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SOME PHILIPPINE EUCHARIDS WITH NOTES ON  
THEIR OVIPOSITION HABITS

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Plate XI, and I Text figure.

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The Eucharid-flies serving as basis for this account are those which the writer had occasion to investigate while his stay at Los Baños in the Philippines in 1929. Small as the material is, it proves to be of great interest on account of embracing two new species. Of these two one appears to represent a new genus. The species dealt with in this account are as follows:

*Parapsilogaster montanus* GIRAULT

*Kapala foveutella* GIRAULT

*Kapala violacea* n.sp.

*Losbanus uichancoi* n.g., n.sp.

Up to the present, very little has been known of the biology of the Eucharid-flies, the majority of which are parasitic on ants. In 1923 C. P. CLAUSEN put on record in some details the biology of *Shizaspidia tenuicornis* ASHMEAD which is parasitic on *Camponotus herculeanus japonicus* MAYR and deposits egg en masses within the buds of various trees. The planidia emerged from the buds gain access the nests of *Camponotus* by attaching themselves to walker ants as the latter move about the trees in search of foods, and attach themselves to host larvae. In this account a record is given of the oviposition habits of some of the above mentioned species.

Before proceeding farther, the writer wishes to express his hearty thanks to Professor L. B. UICHANCO for help rendered him during the

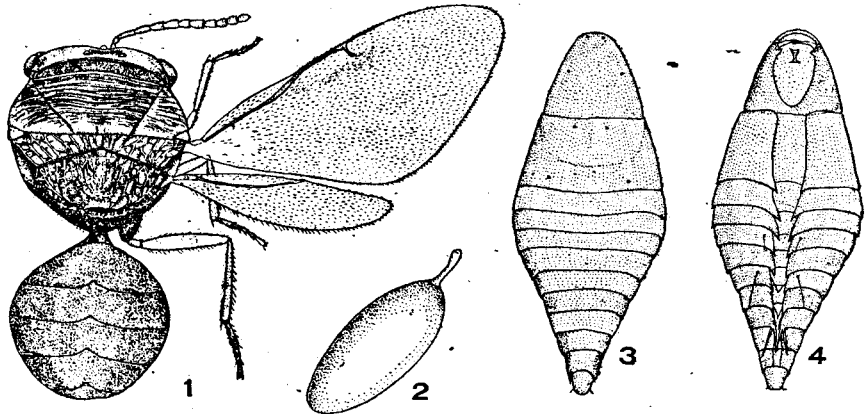
course of this work, and also to Mr. S. KINOSHITA, Professor T. KABURAKI and Mr. K. KISHIDA for kind help and advice.

### PARAPSILOGASTER MONTANUS GIRAULT

(Text fig)

Philippine Journ. Sci., Vol. 36, n. 4, p. 451, 1928.

FEMALE.—Head wider than deep (45:32), very thin in dorsal view; ocelli arranged in an obtuse-angled triangle, the lateral ocelli separated



◆ *Parapsilogaster montanus* GIRAULT

1 Female; 2 Egg; 3 Planidium, dorsal view; 4 Same, ventral view.

from the inner eye margins by their own diameter. Mandibles long, sickle-shaped, the left with a large tooth near the middle, the right with two teeth which are subequal in size. Labrum palmate, with 6 or 9 digits, each with a spine at apex; maxillary palpi 2-jointed, the first joint elongate-cylindrical, with three bristles; the second about half the length of the first and slightly swollen in the basal half, with 3 bristles at apex; labial palpi one-jointed, very small, with one bristle at apex.

Antennae 12-jointed, measuring 1.56 mm. in length; scape rather short, spindle-shaped; and twice as long as wide; pedicel a little longer than wide; funicle joints gradually shortening distad; first joint thrice as long as wide.

Fore-wings 3 mm. long by 1.17 mm. wide; submarginal, marginal, stigmal and postmarginal veins approximately in the ratio of 43:22:5:12; ciliation uniform exclusive of the basal part; apical two-thirds faintly clouded. Hind-wings 2.1 mm. long by 0.54 mm. wide; hooks three; ciliation uniform.

