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Ontario Agricultural and Experimental Union.

The 27th annual meeting of the Ontario Agricultural and Experimental Union convened, as usual, in the Massey Hall, O. A. C., Guelph, Monday afternoon, Dec. 11th, at 1.45 p.m. The attendance was unquestionably the largest since its inception. The usual preliminary business, of appointing committees, hearing reports and passing resolutions, being disposed of, was followed by the report of the Secretary, Prof. C. A. Zavitz. This report included the addresses and reports of the co-operative experiments and summaries of the discussion which took place last session. About 30,000 of these had been printed by the Department of Agriculture, Toronto, in January, 1905, and had been distributed among experimenters and farmers throughout Ontario. In 1905 co-operative experiments had been conducted upon upwards of four thousand farms. These include the Departments of Agriculture, Horticulture, Farm Forestry, Poultry-raising and Agricultural Chemistry.

The President of the Union, Mr. F. C. Elford, Dept. of Agriculture, Ottawa, remarked in his official address of welcome that the work of the experimentalist was not only a self education, but a benefit to the Province at large. Criticism of ex-students was a thing of the past, as it was no longer fitting. They were going out in the world educated and thoroughly competent to fill the highest positions of honor and responsibility, not only in Canada, but in every country in the world. The work of the Union was progressing, both in the number of experimenters and in its scope. He mentioned a new phase of work which had been taken up during the past year, viz., experiments with swamp soils, by Prof. R. Harcourt, and in forest soils, by Prof. E. J. Zavitz. In concluding his address, he expressed the indebtedness of the Union to Prof. C. A. Zavitz, whose work had been such a great factor in promoting its development and success.

RESULTS OF EXPERIMENTS.

Results of co-operative experiments in agriculture was taken up by Prof. C. A. Zavitz, and presented in his usual lucid and illuminating manner. In submitting his report for 1905, he showed that a larger number of good reports had been received during the past year than upon any previous occasion. Better work was also being accomplished by those conducting experiments, due to their having become more familiar with the work, and having been associated with it for so many years.

Thirty-five distinct branches of field agriculture had been carried out during 1905, which covered practically all crops growing in Ontario. Prof. Zavitz presented a tabulated list of the average results of co-operative experiments conducted in Ontario in 1905 with grain crops, field roots, fodder crops, hay crops, potatoes, crops, field roots, fodder crops, hay crops, potatoes, application of fertilizers, methods of cultivation, etc.

Summaries of four varieties of oats distributed throughout Ontario in 1905 showed Joannette oats leading. This oat gave an average yield of 53.6 bushels per acre, and was followed by Siberian, which gave a

yield of 48.4. Daubeney and Tartar King oats yielded 45.8 and 45 respectively. The Joannette oats had not been distributed for several years, owing to their very short straw, which made them unsuitable for the average soil of the Province. This had, however, been overcome by selecting heads from some of the long-strawed plants, and had been the means of producing a strain which surpassed the Siberian by an average of five bushels per acre. The Daubeney oat is a very hardy variety, and is well suited for mixing with Mandscheuri barley. It is one of the very best of the early varieties grown at the College. Tartar King did not give as good results as in former years. It is, however, very thick in the hull, though it possesses a very stiff straw.

Two varieties of barley were distributed in the spring, Mandscheuri and Oberbrucker. The Mandscheuri barley has, as on previous occasions, shown itself the outstanding premier six-rowed barley. It gave a yield of 37.7, and the Oberbrucker 34.3 bushels per acre, or a good margin in favor of the Mandscheuri. An improved strain of this variety is promised for distribution throughout the Province in the spring of 1906. Hulless barley has been experimented with to the extent of fourteen varieties. Guy Mayle gave very good results on the trial plots at the College, but all varieties of hulless barley were inclined to be somewhat weak in the straw.

