The Annual Report of the Experimental Farm.

A short time ago THE COLONIST received from the management of the Dominion Experimental Farms a copy of the annual report for the year 1891, containing reports from the director, Wm. Saunders; the agriculturalist, Jas. W. Robertson; the horticulturist, John Craig; the chemist, F. T. Shutt, M. A.; the entomologist and botanist, James Fletcher; the poultry manager, A. G. Gilbert; and from the superintendents of the various farms throughout Canada. We purpose making some extensive extracts from this volume, as the matter contained therein is of vital interest to a large number of our readers, and makes excellent reading for all.

The director in his opening remarks says: "During the season of 1891 farmers in almost every part of the Dominion of Canada have been blessed with bountiful crops. With few exceptions favorable weather for seeding, growth and harvesting prevailed from the Atlantic to the Pacific and the results have been such as to provoke a general spirit of thankfulness among those engaged in agricultural pursuits. Compared with the average of the past nine years, the statistics of Ontario show an increase for the past year in that province in fall wheat of 5.7 bushels per acre; in spring wheat, 5.4 bushels; barley, 3.2 bushels; oats, 5.7 bushels; peas, 3.6 bushels; and of corn in the ear of 9.8 bushels per acre. In turnips the crop has been increased above the average for the period named by 136 bushels per acre; mangels, 76 bushels; carrots, 36 bushels; and potatoes 28.9 bushels, the only items where there has been any falling off being in beans and hay. The former is less than the average by 1.3 bushels per acre, and the latter by about four-tenths of a ton per acre. The last has been no doubt due to the very dry weather which prevailed generally during the month of June. Farmers also had favorable results in the Maritime provinces. In Manitoba and the North-west Territories notwithstanding the strong winds which prevailed in the spring and the early frosts in autumn, the returns on the whole have been most bountiful. The stores of fertility laid up by nature with so liberal a hand in the soil of those fertile plains promise food and plenty in the future to incoming multitudes. In British Columbia also almost every sort of crop is said to have been above the average. The outlook from an agricultural point of view is most encouraging for Canada, for it will be found that associated with the favorable season there have been improvements in the preparation of the soil in the selections of the seed and in the general management of the crops, showing that increased intelligence is being brought to bear on farm work. The stores of fertility in the soil are being more carefully husbanded by a judicious succession of crops, and greater pains are taken to replace the elements which repeated cropping have removed. The mental inactivity of the past is being replaced by a spirit of inquiry, which augurs well for the future.

That much may still be done by the farmer to improve his condition and add to his profits will scarcely admit of a doubt and while there are some conditions which effect his crop which are beyond his control, the intelligent application of improved methods will enable him to make the very best of every favorable circumstance which may arise. One of the most important means of improvement within his reach is the selection of good seed, and it is worth while to pause to consider how much may be involved in this one point hitherto so often neglected. Every seed has an individuality of its own impressed on it by nature, which under favoring conditions will manifest itself. Each is provided with a germ wherein lies this impress of individuality, and this germ is imbedded in a store of such food as is best suited to stimulate the growth of the young plant. When the seed is plump the food supply is bountiful and the infant plant so nourished makes rapid headway, but when the seed is shrunken and imperfectly developed the store of nourishment is much lessened. After the young plant has begun to grow a period of comparative rest is needed, during which growth is scarcely perceptible until the roots are sufficiently extended to gather food for further development; the rapidity with which this progress is made depends very much on the plumpness and inherent vigor of the seed. Crops are thus often enfeebled at the start and delayed in ripening by the use of poor seed, or they ripen unevenly and lack that vigor so necessary to a liberal return.

