

THE EGG LAYING HABITS OF A PARASITIC DIP-  
TERON, *PTERODONTIA*

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The flies of the genus *Pterodontia* belong to the Dipterous family *Cyrtidae*. This family consists of a small group of strange appearing flies which are characterized by having very small heads composed almost entirely of eyes, a large hump-backed thorax and inflated abdomen. They are of medium or large size, the species described here varying from 4 to 8 mm. in length.

As far as is known, the larvae live as internal parasites in the bodies of spiders and, according to Brauer, while within the abdomen of the host they breathe by placing their posterior spiracles or breathing tube openings into the lung-chambers of the spider, thus taking their air supply from the lungs of the host.

The habits of our North American species are but little known and the writer has been unable to find descriptions of the eggs or egg-laying habits of any of our species. In view of this, the following descriptions of the eggs and egg-laying habits of *Pterodontia flavipes* Gray have been prepared:

On August 7, 1915, the writer, while passing by the border of an open hickory grove, observed several large specimens of *Pterodontia* flying up and down the trunks of some large hickory trees. The flies were observed for about half an hour; during this period they continued to hover up and down the tree trunks from about a foot above the ground to a height of ten to fifteen feet. They flew on the leeward side of the trunks and from one to two inches away from the surface of the bark, and at such times they were so sluggish that it was possible to pick them up in one's fingers, and if allowed to escape they immediately resumed their hovering flight up and down the tree trunk. In fact, they may be pierced through the thorax with a common pin and if released show no particular injury or fright, but continue their hovering flight as before.

Before leaving the locality one of the flies was taken alive and carried in a handkerchief. Upon returning to my field laboratory and transferring the specimen to a bell-jar, it was

noted that the handkerchief in which it had been carried was sprinkled with minute black eggs. Further observation of the fly revealed the fact that the eggs were forcibly discharged from the ovipositor in extremely rapid succession, not unlike bullets from a rapid-firing gun. The eggs when first deposited are coated with a sticky substance which causes them to adhere to whatever they hit or fall upon.

The following day some of the trees in the grove were banded with narrow strips of clean white paper. After a brief period several flies appeared hovering over the surface of the bark in the same manner as observed during the previous day. This time, however, with the aid of the white paper strips, their actions were easily interpreted. By watching closely as the flies flew over the paper strips, one could see the eggs appear upon the paper as minute black specks sprinkled in irregular rows. An examination of the bark of these trees showed the leeward side of each tree to be literally sprinkled with hundreds of thousands of eggs.

The eggs contained in the handkerchief numbered 2,300. All of these were deposited by a single female in a period of not over forty-five minutes. Other counts made show that a female fly may deposit as high as 3,977 eggs. The eggs are very minute, measuring 0.18 mm. in length and 0.15 mm. in width. They are slightly compressed and pear-shaped in outline and are of dull black color. Their period of incubation is thirty-two to thirty-three days.\*

\*For a detailed description of the larvae and other stages see King, J. L., 1916, Observations on the Life History of "*Pterodontia flavipes*," Gray. *Annals Ent. Soc. Amer.* Vol. 9, pp. 309-321.