All legs with hairs in sparse numbers; all femora considerably thickened and broadest at the middle; tibiae rather slender; the basal joints of all the tarsi long, and those of the hind tarsi almost as long as the following three joints combined.

Abdomen visibly five-segmented, the first segment longer than the following two segments combined; all segments emarginated at the middle on the posterior margin; petiol very short, as long as the hind coxa; ovipositor slightly produced; pygidium with sparse numbers of hairs.

Head and thorax metallic blue-green with bronze and purple reflections. Antennae dark brown except the scape, pedicel and basal half of the first funicle joint which are yellowish brown; mandibles brownish red; labial and maxillary palpi pale brown. Legs yellowish except the coxae which are of the same colour as the thorax; the apices of the last tarsal joints brown. Abdomen black.

Head longitudinally striated on both sides of the face, extending from the gena upwards to the back of the anterior ocellus where the striae on both sides are connected together; a transverse keel between the posterior ocelli; occiput transversely striated.

Mesonotum transversely striated; axillae longitudinally striated; scutellum swollen conically, and strio-reticulated longitudinally; propodeum coarsely reticulated; abdomen smooth.

Body 2.7 mm. long by 1.35 mm. across at the thorax.

MALE.—Unknown.

### Egg

(Text fig. 2)

Elongate oval in shape with a short stalk at the broad end; translucent

white in colour; chorion smooth.

Length 0.18 mm. and width 0.07 mm., and length of stalk 0.04 mm.

### First Stage Larva or Planidium

(Text fig. 3, 4)

Body spindle-shape, composed of 11 segments exclusive of the head, and brown in colour except the terminal segment which is pale. Head of a considerably large size, about 0.01 mm. in length, rounded at both ends, gradually widened posteriorly; mandibles sharply pointed, crossing with each other, and occupying a position in the buccal cavity; there is a flattened chitinous plate at the middle of the lower lip; body segments subequal in length except the first which is as long as the next two joints combined. Head with two pairs of minute semitransparent round spots on the first body segment, the one near the anterior margin, the other near the posterior margin. Segments 1-8 slenderly produced posteriorly at the postero-ventral corners; eighth segment sending out a long spine on each side from the postero-ventral corner; a pair of short bristles near the tip of the last segment.

Body 0.12 mm. long by 0.04 mm. across at the widest part.

### OVIPOSITION HABIT

This species is rather common in the district of Los Baños. The adults appear mostly in February. The female deposits eggs on the underside of the leaves of *Sandricum koetjape* and *Premna* sp. The eggs laid look like white powders scattered over the leaf. The egg stage lasts for about one week.

### KAPALA FOVEATELLA GIRAULT

(Pl. XI, Fig. 1)

Philippine Journ. Sci., Vol. 36, n. 4, p. 453, 1928.

FEMALE.—Head wider than deep (42:32); ocelli separated from the eye margins by three times their own diameter. Antennae 12-jointed,

measuring 1.38 mm. in length; scape cylindrical, about four times as long as wide; pedicel as long as wide at apex; funicle joints serrated, the serae of joints 3-5 subequal in length and about as long as their own joints, and longer than those of others; club ovate, 2-jointed, and about as long as the last two funicle joints combined.

Fore-wings 3.3 mm. in length and 1.26 mm. in width; submarginal, marginal, stigmal and postmarginal veins approximately in the ratio of 45:28:5:10; stigmal vein obscured by a fuscous cloud which forms a transverse band across the disk. Hind-wings 2.1 mm. in length and 0.54 mm. in width; hooks six.

Legs rather slender with the femora slightly thickened. First abdominal segment longer than the remaining segments combined; all the segments emarginated medially on the posterior margin; petiol slightly longer than the posterior femora.

Head and thorax metallic blue-green with bronze and purple reflections. Abdomen dark brown with faint blue-green reflections. Antennal scape and pedicel yellowish; funicle joints dark brown; mandibles yellowish brown. Legs yellowish except all the coxae which are of the same colour as the thorax.

Head smooth except the occiput which has transverse striae; mesonotum with heavy transverse striae except the parapsides which are foveate-punctated; axillae heavily striated; scutellum with some 7 striae on each side; propodeum with a few longitudinal striae at the middle; petiol longitudinally striated above; abdomen smooth. Scutellum giving off posteriorly two very long processes over the abdomen.

