

PRODUCTION.

Canada instead of importing them from abroad. So far as they have gone, the experiments have proved successful and are being continued. In the Division of Botany, investigations of the diseases of cultivated plants are carried on at Ottawa and at the field laboratories of St. Catharines, Ont., Fredericton, N.B., and Charlottetown, P.E.I. Reports are made on diseased plant specimens sent in and advice is given as to remedial measures wherever possible. Weeds are identified and methods of eradication recommended. Wild plants from all parts of Canada are received for identification, and information is furnished as to whether they are edible, medicinal or poisonous. Tests are also made as to the suitability of the climate of Canada for the growth of various plants of economic importance, such as fibre plants (flax, hemp), medicinal plants (opium-poppy, anise, etc.), oil-yielding plants (castor oil, soy bean) and miscellaneous plants (mustard, chicory, etc.). Much has been accomplished in arboriculture not only by the setting apart of 65 acres at the Central Experimental Farm for the testing of trees and shrubs from all parts of the world, but also by the encouragement given to tree-planting in the western provinces.

The Division of Chemistry covers a large field, and the Dominion Chemist, who is also Assistant Director of the Farms, controls a staff of nine fully qualified chemists. Investigations have been conducted to determine the nutritive value of fodder plants—Indian corn, grasses, clovers, etc.—by analyses at different stages of their growth. Canadian grown cereals have been analysed to ascertain their quality and nutritive value, and the straw has also been examined to determine its value as fodder. Analyses have been made of soils from different parts of the Dominion, more particularly from the large untilled virgin area of the Northwest. Investigations have been made into the production, fermentation and application of farmyard manures. Many experiments have been conducted to throw light on the factors affecting soil moisture, and means have been suggested whereby the desired conditions of moisture may, to a great extent, be obtained and controlled by cultural operations. The influence of environment on the composition of wheat has been studied since 1905, and the work has now been enlarged, through co-operation with the Dominion Meteorological Service at Toronto, to secure a more comprehensive and detailed study of the relationship between weather conditions and crop growth. Analyses of sugar beets have been useful in demonstrating the suitability of soil and climate at widely different points of the Dominion for the growth of roots of high sugar content and purity. Well waters from farm homesteads have been the subject of special study. Numerous analyses are made in conjunction with problems relating to the land, the crop and the animal which from time to time are submitted by farmers for solution. Analyses are also made of dye stuffs, preservatives, pickling solutions, etc., for the Meat Inspection Division of the Health of Animals Branch of the Department, with a view to the detection of injurious substances. Systematic investigational work with commercial fertilizers is now being carried on at the larger number of the branch Farms and Stations. Owing to the scarcity of potash caused by the European war, the preparation of a nitro-potassic fertilizer by the