

EDITORIAL.

Our Frontispiece.

We take pleasure in surrendering the place of honor in this issue of the FARMER'S ADVOCATE to a portrait of a pen of Leicester ewes, the property of William Sanday, Esq., of Holme Pierrepont, Nottinghamshire, for which a prize of £20 was awarded at the meeting of the Royal Agricultural Society of England, held at Windsor in July, 1851. Our artist has succeeded in making a very faithful reproduction of a fine old steel engraving in our possession, of this group, and the Leicester men of to-day especially will note with interest this representation of the show-yard victors of forty-four years ago.

Agricultural Education.

[An address delivered before the Ontario Central Farmers' Institute by John Dearness, I. P. S.]

(Continued from page 199.)

AGRICULTURE IN THE SCHOOLS OF FRANCE.

The French Minister of Agriculture addressed a circular to the Prefects, on 15th August, 1887, from which I extract the following paragraph:—

"M. le Prefect,—The importance, every day greater, which agriculture is taking in the economic position of nations, has attracted to it much attention from the various governments. In France, the least improvement in working and the smallest invention in machinery brings an augment of production which means for the country an increase of its hundreds of millions of agricultural wealth. Parliament has not neglected ought to further private initiative: exhibitions, agricultural societies, publications, etc., and everything has been done to maintain French agriculture in the position it has ever held. Agricultural education, the surest and most powerful means of giving to improvement a new impulse, has been specially considered in France."

The circular refers to the agricultural colleges and National Institute, and proceeds to speak of the "practical schools" established in 1873, open to the sons of the peasantry whom they receive from the public schools, and maintain more cheaply than the colleges. In 1887 there were nineteen of these schools, one in each of 19 out of the 86 departments forming the Republic. These seemed to bear the same relation to the agricultural college that our county Model schools bear to the Normal School. The children who enter these must have a certain preparation, and it is necessary in agricultural districts to direct the courses of study in the High schools towards agriculture.

"Hence," the report continues, "we must organize in the Public schools a course of instruction in the first ideas and the principal applications of science in reference to agricultural instruction, over which the teachers must carefully watch, as it is the basis."

After lamenting the lack of skilled teachers, the circular points to what the Haute Saone Department has done by way of public scholarships, and concludes by directing each prefect to learn what his Conseil-general will do towards founding scholarships, organizing experiment stations, and establishing agricultural courses in the colleges and High schools.

Mr. James, in the paper first referred to, related the status the subject had reached in France at the beginning of the present decade. The law of 1879 was going into effect as rapidly as trained teachers could be obtained. It was planned to have a special professor in every Normal school by 1885, and to require the Public schools to have agriculture taught in every one of them by 1888. This scheme would set 86 professors of agriculture at work, their salaries being borne equally by the district and by the Government. These were appointed to instruct the teachers-in-training, to assist at farmers' institutes, and to supervise investigations when so directed by the Government. Many of the Public schools have gardens attached, and all the Normal schools were supposed to be provided with gardens. Work with agricultural bearing was presented for the different classes in the Public schools; even the First class had something to do. Much emphasis was placed on the value of the school garden and the museum, and the teachers were recommended to take their pupils on visits to good farms and dairies.

At the last Educational Congress, held at Paris, M. Martel presented the report of the section devoted to agricultural, industrial and commercial education. Of the teaching of agriculture, the report stated:—

In primary education it was evidently impossible to make agriculturists in the true sense of the word: to children from six to thirteen years of age it is necessary, through a scientific method, to give a taste for things agricultural, to accustom them to habits of observation, and to make them capable of understanding what has been written

for them in books. In the High school, however, the teaching of agriculture, while preserving a scientific character, might be largely developed; a special course in agriculture would be in place there, theoretical explanations being complemented by practical work, either in a garden or a field, for experiments. The General Congress adopted the following three resolutions, based on the report:—

(1) The teaching of agriculture in the Public schools, often helped by lessons, exercises, and above all, by the museum, the garden and school expeditions, should be based primarily on simple experiments relating to the growth of vegetables.

(2) At the High school the special course of agriculture, and the demonstrations in the field for experiments, should be adapted for local needs.

