

## DESCRIPTIONS OF TWO NEW GENERA AND SIX NEW SPECIES OF PARASITIC HYMENOPTERA.\*

BY A. B. GAHAN.

The descriptions of one new genus and three new species of Ichneumonoidea, one new genus and two new species of Chalcidoidea, and one new species of Proctotrypoidea are contained in this paper. Types of all will be deposited in the United States National Museum.

## ICHNEUMONOIDEA.

## BRACONIDÆ.

## MICROGASTERINÆ.

*Apanteles* (*Pseudapanteles*) *terminalis*, new species.

1900. *Pseudapanteles terminalis* Ashm. MS. in Smith's Ins. N. J., 1899, p. 593.

*Male*.—Length 3.5 mm. Black, except legs and anal one-third of abdomen, which are brownish testaceous. Whole head, except occiput, strongly rugoso-punctate and covered with short whitish pubescence; mandibles blackish brown; eyes hairy; clypeal fovea deep and rounded; labrum conspicuous; palpi pale yellowish; scape brownish testaceous, the flagellum wholly black. Thorax rugoso-punctate with whitish pubescence, the posterior half of the mesopleuræ smooth, impunctate. Propodium wholly rugoso-punctate, with distinct median and lateral carinæ, the latero-posterior angles prominent, giving an appearance of concavity to the posterior face of the propodium. Anterior and median coxæ brownish, posterior pair black, all trochanters, femora, and tibiæ brownish testaceous, darkest above, all tarsi more or less dark brown, the two anterior pairs slightly testaceous. Wings hyaline, the costal, postmarginal, radius, first intracubital, apex of the median, and more or less of the discoidal veins and the stigma brownish; remainder of the venation paler. First dorsal tergite one and one-half times as long as wide, the sides parallel or nearly, second segment half the length of the first, the third still shorter. The first three dorsal segments are strongly rugoso-punctate, the first two entirely black and the third with a broad crescent-shaped black spot basally, its lateral angles and apex like the following segments and ventral surface testaceous.

*Female*.—Scape, pedicel, and three basal joints of the flagellum brownish testaceous; mandibles reddish brown; all coxæ as well as femoræ, tibiæ, and tarsi pale testaceous; wing veins and stigma brownish testaceous. Ovipositor exerted about the length of the abdomen. Otherwise like the male.

\*Contribution from the Entomological Laboratory of the Maryland Agricultural Experiment Station.

*Type:* No. 12758, U. S. National Museum.

Described from seven specimens, as follows: Three males from Jacksonville, Florida; one male from Cedar Point, Maryland; one male and one female from Long Island, New York, and one male from College Park, Maryland. The College Park specimen is in the collection of the Maryland Experiment Station; all others are in the United States National Museum. The male and female from Long Island are undoubtedly the specimens selected by Dr. Ashmead as types for the species.

#### RHOGADINÆ.

#### ALLORHOGAS, new genus.

Transfacial line equaling or nearly the facial line. Head transverse, the temples rather broad, two-thirds the width of the eyes; antennæ long filiform; ocelli in a small equilateral triangle; labial palpi three-jointed, the maxillary palpi four-jointed. Head and thorax very finely reticulately sculptured; parapsidal furrows complete and deeply impressed, the median lobe of the mesocutum with a broad median longitudinal furrow; scutellum small; mesopleuræ with a distinct furrow; propodium more or less rugose, rather abruptly declivous posteriorly, with two distinct carinæ originating at the median point on the anterior margin and diverging in a curve posteriorly to the apex of the truncation, where they merge with the lateral longitudinal carinæ. Wings with three cubital cells; the marginal cell completely closed; the recurrent nervure interstitial with the first transverse cubital; radius arising from the middle of the stigma, its first abscissa very slightly shorter than the second, the latter about half the length of the second abscissa of cubitus. Abdomen oblong-ovate, sessile, slightly longer than the thorax; the first segment longer than wide, striate with two carinæ laterally at the base; second segment and apical half of the third strongly striate, the suture between distinct but not deeply impressed; ovipositor exerted about twice the length of the abdomen.

*Type:* *Allorhogas gallicola*, new species.

In Ashmead's "Classification of the Ichneumon Flies" this genus would fall near *Clinocentrus*. It may be distinguished from that genus by the non-compressed abdomen. From *Oncophanes* and *Epirhyssalus* it is separated by the fact that the abdominal segments are not tumid. In Szepligeti's classification of the Braconidæ the genus agrees most nearly with *Semirhytus*, but the thorax is not smooth, the parapsidal furrows are deeply impressed, and the recurrent nervure is interstitial. The latter character differentiates it from *Rhogas*.

