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REPORT

OF THE

AGRICULTURAL AND MECHANICAL COLLEGE OF KENTUCKY,

MADE TO THE

GOVERNOR OF THE STATE OF KENTUCKY,

BY J. B. BOWMAN, REGENT OF KENTUCKY UNIVERSITY.

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FRANKFORT, KY.:  
PRINTED AT THE KENTUCKY YEOMAN OFFICE.  
S. I. M. MAJOR, PUBLIC PRINTER.  
1869.

*Resolved by the General Assembly of the Commonwealth of Kentucky,*  
That two thousand copies of the Report of the Regent of the Kentucky Agricultural College be printed—five hundred of which shall be delivered to the Regent for distribution, and the balance shall be sent by mail to the Senators and Representatives of the present General Assembly, postage paid.

Passed March 11th, 1869.

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# REPORT.

OF THE

## AGRICULTURAL & MECHANICAL COLLEGE OF KENTUCKY.

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KENTUCKY UNIVERSITY, REGENT'S OFFICE,  
LEXINGTON, KY., Dec. 28th, 1868. }

*To His Excellency JOHN W. STEVENSON, Governor of Kentucky:*

DEAR SIR: I have the honor to submit to you a report of the condition of the "Agricultural and Mechanical College of Kentucky," one of the educational and charitable institutions belonging to the State.

My late annual reports, as Regent of Kentucky University, embody so fully the details of its operations that I beg leave to present an abstract of the same as a part of this Report, and as containing the desired information in regard to the Institution.

The many inquiries seeking information in regard to this, the *first* Industrial College which was established under the act of Congress donating lands for their endowment, render it expedient that I should present a detailed account of its history, character, plan of organization, and operations.

### ITS HISTORY.

The Congress of the United States, by an Act, approved July 2, 1862, granted to each State, upon certain conditions, 30,000 acres of land scrip for each Senator and Representative, for the endowment of one or more Industrial Colleges therein. The State of Kentucky, by an Act of the General Assembly, passed January 27, 1863, accepted the grant, with the conditions annexed. There were but two ways in which those conditions could be met: either for the

State to expend a large amount of money in the purchase of a farm, and in the erection of all the necessary buildings, and to provide all the necessary auxiliaries in the way of Libraries, Apparatus, Museums, &c.; or, to place the endowment arising from the proceeds of the grant of lands at the disposal of other parties, who would furnish all these facilities. The costly experience of the State, in providing grounds and buildings, for its other public charities, together with the fact that she was then in the midst of a terrible war, with her great heart bleeding and divided, with an empty Treasury, and the burden of taxation bearing heavily upon the people, rendered it inexpedient to adopt the former course. The latter was the only alternative. The conditions of the grant had to be carried out within a limited time, or the lands reverted to Congress. The Legislature, accordingly, *invited* proposals to take the College and locate it, and build it up. By an act approved March 3, 1863, the Board of the State Agricultural Society was directed "to examine and report to the next General Assembly upon the advantages of various localities, and the inducements offered by each, for the location of the State Agricultural College." On the 10th day of December, 1863, the Committee appointed by the State Agricultural Board, consisting of L. J. BRADFORD, P. SWIGERT, and ZEB. WARD, presented the following report to the Legislature:

"The Board of Directors of the State Agricultural Society, appointed Commissioners by an act of the Legislature of Kentucky, approved March 2, 1863, to examine and report to the next General Assembly upon the advantages of various localities, and the inducements offered by each, for the location of the State Agricultural College, most respectfully state, that, in obedience to the requirements of said Act, they met in the city of Louisville, in May, 1863, and passed a resolution directing its Secretary to advertise in various public journals that it was prepared to receive proposals, setting forth the advantages of various localities, and inducements offered by each, for the establishment of the State Agricultural College; all proposals to be delivered to the President of the State Agricultural Society, on or before the 18th day of September, 1863.

"On the 18th day of September, 1863, a full Board of Directors met on the Southwestern Fair Grounds, near Louisville, when the President reported to the Board that he had received only one proposition, and that was from the Trustees of Transylvania University, which is situated near Lexington.

"After full consultation and deliberation, in order that every portion of the State might have full time to present its claims and advantages for the location of the Agricultural College, the Board decided to advertise again, and so authorized their Secretary, and to defer final action on the subject until their next annual meeting on the 9th day of December, 1863.

"The Board met, accordingly, on the 9th of December, when the President reported that no other proposals had been received by him than those made by the Trustees of Transylvania University, and then laid before them a communication from the Hon. M. C. Johnson, Chairman of the Trustees of the University, which gives in detail the many and great advantages which the Trustees offer to the State to enable it to carry out its purpose in the establishment of an Agricultural College. This communication is herewith filed.

"It is proper to state, that, in anticipation of the meeting referred to above, the President visited the University, and on a full examination of the buildings, grounds, and location, reported to this Board that, in his opinion, the buildings and their constructions are admirably adapted to the purposes for which a State Agricultural College is proposed to be established; and that should the grounds (which now consist of only twenty acres) be insufficient, lands adjacent can be obtained, sufficient for all practical purposes.

"The Board, therefore, have no hesitation in recommending to the General Assembly the acceptance of the proposition of the Trustees of the Transylvania University, believing that in locality and advantages none equal can be presented in any other portion of the State.

"Respectfully submitted.

L. J. BRADFORD,

"P. SWIGERT,

"ZEB WARD,

"Committee."

In accordance with this Report, during the session of the General Assembly, in 1864, the Committee of the Senate on Agriculture and Manufactures, reported a bill, accepting the proposition of Transylvania University, and it passed that body. The House of Representatives, however, listening to suggestions for delay, failed to pass the bill.