(3) At the Model and Normal schools the teachers-in-training should be made competent to teach agriculture, under the conditions enunciated in the two preceding resolutions.

In the foregoing sketch the terms used are not those of the French schools, but those of our own schools, of the most nearly corresponding grade.

WHAT MANITOBA IS ATTEMPTING.

Coming to this Continent, we find that many of the States of the Union have voted large sums to Experimental Stations and Agricultural Colleges. In 1877 it was estimated that not less than \$5,000,000 had been contributed to these institutions by private donations, not to speak of the much larger national grants. Illinois, over twenty years ago, enacted that no teacher should be authorized to teach a common school in that State who is not qualified to teach the fundamental principles, rudiments, primary facts and laws of the natural sciences. But it is to our sister Province of Manitoba that we must look for the most advanced, although most recent, effort to give the study of agriculture a real position in the school course. That Province, with the usual promptitude which characterizes the succession of its action to the dictate of duty, instituted energetic measures to prepare the teachers and to equip the schools, so that agriculture may be efficiently taught in the latter.

If success crowns the attempt, much credit will be due to the Rev. Dr. Bryce, the member of the Advisory Board, who appears to be mainly charged with the duty of carrying out the Government's wish. Like France, the Prairie Province has begun by the training of its teachers in the Normal Schools, aiming at qualifying them to teach the prescribed course in a practical manner and by the scientific method. Besides a set of colored charts, two supplementary reading books are projected. That supplementary to the Third Reader will be botanical, and the one to be read by the higher classes will be chemical and agricultural. The headings of some of the lessons in the Supplementary Third Reader are: "Plant Life in Manitoba," "Flowers and Gardens," "How to Tell the Flowers," "Description of Thirty Notable Plants," "Ten Noxious Weeds," "The Trees of Manitoba." This book is to cost about 25 cents, and to be about the size of our Second Reader, and is not merely to be read, but also to be used as a guide book in the practical study of the plants and weeds, of which specimens are to be in the hands of the pupils. In future, no teacher will be certificated at the Normal School who does not show his ability to teach botany practically. Dr. Bryce has kindly informed me of the details of their plan. He says he has been experimenting with children of ten or eleven years of age, and he is satisfied that the work outlined above can be accomplished by them with interest and even delight. It will, he says, cultivate habits of observation, discrimination, accuracy of judging, and love for the plants and fields. This junior course, it is contemplated, will occupy one year, taking two lessons per week.

The Supplementary Fourth Reader will open with thirty chemical experiments on air, water, wood, coal, clay, etc., and each school will be furnished gratis from the Education Department with a box of chemicals and apparatus for the experimental course. These boxes will cost the Government only \$4 each, but this will contain sufficient material and apparatus for the course. As the material is used, the local boards will be expected to maintain the supply. Other titles in this book are: "Growth of Plants," "Soils and Climate," "Tillage," "Drainage," "Crops," "Rotation of Crops," "Manures," "Diseases of Crops," and illustrated articles on "Live Stock," "Dairying," "Farm Buildings," etc. This instruction is to be given in towns and cities, as well as in rural schools. At the Provincial Normal School, Winnipeg, Dr. Bryce is giving, or has already completed, a course of ten lectures on Botany and Chemistry. Mr. Bedford, Director of the Brandon Experimental Farm, will give five lectures on soils, tillage, crops, and grasses; and Dr. Torrance, V. S., will give an equal number on horse, cattle and sheep husbandry. The substance of these lectures will be repeated at the six local Normal Schools, and next season, by the direction of the Education Department, the Teachers' Institutes will be turned into Schools for Agriculture exclusively.