Body 3.6 mm. long by 1.41 mm. across at the thorax.

MALE.—Similar to female in general colour. Antennae 1.65 mm. in length; funicle pectinate, the stalk of the first much shorter than others. Face longitudinally striated on both sides of the upper parts; vertex with transverse striae. Thorax foveate-punctated above; abdomen smooth. Wings hyaline.

Body 3.3 mm. long by 1.5 mm. across at the thorax.

**Egg**

(Pl. XI, Fig. 2)

Elongate oval in shape, with a long, slightly curved stalk at the broad end, translucent white in colour; chorion smooth.

Length 0.18 mm. and width 0.06 mm., and length of stalk 0.16 mm.

**First Stage Larva or Planidium**

(Pl. XI, Fig. 3, 4)

Body spindle-shaped, composed of 11 segments exclusive of the head. Head 0.04 mm. long by 0.03 mm. wide, brown in colour, heavily chitinized, rounded at the anterior end, emarginated medially on the posterior margin, and widened posteriorly. Mandibles sharply pointed, crossing with each other, and lying in the buccal cavity. At the middle of the lower lip there is a flattened chitinous plate. Body segments slightly, uniformly chitinized, and pale brown in colour; first segment as long as the next two segments combined, and other segments subequal in length; segments 3-8 slenderly produced posteriorly at the postero-ventral corners; eighth segment provided on the ventral margin with a long blade-like appendage which extends beyond the terminal segment. Head with a pair of minute bristles on the anterior margin and a pair of minute semitransparent round spots in the dorsal part; first body-segment with four minute spines dorsally and one ventrally on each side; second segment without spine; third segment with two minute spines dorsally and one ventrally on each side; fourth and fifth segments with a long bristle ventrally on each side near the lateral margin, the latter segment with another short bristle a little inside of the bristle just mentioned; seventh segment with a long bristle ventrally on each side near the lateral margin; last segment with a short bristle on each side near the middle.

Body about 0.13 mm. in length and 0.05 mm. in width at the widest part.

## OVIPOSITION HABIT

This species is rather common in the district of Los Baños, and is also found by the writer at Batavia, Java, in 1928. In the former the adults, though found throughout the year, appear in the most abundance in February. The female deposits eggs in the lower tissue of the young leaves of *Griricidia sepium* and *Leucaena glauca*, making holes in the tissue by means of its ovipositor (Pl. XI, Fig. 5). Generally one to four eggs are laid in a single hole. The egg stage lasts about one week.

## KAPALA VIOLACEA n. sp.

(Pl. XI, Fig. 11)

FEMALE.—Head wider than deep (42:32); posterior ocelli separated from the inner eye margins by four times their own diameter. Antennae 1.35 mm. in length and 11-jointed; funicle joints serrated as in *K. foveatella*, and gradually shortening distad; scape cylindrical; pedicel as long as wide at apex; first funicle joint twice as long as wide at apex; club one-jointed, short, oval in shape, and considerably longer than the last funicle joint.

Scutellum (Pl. XI, Fig. 11) sending out posteriorly two very long processes over the abdomen. Abdominal petiol considerably longer than the hind coxa; first abdominal segment much longer than the remaining segments combined; all the abdominal segments emarginated medially on the posterior margin.

Head, thorax and abdomen with blue and purple reflections; antennae with the scape and pedicel yellowish brown; funicle joints and club dark brown. Mandibles yellowish brown. Legs yellowish except all the coxae and femora, the former similar in colour to the general body-surface, the latter pale brown. Fore-wings with a brown cross stripe and faintly dusky extending from this to apex.

Head smooth; mesonotum transversely strio-reticulated; axillae and scutellum longitudinally strio-reticulated; propodeum rather smooth with two longitudinal keels along the middle line; abdomen and petiol smooth.



Body 3.3 mm. in length, by 1.6 mm. across at the thorax.

MALE.—Unknown.

Type in the collection of the Imperial Agricultural Experiment Station.