Experiments with spring wheat showed Wild Goose leading, with an average of 24.9 bushels per acre, and Red Fife second, with a yield of 22.7 bushels per acre. Wild Goose is specially suited to the manufacture of macaroni, and has been found one of the best yielding varieties, both at the College and throughout the Province. Red Fife is one of the best wheats grown for flour production in Ontario.

Emmer and spelt were being successfully grown in many parts of the Province. Emmer produces a much larger yield than spelt, and also produces a good clean straw. Not infrequently it produces a larger yield of grain per acre than oats, and as it only contains about 22 per cent. of hull as compared with about 30 per cent. in oats, its value as a stock food is much superior.

Of the two varieties of buckwheat distributed in the spring of 1905, Japanese buckwheat produced 37.5 bushels per acre, while Silver Hull yielded 32.6 bushels. The Silver Hull is considered the most popular.

Two varieties of field peas were distributed, viz., the Early Britain and Canadian Blue, through those districts which were not as yet infested with the pea weevil. Early Britain gave an average yield of 28.3 bushels per acre, while Canadian Blue gave a yield of 27.5 bushels. The Early Britain has proven a very reliable and abundant yielder in all the experiments that have been conducted for several years past.

The summary of the results obtained with winter wheat experiments, again demonstrated that Dawson's Golden Chaff was the most popular variety. It possesses very stiff straw, and is a heavy yielder. Imperial Amber came second, but the straw of this variety is only considered of medium strength.

Results of co-operative experiments with corn showed Compton's Early leading, with an average yield of 56.74 bushels per acre, and Salzer's North Dakota, 53.87.

Some very interesting results were given with grain mixtures, which experiments are being conducted at the College. It was shown that when a mixture of barley and oats were grown together a larger yield of grain was produced than when they were grown separately, and they also produced a larger yield of grain than any other of the 17 different combinations used. The mixture which produced the best results was Daubeney oats, 84 lbs. per acre, and Mandscheuri barley, 48 lbs., or a mixture of 1 bushel per acre of each variety.

In experiments with fodder corn, Henderson's Eureka gave a yield of 17½ tons per acre, while White Cap Yellow Dent gave only 11½ tons. The Yellow Dent was, however, the more popular variety for fodder, according to the reports received from experimenters.

Results of valuable co-operative experiments with fertilizers were presented by Prof. Harcourt and the Secretary, as to the constituents of the soil and the proper constituents to apply so as to balance them properly to produce satisfactory crops. Swamp soils are generally lacking in mineral matter, and are almost entirely composed of vegetable matter in various forms of decomposition. Under proper conditions this organic matter is rapidly brought into available form, and in such quantities as to entirely overbalance the mineral part of the plant food. This results in a rank growth of straw, and a poor development of grain. This may be remedied by an application of lime, but the lack of potash and phosphoric acid is a much more serious matter. Prof. Harcourt stated that he had secured the co-operation of a number of farmers in testing the effect of fertilizers on swamp soils, and in every case the potash caused an increase in the yield of grain. With oats this increase amounted to from 30 to 40 per cent., and with corn 10 to nearly 100 per cent. over the non-fertilized plot. In two experiments with the oat crop and one with the corn, the Thomas phosphate gave no further increase in yield, while on the remaining plots the Thomas phosphate caused an increase of 30 and 77 per cent. with the oat crop, and 30.19 and 5 per cent. with the corn crop over the potash alone. The experimenters reported that the plots upon which the fertilizers were used produced long, bright straw, which stood up well and yielded grain of good quality, while that

on the "non-fertilized" plot was so weak that it broke down early and produced very light grain. Prof. Harcourt, in concluding, stated that these results indicated that the soils needed to be supplied with a certain amount of mineral constituents. Where the subsoil was clay he recommended getting the clay mixed up with the subsoil by plowing, as the clay contains the constituent usually lacking in the swamp soil.

FORESTRY AND HORTICULTURE.

