PHORIDÆ ASSOCIATED WITH ANTS AND TERMITES IN TRINIDAD¹

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The following notes and descriptions of Phoridæ are based on a small collection secured by Dr. J. G. Myers in Trinidad, British West Indies. As Dr. Myers intends to publish observations which he has made on the biology of the several species, I am taking this opportunity to present descriptions of two forms not previously known, together with notes that extend the known distribution of two other species.

***Diploneura (Dohrniphora) conspicua* Borgmeier**

Vozes de Petropolis, vol. 17, p. 628 (1923)

Arch. Mus. Nac. Rio Janeiro, vol. 25, p. 99 (1925)

Two males, taken by Dr. Myers in Trinidad in company with the following species. The species was described as termitophilous by Borgmeier as his types were taken in a nest of *Eutermes* in Minas Geraes, Brazil.

This species resembles the North American *D. incisuralis* for which I mistook it at first glance, but the bristles outside the seam on the hind tibia lie much nearer to the hair-seam.

***Diploneura (Dohrniphora) myersi* sp. nov.**

♀. Length 1.6 mm. Body black; antennæ dark brown; palpi somewhat lighter brown; proboscis honey-yellow; legs dull brownish yellow, their coxæ almost black, except the front ones which are brownish; wings hyaline, with piceous venation. Front shining, slightly higher than broad; supra-antennal bristles inserted close together, strongly diver-

¹(From the Entomological Laboratory, Harvard University)

gent; lower row of bristles (antial and first lateral bristles) forming a row strongly curved downward medially, the median ones twice as far from one another as from the lateral bristle; middle row nearly straight and equidistant; ocellar tubercle scarcely evident. Cheeks with a bristle at the lower angle of the eye and one below at the oral margin. Antennæ small, oval; arista pubescent. Palpi moderate, each with five bristles at apex. Proboscis rod-like, as long as the head height beyond the basal bend. Eyes uniformly pubescent, postocular cilia rather short. Mesonotum shining; scutellum twice as wide as long, with a pair of bristles at each side, the anterior one much smaller and almost hair like. Hairs of mesopleura reduced to a small group near the spiracle; one large macrochæta on the propleura below the spiracle. Abdomen with five chitinized tergites, the second lengthened and without bristly hairs at the sides; fifth more or less subtriangular or narrowly trapezoidal; following segments membranous. Front tibia with a series of four bristles on the fore side, one at the basal fourth, one at middle, one at apical fourth and one just beyond. Middle tibia with a pair of bristles externally near base and a hair-seam extending to the middle, beyond which is an area of six imbricated transverse rows of minute bristles. Hind tibia with a complete dorsal hair-seam and a row of bristles just next to it inwardly. Costal vein extending slightly beyond the middle of the wing; costal divisions 25:7.5:3, the first therefore nearly two and one half times longer than the other two together; costal cilia very short and closely placed; first vein distinctly thickened beyond the middle and the third from near the middle; second vein leaving the third at a very acute angle so that the cell formed is more than twice as long as wide on the costa with the veins bounding its sides very thin; one small bristle on the third vein at its base; fourth vein originating at the base of the second, gently curved at base and nearly straight beyond; seventh vein weak, but clearly defined. Halteres black.

Type: Trinidad, B. W. I., November 25, 1928; one specimen taken by Dr. J. G. Myers, hovering over a termitarium of *Eutermes* during a raid made by ants on the termites.

It would seem probable that the species is termitophilous as such is known to be the case among some other species of the genus.

In spite of the numerous species, several of which are termitophilous, that have been described from the American tropics, this species is undoubtedly undescribed. From several forms that are similar, it is distinguished as follows: from *D. knabi* Malloch by the shorter first section of the costa which is $2\frac{1}{2}$ times as long as the other together, instead of 5 times, and by the nearly straight middle transverse row of frontal bristles; from *D. obscuriventris* Borgm. by its entirely black color; from *D. intrusa* Borgm. by the presence of 5 abdominal tergites and the black halteres (although there is a disagreement here between the original description and a subsequent key to species); from *D. anterodorsalis* Schm. by the longer first section of the costa.

Megaselia juli Brues

Three specimens collected in the act of attacking and ovipositing in a large millipede and one later reared from the same host; Trinidad, Dec. 19, 1928 and Jan. 4, 1929.

