

by a process of breeding and selection; (2) the importation and testing of promising varieties from other countries; (3) the production of *élite* stock seed of registerable varieties of grain for propagation by members of the Canadian Seed Growers' Association; (4) the evaluation of various crop combinations which may prove especially desirable for specific purposes; (5) the systematic description and study of leading varieties; (6) the verification of the genuineness and purity of seed stocks submitted for the purpose; (7) the investigation of varieties of grain for which a licence has been requested, in accordance with the Canada Seeds Act; (8) the identification of varieties submitted by farmers and others; (9) the encouragement of the use of good seed of adapted varieties through the use of exhibits, press articles and public addresses; (10) the investigation of special problems which have a bearing on cereal breeding and development work.

Probably the most important problem which the division has in hand at the moment is an attempt to develop for Western Canada a variety of hard red spring wheat capable of resisting the ravages of stem rust. This work, which is centralized chiefly at the Rust Laboratory at Winnipeg, appears to be progressing rapidly toward the goal desired.

*Chemistry.*—Investigations towards the solution of problems affecting Canadian agriculture and direct assistance to farmers, market gardeners, provincial agricultural representatives and others through correspondence and analysis, constitute the two chief phases of the division's activities. Further important work includes the official chemical examination of food products submitted by the Health of Animals Branch, the Dairy and Cold Storage Branch and the Fruit Branch—about 2,000 samples in all. The division also renders chemical assistance to a number of branches of the Government service, *e.g.*, the National Parks Branch, Department of the Interior; the Department of Marine and the Department of Fisheries.

*Extension and Publicity.*—This division edits and prepares for printing all publications issued by the Experimental Farms, prepares and stages educational exhibits at fairs and exhibitions throughout Canada, maintains and operates a lending bureau of educational lantern slides, issues annually to the press about 200 timely and seasonal articles, and in various other ways makes the work of the farms as widely known as possible.

*Economic Fibre Plants.*—Extensive field and mill experiments are carried out with the best varieties of fibre flax and hemp on the Experimental Farm plot fields at Ottawa and several of the branch farms. The division renders valuable marketing services to the Canadian flax growers by serving as a medium for trade with Ireland. Increasing amounts of fibre seed are being sold in the Irish market each year.

*Field Husbandry.*—Experiments are being conducted by this division in order to learn the most suitable crop rotations and crop sequences for various parts of Canada. Information is being secured on the newest and best methods of preparing the land for different crops, as well as on the most efficient methods of seeding and harvesting. Investigations are in progress in regard to drainage, to irrigation and learning the most efficient methods of conserving and utilizing soil moisture in the Prairie Provinces.

How to control the noxious weeds which cause such serious economic losses in many parts of Canada is an important problem studied by means of various cropping systems, cultivation methods and applications of chemicals. How to improve the carrying capacity of unproductive pasture land is another project under investigation. The cost of operating tractors, the value of new types of farm machinery,