Reference has already been made to investigations carried on conjointly by the Cereal Division and the Division of Chemistry, and as a further illustration of this class of work I may cite our search for a chemical basis for determining the breadmaking value of a flour, an analytical method that would give results in accord with those from direct baking trials. Our data on this matter are perhaps more voluminous than satisfactory, but nevertheless we have made some headway in determining "strength" of flour by chemical means. We have in certain very important particulars been able to correlate the baking and chemical results.

The influence of soil and climatic condition on the composition of wheat and barley has been carefully and systematically studied for a number of years by the Chemical Division. This research has thrown much light on the cause of the high quality of our northwestern-grown wheats. We have found that the amount of available soil moisture together with the temperature prevailing during the period in which the grain is filling are important factors in determining the character of the grain. A fairly dry soil accompanied by high maximum temperatures, such as we usually find over large areas over the North-West during later summer months, arrest vegetative growth of the plant, hasten maturity and conduce to a hard berry with a high percentage of gluten. On the other hand, grain grown with an abundance of moisture and conditions conducive to the lengthening the vegetative period will be starchy and "soft". The highest type of malting barley is one possessing a low percentage of protein, and such we may look for when grown under irrigation.

Among other investigations in which the Cereal and Chemical Divisions have collaborated may be mentioned, "The influence of artificial bleaching on the quality of flour" and "The influence of storage on the composition and breadmaking value of flour".

HORTICULTURAL WORK.

We must now pass on to speak of the experimental work in the field of horticulture, a very wide and varied field, and a work that has yielded most valuable results to the fruit-growing interests in all parts of the Dominion. Here, as all through this account of our investigations, I can only take a few examples which may illustrate the scope and character of the work.

And, first, in connection with apple growing, I would remind you of the classic work of Dr. William Saunders in his attempt to obtain an apple that would endure the rigorous winters of the prairie provinces. This was begun in 1894 by cross-fertilising the flowers of the extremely