

### Agricultural Science in Rural Schools.

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From time to time it is the privilege of the writer to address large audiences at Farmers' Institutes upon topics of a scientific nature. When Institutes were first established such were not popular; the great majority cared little to hear about a subject which seemed entirely of a theoretical nature, and far removed from the truly practical work of the farm. That condition of affairs has passed away, and the average farmer to-day feels that a knowledge of science lies at the very foundation of success in the pursuit of agriculture. He has learned that science is simply systematized knowledge; that its principles are founded upon the facts which are daily discovered upon the farm; that our successful farmers to-day are those who have been scientific, close observers of facts and results from years of experience—men who have gathered together principles which underlie certain operations, and now apply them with success. In reality the farmer is one of the most scientific of men, and is surrounded by conditions especially fitted to develop observation, comparison, and method in work, and his success will be in proportion to the amount of scientific management he displays in reference to the care of his stock and the cultivation of his fields. The Farmers' Institutes have done a great work in awakening farmers to the necessity of a study of science as it bears upon their work. But we believe a greater future is in store for the people of rural districts, when their children shall have become acquainted with the teachings of science by giving some attention to its study while at the common school in their neighborhood. With a view to direct attention to how agricultural science might be taught in country schools this article has been written. Several writers have dwelt upon its importance, but few, if any, have outlined any method by which such important knowledge can be obtained. The course referred to here the writer has discussed on several occasions before Farmers' Institutes and Teachers' Associations. The former heartily endorse it, and the latter agree that it would be an excellent thing were it not that teachers are overburdened with work apparently necessary to give their schools rank in the eyes of the public.

We claim that the work can be accomplished, even crowded as the time table is, and at no additional expense, by the purchase of text-books. Our plan is that a series of talks be given on the subjects of geology, chemistry, agriculture, botany, and entomology during the last hour of Friday afternoon.

During the fall term the subject of geology might be taken up, emphasizing those parts that relate to the origin and formation of soil. Illustrate as far as possible by blackboard, chart, and specimen, and have the pupils commence a collection which would represent the geology of the section.

The winter term could be devoted to chemistry, dealing with the elements relating to the air, soil, plant, and animal, and if time permitted take up some topics connected with agriculture in general.

When spring appeared commence the study of botany and emphasize particularly the wild flowers and weeds of the section; at the same time have the pupils make a collection of plants and the seeds of the weeds. As soon as the summer term commenced, take up the study of entomology, giving special attention to such insects as are beneficial and injurious, and invariably have the pupils collect specimens to illustrate the subject and contributed to a collection that would represent the economic entomology of the section.

If such a course were followed in the rural sections of Ontario, who could estimate its influence upon the rising generation of farmers? Scientific facts to-day a wonder to farmers who have never viewed their work from a scientific standpoint would be as familiar as the most common operations in the field.

The great difficulty seems to be to secure teachers fitted for the work. Some claim the course too extended for most teachers, but it must be remembered the information required is only that which is most attractive and instructive, and consequently does not require a very exhaustive knowledge of any. We think, too, if a teacher could teach any three of the above it would be satisfactory—certainly far in advance of to-day, when none are discussed. Teachers desirous to pursue this work could readily secure books that would serve their purpose admirably.

The writer would not have pupils get text-books, but to depend entirely upon the instructions of the teacher and their own observations in the great book of nature. Then, too, we have no doubt that if a want arose teachers could have the benefit of attendance at summer schools, at which such subjects would be discussed by efficient men. We are confident that if the above method could be carried out, a great step would be made towards the uplifting of the occupation of farmers, that it would be more attractive to the young and more productive to the old.

It would result in developing observation in young minds, something that is aided very little in our system of education among rural schools. No faculty in the young mind is so ready for development as observation, and yet how little is done to assist it. Nature furnishes material on every side in the country, and surely we should take advantage of it and early train our young to be close observers.

Such a course of instruction would develop an interest in the study of science as it is illustrated upon the farm. The air, the soil, the plant, and the animal would become sources of information full of all that is interesting, instructive, and profitable.

Pupils trained in this way would become intelligent readers of useful scientific articles now of little value to many farmers who are ignorant of the simple principles a knowledge of which is necessary to their proper understanding. We have no doubt that the study of such subjects would increase the attractiveness of farm life and serve to keep many a boy upon the farm who, with such surroundings as we find to-day, seeks the shadowy allurements of a home among overcrowded centers in town and city.

