

Fifth Canadian Seed-growers' Convention.

The fifth annual convention of the Canadian Seed-growers' Association, held in Ottawa, Feb. 4th and 5th, was well attended, representatives being present from all the Provinces east of the Great Lakes, and keen interest was manifested throughout in the meetings and discussions. Some previous conventions may have been more largely attended and more widely representative of the whole Dominion, but never has greater advancement been made toward putting the work of the Association on a basis that will appeal to farmers, and widen its influence throughout the country.

AIMS OF THE ASSOCIATION.

The aims and objects of the Association were very fully and clearly reviewed by the President, Dr. James W. Robertson, of Macdonald College. Dr. Robertson pointed out that the system of selection, as practiced by the members of the Association, was by no means a new principle. In Scotland, it has long been the practice of the best farmers to build a "seed stack" of grain taken from those portions of the field where the grain is of best quality. This superior grain is then kept separate, and used for seed. A quotation from Virgil indicated that the process of hand selection for crop improvement was practiced with marked advantage even before Christ was born.

Reviewing the Macdonald-Robertson competition in seed-growing, it was shown that the yields had been greatly increased and the quality of the grain improved, covering a period of only three years' selection. Dr. Robertson estimates that if the field crops of Canada last year had been increased to the same extent that the crops entered in the seed-growing competition were by three years' selection, the increased value to the country would have amounted to \$80,000,000. Another striking instance of what can be done by the use of good seed and improved methods of farming is furnished by the experience at the College Farm at Ste. Anne de Bellevue. When the farm was purchased, it was no better than the average in the Province. After three years' careful cropping, using improved seed, the yield per acre is practically double that of the average farm in Quebec. This season the farms of Quebec yielded crops to the value of \$73,000,000. If the average yield throughout the Province had been as good as at the College farm, the value would have been \$147,000,000. These figures, Dr. Robertson points out, convey some conception of the room there is for plant improvement, and the work accomplished by those who took part in the seed-growing competition is good evidence as to what can be done through methods employed by the Association.

IMPORTANT CHANGE IN CONSTITUTION.

Among the recommendations brought before the convention, and finally accepted, after considerable discussion, was one altering the constitution so as to give recognition to work of improvement in plants that may have been done by other recognized authorities. Up to the present, no standing in the Association has been given to seed that may have been improved by the experiment stations, or by private individuals, unless the work was done strictly in accord with the Association regulations, which demand that one-quarter acre be the minimum size seed-plot, and that in no case shall more seed be selected from the seed-plot than sufficient to sow a plot four times the size of the one from which the seed was taken. At most of our experiment stations the system of individual plant selection is followed as a basis of improvement, rather than a bulk selection of heads, as practiced by the Association. The system, as outlined by Prof. L. S. Klink, of Ste. Anne's, is, in brief, as follows: Several thousand grains of one variety are planted in rows separately, several inches apart each way, and throughout the growing season these individual plants are carefully studied. Those showing the desired characteristics are noted, and, of the large number of plants growing, about one hundred are selected and carefully stored. During the winter, these one hundred plants are again culled down by more rigid inspection of both the plant and the ripened grain. The progeny of each plant is kept separate, and the seed sown in small test plots in the spring. In this way, improved strains of the different varieties are established, and, when sufficient seed is produced, it is distributed to farmers.

Work of this nature must necessarily be done by public institutions, rather than by private farmers, and it was felt by the Association that grain that has been improved in this way should be given a standing in the Association, as many members would likely wish to start with seed of this sort. The constitution, as now amended, gives the executive council power to give seed improved by recognized authorities a standing in the Association records as high as hand-selected seed of the fifth year. The outcome of this amendment will probably be that most of the new

members will start their work of selection with seed already improved by the experiment stations, as outlined above, and this would seem to be the most rational system.

DR. CHAS. SAUNDERS ON PLANT IMPROVEMENT.

In the course of a paper on the work of plant-improvement, Dr. Chas. Saunders, Cerealist at the Central Experimental Farm, Ottawa, pointed out the difference between the methods of selection followed by the Seed-growers' Association and that followed at the Experimental Farm. The Association method is to select heads from the growing crop repeatedly year after year. One difficulty with this system is that large heads, which are likely to be picked, may be produced on a poor plant, or it may even be a different variety. With wheats, especially, it is extremely difficult to distinguish accurately between some of the varieties, and, as the selection has to be made each year, there is always the danger of not keeping the variety perfectly pure. With the individual-plant system, as outlined above, this difficulty does not present itself, and the desired qualities can be more readily recognized and established in improved strains. Dr. Saunders' recommendation is that farmers who wish to grow specially-selected seed, secure their stock from a strain that has been improved by individual-plant selection, and then keep it pure by the hand-selection process or by the use of a small seed-plot, on which should be sown hand-picked seed.

SHOULD ONTARIO IMPORT SEED POTATOES?

During a discussion on crop-improvement, W. T. Macoun, Horticulturist, of the Central Experimental Farm, Ottawa, expressed the opinion that the time will come when Ontario will import her seed potatoes from the Maritime Provinces. He bases this statement on the results of experiments conducted at the Central Farm, testing Maritime seed potatoes with home-grown seed of the same variety. The first year, the imported stock greatly outyielded the home-grown stock, and even in the second year there was still a marked difference in favor of the Maritime stock. Mr. Macoun attributes this to a loss of vital energy, due to the tubers being grown under adverse weather conditions. The past three seasons have been very dry in the Ottawa district, and Mr. Macoun thinks that this has resulted in the lowering of the value of the potatoes for seed. To overcome this, he recommends securing seed potatoes from districts where a heavier rainfall insures more perfect development, and, therefore, stronger vital energy, and greater ability to give a heavy-yielding crop. In support of this contention, Mr. Macoun instanced the case of England and Scotland, where it has been found advantageous to secure seed from the moister sections of the country for planting in the dry districts.

