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Prize Essays.

Competition Essay for Centre Grey Farmers' Institute on the "Benefits secured Through an Agricultural College Education."

FIRST PRIZE.

We, as Canadian farmers, have in the past been accustomed to look upon education as something to be shunned. This was no doubt due to the fact that a literary education, though good enough for its own specific purpose, has a tendency to allure men away from the farm, rather than causing them to take a deeper interest in the cultivation of the soil.

Education may be defined as something that renders its possessor better fitted for his life's work. With this object in view we see that a literary education, as obtained at the various institutions of learning, entirely fails in fitting the agriculturist for his work. On the contrary such an education tends to direct the energies of the student along lines of work altogether foreign from that of tilling the soil. This is true to such an extent that we seldom see a young man from the farm return and pursue farming as his occupation, after having been successful in passing the examinations as prescribed by our higher educational institutions.

Nevertheless there is no class of men whose surroundings present such a large field for investigation as the tillers of soil. Being surrounded by nature and her laws, which underlie all farm operations whether they are a success or failure, the farmers are thus brought into close contact with her and all her intricate variations. Indeed the farmer's success entirely depends upon the way in which he appropriates nature's laws to aid him in attaining his purpose. To do this profitably, it must be done intelligently, which demands a thorough knowledge of those sciences that relate to the soil, plant and animal.

The best way in which the farmer can obtain such knowledge is by spending a year or two at an institution where these subjects are dealt with, and where the course of study bears directly along the line work which is being carried out upon our farms every day. The need of such instruction is manifested by the great interest that has been taken in this matter by the most advanced nations of the earth. Great Britain, Germany and most of the European countries spend large sums of money in equipping and maintaining agricultural colleges, where the people can receive an education that meets the wants of the agriculturalists. Australia, although a comparatively new country, has found it necessary to have agricultural colleges to educate her yeomanry and thus keep pace with other lands. But not until coming to our own continent do we find this subject receiving the attention that its importance demands. Our cousins over the border, although having a world wide reputation for their advancements in the mechanical pursuits have, during the last two years, spent more money to advance the cause of agriculture than they ever gave during a like period of time to any of their other industries. Large sums of money have been set aside for the use of every state in providing agricultural instruction for the people. Thus we find every state in the union has, or is shortly to have, an agricultural college or experimental station within its borders. Upon coming to our own province we find that we have had an agricultural college in our midst for the last 14 years which compares favorably with those of other lands as regards the nature and thoroughness of the course.

When we remember that these colleges are but poorly patronized by the class whom they were specially to help, we must say that the farmers are neglecting the means of education within their reach, which, if attended to, would be the means of improving their present condition so that they would be able to take that position which the importance of their calling demands. The few who avail themselves of these opportunities receive an education which will benefit them greatly in after life.

By studying the works written by advanced men, showing the relation the sciences bear to agriculture, the energies of the student are directed along the proper course of work and he takes a deeper interest in his studies on account of the very close connection they have with his work upon the farm. Thus by taking a college course the student has the whole field of agriculture unfolded before him in its different phases. The position which the soil occupies to the plant, and that of the plant to the animal is all carefully traced out and fully explained by the professors in their respective courses of lectures on the different sciences, such as Geology, Zoology, Botany, Chemistry, Veterinary, Dairying, and Live Stock, etc. By the study of these subjects the student gets a thorough knowledge of the principles which underlie agriculture.

By the study of live stock on the farm the student becomes thoroughly conversant with the different breeds as regards origin, characteristics and points. This cannot but be of great practical benefit to a man engaged in farming, for having a thorough knowledge of the capabilities of his farm he can, from his knowledge of the different breeds of live stock, select those that will do best under his conditions. The proper use of such knowledge may be worth hundreds of dollars to its possessor in these days of keen competition, when very small changes decide whether a man is going to succeed or fail in his undertakings.

Furthermore the course of veterinary science renders the student conversant with the structure, functions and diseases of the different farm animals. This is very important as every farmer must of necessity be a stock owner and every stock owner's success will vary in proportion to his knowledge of the animals and their diseases. I do not mean to say that every farmer should be a veterinary surgeon; but every farmer should have sufficient knowledge of the common forms of disease, and the methods of treatment, to enable him to keep his animals in a state of health. By possessing such knowledge the agricultural college graduate will often be enabled to save the life of a valuable animal by giving it proper care when threatened by a sudden attack of disease.

So pressing is the need for the adoption of different methods of farming that the farmers are eagerly questioning themselves how they can give the land tillage that will make it yield larger returns? And while drainage and the adoption of other methods are being largely discussed, as a way out of the difficulty, it is evident that if the owners of the farms had a thorough knowledge of the science of farming they would be better able to decide what alterations would be necessary for them to make in order to put their business upon a paying basis. Different methods must be adopted upon different farms according as the capabilities of the soil and circumstances vary, hence the importance of every man being capable to decide which methods he must adopt for success, instead of blindly following his neighbors and their ways, thinking their methods will produce the same result upon his farm.

The growing of plants upon the farm so as to supply food for man and animals is the first work of the husbandman. His success at this work will largely depend upon his knowledge of plant life and its requirements as well as the amount of skill he can put into the crop he undertakes to grow. A person to possess such knowledge must become thoroughly acquainted with every part of the plant, knowing how it obtains its food and what changes take place in the plant during its growth. This involves the studies of botany and plant chemistry with which the student is familiar. But if the plants are going to be grown under the most favorable conditions it will be necessary to place them in a soil suited to their requirements. This requires the farmer to know something about drainage, for he will find that a certain portion of his farm is too wet for the profitable growing of plants. All weeds and noxious plants must be kept out of the land so as to produce as much of the cultivated crop as possible.

