

NEW OR LITTLE-KNOWN TIPULIDÆ FROM THE
PHILIPPINES (DIPTERA), V.

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ONE PLATE

The present report on the crane flies of the Philippines is based on large and important collections that were made by Messrs. R. C. McGregor, Francisco Rivera, and A. C. Duyag, chiefly near Majayjay, on Mount Banahao, Luzon, and by the two latter collectors in Romblon Province. I wish to express my deepest thanks to these gentlemen for their continued interest in making known the very rich tipulid fauna of the Philippines, and for their kindness in allowing me to retain the types of the species herein defined as new.

A critical study of the so-called genera and subgenera that center about *Limonia* Meigen has been made in recent years, and it has become more and more evident that the groups constituting the subtribe Limoniaria are so plastic and grade so insensibly into one another that it is best to recognize the single genus *Limonia*. In this report I wish to discuss the limits of this large and involved genus; to list the characters available for the definition of each of the nineteen included subgenera, as here recognized; to give a key for the separation of these subgenera; and to replace with new names certain of the names that have been invalidated by this consolidation.

THE GENUS LIMONIA MEIGEN

The genus *Limonia* was proposed by Meigen in 1803. Since that date, aberrant and apparently isolated types of crane flies have been added in the vicinity of *Limonia*, most of these having been based primarily on the conformation of the wings and their venation, but a few more especially on the structure of the antennæ and mouth parts. In their typical forms, these various groups have long appeared to be quite valid, but as the fauna of

¹ Contribution from the Department of Entomology, Massachusetts Agricultural College.

the World has become better known it has been found that all of them, in some region or another, pass insensibly toward and overlap others, and, in almost all cases, revert to the typical form of *Limonia*. It has become increasingly difficult correctly to assign these various nontypical forms, and the only course that remains seems to be to consider the various members of the *Limoniaria* as subgenera under *Limonia*. By such a procedure, any species that are in question will be correctly placed as to genus and any error in the assignment will affect the subgenus only.

The tendencies in the genus *Limonia* in the broadest sense are as follows: Antennæ 14-segmented, very rarely elongated (and then only in the male sex), sometimes pectinate (*Rhipidia* and some species of *Zelandoglochina*). Mouth parts short, with 4-segmented maxillary palpi; greatly elongated in some *Geranomyia* and *Zelandoglochina*; maxillary palpi tending to reduce in number and size of segments. A complete holopticism in a few species. Claws usually pectinate, or at least with a single basal tooth. No tibial spurs. Wings with Sc and R varying in length and relative position in different subgenera and species. The position of the free tip of Sc₂ and its outward shifting has been discussed in detail.² Cell M₁ always lacking; condition of cell 2d M₂ and M₃ varying in different subgenera and species; m-cu varying greatly in its relative position to the fork of M; Cu₂ sometimes entirely lacking; vein 2d A present, except in *Doaneomyia*.

The following names are regarded as synonyms: *Aporosa* Macquart, 1838, equals *Geranomyia*; *Ataracta* Loew, 1850, equals *Limonia*; *Atypophthalmus* Brunetti, 1911, equals *Limonia*; *Ceratostephanus* Brunetti, equals *Rhipidia*; *Glochina* Meigen, 1830, equals *Dicranomyia*; *Limnobia* Meigen, 1818, equals *Limonia*; *Limnobiorrhynchus* Westwood, male, 1835, equals *Geranomyia*; *Limnomyza* Rondani, 1856, equals *Limonia*; *Plettusa* Philippi, 1865, equals *Geranomyia*; *Siagona* Meigen, 1830, equals *Dicranomyia*. In addition, the following names, proposed as subgenera, are dropped, as being of less than subgeneric value: In *Geranomyia* (*Triphana* Skuse, *Tetrphana* Skuse, *Monophana* Edwards, *Pseudaporosa* Alexander); in *Rhipidia* (*Monorhipidia* Alexander, *Arhipidia* Alexander, *Conorhipidia* Alexander). The

² Alexander, Proc. Linn. Soc. New South Wales 52 (1927) 64-68, figs. 69-78.

The subgenera of *Limonia* are as follows:

Subgenus.	Date.	Genotype.	Region of typical form.
<i>Limonia</i> Meigen	1803	<i>tripunctata</i> Fabricius	Holarctic, Ethiopian.
<i>Rhipidia</i> Meigen	1818	<i>maculata</i> Meigen	Cosmopolitan, except Ethiopian.
<i>Dicranomyia</i> Stephens	1829	<i>modesta</i> Meigen	Cosmopolitan.
<i>Geranomyia</i> Haliday	1833	<i>unicolor</i> Haliday	Cosmopolitan, except New Zealand.
<i>Discobola</i> Osten Sacken	1865	<i>argus</i> Say	Holarctic, Australasian.
<i>Periphroptera</i> Schiner	1866	<i>nitens</i> Schiner	Neotropical.
<i>Libnotes</i> Westwood	1876	<i>thwaitesiana</i> Westwood	Oriental, Australasian.
<i>Dapanoptera</i> Westwood	1881	<i>perdecora</i> Walker	Australasian.
<i>Thrypticomya</i> Skuse	1889	<i>aureipennis</i> Skuse	Australasian, Oriental, Ethiopian.
<i>Goniodineura</i> van der Wulp	1895	<i>nigriceps</i> van der Wulp	Oriental.
<i>Zalusa</i> Enderlein	1906	<i>falklandica</i> Enderlein	Neotropical.
<i>Doaneomyia</i> Alexander	1921	<i>tahitiensis</i> Alexander	Australasian.
<i>Euglochina</i> Alexander	1921	<i>cuneiformis</i> de Meijere	Oriental Ethiopian.
<i>Idioglochina</i> Alexander	1921	<i>tusitala</i> Alexander	Australasian, Oriental.
<i>Pseudoglochina</i> Alexander	1921	<i>pulchripes</i> Alexander	Do.
<i>Alexandriaria</i> Garrett	1922	<i>suffusca</i> Garrett	Nearctic, Oriental, Australasian.
<i>Zelandoglochina</i> Alexander	1924	<i>huttoni</i> Edwards	Neotropical, New Zealand or Maorian.
<i>Laosa</i> Edwards	1926	<i>gloriosa</i> Edwards	Oriental.
<i>Neolimnobia</i> Alexander	1927	<i>diva</i> Schiner	Neotropical.

above names may perhaps be retained to indicate well-marked groups within their respective subgenera.

The following characters and tendencies of the various subgenera may be indicated:

Limonia MEIGEN, Illiger's Magaz. 2 (1803) 262.

Wings of normal form. Sc long, extending to beyond the origin of Rs but not beyond the end of this vein; free tip of Sc₂ opposite or beyond R₂; m-cu at or before the fork of M, rarely beyond; Cu₂ present.

Rhipidia MEIGEN, Syst. Besch. 1 (1818) 153.

Essentially a weak modification of *Limonia*, based on the pectinate condition of the antennæ in the male sex. The group grades insensibly into *Limonia* and *Dicranomyia*.

