The Relation of Education to Agriculture.

This subject embraces two word that include more in extention and intention than any other two in our language and they are subject to more degrees of proficiency. The one, education, may be subdivided in several ways, but the classification I wish to use is into a general and special. Also, I desire to use the same division with agriculture. But, before so subdividing, I would like to very briefly notice the history of each.

The beginning of any science or art is generally vague and indeffinite. Nearly all of the early history of agriculture is unknown. It is thought that it was first practiced in a very crude form in Egypt. Later the Greeks and Romans practiced it long enough to have a few maxims relating to it. Through the "Dark Ages," so called, agriculture scarcely survived except in Monastaries controlled by the Monks. When this time was passed, agriculture progressed slowly and but little until some years after the fall of Constantinople in 1453.

The history of education is simular to that of agriculture. Its beginning and progress for centuries is little know. For a long time Constan-

tinople was the center of learning of the world. And when it fell, the knowledge was scattered to the westward. The first great coming together of education and agriculture, and recognized as such was in 1851 at the London exhibition where articles showing industrial skill, from all countries, were exhibited. At this exhibition, it was found that England gained the palm of excellence in a great majority of the industrial departments. The other countries saw that their defeat lay in the fact that they had inferior industrial schools. They took steps immediately to remedy this. And their success was shown, when England carried off only one-tenth (1/10) of the industrial prizes at the Paris exhibition sixteen years later. The effect of this was the passing of the great Educational Bill of England.

Thus at this time, it was recognized and demonstrated that education was essential to any industrial success. In tracing the history of these two (agriculture and education) down through the past, even to the present, we find that where education is progressing rapidly, agriculture begins to "fall in" and progress likewise. Also that education is one of the

prime factors in the promotion of agriculture. And that education cannot exist without agriculture, nor agriculture progress without education.

Now, let us notice the condition of these to-day after forty years of unparalleled progress in both. The special agricultural education is somewhat neglected in the United States. There are but few schools of this kind. There is a good reason for this and it is that in this country, the climate and other influences, do not permit a general special classification of the different lines of agricultural pursuits. In other countries, there are special lines pursued. Such as in Scotland, where there are six branches practiced, each one being adapted to that particular pursuit. They are pastoral, carse, vegetable, dairy, common, and mixed husbandry. In Denmark, dairying has become the more highly developed than in any other county in the world. Here also there is a special training for this kind of work. That such a course is not generally successful in the United States, is demonstrated by experimental knowledge. As when farmers came to Kansas, they tried this and found that it would not be successful. But it is still

tried in the western part of this state. One thing against such a system is that there is the liability to failure of crops in some parts of this country. If they have only one crop to depend upon, it may be totally destroyed. While it is very seldom if ever the case that there is a failure in all, as corn, oats, and wheat the same year.

It is true that there are some special lines in agriculture. In the South, it is principally cotton, sugar cane and tropical fruits. In some western states, it is almost entirely wheat. While in other parts fruit growing is the principal occupation. But probably for the larger part there is a mixed husbandry, and even the others are somewhat mixed. Then if any one desires to be successful in any of these special lines, he should have a special educational training. For just as much skill is required and just as hard questions to be solved as is presented to any of the recognized professions. This is recognized more and more as the people become more educated. For then they begin to see that these are difficult questions presented to the dairymen, wheat growers, cotton cultivators, and fruit raisers. Then why

not prepare these persons with as much care as any others. For, until they are developed and trained for their work, until they become masters of their occupations, they will not have the power for the greatest productiveness and hence just so much diminish the prosperity of their country.

Another question confronts us and that is, "What should be the basis of a special education for a special agricultural pursuit?" In order to develop the mind, in order to give the person proper discipline for the study of his subject, and in order to get him to see the relation of his occupation to the rest of the world, that person should have a general education as the basis of his special education. Another reason for this is that a special line of work is liable to be blotted out of existance or be very much over supplied with laborers. In such an emergency, the man with a special education alone would find it very very difficult to obtain employment or to learn another trade. But he who has the general education can adapt himself to circumstances with comparative ease. Thus he is much more independent.