These specimens seem to be indistinguishable from the North American *Megaselia (Aphiochæta) juli* Brues in spite of the widely separated localities. A South American species, *M. mucronata* Borgmeier from Petropolis near Rio de Janeiro is very similar, but differs in its much longer ovipositor and more nearly equal first and second costal divisions in the wing.

The ovipositor shows the same striation on both the apical and basal sections as Borgmeier has described and figured for *M. mucronata* (Arch. Mus. Nac. Rio de Janeiro, vol. 35, 142 (1925)).

In both *M. juli* and *M. mucronata* the mesopleura has one strong macrochæta in addition to minute hairs. An European species *M. styloprocta* Schmitz has the body black and the mesopleural hairs all minute, although otherwise very similar.

Cremersia Schmitz

There is a species of this peculiar genus in the collection.

The female possesses a most remarkable asymmetrical ovipositor that shows such striking similarity to the hypopygium of the males of certain other Diptera that specimens of this sex were first mistaken for males. Borgmeier has, however, more recently found the male (Arch. Biol. São Paulo, vol. 1, 1928) and thus shown conclusively that this organ is in fact an ovipositor of very unique type.

***Cremersia minor* sp. nov.**

♀. Length 1.4 mm., including ovipositor. Black or piceous, lighter on the mesonotum, pleuræ and legs. Front, abdomen above and ovipositor black; antennæ and mesonotum fuscous; palpi and legs testaceous, the pleuræ considerably stained with brown; halteres piceous, with paler stalk. Wings hyaline, heavy veins piceous, light ones strongly colored, but very delicate. Lowest pair of frontal bristles separated by one-fourth the width of the front, stout and but little divergent; second row of two large bristles set very close to the eyes; third row of four equidistant, curved downward medially, placed high on the front, with the lateral bristles but little below the level of the lower ocellus. Antennæ small, bluntly oval, the arista short, stout and scarcely pubescent. Palpi very small, with four weak bristles at the tip; cheeks each with two rather strong bristles below the lower corner of the eye. Mesonotum long and narrow, with one pair of small dorsocentral bristles placed close to the hind margin; surface clothed with conspicuous fine hairs, and side margins with several conspicuous bristles just before the base of the wing as well as a large one on the scapula. Scutellum about semi-circular, with one pair of very short bristles and an extremely minute bristle in front of each of these. Propleura with two bristles next to the spiracle and another near the insertion of the fore coxa. Mesopleuræ entirely bare. Second segment of abdomen lengthened, the three following subequal, not greatly narrowed. Fourth tergite with a subapical series of delicate bristles, growing stronger laterally; fifth tergite on the margin with a series of four large bristles on each side and a series of about four small, delicate ones between. Sixth tergite much narrower than the fifth, convex and

rounded at apex, with two cross rows each of five long, curved bristles, the anterior row on the right side and medially somewhat overlapping the posterior row (which is on the left side) as the anterior row extends well to the left of the median line; all these bristles curved toward the righthand side. Fifth sternite with a close series of about six stout bristles. Legs long and slender; front tarsi not modified in any way. Front tarsi with the first joint almost as long as the tibia; second and fifth joints each half as long as the first; fourth one-fourth shorter. Hind tibia with a dorsal hair-seam and a series of very minute setulæ just internal to this, these setulæ not much larger than the hairs that clothe the inner surface of the tibia; tibia at apex with one small bristle inside the seam; hind femur simple, without long hairs below. Ovipositor of the usual hypopygium-like form; shining black in color with a long finger-like process above that curves to the left and is provided near its base with two transverse bristle-like spines that extend horizontally to the left; below with a short process apically, terminating in a twisted hook. Wing similar to that figured by Borgmeier for *C. pilosa*. Costal vein extending to slightly beyond the basal third of the wing its bristles long; first section more than twice as long as the second and third together; third not quite half as long as the second; fourth vein entering the margin at tip of the wing; fifth lying very close to the fourth.

One female collected by Dr. J. G. Myers in Trinidad, B. W. I., November 25, 1928, "hovering constantly close over the backs of ants engaged in raiding a termitarium (*Eutermes*)."

So far as is known the numerous South American species of this genus are ecitophiles.

In Borgmeier's key to the Brazilian species of this genus (Arch. Inst. Biol., São Paulo, vol. 1, p. 161, 1928) this species will run to *C. brasiliensis* from which it differs in the bristling of the terminal abdominal segments, especially in the very stout, straight bristles on the sixth sternite. It is also a much smaller species.