

NEW GENERA AND SPECIES OF GALL MIDGES.

By E. PORTER FELT,

State Entomologist of New York.

The following descriptions of new genera and species are based upon a collection of gall midges in the United States National Museum, kindly loaned for study by Mr. F. Knab, through the courtesy of Dr. L. O. Howard. The forms are so interesting from both a taxonomic and faunal standpoint that it has been deemed best to characterize them in the hopes that others may give attention to this practically unworked field.

It will be noted that an unusually large percentage of these insects are referable to the Asphondyliariae, an exceptionally interesting group because of its high degree of specialization and wide distribution. A table for the separation of the genera of the world, a modification of that given by Dr. J. J. Kieffer in fascicle 152, Genera Insectorum, has been prepared not only for the purpose of facilitating the recognition of these new forms, but also to give a taxonomic summary of the tribe. It will be noticed that there are two distinct lines of specialization, the dominant having a protractile aciculate ovipositor, usually accompanied by a uni or bidentate terminal clasp segment in the male. The more generalized in this group is the widely distributed *Schizomyia* recorded from five of the six continents and presumably occurring also in Australia. The more easily recognized and apparently very successful *Asphondylia* has been recorded from all continents, there probably being a considerable number of species in each.

The less highly specialized *Asphondyliariae* have a wide distribution and apparently a much greater restriction in the number of species. The American *Cincticornia* has a near relative in the European *Polystepha*, both being closely restricted to oak, while the food plant of the very distinct though similar *Eocincticornia* of Australia is unknown.

The distribution of the various genera in the Asphondyliariae is also interesting as indicating the original home of the group, the thoroughness of distribution and subsequent specialization after dissemination became impossible. The following list shows 18 genera, 10 of which occur in the Tropical Americas, namely, Southern North America, Central America, Northern South America, and the West Indies, South America alone being credited with 7 genera. It is this region which is the home of the synthetic *Feltomyia*, a genus presenting the antennal characters of *Schizomyia*, while the ovipositor and terminal clasp segment of the male show an affinity with *Cincticornia*. A somewhat similar combination obtains in the Brazilian *Proasphondylia* with the pectinate terminal clasp segment of *Cincticornia* and a subaciculate ovipositor, suggesting a relationship with *Asphondylia*. Africa has 5 genera, Europe, Asia, and North America 4 each, while Australia is credited with but 2. Relatively the faunae of Europe and North America have been much more carefully explored than those of Africa, Asia, South America, and in particular, Australia. Systematic collecting in the Tropical and Subtropical sections of the globe would give rich returns in this group.

The following is a tabulation of the geographical distribution of the various genera:

Family ASPHONDYLIARIAE.

Distribution of the genera.

Schizomyia, Europe, Northern Africa, East Indies, West Indies, North and South America.

Kiefferia, Europe.

Tetrasphondylia, Mozambique.

Parasphondylia, East Africa.

Xenasphondylia, West Indies.

Asphondylia, Europe, Asia, Africa, North and South America, Australia.

Bruggmanniella, Brazil.

Proasphondylia, Brazil.

Bruggmannia, Brazil.

Oxasphondylia, Guatemala.

Houardiella, Northern Africa.

Zalepidota, Brazil.

Polystepha, Europe.

Cincticornia, North America.

Feltomyia, Mexico and West Indies.

Eocincticornia, Australia.

Daphnephila, Bengal.

Ozobia, Brazil.

Table for the separation of the genera.

- a¹.** Ovipositor protractile, aciculate or nearly so, the terminal clasp segment of the male usually uni or bidentate.
- b¹.** Palpi quadriarticulate.
- c¹.** Flagellate antennal segments with long whorled hairs and 2 strongly sinuous and anastomosing circumfili, especially in the male.
- d¹.** Ovipositor aciculate, without lamellæ apically; larval breastbone bidentate.
Schizomyia Kieffer.
- d².** Ovipositor subaciculate, with 2 very small lamellæ apically; larval breastbone unidentate.....*Kiefferia* Mik.
- c².** Flagellate antennal segments with short hairs, not whorled.
- d¹.** Flagellate antennal segments sessile, without an appreciable stem.
- e¹.** Claws much longer than the pulvilli, the basal segment of the ovipositor with rows of minute spinules.....*Tetrasphondylia* Kieffer.
- e².** Claws as long as the pulvilli, the first segment of the ovipositor finely striate, without spinules.....*Parasphondylia* Kieffer.
- d².** Flagellate antennal segments subsessile, with a stem about one-fourth the length of the basal enlargement; claws shorter than the pulvilli.
Xenasphondylia, new genus.
- b².** Palpi bi or triarticulate, rarely uniarticulate.
- c¹.** Circumfili in the female consisting of two comparatively simple bands.
- d¹.** Terminal clasp segment of the male uni or bidentate, not pectinate.
- e¹.** Subcostal cell normal, not opaque, the ovipositor with a lobed pouch proximally, not vesiculate basally.....*Asphondylia* H. Loew.
(Syn. *Monasphondylia* Kieffer.)
- e².** Subcostal cell opaque, the ovipositor with a globose, striate basal enlargement.....*Bruggmanniella* Tavares.
- d².** Terminal clasp segment of the male pectinate.
- e¹.** Terminal clasp segment apical; ovipositor subaciculate, with submedian groups of hairs on the distal segment.....*Proasphondylia*, new genus.
- e².** Terminal clasp segment of the male subapical, the ovipositor probably as in *Schizomyia*.....*Bruggmannia* Tavares.
- c².** Circumfili in the female forming 5 irregular, anastomosing bands; ovipositor as in *Asphondylia*.....*Oxasphondylia*, new genus.
- b³.** Palpi uniarticulate.
- c¹.** Terminal clasp segment of the male subapical, conical....*Houardiella* Kieffer.
- c².** Terminal clasp segment of the male bidentate, the subcostal cell remarkably broad, a rudimentary vein spur at the base of subcosta.
Zalepidota Rùbsaamen.
- a².** Ovipositor exerted, apically with lobes or triangular plates; terminal clasp segment of the male usually serrate apically.
- b¹.** Palpi quadriarticulate.
- c¹.** Terminal clasp segment of the male subapical; third and fourth antennal segments not fused, the circumfili coarsely reticulate in the male, the pulvilli longer than the claws.....*Polystepha* Kieffer.
- c².** Terminal clasp segment of the male apical; third and fourth antennal segments fused, the circumfili usually with many fine reticulations in the male, the pulvilli usually shorter than the claws.....*Cincticornia* Felt.
- b².** Palpi triarticulate.
- c¹.** Terminal clasp segment of the male serrate apically.

