

by the work of university investigators. Considerable effort is expended on studies of the chemical, physical, and microbiological features of the soil in order to devise means of cultivation and discover suitable fertilizers to improve the yield and quality of crops of all kinds. An interesting phase of soil study has been the zonation of large areas for crop production on the basis of the suitability of the soil for specific crops and varieties. In this work the universities have taken a leading part.

The utilization of the products of the farm presents further problems for research. Cereal chemists in the universities are engaged in devising improved means of testing and controlling the quality of wheat, barley, flax, and other grains, and the products made from them. Bacteriologists, plant pathologists, engineers, chemists, and physicists are studying the conditions that provide safe storage for perishable foodstuffs such as meats, dairy products, and fruits. Others are engaged in devising means of producing new products for the purpose of widening the market for farm produce.

Among the many factors that limit the quantity of animal and plant production are diseases and parasites of animals and plants. University laboratories, dealing with such subjects as bacteriology, parasitology, plant pathology, and entomology, carry on investigations toward the control of such pests.

The application of the results of many of these researches is not limited to plant and animal production. Many investigations in parasitology, for instance, are of direct importance to human health. Some parasites that have injurious effects on human beings may be ingested with improperly prepared meat or fish. Such parasites would cause widespread misery but for the fact that public health authorities and others have used the information gained by research workers in the formulation of regulations governing the preparation of foodstuffs. By this means both the quality of the food supply and the health of the individual are protected.

In agriculture, weather is as important as soil and, consequently, the science of meteorology can offer the farmer aid by the development of weather forecasting and by providing information on the agricultural possibilities of local areas as these are affected by climate. In Canadian universities, meteorological studies are carried on for the purpose of extending knowledge of climatic conditions and their effects on crop yield and quality. The development of improved instruments for meteorological work also receives attention. The expansion of air transport has made necessary the rapid development of the branches of physical science that bear on meteorology, and valuable services to agriculture and forestry may arise as a by-product of this development.

The forest resources of Canada provide problems in the production of timber and the manufacture of such products as pulp, paper, and veneers, and studies of many of these problems are carried on either by scientists in university laboratories or in association with them. The production and conservation of forests is aided by research in entomology, botany, soils, meteorology, and aeronautics, in which researches the universities take part. The control of waste caused by forest fires has become a problem for the physicist and the engineer in developing equipment for detecting conditions predisposing to fire. Such problems as the difficulties that complicate the apparently simple procedure of floating logs to the mill have provided universities with opportunities for research and the results have proved useful to forest products industries.