**Allorhogas gallicolaw** species.

*Female*.—Length 4. Antennæ 30-jointed, the flagellum blackish brown, darkest at apex, the basal joints and scape somewhat testaceous. Face more finely pilose than the rest of the head, its sculpture, except on median line which is nearly smooth, slightly coarser and more distinctly punctate than the vertex; mouth opening rather small; eyes, lobes at the apex, and spot enclosed by the ocelli black; remainder of head, thorax, and abdomen brownish-testaceous; the metathoracic propodium slightly darker than the rest of the body; scutellum 1, separated from the mesoscutum by a deep, wide furrow which is crossed by several transverse ridges; carinae of the propodium with numerous short transverse striae radiating from them. Palpi and legs slightly paler than the body, the hind tibiae brownish and the apex of all tarsi brown. Wings hyaline; tegulae and veins are yellowish; stigma and veins outwardly brownish. Apical half of third abdominal segment and base of the fourth faintly lineolate, others smooth; ovipositor blackish.

*Male*.—Similar to female in every respect except that the propodium is slightly more rugose and somewhat darker than in the female and the antennae 28-jointed.

*Type*. No. 143J. U. S. National Museum.

Described from single female reared May 20, 1911, and two males reared May 27 and May 18, 1911, respectively, at College Park, Maryland, from cynipid twig-galls on *Quercus pinifolia*. From same galls were reared specimens of *Synanthedon scitellus* Harris, and it is reasonable to suppose that the braconid is parasitic on that moth. In the National Museum are two specimens, apparently the same species, bearing the number 61021. Ft. Grant, Arizona. The record to which this number refers shows that the specimens were bred from twig-galls on oak from the above-mentioned locality, and is interesting in indicating a wide distribution for the species.

## ALYSIIDÆ.

## DACNUSINÆ.

**Synaldis incisa**, species.

*Female*.—Length 1 mm. Black; smooth and shining. Antennæ submoniliform, brown-testaceous, darker toward the apex; first flagellar longer and more slender than the second, the second not twice as long as the following joints shortening and narrowing gradually toward the apex about one and one-half times as long as wide, the joints toward apex slightly pedicellate. Head smooth and shining; face somewhat pilose, with a faint median carina between

the antennæ: vertex divided by a deep median furrow extending from the ocelli to the occipital foramen. Mesothorax smooth, shining impunctate; the parapsidal furrows absent, the mesoscutum with a short median longitudinal furrow or incision near its posterior margin; mesopleuræ with a distinct furrow; propodium rugose with a short median carina anteriorly becoming lost in the roughness of the sculpture posteriorly. Wings hyaline; the stigma very narrow, only slightly thicker than the postmarginal vein, which is thickened throughout its whole length; the first cubital cross-vein is entirely absent, the second removed nearly one-third the length of the radius from the origin of the latter; the cubital nervure abruptly cut off just beyond the cross-vein; marginal cell reaching to the apex of the wing; costal, radial and postmarginal veins and the stigma brownish, remainder of the neuration pale. Palpi and legs brownish-testaceous, darkest above. Abdomen not longer than the head and thorax, smooth, shining, black; ovipositor exerted half the length of the abdomen, brownish-testaceous.

*Habitat*: Manhattan, Kansas.

*Type*: No. 14357, U. S. National Museum.

Two slides bearing a large number of specimens were received from T. J. Headlee for identification. These specimens were taken from cages in which the Hessian fly was breeding and are possibly parasitic on that insect.

The species may be distinguished from *S. ulmicola* Ashm. by the incision on the mesoscutum and by the more rugose propodium. Types removed from slide and mounted on points; paratypes in the collection Kansas Agricultural College, slide-mounted.

#### CHALCIDOIDEA.

#### TORYMIDÆ.

#### MONODONTOMERINÆ.

#### *Ditropinotus flavicoxus*, new species.

*Female*.—Length 2.5 mm. Head and dorsum of the thorax golden green, strongly punctate, the punctures of the head somewhat finer than those of the thorax. Antennæ dark brown, nearly black; the scape and club orange yellow. Face below antennæ with sericeous white pile. Pleuræ, underside of thorax (except mesosternum, which is usually green), legs including all coxæ, and abdomen honey-yellow; the anterior coxæ and middle tibiæ are usually somewhat paler than the rest of the legs, and the apical tarsal joints are dark. Abdomen very finely, transversely lineolate, the ovipositor about half the length of the abdomen and black.