Thus another year was lost, and, in the meantime, the land scrip, with which the State was to endow and sustain the College, depreciated, so that a large sum was lost to the State. The failure of

the State to accept the proposition of Transylvania University, left the Trustees of that Institution at liberty to make other arrangements. Accordingly, in September, 1864, they renewed the proposition which they had *previously* made to the Curators of Kentucky University, and which was virtually the same as that made to the State, that they would transfer all their grounds, buildings, and funds to said University, provided its Curators would remove it to Lexington. The proposition was accepted by the Curators of this University, and at the session of 1864-65, as its representative, I appeared before the General Assembly, asking for the legislation necessary to carry out the proposed consolidation of the two Universities. At this session of the Legislature, the question of the Agricultural College again came up for disposal. The Legislature had previously disregarded the only proposition which had been made, which was the one from Transylvania University, and which we had accepted. Another year had passed away, and no other proposition came from any other quarter, and the limit of time fixed by Congress in which it was to be carried out, or prove a forfeiture, was rapidly expiring. This elephant, as every one seemed to regard it, went begging for a keeper. It was at this juncture that the proposition was made to me that we should take it, and make it one of the Colleges of the University. Believing that the aims and objects of the proposed Agricultural College were in harmony with the great ends I had long had in view in building up Kentucky University for the benefit of the masses, and especially the Industrial Classes, I agreed to accept it as one of its Colleges, and accordingly, upon a conference with the Committee of the House of Representatives on Agriculture, and the Chairman of the Board of Trustees of Transylvania University, the bill was drawn up establishing it as such; and after a full and protracted discussion of its merits and its bearings upon the educational interests of the State, and in the face of a strong, concentrated sectional and sectarian opposition, the Legislature passed the bill by a deliberate and decided vote of 64 to 18 in the House, and 20 to 10 in the Senate. Thus, the consolidation of these three important educational interests was effected, laying at once the foundation for a great University, with a basis of half a million dollars, and furnishing to the State liberal advantages in the way of popular education, without the expenditure of a dollar on her part, except a *loan* of \$20,000, to be returned from the fund, if required.



It is not my purpose, in this Report, to discuss the propriety of the action of the General Assembly in consolidating the educational interest of the State with those of Transylvania and Kentucky Universities. Suffice it to say, that the efforts of the State, hitherto, to build up *State Colleges*, had utterly failed. Therefore, her legislators, in this case, composed of many of her best men, representing all parties, political and religious, in their wisdom, and after a mature consideration of the whole question, with unusual concurrence, thought it the best thing which could be done, to establish the Agricultural College as one of the Colleges of a University already firmly established and in successful operation; placing it under the special care of one of the wealthiest and most numerous peoples in the State, and by the strictest safeguards, holding them responsible for the successful management of it for the general good of all. It is also the judgment of many of the best educators throughout the country, that such a connection of these Industrial Colleges, with literary Institutions already established, giving the benefit of reciprocal courses of study and discipline, with all the auxiliaries for education usually attached to such Institutions, is essential to their success. Hence, a number of the States have since followed the example of Kentucky in making such connections.

I presume, therefore, that any subsequent Legislature of Kentucky will be slow to violate a contract until such connection proves to be a failure, and at least until a reasonable time is given the other contracting party to make it a success. We should, however, always be ready to invite the strictest scrutiny as to any management of this important interest of the State.

It is due to say that I entered into this arrangement in behalf of Kentucky University upon my individual responsibility, and without the knowledge or action of its Curators (subject, of course, however, to their subsequent ratification), and against the almost unanimous judgment of the special friends of the Institution. Let me, and not them, therefore, be held responsible for the results of this combination. Relying, however, upon the generous co-operation of the citizens of Kentucky, many of whom had already aided me liberally in the upbuilding of Kentucky University, I felt that the conditions of the educational problem could be met, and was therefore willing to give at least an humble, gratuitous service to my native State, in carrying out her educational enterprise.

It was with this confidence, therefore, that I was willing to obligate myself, as the General Agent of Kentucky University, as was done by the conditions of the act, to raise at least \$100,000 for the Farm, Buildings, Apparatus, &c., for the use of the Agricultural College. The sequel shows that this confidence in the liberality of the people was not misplaced.

Immediately after the passage of the bill, I proceeded to the work; and though we were still in the midst of the war, and surrounded by the darkest clouds of the political and financial horizon, I succeeded in raising, in about three months, more than the \$100,000 required, and reported the conditions as complied with before the same Legislature had adjourned. It is true, that, at the time I assumed this obligation, the land scrip, which was the basis of the endowment for the Agricultural College, was worth about one dollar per acre, and I expected that the State would realize at least \$330,000 from the sale of the 330,000 acres, and that the income which would be placed at our disposal to conduct the College, would be at least \$20,000 per annum. But for reasons which we could not control (the State having the disposition of it), the scrip was held up until it had depreciated to one half, and was finally sold for \$165,000, the income upon which is less than \$10,000; yet we were obligated, still, to educate 300 students for the State, besides furnishing all the lands, buildings, apparatus, &c., for the College. Surely, the State was largely the obliged party, as matters resulted; but for one, I was determined to carry out in good faith, and to the letter, our part of the contract. Therefore, after having raised the \$100,000, in accordance with a cherished purpose, I succeeded in purchasing, as an eminently appropriate site for this and other Colleges of the University, the estate of Ashland including "Woodlands," the homestead of Henry Clay, the great Commoner and friend of the Industrial Classes, and containing 433 acres of as beautiful and productive land as can be found in America.

Upon this magnificent estate, the Agricultural College has been located. The buildings upon it have been refitted for its use, others have been erected, the College has been organized with an able Faculty, and passed through its first session with 190 students in attendance. This has all been done within a little more than two years from the passage of the act of consolidation, and within the limit of time fixed by Congress; and that, too, while the Legislatures

of some other States are yet doubting and disputing as to what they will do with their Colleges.

#### THE DESIGN OF THE COLLEGE.

Different views are held in reference to the character and design of this College. This must be ascertained from the Acts of Congress and of the General Assembly of Kentucky, which express it in very simple and concise terms. The act of Congress declares the *leading object* to be "to teach such branches of learning as are related to *Agriculture* and the *Mechanic Arts*, including *Military Tactics*, without excluding other scientific and classical studies, *in order* to promote the liberal and *practical* education of the industrial classes in the several pursuits and professions of life."

