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### Agricultural Education.

The recently organized Erin Farmers' Club held the first of their meetings for the winter months in the Hall, to hear an address on Agricultural Education by Mr. Wm. Johnston, President of the Agricultural College. From Mr. Johnston's address we take the following condensed extracts:

Agricultural Education.—I like the term. It implies, in the first place, that every farmer should have an education. I use the word in the simplest and most technical sense of the term. It is true that amongst us there are those who are unable either to read or write, whose farm practice is of the best. Naturally intelligent, they have educated themselves, or have been educated by the circumstances in which they were placed. But these are the first and most anxious to procure for their children the privileges which were denied to themselves. And, after all, gentlemen, these are the exceptions, not the rule. The majority of our best and most successful farmers have had the benefit of a fair education, can, at least, read and write, and upon those as a foundation have built faithfully and well. Only now are we beginning to recognize the fact, that in order to keep abreast of the age the farmer too, if he is to stand at the head of his occupation and do battle for his class with other and encroaching interests, must have not only a general but a special education. After laying a sure and sufficient basis the term implies that his education must be specified in order that it may advance not only his own interests, but raise and help forward what he and all our class should have at heart, the cause of agricultural progress.

In the first place let us consider *agriculture as a business*. For it is a business. True, the capital in the latter is fixed, whilst in the former it is circulating. But the profits in both cases determine success. True, the principle of division of labor cannot so readily be applied in the latter as in the former, but the question of labor enters as a factor into the problem of management in one case as well as the other. In order to be a successful farmer there is needed a knowledge of the markets and the causes that effect them, a knowledge of the most profitable productions in his particular circumstances, and the best methods of producing. Yes, agriculture is a business; and in order to be successful the young farmer must previously have acquired an education sufficient to enable him to understand the forms of his business. He should know his place in time as History and his space as Geography. There are books to keep, and fields to measure, and however simply done, the elements of Bookkeeping and Mensuration are necessary for them. And these are but the tools with which his intellect is to work. That intellect itself must be trained. There must be accurate judgment, concentration of thought, thoroughness of intellectual grasp, and these intellectual habits are not born with the majority of men, but obtained only as the price of effort. I hold then you will see that the education required for the business of agriculture, as well as the intellectual habits, requisite to grasp the problems of farm management, should be acquired, and can be acquired at our Public Schools.

But, gentlemen, we have not finished the consideration of the education requisite for the business of agriculture. If we are to draw from amongst ourselves, our councillors and legislators, we must have those in our midst who can express themselves correctly and well, and defend their own interest successfully against all comers. To be able to do this, they should on the one hand have studied some of our English authors, and on the other possess a knowledge of the laws relating to the agricultural interest. Besides this, they should have a knowledge of the causes which affect the prices and value of their products in the world's market, the relations in which our interest stands to the other industries of the country, and understand, and have solved some of the problems relating to the laws of the production and distribution of wealth. In other words, they should study the elements of Political Economy.

Let us now in the second place look at *Agriculture as an Art*. Agriculture, too, needs apprenticeship. It is not enough that the student shall know how the various farm operations are performed. He must be able to lay hold of and do them. It is not enough that he knows how a horse is harnessed or driven, a plough set or held; but he must be able, at a moment's notice, to harness or drive the horse and hold the plough. It is not sufficient that he knows a scythe or a cradle, a mower or a reaper, he must be able to handle and

work any of them. If years are to be spent in learning a trade, so must years be spent in learning the best, the most economical and the most expeditious methods of performing farm operations. And this can only be acquired by taking part in the daily work of the farm. If the student is to be made a skilful farm workman it can only be by constant and continual practice.

And now, in the third place, let us look at *Agriculture as a Science*. Science is a collection of principles and laws derived by induction from the facts of observation and experiment. And is not every farmer in possession of a collection of such principles? Does he not every day use them as rules of practice? He may not have observed or experimented, and drawn his rules of practice from both, but if he has not, his forefathers, or those around him have, and he is but to day applying principles of procedure, which were thus gained from facts observed or learned from oft-repeated practice. When any of us determines upon the particular condition of the soils for sowing, and of the crop for cutting, upon the method of cultivation of the various cereals, upon the plan of rotation we shall follow on our particular farms, upon our principles of manuring or of feeding, we are but applying to practice the results of past observation and experiment—are but in fact applying to practice those principles, which taken collectively, make up the Science of Agriculture. Is there an enterprising and energetic farmer who does not try various modes of cultivation, varieties of the different cereals, various methods of feeding, nay, even various plans of rotation? And is not this done in order, as he says, to find out the best in other works from his experiments, to make for himself in his own place, and in his own circumstances, rules of practice? Chemistry, Botany, Zoology, Physiology and half a dozen other ologies, it is true enter as factors into the problems relating to the subject matter of agriculture, but they do not enter into the science itself. The investigation into the relation between them and agriculture should assist us greatly in building up the latter, yet though making stones in the structure they are not the structure. The science is advanced by a careful observation of agricultural facts and a careful noting of the results of agricultural experiments, and from both of these deducing the principles running through them. So that the more closely we observe and the more carefully we experiment, the more we advance this science.

