

as well as liabilities in the rational management of the forest insect fauna. In view of the enormous expanse of territory to be covered, any survey system of this kind must rely on the close co-operation of all parties interested in forest conservation. An efficient organization has been in operation in Canada since 1936. Practically all the important government and commercial agencies concerned with forestry or forest exploitation take an active part, and extensive use is made of their personnel (approximately 2,500 men) in the collection of information. The country has been divided into five regions roughly corresponding to some of the natural divisions of the forest. In each of these a central laboratory serves as a clearing house for specimens and information received. The complete results for the entire Dominion are collated yearly at the Ottawa headquarters. At present, the system is based on the collection of samples of live insects and the submittal of concise, pertinent reports by rangers and wardens. All specimens are reared at the various laboratories receiving them. A wealth of information on insect conditions, heretofore unavailable, has already been collected in this way and is being used for further study and for practical application in control operations. An idea of the progress made may be gained from a comparison of the number of reports received during the years 1936-44.

<i>Year</i>	<i>No. of Reports</i>	<i>Year</i>	<i>No. of Reports</i>	<i>Year</i>	<i>No. of Reports</i>
1936.....	528	1939.....	8,310	1942.....	13,210
1937.....	3,703	1940.....	10,081	1943.....	10,254
1938.....	5,117	1941.....	11,326	1944.....	10,238

The instruction of forest rangers on making observations and insect collections is an important phase of this work. Whenever possible, short courses are given at various points during the winter or spring and these are supplemented by field demonstrations throughout the summer season.

Seventeen forest insect rangers were appointed by the Dominion Government in 1945 for the express purpose of directing the field work of the rangers employed by the Provincial Services and the forest industries. In 1946, an additional 25 specially trained rangers were added to the original number and, eventually, a corps of approximately 75 men will be available for this work throughout the Dominion. Besides instructing and guiding the regular forest rangers, these forest insect rangers will make special collections and reports in their respective territories and will be employed singly or in groups on projects of many kinds, such as estimating damage, laying out sample plots, rearing insect material, and supervising mass collections whenever the occasion demands.

Fundamental Studies

Fundamental studies are designed particularly with a view to unravelling the mysterious maze of relationships which underlies the fluctuations in insect populations. Although, at present, they are purely scientific in scope, there cannot be the least doubt that ultimately they will lead to eminently practical results in the prevention and control of insect outbreaks. The thorough investigation of the biotic and physical factors influencing insect behaviour and reproduction will eventually eliminate much that is now empirical and uncertain from the practice of forest entomology. In the future all such fundamental studies will be conducted by the personnel of the laboratory at Sault Ste. Marie, Ont. This laboratory was erected in 1945 by the Department of Lands and Forests of the Province of Ontario and has been placed at the disposal of the Dominion Department of Agriculture with