Dicranomyia STEPHENS, Cat. Brit. Insects 2 (1829) 243.

Wings of normal form. Sc short, Sc₁ ending opposite or before the origin of Rs; free tip of Sc₂ usually opposite R₂; m-cu at or before the fork of M; Cu₂ present. Grades perfectly into *Limonia*.

Geranomyia HALIDAY, Ent. Mag. 1 (1833) 154.

Essentially a modification of *Limonia*, based on the produced mouth parts, and especially the very long labial palpi, of both sexes. A reduction in the number of segments of the maxillary palpi from four to one, this being paralleled in other subgeneric divisions. Venation and wing form as in *Limonia* and *Dicranomyia*. The group grades perfectly into *Limonia* and *Dicranomyia*, through *Pseudaporosa* and others, especially in the Australasian and Neotropical Regions.

Discobola OSTEN SACKEN, Proc. Ent. Soc. Philadelphia 1 (1865) 226.

Essentially a *Limonia* with a supernumerary crossvein in cell 1st A.

Peripheroptera SCHINER, Verh. Zool.-bot. Ges. Wien 16 (1866) 933.

Essentially a *Dicranomyia*, characterized by the unusual development of the prearcular cells of the wing, especially in the male. Wings cuneiformly narrowed at base, the apex obtusely rounded; vein Cu_2 partly atrophied, persistent basally, usually becoming obsolete opposite or before midlength of the basal section of Cu_1 . Grades perfectly into *Dicranomyia*, especially in the female sex.

Libnotes WESTWOOD, Trans. Ent. Soc. London (1876) 505.

Essentially a *Limonia*, in its typical form characterized by a short, oblique Rs , long Sc , a peculiar caudad deflection of the tips of veins R_3 to M_4 , and the great elongation of cell 2d M_2 . Wing of typical form, long and very narrow. Very numerous species have been discovered that grade perfectly into *Limonia*. The most satisfactory characters still remaining for separating these two groups are those outlined by Edwards (1928); namely, long Sc , Sc_1 usually ending beyond the fork of Rs ; usually oblique Rs ; position of $m-cu$ beneath cell 1st M_2 , sometimes as far distad as its outer end, in rare cases at the fork of M . The group grades insensibly into *Limonia*.

Dapanoptera WESTWOOD, Trans. Ent. Soc. London (1881) 365.

Essentially a *Limonia*, distinguished by a supernumerary crossvein in cell R_5 .

Thrypticomysia SKUSE, Proc. Linn. Soc. New South Wales, II 4 (1889) 774.

A modification of the type of *Dicranomyia*. Wings strongly cuneiformly narrowed; Sc short; free tip of Sc_2 before R_2 ; R_{1+2} with a strong terminal spur; fork of Rs at near three-fourths the wing length; Cu_2 entirely atrophied; vein 2d A present.

Goniodineura VAN DER WULP, Tijdschr. v. Ent. 38 (1895) 37.

A weak modification of *Libnotes*, represented by a single widespread Malayan species, characterized especially by the strong subbasal angulation of both Rs and R₂₊₃.

Zalusa ENDERLEIN, Zool. Anzeig. 29 (1906) 70-71.

A degenerate modification of *Limonia*, characterized essentially by the subapterous condition of both sexes.

Doaneomyia ALEXANDER, Bull. Brooklyn Ent. Soc. 16 (1921) 11.

Characterized by the total loss of vein 2d A. Wings long-petiolate basally.

Euglochina ALEXANDER, Can. Ent. 53 (1921) 207-208.

A modification of *Dicranomyia*, characterized by the extreme distal position of the cord which lies at or beyond four-fifths of the length of the wing. Wings cuneiformly narrowed; Sc unusually short, ending approximately opposite the tip of vein 2d A; Rs short to very short; Cu₂ atrophied wholly or in part, in the latter case ending before midlength of the basal section of Cu₁.

Idioglochina ALEXANDER, Can. Ent. 53 (1921) 207.

A weak modification of *Dicranomyia*, distinguished especially by peculiar modifications of the antennæ of the male sex, the ventral face of the flagellar segments being greatly produced and provided on the periphery with stout spinous setæ. Some species have been confused with *Rhipidia*, but the nature of the antennal modification is quite distinct in the two groups. The male sex shows a notable incrassation of costa and peculiar arcuations of certain of the veins of the radial field.

Pseudoglochina ALEXANDER, Can. Ent. 53 (1921) 208.

A modification of *Limonia*. Wings strongly narrowed and petiolate at base; elements of anterior cord in oblique alignment, like *Libnotes*; Sc₁ extending some distance beyond base of Rs; cell M₂ open by the atrophy of the basal section of M₃; m-cu at or close to the fork of M; Cu₂ persistent almost to the level of m-cu. Edwards³ has shown the affinities of this group to *Doaneomyia* and indicated the probable manner in which the second anal vein of the latter group has been lost. It should be further noted that *Doaneomyia* has lost vein Cu₂, whereas *Pseudoglochina* has it long and persistent.

³ Insects of Samoa, Nematocera (1928) 78-79.

Alexandriaria GARRETT, Proc. Ent. Soc. Washington 24 (1922) 60.

A weak modification of *Dicranomyia*. The essential features of the venation lie in the total loss of cell M_3 by the complete atrophy of m and both sections of M_3 . As has been pointed out by Edwards, this is essentially a group of convenience, since the same tendency has been found in several groups of the genus. It is of interest to note that a *Euglochina*, described as new at this time, has this same peculiar venation.

Zelandoglochina ALEXANDER, Ann. and Mag. Nat. Hist. IX 13 (1924) 449-500.

Essentially a *Geranomyia* but with the frontal prolongation of the head short, the maxillary palpi at its apex and thus appearing to lie close to base of rostrum. The great elongation of the latter is made up of labial palpi. Antennæ of male strongly nodulose, in one species flabellate as in *Rhipidia*. In the Maorian and Chilian subregions, the group grades insensibly into *Dicranomyia* by a reduction of the mouth parts.

Laosa EDWARDS, Encylop. Entomol. ser. B., Diptera 3 (1926) 48.

A modification of *Limonia*, distinguished especially by the reduction in length to total obliteration of $r-m$ by the approximation of the adjoining veins, together with the presence of supernumerary crossveins in cells R_3 and R_5 . Too much importance should not be placed on the latter character, since it is likewise found in certain species of *Libnotes* (as *regalis* Edwards) for which no generic or subgeneric group is deemed necessary.

Neolimnobia ALEXANDER, Proc. Linn. Soc. New South Wales 52 (1927) 68.

Essentially a *Dicranomyia* with a supernumerary crossvein in cell R_3 .

A key to the subgenera of the genus Limonia Meigen.

