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[FROM THE REPORT OF THE SECRETARY OF STATE.]

OHIO AGRICULTURAL AND MECHANICAL COLLEGE.

BY PRESIDENT EDWARD ORTON.

HON. A. T. WIKOFF, *Secretary of State* :

DEAR SIR:—I am glad to avail myself of the opportunity which you offer of furnishing for publication in your forthcoming annual report a short sketch of one of the last established and least known of the public institutions of the State, namely, the Ohio Agricultural and Mechanical College. I will speak briefly of its origin and endowment, of its plan and scope, and of its equipment and present condition.

1. The Ohio Agricultural and Mechanical College is founded on the Congressional land grant of July, 1862. By that act a large amount of the public land was turned over to the several States, the proceeds of the sales to be devoted to the better education of the industrial classes. The share of each State was proportioned to its representation in the National Legislature, and thus six hundred and thirty thousand acres came into the possession of Ohio. This munificent gift was unfortunately pressed for sale upon a temporarily overstocked market, and the State realized only fifty-four cents to the acre. The total amount of the sales (\$342,450) was, however, put at interest, and when the College was opened in September, 1873, the principal and interest together constituted a productive fund of something over \$500,000, the annual income from which slightly exceeds \$30,000.

The Legislature having passed an act to authorize the several counties of the State to raise money to secure the location of the College, an offer of \$300,000 from Franklin county was accepted by the Board of Trustees, and the College was permanently located at Columbus. The money furnished by Franklin county has been mainly expended in the three following items: 1. The purchase of a valuable farm of 320 acres within the corporate limits of the city of Columbus. 2. The erection of a spacious and elegant college building and two boarding-houses and dormitories for students. 3. The equipment of the various departments of instruction in the college.

The value of the College farm has been greatly enhanced since its purchase by the rapid growth of the city in its direction. As land is rated and sold on all sides of it, it is now worth at the lowest calculation double the amount paid for it (\$117,508).

The Legislature has also turned over to the college the proceeds arising from the sale of various tracts of unsurveyed lands within the Virginia Military District, and it is hoped that a considerable amount will ultimately be realized from this source.

2. Upon leaving the region of accomplished facts and exact figures and taking up the second topic proposed, namely, the true plan and scope of this institution, we enter upon debated ground, and find every where decided and discordant views as to what it should be and do. Unfortunately, the organic law is not free from ambiguity ; at least, diverse constructions have been put upon its language by equally sincere and zealous friends of industrial education. "The leading object" of the institutions to be supported by the endowments arising from the land grant "shall be," in the words of the organic act, "to teach such branches of learning as are related to agriculture and the mechanic arts," "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."

It is obvious that a wide and generous scheme of education can find place under such a charter, and it is hard to see how any narrow or exclusive plan can be reconciled with it. Both sorts of schemes, nevertheless, have been and are advocated as legitimately derived from its terms.

Perhaps it will help us in gaining an idea of the kind of institutions that fall within the scope of the law to notice one or two kinds that seem to be excluded.

It seems safe to say that it would be a perversion of the fund to establish upon it an institution similar in kind to the literary colleges that already abound in Ohio. These institutions may turn out an occasional farmer or mechanic, but nobody will claim for them that it is their "leading object" to teach such branches as are related to agriculture and the mechanic arts.

On the other hand, it would seem to be a real though less gross violation of the letter and spirit of the law to devote these foundations to schools narrowly agricultural in their scope—in other words, to institutions that should make it their chief concern to give training in the *art* of practical agriculture ; for, aside from the clause that forbids the exclusion of "other scientific and classical studies," the mechanic arts are jointly named with agriculture in the national grant, and are entitled to an equal share with it to all educational advantages furnished by the grant.