- d*¹. Circumfli of male coarse, very irregular, 4 or 5 transverse fili to a segment, the plates of the ovipositor triangular.....*Feltomyia* Kieffer.¹
*d*². Circumfli of male fine, about 18 transverse fili to a segment, the terminal lobes of the ovipositor roundly quadrate.....*Eocincticornia*, new genus.
*c*². Terminal clasp segment of the male bidentate, subapical, the ovipositor conical.....*Daphnephila* Kieffer.
*b*³. Palpi uniaarticulate, the flagellate antennal segments subsessile, the abdomen with caducous scales, the short ovipositor biarticulate.....*Ozobia* Tavares.

The drawings were all made with the aid of the camera lucida and are more or less diagrammatic. The types or cotypes of the new genera and species here described are in the United States National Museum.

MICROCERATA BUSCKI, new species.

This small midge was collected in September, 1901, by Mr. August Busck at Baracoa, Cuba. It is of interest largely because it shows the subtropical distribution of the genus.

Male.—Length, 1.2 mm. Antennae, as long as the head; 8 and possibly 9 segments, the second enlarged, globose, the fifth broadly pyriform, with a length one-fourth greater than its diameter, with a sparse subbasal whorl of long, stout setae and a scattering subapical whorl of short, stout spines. The eighth segment is slightly produced and more or less fused with the narrowly fusiform ninth. Palpi one-half longer than the antennae, the first and second segments subequal, each with a length over twice the diameter, the third one-half longer than the second, more slender, and the fourth about twice as long as the second, more slender. Mesonotum dark brown, the submedian lines sparsely haired. Scutellum reddish brown, postscutellum and abdomen dark brown, almost black. Genitalia fuscous. Wings hyaline, subcosta uniting with the margin near the basal half, the third vein at the distal fourth, the fourth vein forking just beyond the middle of the wing; the fifth joining the posterior margin at the distal fourth, the sixth at the basal half. Halteres and legs fuscous yellowish red, the pulvilli as long as the simple curved claws. Genitalia; basal clasp segment long, tapering; terminal clasp segment swollen basally, stout and about three-fourths the length of the basal clasp segment; dorsal plate moderately long, tapering to an obliquely rounded, thickly setose apex. Type Cecid. 1532.

Type.—Cat. No. 18485, U.S.N.M.

RUBSAAMENIA MULTINODA, new species.

The species described below was labeled Fort Pikit, Mindanao, May 31, 1907, C. H. Halliday, collector. It can be easily distinguished by the characters given below.

¹ Judging from larval characters, this genus is closely related to and may possibly be a synonym of *Uveella* Rübсааmen, a genus founded upon a larva.

Female.—Length, 1.5 mm. Antennae nearly as long as the body, rather thickly haired, yellowish; 23 segments, the first somewhat produced, with a length one-half greater than its diameter, the third with a length five times its diameter, the fifth with a stem one-fourth the length of the cylindric basal enlargement, which latter has a length twice its diameter and a rather thick subapical whorl of long, stout setae; low circumfili occur near the basal fourth and subapically; terminal segment evidently composed of three rather closely fused units and having a length at least four times its diameter and showing a distinct constriction near the basal third, a less evident one just beyond the middle and terminating in a short, stout, finger-like process. Palpi; first segment subquadrate, with a length twice its diameter, the second one-half longer than the first, the third nearly twice the length of the second, and the fourth one-third longer than the third, the segments successively more slender. Mesonotum reddish brown, the submedian lines yellowish. Scutellum whitish, postscutellum and abdomen brownish yellow, the latter thickly haired. Ovipositor nearly as long as the body, slender, recurved dorsally. Wings hyaline, the fifth and sixth veins simple. Halteres yellowish white. Coxae yellowish. Legs dark straw, the distal tarsal segments somewhat lighter, the pulvilli nearly as long as the strongly curved unidentate claws. The terminal lobes of the ovipositor indistinctly triarticulate, the two basal subquadrate, each with a length a little greater than its diameter, the terminal lobe narrowly oval, all sparsely setose. Type Cecid. 1531.

Type.—Cat. No. 18486, U.S.N.M.

CTENODACTYLOMYIA, new genus.