Then, too, each rural school would become a museum of the geology, botany, and entomology of the neighborhood, and at an early age the pupils would be quite familiar with objects which to-day are unknown to them, though they are found constantly about them. We hope the day is not far distant when the teachings of nature will be better known in country sections, and that the boys and girls of our farming districts will see more in farm life than what some bemoan as drudgery; that they will see in it that which tends to health, peace, independence, and an ideal home; and that while they eagerly learn how a thing should be done, they will also know the reason why, so that practice and science, the handmaids of agriculture, will be more closely associated than in the past.

### Nature to the Rescue.

To the Editor FARMER'S ADVOCATE:

SIR,—I have been fighting thistles for a quarter of a century, and have read and tried all the experiments and recommendations enumerated in agricultural literature. Perhaps many of your readers have done the same. But I ask for a few lines of space to note how superior nature's agency is to man's. The frost of 13th May, 1895, coming after intense heat, found the thistles well above ground. Now, the thistle weed is as sensitive to frost as the most delicate plant that the farmer tries to raise. The frost was followed in our section by drought and grasshoppers. As a consequence I find very few thistles on my farm—725 acres—this year, and these few are remarkably weak. Every one in sight has just been cut, the head being blue with bursting blossom, and this I have found to be the best time to strike them. I dare say others have noticed the wonderful decadence this year in thistle growth, as they must have observed the extraordinary luxuriance of red sorrel in the meadows. What is one weed's meat is another weed's poison, and it is lucky for us that the seasons vary as they do. Toronto, June 30th. T. C. P.

### Get a Second Crop.

Harvest is well ahead this year, there being wheat and barley cut in Western Ontario in June. Land cleared so early, that is not seeded, should be made to grow another crop this year, even though it has to be plowed down for manure. Rape, buckwheat, and millet will be largely used. For either of these crops, shallow plowing will do. For sheep and young cattle pasture, rape is best to sow; for hay, millet; for a grain crop, buckwheat will give a good return; but for plowing down, any of the three will grow fast and help the land into which it is plowed. As soon as a field is cleared, put in the gang plow, if there is not time to single it. Don't allow the ground to become hard if it can be avoided. For either crop the surface must be worked finely, and rolled as soon as sown. The quantity of seed per acre should be: For rape, broadcast, 4 to 6 pounds; buckwheat, 4 to 5 pecks; and millet, about 40 pounds per acre. When the crop is to be plowed down heavier seeding may be given, especially with millet and buckwheat.

### SHOWS AND SHOWING.

#### Should We Have Fewer Shows?

Whether so many agricultural fairs as we now have throughout the country are advantageous or otherwise is worthy of some consideration, and, indeed, is occupying the minds of many progressive citizens of our own country as well as those of Scotland, as indicated in our Scottish letter in July 1st issue. There need be no question but that the larger shows, held in Toronto, Ottawa, London, and like places, can, if properly managed, continue to grow in magnitude and advantage to the country, and pay their way. Such shows must pay or go to the wall, and the very fact that a show closes its gates is evidence that it is not commanding the patronage of the public, which, after all, pass the most correct judgment upon its worth. Changes are going on continually among the lesser fairs; very few, if any, new ones are being started, the most of the changes being confined to amalgamations of two or more societies. There are many agricultural societies at the present time which feel that to unite with a neighboring township or county, as the case may be, would save their show from failure. So light has become their patronage, in some instances it is impossible to offer prizes large enough to bring out competition, and without this the educational advantages are largely lost. The great difficulty in any readjustment of the agencies is to decide which of the wanted gatherings should be absorbed in the others. On

general grounds, however, it must be conceded that the show which secures the least popular support is the one to be first abandoned. When consolidation can be accomplished without giving rise to any feeling of soreness, no doubt a great step towards economy and efficiency would be taken.

In order for an agricultural show to be at all educative it should be able to offer sufficiently liberal prizes to draw keen competition, and to obtain judges whose decisions would be respected by the exhibitors as well as by the visiting public. Such shows, if otherwise well managed, will not have to go begging for patronage, but will have to increase their facilities from time to time in order to keep pace with the demands of the public, who are not slow to recognize merit in a concern of so great importance.

### Canada's Great Exposition.

The prize list for this year's Toronto Industrial Fair has been issued and distributed, but those who have not yet received a copy can obtain one by dropping a post card to Mr. Hill, the manager, at Toronto. This great Fair, which is now one of the largest and best on this Continent, is looked forward to each year with pleasurable anticipation by people in all parts of Canada and the adjoining States, who make it the occasion for their annual holiday outing. It is this year to be held from the 31st of August to the 12th of September; commencing two days earlier than last year.