The Legislature of Kentucky, in accepting the grant prescribed and enacted, in order to effect this leading object, "that there should be established in said College, the competent number of professorships for teaching the sciences related to *Agriculture* and the *Mechanical Arts*, including *Military Tactics*; and as a part of said College, there shall be conducted an experimental or model farm, with the usual accessories thereto, and on said farm, and in the *Mechanical Arts*, there shall be provided to the students opportunity for industrial pursuits, at stated times, whereby *Agriculture* and the *Mechanical Arts* may be practically learned, and the student, if he chooses, enabled to earn his support while being educated, in whole or in part, by his labor and industry." The spirit and intent of these enactments are clearly ascertained from the context.

The industrial classes referred to here, evidently were those whose pursuits and professions of life lay in the direction of *Agriculture* and the usual *Mechanic Arts*, and who compose the largest and most important sub-strata of our social and political fabric—the *farmers* and *mechanics* of the country. If the enactments contemplated Polytechnic Colleges, in the widest sense, embracing *all arts and trades*, then the means appropriated for their endowment were altogether inadequate, and the combination of the *farm* and the *mechanical arts*, as required by the act of the Legislature, was impracticable. The character of the education to be given is equally well defined. It was to be liberal, and yet practical. The prominent aim should be to teach the sciences related to *Agriculture* and the *Mechanical Arts*, not including other scientific and classical studies, but including, of course, a thorough knowledge of our own English language and literature, and other studies

which form the basis of a *practical* business education. The course of instruction was also to be liberal, and might include a wide range of studies. But the law of Congress evidently contemplated the establishment of Colleges throughout the country different from, and in contradistinction to, the regular literary and classical Colleges in the land, the types of old Oxford and Cambridge, whose foundations were laid away back in the dark ages, and far beyond our civilization. It was designed to meet the wants of the masses who have neither the time or means to give to a thorough collegiate and classical course. It was in no antagonism to those already established, but provides for the wants of the industrial classes in the way of special courses of study. Hence, these Industrial Colleges can be, in my judgment, most successfully built up as Departments of Universities already established, thereby furnishing to students the reciprocal advantages of either special or general courses, and also avoiding the duplication of many professorships. But the framers of the law evidently did not contemplate the establishment of either Polytechnic Colleges or Universities in the common sense.

But at the time of the passage of the law the country was engaged in a war of uncertain duration. The citizen had to become also the soldier, and hence instruction in *military tactics* was required as a part of the curriculum. This requirement is a popular feature, and can be made valuable as a means of collegiate discipline, as well as of physical education.

The act of the Legislature, however, goes beyond the act of Congress, and ingrafts upon the College a benevolent feature, in making the facilities of education also the means of support to the poor young men of the country, by manual labor upon the farm, or in the workshops. Most of our American Colleges have been unavailable to this worthy class of young men, from whom come largely our most useful and honored citizens, on account of the heavy expenses attending them, and on account of their peculiar course of study, which was not adapted to their wants and circumstances. The act, therefore, provides for these wants, and secures to the poor young men of the State advantages which they have not hitherto enjoyed. But more than this, it proposes to *dignify labor* and to verify the wisdom of the inexorable law of our being, that "in the sweat of our face we shall eat bread"—a lesson which has not hitherto been well learned by a large portion of our youth, especially in the West and South, and which, under the social and political revolutions which have recently taken place, becomes the more important to learn. It is to be regretted that with a large portion of the young men who are favored with the means of education, College life has become one of

dissipation of time and money, and too often of utter prostitution of their moral, mental, and physical being. These Industrial Colleges propose, by the system of combined study and labor, to give to all young men more practical views of life and true manhood, as well as of experimental knowledge in the useful and honorable pursuits of Agriculture and the Mechanical Arts.

Such we understand to be the aims and objects of the Agricultural College.

#### THE PLAN OF ORGANIZATION.

In accordance with these views, the plan of organization embraces a combined scheme of *study, labor, and drill*, and the whole educational machinery has been arranged with reference to this; a corresponding course of study and discipline has been adopted, and the classification of all the students made in accordance therewith. The course of study embraces a wide range of instruction in the English Language and Literature, in Mathematics, History, Science, Philosophy, Civil Engineering and Mining, Commercial or Business Education, Modern Languages, and the Fine Arts. Besides, by its associated relationship with other Colleges of the University, in accordance with the requirements of the act of the Legislature, the students of this College have access, free of charge, to the courses of instruction in those Colleges.

#### CONDITIONS OF ADMISSION.

All applicants for admission to the regular collegiate course in the Agricultural College must be at least sixteen years of age, and must present satisfactory evidence of good moral character and industrious habits. They must, upon examination, show a fair acquaintance with the following subjects:

English Grammar; Geography; Outlines of History; Ray's Arithmetic, Part III.; Ray's Algebra, Part I.

#### COURSE OF INSTRUCTION.

##### I. SCHOOL OF PHILOSOPHY.\*

###### JUNIOR CLASS.

FIRST TERM.—Mental Philosophy, begun.

SECOND TERM.—Mental Philosophy, completed.

###### SENIOR CLASS.

FIRST TERM.—Moral Philosophy.

SECOND TERM.—Evidences of Christianity.

TEXT-BOOKS.—In this School instruction is given chiefly by Lectures, but the following Text-books are used; Haven's Mental Philosophy, Hamilton's Metaphysics, Wayland's Moral Science, and Milligan on Reason and Revelation.

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\*This School is, for the present, under the charge of Professors PICKETT and PATTERSON.

## II. SCHOOL OF THE ENGLISH LANGUAGE AND LITERATURE.

PROFESSOR PICKETT.

## FRESHMAN CLASS.

FIRST TERM.—Fowler's English Grammar; Klipstein's Anglo-Saxon Grammar and *Analecta Anglo-Saxonica*; Lectures on the Science of Language; Exercises in English Composition and Elocution.

SECOND TERM.—Fowler's English Grammar; Klipstein's Anglo-Saxon Grammar and *Analecta Anglo-Saxonica*; "Anglo-Saxon Version of the Holy Gospels;" Lectures on the Science of Language; Exercises in English Composition and Elocution.

## SOPHOMORE CLASS.

FIRST TERM.—Blair's Lectures on Rhetoric and Belles-Lettres; Essays, Declamations, and Debates.