1. A single anal vein present..... *Doaneomyia* Alexander.
Two anal veins present..... 2.
2. Both sections of vein M_2 and m lacking, cell M_2 thus always lacking.. 3.
At least the distal section of vein M_2 present and usually both sections,
together with m , cell M_2 thus usually present..... 4.
3. Cord of wing lying far distad, at or beyond four-fifths the wing length.
Euglochina Alexander, in part (*projecta*, sp. nov.).
Cord of wings normal, not lying beyond two-thirds to three-fourths the
length of the wing..... *Alexandriaria* Garrett.
4. Wings reduced to mere stubs in both sexes..... *Zalusa* Enderlein.
Wings fully developed in both sexes..... 5.

5. Supernumerary crossveins present in one or more cells of the wing. 6.
No supernumerary crossveins in cells of wing (except a weak element
sometimes evident in subcostal cell)..... 11.
6. A supernumerary crossvein in cell 1st A..... *Discobola* Osten Sacken.
No crossvein in cell 1st A..... 7.
7. Supernumerary crossveins in a single radial cell..... 8.
Supernumerary crossveins in two radial cells..... 10.
8. A supernumerary crossvein in cell R_3 9.
A supernumerary crossvein in cell R_6 *Dapanoptera* Westwood.
9. Sc short, Sc_1 ending opposite or before the origin of R_5 ; supernume-
rary crossvein lying distad of the tip of vein R or outer end of
cell 1st M_2 ; m-cu at fork of M *Neolimnobia* Alexander.
 Sc long, Sc_1 ending beyond the fork of R_5 ; supernumerary crossvein
lying proximad of R_2 and outer end of cell 1st M_2 ; m-cu beyond
fork of M *Libnotes* Westwood, in part (*fuscinervis* Brunetti,
transversalis de Meijere).
10. r-m greatly reduced or entirely obliterated by the fusion of R_5 on
 M_{1+2} *Laosa* Edwards.
r-m of normal length.... *Libnotes* Westwood, in part (*regalis* Edwards).
11. Mouth parts, and especially the labial palpi, lengthened, longer than
the head, usually much longer..... 12.
Mouth parts, with the labial palpi, not notably lengthened, shorter than
the head 13.
12. Antennæ strongly nodulose, rarely flabellate; frontal prolongation of
head short, the maxillary palpi not far from base of rostrum.
Zelandoglochina Alexander.
Antennæ not nodulose; frontal prolongation long, forming a consider-
able portion of the base of rostrum, the maxillary palpi at its tip
and thus appearing remote from base of rostrum.
Geranomyia Haliday.
13. Antennæ of male more or less branched (bipectinate, unipectinate, or
subjectinate) or with the lower face of the flagellar segments pro-
duced to give the organ a serrate appearance..... 14.
Antennæ simple in both sexes..... 15.
14. Antennæ more or less distinctly branched; bipectinate (*Rhipidia*, s. s.),
unipectinate (*Monorhipidia*), or subjectinate (*Archipidia*).
Rhipidia Meigen.
Antennæ with the ventral face of each flagellar segment produced into
a flattened lobe, its periphery set with stout spinous setæ.
Idioglochina Alexander.
15. Cord of wings lying far distad, at or beyond four-fifths the length of
the wing *Euglochina* Alexander.
Cord of wings normal in position, lying more proximad, at or near
two-thirds and not exceeding three-fourths the length of wing.... 16.
16. Cu_2 entirely lacking..... *Thrypticomomyia* Skuse.
 Cu_2 present, in most cases extending to opposite m-cu, at least extend-
ing to midlength of the basal section of Cu_1 17.
17. Wings of male with the prearcular region greatly developed; wing
tip very obtuse..... *Peripheroptera* Schiner.
Wings in both sexes with small, normal prearcular cells; wing tip
not conspicuously obtuse..... 18.

18. Both Rs and R₂₊₃ angularly bent near origin.
Goniodineura van der Wulp.
 Rs sometimes angulated but not coincidentally with any angulation
 of R₂₊₃ 19.
19. Sc relatively short, ending opposite or before origin of Rs.
Dicranomyia Stephens.
 Sc ending some distance beyond the origin of Rs..... 20.
20. Wings strongly cuneiformly narrowed at base; Rs and anterior cord
 in oblique alignment; cell M₂ open by atrophy of basal section M₂.
Pseudoglochina Alexander.
 Wings not with the above combination of characters; when Rs and
 anterior cord are in oblique alignment, cell 1st M₂ closed..... 21.
21. Rs short and oblique, Sc extending to beyond its fork; radial veins
 deflected strongly caudad at outer ends; m-cu beneath cell 1st M₂.
Libnotes Westwood, in part.
 Rs longer and more arcuated, Sc not extending to opposite its fork;
 veins beyond the cord, including the radial veins, not deflected strong-
 ly caudad at tips; m-cu at, before, or only slightly beyond the fork
 of M *Limonia* Meigen.

As a result of the uniting of the above names in the single genus *Limonia*, a number of specific names become homonyms. A certain number of these are renamed herewith, these including only species described by deceased or inactive workers. A considerable number of additional preoccupied names of species described by contemporary and active workers likewise exist and it is advisable that they be renamed as soon as practicable.

Limonia (Limonia) brunettiella nom. nov., for *L. (L.) confinis* Brunetti, Rec. Indian Mus. 15 (1918) 290, nec *L. (Dicranomyia) confinis* Bergroth, Wien. Ent. Zeitung 8 (1889) 116.

Limonia (Limonia) marginella nom. nov., for *L. (L.) marginata* Brunetti, Rec. Indian Mus. 15 (1918) 290, nec *L. (Dicranomyia) marginata* Macquart, Recueil Soc. Sc. Agr. Lille (1826) 151.

Limonia (Limonia) nigricans nom. nov., for *L. (L.) nigrescens* Brunetti, Rec. Indian Mus. 15 (1918) 293, nec *L. (Dicranomyia) nigrescens* Hutton, Trans. New Zealand Inst. 32 (1900) 34.

Limonia (Limonia) nigrella nom. nov., for *L. (L.) nigronitida* Alexander, Ann. Ent. Soc. America 16 (1923) 60-61, nec *L. (Gera-
 nomyyia) nigronitida* Alexander, Can. Ent. 53 (1921) 208-209.

Limonia (Rhipidia) willistoniana nom. nov., for *L. (R.) costalis* Williston, Trans. Ent. Soc. London (1896) 286, nec *L. (Limonia) costalis* Wiedemann, Analecta Entomologica (1824) 10.

Limonia (Rhipidia) punctoria nom. nov., for *L. (R.) punctipennis* Alexander, Journ. New York Ent. Soc. 22 (1914) 117, nec *L. (Dicranomyia) punctipennis* Skuse, Proc. Linn. Soc. New South Wales II 4 (1889) 761.