### Crops in Michigan—Do Varieties Run Out?

By L. S. A. in Western Rural.

If there be any Canadian farmers dissatisfied with their lot, a glance at the condition of farmers in some of the States would teach them that there too fortune is sometimes adverse, and that taking all things into consideration the life of the farmer is as favorable in Canada as in other countries where all things appear so bright, even at a distance.

The crops for the year in quality and quantity scarcely ordinary, I judge. The wheat had a stout, thickly standing straw, but the midge hurt the heads so that the yield has not been more than from ten to twelve bushels per acre. Hay was good. Corn I hear the farmers say is very good. But it does not appear to me that from 25 to 35 bushels of shelled corn to the acre is much of a yield. In a corn country 50 bushels shelled to the acre is little enough. Oats and heavy straw, but not a very heavy yield. Potatoes are almost nothing. The price was almost priceless last year, and this season the farmer gave the fields over to the Colorado pest. Without tops, tubers will not form. Apples were not as abundant per tree as they frequently are, but almost every tree in almost every orchard bore apples, and the aggregate, therefore, was very considerable. The price has been very low, and buyers have been very particular, culled closely, and yet most of those who bought on their "own hook," and trusted the marketing to commission men, I think have lost money. In the orchards, apples that in ordinary years would be deemed merchantable, have been allowed to remain and rot by the thousands and thousands of bushels.

That times are almost unprecedentedly close and severe on all who are dependent on their neighbors and fellow men for employment. There is but little work to do. Digging potatoes and picking apples—as was done in the Fall—at five shillings

per day, is very hard for a man with a family to support. For men who are out of business, for any cause, it is the next thing to an impossibility to find employment. Nor is it the time now to start business.

The plant cereals and vegetables *run out* is the opinion held by many practical farmers besides L. S. A.; but it is certainly a question worthy of enquiring—Is not this degeneracy due in a great measure to the carelessness of the cultivator in everything connected with seed and plant? We know that after a variety has, as it has been said *run out*, the same variety still continues to be grown without any degeneracy by some who are good farmers.

On this subject L. S. A. says:—Do varieties of plants, cereals and vegetables run out. I think in many cases they do. I am quite sure they do in potatoes, wheat, corn, squashes, peas, etc. Many at one time excellent varieties of wheat are now rejected because, as growers complain, they do not produce as well, character of straw is changed, and the quality of the kernels has deteriorated. Certainly, if corn is removed to distant localities, in acclimatization, it is materially changed in character and often in quality. Take the Peach-blow potato, in the potato list, as an instance of *running out*. It has lost almost entirely its primitive form. It is not uniform in outline as it once was. It does not produce as well as it did formerly, nor has it the quality. I have seen, this season, that it was quoted in Eastern marts lower than the Peerless, and that was always a potato of inferior quality. It seems to be developing—if that be possible—some ancestral peculiarity; it is *running out*. I have been of the opinion for many years that cutting the potato in planting was the fruitful cause of an injury, which the course of the years demonstrated. Avarice cuts the seed potato. But I cannot go into detail in this matter.

AN AMHERST FARM.—To-day we give our readers the results of an experiment in farming attempted by J. E. Page, Esq., of Amherst. Mr. Page owns a tract of land on the old Halifax road, about a mile from the corner. It possesses a thin, sandy soil, with a gravelly subsoil. Seven years ago, when he first commenced working it, it was considered almost worthless, but by careful and generous treatment he now has as handsome and productive a 30-acre field as there is perhaps in the Maritime Provinces. A cardinal principle with Mr. Page is a manure well; the soil has been fed to the extent of about 300 loads per year. What he cultivates, he cultivates thoroughly. Three or four large composts for next season's operations show the liberal and provident manner in which it is framed. This present year, there was taken off it the following:—

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| 1,000 bushels of potatoes, |
| 180 " " wheat,             |
| 10 tons of hay,            |
| 50 bushels of buckwheat,   |
| 50 " " oats.               |

The wheat is full and very free from weevil and rust. By selecting good seeds and sowing early wheat, Mr. Page's crop has never failed. He has not only succeeded in raising wheat for a number of years continuously, but has made its cultivation pay. What is to prevent more of our farmers turning their attention to raising breadstuffs for home market and thus checking one of the most serious drains to which our country is subject?

A barn 60x32 has recently been erected on the field that is worthy of mention. It has this peculiarity—it has no collar beams. The rafters rest on purloin plates, on which there is a track for conveying hay back to the mows by means of a patent horse hay-fork. This hay-fork is a great labor saver, and our big farmers would find it an advantage were they more generally to adopt it.

DIVERSITY.—If you have been endeavoring to get ahead in the world by simply growing a single crop, we suggest that you diversify in future, for we are assured you find yourself getting behind hand every year. All cotton, all corn, all cane, all anything, is poor policy, especially if you depend, wholly or in part, upon advances.

Williston, S. C., boasts a stalk of cotton fifteen feet high, which resembles a three-year-old pear-tree in size and form.