REMARK.—The species is closely allied to *K. foveatella* GIRAULT, but it may be distinguished from this by the difference in the sculpture of the thoracic notum.

### LOSBANUS UICHANCOI n.g., n.sp.

(Pl. XI, Fig. 6)

FEMALE.—Head wider than deep (30:22), thin in dorsal aspect; ocelli arranged in an obtuse-angled triangle; the lateral ocelli separated from the inner eye margins by twice their own diameter. Mandibles long, sickle-shaped, the left with a large tooth near the middle, the right with two teeth which are subequal in size; labrum palmate with 4 digits, each with a stout spine at tip; maxillary palpi 3-jointed, the first joint cylindrical, about thrice as long as wide, the second a little shorter than the first, and the third a little shorter than the second; labial palpi one-jointed; thrice as long as wide. Antennae 11-jointed exclusive of a ring joint, measuring 1.29 mm. in length; scape cylindrical, rather short; pedicel as long as wide at apex; first funicle joint a little more than twice as long as wide, the second a little shorter than the first, the third almost as long as the second, the following joints, except the last, subequal in length and width, and slightly longer than wide, and the last joint as long as the preceding two joints combined.

Fore-wings 2.25 mm. in length and 0.96 mm. in width; submarginal, marginal, stigmal and postmarginal veins approximately in the ratio of 32:20:2:10; ciliation uniform except the basal part; apical two thirds faintly clouded; veins brown. Hind-wings 1.8 mm. in length and 0.39 mm. in width; hooks three; ciliation uniform.

Legs slender; the first tarsal joint of the hind legs as long as the following three joints combined.

The first abdominal segment as long as about half the length of the

abdomen petiol cylindrical, and slightly longer than the hind femur.

Head and thorax metallic-green; pleurae, metanotum and propodeum with blue and purple reflections; abdomen black with slight blue and purple reflections. Antennae with the scape yellowish brown, pedicel pale brown; flagellum dark brown; mandibles yellow except the tip which is brown. Legs yellowish except all the coxae which are similar in colour to the thorax. *excludes from Lobbmann as now recognized!*

! Head and thorax foveate-reticulated except the parapsides which are smooth and shining; parapsidal furrows and the furrows between the axillae and scutellum foveate; scutellum with a transverse keel near the tip.

Body 2.8 mm. in length and 0.66 mm. in width at the thorax.

MALE.—Unknown.

Types in the collection of the Imperial Agricultural experiment Station.

REMARK.—The present form is closely allied to *Parapsilogaster* GIRAULT, but it may be distinguished from this by the following points:—Maxillary palpi 3-jointed (2-jointed in *Parapsilogaster*); thorax much longer than wide; parapsides and axillae somewhat swollen and smooth; scutellum not particularly swollen; abdominal petiol elongate-cylindrical; abdominal segments with the posterior margin not emarginated.

### Egg

(Pl. XI, Fig. 7)

Elongate ovoid in shape, with a rather long stalk at the broad end; translucent white, and chorion smooth. Length 0.14 mm., width 0.05 mm., and length of stalk 0.08 mm.

### First Stage Larva or Planidium

(Pl. XI, Fig. 8, 9)

Body spindle-shaped composed of 11 segments exclusive of head, pale brown in head, and brownish in body. Head rather small as compared with the preceding species, measuring 0.03 mm. in length, and a little longer than wide; mandibles sharply pointed, crossing with each other,

and lying in the buccal cavity; two pairs of minute semitransparent round spots in the head, the one near the anterior margin; the other near the middle. First body-segment as long as the following two segments combined; second a little longer than the third; other segments subequal in length; two pairs of minute semitransparent round spots on the dorsal side of the first segment, the one near the anterior margin, the other near the posterior margin; a pair of similar spots near the posterior margin of the second segment. Eighth segment slenderly produced posteriorly from the postero-ventral corners; a small bristle on each side of the last segment near the middle.