- Limonia (Rhipidia) luxuriosa* nom. nov., for *L. (R.) vicina* Alexander, Trans. Am. Ent. Soc. 42 (1916) 8-9, nec *L. (Geranomyia) vicina* Macquart, Hist. Nat. d'Îles Canaries, Ent., Dipt. (1838) 101.
- Limonia (Dicranomyia) cramptoniana* nom. nov., for *L. (D.) cramptonia* Alexander, Ent. News 39 (1926) 47-49, nec *L. (Rhipidia) cramptoni* Alexander, Bull. Brooklyn Ent. Soc. 8 (1912) 10-11.
- Limonia (Dicranomyia) divisa* nom. nov., for *L. (D.) diversa* Osten Sacken, Proc. Acad. Nat. Sci. Philadelphia (1859) 212, nec *L. (Geranomyia) diversa* Osten Sacken, Ibid. (1859) 207.
- Limonia (Dicranomyia) brevivenula* nom. nov., for *L. (D.) flavescens* Dietz, Trans. Am. Ent. Soc. 47 (1921) 239, nec *L. (Limonia) flavescens* Macquart, Suit. a Buffon, Dipt. 1 (1834) 103.
- Limonia (Dicranomyia) primæva* nom. nov., for *L. (D.) primitiva* Alexander, Ann. and Mag. Nat. Hist. IX 13 (1924) 562-563, nec *L. (D.) primitiva* Scudder, Tertiary Insects (1890) 570.
- Limonia (Dicranomyia) rostralis* nom. nov., for *L. (D.) rostrata* Scudder, Tertiary Insects (1890) 571, nec *L. (Geranomyia) rostrata* Say, Journ. Acad. Nat. Sci. Philadelphia 3 (1823) 22.
- Limonia (Dicranomyia) scudderiana* nom. nov., for *L. (D.) simplex* Scudder, Tertiary Insects (1890) 573, nec *L. (Libnotes) simplex* Osten Sacken, Ann. Mus. Civ. Genova 16 (1881) 202, and others.
- Limonia (Geranomyia) annulosa* nom. nov., for *L. (G.) annulata* Skuse, Proc. Linn. Soc. New South Wales II 4 (1889) 780, nec *L. (Discobola) annulata* Linnæus, Syst. Nat. ed. 10 (1758) 586.
- Limonia (Geranomyia) skuseana* nom. nov., for *L. (G.) fusca* Skuse, Proc. Linn. Soc. New South Wales II 4 (1889) 780, nec *L. (Dicranomyia) fusca* Meigen, Klass 1 (1804) 54, and others.
- Limonia (Geranomyia) pallidula* nom. nov., for *L. (G.) pallida* Wiliston, Trans. Ent. Soc. London (1896) 284, nec *L. (Dicranomyia) pallida* Macquart, Dipt. exot. 1 (1838) 72.
- Limonia (Geranomyia) austropicta* nom. nov., for *L. (G.) picta* Skuse, Proc. Linn. Soc. New South Wales II 4 (1889) 778, nec *L. (Limonia) picta* Heer, Insectenfauna von Oeningen und Radaboj in Croatien 2 (1849) 197.
- Limonia (Geranomyia) devota* nom. nov., for *L. (G.) pulchella* Alexander, Trans. Am. Ent. Soc. 40 (1914) 228-229, nec *L. pulchella* Meigen, Syst. Besch. 6 (1830) 275.
- Limonia (Geranomyia) pictorum* nom. nov., for *L. (G.) pulchripennis* Brunetti, Fauna British India, Diptera Nematocera (1912) 393, nec *L. (Dicranomyia) pulchripennis* Brunetti, Ibid. (1912) 376.
- Limonia (Geranomyia) tristella* nom. nov., for *L. (G.) tristis* Loew, Linnaea Entomologica 5 (1851) 398, nec *L. (Dicranomyia) tristis* Schummel, Beitr. zur Entomol. 1 (1829) 135.

- Limonia (Discobola) pictoralis* nom. nov., for *L. (Discobola) picta* Hutton, Trans. New Zealand Inst. 32 (1900) 37, nec *L. (Geranomyia) picta* Skuse, Proc. Linn. Soc. New South Wales II 4 (1889) 778.
- Limonia (Discobola) venustula* nom. nov., for *L. (Discobola) venusta* Osten Sacken, Berliner Ent. Zeitschr. 39 (1894) 265, nec *L. (Limonia) venusta* Bergroth, Wien. Ent. Zeitg. 7 (1888) 193.
- Limonia (Peripheroptera) austroandina* nom. nov., for *L. (P.) subandina* Alexander, Journ. New York Ent. Soc. 27 (1919) 135-136, nec *L. (Dicranomyia) subandina* Alexander, Proc. U. S. Nat. Mus. 44 (1913) 488.
- Limonia (Libnotes) sackenina* nom. nov., for *L. (L.) simplex* Osten Sacken, Ann. Mus. Civ. Genova 16 (1881) 202, nec *L. simplex* Wiedemann, Aussereur. zweifl. Ins. 1 (1828) 549; nec *L. simplex* Meigen, Syst. Besch. 6 (1830) 277.
- Limonia (Thrypticomyia) unisetosa* nom. nov., for *L. (T.) arcuata* Alexander, Trans. Am. Ent. Soc. 46 (1920) 4, nec *L. (Peripheroptera) arcuata* Alexander, Ent. News 24 (1913) 411-412.

TIPULINÆ

PSELLIOPHORA NIGRORUM sp. nov.

Thorax entirely black; anterior vertex abruptly yellow; palpi yellow; fore and middle femora black, the bases narrowly yellow; posterior femora yellow, the tips blackened; all tibiæ black, with a subbasal white ring; wings dark brown, the base broadly yellow; a paler yellow V-shaped area on the disk; abdomen with the basal segments reddish orange, the apex, including the hypopygium, black.

Male.—Length, about 14 millimeters; wing, 14.2.

Frontal prolongation of head very high and tumid, at base fully as deep as the vertex, thus gradually sloping from the vertex to its anterior end, obscure yellow above, dark brown laterally; palpi pale yellow, the distal end of the last segment a little darkened. Antennæ with the scape and basal segment of flagellum yellow; succeeding flagellar segments obscure yellow, the branches black, the apices of the segments narrowly pale; outer flagellar segments uniformly darkened. Head black, the anterior vertex abruptly yellow, the posterior margin of this area evenly rounded.

Prothorax, mesonotum, and pleura entirely deep velvety black. Halteres with the basal half of the stem yellow, the remainder dark brown. Legs with the coxæ black; trochanters reddish yellow; fore and middle femora black, with about the basal

fourth yellow; posterior femora yellow with a little more than the distal third black; all tibiæ black, with a narrow subbasal white ring; tarsi black. Wings dark brown, the base broadly and conspicuously bright yellow, this including the entire pre-arcular region and bases of the cells beyond, with the basal third of cell 2d A of this color; a conspicuous V-shaped mark on disk that is of a somewhat paler yellow than the base; pale streaks along vein 1st A and near central portion of this cell.

Basal four abdominal segments reddish orange, the remainder, including the hypopygium, black; basal sternites black medially, broadly reddish laterally, the amount of black increasing on the outer segments. Male hypopygium with the lateral lobes of the tergite densely tufted with setæ. Eighth sternite carinate medially, the prow-shaped apex chiefly reddish fulvous.

NEGROS, northern Oriental Negros, Lake Dako, July, 1925; holotype, male.