SECOND TERM.—Kames' Elements of Criticism; Chambers' English Literature; Essays, Declamations, and Debates.

## JUNIOR CLASS.

FIRST TERM.—Chamber's English Literature; Whately's Logic, Essays, Declamations, and Logical Disputations.

SECOND TERM.—Chambers' English Literature; Whately's Rhetoric; Essays, Original Declamations, and Logical Disputations.

## SENIOR CLASS.

FIRST TERM.—Lectures on English Literature; Readings in English Literature, with Critiques; Theses, Original Orations, Disputations, and Exercises in Extemporaneous Speaking.

SECOND TERM.—Lectures on English Literature; Readings in English Literature, with Critiques; Samson's Elements of Art Criticism, with Lectures and Illustrations; Theses, Original Orations, Disputations, and Exercises in Extemporaneous Speaking.

## III. SCHOOL OF MATHEMATICS.

PROFESSOR WHITE.

## FRESHMAN CLASS.

FIRST TERM.—Towne's Algebra.

SECOND TERM.—Davies' Legendre's Geometry, Books I, II, III, IV, V, VI.

## SOPHOMORE CLASS.

FIRST TERM.—Davies' Legendre's Geometry, Books VII, VIII, IX; Plane Trigonometry and Mensuration.

SECOND TERM.—Loomis' Surveying and Navigation; Loomis' Analytical Geometry.

## JUNIOR CLASS.

FIRST TERM.—Loomis' Calculus.

SECOND TERM.—Snell's Olmsted's Mechanics.

## SENIOR CLASS.

FIRST TERM.—Davies' Spherical Trigonometry; Snell's Olmsted's Astronomy, begun.

SECOND TERM.—Astronomy, completed.

## IV. SCHOOL OF CHEMISTRY AND EXPERIMENTAL PHILOSOPHY.\*

PROFESSOR PETER.

## JUNIOR CLASS.

FIRST TERM.—Elementary Chemistry and Physics; instruction given by daily Lectures, fully illustrated by experiments, specimens, etc., and impressed by daily Examinations. Considerable attention paid to the applications of these branches of science.

SECOND TERM.—Lectures on Chemistry, illustrated by experiments, continued twice a week; Elementary Physics, with experiments, three times a week.

## SENIOR CLASS.

DURING THE SESSION.—Experimental and Applied Chemistry and Chemical Physics; five Lectures a week, more thorough than during the Elementary Course, and illustrated to the greatest possible extent by experiments, models, diagrams, specimens, etc. The numerous applications of the science to Agriculture, the Arts, and Manufactures are specially indicated, and the Art of Testing in general and the Detection of Poisons considered. Organic Chemistry is discussed during the latter part of the course, and such instruction given in the Chemistry of Vegetable and Animal Physiology as the allotted time allows.

*Practical Chemistry.*—Provisions will be made for instruction in Practical Chemistry, including the Chemistry of the Soil, as soon as students are sufficiently prepared.

TEXT-BOOKS.—Youman's New Class Book of Chemistry; Fowne's Chemistry for Students; Quackenbos' Natural Philosophy; Graham's Elements of Chemistry.

## V. SCHOOL OF NATURAL HISTORY.

PROFESSOR CLARKE.

## SOPHOMORE CLASS.

FIRST TERM.—Terminology and Outlines of Structural and Systematic Botany; Collection and Examination of Specimens; General Views of the Animal Kingdom; Collection and Preservation of Insects, Birds, and Mammals.

SECOND TERM.—Structural and Physiological Botany, embracing the Laws of Propagation, Hybridization, Training, Pruning, Budding, Grafting, etc.

## JUNIOR CLASS.

FIRST TERM.—Human Physiology and Comparative Anatomy and Physiology, especially of domestic animals; the making of Illustrative Preparations; Collection of Zoological Specimens.

SECOND TERM.—Exotic Botany, including the Green-house, the Grapery, and Principles of Treatment; Geology; Outlines of Mineralogy and Lithology; Sources and Materials of Mineral Wealth; Building Stones; Mineral Veins; the Location and Working of Mines and Wells for Petroleum, Salt, Artesian Waters, etc.; Collection of Specimens.

## SENIOR CLASS.

FIRST TERM.—Systematic Zoology; Collection of Specimens; Outlines of Historical and Dynamical Geology.

SECOND TERM.—Entomology; Insects injurious or beneficial to Vegetation; preparation of a Thesis.

## VI. SCHOOL OF HISTORY.

PROFESSOR PATTERSON.

## JUNIOR CLASS.

FIRST TERM.—Smith's History of Greece; Liddell's History of Rome; Lectures.

SECOND TERM.—The Student's Gibbon; Political Economy, Lectures.

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\* Professor W. G. Strange has been appointed to the Chair of Physics and Mathematics.

## SENIOR CLASS.

FIRST TERM.—Student's History of France; Student's Hume; Lectures.

SECOND TERM.—History of the United States; Constitution of the United States.

## VII. SCHOOL OF MODERN LANGUAGES.

## PROFESSOR EYRAUD.

## JUNIOR CLASS.

FIRST TERM--	{	<i>German.</i> —Ahn's New Method; Adler's Reader.
		<i>French.</i> —Fasquelle's Grammer; Télémaque.
		<i>Italian.</i> —Cuore's Grammar; Foresti's Reader.
		<i>Spanish.</i> —Schele De Vere's Grammar; Velasquez's Reader.
SECOND TERM.	{	<i>German.</i> —Ahn's Method; Adler's Reader; Schiller's Maid of Orleans.
		<i>French.</i> —Fasquelle's Grammar; Télémaque; Voltaire's Charles XII.
		<i>Italian.</i> —Cuore's Grammar; Foresti's Reader; Tasso.
		<i>Spanish.</i> —Schele De Vere's Grammar; Velasquez's Reader; Don Quijote.