The remarkable midge described below is referable to the Dasyneurariæ and runs in our keys to *Rhizomyia*, from which it is easily distinguished by the larger number of antennal segments and in particular by the pectinate claws. It is a highly specialized form, as evidenced by the very long, narrow wings and the rudimentary condition of the anterior branch of the fifth vein.

Type of the genus.—*Ctenodactylomyia watsoni*, new species.

CTENODACTYLOMYIA WATSONI, new species.

A number of midges were reared from nipped, blistered leaf galls on *Coccolobis floridana*, collected by Mr. C. J. Cragin, at Palm Beach, Fla., March 18, 1914, and submitted for study by Prof. J. R. Watson,

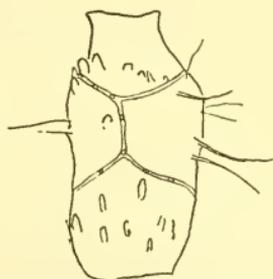


FIG. 1.—DIAGRAM OF FIFTH ANTENNAL SEGMENT, FEMALE, RUBEAAMENIA MULTINODA.

of the Agricultural Experiment Station. The galls are abundant and irregularly clustered upon the small piece of leaf accompanying the specimens. The insects evidently transform within the galls, since whitish exuviae are to be found projecting from the deformations.

Gall.—Diameter, 3 mm., circular, blisterlike, dark green, with a slight, darker, median nipple. The gall shows about equally upon both sides of the leaf.

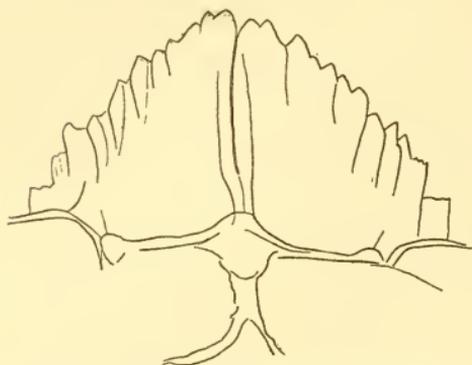


FIG. 2.—CEPHALIC HORNS OF PUPA OF CTENODACTYLOMYIA WATSONI.

chitinous, approximate, the lateral margins strongly serrate and tapering irregularly to the median line, the abdominal segments each with a transverse row of about 8 chitinous spines near the anterior third, the number being reduced to about 4 on the penultimate segment; terminal segment bilobed.

Pupa.—Length, 3 mm., moderately stout and variably yellowish or dark brown, dependent upon the development, the external structures as in the exuviae.

Female.—Length, 3 mm. Eyes confluent. Antennae nearly as long as the body, sparsely haired, light brown; 14 segments, the third and fourth fused, the fifth with a stem about one-fifth the length of the subcylindric basal enlargement, which latter has a length three and one-half times its diameter and sparse subbasal and subapical whorls of moderately stout setae; circumfili near the basal third and apically; terminal segment produced, apically with a finger-like process about one-third the length of the cylindric basal enlargement, which latter has a length three times its diameter. Palpi; first segment with a length over twice its diameter, the second as long as the first, somewhat stouter, the third more than twice the length of the second, slender; mouth parts slightly produced, with a length about one-fourth the diameter of the head. Mesonotum

Larva.—Length, 3 mm., yellowish, the segmentation distinct and tapering toward the posterior extremity. Head and breastbone indistinct in the one specimen before us.

Exuviae.—Length, 3 mm., whitish transparent. Antennal cases extending nearly to the base of the abdomen, wing pads to the third abdominal segment, and the leg cases about to the sixth abdominal segment; cephalic horns large,



FIG. 3.—MIDDLE CLAW OF MALE OF CTENODACTYLOMYIA WATSONI.

dark reddish brown, the submedian lines and median area a slaty gray. Scutellum pale orange apically, grayish basally; postscutellum dark brown. Abdomen dark brown, sparsely short haired. Wings very narrow, with a length fully three times the width; subcosta uniting with costa at the basal third, the cross vein indistinct, the third vein joining the posterior margin well beyond the apex of the wing, the fifth vein forked, the rudimentary anterior branch uniting with the margin near the distal third, the well-developed posterior branch at the basal third. Halteres yellowish white, the club slightly fuscous. Coxae dark brown, reddish brown apically, the anterior femora and tibiae mostly dark brown, the former yellowish white basally, the latter narrowly annulate with white basally; tarsi a dark grayish brown, the distal three segments mostly yellowish gray, the posterior femora

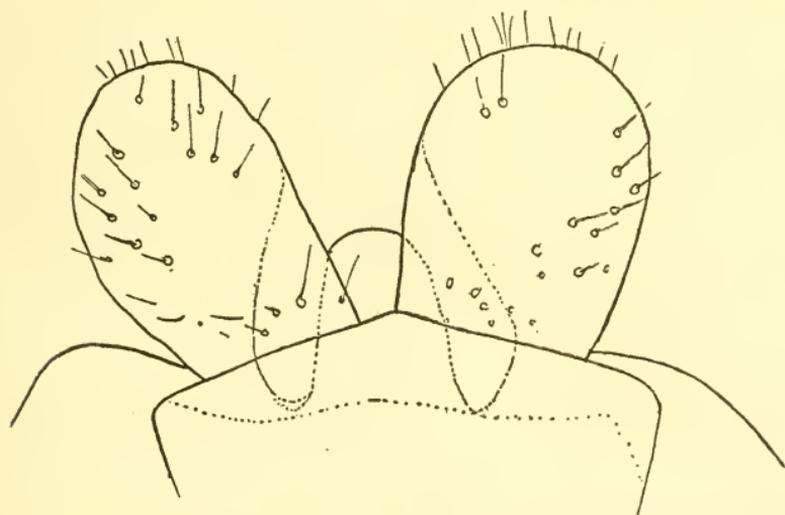


FIG. 4.—DORSAL VIEW OF THE APEX OF THE FEMALE ABDOMEN OF *CTENODACTYLOMYIA WATSONI*.

