

Climatic conditions during the year have been somewhat peculiar, and although the total precipitation has been normal the summer is probably the driest that has been recorded in this district.

Hay and grain crops were harvested in good condition, the former being quite up to the average of previous years. Hot winds during the month of December caused considerable loss in the oat crop, consequently the yield has been somewhat low. Dry weather militated against root crops, swedes being very poor, while there are numerous vacant spaces in the mangel crop; yet on the whole the roots are good. Carrots are a very fine crop. Potatoes, although sound, are very small, and will not yield sufficiently to be profitable.

The value of lucerne has been forcibly demonstrated during the drought, and while grass has been burnt by hot winds and sun lucerne has produced a succession of luxuriant crops. All classes of live-stock have been grazed on the lucerne-fields and have kept in splendid condition. During the year the area under this fodder has been increased, about 12 acres being sown for experimental work, from which interesting data should be available next season.

In the horticultural branch the lack of assistance has also been keenly felt, and work has consequently been chiefly of a routine nature. Nevertheless varieties of vegetable-seeds have been tested, concomitant with keeping up a supply of vegetables for farm use.

In plant-breeding work, considerable time has been devoted to the selection of Italian rye-grass, red clover, white clover, cocksfoot, Scotch vetch, potatoes, and numerous other plants. Encouraging results have been obtained in several instances, but some time must elapse before definite results are obtainable.

During the spring a number of young steers and older bullocks were selected for the purpose of comparing the advantages (if any) of fattening cattle at the age of two years instead of growing them on to three and a half and four years of age. The older cattle will shortly be ready for the butcher, but as some time must elapse before the steers are fat the result will not be determined in the meantime.

A considerable number of cattle have been fattened in the ordinary course during the year, and disposed of at remunerative prices. Shorthorn cattle on the farm are of good type, and as the cows are rearing some good calves the future of the herd is assured.

The dairy herd consists entirely of Ayrshires, of which twenty-one cows are this season at the pail. From its inception the breeding and management of this herd has received every attention, and it is gratifying that to-day it is second to none in the Dominion. During the spring the imported bull Auchenbrain Exchange was added to the herd; his progeny will be looked forward to with interest. Another valuable addition to the herd is the imported cow Wylie-land Kate Lockhart 2nd, and Ayrshire champion, now in calf to the imported bull Netherton Good Bonus.

The flock of Ryeland sheep is progressing, and comprises a number of animals which would be creditable to the breed in any English show-ring. This breed is not yet sufficiently known in the Dominion to receive the attention it merits.

The Moumahaki Berkshire pigs are so well known that comment is unnecessary, representatives from the herd being now distributed throughout the Dominion. Great attention has been paid to the breeding of the herd, a special feature, always carefully watched, being fecundity. The herd is still being handled under very disadvantageous conditions with regard to housing.

Six farm learners completed one year's training, and their places have been filled by other boys.

#### *Ashburton Experimental Farm.*

The delay in appointing an Overseer to this farm until late in the season greatly hindered progress being made to get this farm into tilth. This, together with the weedy condition of much of the land, necessitated a great deal of work being done in a short space of time. However, the work was tackled in an energetic manner by Mr. J. G. McKay, who was appointed Overseer, and good progress has been made. On account of the very dry season experienced from the beginning of spring until within a week of the close of the year, the crops grown have been light. The foundation of good work, however, has been laid for future experiments and demonstrations in crops, &c., and useful data collected in regard to crops grown under the abnormally dry conditions prevailing. Following is a list of experiments and demonstrations undertaken to the close of the year: Varieties of potatoes; manuring of potatoes; size of seed test. Peas and tares variety test. Rotation lime experiments, in two series. Pastures: Rotation demonstration; green-manuring and feeding-off experiments; phosphate availability. Variety trials in wheat, oats, barley, forages, and roots. Special selection work with wheat; wheat-breeding.

Mr. Allan, Agricultural Instructor at the Ashburton High School, has been in regular attendance at the farm for observation and recording purposes. His services have been greatly appreciated.

The work of the farm has been under the general supervision of Fields Supervisor Macpherson, who has attended to all details in his usual thorough manner.

#### MISCELLANEOUS EXPERIMENTAL UNDERTAKINGS.

During the year provision was made for the establishment of a limited number of small experimental areas on selected type soils, the work on these being carried out by farmers or local agricultural committees in co-operation with the Department. This arrangement is intended to replace the co-operative experimental plot system hitherto in vogue. The benefits which accrued from the latter system were pointed out in my last annual report. These farmers' trials were conducted, however, under great disadvantages. Being scattered over the country, they did not command and focus the attention of the farmers, and were not under regular observation by the field officers. They were very often imperfectly carried out, and demonstrations continuing on for several years were not possible. Their substitution by definite experimental areas on which