

ICHNEUMONIDAE, EVANIIDAE, AND BRACONIDAE OF GUAM

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Data on the material obtained on the Guam insect survey of 1936, and the host records of the reared material are contributed by O. H. Swezey.

FAMILY ICHNEUMONIDAE

SUBFAMILY PIMPLINAE

1. *Echthromorpha conopleura* Krieger, Zool. Mus. Berlin, Mitt. 4(2): 321, 1909.

Mt. Alifan, April 21, Bryan; Ritidian Point, April 14, 22, Bryan; Piti, April 30, issued from pupa of *Sylepta derogata* on *Hibiscus tiliaceus*, Swezey; Piti, May 2, Usinger; Piti, Aug. 2, Sept. 17, reared from *Cosmophila flava flava* on *Urena lobata* var. *sinuata*, Swezey; Mt. Tenjo, May 3, Swezey, Usinger; Inarajan, May 6, Usinger; Mt. Chachao, May 16, Swezey; Agana, May 25, Swezey; Asan, Aug. 8, reared from a *Nacoleia diemenalis* on an unidentified legume, Swezey; Fadian, Aug. 19, Swezey; Sasa, Sept. 3, reared from pupae of *Spodoptera mauritia* in rice seedling plot, Swezey; Yigo, Nov. 8, reared from *Sylepta derogata*, Swezey. Occurring rather commonly.

This species was described from Brazil. There is no record of its occurrence elsewhere except in Guam. It is the species recorded from Guam by me in 1913 as *Echthromorpha continua* (Brulle) (?). It was recently studied by R. A. Cushman at the U. S. National Museum, from material sent from Guam by R. G. Oakley. Cushman determined it as *Echthromorpha conopleura* Krieger, so named because of the conical protuberance on the mesopleura which distinguishes it from other species.

As no other species of *Echthromorpha* is known to occur in the Western Hemisphere, and as this species was described from only four specimens in the Berlin Museum, with partially illegible label, it may be possible that the locality "Brasil" is in error. It will be of great interest to learn of its occurrence in any additional localities.

2. *Lissopimpla nigricans* Fullaway, Haw. Ent. Soc., Proc. 2(5): 288, 1913.

Machanao, June 30, Swezey; Piti, July 20, at light, Swezey; Piti, Nov. 3, in garden, Swezey; three specimens.

This is a black species described from Guam, and there is no record of its occurrence elsewhere.

SUBFAMILY TRYPHONINAE

3. *Diplazon laetatorius* (Fabricius).

Ichneumon laetatorius Fabricius, Spec. Ins. 1: 424, 1781.

Bassus laetatorius, Morley, Ichn. Brit. Mus. 3: 125, 1914.

Diplazon laetatorius, Kelly, Jour. Econ. Ent. 7: 294, 1914.

Only one specimen of this cosmopolitan syrphid parasite was obtained at Piti, Sept. 16, Swezey.

SUBFAMILY OPHIONINAE

4. *Paniscus latro* Holmgren, Freg. Eugenies Resa, Ins. 6: 412, 1868; Fullaway, Haw. Ent. Soc., Proc. 2(5): 289, 1913; Morley, Ichn. Brit. Mus. 2: 124, 1913.

Piti, Sept. 13, Nov. 12, 22, at light, three specimens, Swezey.

This ophionid was described from Guam. According to Morley, the *Paniscus samoanus* Kohl described from Upolu, Samoa, in 1905 is the same species.

5. *Allocamptus giganteus* (Szépligeti).

Dicamptus giganteus Szépligeti, Gen. Ins., Fasc. 34: 28, 1905.

Allocamptus giganteus, Morley, Ichn. Brit. Mus. 1: 26, 1912.

Agana Swamp, May 25, Usinger.

This large ophionid is known in Java and the East Indies. The single specimen collected by Usinger is its first record in Guam.

6. *Henicospilus merdarius* (Gravenhorst).

Ophion merdarius Gravenhorst, Ichn. Europ. 3: 698, 1829.