with the basal half yellowish white, and the entire tarsi mostly yellowish gray, otherwise as in the anterior tarsi; claws moderately long, stout, distinctly angulate basally, with three relatively large and two minor pectin; pulvilli rudimentary. Ovipositor short, the lobes roundly rectangular and thickly setose, minor lobe tapering to a narrowly rounded apex.

Male.—Length, 3 mm. Antennae probably extending to the second abdominal segment, the fifth with a stem about one-fourth the length of the cylindric basal enlargement, which latter has a length thrice its diameter and rather thick subbasal and subapical whorls of stout, nearly straight setae; terminal segment with a finger-like appendage nearly one-half the length of the cylindric basal enlargement, which latter has a length thrice its diameter; claws slender, slightly curved and with about five well-developed and two

minor pectin. The claws are more slender and the pectin more numerous than in the female. Genitalia; basal clasp segment long, stout; terminal clasp segment as long as the basal, rather stout, somewhat irregular and with a well-developed though inconspicuous tooth apically; dorsal plate short, deeply and roundly emarginate, the lobes well separated and tapering to a narrowly rounded, thickly and coarsely setose apex; ventral plate long, broad, broadly and slightly emarginate, the lateral angles rather thickly and coarsely setose; style rather long, stout, narrowly rounded. Other characters as in the female. Type Cecid. a 2504.

Paratype.—Cat. No. 19006. U.S.N.M.

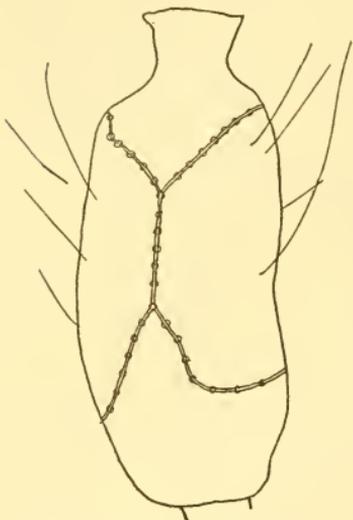


FIG. 5.—OUTLINE OF FIFTH ANTENNAL SEGMENT, FEMALE, OF *XENASPHONDYLIA ALBIPES*.

XENASPHONDYLIA, new genus.

Antennal segments 14, subsessile, the stem with a length about one-fourth that of the cylindric basal enlargement. The palpi are long, quadri-articulate, the claws simple, stout, and about equal in length to the pulvilli. Ovipositor as long as the body, the basal portion fleshy, eversible, the distal part aciculate as in *Asphondylia*.

Type of the genus.—*Xenasphondylia albipes*, new species.

This genus approaches *Tetrasphondylia* Kieffer and *Parasphondylia* Kieffer, from which it may be separated by the distinctly more generalized condition of the antennæ

and the more specialized ovipositor.

XENASPHONDYLIA ALBIPES, new species.

Female.—Length, 2.75 mm. Antennæ extending to the fifth abdominal segment, sparsely haired, basally yellowish, the flagellate segments yellowish brown; 14 segments, the third and fourth free, the fifth with a stem one-fourth the length of the basal enlargement, which latter has a length $3\frac{1}{2}$ times its diameter, with short, sparse subbasal and subapical whorls of setae and numerous finer ones. Low circumfili united on one face occur near the basal fourth and subapically; terminal segment with a narrowly conical apical process having a length about one-half that of the cylindric basal enlargement, which latter has a length three times its diameter. Palpi long, the first segment irregular, the second with a length nearly three times its diameter, the third fully one-half longer than the second, more slender and the fourth three-fourths longer than the

third, capitate. Eyes black, coarsely granulate. Mesonotum shining dark brown, the submedian lines and posterior median area sparsely haired and fuscous yellowish. Scutellum whitish, post-scutellum yellowish orange. Abdomen rather thickly haired, dark reddish brown, the ovipositor fuscous orange. Wings hyaline, costa dark brown, the third vein uniting with the margin well beyond the apex, the fifth at the distal fourth, its branch near the basal half. Halteres yellowish transparent. Coxae and femora basally yellowish brown, the distal portion of femora, tibiae and the most of tarsi dark reddish brown, the distal tarsal segments, in some instances, portions of the fourth also, silvery white or yellowish white. Claws stout, strongly curved, simple, the pulvilli longer than the claws. Ovipositor longer than the body, the distal part aciculate as in *Asphondylia*. Type Cecid. 1525, C. 1528.

This beautiful species was collected by August Busck in the San Francisco Mountains, Santo Domingo, West Indies, September, 1905.

Type.—Cat. No. 18487, U.S.N.M.

PROASPHONDYLIA, new genus.

Antennal segments 14, subsessile, the distal segment not reduced (presumably not in the female); the circumfili much as in *Schizomyia*. The palpi are triarticulate. The ovipositor relatively short, the distal portion being subaciculate. The male genitalia with the terminal clasp segment subapical, short, stout, pectinate apically.