## SENIOR CLASS.

FIRST TERM--	{	<i>German.</i> —Schiller's Mary Stewart and William Tell; Composition and Conversation in German.
		<i>French.</i> —Corinne; Racine; Composition and Conversation in French.
		<i>Italian.</i> —Tasso; Goldoni.
		<i>Spanish.</i> —Don Quijote.
SECOND TERM.	{	<i>German.</i> —Goethe's Iphigenia and Reineke Fuchs; Lessing's Minna Von Barnhelm.
		<i>French.</i> —Molière's Comedies; Voltaire's Tragedies.
		<i>Italian.</i> —Dante.
		<i>Spanish.</i> —Calderon.

## VIII. SCHOOL OF CIVIL ENGINEERING AND MINING.

## PROFESSOR EYRAUD.

In this School will be taught Geometrical and Topographical Drawing, Tinting, Shading, and Lettering; Descriptive Geometry; Linear Perspective; Shades and Shadows; Practical Astronomy; Road Engineering; the use of Engineering Instruments; Leveling; Architectural Drawing; Geology of Mining Districts; Metallurgy; Mining Engineering; Construction of Furnaces; Determination; Mineralogy; and History of Mining Operations.

## IX. SCHOOL OF FINE ARTS.

In this School will be taught Music, Drawing, Painting, and Landscape Gardening.

## X. SCHOOL OF MILITARY TACTICS.

## PROFESSOR CALDWELL.

The Course will comprise Practical and Theoretical Instruction in the Tactics of the different Arms, Military Discipline, including the Duties of Guards, Sentinels, etc., in accordance with the Tactics and Regulations prescribed for the United States Army.



## STATE STUDENTS.

By the provisions of the Act of the Legislature establishing the Agricultural and Mechanical College of Kentucky as one of the Colleges of the University, each Representative District in the State is entitled to send to the College three *properly prepared* students, free of charge, for *tuition*, for each member the District is entitled to send to the General Assembly. Said students also have the right to receive, free of charge for tuition, the benefit of the instruction given in any College of the University, except the Colleges of Law and Medicine. To enjoy these privileges, young men must be *selected by a majority of the Justices of the Peace in the several districts*, and be properly vouched for by their certificate.

It is most earnestly recommended to the Justices to select a Board of Teachers in each District for the examination of applicants, and to institute a system of competitive examinations, giving all, even the humblest youth, a chance for this State honor. It is expected that the State students will be selected and sent to the College with the settled purpose on their part of completing the whole Course of Studies prescribed.

It is very important that students be present at the beginning of the Session, on the second Monday in September. They may experience great difficulty in securing rooms and in arranging their Course of Study, if their attendance should be delayed for any length of time.

## MILITARY INSTRUCTION.

The Act of Congress granting the land scrip requires any Agricultural College receiving the benefit of the grant to give instruction in Military Tactics. In accordance with the provisions of this Act, regular instruction is given to the students of this College, at stated times, in the Infantry Drill, and Military Discipline and Police, in accordance with the regulations prescribed for the United States Army.

The faculty may, for sufficient reasons, exempt any student from Drill.

A uniform of cadet gray cloth, such as is usually worn at the Military Schools in the country, is required, and can be obtained by students on their arrival at the College, at a cost not exceeding that of an ordinary suit.

This Department is under the charge of Col. Jas. A. Caldwell, an accomplished West Point officer, who has been detailed to this College by the President of the United States.

## THE ESTATE.

The Estate embraces "Ashland" and "Woodlands," and contains 433 acres of land lying between two macadamized roads, converging towards Lexington, with a front of one and a half miles upon the main street leading out of the city. A considerable portion of it is within the corporate limits, and reaches within a few hundred yards of the business part of the city, making it sufficiently accessible for all desirable purposes. About one third of the Estate is a beautiful blue grass woodland, with a heavy growth of trees upon it, of every variety indigenous to Central Kentucky. The remaining portion is divided into fields, gardens, orchards, nurseries, and ornamental grounds, handsomely laid out, the work of more than fifty years' labor and expense.

It is located in the lower silurian formation of Kentucky, resting upon a blue limestone foundation, with a deep subsoil of red clay, and a rich loam upon it. The Estate is one of the most beautiful and fertile in America, every acre of it susceptible of the highest culture, and adapted to the growth of almost any crop of farm, or garden produce. It is supplied with wells, cisterns, and springs; but the landscape is deficient in water-views, which, however, can be remedied to some extent by artificial means. In raising the money, and purchasing this Estate, and turning it over to the Board, I had several leading objects in view, harmonizing with my long-cherished plans for the upbuilding of a free University for the people.

First. I desire to see it, eventually, the permanent site of the University, with all its Colleges and Schools located upon it, with proper distances and relationships to one another—a University village, indeed, in the suburbs of what will be, some day, a large city, and connected with it by a street railroad; with its main buildings for public occasions, for museums, libraries, laboratories, society halls, residences for Professors, with lecture-rooms attached thereto; with boarding-houses and farm buildings, workshops, &c.; indeed, with all the conveniences necessary for the accommodation and instruction of at least one thousand young men.

I would lay out, as the base line of these improvements, a broad central avenue, winding through the entire Estate, for a distance of nearly two miles, bringing into view, with proper landscaping, all the improvements upon it; making it a public drive, and the grounds, not only the site of the University, but a public park, open and inviting to our citizens, and to the thousands of strangers who will annually visit it, feeling that they have a common interest in the sacred memories which cluster around Ashland.

Secondly. I would make the Estate, under the regime of the Agricultural and Mechanical College, a grand piece of *Educational Apparatus* for the practical illustration of Agricultural and Horticultural science and Mechanical skill; and, above all, for the purpose of dignifying *labor*, and giving to the rising generation sound minds and sound bodies, industrious habits, and true and practical views of life.

Thirdly. I would make it at the same time a source of income to the Institution. Surely so large an Estate, costing the Board nothing, free from taxation, so productive and so convenient to the markets, both at home and abroad, ought to yield a large revenue under proper management. I would, therefore, divide it into two departments, the one educational and experimental, the other practical and productive. The first should include the ornamental grounds, experimental plats, orchards, nurseries, vineries, propagating-houses, green-houses, arboreta, botanical gardens, &c. With this department might be connected the nursery and seed business, which could be made productive as well as educational. The second department, which would be the *farm* proper, should be divided into pasture lands, tillable lands, cattle lots and folds, and vegetable and fruit gardens. In connection with this, might be established the dairy business, which would consume profitably the grass and grain. Upon the farm should be the best breeds of stock, representing the best flocks and herds of the country.

