

Prof. Saunders, at the Entomological Club of the A.A.A.S., in 1887, reported, "that in the Maritime Provinces, Nova Scotia and New Brunswick, he found the larch saw-fly (*Nematus Erichsonii*), extremely abundant and destructive." (Ann. Rept. XVIII., page 31.)

Mr. Fletcher, in his address as President in 1889, made the following brief reference to the spread of this pest: "The larch saw-fly was very abundant in the neighborhood of Ottawa, and in fresh districts in the Maritime Provinces; the tamarack swamps being rendered almost leafless for hundreds of acres." (Ann. Rept. XX., page 3.)

The Rev. Dr. Bethune, in his address the following year, referred to the species briefly: "The larch saw-fly, to which reference has been made of late years, has not been nearly so abundant as usual in those parts of Ontario where it has hitherto prevailed. It is to be hoped that its natural enemies have multiplied to a sufficient extent to keep it in subjection and prevent its undue increase." (Ann. Rept. XXI., page 7.) In 1891 he again stated that it "continues to be very abundant and destructive. Unfortunately it is a kind of attack for which there seems no practicable remedy." (Ann. Rept. XXII., page 14.) At this meeting also the Rev. Mr. Fyles presented a valuable paper entitled, "*Nematus Erichsonii*; a Retrospect" (l. c. page 28,) to which reference will be made presently.

I have now traced the progress of this obnoxious insect, as recorded in the publications of our society, but a few remarks may be added on its later ravages, and the extent to which it may have permanently injured the tamarack areas of the Dominion. While we have seen that as early as 1883 it had spread through Quebec, it is probable that it had been in Canada at least a year or two previously, but had only then reached a locality where it came under the notice of an entomologist.

My own observations along the line of the Intercolonial Railway and the Maritime Provinces, during the period elapsed since the insect was first reported, fully confirm the extent of the injury wrought in the tamarack districts, and the extent to which the trees were killed. Up to 1890, however, the insect had not, as far as I could see, invaded the Island of Cape Breton, but in the autumn of that year I found, not many miles from old historic Louisburg, a single twig with the characteristic twist and the evidence of oviposition, showing that the enemy had crossed the island. I did not find other evidences of its presence, and all the surrounding trees looked most healthy and vigorous. The worms were in this year reported as very abundant in Prince Edward Island.

The next year I did not visit Cape Breton, but in the beginning of September, 1892, just after our annual meeting of that year, I was in Sydney, and, on driving out through the surrounding country, found that the beautiful green tamarack groves and forests, which (with spruce) are in this section of country quite extensive, had the fire-swept appearance caused by the ravages of the saw-fly, and I was informed that in the previous summer they had been almost as much defoliated. The lower portions of many trees, and small trees had, as elsewhere, partially escaped, but many of the larger trees seemed to be killed. This year the same dreary appearance was observed, and there is no doubt that very serious loss of older trees has been caused.

Whence came the obnoxious insect which has so devastated and disfigured our beautiful woods and by what route did it invade our territories? Apparently from Europe, whence have come many of our most injurious insects, and, unfortunately, but few beneficial ones, and probably through the New England States. The first record that I can find of its appearance in the New World is contained in one of Dr. Hagen's "Entomological Notes", (Can. Ent. Vol. XIII., page 37), where he identifies specimens of larvæ, received from Harvard Arboretum in 1880, as agreeing perfectly with the description and figure of *Nematus Erichsonii*. These larvæ, it may be added, had been discovered feeding on European larches, and at first the native larches appear to have escaped.

In Maine in 1882 the spread of the insect was very extensive, and in the same year it occurred in Massachusetts, New Hampshire, and New York, proving that the insects had multiplied and spread with most astonishing rapidity. The United States Entomological Commission made examinations, in this and following years, of the infected districts, and in its very valuable Report on Insects Injurious to Forest and Shade Trees (1896), Dr. Packard gives a full account of the insect and its ravages. In his Report for