*Male*.—Entirely green, the abdomen slightly bronzed above. Antennæ wholly black. Coxæ and femoræ, except apically, dark brown, the tibiæ, tarsi, and apices of femoræ pale yellow. Body sculpture similar to that of the female.

*Habitat*: College Park, Maryland.

*Type*: No. 14356, U. S. National Museum.

Eight female and six male specimens collected by Mr. E. N. Cory, July 19, 1909, in a room in which were stored quantities of meal and other ground feed badly infested with several different coleopterous and lepidopterous pests of this class of stored products. It is probably, though not certainly, parasitic on some insect which infests stored cereals.

The species differs from *D. aureoviridis* Crwfd. in the female having all of the coxæ honey-yellow instead of green and in the absence of any green markings on the abdomen. The sculpture of the propodium is also slightly different. The males are not distinguishable.

#### ENCYRTIDÆ.

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#### AGROMYZAPHAGUS, new genus.

Body metallic. Head transverse, seen from in front slightly broader than long; cheeks half the length of the eyes; eyes bare, nearly circular, converging above and extending to the occiput; vertex rather narrow; frons somewhat flattened, finely punctate, and with numerous larger, deeper punctures surrounding the forward ocellus; ocelli in a nearly equilateral triangle, the two lateral close to but not touching the eye margins; antennæ 11-jointed, inserted below the eyes, the scrobes triangular; scape slender, not reaching to the front ocellus; pedicel shorter than the first funicle joint; funicle joints thickened, cylindrical, the first joint slightly the longest, following joints subequal, one and a half times as long as wide; the club is flattened, not as long as half the funicle, its apex bluntly rounded, the first joint slightly longer than wide, the two following transverse. Thorax robust; mesoscutum short and broad, not more than half as long as wide and very finely shagreened; scutellum convex, as long as the mesoscutum, rounded posteriorly and delicately sculptured; metathorax smooth, impunctate, and without pubescence. Wings hyaline; the marginal vein short, not much longer than thick; postmarginal shorter than the marginal; stigmal about as long as the marginal and postmarginal together. Abdomen conic ovate, flattened above, not longer than the thorax; ovipositor not exerted. The male differs from the female in having the club of the antennæ shorter than the two preceding funicle joints, the funicle joints hairy, not especially thickened,

and distinctly notched above at the sutures; the first funicle joint is two or more times as long as the pedicel.

*Type: Agromyzaphagus detrimentosus*, new species.

In Ashmead's Classification of the "Chalcid Flies" this genus apparently falls nearest to *Coccidencyrtus*, but differs from that genus in that the antennal club is less than half the length of the funicle. The fact that the eyes are bare distinguishes it from *Ageniaspis* and the short pedicel will serve to separate it from most of the other genera.

*Agromyzaphagus detrimentosus*, new species.

*Female*.—Length 1.5 mm. Antennæ black with very short whitish pile, scape slightly metallic; scrobes deeply impressed; eyes reddish brown; face and cheeks bluish-green tinged with brassy, the former finely shagreened, the latter delicately lineolated. Head above and mesocutum finely shagreened, brassy green; scutellum copper-colored its sculpture finer than that of the mesoscutum; mesopleuræ steel-blue, very finely lineolate; metathorax and abdomen smooth, shining, impunctate, nearly black, but often slightly metallic. Wings hyaline, the anterior and posterior margins without cilia, the apical margin with very short cilia; veins brownish. Coxæ all metallic green; trochanters testaceous; anterior femoræ dark brown, their apices and tibiae and tarsi pale yellow; median femoræ and tibiae dark brown, the apex of femoræ, base and apex of tibiae, and their tarsi pale yellow; posterior femoræ and tibiae black, more or less metallic, their tarsi yellowish.

*Male*.—Exactly like the female, except in the antennal characters, as pointed out in the description of the genus and the fact that the flagellum is wholly testaceous instead of black.

*Type*: No. 14355, U. S. National Museum.

*Habitat*: College Park, Maryland.

Described from eleven females and seven males reared July 19, 1911, by Mr. O. G. Babcock and the writer, from the puparia of an agromyzid fly belonging to the genus *Leucopis*. The flies, which are probably *Leucopis nigricornis*, were feeding in the larval state upon an aphid infesting apple and also one infesting a species of thistle.