Henicospilus merdarius, Morley, Ichn. Brit. Mus. 1: 46, 1912.

Ritidian Point, April 15, among ferns, one specimen, Bryan.

This is a European species which has been taken rarely in India, Malay Peninsula, Asiatic Siberia.

7. *Cremastus flavo-orbitalis* (Cameron).

Tarytia flavo-orbitalis Cameron, Bombay Nat. Hist. Soc., Jour. 17: 589, 1907; Morley, Fauna Brit. India, Hym. 3(1): 506, 1913.

Cremastus flavoorbitalis, Cushman, Ent. Soc. Wash., Proc. 35(5): 73, 1933.

Mt. Alifan, May 21, reared from *Eurrhyarodes tricoloralis* (Zeller), a leafroller on a low weed called *yerbas babue*, Swezey; Mt. Chachao, June 16, reared from a leafroller on *Gymnosporia thompsonii*, Swezey; Piti, June 22, reared from tortricid larva in pod of *Pithecolobium dulce*, Swezey; Machanao, June 30, reared from *Margaronia multilinalis* on *Ficus tinctoria*, Swezey; Talofoto, Nov. 18, collected among spiny amaranths infested with *Hymenia fascialis*, one of its favorite hosts, Swezey.

This species has a wide distribution in the Orient from India to Japan. It reached Hawaii as an immigrant, being first noticed in 1910. It was described and known for a long time under the name *Cremastus hymemiae* Viereck. It was introduced from Japan into the United States as a parasite of the European corn borer, and was also introduced from Japan into Guam in 1931 for the same purpose. It became established, but Mr. Swezey did not rear it from the European corn borer in 1936. It was, however, reared from several other species of moths.

SUBFAMILY CRYPTINAE

8. *Hemiteles guamensis*, new species.

Female 3 mm. long, shining black and, for the most part, highly polished, the legs, mandibles, basal joint of antennae and tegulae pale to golden-yellow, antennae beyond the first joint light brown; smooth throughout except for the fine pin-point punctuation on the face, costae, and carinae on scutellum and propodeum; the face, propodeum laterally and abdomen apically clothed more or less densely with fine silvery-gray hairs.

Head transverse, wider than the thorax, width twice the length (as seen from above), eyes large, oval, convex, bare; ocelli lying between on the vertex, arranged in the form of an obtuse triangle, the lateral members removed from the eye margin and from each other about two diameters, anterior member not much over one; frontovertex still wider than long, flat on top, declivous in front; face nearly quadrate but still noticeably wider than long, with the antennae attached at the top and between the eyes at about their middle, in rimmed sockets lying at base of a depression; clypeus not separated but probable line of separation marked by a short sulcus at the sides; antennae 20-segmented, long and slender, nearly as long as the body, not widely separated at base, basal joint short, stout, apically tangentially excised at outer side and hollowed, the second segment or pedicel sunk in the cup, flagellum filamentous, segments 3 to 5 subequal and four to six times longer than wide, the following segments progressively shorter, the apical segment a little longer and somewhat flattened and pointed; mandibles short, flat, narrowing apically and bidentate, base about equaling in width the malar space; genae and postgenae moderately wide and convex; maxillary palpi slender, 5-jointed; labial palpi shorter and 3- or 4-jointed.

Thorax long, moderately wide and deep, prothorax visible from above, extended in front in a short neck; mesoscutum as wide as long, convex, margins carinate and perfectly rounded, notauli present extending five sixths the length, converging medially behind but not meeting; scutellum triangular, slightly convex, separated from the scutum by a deep costate groove with ridged sides; metathorax transverse, marked by a transverse depression with ridged anterior and posterior margin; propodeum convex and declivous behind, finely reticulately sculptured and completely areolated, areola closed, a deep fovea directly in front of it, the median area behind it slightly depressed, carinae of lateral margins with an anterior and posterior spinous projection on either side; mesothoracic pleurae with a shallow depression next posterior margin; metathoracic spiracle small, oval.