By Edwards's key to the Philippine species of *Pselliophora*,⁴ *P. nigrorum* runs to couplet 7, agreeing with *P. tigriventris* Alexander in the broad yellow wing bases but differing conspicuously in the entirely black thorax and the coloration of the abdomen, which has about the basal half uniformly red, the apex entirely black.

SCAMBONEURA PRIMÆVA sp. nov. Plate 1, figs. 1 and 2.

General coloration obscure fulvous yellow, the præscutum with four shiny plumbeous stripes that are narrowly bordered by black; antennal flagellum black; wings relatively broad, tinged with gray; Rs and the anterior cord in approximate transverse alignment, the latter not arcuated; cells of the medial field of wing relatively wide; abdominal tergites obscure yellow, the subcaudal portions shiny plumbeous, the caudal margins narrowly dark brown.

Female.—Length, about 15 millimeters; wing, 13.

Frontal prolongation of head deep fulvous, with a narrow dorsomedian black vitta that includes the conspicuous nasus; palpi dark brown, the two intermediate segments somewhat paler. Antennæ with the scapal segments obscure yellow; first flagellar segment dark brown; remainder of organ black. Head fulvous yellow, the anterior vertex narrowly lined with black.

Pronotum brown, more yellowish dorsomedially. Mesonotal præscutum obscure fulvous yellow with four shiny plumbeous

⁴Notulae Entomologicae 6 (1926) 41.

stripes that are narrowly margined with black; scutal lobes similarly darkened; scutellum dark, more brownish yellow laterally, the parascutella yellow; postnotum dark brown. Pleura obscure fulvous yellow, the meron darker; posterior sclerites, including the pleurotergite, more testaceous yellow. Halteres brown, the knobs darker, the base of the stem restrictedly pale. Legs with the coxæ reddish brown; trochanters pale brown; femora yellowish brown, brighter basally; tibiæ dark brown, the tips narrowly blackened; tarsi passing into black. Wings (fig. 1) relatively broad, tinged with gray; cell Sc darker; stigma small, pale brown; veins dark brown. Venation: Rs very short, in approximate alignment with the remainder of the anterior cord, the latter not strongly bowed, as in the other known species of the genus; R_2 lost by fusion of R_1 with R_{2+3} ; distal section of R_{1+2} atrophied; forks of medial field relatively short and broad; m-cu very erect, its angle with Cu_1 obtuse.

Abdominal tergites obscure yellow, the subcaudal portions of the intermediate segments more plumbeous and highly polished; caudal margins of the segments narrowly dark brown; sternites more uniformly brownish yellow. Ovipositor with the genital shield shiny castaneous; tergal valves of ovipositor yellowish horn color.

LUZON, Mountain Province, Benguet, Pauai (Haight's place), altitude about 2,400 meters, May 1926; holotype, female.

Scamboneura primæva is very distinct from the other Philippine species of the genus. By the author's key to the species of *Scamboneura*,⁵ the present form would run to *S. faceta* Alexander, a very different fly. The generalized condition of the venation of the radial field of the wing is noteworthy and finally settles the argument that the small transverse element at the proximal end of the stigma, first interpreted as being Rs, really is this vein. The strongly bowed condition of the anterior cord in the other known species of the genus, with a small spur jutting basad into cell R, lead to the possibility of an alternative interpretation,⁶ but the primitive condition of the venation in the present species proves that the original explanation of this remarkable venation is the correct one. The venation of *S. psarophanes* Alexander is shown for comparison (fig. 2).

⁵ Philip. Journ. Sci. 33 (1927) 293.

⁶ Alexander, Proc. Linn. Soc. New South Wales 52 (1927) 60, fig. 54.

Genus MACGREGOROMYIA novum

Frontal prolongation of head relatively stout, the nasus unusually long and slender. Antennæ apparently only 12-segmented, the basal segment elongate. No vertical tubercle. Legs long and slender; tibial spurs small; claws (♀) simple. Wings (fig. 3) with Sc_1 completely preserved, Sc_2 short, at its tip; R_s strongly arcuated; r-m connecting with R_s at nearly its own length before the fork; R_{2+3} gently arcuated on basal half; free tip of Sc_2 and R_{1+2} entirely preserved, converging outwardly, cell Sc_2 broadest at proximal end; R_3 long, cell R_2 at margin very wide; cell 1st M_2 present; all medial cells relatively deep; m-cu just beyond the fork of M ; vein 2d A nearly straight. Ovipositor with the valves chitinized, the tergal valves nearly straight and relatively slender; sternal valves very short and high, nearly as wide as long.

Genotype, *Macgregoromyia benguetensis* sp. nov. (Oriental Region.)

I take great pleasure in naming this new group in honor of my friend and colleague, Mr. Richard C. McGregor, to whom I am very greatly indebted for aid in a study of the rich crane-fly fauna of the Philippines and for other kind favors. I cannot refer the present fly to any of the described groups of tipuline crane flies. The position of r-m on R_s before the fork of the latter provides a unique character for the definition of the present group. Other striking characters and combinations of characters lie in the retention of Sc_1 , the preservation of R_{1+2} and its close approximation at wing margin to the free tip of Sc_2 , the long, parallel-sided cell 1st M_2 , and the position of m-cu.

MACGREGOROMYIA BENGUETENSIS sp. nov. Plate 1, fig. 3.

General coloration fulvous brown, the mesonotum chiefly dark brown; base of antennæ yellow, the outer segments dark brown; pleura pale, variegated with dark brown; legs relatively long and slender; femora obscure yellow at base, more darkened outwardly, the tips again paler; wings pale yellow, longitudinally striped with brown; abdominal tergites dark brown, the caudal margins of the segments broadly brownish yellow.

Female.—Length, about 14 millimeters; wing, 13.8.

Frontal prolongation of head brownish yellow, darker laterally; nasus long, slightly widened distally, a little brighter than the front; palpi pale brown, the third segment brighter, the

terminal segment broken. Antennæ with the first segment yellow, the second segment almost white; basal two flagellar segments yellow, the succeeding segments passing into brown. Head dark fulvous brown; anterior vertex wide.

Pronotum chiefly brownish yellow. Mesonotal præscutum with the disk largely covered by confluent brown stripes, the broad lateral margins abruptly yellow; margins of lateral stripes and anterior interspaces a little darker than the stripes; scutal lobes darkened, the median area slightly paler; scutellum dark brown; postnotum dark brown, laterally with dense yellow pollen. Pleura pale, the anepisternum and sternopleurite variegated with dark brown. Halteres relatively long and slender, pale, the base of the knobs dark brown, the apex paler. Legs with the coxæ dark brown; trochanters obscure yellow; femora obscure yellow, darkened outwardly, the tips paling into yellow; bases of tibiæ narrowly yellowish, the remainder of the legs passing into dark brown. Wings (fig. 3) with the ground color pale yellow, the veins conspicuously bordered with brown to produce a vittate appearance; cell C brownish yellow, pale yellow at outer end; cell Sc more uniformly yellow; cord conspicuously seamed with brown; radial cells more uniformly infumed, the proximal two-fifths of cell R_3 pale yellow; cells beyond cord infumed, a large area centering about cell 1st M_2 , together with all of cell M_1 pale; bases of cells R and M, basal two-thirds of Cu, vein 2d A and axilla all conspicuously variegated with brown. Venation as discussed under the generic diagnosis.