The Trustees of the Ohio Agricultural and Mechanical College have sought to avoid these and other forbidden paths, and, after mature deliberation and prolonged discussion, have established an institution and

opened courses of study that seem to them to meet the terms of the law in letter and in spirit. The institution which they have organized may be called a scientific school, liberal in its character and practical in its aim. The central departments in it are those of Physics, Mechanics, Engineering, Chemistry, Zoology, Botany, Geology, and Practical Agriculture, while the common ground of all educational processes, namely, linguistic and mathematical training, is sufficiently provided for. They are encouraged to believe that they have made no mistake by the emphatic indorsement that the United States Commissioner of Education, who may in some sense be regarded as an official expounder of the meaning and intent of the legislation referred to, gives to their view in his recently published report. "There seems," he remarks, "to be in the popular mind a misapprehension of the scope of the law of 1862, providing for the establishment of these institutions. At the time of the passage of the act there were in America very few instrumentalities for adequate instruction in either theoretical or applied science; while in Europe the schools of science had already reached a high degree of development, and were exercising a far-reaching influence, not only on all the professions outside of the theological and legal, and in all departments of arts and manufactures, but also greatly modifying theories and methods of education in nearly all its phases. The international expositions had opened the eyes of our educators and scientists to the inferiority of our country in almost all departments of applied science. Our students were resorting to the European schools for scientific training. Few original scientific works of authority were produced, or could be produced, here from the lack of the requisite opportunities for scientific culture. The country abounded in material wealth; it was poor and provincial in the sciences and arts. *What was demanded for our country was, therefore, a class of schools combining in their curriculum means for thorough education in the sciences, both theoretical and applied, and in all the elements of true modern culture. Such appears to have been the intention of the act of 1862.* Its spirit was broad and liberal, excluding nothing which experience had shown to be valuable in modern education, while expressly providing for means of scientific instruction in agriculture and the mechanic arts."

The Commissioner further says: "The colleges which have organized their curriculum claim to have provided for special instruction of students in agriculture and in the mechanic arts. What would constitute a liberal and practical education in agriculture and the mechanic arts? It would probably be admitted to comprise, besides a respectable knowledge of the vernacular and its literature, a knowledge of the laws of mechanics and physics; a knowledge of natural history and of geology and botany; of experimental

chemistry, both organic and inorganic; of engineering and surveying, as related to irrigation and the reclaiming of waste lands; of political, rural and domestic economy. Every one of these branches of knowledge is intimately related to scientific agriculture and the mechanic arts. Certainly the demands of modern science in either or both of these fields far outrun the usual popular and superficial estimate of them. But while science was appointed to be the leading aim of the schools, there was to be no exclusion of other studies which are suited 'to bring the light of general culture to illuminate the technicalities of special pursuits.' The interest of the country and its honor alike require that the colleges should be thorough-going and maintain courses of instruction in all departments of science. Thus only can they meet the exigencies of the times and place our country on a par with European nations."

The Ohio Agricultural and Mechanical College has done for the great interests whose name it bears what has been sketched, and more. Besides furnishing ample instruction in the sciences relating to agriculture and the mechanic arts, it has already established a chair of practical agriculture, and hopes soon to add a department of practical mechanics. It is now prepared to render most useful service to the great departments of industrial life. Its doors are open to all comers, and its instruction is furnished without charge. The only restriction is, that candidates for entrance shall be qualified to take up with profit the subjects here taught. If it be asked what qualifications are requisite for entrance, the answer is, *a good common school education*. Any one who knows well the elements of English grammar, geography, and arithmetic, with the single addition of elementary algebra, can find place in the lower classes formed here. The present requirements for admission are, however, criticised from two opposite sides—on the one hand as being too high, and on the other as being too low. The first named complaint comes in the interest of young men who seek to enter a college, while, by the grade of their attainments, they really belong in a common school. They have never mastered the common school branches, and are unprepared to take up, with advantage, advanced studies. The College does not propose to duplicate the work of the common schools, even though the work of the common schools is sometimes inadequately done. To the teaching of these branches Ohio now devotes more than seven millions of dollars annually. It would be a gross perversion of the national bequest to spend one dollar of the thirty thousand which it annually produces, in teaching these elementary studies, already so amply provided for by the State.