"As an illustration we may take the oat crop. How often it has occurred that farmers have held over for seed such oats as were too poor in quality to sell to advantage, thinking that any sort was good enough for that purpose, and how frequently has the yield been poor and the grain of light weight. It is not unusual for good farmers who provide good seed of fertile sorts to have crops of this grain of from 50 to 60 bushels per acre, while the average is about 35 bushels; by the exercise of greater care in this respect the average production may be materially increased, and every additional bushel per acre would in Ontario alone add to the returns of the farming community nearly $625,000 a year. Or, taking the improvement in another line, it is well known that some farmers by the selection of good plump seed and thorough preparation of the soil grow oats from four to eight pounds heavier per bushel than many of their neighbors. It should not be forgotten that with an equal yield in measured bushels per acre an average increase in the single province of Ontario of one pound per bushel in weight of the entire crop would be a gain to the farmers, basing the estimate on the crop of last year, of $750,000 per annum. An addition of one bushel per acre on the wheat crop of Ontario, including both spring and fall wheat would in like manner add to the gains of the farmers over $1,300,000 in a single season. The statements respecting wheat and oats will apply with more or less force to every other crop.

"Good varieties of grain some times deteriorate by long and careless cultivation, to such an extent as to make them unprofitable, when they are usually replaced by other sorts. Judicious selection and change of seed would no doubt conserve this fertility and add greatly to the length of life of such varieties. New sorts are obtained either by careful selection and cultivation, by the preservation of occasional sorts which occur in nature or by artificial crossing. The watchful farmer may do much to improve his own grain, and furnish good seed to his less thoughtful neighbors by the first method, and occasionally secure new varieties by the second, but the third requires much more skill and care and is usually practised only by experts in such matters. On the experimental farms all these methods are in operation, and in a very few years a large number of new sorts which have been originated in this climate will be available for test in the different parts of the Dominion.

DISTRIBUTION OF SEED GRAIN.

In view of the importance of placing within the reach of Canadian farmers the best varieties of seed grain obtainable, all the most promising sorts are yearly brought together and tested at the Experimental farms. The crops of such sorts as are likely to be generally useful are preserved, and under instruction of the Minister of Agriculture distributed the following season to those who apply for them as long as the supply lasts.

The samples sent out in the early months of 1891 were as follows:

Province.	Applications for.	Total No. sent
Prince Edward's Island ..	256	468
Nova Scotia	1,000	1,744
New Brunswick	244	360
Quebec	1,205	3,116
Ontario	1,575	4,249
Manitoba	400	1,055
Northwest Territories ..	313	895
British Columbia.....	141	390

REPORTS RECEIVED FROM SAMPLES SENT OUT.

OATS.

Prize Cluster.—This variety of oats has again given good results. At the Central Experimental Farm the yield has varied in different soils from 84 bushels and 4 lbs. to 28 bushels 28 lbs, weighing about 42 lbs per bushel. A large field averaged 58 bushels 24 lbs, and it was considered that one-fourth of the grain was beaten out by a hail storm which occurred after cutting and while the grain was in stook. On the Experimental Farm at Nappan, N.S., the yield in plot culture has been quite phenomenal, having reached 101 bushels 19 lbs per acre, weighing 38½ lbs per bushel. At Brandon, Man., these oats have given 54 bushels 15 lbs per acre, weighing 39 lbs per bushel, and at Indian Head, N.W.T., 82 to 86 bushels per acre, the grain having reached the extraordinary weight of 47 to 48½ lbs per bushel. At B.C. the return has been smaller, being 28 bushels 28 lbs per acre. These oats maintain their character for earliness, ripening usually from two to three days to a week earlier than many other sorts.

Victoria Prize—This is a short, plump, white oat, much like the Prize Cluster, but is not uniformly so good a cropper. On the Central Experimental Farm a yield of six acres averaged 26 bushels 29 lbs per acre, weighing 39¾ lbs per bushel. At the branch farm at Nappan, N.S., the experimental plots yielded 83 bushels 8 lbs per acre, and at Agassiz, B.C., 25 bushels 30 lbs per acre.

Flying Scotchman—This is a white oat, a little longer in the kernel than Prize Cluster or Victoria Prize, which has made a good record for itself, being generally prolific, healthy and vigorous. At the Central Experimental Farm