Type of the genus.—*Proasphondylia brasiliensis*, new species.

This genus approaches *Parasphondylia* Kieffer, from which it is easily separated by the triarticulate palpi and is closely related to *Feltomyia* Kieffer, though it is quite different from the latter, especially in the development of the ovipositor. We have in this genus an approach to the characters found in the American *Cincticornia*. It is a peculiar synthetic type.

PROASPHONDYLIA BRASILIENSIS, new species.

Male.—Length, 1.2 mm. Antennæ nearly as long as the body, sparsely haired, light brown; 14 subsessile segments, the third and fourth narrowly fused, the fifth with a stem one-fourth the length of the cylindrical basal enlargement, which latter has a length $2\frac{1}{2}$ times its diameter and is provided with rather high, irregular circumfili, much as in *Schizomyia*; terminal segment slightly reduced, with a length three times its diameter and tapering gradually to a narrowly rounded apex. Palpi; first segment short, irregular, the second with a length about three times its diameter, the third nearly three times the length of the second, dilated. Mesonotum reddish brown, the submedian lines whitish. Scutellum fuscous yellowish, the postscutellum and abdomen yellowish brown. Wings hyaline;

the third vein uniting with the margin at the apex; the fifth forked. Halteres fuscous yellowish, the knob whitish. Coxae fuscous yellowish, the legs a nearly uniform yellowish white. Claws slender, evenly curved, simple, the pulvilli rudimentary. Genitalia; basal clasp segment short, stout; terminal clasp segment subapical, short, tapering to a rather narrow, coarsely pectinate, chitinized apex. Other structures indistinct.

Female.—Length, 1.5 mm. Antennae nearly as long as the body, sparsely haired, light brown; 14 subsessile segments, the third and fourth narrowly fused, the fifth with a short stem and a cylindrical basal enlargement, which latter has a length $3\frac{1}{2}$ times its diameter

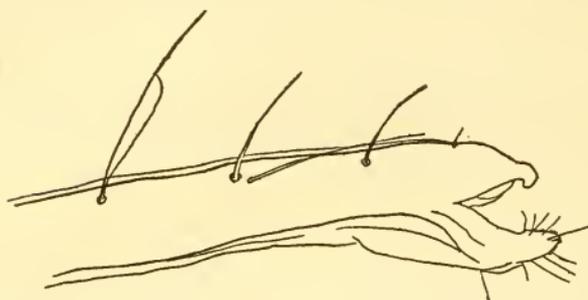


FIG. 6.—OUTLINE OF THE TIP OF THE OVIPOSITOR OF PROASPHONDYLIA BRAZILIENSIS.

and rather high, irregular circumfilii as in the female of *Schizomyia*; the thirteenth segment with a length nearly four times its diameter, the fourteenth probably only slightly reduced. Palpi; first segment irregular,

the second with a length nearly twice its diameter, the third greatly produced, with a length nearly three times the second, the mouth parts slightly produced. Ovipositor with a length less than half the abdomen, the basal portion stout, fleshy, the distal part subaciculate, with about four submedian groups of one or two hairs at nearly regular intervals, and apically tapering slightly to an irregular point. Other characters nearly as in the male.

Exuviae.—Length, 2 mm., light yellowish brown, the dorsum of the abdominal segments with a transverse row of moderately stout, chitinous points at the anterior third. Type Cecid. 1526.

The above specimens were loaned for study through the courtesy of the United States National Museum and are labeled 121 Bonito, Province of Pernambuco, Brazil, Jan. 29, 1883.

Type.—Cat. No. 18488, U.S.N.M.

OXASPHONDYLIA, new genus.

This form is closely related to *Asphondylia*, though easily distinguished therefrom in the female by the relatively slight reduction of the terminal antennal segments and the reticulate circumfilii. The dorsal pouch so characteristic of *Asphondylia* is only slightly developed in this species.

Type of the genus.—*Oxasphondylia reticulata*, new species.

OXASPHONDYLIA RETICULATA, new species.

The midge described below was labeled June 27, Cacao, Trece Aguas, Alta V. Paz., Guatemala, Schwarz and Barber collection. Only the female is known.

Female.—Length, 2.5 mm. Antennæ extending to the third abdominal segment, thickly haired, brownish yellow; 14 segments, the

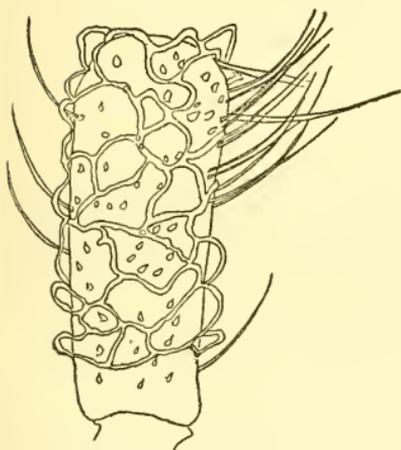


FIG. 7.—FIFTH ANTENNAL SEGMENT, FEMALE, OF OXASPHONDYLIA RETICULATA.