A subject of much interest was taken up by E. J. Zavitz, Professor in Forestry, O. A. C. He discussed the subject under the clauses contained in the resolution adopted by the meeting in 1903. There was a demand for specially-trained men to carry on the work in the Province. A number of young men in Ontario desired to make this their life work. At present they could only accomplish this by leaving the country. The carrying out of forestry work in relation to agriculture and our great timber resources, requires that such a school be established at an early date. He considered that for economic reasons wood lands should be taxed at a different rate from lands producing other crops. The question of planting tree clumps on dairy farms or in permanent pastures for protection to stock is also worthy of attention.

Prof. Hutt gave an interesting report of the experiments in horticulture. These experiments began twelve years ago, and covered at the present every county and district in the Province. The reports of strawberries this year showed that Tennessee Prolific and Clyde gave the heaviest yields. In raspberries, Walboro was the best early and Cuthbert the best late variety. Prof. Hutt announced that the fruit experiment would be extended, and reports from apples and grapes would be secured in the near future.

PRIZE FARM COMPETITION.

The advisability of having a good farm competition in Ontario, which the "Farmer's Advocate" has several times urged, was presented by H. B. Cowan, Supt. of Fall Fairs, Ontario. He outlined a system by which such a competition could be made productive of much good in the Province. He mentioned the sphere of usefulness which these competitions were accomplishing in the Province of Quebec, where they were looked upon as being of greater service to agricultural interests than institute systems and fall fairs combined. He stated further that while the competition which had been carried on in Ontario some years ago had proven beneficial, yet he claimed they might be made of still greater service. The basis upon which the prizes were awarded might be made more elastic, so that they would apply to the various conditions of farm life throughout the Province. He suggested that while the main competition might be for the best-kept farm, the sub-classes might be arranged so that the man under less prosperous financial circumstances might have a fair chance to compete in one or more sections. For instance, a man who might not be able to compete for the best farm might compete for the best-kept wood-lot, the system of securing the best quality of seed for his general farm crop, the best system of feeding his farm animals; and, in fact, a great many phases of farm work might be given stimulus by drawing men who really need encouragement most into doing things in a businesslike and up-to-date manner. He suggested that booklets demonstrating the most approved and practical methods of farm bookkeeping be prepared for distribution among those who might wish to use them.

Hon. Nelson Monteith expressed his sympathy with the movement, but thought it advisable for obvious reasons that persons outside the Department discuss this question.

Mr. T. H. Mason wished to place himself on record as being in sympathy with any movement which would tend to make for the general uplifting of Canadian agriculture. He had not had sufficient time to consider the various phases of this matter, but thought the suggestions offered by Mr. Cowan workable.

Mr. R. F. Holtermann gave expression to a few timely remarks upon the subject, and urged that the classification be subdivided so that the greatest good to the greatest number should accrue.

L. H. Newman, Secretary-Treasurer Canadian Seed-growers' Association, Ottawa, stated in his remarks that no better means could be devised to induce the people to put into practice the truths expounded by our agricultural colleges, experiment stations and institute systems than by such a system as this. It would be difficult, indeed, to estimate the value of the influence of a successful farmer in a community. He suggested in the classification that farm management should be given greater prominence, for in this respect many of our farmers are yet in a very primitive stage. Another feature which should be given the greatest degree of prominence is the beautifying of the farm home. The township societies might enter two or three homes in competition in each district. Homes such as these would offer an ever-present object lesson to the passer-by, and would be an incentive generally to the farmer to pay greater attention to this question, and thereby aid in raising the dignity of the social scale to a higher standard.

Election of officers for ensuing year are as follows: President, Geo. Robertson, St. Catharines; Vice-President, J. M. McCallum, Shakespeare; Secretary, Prof. C. A. Zavitz, O. A. C. Board of Control—G. A. Putnam, Toronto; President Creelman, O. A. C.; J. O. Laird, Blenheim; Geo. Brodie, Bethesda; Hon. N. Monteith; J. W. Crowe, Pelham.