These two divisions of the Estate should be under the superintendence of two men—the one a scientific Horticulturist and Landscape Gardener, the other a practical Farmer.

Under this division of the Estate, students will be enabled, by the guidance of the Superintendents and Professors, to combine theoretical and practical knowledge, and thereby to remove many erroneous ideas prevalent in reference to what is called *book* farming and agricultural education.

But there should be, also, the various mechanical shops, located conveniently upon the Estate, and under the superintendence of skillful artisans, who could give practical instruction to such as desire it, in the various mechanical arts, illustrating, thereby, the principles of Natural Philosophy, as well as teaching the use of tools, and the construction of all implements, machinery, &c., used upon the Estate.

With this view of the Estate, and its adaptation to the wants of the University in the future, I had an accurate survey made of it, which was furnished to the Superintendent, together with a general outline of our prospective plans and purposes, as foreshadowed above; and with these before him, he has made a topographical map of the same, and has proceeded to lay it off in divisions corresponding therewith.

It will, of course, take much time and money to accomplish all these plans, reaching far into the future for their full development; but I have a confidence, that, as they are gradually unfolded to the public, a spirit of benevolence, responsive to the demands of the case, will be awakened, and that, by the blessing of God, we will be enabled to realize hopes and expectations cherished through long years of anxious care and labor.

In accordance with these views the Estate has been divided into two Departments, to correspond with the two divisions under the Labor System—the Farm, including Ashland and a portion of Woodlands, and the Ornamental and Experimental Grounds and Gardens. In accordance with the ultimate plans of locating the entire University upon the Estate, considerable advance has been made in laying it out upon the plan of the survey which I had made in 1866. Much of the old fencing has been removed, and a large amount of new fencing has been built. About seventy-five acres of the Estate have been put in clover, about eighteen acres of woodland cleared out, yielding some two hundred and fifty cords of fine wood, now ready for market. The general appearance and condition of the Farm have been greatly improved.

The growing crop consists of ninety acres of wheat, about fifty acres of oats, fifty acres of corn, fifteen acres of hemp, four acres of sorghum, and about fifteen acres in a vegetable garden, which is supplying the Boarding-houses upon the Estate, besides furnishing a considerable amount of produce to the markets of the city. There are seventy-five head of fine Durham cattle on the farm, which are designed for the Fall market. They were purchased on the 1st of January last, and promise a remunerative profit. The work stock, hogs, sheep, and milch-cows are not sufficient for the purposes of the Estate, or for the illustration of the best breeds. It is earnestly hoped that every friend of the Institution will interest himself in securing donations of stock, farming implements, etc., for the Institution. Much can be done by a small effort on the part of all. It is es-

pecially desirable that the stock of milch-cows be increased for dairy purposes, which would prove very remunerative.

I cannot omit to express my high appreciation of the faithfulness, energy, and practical knowledge of the Superintendent of the Farm, as displayed in the management of his Department. He has, also, given his hearty co-operation in carrying out the general plans of the Estate.

The Horticultural Department is limited, for the present, to the Gardens, Green-houses, and Ornamental Grounds at Woodlands, containing about thirty acres, the labor on which has been performed by the two-hour students, embracing about three fourths of the number in attendance at any one time.

The Ornamental Grounds have been much improved in appearance; an excellent vegetable garden of twenty acres is in cultivation, and a large number of plants have been propagated in the Green-house. But little has been done, as yet, in the Nursery. I have placed at the disposal of the Superintendent every facility which the means of the Institution would justify, in order to lay the foundation for success in it. Already some income has accrued from this Department; and in the course of time, by proper management, it can be made profitable to the Institution and highly educational to the students.

The *Mechanical Department* has been partially organized during the present year. Temporary shops for Carpenters, Wagon-makers, and Blacksmiths have been fitted up, and a corps of excellent young men, some of whom have had experience as Mechanics, has been assigned to the Director. They work in two sections of four hours each, and thus a continuous day's work is kept up. Their labor, so far, has been confined to the making and repairing of farming implements, and to general improvements upon the Estate, and has already saved to the Institution more than the salary of the Director. A demand for outside work has already been made by the neighboring farmers, and would be readily and cheerfully met if we had all the facilities necessary. Indeed, this Department could be made a success at once, if we had the necessary Work-shops,\* Machine-shops, Tools, etc., and it would become very popular with the students. I take this occasion to report, that a beautiful, costly steam-engine has been

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\* Since presenting this Report, arrangements have been made for the erection of a large Machine-shop, and for the erection of several additional club-houses, sufficient for the accommodation of fifty additional students, who will thus enjoy largely-increased facilities in the Mechanical Arts.

donated to me for the use and benefit of the University by Col. Wm. H. GRAINGER, an intelligent and generous citizen of Louisville, Ky. He was a zealous and influential friend of the Institution while a member of the State Senate, and of the Board of Visitors of this College. I purchased a suitable boiler for the engine; and if we had the proper Buildings, we could at once inaugurate this Department upon a successful basis by meeting many of our wants by the application of machinery.