#### PROCTOTRYPOIDEA.

#### PROCTOTRYPIDÆ.

#### SCELIONINÆ.

*Hoplogryon kansasensis*, new species.

*Female*.—Length 2.5 mm. Black, more or less shining. Antennæ strongly clavate; scape long and reaching about to the forward ocel-

lus, slightly testaceous; pedicel conical, much narrower and less than half as long as the following joint, dark brown; flagellum about twice as long as the scape, blackish; the first joint not wider at base than the pedicel but much wider at its apex, second joint distinctly shorter than the first, one and a half times as long as thick, third and fourth joints subequal, transverse, about twice as wide as long; club joints transverse, but distinctly longer than joints three and four of the funicle, the two apical sutures slightly oblique, the apical joint rounded at its apex. Head black, strongly transverse; mandibles deeply toothed and brownish; clypeus strongly transversely striate; lower part of face, eye margins above, the temples, cheeks, and vertex also deeply striate; remainder of the face smooth and shining but with many deep punctures arranged in irregular rows on the upper half. Thorax black; mesothorax and scutellum coarsely punctate, mesopleuræ rugoso-striate; metathorax more or less rugoso-striate with three long pointed projections, one on the median line reaching to the middle of the first abdominal segment, and one at each posterior lateral angle considerably shorter. Wings slightly smoky, with a row of stiff black bristles along the subcostal and marginal veins. Legs including all coxæ brownish testaceous. Abdomen shining black, longer than the head and thorax, spatulate, the first segment wider at apex than long, its base narrow; second segment also much wider at apex than at base and about half as long as wide; third segment as long as two and three together, the following segments very short; segments one, two, and three are strongly longitudinally striate, the striations gradually fading out and disappearing before the apex and at the sides of the third.

*Habitat:* Manhattan, Kansas.

*Type:* No. 14354, U. S. National Museum.

One specimen was received from T. J. Headlee which had been secured from a cage in which experiments with the Hessian fly were being carried on and it is possibly, though not likely, a parasite of the fly.

The species is closest to *H. bethunei* Sanders, recently described, but differs as follows: The thorax is densely punctate instead of rugose, the metathoracic teeth are much longer, and the flagellum is more strongly dilated.

—Mr. Busck gave a very interesting account of the rearing of the man-infesting bot of tropical America.

## ON THE REARING OF A DERMATOBIA HOMINIS LINNÆUS.

BY AUGUST BUSCK.

The literature on *Dermatobia* infesting man is very large and the biology of the species is fairly well studied and understood. Dr. Raphael Blanchard, in his classical paper, "Sur les *Cestrides* américains dont la larve vit dans la peau de l'homme" (Ann. Soc. Ent. France, vol. 61, pp. 109-154, 1892), gives a comprehensive review of the literature on this species from the first record in 1749 to the date of his article, and Dr. A. Neiva has lately given full synonymy and life-history with illustrations of all stages in his "Algumas informações sobre o Berne" (Chacaras e Quintaes, vol. II, no. 1, 1910, reprinted as a separate publication in Rio de Janeiro, 1911).

The following notes do not pretend to add anything new, but are merely an account of an actual breeding of the parasite from man, of which there is as yet no published record.

The writer has on several occasions become infested with the larva of *Dermatobia*, but has been unable to indulge his desire to breed the fly, because the inconvenience of an infestation interfered with work on hand. Acquiring, however, an infestation towards the close of my last stay in Panama, this summer, and in a reasonably inoffensive part of the body, upper left arm, I determined to let it remain and succeeded in rearing the fly.

The infestation took place at Cabima, Panama, on May 29; only one cast skin was observed during the larval period; this was shed and pushed out nearly entire through the aperture in my skin on July 19; on September 9 the larva had attained full growth and left the arm, posterior end first. It was at this time nearly 1 inch long (24 mm.) and 10 mm. in diameter. On being placed in a jar with wet sand it immediately burrowed down 2 inches to the bottom of the jar and pupated. The fly issued on October 23.

No exact observation on the oviposition is recorded in print and none was made by the writer; the egg is known only from dissected females, but there is no doubt that the larva hatches at once at the time of oviposition and normally bores into the skin just where it is deposited; for this reason the bulk of the infestations occur on exposed parts of the body, the arms, legs, and neck; but it is plainly either possible for the larva to travel some distance, if not satisfied with its first situation, or else survive a fall from this exposed place to another under the clothing of the host; the writer was thus infested by another larva earlier in the season just under the