This page intentionally left blank.

211, the specimen having been said to be from Florida. See Ent. News, 1917, XXVIII, 82. Dr. F. D. Godman, Ann. Mag. Nat. Hist., 1907, XX, 144, cites *magica* Ploetz, as a synonym of *radians*.

Choranthus haitensis n. sp.

The description of *radians* will answer for this species. It differs as follows. *Upperside*: Primaries: Nervures black, the fulvous not dentate into the fuscous border. Secondaries: Fuscous border entire. *Underside*. Primaries entirely fulvous, excepting the base and the border of the inner margin. Secondaries entirely fulvous.

Described from a number of specimens from Haiti and San Domingo. The only definite localities are Samana Bay, San Domingo, (Dr. W. L. Abbott) and the *type* male from Port de Paix, Haiti, VII, 27, 1917, (Dr. W. L. Abbott) and a female with the same data.

The sex mark distinguishes these two species from any Pamphilinae known to me. *Type* in the collection of The Academy of Natural Sciences of Philadelphia.

Notes on Gonatopus ombrodes, a Parasite of Jassids (Hymen., Homop.)

By C. N. AINSLIE, U. S. Bureau of Entomology.

(Continued from page 173).

It may be worth while to note here that the body of the larva after emergence is so much greater in bulk than the capacity of the sac that it is plainly evident it must occupy much of the abdominal chamber of the jassid, using the sac possibly as a spare room into which to expand as growth adds to the volume of the body.

THE COCOON

When ready to construct the cocoon, and this usually follows closely on emergence, the larva seems best satisfied to select the groove of a curled grass blade or even to locate on a flat blade, and there, with its body parallel to the axis of the leaf it makes its cocoon. The silk of which the cocoon

is fashioned is of such very fine texture that a single thread is almost invisible except when placed in a strong light. When the larva leaves its host it sometimes spins a few threads as it moves away, but these are meaningless and are soon abandoned. After more or less travelling about, in captivity, a location for the cocoon is decided upon and a first move made by fastening a few delicate threads in front of the head. The silk issues from a spinneret near themouth. By swinging the head backwards and sideways, points of contact for more threads are secured and soon a filmy fabric or awning begins to envelop the larva. Hour after hour the spinning progresses on the inside of the chamber without a minute's delay as if the naked helpless larva were making frantic efforts to clothe itself as soon as possible. The spinner reverses ends within the cocoon whenever necessary to distribute the silk properly. When complete the cocoon is quite dense, nearly or quite opaque and is snow white. It measures, over all, about 6 millimeters long and 1 millimeter broad at the widest part. The cell proper that contains the larva and afterwards the pupa is only 4 millimeters in length. On each end of this is a sloping addition more transparent than the main structure, a tapering web, the entire affair somewhat resembling an inverted hammock in shape.

These cocoons are not difficult to find in the open since they are very white and are usually placed prominently near the tips of grass blades in plain sight, on the upper side of the leaf. Occasionally they are found attached to stems of grasses or among the vegetable rubbish near the ground. On one occasion an *ombrodes* larva emerged in captivity and locating on a grass blade spun for itself a very fine, nearly transparent screen of silk. Two very minute ants that happened to have been introduced into the cage with some earth were seen feeding upon this silk fabric and they nearly denuded the larva before they could be driven off. The larva did not mature but gradually dried up without moving.

The adult emerges through an irregular opening that is chewed in one end of the cocoon. A period of ten to twelve

days elapses from the emergence of the larva to the appearance of the adult.

The Adult

August 21, 1914 an adult emerged from a cocoon that was begun August 10th. She was black, wingless, had enlarged anterior femora and the usual chelate tarsi. At first glance she exactly resembled a very active ant. When first seen she was racing wildly about the vial, pausing at times for a careful preening. To see what would happen I introduced three living and active *Cicadula 6-notata* into the tube with this adult. As the three moved down the cage toward the lighter end of the vial the dryinid sprang at them and captured the least active individual. She caught it at right angles, bent her body around beneath the body of the jassid and apparently attempted oviposition. She soon left this one, approached one of the others with her antennae in rapid motion before her, touched it with the tips of the antennae and threw the antennae back against her thorax, stiffly for a second or two, repeating this operation several times. This backward antennal gesture gave her a startlingly fierce and tigerish expression. Presently she made a spring, grasped her victim with her jaws and chela and curved her abdomen under its body as if searching for a place to penetrate with the ovipositor. Beginning at the neck she gradually worked down across the thorax until she reached the opening between the second and third segments of the abdomen when the tip of her abdomen was thrust in and held there for at least a minute. Meanwhile the jassid was lying limp and helpless, and without any effort to escape. While ovipositing the parasite appeared to be chewing on the jassid's thorax but seemingly did no harm. When released the jassid shook itself, seemed much disturbed by the attack, but in a few minutes was as lively as ever. Time did not permit of dissection to learn if an egg had actually been placed.

Similar attacks have several times been observed. The parasite usually steals slowly up on her prey with quivering antennae, at times throwing these rigidly back against the

thorax, giving her a most vicious expression. When near enough she makes a quick spring and seldom misses. All these observations were made on individuals in captivity. Without doubt the same method is used in the open, her resemblance to an ant perhaps making approach more easy. In a number of instances these adults have been seen to feed on jassids after capture, sinking their jaws into the thorax of the captive and devouring ravenously, killing it in the operation.

From an economic standpoint this species must be regarded as distinctly beneficial although as a control measure it can be of little real value since it normally occurs in very limited numbers.

Oviposition by a Cockroach, Periplaneta americana Linn.* (Orth.).

By V. R. HABER, Research Assistant in Entomology, University of Minnesota.

Little detailed information concerning the egg placing habits of our common cockroaches is recorded. For this reason it seems desirable to record these observations made upon the oviposition habits of the American cockroach, *Periplaneta americana* Linn.

As is characteristic of most of the species of cockroaches or Blattidae, *Periplaneta americana* Linn. is nocturnal. Thus it was necessary to continue observations during the entire night.

A cage was provided in which to confine the roaches during observation. It consisted of a wide mouthed candy jar of about two gallons capacity. Inside upon its bottom rested small slabs of corrugated pasteboard, each leaned slantwise against the wall of the cage. During observation the cockroaches were fed with freshly killed individuals of the same species, bread and water.

---

*Published with the approval of the Director as Paper No. 200. of the Journal series of the Minnesota Agricultural Experiment Station.