#### THE LABOR SYSTEM.

This has been one of the most interesting, if not one of the most difficult, questions connected with the success of Industrial Colleges. Having informed myself by personal inspection, and by correspondence, of the practical workings of the System in other Industrial Colleges of the United States, and having observed the results of our own experiment for the first year, and arriving at certain conclusions as to their defects, as a practical man, and as a farmer of some experience and in full sympathy with the question of labor, I ventured to recommend, in my last Annual Report, its reorganization upon a basis entirely different from that of any Institution known to me. The subject was referred by the Board to the Executive Committee, and after due consideration, the scheme was adopted. The details of it are as follows:

*All* students are *required* to work, unless in consequence of actual physical disability, of which there were only two cases during the past session. An Industrial College without work is anomalous and impracticable; and to require some to work and not others, would create discontent and display partiality. They are arranged into two divisions, one compensated and the other uncompensated. The compensated division is required to work four hours per day on the Farm or in the Work-shops, for which each member receives ten cents per hour. The other division is required to work two hours per day in the Ornamental Grounds and Gardens, without compensation, except in the way of physical exercise and practical instruction. Every student applying for admission is left free to select whichever division he prefers. In this respect the system is entirely voluntary, and precludes all castes or distinctions. If a young man wishes to defray, in part or in whole, the expenses of his education, he cannot do it without performing at least four hours' work per day, nor would his labor be at all profitable to the Institution if he work less. If, then,

he is dependent on his labor for a support, he must necessarily take a longer time to complete his education than those who have the means to support themselves without necessarily resorting to labor. He must, then, work more and study less, and a year or two longer spent in securing an education by his own efforts will never be regretted. But, on the other hand, if a student have the means to defray his expenses, he should be required, though a son of Cræsus, to work a portion of his time, in order that he may learn to respect and honor the divine law of Labor, as announced to our first parents, and that he may receive the necessary physical exercise, and the proper instruction in Agricultural and Horticultural Science. Any young man who can not, or will not, perform at least two hours of moderate work in the course of twenty-four hours, ought not, in my judgment, to apply for admission into an Industrial College, I care not what may be his circumstances, his prospects, or his intended profession. Two hours' active exercise per day in the Gardens, Green-houses, Nurseries, or Ornamental Grounds of the College will be profitable to him by giving him practical views of life and true manhood. But, says some farmer, who has no ambition to see his own noble profession exalted to its proper dignity and placed upon a scientific and rational basis, *I can teach my son to work at home; I do not wish him to work at College.* Of such I would simply and civilly ask, Why, then, do you wish to send him to an *Agricultural* College? Why do you wish us to demoralize the whole Institution by asking us to compromise this cardinal, fundamental feature in all Industrial Colleges? In fact, I know none, either in this country or in Europe, where labor, *manual labor*, is not required in some form. We advise all objectors on this ground to seek some other College for their sons.

But the main question arises, "What has been the practical workings of this system during the past year?" I am glad to report that, notwithstanding many disadvantageous circumstances, the system has worked well. Indeed, far better than I could have hoped, in so short a time. The practicability of it has been clearly demonstrated, and I am confident that with the proper facilities, and with the proper support from all the Officers of the College, it can be made a complete success. I am aware that, in the "two-hour division," there has been dissatisfaction among some of the students. This arose from the demoralization of last year, and from the fact that the labor was, in effect, *optional* the first part of this Session. There will

always be some young men who do not *love work*, however light or pleasant you may make it. But under a firm, kind, uniform enforcement of the law, these will gradually slough off, and leave perhaps a smaller but a far better class of students. It has been gratifying to observe that, generally, the best young men and best students have been the most cheerful workers. It is true, also, that, as yet, the most of the students have not been sufficiently advanced in study to make this class of labor *Experimental* and *Educational*, and hence not so attractive. But in due season it will be fully done.

The labor of the "four-hour division" has been every thing that we could reasonably ask or expect under the circumstances. Under the direction of the efficient Superintendent of the Farm, the system has been managed economically and successfully. It has been profitable both to the Students and the College. The young men in this Department are sub-divided into two sections, one laboring four hours in the forenoon, and the other four hours in the afternoon. Thus giving, without interruption, a regular, continuous day's work. These sections alternate their labor and study; the one working while the other is in the class-room. The signal from a large bell, which is heard over the whole estate, sounds every hour from 5 o'clock, A. M., until 9 o'clock, P. M., and regulates the movements of all divisions, sections, and classes, whether on the Farm, in the Gardens, or in the School-room.

The young men in this division receive generally ten cents per hour for their labor, although the law specifies from five to ten cents per hour. At the maximum rate they can make ten dollars per month, which is paid them promptly at the end of the month. Some perform extra work by the job, such as cutting cord-wood, feeding stock, etc., by which they have made from fifteen to seventeen dollars per month, and at the same time carried on their studies successfully. Many of these young men are among the best students in the whole University. But the chief excellence of the system is, that many are enabled by their economy and industry to defray the greater part of their expenses while obtaining their education. We have several who came from other States, even walking hundreds of miles, reaching the Institution with less than five dollars in the world, and yet have supported themselves entirely by their labor during the Session. I must mention the case of one young man who walked hither from Southwestern Virginia. He has averaged fifteen dollars per month during the Session, performing faithful labor every day, and has



carried on four daily studies, walking from Ashland to Morrison College, a distance of one and a half miles, to recite two of them. He has not been sick a day, and has missed but one recitation during the collegiate year. His Professors speak in high terms of his scholarship and deportment. This is, of course, extraordinary, but shows the practicability of the case. Another young man, raised in affluence, has attended faithfully and successfully to the Poultry and Dairy during the Session, supplying from five or six cows the Boarding-houses with milk most of the time, making his ten dollars per month regularly, besides carrying on his four daily studies and discharging satisfactorily his duties as a student and cadet. A large number of these young men are distributed over the Estate in the plain cheap cottages which I had built, and are organized into clubs, boarding themselves comfortably at about one dollar and a half per week. I have been watching, as a matter of interest both to the Student and College, the working of the club system of boarding, and have done what I could to assist in organizing it upon a proper basis. I will give you, as the result of the experiment, an illustration of its practical workings. We have in the yard at Ashland a cottage with a dining-room and kitchen attached. The building is occupied by sixteen students, who are organized under the name of the "Ashland Batching Club," with a written constitution, recognizing a President, Secretary, Treasurer, and Commissary. They hold their regular meeting every Friday night for the transaction of business, and for literary exercises. It is the duty of the President to exercise a general supervision of domestic affairs, preside at the table, as well as at all meetings. The Treasurer regularly presents a report of the joint fund and makes the assessments; the Commissary reports the state of the larder, lays in the supplies, and prepares the bill of fare. Social and domestic duties are discussed and arranged, and the Secretary keeps a record of the proceedings. A good cook is hired at eight to ten dollars per month. All substantial supplies are drawn from the Farm, for which they are duly credited by their labor. By this system they live comfortably and substantially upon one dollar and a half per week. The military *regime* is extended over the club-houses, and a regular system of inspection and police is maintained by an orderly in each building.

