	Hill, J.	74.2	56.3	93	74.9	....	96	394.4	
29	Bering	61.2	74.7	71	87.2	....	96	390.1	Passed in Physics.

THIRD CLASS—CONTINUED.

Order of General Merit.	NAMES.	Physics.	Mathematics.	English.	Mechanics.	Agriculture.	Conduct.	Total Mark.	REMARKS.
30	Fleming, J.	69.8	63.8	84	74	....	95	386.6	Passed in Mathematics.
31	Sherley, M.	73.5	67.3	64	82.5	....	93	380.3	Passed in English.
32	Duggan	61.5	74	83.6	62.8	....	93	374.9	
33	Buckman	66.3	80.5	69	73.2	....	81	370	
34	Freeman, R.	65.4	66.7	68	73.7	....	85	358.8	
35	Bethany	67.6	66.5	60	60.2	....	100	354.3	
36	Green, G.	63.2	68.2	88	...	....	87	306.4	

The following are distinguished in the department of languages:

German—Blackshear, Fearhake.

Spanish—Rooney, Schmidt.

Latin—Abney A., Peareason.

The following students of the newly organized fourth class were passed to the third class:

Bird, Boediker, Cushing, Green N. O., Groos, Hanschke, Hereford, Lingo, Niggli, Peyton, Quinan C., Stallworth, Schmidt, Smith R., Vidor, Stowe.

The following preparatory students were passed to the fourth class:

Baker, Carey, Jonas, Hall, Muller, Quinan W., Thatcher, Brown H. P., Cerf, Garrett, Rooney, Whealan.

ALUMNI.

From the opening of the College in 1876 to its reorganization in 1880 the studies were elective. There were many graduates during that period in one or more departments. Since at that time only those students who obtained degrees could rank with graduates under a curriculum, it has been deemed proper to omit from this list all except titled graduates and those who have completed a curriculum.

Names of deceased alumni are in small capitals.

The present occupations of the alumni are given so far as known, but information as to these is not readily accessible, and errors may be found in that given here. The alumni are requested to aid the Chairman in making their roll as complete as possible, as a means of conveying to each trustworthy intelligence of all the others.

1880.

L. J. Kopke, C. E., Engineer, Merchant.
W. H. Brown, C. E., Lawyer.

1881.

G. H. Dugan, Stock-raiser.

1882.

M. F. Armstrong, Mechanical Course, farmer, Prof. C. H. F. C.
Searcy Baker, " " Merchant.
J. M. Burford, " " Druggist, Physician.
F. R. Von Biberstein " "
J. R. Cravens, " " Civil Engineer.
C. S. Graves, " " Civil Engineer.
S. A. Hare, Mechanical Course, Lawyer.
R. S. Linscomb. " " Teacher.

David Rice, Mechanical Course, Lumber Manufacturer.
Robert Sawyer, " " Lumber Dealer.
Aaron Talbot, " " Farmer.
D. H. Watson, " " Horticulturist.

1883.

J. C. Caldwell, Mechanical Course, Civil Engineer
J. F. Edwards, " " " "
Osborne Kennedy, " " Teacher.
H. J. Miller, " " Merchant.
W. E. MOSELY, " "
A. T. Patrick, " "
W. L. Tuller, " " Contractor.
J. M. Wesson, " " Lawyer.

1884.

After this time the names are arranged in the order of general merit, the three most distinguished students being indicated by asterisks.

1. *G. W. Roach, Mechanical Course, Teacher.
2. *W. Wipprecht, Agricult'l " Assist. Prof. A. & M. C.
3. *J. L. Gray, Mechanical " Engineer,
4. T. B. McQueen, " " Merchant.
5. N. A. Dawson, " "
6. F.C.Von Rosenberg, " "
7. B. C. Mackensen, " " Architect.
8. A. L. Sherley, Agricultural " Railroad Agt., farmer
9. R. E. Pennington, " " Lawyer.
10. G. Gieseke, Mechanical " Agent Woolen Mills.
11. R. B. Green " " Merchant.
12. W. B. Philpott, " " Assist.Prof.A.&M. C.
13. B. E. Knolle, " " Physician.
14. V. Andrews, " " Teacher.

1885.

W. Wipprecht, B. S. A., Ass't Prof. A. & M. C.

1. *J. N. Davis, Mechanical Course, Teacher.
2. *F. L. Pfeuffer, " " Merchant.
3. *W. Whitaker, " " Contractor.

4. T. D. Rowell, Agricultural Course, Lawyer.
5. F. Caruthers, " " Teacher.
6. F. E. Dudley, Mechanical "
7. L. Mackensen, " " Watchmaker.
8. C. H. Pescay, " " Clerk.
9. S. Hough, " "
10. E. W. Spann, " "

1886.

1. D. Adriance, Agricultural Course, Ass't. Prof. A. & M. C.
2. F. E. Giesecke, Mechanical " " " "
3. M. D. Tilson, " " Civil Engineer.
4. H. L. Wright, " " " "
5. I. A. Cottingham, " " Farmer.
6. E. H. Whitlock, " " Student.
7. J. W. Carson, Agricultural Course, Farmer.
8. C. L. Burghard, Mechanical Course, Ass't. Postmaster.
9. J. M. Carson, Agricultural " Druggist.
10. W. F. Woodward, Mechanical " Clerk.
11. C. C. McCullough, Mechanical " Student.