The second criticism is suggested in the interest of the graded schools of the State. It is claimed that students will be tempted to leave the

systematic and extended courses of our high schools, if the requirements for admission to the College allow them to enter here before completing the high school courses. To this charge it is to be answered, in the first place, that the state of things complained of *cannot be helped*. Good faith forbids that such conditions of entrance shall be imposed as would exclude from the College that large part of our population that gets its training in our common country schools. Through the same door that such students enter, pupils can also enter from the lower years of a high school course. In the second place, it is believed that the evil will not prove a serious one. The College unhesitatingly recommends that all students who can shall complete a high school course. They will find much in it that the College does not furnish, and which will give them a decided advantage in all subsequent work. They gain also advanced standing in the College by completing their high school work; but inasmuch as the two courses are necessarily dissimilar, their gain in this respect is not a proper measure of the real service that a more extended course of study has given them.

3. In the third place and finally, a few words must be said in regard to the equipment and present condition of the College.

Twenty-five thousand dollars (\$25,000) have been expended in the outfit of the College thus far. The department of Physics and Mechanics is well equipped. It is safe to say that the opportunities for studying these great and fundamental branches here are decidedly superior to those elsewhere offered in the State. The laboratory method of study has been adopted, the student being obliged to make the experiments and repeat the demonstrations upon which these branches are founded.

Ample provision has been begun for the thorough and comprehensive study of theoretical and practical chemistry in its main sub-divisions. The laboratory is already well furnished for ordinary work, and will be made to keep pace with the growing necessities of the College by all additions and enlargements required.

In the department of Surveying and Engineering a full set of the best instruments in the market is provided.

Much useful material in the department of Practical Agriculture and Botany has already been accumulated, in the way of specimens, charts and models. A portion of the College farm is to be set aside as an experimental station, and this will furnish invaluable assistance in these departments.

A zoological laboratory and museum has been begun, and is already in a condition to render very important service to the agricultural and general student.

The cabinets in Geology and Mineralogy contain a considerable amount of excellent material—the geology of Ohio in both its systematic and economical aspects being especially well represented.

A skillful instructor has been provided in free-hand and mechanical drawing, and all students can receive thorough training in these important and practical subjects.

There are now in attendance at the College sixty-five students, distributed through its different departments of instruction. Of those that have come from the farm, a large proportion design to return to the farm; others are fitting themselves to be engineers, mechanics, or practical chemists, and others, still, are seeking a general scientific education that can be turned to account in any department of life. It is for industrial life rather than for the learned professions that students trained here are, for the most part, preparing themselves.

The courses of instruction adopted are believed to combine in a happy and, to some extent, original way the systems of required and elective studies, providing for the special tastes and necessities of the student, and still securing to him something of symmetry and balance in his education.

To those who have but little time to spend—one year, or two, or three—the range of studies in the College is freely offered, ability to do the work being the only condition imposed.

A three years' agricultural course has been shaped, which, it is believed, contains as much that the farmers of the State ought to know as can well be comprised within these limits of time.

The friends of the College sometimes betray disappointment over its humble beginning and impatience with its slow growth, but all such may find comfort in remembering that, if humble, its beginning at least is honest and unpretending, and that its growth, though slow, seems safe and sure. It keeps what it gets. Every term adds to its efficiency and compactness. Its courses of study are taking definite shape, and its tone and spirit are becoming established. No reaction is in store for it from the giving way of "unfounded claims and excessive pretensions," but its steady and natural growth seem certain to be continued until it attains proportions which shall compel general recognition. When public attention is directed to it, these anomalous facts will come to light, viz., that a State institution has been growing to a vigorous and efficient life without receiving one dollar from the treasury of the State, and almost without the knowledge of the people of the State. The people will certainly recognize the great services which this institution is able and willing to render to their industrial and educational interests, and when they see this it