Abdomen elongate, subpetiolate, fusiform, greatest width at apical margin of 2d segment; 1st segment the longest, 2d longer than wide, 3d wider than long, following shorter, transverse; 1st segment bent and expanded apically, the spiracle in middle slightly raised at end of lateral groove; ovipositor exerted about one third length of abdomen.

Wings hyaline, stigma triangular, moderately wide, areolet incomplete.

Legs moderately long and slender.

Piti, May 2, one specimen, holotype female, reared from grass leafroller, *Marasmia venialialis*, Swezey. Type in collection of Experiment Station, Hawaiian Sugar Planters' Association.

9. *Bathymetis* species.

Upi Trail, May 5, swept from ferns, one specimen, Swezey.

10. *Pezomachus* species.

Upi Trail, May 5, swept from ferns, one male, Swezey; Orote Point, May 24, one female, Swezey; Machanao, June 4, one female, Swezey; Sinajana, June 15, one male, Swezey. There may be more than one species.

FAMILY EVANIIDAE

Evania appendigaster (Linnaeus).

Ichneumon appendigaster Linnaeus, Syst. Nat., 10th ed. 1: 566, 1758.

Evania appendigaster, Fabricius, Syst. Ent., 345, 1775.

Merizo, May 24, Bryan; Piti, May 10, June 8, Usinger; Piti, May 27, July 13, 27, Swezey; Sumay, Sept. 28, Swezey.

This cosmopolitan parasite of roach oothecae was reported in Guam by Fullaway in 1911.

FAMILY BRACONIDAE

1. *Macrocentrus pallidus* Fullaway, Haw. Ent. Soc., Proc. 2(5): 289, 1913.

Dededo, May 11, four specimens, reared from phycitid abundant on leaves of *Guettarda speciosa*; Agat, May 31, one specimen reared from cocoon on leaf (probably of coconut tineid); Mt. Alifan, June 27, three specimens reared from phycitid on *Guettarda*; Orote Peninsula, two specimens, reared from leafroller on unidentified tree; Merizo, Oct. 2, one specimen, reared from cocoon of coconut tineid. All collected by Swezey.

2. *Chelonus guamensis*, new species.

Female 3 mm. long, shining black, basal third of abdomen, legs, antennae, and mandibles brown, the mandibular teeth black, flagellum of the antennae fuscous, as are also the hind coxae, apical half of hind tibiae, and the tarsi; covered with a close microscopic silky pubescence, although the disk of the scutellum and the mesopleurae are, for the most part, bare; variously sculptured.

Head transverse, wide as thorax, about twice as wide as long (as viewed from above), eyes oval, convex, hairy, ocelli on the vertex in the form of an obtuse triangle, lateral members less than one diameter apart but removed from eye margins about four, frontovertex twice as wide as long, convex, finely striate, excavated in front for the antennal scrobes, face only a little wider than long, also striate, clypeus below indicated by a shallow linear impression with pit on either side, antennae attached at top and at about middle distance of eyes, widely separated and not far from eyes, about two thirds length of body, consisting of 16 segments, the basal segment quite stout, following segments filamentous and decreasing in length outwardly, mandibles fairly stout and toothed apically,

the width of base much less than that of malar space, genae and postgenae fairly wide, convex, striate, smoothly rounded to occipital margin, which is distinctly carinate, maxillary palpi 5-jointed, labial palpi 3-jointed, white.

Thorax stout, fairly long and deep, pronotum transverse, collarlike, hardly visible from above, mesonotum wider than long, convex above, declivous in front, finely punctuate and in part striate, scutellum triangular, convex, a transverse row of circular pits along the basal margin; metanotum transverse, the anterior and posterior margins of the apical half carinate with a costate groove between, basal half on either side of the scutellum also costate, propodeum about as long as metanotum, flat on top, declivous behind and on the sides, coarsely rugulose.

Abdomen as long as head and thorax combined, corbiculate, elongate oval, the tergum convex, the ventrites basally collapsed against the tergites leaving a hollow cavity, the tergum without indication of segmentation and generally rugoso-striate, ovipositor exerted and about half the length of the abdomen.