Abdominal tergites dark brown, the caudal margins of the segments broadly brownish yellow; sternites more uniformly brownish yellow. Ovipositor with the tergal valves brownish horn color.

LUZON, Mountain Province, Benguet, Pauai (Haight's place), altitude about 2,400 meters, May, 1926; holotype, female.

LIMONIINÆ

LIMONIA (LIBNOTES) IGOROTA sp. nov. Plate 1, fig. 4.

Size large (wing, ♂, over 20 millimeters); general coloration yellow, the posterior sclerites of the mesonotum variegated with dark brown; antennal flagellum and terminal segments of palpi yellow; thoracic pleura yellow, narrowly lined with dark brown; halteres yellow; legs yellow, the femora only vaguely darkened subapically on outer face; wings with a strong yellow tinge, the veins with long brown streaks, on Cu and on R_{4+5} extending

almost unbroken the entire length of the vein; R_{1+2} about three times R_2 alone; inner end of cell 2d M_2 far proximad of cell M_3 .

Male.—Length, about 15 millimeters; wing, 22 by 4.6.

Rostrum dark brown; palpi short, the first segment dark brown, the short outer three segments yellow. Antennæ with the scapal segments dark brown; flagellum abruptly light yellow; basal segments of flagellum with relatively short spinous verticils; outer segments more elongate. Head deep fulvous yellow, without markings; anterior vertex reduced to a strip.

Pronotum yellow. Mesonotal præscutum greenish yellow, with four nearly concolorous stripes, these becoming narrowly dark brown just before the suture; scutum with the median area greenish gray, the lobes olive-yellow with their centers dark brown; scutellum dark brown, the median area obscure yellow; postnotal mediotergite dark brown, the caudal margin narrowly yellow, the disk with a conspicuous median pale area that is narrowed behind. Pleura yellow with two narrow, slightly interrupted, dark brown, longitudinal stripes; dorsal stripe extending from the ventral margin of the pronotum, across the propleura and anepisternum, onto the pteropleurite, interrupted beyond this by the pleurotergite, which has only a small area above the halteres; ventral stripe interrupted, beginning on the fore coxa, including large areas on the sternopleurite and middle coxa, and above the hind coxa. Halteres entirely yellow. Legs with the fore and middle coxæ yellow, the outer face darkened as above described; hind coxæ yellow; trochanters obscure yellow; femora obscure yellow, with a barely indicated subterminal darkening that does not form a complete ring, the tips clear yellow; tibiæ and tarsi obscure yellow, the latter passing into black; segments, especially of the fore legs with the setæ reduced to tiny spines. Wings (fig. 4) with a strong yellow tinge, the veins conspicuously seamed with brown, the seams along R_s , R_5 and Cu nearly uninterrupted; other areas include a streak on R_{2+3} below the fork of Sc, R_2 , tip of R_{1+2} a long area at outer end of M_{1+2} , outer end of cell 1st M_2 and the tips of the anal veins; a dark marginal seam from 1st A almost to the tip of vein M_4 ; veins yellow, darker in the infuscated areas. Venation: Sc_2 at tip of Sc_1 ; R_s short, oblique; R_{1+2} elongate, fully three times R_2 alone, the free tip of Sc_2 carried to its extreme outer end; proximal end of cell 2d M_2 lying far proximad of cell M_3 ; m-cu about two and one-half times its length beyond the fork of M.

Abdominal tergites brownish yellow, with a narrow, dark brown lateral stripe that becomes obsolete on the outer segments; hypopygium yellow.

LUZON, Mountain Province, Benguet, Baguio; holotype, male.

In its large size and general coloration of the wings, *L. (L.) igorota* resembles *L. (L.) regalis* (Edwards), of Formosa, differing conspicuously in the entire lack of supernumerary crossveins, and all details of coloration of the body, antennæ, and legs. By Edward's key to the species of *Libnotes*,⁷ the present species runs to couplet 13, disagreeing with both included groups of species by the combination of striped thoracic pleura and uniformly yellow halteres. The pale yellow antennal flagellum and almost immaculate femora are conspicuous features of the present species.

LIMONIA (LIBNOTES) BANAHAOENSIS sp. nov. Plate 1, fig. 5.

General coloration brownish gray; antennæ black throughout; pleura pale yellow, with a transverse brown girdle; legs brown, the narrow tips of the femora and the bases of the tarsi paler; wings whitish subhyaline, with a heavy brown pattern, including areas in the base of cell R and at the wing tip; costal margin yellow, alternating with larger brown areas; Rs arcuated; free tip of Sc₂ before R₂; cells 2d M₂ and M₃ with their inner ends in transverse alignment.

Sex?—Wing, 6.7 millimeters.

Rostrum about one-half the length of the head, pale brown basally, the apex and palpi black. Antennæ black throughout; flagellar segments long-oval, the unilaterally arranged verticils approximately twice the segments. Posterior vertex dark, the narrow anterior vertex more grayish. Eyes large, contiguous or virtually so on dorsum.

Mesonotum almost uniformly brownish gray, the præscutum with a median darker brown stripe; scutellum more testaceous; pleurotergite yellow. Pleura pale yellow, with a brown transverse girdle, involving the cephalic portions of the anepisternum and sternopleurite, the posterior margin of the propleura, and the fore coxæ. Halteres elongate, dark brown. Legs with the fore coxæ dark, the remaining coxæ and all trochanters pale yellow; femora brown, the bases paler, the extreme tips narrowly yellow; tibiæ brown, the tips paling into brownish yellow; basal two tarsal segments yellow, the terminal segments black. Wings (fig. 5) whitish subhyaline, with a heavy brown pattern;

⁷ Journ. Federated Malay States Mus. 14 (1928) 74-80.

costal margin in cells C and Sc yellow, alternating with extensive brown areas above h, over origin of Rs, tip of Sc and the small stigmal area above the end of R; wing apex in cells R_2 and R_3 broadly infumed; an extensive dark cloud in base of cell R; broad, conspicuous brown seams along Cu, the cord, outer end of cell 1st M_2 , R_{2+3} R_3 and the tip of 2d A; veins dark brown, yellow in the costal interspaces. Venation: Sc_1 extending to shortly beyond the level of r-m; Rs gently arcuated, nearly three times the basal section of R_{4+5} ; free tip of Sc_2 about its own length before R_2 ; radial veins long and extending generally parallel to one another to margin; cell 1st M_2 elongate, gently widened distally, the proximal ends of cells 2d M_2 and M_3 in transverse alignment; m-cu about its own length beyond fork of M; vein 2d A strongly converging toward 1st A on basal half, thence diverging strongly to margin.

Abdomen with the basal segments greenish yellow, a little infumed; abdomen broken beyond the third segment.