1887.

1. G. A. Rogers, Mechanical Course.
2. F. L. Fordtran, Agricultural Course.
3. J. H. Freeman, Mechanical Course.
4. H. J. McNair, Mechanical Course.
5. T. B. West, Mechanical Course.
6. L. E. Allen, Mechanical Course.
7. E. R. Knolle, Mechanical Course.
8. J. B. Hereford, Mechanical Course.
9. H. C. Hare, Mechanical Course.
10. E. Gruene, Mechanical Course.

APPENDIX.

This College owes its origin to

AN ACT

DONATING PUBLIC LANDS TO THE SEVERAL STATES AND TERRITORIES WHICH MAY PROVIDE COLLEGES FOR THE BENEFIT OF AGRICULTURE AND THE MECHANIC ARTS.

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 hereinafter 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 land 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 sub-division 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 said States shall be entitled shall be selected from such lands within the limit to each of the States, 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 applied to the uses and purposes prescribed in

this act, and for no other purpose whatsoever; *Provided*, that in no case shall any State to which 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 subjected to same 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 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 date of selection of said lands, previous to their sales, and all expenses incurred in the management and disbursement of the money which may be received therefrom, shall be paid by the State 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 any diminution whatever to the purposes hereinafter mentioned.

SEC. 4. *And be it further enacted*, That all moneys derived from the sale of lands aforesaid, by the states to which the lands are apportioned, and from the sale of land scrip hereinbefore provided for, shall be invested in stocks of the United States, or of the States, or some other safe stocks, yielding not less than five per centum 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 fifth of this act), and the interest of which shall be inviolably appropriated by each State which may take and claim the benefit of this act, to the endowment, support and maintenance of at least one college where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and mechanic arts, in such manner as the Legislature 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 fund invested, as provided by the foregoing section, or any portion of the interest thereon, shall by 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 increase 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 pretense whatever, to the purchase, erection, preservation or repair of any building or buildings.

Third. Any State which may take and claim the benefit of the provisions 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 purchasers 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 cost 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 the other colleges which may be endowed under the provisions of this act and also one copy to the Secretary of the Interior.

Fifth. When lands shall be selected from those which have been raised to double the minimum 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 benefit of this act.

Seventh. No State shall be entitled to the benefit 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 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 fees for locating 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 shall be disposed of, the amount received for the same, and what appropriation has been made of the proceeds.

Approved July 2, 1862.

And to the following amendment:

AN ACT TO AMEND THE FIFTH SECTION OF AN ACT ENTITLED "AN ACT DONATING PUBLIC LANDS TO THE SEVERAL STATES AND TERRITORIES WHICH MAY PROVIDE COLLEGES FOR THE BENEFIT OF AGRICULTURE AND THE MECHANIC ARTS," approved July two, eighteen hundred and sixty-two, so as to extend the time within which the provisions of said act shall be accepted and such Colleges established.

1. *Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assemled*, That the time in which the several States may comply with the provisions of the act of July two, eighteen hundred and sixty-two, entitled "An act donating public lands to the

several States and Territories which may provide colleges for the benefit of agriculture and the mechanic arts," is hereby extended so that the acceptance of the benefits of the said act may be expressed within five years from the date of filing of such acceptance with the Commissioner of the Land Office; *Provided*, that when any Territory shall become a State and be admitted into the Union, such new States shall be entitled to the benefits of said act of July two, eighteen hundred and sixty-two, by expressing acceptance therein required within three years from the date of its admission into the Union, and providing the colleges within five years after such acceptance, as prescribed in this act; *Provided, further*, that any State that has heretofore expressed its acceptance of the act herein referred to, shall have the period of five years within which to provide at least one college, as described in the fourth section of this act, after the time for providing said college according to the act of July two, eighteen hundred and sixty-two, shall have expired.

Approved July 28, 1865.

By joint resolution, approved November 1, 1866, the Legislature of Texas formally accepted the provisions of the Congressional acts, and the State received from the General Government scrip for 180,000 acres of public land, the proceeds of which constitute the present permanent endwment fund of this College, and is in Texas seven per cent. gold frontier defense bonds to the amount of $174,000.

The Legislature fulfilled its obligations by passing "An act to provide for the establishment of an Agricultural and Mechanical College of Texas," approved April 17, 1871, and by making liberal successive appropriations—aggregating $187,000—for the buildings and equipments necessary for putting the institution in operation. And the County of Brazos secured its location within its limits by donating to the State the present College farm, a tract of 2416 acres, five miles south of the town of Bryan.

Finally, the Constitution of 1876, article VII, provided: "Section 13. The Agricultural and Mechanical College of Texas, established by the act of the Legislature, passed April

17, 1871, located in the County of Brazos, is hereby made and constituted a branch of the University of Texas, for instruction in agriculture, the mechanic arts, and the natural sciences connected therewith."

The College was formally opened for the reception of students October 4, 1876.