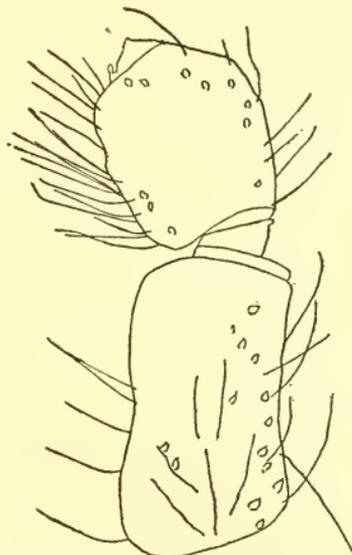


FIG. 8.—OUTLINE OF THIRTEENTH AND FOURTEENTH ANTENNAL SEGMENTS OF FEMALE OF OXASPHONDYLIA RETICULATA.

first broadly conical, with a length only one-fourth greater than its diameter, the second subhemispherical, the third and fourth free,

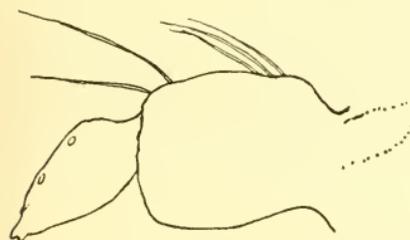


FIG. 9.—OUTLINE OF THE BIARTICULATE PALPUS OF OXASPHONDYLIA RETICULATA.

the fifth with a length three times its diameter, uniformly and rather thickly clothed with narrow, curved scales, and with a series of sinuous reticulate circumfili approximating the condition found in the male of *Schizomyia*, there being approximately five sinuous transverse circumfili on each segment; the three distal segments somewhat reduced; the twelfth with a length $2\frac{1}{2}$ times its diameter; the thirteenth with a length twice its diameter, and the fourteenth with a length one-fourth greater than its diameter, apically tapering abruptly to a conical apex. Palpi short, the first segment subquadrate, with a length one-fourth greater than its diameter, the second subfusiform,

reduced, about as long as the first. Mesonotum yellowish brown, the submedian lines sparsely haired. Scutellum yellowish transparent, postscutellum a little darker. Abdomen reddish brown, the genitalia yellowish red. Wings subhyaline, being rather thickly clothed with short, curved scales, the third vein uniting with the margin at the apex of the wing. Halteres reddish brown. Coxae brownish yellow. Legs mostly thickly clothed with fuscous scales, the distal tarsal segments on the anterior legs somewhat lighter. Claws heavy, strongly curved, simple, the pulvilli rudimentary. Ovipositor when extended nearly as long as the body, the dorsal lobes divided, subquadrate, and only sparsely haired, the basal portion of the ovipositor fleshy, eversible, the distal part aciculate as in *Asphondylia*. Type Cecid. 1534.

Type.—Cat. No. 18489, U.S.N.M.

ASPHONDYLIA ALTANI, new species.

The midge is labeled San Marcos, Nicaragua, Baker collection. It is an interesting form in that it presents a comparatively generalized condition of the antennae, the basal, flagellate segments not being so greatly prolonged as in many of the typical species referable to this genus.

Female.—Length, 3 mm. Antennae nearly as long as the body, sparsely haired, dark brown; 10 and probably 14 segments, the fifth cylindrical, with a length about four times its diameter, the basal circumfilum broadly sinuous and united with the nearly transverse apical filum by two longitudinal filii; terminal segments wanting. Palpi; first and second segments short, the second narrowly oval, with a length over twice its diameter, the third more than twice as long as the second, slender, basally capitate. Mesonotum grayish brown. Scutellum reddish brown, postscutellum yellowish brown. Abdomen a dark reddish brown. Wings hyaline, the third vein uniting with the margin at the apex of the wing. Halteres yellowish basally, whitish apically. Coxae and legs a nearly uniform yellowish brown, the pulvilli nearly as long as the relatively slender, strongly curved claws. Ovipositor when extended nearly as long as the body. Type Cecid. 1533.

Type.—Cat. No. 18490, U.S.N.M.

EOCINCTICORNIA, new genus.

Antennal segments 14, cylindrical, sessile, the distal ones not plainly reduced and bearing in both sexes, low, finely reticulate circumfilii. Palpi triarticulate. Wings with the third vein heavy, uniting with the margin just beyond the apex of the wing, the fifth vein, obsolescent distally, the anterior branch practically obsolete. Male genitalia with the basal clasp segment greatly produced, the terminal

subapical and shorter than the portion of the basal clasp segment extending beyond the point of insertion. Ovipositor short, fleshy, the lobes quadriarticulate, setose.

Type of the genus.—*Eocincticornia australasiae*, new species.

The circumfli indicate an affinity with the American *Cincticornia* and European *Polystepha*, though the reduction of the palpi, the greatly developed circumfli and basal clasp segment prevent its association with either of these genera.

EOCINCTICORNIA AUSTRALASIAE, new species.

The peculiar form described below was received through the courtesy of the United States National Museum and labeled Perth, West Australia, G. Compere, collector, 798. It is such a striking species that there should be no difficulty in recognizing it from the following characterization.

Male.—Length, 2 mm. Antennae nearly as long as the body, naked, dark brown; 14 sessile, cylindrical segments, the first short, obconic, the second disk-like, the third and fourth free, the fifth with a length about $2\frac{1}{2}$ times its diameter, with a basal whorl of very short setae and the entire surface covered with a fine reticulation of low, stout circumfli, there being about 18 very irregular transverse fili on a segment; terminal

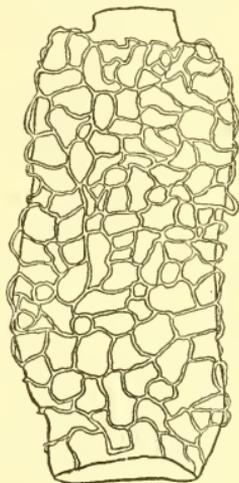


FIG. 10.—SIXTH ANTENNAL SEGMENT OF MALE OF *EOCINCTICORNIA AUSTRALASIAE*, SHOWING THE NUMEROUS ANASTOMOSING CIRCUMFLI. DIAGRAMMATIC.