LUZON, Laguna Province, above Majayjay, Mount Banahao, altitude over 500 meters, June 10, 1928 (R. C. McGregor); holotype.

Limonia (L.) *banahaoensis* belongs to the group of the subgenus that includes small *Limonia*-like forms, with the transverse veins at outer end of cell 1st M_2 in alignment. By Edwards's key to the species of *Libnotes*,⁸ the present species runs to couplet 36, disagreeing with both groups in the small stigma and clouded wing apex. The coloration of the wings readily separates this species from all forms so far described.

LIMONIA (LIBNOTES) RIVERAI sp. nov. Plate 1, fig. 6.

General coloration gray; rostrum, palpi, and antennæ black; femora brownish yellow, the tips narrowly and inconspicuously brownish black; wings grayish subhyaline, the prearcular region more whitish; stigma lacking; free tip of Sc_2 and R_2 in alignment; proximal ends of cells 2d M_2 and M_3 in alignment.

Female.—Length, about 6 to 7 millimeters; wing, 6.5.

Rostrum and palpi black, the former about one-half the length of the remainder of the head. Antennæ black throughout, the flagellar segments oval, somewhat longer outwardly, the terminal segment nearly twice the penultimate. Anterior vertex narrow, silvery white; remainder of head dark gray, the posterior orbits paler.

⁸ Loc. cit.

Mesonotum dark brownish gray, the præscutum with three poorly defined darker brown stripes; posterior sclerites of mesonotum clearer gray. Pleura dark grayish brown, the dorso-pleural region paler. Halteres with the stem yellow, the outer end and the knobs dark brown. Legs with the coxæ dark, concolorous with the pleura; trochanters obscure yellow; legs relatively long; femora brownish yellow, the tips narrowly brownish black; tibiæ brown, the tips narrowly darkened; tarsi brownish yellow, the terminal segments blackened. Wings (fig. 6) grayish subhyaline; prearcular region pale; cell Sc a little more infumed; stigma lacking; veins dark brown. Venation: Sc₁ ending about opposite midlength of basal section of R₄₊₅, Sc₂ close to its tip; Rs about twice the basal section of R₄₊₅, the basal half more oblique, the distal half more arcuated; free tip of Sc₂ in alignment with R₂; cell 1st M₂ relatively elongate but shorter than the veins issuing from it; inner ends of cells 2d M₂ and M₃ in alignment; m-cu at near three-fifths to two-thirds the length of cell 1st M₂; 2d anal vein diverging gently from 1st A, beyond the base gently sinuous, the cell broad.

Abdomen dark brown. Ovipositor with the valves reddish horn color; tergal valves slender.

LUZON, Laguna Province, above Majayjay, Mount Banahao, altitude over 500 meters, May 30, 1928 (*R. C. McGregor and Francisco Rivera*); holotype, female; paratopotype, female. "On small tree trunk in open field, far from water."

I take great pleasure in naming this interesting *Limonia* in honor of the collector of many of the specimens studied in connection with the present report, Mr. Francisco Rivera. *Limonia* (*L.*) *riverai* differs from all similar *Limonia*-like species of the subgenus *Libnotes* in the gray coloration of the thorax and the unmarked wing. By Edwards's key to the species of the subgenus,⁹ the present species would run to couplet 55, disagreeing with both sets of characters in the immaculate wings.

LIMONIA (LIBNOTES) DUYAGI sp. nov. Plate 1, fig. 7.

Ground color reddish yellow, the thorax heavily variegated with brownish black, including three præscutal stripes; knobs of halteres light yellow; legs chiefly yellow, the fore femora with a narrow dark brown subterminal ring; wings subhyaline, the costal border and base more darkened; stigma small, sub-circular, darker brown; Rs long; cell 2d M₂ a little longer than

⁹ Loc. cit.

cell M_3 ; m-cu at near midlength of cell 1st M_2 ; anal veins nearly parallel at base.

Female.—Length, about 6.5 millimeters; wing, 6.8.

Rostrum and palpi black. Antennæ with the scape black, the flagellum much paler, light brown; flagellar segments oval, the verticils not conspicuous. Head dark brownish gray with a blackish median line; eyes broadly contiguous on the vertex.

Pronotum narrowly black medially and laterally, paler on either side of the median line; posterior notum obscure yellow. Mesonotal præscutum with the ground color reddish yellow, the three stripes black, very extensive, confluent behind or nearly so; median stripe constricted and diluted with reddish opposite the anterior ends of the lateral stripes; scutal lobes dark brown, the median area yellow; scutellum brownish black, the base obscure yellow; postnotum brown. Pleura obscure yellow, sparsely variegated with brown, the most distinct area on the anepisternum; dorso pleural region more or less darkened. Halteres pale, the base of the stem and the knobs light yellow. Legs with the coxæ and trochanters yellow, the fore coxæ darker; fore femora yellow with a narrow dark brown subterminal ring, this narrower than the yellow apex beyond; remaining femora with the subterminal dark annulus more diffuse, only the outer end clearly delimited; tibiæ yellow, the tips very narrowly and vaguely darkened; tarsi yellow, the outer three segments dark brown. Wings (fig. 7) subhyaline, the prearcular region, cells C and Sc, and a more-diffuse costal border extending to the wing tip brown; stigma subcircular, darker brown; caudal border of wing more vaguely infumed; a narrow brown seam at origin of Rs; bases of cells R, M, Cu, and 1st A a little clouded; veins dark brown. Venation: Sc_1 ending shortly beyond r-m, Sc_2 a short distance from its tip; Rs long, rather strongly arcuated, some five times the basal section of R_{4+5} ; free tip of Sc_2 and R_2 in alignment; cell 2d M_2 a little longer than cell M_3 ; cell 1st M_2 elongate, m-cu at near midlength, a little shorter than the distal section of Cu_1 ; anal veins nearly parallel at origin, vein 2d A gently sinuous.

Abdominal tergites dark brown, the sternites more bicolored, the bases and apices of the individual segments yellow, the former more broadly so, the intermediate portion dark brown. Ovipositor and genital segment reddish yellow, the base of the sternal valves blackened; tergal valves relatively small and slender, upcurved.

LUZON, Laguna Province, above Majayjay, Mount Banahao, April 24, 1928 (A. C. Duyag).

This interesting *Libnotes* is named in honor of the collector, Mr. A. C. Duyag, who has collected many interesting species of Tipulidæ. By Edwards's key to the species of this subgenus,¹⁰ the present species would run to *L. (L.) megalops* (Edwards), of Borneo. The latter differs in the uniformly ochreous thorax, brown halteres, and details of the wing pattern and venation.

LIMONIA (LIMONIA) IMPERSPICUA sp. nov. Plate 1, fig. 8.

General coloration reddish brown, the præscutum with a darker brown median stripe; legs brownish black, the femoral bases yellow; wings with a brownish suffusion, the costal margin narrowly dark brown; this continued outwardly to beyond the wing tip; male hypopygium with the rostral prolongation of the ventral dististyle very long and slender, the two spines arising from a common tubercle placed at the base of the prolongation.

