tain regions of Germany. It was first discovered in America by Dr. Hagen of Harvard University who recorded it in the 'Canadian Entomologist' in 1881. In that and the two following years it was found through the New England States where great destruction of the larch was caused. It was not long in reaching Canada, for in 1883 Dr. Fyles reported its appearance in Quebec on Larix Americana. Two years later, my predecessor, Dr. Fletcher, gave an account of its occurrence in his annual report as Dominion Entomologist: it occurred throughout the east in the provinces of Ontario, Quebec. New Brunswick and Nova Scotia. In 1905 it again assumed serious proportions and it will be of interest to quote Dr. l'letcher's reference to it in his report of that year. After mentioning the fact that it reached Canada in 1882, he states that after three or four years of being stripped, the larches over millions of acres, and practically over the whole of Eastern Canada, were wiped out. With this large destruction of its food plant, the insect practically disappeared until 1904 when it again become noticeable upon ornamental European larches and on larches in swamps. Further, he says: 'A feature of the last outbreak of 1882 to 1885 was the rapidity Further, he with which the attack spread, and the suddenness with which it disappeared. Occasionally specimens of the sawfly or of the colonies of larvae have been seen from time to time since 1885, but there has been no noticeable destruction until the present year.' This last attack has now spread along the forest belt into Manitoba where I have observed it during the past two years, and it has also been reported from near James' Bay and recently as far west as Battleford, Saskatchewan. I have not found it attacking the western larch in British Columbia, but its occurrence there would not be surprising. East of Winnipeg it may be said to extend to the Atlantic as I have found it throughout to the eastern region of Nova Scotia. Its present known distribution in Canada, therefore, is over an area of 2.500 miles in extent. In the United States it extends from the Atlantic coast to Minnesota and as far south as Pennsylvania.

The results of the first outbreak were disastrous as was seen from the report just quoted. The second growth of larch is now being attacked, and we cannot prophesy as to the result of this renewed outbreak. Even should these trees escape, I shall show later in what manner the timber has been reduced in value and utility in most cases by the effect of the first visitation of 1882-5 upon the young second growth.

The habits and life-history of the insect are such as to render it injurious in both the caterpillar or worm stage and the fly stage. The winter is passed by the larva in a cocoon under the turf round the base of the tree. In May the larvae transform into the perfect insect and the flies begin to emerge during that month. An interesting feature of the productive powers of the larch sawfly is that it can reproduce parthenogenetically, this means that the females can deposit eggs which, although they have not been fertilized by the males, are not infertile but produce larvae of the sawfly. This interesting phenomenon which also occurs in certain other insects, is of importance as the productive power of the species is increased when the necessity of the female meeting a male is dispensed with. Shortly after emerging the females begin to deposit their eggs. The eggs are always deposited in the terminal green shoots of the larch and never on any other part of the tree. In laying the eggs the female sawfly makes an incision in the tender stem of the shoot by means of a pair of saw-like instruments at the end of the body and into this incision the egg is pushed. The eggs are usually d posited in a double row in the shoot and as many as forty or fifty eggs may be found on a single green shoot. As they are usually deposited along one side of the shoot the injuries inflicted by the saw-like appendages of the female cause the shoot as it grows to curl. In many cases the injuries are so severe as to kill the shoot and the presence of the dcad and reddish-brown shoots often serves as an indication of the presence of the insect. In about a week to ten days after deposition the eggs hatch and the young pale green caterpillars emerge and immediately begin to feed upon the green verticels of leaves. As they become older they feed in masses, sometimes as many as fifty or sixty caterpillars in a single