the dangers of hormonal stimulation and of endocrine depressors for dairy cattle and poultry. Of interest also to the stockman is the chemical and biological diagnosis of pregnancy and the tattooing of live stock for identification purposes.

Research in soil chemistry includes a study of the colloid fractions of soils in relation to soil types, soil fertility and phosphate fixation; a study of the composition of soil organic matter and its maintenance in cultivated soils; an investigation of the mineralogical composition of Canadian soils; the adaptation of chemical methods for the determination of fertilizer requirements of soils, and studies of the minor element content of soils in relation to physiological disorders of plants and animals. Soil fertility investigations are conducted in the field and greenhouse in connection with fertilizer trials on soil types, the effect of soil amendments on soil reaction and crop growth, the effect of crop rotations on the nitrogen and organic matter content of prairie soils, the production of canning and orchard crops, and the reclamation of saline soils resulting from flooding by sea water.

Investigations under way in the field of entomology embrace studies of insects affecting man and animals, forest, field, garden and orchard crops, and materials in transit or storage. Specific projects relate to the studies of harmful and beneficial insects, appraisal of their damage, and methods for their control. The methods of control under study include management practices, cultural measures, chemicals, and the production and dissemination of parasites and diseases that attack noxious insects.

Studies on insects attacking man and animals include a wide range of household pests, cattle warbles, ticks, and lice; the preparation and testing of repellents for protection from biting flies; and control of mosquitoes and houseflies over extensive areas. Considerable attention is being given to the newer insecticides and practical methods for their application.

Forest-insect control activities embrace the nation-wide forest-insect survey, begun in 1936, and intensified in recent years in an effort to devise a reliable means of forecasting impending outbreaks. Particular attention is given to such widespread destructive pests as the spruce budworm and sawflies attacking conifers, the hemlock looper and bark beetles, the bronze birch borer and the vectors of Dutch elm disease. Control investigations centre around long-term forest management projects, the use of parasites and diseases, and the exploration of the possibilities of chemical control.

Field-crop and garden insect investigations include studies on grasshoppers, the wheat-stem sawfly, wireworms, cutworms, white grubs, the European corn borer, root maggots, potato aphids, and nematodes. The abundance and distribution of these pests are measured annually by extensive field surveys which provide a basis for planning control campaigns. Insecticides are widely employed in these investigations. Where possible, however, modification of cultural practices are utilized, especially in the control of insects injurious to field crops.

Of the orchard pests, codling moth, European red mite, eye-spotted budmoth, apple maggot, oriental fruit moth, oyster-shell scale and pear psylla are among the subjects of major study. Emphasis is placed on the use of recently developed insecticides, including their combination with fungicides, and on the effect of spray programs upon the whole biotic complex of the orchard. Insect control by parasites and diseases and by orchard management is receiving increased attention.