

young European larches which had been planted in a garden in the middle of the town, and which were entirely stripped of their leaves. Upon enquiring if there were any larch or tamarac trees in the neighbourhood, I found that these names were not even known, and when I explained that the tree I was in search of was a Conifer which dropped its leaves in winter, I was informed that "Juniper" was what I meant and should have asked for. This tree does not appear to be so plentiful in the Lower Provinces as in Quebec and Ontario; but wherever they were detected I found more or less of the larvæ of the saw-fly also. At the mouth of Eel River, a mile or two from Dalhousie, is an extensive tamarac and cedar swamp, and here I found that although some of the trees were untouched; yet the greater proportion, especially the taller trees, were badly infested.

On the farm of Mr. Duncan Stewart, there was a row of tamaracs which he has transplanted from the swamp mentioned, and these were badly infested, being conveniently near to the McHarran Hotel, where I was staying, I was able to examine the insects frequently, between the 16th and the 28th July. On visiting the trees the first time, I succeeded in capturing two perfect females of the saw-fly, and found a large number of the clusters of the young larvæ. They were evidently much later in hatching out in this locality than at Quebec, as at this time little harm had been done, and although there were larvæ of all sizes, by far the greater part were very lately hatched from the eggs—and were collected in clusters, every needle of each fascicle, near the part of the twig which had held the eggs, bearing its strange-looking dark-green larvæ. Immediately after hatching, the young larvæ attack the leaves nearest the orifices of their cells; they do not consume the whole of the leaves but nibble the edges, leaving them ragged and uneven. They seem always to work backwards, down the branchlet, and leave the terminal shoot untouched. After the first month they are very voracious and consume every needle in the different fascicles as they come to them; beginning at the apex and holding them between their thoracic feet, they eat them right down to the base, and as soon as one bunch of leaves is finished they move back to the next. On being disturbed they curl their bodies over their backs similarly with the larvæ of some other species of saw-flies. They may, too, be seen sometimes resting in the same position, when being in large numbers all together, they have a very peculiar appearance. When the young larva is first hatched the head is disproportionately large and of a darker colour than the body. I regret to say I did not take accurate measurements of the larvæ, nor record the duration of the different moults; but the active larvæ stage seemed, in most instances, to last about one week, although a few individuals I took home with me from the Eastern Townships, fed for the remarkably long period of three weeks before spinning their cocoons. It is probable that some of these will turn out to be parasitised. After the first moult the larva is of a lighter green in colour, and the head and thoracic feet are black instead of dusky green. After the next moult, however, a great change takes place; the worm is quite altered in appearance; it is very much larger and the colour is quite different; instead of dull-green the whole upper surface of the body is of a peculiar bluish-white hue, similar to the glaucous waxy bloom which is seen on some fruits or the leaves of some plants, as for instance the bloom of the ripe plums or the glaucous white colour beneath the leaves of Pines and the Common Juniper (*Juniperus Vulgaris*). The black head is very conspicuous, and on each of the segments, after those which bear the thoracic feet, except the last, are two double rows of small black tubercles; these do not occur on the second, third and fourth segments. After this there is one more moult; but the only important change is in the size of the larva which, when full-grown, is about an inch and a quarter in length, bluish-white above and green beneath, head and thoracic feet black; pro-legs, of which there are seven pairs, green. When mature and just before spinning up, the larvæ assume a brownish or pinkish hue, and drop from the trees to the ground, where they spin an oval cocoon about half an inch in length and of a dark-brown colour. The cocoon is generally found beneath moss or stones or among the roots of grasses, on or just beneath the surface of the ground; but Dr. Fyles writes me that he found the cocoons at least six inches beneath the surface along the bottom of a hot-bed where they were collected together in masses. Although the larvæ spin up about a week after emergence from the egg, they do not at once change to pupæ, but pass the

winter in the larvæ attained. This is in a cocoon.

The perfect size, somewhat res it is slightly large. nine-jointed anten two to five and pa of a rich waxy or little darker than third pair of legs the same colour as light-yellow for tw colour is black. I rest of the leg. dark spot towards three sub-costal c wing of the femal over half the leng insects emerge tow according to the tamarac, and some to observe the pro last Annual Repor Dr. Packard has coloured plate. I follows:

"The female green shoot, some shape of the hole, and about 1.5m.m. parallel, one being base of the fresh, s by June 20th to 30 of the eggs causes all cases observed, foregoing lines wer while engaged in tl the slit and deposit more than that len, as a number of eg and worked down t while engaged in m twig from the glass ovipositor under a were thrust oblique most active, sliding saw. After the inc blades of the ovipo the muscles at the l egg has passed into the process the ant drawn, they begin fresh incision. \* increases in size the slits enlarge and ga when the eggs are fi