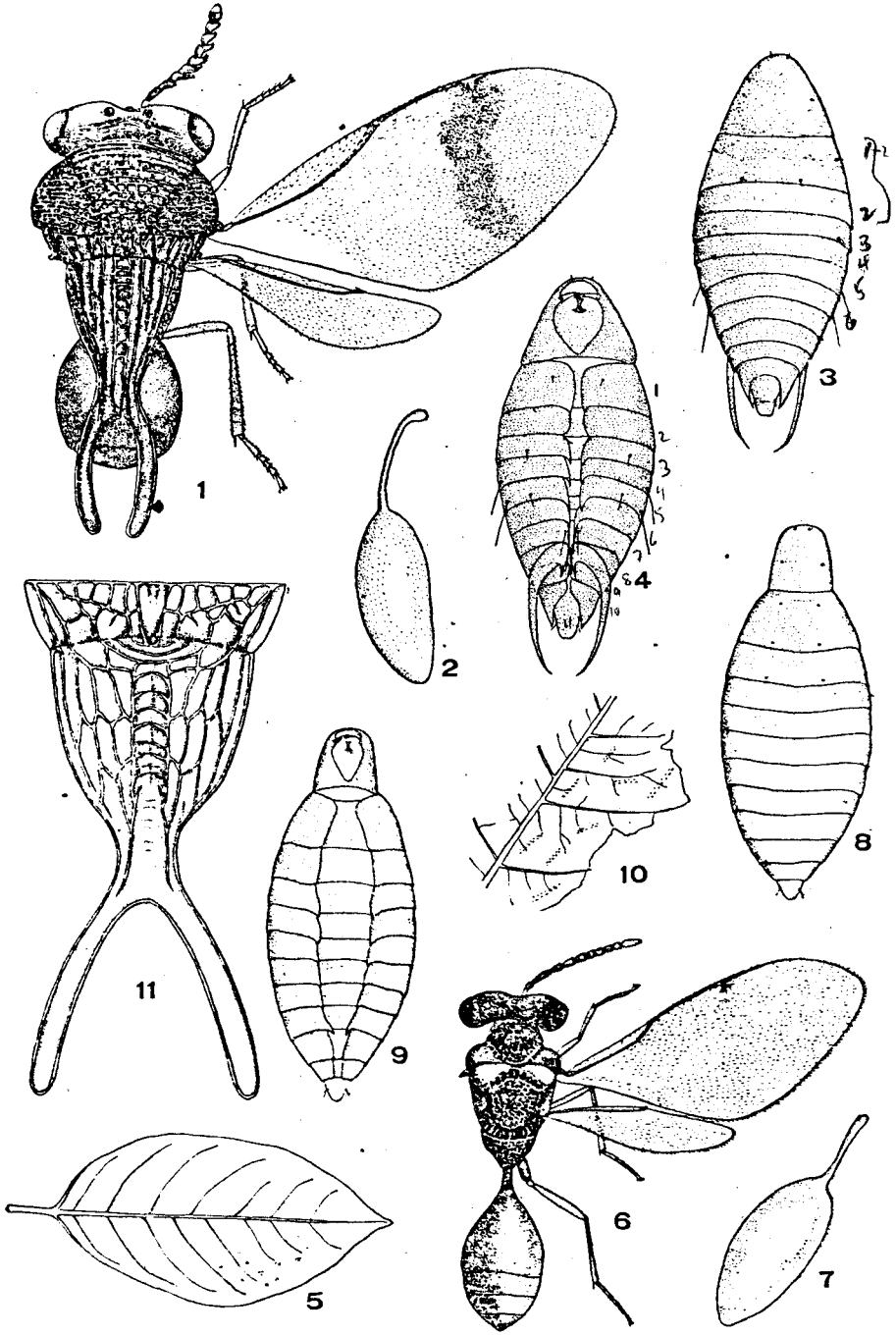
Length about 0.16 mm., and width 0.052 mm. at the widest part.

#### • OVIPOSITION HABIT

In the district of Los Baños, this species may be collected throughout the year. However, the adults are most common during the dry season, especially in February. The female deposits eggs in the lower tissue of the young leaves of *Celtis philippinensis* and *Leucaena glauca*, making holes by means of its ovipositor. The holes are arranged in two short parallel rows as is shown in the accompanying figures (Pl. XI, Fig. 10). The duration of the egg stage seems to be about one week.

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