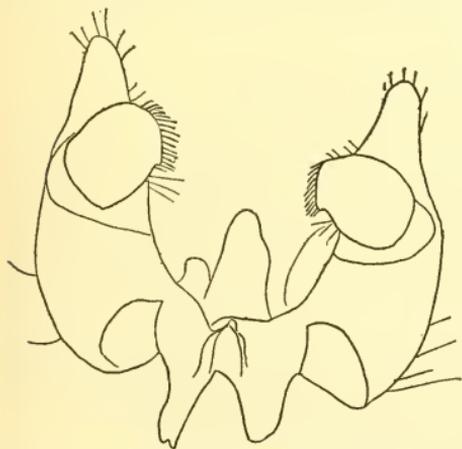


FIG. 11.—OUTLINE OF MALE GENITALIA OF *EOCINCTICORNIA AUSTRALASIAE*.

segment not reduced, with a length three times its diameter, obtuse apically. Palpi; first segment short, irregular, the second with a length about $2\frac{1}{2}$ times its diameter, stout, the third nearly three times the length of the second, irregular, slender. Mesonotum dark reddish brown. Scutellum and postscutellum dark yellowish brown. Abdomen very dark brown, almost black. Wings hyaline, the membrane almost free from hairs, subcosta uniting with costa at the basal third, the third vein heavy, joining the margin just beyond the wing apex, the fifth vein obsolescent distally, strongly curved and joining the posterior margin at the basal third; the anterior branch discernible only as an almost imperceptible line. Halteres fuscous yellowish. Coxae dark yellowish brown. Legs

mostly yellowish brown. Claws moderately heavy, strongly curved, simple, the pulvilli as long as the claws. Genitalia; basal clasp segment stout, long and produced to form a conspicuous roundly triangular apical process; terminal clasp segment subapical, short, stout, with a length less than the appendage of the basal clasp segment and the transverse apex with a heavy, chitinous pectination; dorsal plate broad, deeply and triangularly emarginate, the lobes tapering to a narrowly rounded apex; ventral plate short, broad, tapering to a broad, round emargination. Harpes short, stout, irregularly rounded apically; style longer, stout, obtuse.



FIG. 12.—SIDE VIEW OF THE APEX OF THE FEMALE ABDOMEN OF *EOCINCTICOLENIA AUSTRALASIAE*.

Female.—Length, 2.75 mm. Antennae nearly as long as the body, dark brown; 14 segments, the fifth with a length $3\frac{1}{2}$ times its diameter and with somewhat coarser reticulate circumfili, there being approximately 12 irregular, transverse fili to a segment; the terminal segment with a length three times its diameter, the apex

narrowly rounded. Mesonotum dark brown, almost black. Scutellum dark yellowish brown, postscutellum fuscous. Abdomen dark yellowish brown. Halteres yellowish brown. Coxae dark brown. Ovipositor short; terminal lobes fleshy, roundly quadrate and thickly setose. Other characters practically as in the male. Type Cecid. 1538.

Type.—Cat. No. 18491, U.S.N.M.

EOHORMOMYIA, new genus.

The quadriarticulate palpi, the simple fifth vein and claws, the latter with well-developed pulvilli, indicate a relationship with the Formosan *Calodiplosis* Kieffer, though it is easily distinguished therefrom by the great reduction rather than production of the palpal segments and the less specialized wings and the cross-vein wanting or at most rudimentary. The third vein unites with the margin well beyond the apex of the wing. The male of this African form will doubtless approach, in certain characters, those given for *Calodiplosis*, though it is hardly possible that they can be referred to the same genus.

Type of the genus.—*Eohormomyia howardi*, new species.

EOHORMOMYIA HOWARDI, new species.

The large, strikingly marked female described below was collected by Mr. C. W. Howard and labeled: "Along river, Umbelusi, 5-3-09, Lorenzo Marquez." The striking characteristics of this insect should render its identification comparatively easy.

Female.—Length, 6 mm. Antennae nearly as long as the body, thickly haired, light brown; (?) 14 segments, the fifth with a stem one-fourth the length of the cylindric basal enlargement, which latter has a length fully four times its diameter and with a slight constriction near the basal third. There is a sparse subbasal whorl of moderately stout setae and a thicker subapical whorl. Low circumfili, slightly looped, occur near the basal half and apically on the enlargement. Palpi; the first segment subglobose, the second a little smaller, globose, the third short, irregular, with a length twice its diameter, the fourth three-fourths the length of the third, ovate. Mesonotum yellowish brown, the submedian lines sparsely haired. Scutellum and postscutellum concolorous. Abdomen thickly haired, a rich dark brown, the ovipositor yellowish. Wings subhyaline, the membrane rather thickly clothed with fuscous hairs; costa dark brown, the third vein uniting with the margin well beyond the apex, the fifth simple, strongly curved near the middle of the wing and joining the posterior margin at the distal third. Halteres yellowish basally, dark brown apically. Coxae yellowish brown; femora, tibiae, and tarsi dark yellowish brown and rather thickly clothed with fuscous hairs, the distal tarsal segments somewhat lighter; the pulvilli as long as the stout, evenly curved, simple claws. Ovipositor short, yellowish, the lobes tapering to a narrowly rounded setose apex, minor lobes triangular, with a narrowly rounded apex. Type Cecid. 1523.



