

teenth inclusive, has two tubercles, one on each side, and in a line with the long horns on third segment, each crowned with a cluster of whitish spines; the tubercles on sixth and twelfth segments are much larger than the others those on the eleventh and terminal segments next in size, those on the ninth smallest. The tubercles on the seventh, eighth, tenth and eleventh segments have a streak of white at their base, and each segment behind fourth, excepting ninth, has several smaller tubercles of a bright blue colour. A large whitish patch covers nearly the whole of the ninth and parts of the eighth and tenth segments, and another of a similar character covers the second, third and part of the fourth. A white stripe extends along each side, close to the under surface, from the fifth segment to the end of the body, and in which is set a small cluster of whitish spines about the middle of each segment, from sixth to tenth inclusive. On each side of seventh, eighth and tenth segments is an elongated blackish spot, just above and behind the spiracles; the terminal segment has two dark greenish brown spots above in front of the tubercles. The spiracles are rather large, oval and brownish-black.

The under side is whitish-green, with a central dull white stripe on the hinder segments; the feet are brown, ringed with brownish-black; the prolegs pale greenish, faintly tipped with brown.

This caterpillar varies somewhat in colour, some specimens being of a paler green than that just described.

The chrysalis, Fig. 46, *b*, Mr. Riley describes as "marked with burnt amber, brown, ash grey, flesh-colour and silvery white, and is characterized, like that of the other species of the genus, by a curious, thin, almost circular projection, which has been likened to a Roman nose, growing out of the middle of its back."

There are two broods of this insect during the year; the larvæ resulting from the eggs deposited by the second brood usually attain to less than half their full growth before winter, when they hibernate and complete their growth the following spring. The interesting preparations made by these caterpillars in the construction of little cases, in which they rest tolerably secure from harm while in this state of torpor, is thus described by Mr. Riley "First and foremost—with wise forethought, and being well aware through its natural instincts that the leaf which it has selected for its house will fall to the ground when the cold weather sets in, unless it takes measures to prevent this—the larva fastens the stem of the leaf with silken cables securely to the twig from which it grows. It then gnaws off the blade of the leaf at its tip end, leaving little else but the mid-rib, as shown in Fig. 46, *d*. Finally, it rolls the remaining part of the blade of the leaf into a cylinder, sewing the edges together with silk. The basal portion of the cylinder is, of course, tapered to a point, as the edges of the leaf are merely drawn together, not overlapped; and invariably the lower side of the leaf forms the outside of the house, so as to have its projecting mid-rib out of the way of the larva, as it reposes snugly in the inside. The whole when finished (see Fig. 46, *c*.) has somewhat the appearance of the leaf of a miniature pitcher plant. These curious little cases may be commonly found upon our willows or poplars in winter time.

This insect is liable to the attacks of several parasites, which effectually prevent its increase beyond certain limits. One of these parasites is a tiny dark four-winged fly, which infests the eggs of the *disippus* butterfly; another is a very small black four-winged fly; and a third a larger two-winged fly, both of which attack the insect in its caterpillar state.

THE HELGRAMMITE FLY (*Corydalis cornutus*—Linn.).

This is an insect which is not uncommon throughout Ontario, and whenever and wherever found, either in the larval or perfect state excites much surprise and curiosity from its large size and formidable appearance; it is not, however, in any way poisonous, as some people imagine it to be. In Fig. 47 this insect is represented in its several stages, while the expanded female is shown in Fig. 48. The larva—a most diabolical looking creature *a*, Fig. 47—spends the earlier portion of its life in the water, crawling and swimming about upon the bottoms of rivers and streams, feeding upon the larvæ of various other insects which also inhabit the water. Mr. Riley has published a very interesting account of this insect in the first vol. of the American Entomologist, from which most of the following remarks are condensed.

Most aquatic larvæ spend the period of their chrysalis state in the water, and only emerge therefrom when ready to pass into the perfect or winged state; but the insects form

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