Legs fairly long and stout, the hind pair much larger than the fore and middle pairs.

Wings hyaline, stigma large, triangular, more than half as wide as long, with the parastigma, which is quite conspicuous, as long as the metacarp, radial cell not nearly reaching apex of wing, recurrent nervure interstitial with 1st cubital crossvein, 1st cubital and discoidal not separated, subdiscoidal nervure not interstitial but joining the discoidal below the middle of the apical section, nervulus postfurcal.

Sumay Road, July 15, holotype female, Swezey. Type in collection of Experiment Station, Hawaiian Sugar Planters' Association.

3. *Chelonus* species.

Inarajan, May 14, one specimen, reared from bean leafminer, Swezey.

4. *Phanerotoma melanocephala* Fullaway, Haw. Ent. Soc., Proc. 2(5): 290, 1913.

Described from a single specimen collected in Guam by Fullaway in 1911; not collected in 1936.

5. *Phanerotoma* species.

Mt. Chachao, June 16, one specimen, reared from leafroller on *Gymnosporia thompsonii*, Swezey.

6. *Apanteles guamensis* (Holmgren).

Microgaster guamensis Holmgren, Freg. Eugenies Resa, Ins. 6: 432, 1868.

Apanteles guamensis, Fullaway, Haw. Ent. Soc., Proc. 2(5): 290, 1913.

Inarajan, May 7, 14, June 25, reared from rice leafroller, *Susumia exigua*, Swezey; Dededo, May 11, reared from corn leafroller, *Marasmia trapezalis*, Swezey; Mt. Alifan, May 26, reared from corn leafroller, Swezey; Piti, July 13, reared from *Pyrausta phoenicealis*, a leafroller on *Elephantopus spicatus*, Swezey.

This braconid was described from Guam. It was collected by Fullaway in 1911, and was quite common in 1936.

6a. *Apanteles guamensis* variety?

Ypan, June 8, one specimen reared from *Hymenia fascialis*, Swezey; Talofofo, Nov. 18, four specimens reared from *Hymenia fascialis*, Swezey.

7. Apanteles species.

Tarague, May 17, one specimen, swept from grass, Swezey.

8. Apanteles species.

Agana, May 4, one specimen, Swezey; Orote Peninsula, Aug. 2, one specimen, reared from leafminer in *Ipomoea*, Swezey.

9. Opius longicaudatus (Ashmead).

Biosteres longicaudatus Ashmead, U. S. Nat. Mus., Proc. 28: 970, 1905.

Biosteres = *Opius*, Gahan, U. S. Nat. Museum, Proc. 49: 65, 1916.

This braconid was described from Manila, and now is recorded from Guam for the first time. Ritidian Point, Aug. 6, reared from the fruitfly *Dacus ochrosiae* Malloch in *Ochrosia* sp. Search was made for it in other parts of the island. The fruitfly was reared from *Ochrosia* fruits from several places, but no other parasites were obtained except the first ones. In November 1937, R. G. Oakley reported that the parasite had been recovered from infested *Ochrosia* fruits at Orote Point, and infested *Ximenia* fruits between Dededo and Yigo.

10. Microbracon species.

Tarague, May 17, three specimens swept from grass, Swezey.

11. Ischiogonus pallidiceps Perkins, Fauna Hawaiiensis 2(6): 684, 1910.

Piti, May 2, one collected on *Pithecolobium dulce*, Usinger; Upi Trail, May 5, one specimen swept from ferns, Swezey; Fadian, Sept. 18, 21 reared from a mass of cocoons in burrow of *Ceresium unicolor* in log of *paipay*, Swezey.

This species was described from Hawaii, where it is parasitic on larvae of cerambycid beetles.

12. Ischiogonus palliatus (Cameron).

Monolexis ? *palliatus* Cameron, Ent. Soc. London, Trans., 560, 1881.