FIG. 13.—FIFTH ANTENNAL SEGMENT OF THE FEMALE OF *EOHORMOMYIA HOWARDI*.

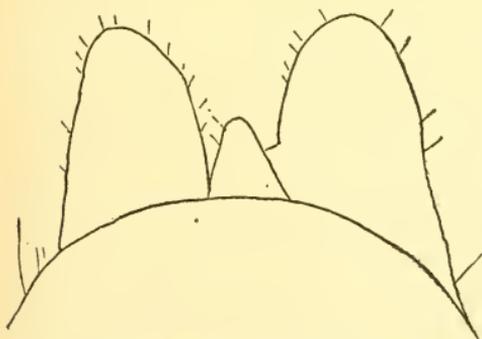


FIG. 14.—DORSAL VIEW OF THE APEX OF THE FEMALE ABDOMEN OF *EOHORMOMYIA HOWARDI*.

Type.—Cat. No. 18492, U.S.N.M.

Type.—Cat. No. 18492, U.S.N.M.

SCOPODIPLOSIS, new genus.

This form is allied to the African *Compsodiplosis* Tavares, from which it is most easily separated by the spotted wings, the nearly

free third and fourth antennal segments, and the character of the ovipositor.

The generic type is *Scopodiplosis speciosa*, new species.

SCOPODIPLOSIS SPECIOSA, new species.

This striking species was labeled S. Bernardino, Paraguay, K. Fiebrig, collector. The abdomen was packed with eggs, the number being estimated at 300.

Female.—Length, 4 mm.

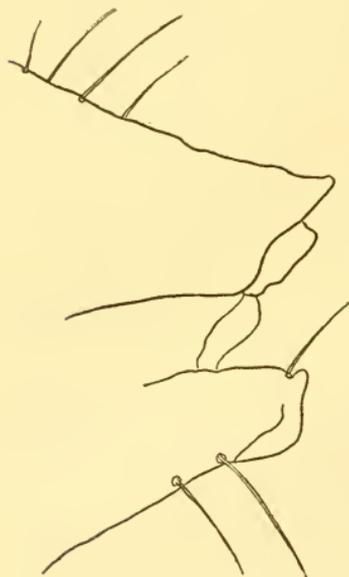


FIG. 15.—SIDE VIEW OF THE APEX OF THE ABDOMEN OF *SCOPODIPLOSIS SPECIOSA*, FEMALE.

Antennae as long as the body, thickly haired, brownish yellow; 14 segments, the fifth with a stem one-half the length of the cylindric basal enlargement, which latter has a length four times its diameter and a distinct constriction near the basal fourth; low circumflia occur at the basal and distal portions of the indistinctly separated apical part of the enlargement; terminal segment with a tapering finger-like process one-half the length of the subcylindric basal enlargement, which latter has a distinct subbasal constriction and a length five times its diameter. Palpi; the first segment irregular subquadrate, the second stout, with a length about three times its diameter, swollen near the basal third and truncate apically. Eyes holoptic, dark brown. Mesonotum honey yellow, an irregular median dark brown line with a marked expansion anteriorly and two irregular dark brown sublateral areas. Scutellum and postscutellum yellowish white. Abdomen whitish yellow, sparsely clothed with white hairs. Wings yellow, distinctly spotted, there being an irregular, broken, transverse, fuscous band near the distal third and a somewhat linear fuscous area on the branch of the fifth vein expanding and extending along the posterior margin toward the anal angle. There is also an indistinct fuscous area near the base of the wing and occupying most of the anal angle; costa mostly honey yellow, except the somewhat fuscous basal fourth; subcosta uniting with the margin near the basal half, a supernumerary vein extending from near the normal point of union with the cross vein to the basal fourth of subcosta. This may be a simple dilation and partial division of subcosta or a rudiment of the cross vein; the third vein unites with the margin well behind the apex, the fifth at the distal fourth, its branch near the basal half. Coxae and femora basally yellowish, the distal portion of femora,

Wings yellow, distinctly spotted, there being an irregular, broken, transverse, fuscous band near the distal third and a somewhat linear fuscous area on the branch of the fifth vein expanding and extending along the posterior margin toward the anal angle. There is also an indistinct fuscous area near the base of the wing and occupying most of the anal angle; costa mostly honey yellow, except the somewhat fuscous basal fourth; subcosta uniting with the margin near the basal half, a supernumerary vein extending from near the normal point of union with the cross vein to the basal fourth of subcosta. This may be a simple dilation and partial division of subcosta or a rudiment of the cross vein; the third vein unites with the margin well behind the apex, the fifth at the distal fourth, its branch near the basal half. Coxae and femora basally yellowish, the distal portion of femora,

most of tibiae and the tarsi a golden yellow or yellowish, except for a rather distinct fuscous band near the middle of femora, narrow apical fuscous bands on tibiae, and on the second and third tarsal segments; claws slender, evenly curved, simple, the pulvilli rudimentary. Ovipositor short, the terminal portion of the body triangular and bearing apically two slightly chitinized, upcurved dorsal plates and a triangular ventral plate. Type Cecid. 1524.

Type.—Cat. No. 18493, U.S.N.M.