After this brief review of the best examples Europe and America have to show us, let us inquire what we in Ontario should do. I believe that, taking all round, there is no more excellent system of public education in the world than the one that has been developed in this Province; and while the contemplation of our success and the acknowledgements thereof in world contests may justly stimulate our national pride and rewards us for past efforts, our further progress must come from

searching out and strengthening our weak points. Such examination and comparison with the systems of other progressive countries lead to the conclusion that our Public school system is weakest on the side of the education of the faculties of observation, comparison, judgment; in short, in the intellectual activities that may be well trained—in fact, trained best by the study of natural phenomena by the scientific method. [An accessible reference in this connection is to the Hon. Dr. Ross' *Schools of England and Germany*, pages 116-120, 177-178, 229-230, 239-240.] This kind of training, while particularly advantageous to the housekeeper and agriculturist, is helpful for every profession and avocation, and therefore should have a prominent place in city schools as well as rural ones.

Here are the words of the illustrious Agassiz at a national meeting: "I wish," said he, "to awaken the conviction that the knowledge of nature lies at the very foundation of the prosperity of nations; that the study of the phenomena of nature is one of the most efficient means for the development of the human faculties; and that, on these grounds, it is highly important that this branch of education should be introduced into our schools as rapidly as possible. The only difficulty is to find teachers equal to the task, for, in my estimation, the elementary instruction is the most difficult. It is a mistaken view with many, that a teacher is always efficiently prepared to impart the first elementary instruction to those entrusted to his care. Nothing can be further from the truth; and I believe that in entrusting the education of the young to incompetent teachers, the opportunity is frequently lost of unfolding the highest capacities of the pupils. I have been a teacher since I was fifteen years of age, and I am a teacher still, and I hope I shall be a teacher all my life. I do love to teach; and there is nothing so pleasant to me as to develop the faculties of my fellow-beings who, in their early age, are entrusted to my care; and I am satisfied that there are branches of knowledge which are better taught without books than with them; and there are some cases so obvious that I wonder why it is that teachers always resort to books when they would teach some new branch in their schools. When we would study natural history, instead of books let us take specimens: stones, minerals, crystals. When we would study plants, let us go to the plants themselves, and not to the books describing them. When we would study animals, let us observe animals."

Dr. Lyon Playfair was a most eminent British scholar and educator. Listen to what he avers: "The pupil must be brought in face of the facts through experiment and demonstration. He must pull the plant to pieces and see how it is constructed; he must see water broken into the constituent parts and witness the violence with which its elements unite. Unless he is brought into actual contact with the facts and taught to observe and bring them into relation with the science evolved from them, it were better that instruction in science should be left alone. For one of the first lessons he must learn from science is not to trust in authority, but to demand proof for each asseveration. All this is true education, for it draws out faculties of observation, connects observed facts with the conceptions deduced from them in the course of ages, gives discipline and courage to thought, and teaches a knowledge of scientific method which will serve a lifetime. Nor can such education be begun too early. The whole yearnings of a child are towards the natural phenomena around, until they are smothered by the ignorance of the parent. He is a young Linnæan roaming over the fields in search of flowers. He is a young conchologist, or mineralogist, gathering shells or pebbles on the seashore. He is an ornithologist, and goes bird-nesting; an ichthyologist, and catches fish. Glorious education in nature, all this, if the teacher knew how to direct and utilize it. The present system is truly ignoble, for it sends the workingman into the world in gross ignorance of everything he has to do in it. The utilitarian system is noble in so far as it treats him as an intelligent being who ought to understand the nature of his occupation and the principles involved in it. If you bring up a ploughman in utter ignorance of everything relating to the food of plants, of every mechanical principle of farm implements, of the weather to which he is exposed, of the sun that shines upon him, and makes the plants to grow, of the rain which, while it drenches him, refreshes the crops around, is that ignorance conducive to his functions as an intelligent being?"

Under our present system of elementary teaching, no knowledge whatever bearing on the life-work of our people (English) reaches them by our system of education. The air they breathe, the water they drink, the tools they use, the plants they grow, the mines they excavate, might all be made subjects of surpassing interest and importance to them during their whole life. Yet of these they learn not one fact, and we are surprised at the consequences of their ignorance.

An authoritative document, the report of the British Royal Commissioners on the National School System, states: "We think it established that the study of Natural Science develops better than any other studies, the observing faculties, disciplines the intellect by teaching induction as well as deduction, supplies a useful balance to the studies of language and mathematics, and provides much instruction of great value for the occupations in after-life."

(TO BE CONTINUED.)