

5. Female moth, bred specimen showing extended ovipositor.
6. Female moth, bred specimen, side view.
7. Female moth, specimen found on poplar.
8. } Male moths; bred specimens.
9. }
10. Male moth, collected at Winnipeg, Man.
11. Male moth, collected at Aweme, Man.

SOME PARASITES OF SIMULIUM LARVÆ AND THEIR POSSIBLE ECONOMIC VALUE.*

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During a year's residence at the Bussey Institution of Harvard University, in 1911, the writer had an opportunity of studying the Simuliid larvæ which abound in the streams of that locality. This study revealed the fact that a large percentage of these larvæ are attacked by parasites, the presence of which appears to result, in all cases, in the death of the host. Simuliid larvæ are most abundant in these streams from early March until May. Isolated specimens are found from then onwards till October, when other species occur in considerable numbers upon the rocks and vegetation in rapidly flowing parts of the streams.

A brief resume of the peculiarities in structure and habits of these interesting larvæ will be of advantage here, as their curious modifications have a very direct bearing upon their liability to parasitism.

The larvæ are to be found either solitarily or gregariously, according to species, attached by means of a caudal sucker to stones or vegetation, only in the fastest flowing water. Silken threads secreted from the salivary glands act as anchor lines, holding the larva in a vertical position, and retain a hold upon the support should the caudal sucker become detached. The cylindrical head bears on its anterior border two fan-like organs carried on elongate pedicels. When expanded, these fans form two very efficient bowl-shaped strainers, through which the water flows. They can be closed at will, and brought over the mouth orifice, carrying with them the small particles of vegetation, and diatoms which constitute the food of the larvæ. Since Simuliid larvæ,

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