

products, research is undertaken on methods of processing, storing, and transporting human and animal foods. The marketing of perishable foods, such as fruit and vegetables, butter, cheese, eggs, honey, and meat, continually presents new problems that demand solution in the best interests of producers and distributors. The recent development in the production and marketing of apple juice made from surplus apples is an example of this type of work.

Great advances have been made in the cold storage of fruits and vegetables, and the recent use of gas storage, discovered in Britain after research in the respiration of fruits, is being applied in this country to Canadian varieties in relation to commercial requirements. Definite progress is being made in maturity studies of fruits, problems of dehydration, and the preservation of fruit juices. Morphology and bacteriology are guiding the application of freezing processes used in the preservation of various agricultural products.

The present-day system of handling milk and dairy products is almost entirely the result of knowledge based on research in bacteriology. The establishment of modern methods is based on painstaking investigation on the physiology of micro-organisms, and the application of this knowledge to practical problems. The researches into methods of evaluating milk and dairy products have become as important as the hygiene of milk production. Bacteriological research has effected a marked change in the conception of food utilization.

Economic research relating to farm management and marketing is also a function of the Department. It is not the intention to increase production without regard to consumer preferences and potential markets. The maintenance of production on an economic basis in well-established farming areas is necessary to prevent the decline and abandonment of such areas with the consequent dislocation of community and national services. Agricultural research is aimed at lowering the cost of production and maintaining a continuous flow of high-quality products to available markets. This service is absolutely necessary for the maintenance of a well-balanced Canadian economy.

THE BOARD OF GRAIN COMMISSIONERS LABORATORY\* (DEPARTMENT OF TRADE AND COMMERCE).

The rapid development of grain production in Western Canada during the first decade of the present century led to the passing in 1912 of the Canada Grain Act. Provision was made for administration of the Act by a Board of Grain Commissioners who were thus made responsible for control of the transportation, weighing, grading, and warehousing of Canadian grain. The Board soon encountered problems that required scientific study and a Grain Research Laboratory was established in 1913.

The Laboratory, which now employs a permanent staff of seven chemists and twelve assistants, comprises a sample-receiving and moisture-testing room, mill room, baking laboratory, macaroni laboratory, optical laboratory, constant temperature room, balance room, nitrogen laboratory, two general chemical laboratories, a small work shop, and various store-rooms and offices.

**Studies Undertaken at the Laboratory.**—Each year the Laboratory provides certain information required by the Board for the administration of the Canada Grain Act. During August and September the quality characteristics of the new crops are determined by the study of numerous individual and composite samples. The Laboratory then collaborates with the Inspection Branch in preparing the

\* Prepared in the Board of Grain Commissioners Laboratory, Winnipeg.