In discussing this question, T. G. Raynor, Seed-branch representative for Ontario, stated that, during his work of inspection, he had found one man who had been growing the same variety of potatoes for twenty years, and was now getting better yields than ever before. He also pointed out that the results at Guelph indicated that a change of seed was not necessary for best results. This seeming contradiction may be due entirely to the very dry seasons which had prevailed at Ottawa during the past few years, and the results there during this abnormal season can scarcely be taken as representative of the Province generally over a number of years.

THE PRODUCTION OF SEED CORN.

A very valuable address was given by Prof. L. S. Klink, of Macdonald College, on the most approved methods of breeding and selecting seed corn. Prof. Klink stated that, in corn work, the ear is taken as the unit, and it was found that individual ears vary greatly not only in the yield and quality of grain and fodder, but also in the proportion of broken and barren stalks produced. It is only by careful row tests that the best seed corn can be picked out.

J. O. Duke, of Ruthven, Ont., in the discussion, stated that his experience indicated that there was now a ready market, at good prices, for home-grown seed corn. It has been demonstrated that home-grown seed gives much better satisfaction than stock grown further south. Seedsmen recognize this now, and are willing to pay from two to ten cents per bushel more for the home-grown seed. Mr. Duke expressed the opinion that many more men would take up the work of corn selection under the Seed-growers' Association if the size of the breeding plot required were reduced to twenty-five per cent. of the present size. As it now stands, the work is too heavy an undertaking to appeal to the general farmer.

REPORT OF THE YEAR'S OPERATIONS.

The report of the Secretary-Treasurer, E. H. Newman, covered in detail the operations during the past year, and represented the Association to

be in a prosperous condition. Most of the old members are reported to be doing good work in selection, and several promising men have been added to the list of members. Last season there were 536 names on the list, including members and applicants. Of these, 139 reported having selection plots under operation, and requested visits from the inspector. In all, 199 members were visited by the inspectors during the past season. The number of members in full standing last year was 140, and 30 more were accepted during the present convention.

Dealing with the different sections of the country, Mr. Newman noted that improvement is noticeable, both in the number of men operating and in the character of the work being done in all districts. In British Columbia, most of the operators are working with potatoes. In Alberta, oats receive the greatest attention, with fall wheat coming next. Turkey red is the favorite variety chosen for improvement in the southern part of this Province, while in the northern districts more attention is being given to the softer varieties, such as Dawson's Golden Chaff. In Saskatchewan there are not many active members; most attention is given to wheat, oats coming next. The Manitoba members are reported to be doing excellent work. South of the C. P. R. main line Red Fife wheat is the favorite variety, but in the northern districts considerable attention is being given to the earlier varieties. Considerable work is also being done with fall wheat in the northern sections. The order of crops in Ontario, as to their popularity for improvement by selection, is corn, oats, barley, wheat and potatoes. There are a large number of members in Ontario, and, on the whole, they are doing excellent work. Quebec members are not getting along as well as they might, due, largely, it is thought, to the fact that they do not understand the details of operations thoroughly. It is hoped to overcome this difficulty by having a general meeting in French next spring, when the process will be fully explained. In the Maritime Provinces the work is becoming more and more popular, due, to some extent, to the excellent educational influence of the annual Winter Fair at Amherst. Prince Edward Island and Nova Scotia both have a goodly number of men who are doing excellent work in plant improvement. New Brunswick has fewer members, but they are equally good.

TO ENCOURAGE DISTRICT MEETINGS.

Among the recommendations made by the Board of Directors, and approved by the Convention, was one favoring the holding of district meetings or conventions by members of the Association. These informal conferences have been held at some of the winter fairs, and have been very beneficial in getting expression of opinion from a large number of members who are unable to attend the annual convention.

FAVOR EXPERIMENTS WITH CANADIAN-GROWN ROOT SEED.

It was pointed out by the Board of Directors, and also by Peter H. McKenzie, ex-Chairman Standing Committee on Agriculture and Colonization, that a great deal of the vegetable and root seed sold in Canada is of low vitality, and does not produce uniform plants. It was suggested that experiments should be conducted at the Experimental Farm, with the view to determining whether root and vegetable seeds can be grown economically in this country, and testing their relative value, as compared with the imported stock.

Very interesting and instructive papers were presented during the convention by Geo. Michaud, Assistant Seed Analyst, Ottawa, on "Conditions Which Affect the Vitality and Viability of Seeds"; by Prof. R. Harcourt, O. A. C., on "The Comparative Baking Value of Flours Made from Different Varieties of Fall Wheat"; by A. P. McVannell, Perth, Ont., on "Barley Production"; by Prof. Wm. Lochhead, Macdonald College, Quebec, on "How Plants Feed"; and by J. W. Gibson, Ottawa, on "The Seed-plot as an Educator."

OFFICERS RE-ELECTED.

The President of the Association, Dr. Jas. W. Robertson, was re-elected for another year, as were also the ten first directors. Thirty new names were added to the list of honorary members.

HON. SYDNEY FISHER ON THE ROME CON- FERENCE.

In an address before the Seed-growers' Association, Hon. Sydney Fisher, Minister of Agriculture, took occasion to give a brief statement as to the aims and objects of the International Agricultural Institute, a session of which was recently held in Rome, at which Mr. Fisher was present. The objects of the Institute, as outlined by Mr. Fisher, are twofold. First, to secure co-operation in the compilation of reliable reports on crop conditions throughout the world, and in this way secure useful information which will be of great