Now after having reaped a bountiful harvest as a result of skill and industry, the farmer cannot expect to take a place in the front rank of agriculturists without he is capable of disposing of his crop to the best advantage. This is done by having the principal part of the crop, especially all of the fodder and coarse grains manufactured into animal products which are concentrated in their character and when sold off the farm they carry away but a small proportion of the mineral constituents of the land. To do this economically the farmer must be well grounded in animal chemistry as well as scientific dairy and practice; for, if animals are to be fed at a profit it must be done upon proper principles, and it will be found to be more advantageous to feed milch cows and send the surplus animal products away in the form of butter or cheese rather than meat.

The man who is doing this successfully is engaged in no mean work, for he is directing the energy of the sun through the soil, the plant, and the animal, and gathering the produce in a concentrated form fit for man's use. But while attaining this end every opportunity has been offered him for the exercise of skill and science, and a person who can go along the line of work and direct the various agents with certainty of success is engaged in a work that will vie with that of the chemist or sculptor.

When we see the importance of the farmer's work, and how it is connected with the different sciences, we cannot make a mistake in deciding that the agricultural college graduate is better fitted to succeed at farming than those who have not attended such a place. He has a thorough knowledge of the principles bearing upon the farmer's work and will apply them as opportunities are offered. We cannot improve upon the idea of the ancient poet, Virgil.—

"Happy is he who knows the causes of things, and it is very applicable to the farmer, surrounded as he is by nature, if he can trace out the causes of the changes that are taking place around him every day.

But some may ask "How are these results to be realized by agricultural college graduates?" To satisfy such it will be necessary to show how these foundation principles are to be applied, and this I think is a great number of farmers do not know that abundant opportunities are afforded for the exercise of science in farm improvement. After the student has finished his course and finds himself the possessor of such a farm his aim will be to so cultivate it by the application of the most advanced methods as to materially improve it. The fields may be over-run with foul weeds, but he being acquainted with their nature, habits and knowing the critical period in their life, will adopt the proper means to have them thoroughly eradicated when it can be done with least labor and greatest economy. For example, you would never find him cultivating a field when it was wet to kill twitch grass, for he knows that the stirring of the soil and cutting of the roots at such a time would only strengthen its growth and increase its numbers. Nor when cultivating to kill Canadian thistles you would not find him ploughing deep and turning up the root stocks upon which the buds are fed, but knowing that plants cannot grow without light and air he contents himself with cutting off their breathing pores and thus smothers them. Portions of the farm may be wet and thus seeding will be delayed in the spring; but he knowing the folly of keeping land in such a state when, by draining, it would become the most productive part of the farm, and knowing that draining would not only remove the excess of moisture, but would increase the fertility, depth and temperature of the soil he has it drained at once and thus increases the producing capacity of his soil to an appreciable extent.

On account of the prominent place that dairying occupies as a branch of farming there is much need that the ordinary farmer should give it his most careful attention. But we find that the dairy is often sadly neglected on account of the proper principles not being observed in its management. But the agricultural college graduate knows that in keeping cows for profit only such animals should be kept that will yield a profit to their owner after paying for their keep and by testing the performance of every cow in his herd, he will only keep those that come up to the standard. But in making the dairy pay you will not find cows out under the glare of a scorching August sun, tormented with flies, to seek pastures that indicate the presence of a two months drought which we almost invariably have every summer. Nor will you be likely to find him feeding dry feed to produce a flow of milk in winter. On the contrary he will grow a few acres of corn part of which will be fed green during the dry time of summer, and the remainder will be ensiled for winter food. By attending to these and a few minor points he knows that his cows will yield a large profit. Thus to the advantage of situation he has received by giving a continuous flow of milk for ten months in the year. The live stock upon a farm may not be of a high order but knowing the principles of breeding he will patronize the best sires within his reach, and by this pursuing a definite object he will soon have his stock so graded up as to be equal to pure breds for all practical purposes.

These few practical illustrations will suffice to show you how the farmer is personally benefitted in his work by the course which he has taken; but beyond these there are other benefits secured which are more general in their character. By this I mean that he secures benefits which are shared by his neighbors. He is reading the latest agricultural works and constantly adopting some new methods of working which will be copied in turn by his observing neighbors. He will also take a very active part in anything that is going to improve the condition of the farmers. Being aware of the benefits to be derived by having the farmers attend public meetings to discuss questions of interest he will give them his hearty support and try to have these meetings increased by recommending the organization of debating societies in every neighborhood where the young people can get a training in public speaking that will be useful to them in after life when attending farmer's institutes or other public meetings.

In conclusion, we see that the agricultural college graduate is in every way better fitted for life's work than he could be without the course he has taken. He is a better farmer, he is a better citizen in every respect being better fitted to fill any office in church or state to which he may be appointed. Beyond the benefits to be realized by himself that if their improvement were fully realized by the farmers we would soon find agriculture making such rapid strides that we would be ahead of any other class of people. Instead of our land owning farmers sending their sons to the towns to learn where they have received no agricultural training. Then we would have plenty of men in our midst capable of filling those offices which should be filled by farmers but are now occupied by men from other professions. In addition to this vexing question of keeping the boys upon the farm would be settled permanently for, having read the lives of the great promoters of agriculture, having become acquainted with all of the sciences underlying their work, and having a thorough knowledge of the beauties of nature and all her laws they have no desire to leave the old homestead where these things abound, and to go to the vast cities of our land where men do sicken and decay for want of nature's greatest blessing.

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