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BIOLOGY OF *GONIOZUS JAPONICUS* ASHMEAD, A PARASITE OF THE
PERSIMON LEAF-ROLLER, *DICHOZOCIS CHLOROPHANTA* BUTLER

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So far as known *Goniozus japonicus* Ashmead has been an ectoparasite on the mulberry leaf-roller, *Margaroma pyloalis* Walker, in Japan, although its biology remains unknown. In 1948 I found it attacking a Pyralid larva, *Dichocrocis chlorophanta* which is the leaf-roller of *Diospyros kaki* Thund. and *Alnus japonica* Sieb. et Zucc. The adult wasp was sent to Dr. Keizo Yasumatsu, who kindly identified it with the specimen reared as the parasite of *Margaroma pyloalis*.

Little is known on the biology of the genus *Goniozus*. The European species, related to the present species, *G. claripennis* Forster, is reported as a parasite on the vine stem-borer *Oekophthirā pillerina* Schiff and *Goniozus* sp. as a natural enemy of the banana scab moth, *Naxoleia octosema* Meyr. in Java. These species sting their host larvae into temporary paralysis and deposit several eggs on a single prey:

Up to the present time, I observed *Goniozus* on pyralid larvae of several different kinds of plants in Japan. The common host was *Margaroma pyloalis*. In Sept. of 1941 I found many of them attacking pyralid larvae, probably *Sylepta derogata* Fabricius, in the leaves of *Hibiscus syriacus* L. in Osaka and in those of *Gossypium indicum* Lam. at Ikeda. At the same time they were also discovered to be parasitic on a Pyralid larva of *Cissus japonica* Willd. All these *Goniozus* wasps seem to belong to the species in question, although not clearly identified. Probably the present species may attack larvae of several Pyralids that roll the leaves of Moraceae, Ebenaceae, Malvaceae, Vitaceae, etc.

The developmental stage attacked by *G. japonicus* is not strictly determined. In August, 1948, the head-widths in mm. of the parasitised *Dichocrocis* larvae found in the rolled

persimon leaves indicate that they belong to four or five different stadia as shown in the following data: 1.85mm. (3examples) - 1.76 (1) - 1.67(1) - 1.37(1) - 1.30 (1) - 0.78 (2). Although the wasp attacks the host larvae in several instars, the condition of the larvae attacked seems to be critically determined; for example she seems to attack them in their short resting period before ecdysis when the defence is the smallest. When transferred into a glass tube containing a rolled leaf of the host, she often avoids the larva which severely bites all minute intruders with mandibles. It is difficult to make the wasp attack the hosts in captivity as in the case of some solitary wasps like *Tiphia* and *Lahva*. On Aug. 23, a female was transferred into a tube of 1.5cm. in diameter containing a nearly fullgrown larva of *Sylepta derogata* in a rolled leaf of *Abutilon avicennae*. She did not attack it. On Aug 25, she was replaced into a tube containing a *Dichocrocs* larva. She stung the larva into semiparalytic condition on Aug. 26 and deposited 3 eggs on the 5 th abdominal segment on Aug. 27.

In general the attacked host larva becomes clearly sluggish in movement and remains in the semiparalytic state permanently. The wasp eggs, which are about 0.43mm. in length and 0.13 mm. in width; tapering caudad and milky white with glassy lustre, are attached transversely on the dorsal surface of the middle portion of the host body, always directing their cephalic ends towards the median line. The number of eggs deposited on a single host is about 10, viz., 16 - 12 - 10 - 10 - 9 - 6 - 5 - 4 - 3 - 2 in respective case observed. The hatching larvae feed on the host body fluids at the same points as the ectoparasite. The fullgrown larvae spin their scanty, pale brown and short spindle-shaped cocoons in group. They are about 5mm. in length. The female has 3 pairs of ovarioles and the total number of mature egg cells in both ovaries is 2 or 6, while the number of immature egg cells is small. This may indicate that she is unable to deposit many eggs in a short time in succession and she needs to supply nutrition by means of feeding upon the body fluids of the host larva. The proportion of *Dichocrocs* larvae attacked by this wasp at Hirai, Kagawa-pref., approached 20 per cent.

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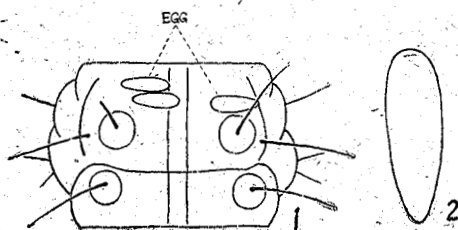


Fig. 1. Egg location of *Goniozus japonicus* on the 5 th abdominal segment of *Dichocrocis* larva. Fig. 2. Dorsal aspect of the egg.

摘 要

柿葉捲ホソミスジノメイガの天敵ハマキアリガタバチの生態

岩田久二雄

従来クロフメイガの敵虫としてのみ知られていた、ハマキアリガタバチが香川県下において柿の害虫たるホソミスジノメイガの幼虫に20%の寄生率を示していることを報じ、その生活概要をのべた。今後に残された問題は、如何にして人工的に増殖せしめるかにある。