#### THE SECOND SESSION.

Under the general plan of organization herein set forth, the College has passed through its second session with most flattering re-

sults. During this session 220 students were matriculated, which is a considerable increase upon last year, and is, by far, the largest number which has ever attended any Agricultural College in the United States in a single session. About 70 Legislative Districts have been represented by State students; in addition to which we have had representatives from Georgia, New York, Illinois, Tennessee, Virginia, Arkansas, Missouri, North Carolina, Mississippi, Louisiana, and Texas.

The Reports of the Presiding Officer and the various Professors present very satisfactory statements of the operations of their respective Departments during the year. The necessary limit of this Report will not permit me to give a minute abstract of the various Schools, including the organization and instruction of the various classes. Suffice it to say, that the conduct and scholarship of the Students are highly commended. There has been, in both respects, a decided improvement upon the first Session. The health of the Students is reported to have been remarkable, which is attributable to the healthiness of the location, to the sanitary regulations, and to the physical exercise consequent upon the labor system. The *discipline* of the Institution has been admirably maintained under all the inconveniences of inadequate buildings for boarding and instruction. This may be attributed in a great degree to the influence of the Military *regime* which is intimately interwoven with the Domestic, Academic, and Industrial Departments.

The two years of its past existence have been years of severe trial, and in many details largely experimental. The results of these experiments have been profitable and instructive, and the success of the Institution, with all its novel and complicated features, has been, under all the circumstances, remarkable. The association of the National Industrial Schools with Institutions already established was regarded by many leading Educators throughout the country as of doubtful policy. The Kentucky College, being the first which was established upon that basis, was looked upon with especial interest. The results so far show that the arrangement was wise and economical, and truly advantageous to all parties. The State of Kentucky receives the use and benefit of the Endowments, Real Estate, Libraries, Apparatus, Museums, etc., of the University, worth in the aggregate a half million dollars, and the free instruction of three

hundred young men, for the small sum of \$10,000, paid annually to the University; while the latter receives some prestige and influence and saves the duplication of four or five Professorships. The Agricultural and Mechanical College, by its peculiar organization, is really what it should be—the *Scientific* Department of the University. In its associated relationships with the other Colleges, the benefits are mutual and manifold, and, though situated at present at inconvenient distances from each other, many have enjoyed these advantages. Students of the Agricultural and Mechanical College desiring to pursue the Classical Course pass without much difficulty over to the College of Arts, while those of the latter who do not wish to pursue the Classical Course can receive in the former a more extended Course in the Sciences, the Higher Mathematics, Modern Languages, etc. When these several Colleges become permanently located on the one Estate, these advantages will become more apparent. I am happy to state that the intercommunication of the Professors and Students of these respective Colleges has been uniformly pleasant and harmonious.

#### THE THIRD SESSION.

I beg leave to add that the third Session has also opened under the most encouraging prospects. Already 225 Students have been enrolled, representing a large majority of the Legislative Districts of the State. The facilities for the accommodation of Students, and for their instruction in Scientific and Literary pursuits, have been considerably increased. I desire especially to state, that, through the disinterested benevolence of a noble-hearted citizen of another State, G. W. N. Yost, Esq., a large fine building has been erected recently at Ashland, and fitted up with Machinery, at a cost of \$25,000, for the inauguration of the Mechanical Department of the College; and for the manufacture especially of all kinds of Agricultural Implements.

This Department will go into operation in January under the Superintendence of skillful Mechanics, and will furnish employment to a large number of young men, who will have an opportunity of learning the Mechanic Arts, while, at the same time, defraying a large portion of the expenses of their education by their industry.

It will inaugurate also a new feature in the industrial enterprise of the State, by enabling the farmers of Kentucky to secure at home,

upon cheaper terms, and with a surer guaranty of reliability, a large amount of Agricultural Machinery, for which, hitherto, they have been dependent on other States.

I take great pleasure in stating, that the Agricultural and Mechanical College, though in its infancy, and with limited accommodations, while furnishing free tuition and cheap board to the State Students, has, at the same time, thrown its doors wide open to many poor young men of the West, and especially of the impoverished South, and is extending the blessings of Education to them at a mere nominal cost; and we fondly hope that, at no distant day, through the continued liberality of private donors, and by a wise, liberal policy on the part of the authorities of the State, its blessings will continue to flow freely to thousands of worthy young men of all creeds and latitudes.

In conclusion, I beg leave to state that *Kentucky University*, of which the Agricultural and Mechanical College is a Department, is rapidly growing and expanding into the well-defined proportions of a *University* in the full and true sense of the term. Founded upon broad, liberal principles, with a comprehensive curriculum, adapted to the demands of our growing country and advancing civilization, it is emphatically, as it was designed to be, an Institution for the masses, and especially for the poor young men of the country. To-day it is giving free education in its various Departments to about three hundred such, and turns off none who apply.

Its liberal provisions in the way of general and professional education, its full and efficient corps of instructors, its cheap board and tuition, its industrial and economic advantages, its beautiful estates of Ashland and Transylvania, with all their hallowed associations, its liberal endowment, its central, healthy location, in the midst of a people so generous, so hospitable, so cultivated, all these have attracted over seven hundred students to its halls from all parts of the continent, until it is now the fourth Institution in the United States, and the first in all the South and West in patronage. All the blessings and privileges of this Institution flow freely and gratuitously to the students of the Agricultural and Mechanical College.

For myself I desire to say, in conclusion, that, having accepted this College at the hands of the State as a Department of an Institution to the upbuilding of which I have dedicated, gratuitously, the best years of my life, I stand pledged by every tie which binds me to it, and to all the interests of my native State, to make it a success.

With your liberal and enlightened co-operation, and with the generous support of the Legislative authorities of the State, but, above all, with the continued blessings of that Providence which has so peculiarly followed it, I doubt not we will be able to make its success complete.

I have the honor to be, very respectfully,

Your obedient servant,

J. B. BOWMAN,

*Regent Kentucky University.*