The changes made in the prize list from that of last year is the addition of a prize of \$100 for Clydesdale stallion and four of his get, a similar prize for Hackney stallion, and the reinstitution of the general purpose class with over \$300 in prizes, which was struck out two years ago. In the cattle department, \$183 have been added to the Hereford class, and additions have been made to the Guernsey, Jersey, and Holstein classes. In the swine department the classes for Essex and Suffolks have been amalgamated, and the \$240 thus saved has been added to the prizes in the other swine classes. Two hundred dollars have been added in the poultry classes for new varieties.

Entries in the live stock department have to be all made before the 8th of August. The various live stock associations and the principal exhibitors having agreed to the proposition, all stock are required to be on the grounds by noon on Thursday of the first week, Sept. 3rd, so that with the exception of fruit and out flowers, every department of the Exhibition will be complete from that date, and the first week will, therefore, be fully as good a time to visit the Fair as the second week has been in the past. Cheap railway rates will be given during the entire Fair. The judging will commence on Friday, the 4th, and will all be complete by Tuesday, Sept. 8th. Many new attractions of a superior quality are being secured by the management, and the latest inventions in all departments will be on exhibition. The beautiful hanging advertisement for the Fair, which has been sent out by the Association, is a most creditable sample of Canadian workmanship. The Governor-General and Lady Aberdeen have signified their intention of visiting the Exhibition, and it is probable it will be opened by the new Premier, the Hon. Wilfrid Laurier, on Tuesday, Sept. 1st.

### The Western Fair.

A visit to the London Western Fair Grounds by a FARMER'S ADVOCATE representative, on July 9th, found the place alive with a little army of busy workmen. The old complaint that the Western Fair buildings are inadequate will no longer be heard. The whole of the old Stock, Carriage, Dairy, Poultry, and Machinery buildings have been replaced by monstrously grand new structures of the most modern design. Secretary Browne and other members of the Board have spent a deal of time examining the best exhibition buildings on the Continent, and have combined the good points of the best seen in the new structures, which are well forward in construction.

The cattle, sheep, and swine are all to be in one monster building along the west side of the south half of the grounds. This structure is 735 feet long by 52 feet wide. This, like the other buildings, has circular bents supporting the roof, which do away with the necessity of having posts in the inside to obstruct a clear view of the whole interior from end to end. The roof has deep side and peak openings, which provide ideal light and ventilation. They cannot but be cool and fresh at all times. Sleeping berths are provided for stockmen.

The Machinery and Implement Hall is 400 feet by 60 feet, fitted with lines of shafting to drive the exhibits. It is built backing against the G. T. R. platform, so that exhibits will be transferred directly from the car to the building.

The Carriage Building, 180 by 60 feet, along the R. R. platform, has an arch roof without posts, is thoroughly lighted, and lacking in nothing.

The Horse Barn, over 1,100 feet long, has box stalls down one side and single stalls down the other. The same good light and ventilation as characterize all the other buildings is present here. All the buildings are supplied with as good as the best water in America. The buildings being arranged as they are, upon three sides of the grounds, provides for a perfect inspection of the entire exhibit in the cool shade, so that a rainy day need not adversely affect the show so far as seeing the exhibits is concerned.

The Poultry Building is large, light, and airy, and provided with fine coops, suitable to the requirements of the different kinds of poultry and pet stock.

The half-mile race track is undergoing a remodeling, making the turns less abrupt, which will be a great improvement upon the old form. The new double-decked grandstand, 300 by 45 feet, will greatly increase the pleasure of witnessing the special attractions and fill a long-felt want. The Pawnee Bill Wild West, with 80 people, 60 animals, and 50 tents, will be the principal feature.

The cattle, sheep, and horses (other than those in light harness) will be judged in the shade of the beautiful trees, where the public will have ample opportunity of viewing the competitors and learning the desirable points of the winners.

### Central Canada Fair.

SOME NOTEWORTHY IMPROVEMENTS.

The official programme of the Ottawa (Central Canada) Exhibition for 1896 indicates a great improvement over the shows of previous years, not only in the prize list and accommodation, but also in character and variety of entertainment. The Association will have splendid value to show for the \$10,000 expended in new buildings and in improvements to the grounds.

The horse and cattle stables are constructed upon a plan entirely different from any in use in the country, and are splendidly adapted to the purpose of exhibiting stock to the comfort and convenience of the visiting public. Each building has a separate entrance and plank walk for the spectators, and all together form the passages used by the animals on exhibition.

New sheds for sheep and swine are also erected and upon the most modern principles; they also have plank walks around them. And by reason of these improvements rain will not impair the success of the Fair; visitors will be able to view all the live stock, in addition to the other displays, under shelter. Nothing has been overlooked that would tend to the comfort and convenience of exhibitors and visitors. The carriage building is new and much larger than the former structure, with the capacity of the machinery hall has been doubled. The building has also been considerably enlarged, and is well adapted for the display of stoves makes an important and