Ischiogonus palliatus, Ashmead, Fauna Hawaiiensis 1(3): 362, 1901.

Machanao, June 4, Usinger; Barrigada, June 12, four specimens reared from cocoons found in cerambycid burrows in dead trunk of *Hibiscus tiliaceus*, Swezey.

This species was also described from Hawaii. We procured five specimens in Guam.

13. Spathius guamensis, new species.

Female: 4 mm. long, yellowish brown to brown to reddish brown to black, tegulae and legs stramineous brown with tarsi fuscous; antennae fuscous brown, sheath of ovipositor fuscous brown; mandibles brown with black tips; wings hyaline.

Head a little wider than the thorax, a little wider than long, extended somewhat behind the eyes, which are short oval, convex and bare; ocelli arranged in a small obtuse triangle just below the summit of the head and about half way between the insertion

of antennae and vertical margin, distance between lateral members about one third distance to eye margin; frontovertex convex above, smooth and polished, declivous in front of ocelli, where the surface is rugoso-striate except for a narrow strip along eye margin, behind highly polished and smoothly rounded on to occiput, which has the margin strongly carinate on the sides; face more or less in the vertical plane although somewhat retracted below, wider than long, widening out below to about 1.5 times the width at its upper limit, finely aciculate and rugulose, and hairy; clypeus small, distinctly separated, anterior margin carinate and slightly curved; mandibles below oral orifice short, stout, apically pointed, basal width about equaling that of malar space; antennae attached at middle distance of eyes behind a frontal prominence, the sockets oval, fairly far and wide apart, rather close to eye margin with a deep groove or depression between, a little longer than the body, consisting of 35 segments, which decrease in length gradually from 3d segment outwardly although the first three segments of the flagellum are hardly different in length, segments 1 and 2 are stout, the flagellum slender; maxillary palpi long and slender, 5-jointed; labial palpi shorter, 3-segmented, genae and postgenae quite wide.

Prothorax prominent with the anterior and posterior margins carinate, the saddle rather coarsely reticulately sculptured; mesoscutum longer than wide, convex, its surface shagreened; parapsidal furrows deep, converging and confluent before reaching posterior margin; scutellum scutate, that is, triangular but apically truncate with a wide and deep costate furrow at base, disk slightly convex, sculpture microscopically fine; metanotum a transverse furrow with posterior margin strongly carinate; propodeum nearly as long as mesoscutum, convex, rugulose, areolated, the central areola pentagonal with apex directed anteriorly, this and several other areolae striate; spiracles minute, circular; mesopleurae smooth and shining below, striate above, a row of circular fossae along the carinated posterior margin, duplicated on the margin of the side of the propodeum.

Abdomen elongate oval, more or less depressed, petiolate, the petiole rather short, 1st abdominal segment one third the length of the abdomen, bent near the middle where the spiracle is, somewhat flat, narrow basally but widening apically to twice the basal width, the tergite rugoso-striate, 2d segment about three fourths as long as 1st but wider than long, following tergites transverse, smooth, and shining behind the first; ovipositor as long as or possibly a little longer than the abdomen.

Legs fairly stout, spinulose.

Wings rather long and narrow, stigma large, lanceolate, recurrent nervure received at lower inside angle of 2d cubital cell, which is five-sided, long, and narrow, only half as wide at base as it is apically; nervulus slightly postfurcal, radius reaching apical margin of wing.

Male: similar except in pygidial characters peculiar to the sex, though generally smaller and with fewer antennal segments (28-30).

Machanao, June 30, described from 19 females and two males (holotype, allotype, and paratypes) reared from two clusters of cocoons in burrows of cerambycid collected under bark of *Elaeocarpus joga* log, Swezey. Types in the collection of the Experiment Station, Hawaiian Sugar Planters' Association.

14. *Spathius* species.

Upi Trail, May 5, from ferns, one female, Swezey; Mt. Chachao, May 16, two females, Usinger; Machanao, June 2, miscellaneous sweeping, three females, Swezey. These may include more than one species.