

forest pests has brought about a fairly general realization of the potentialities of disease organisms as factors in the control of insects. Although the case of the spruce sawfly disease is perhaps better known than any other by the general public, it does not stand alone in the history of entomology. In the past, too little attention has been paid to disease as a potential ally of man in his struggle against insects. Belief in the efficacy of diseases has been lacking partly because, under natural conditions, their spread is sometimes too slow to prevent serious damage by the insects and partly because many previous attempts at dissemination of disease have met with utter failure. In the opinion of experts, this lack of success should be largely attributed to lack of information concerning the viruses themselves and to failure to appreciate some of their unusual characteristics. In the light of advances made in the past few years, it seems safe to assert that any method by which these diseases may be speeded in their spread and activity is economically justifiable. With this object in mind, the Division of Entomology recently initiated a preliminary program of studies of diseases attacking the spruce sawfly and the black-headed budworm. In 1946, these studies were intensified and extended to include investigations of new possibilities in connection with the control of the spruce budworm and other major forest pests. It is planned to erect a special laboratory for the study and propagation of insect diseases at Sault Ste. Marie, Ont., in 1947.

Chemical Control.—The discovery of the insecticidal properties of DDT has greatly stimulated both research and public interest in the field of chemical control. DDT is one of the most powerful insect poisons known to science. Its uses will be many and varied. It is not likely, however, that it will ever become the “nostrum” into which it has been built up by well-meaning but ill-informed publicity. In forest entomology its uses will be limited, like those of any other insecticide, by the physical and financial difficulties attending its application. The best that may be hoped for is that it will serve as a temporary means of protection of comparatively small areas supporting valuable stands and, in some cases, as an efficient method of stopping outbreaks before they reach excessive proportions. The usefulness of spraying operations of any kind will always be conditioned by several prerequisites, especially by continuous and thorough forest-insect surveys.

Preventive Measures

Control of Importation.—The realization that “an ounce of prevention is better than a pound of cure” is of particular value in dealing with foreign pests. For this reason, the Plant Protection Division of the Department of Agriculture exercises continual, unrelenting vigilance over the importation of plants and plant products from other countries. The function of this Division is well summarized in Regulation I of the Destructive Insect and Pest Act:—

All trees imported are subject to the requirement of a permit issued by the Secretary of the Destructive Insect and Pest Act Advisory Board. The importations must enter through one of several ports of importation established in Canada, and in addition to being accompanied by a certificate of inspection from the country of origin, are subject to reinspection on arrival in Canada either at the port of importation or after delivery to the premises of the importer. No importations may be released from customs without authority under the above Act involving an inspection or clearance certificate issued in Canada, in addition to the permit.

Special regulations are drafted whenever new emergencies arise and are so designed as to ensure as complete protection as is humanly possible against the introduction of dangerous insects and diseases into Canada. Several important interceptions of forest pests have been made from time to time under these regulations.