But for all this experience, we find an opinion still prevailing among the people, that anyone can be a farmer. This may be true, but can

he be a successful farmer? Thus the farms of our country have gradually fallen into the hands of those people who are not fitted for any kind of work. In this way, the occupation has come to be looked down upon as a degrading occupation and one where a person is subject to continual drudgery. An occupation that does not pay and one which ought to be the most independent of any, but which is in some respects the most dependent. This is due to some extent to the ignorance of this class of people in general. And the only way to remedy this is to educate the farmer. That this is recognized is shown by the fact that at no time in our history has there been such a general movement for more education. Agricultural Colleges are being established all over the land. Larger and larger appropriations are being made by the states for schools. While the United States has provided a neat sum for the promotion of such colleges besides experiment stations. The common schools are being extended to reach every hamlet in the land. And by giving the children some knowledge, it creates in them a desire for more and they will have it.

To be a successful agriculturist, a farm-

er needs to know how to keep his land from decreasing in fertility, which grains are best suited to his locality, and for him to raise, and how to do any kind of work from fixing machinery to cooking. In other words, he must be jack of all trades and master of each. He should watch the markets, notice the demand and supply of any article, and see which grains, fruits, or vegitables sells best. Know when to buy and sell, and be an excellent judge of horses, cattle, sheep, hogs, poultry, or any other domestic animal. He should be a physician, nurse, veterinarian, musician, mathemitician, lawyer, scientist, and business man. With all this before the farmer, some one may ask, what can assist him most in accomplishing this?

A general education supplies the farmer with mathematics, which is necessary for him in transacting his business and which is the essential means of demonstating the strictness of these laws which govern natural phenomena. Without it, no one can comprehend Natural philosophy. And its study tends to expand the mind — to enlarge its capacity of general principles, — and to improve its reasoning powers. Also Natural philosophy has been a great aid to the farmer. The first of this is mechanics. This branch is used almost constantly by him.

He should know the principles upon which his machines are builded. He is almost continually running some kind of machinery or is building something. Next to mechanics is pneumatic, which treats of air and the laws according to which it is condensed, rarified, and graviates. Hence the states of the atmosphere should be a constant source of observation to farmers. Another branch is Hydrostatics which treats of the laws which govern the weight of fluids. This often becomes essential to the mechanic. Also Hydraulics is essential here, in treating the laws which govern the motion of fluids. Chemistry answers many perplexing questions that confront the would be farmer and prepares the way for better investigation. This is one of the most important sciences to any farmer. These with the other 'oligies, 'graphies, and 'ics, throw around the farmer a breastwork of protection, plant him upon a firm foundation to fight his battles, and place in his hand, arm, and mind that skill, power, and discipline which open the way for him to accomplish the most.

Then we feel safe in saying that education performs one of the most important offices in supplying the needs of the agriculturist. If it cannot

do this, what can? What it has done for him in the past is almost beyond calculation. It has discovered many laws in nature that have aided him. It has made many inventions that promote his progress. It has prepared him to use the experience of others in his work. And in innumerable ways has promoted his prosperity and assured him of success. At present, it does for him, if he will let it, all that has been previously enumerated together with preserving the health, wealth and wisdom of its possessor.

We find the opinion abroad that a common school education is sufficient. Now, in the improved common schools of to-day, there are taught such studies as of course may be better than none for the farmer. But they are only a preparatory to the studies he should take and the condition of agriculture now and what it will be in the future do not permit of this partially prepared course making a successful farmer. In times past a person could be a lawyer and have some success in it with far less of an education than one of to-day. For there were not many educated persons around him then and they would submit to him. But it is not so to-day. The more education advances the higher must

be the standard of excellence of the professions. For the more the advance in education the more each one is going to think and study for himself. These times require those that would be successful as lawyers, or any other professionalist, to be well and carefully equiped for his work. The more of the skilled lawyers there are the more of the poorer ones will be crowded out. So it is getting to be with the farmer. Machinery is becoming more complicated. The farms are being run by more skilled hands. And it is the same here as in any other profession, the more educated persons take hold of it, the more of an education it requires to be successful. Therefore, in the future, he who would be successful in the agricultural pursuit must have a good general education.

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