Male.—Length, about 8 millimeters; wing, 9.2.

Rostrum and palpi black. Antennæ with the scapal segments black, the flagellum broken. Head dark gray, the anterior vertex lighter gray; eyes shrunken but apparently broadly contiguous above.

Mesonotal præscutum dark reddish brown, with a darker brown median stripe; scutum testaceous yellow, each lobe with a large brownish black area; scutellum dark brown, the base medially pale yellow; postnotum brownish black, the cephalic margin narrowly paler. Pleura pale brownish yellow, with a conspicuous brownish black girdle that includes the anepisternum and sternopleurite; propleura less distinctly infuscated; a dark spot on the ventral pleurotergite. Halteres pale, the knobs infuscated. Legs with the coxæ brownish yellow, the fore coxæ brownish black at base; trochanters obscure yellow; femora dark brown, the bases narrowly yellow, the tips very vaguely pale; remainder of legs black; claws elongate, with a single long basal spine. Wings (fig. 8) with a brownish suffusion, cells C and Sc still darker, the color continued as a narrow costal seam to beyond the wing tip; stigma small, oval, darker brown; small vague brown seams at origin of Rs, along the cord, and in the axillary region; veins dark brown. Venation: Sc₁ ending about opposite two-thirds the length of Rs, Sc₂

¹⁰ Loc. cit.

at its tip; Rs nearly straight beyond base, the distal third more arcuated; free tip of Sc₂ in alignment with R₂; cell 1st M₂ about as long as vein M₃ beyond it; a small spur jutting basad into cell 1st M₂ at the bend of M₃; m-cu at fork of M, a little longer than the distal section of Cu₁.

Abdomen dark brown, the caudal margins of the segments slightly paler; hypopygium dark. Male hypopygium with the ninth tergite transverse, the caudal margin evenly rounded, only vaguely emarginate medially. Basistyle with the mesal lobe relatively large and conspicuously setiferous. Ventral dististyle fleshy, the rostral prolongation slender, chitinized, the two spines placed at the base of the prolongation, arising from a common tubercle, gently curved, shorter than the prolongation alone; face of style near prolongation with a long, fleshy lobe that terminates in two long setæ. Dorsal dististyle a slender, angularly bent, chitinized rod that narrows gradually to the slightly decurved acute tip. Gonapophyses extensive, broad-based, narrowed gradually to the more slender apical points.

LUZON, Laguna Province, above Majayjay, Mount Banahao, altitude over 500 meters, June 2, 1928 (R. C. McGregor); holotype, male.

The peculiar structure of the male hypopygium is approached by *Limonia (Libnotes) termitina* (Osten Sacken), another fact in the long chain that has been accumulated to prove the close relationship existing between the various groups of limoniine Tipulidæ.

LIMONIA (EUGLOCHINA) PROJECTA sp. nov. Plate 1, figs. 9 and 9a.

General coloration dark brown; proximal ends of basitarsi blackened; wings elongate, cuneiformly narrowed at base, suffused with brown, especially on the costal and apical portions; Sc₂ ending opposite the end of vein 2d A; cell M₃ lost by the complete atrophy of m and both sections of vein M₃.

Male.—Length, about 6.5 to 8 millimeters; wing, 6 to 7.5.

Female.—Length, about 6 to 6.5 millimeters; wing, 6 to 7.

Rostrum and palpi dark brown. Antennæ with the scapal segments brown, the flagellum somewhat darker; flagellar segments elongate-fusiform, the longest verticils unilaterally arranged. Head black, the anterior vertex broad, more silvery.

Mesonotum dark brown, the pleura more yellowish testaceous. Halteres elongate, pale, the outer end of the stem and the knobs dark brown. Legs with the coxæ and trochanters yellowish

testaceous; femora and tibiæ black; basitarsi black at base, the remainder of tarsi snowy-white. Wings (figs. 9, 9a) long and narrow, the basal pedicel unusually long; membrane with a brownish suffusion, the costal region and apex darker brown; stigma long-oval, dark brown; veins black, the oblitative areas extensive. Venation: Sc short, ending opposite or just before the level of the end of vein 2d A, Sc₂ at the extreme tip of Sc₁; cord lying unusually far distad, at or beyond five-sixths of the length of the wing; Rs short, less than the angulated basal section of R₄₊₅; free tip of Sc₂ and R₂ in alignment; cell M₃ lacking by the atrophy of m and both sections of vein M₃; m-cu more than one-half its length beyond the fork of M; Cu₂ lacking.

Abdomen brownish black, including the hypopygium.

TABLAS, Badajoz, August 21, 1928 (*Francisco Rivera and A. C. Duyag*); holotype, male; allotype, female; August 20 to 27, 1928, nine paratopotype males and females. ROMBLON, August 16, 1928 (*Francisco Rivera and A. C. Duyag*), paratype male.

Limonia (Euglochina) projecta marks the extreme tendency of venation in the subgenus. The cord lies far distad and cell M₃ is entirely lacking by the atrophy of m and both sections of vein M₃, the latter condition being identical with the subgenus *Alexandriaria* Garrett. I have seen another species of *Euglochina* from Sumatra with the same peculiar venation.

HELIUS (HELIUS) ARCUARIUS sp. nov. Plate 1, fig. 10.

General coloration brownish yellow, the pleura clearer yellow; rostrum relatively long and slender; antennæ black throughout; legs brownish black, the tarsi paling into yellowish brown; wings subhyaline, the costal margin narrowly infuscated; R₂₊₃ long, strongly arcuated at origin, beyond the base running parallel to R₁ or nearly so, this part of cell R₁ greatly narrowed; cell 1st M₂ long, m-cu near its base.

Male.—Length (excluding rostrum), about 4.5 millimeters; wing, 5.6; rostrum alone, about 0.7.

Rostrum relatively long and slender, approximately twice the remainder of the head, brownish black; palpi black. Antennæ longer than the rostrum, black throughout; flagellar segments long-oval, with an abundant erect pubescence. Head black.

Mesothorax almost uniformly brownish yellow, the dorsum darker medially, the pleura clearer yellow. Halteres dark brown, the base of the stem narrowly pale. Legs long and slender, the coxæ and trochanters obscure yellow; femora and tibiæ brownish black, the femoral bases narrowly paler; tarsi

paling to yellowish brown. Wings (fig. 10) subhyaline, cells C and Sc and the stigmal region infuscated to produce a dark costal border; veins brown. Venation: Sc_2 ending shortly beyond r-m, Sc_1 indistinct; Rs gently arcuated; R_{2+3} long, strongly arcuated at origin, beyond the base lying close to R_1 , this part of the cell being narrow and generally parallel-sided; cell R_1 at margin a little more than one-third cell R_3 ; r-m just beyond the fork of Rs; cell 1st M_2 long-rectangular, shorter than the veins issuing from it; m-cu just beyond the fork of M, near the base of cell 1st M_2 .

Abdominal tergites dark brown, the sternite obscure yellow; hypopygium dark. Male hypopygium with a conspicuous setiferous lobe on mesal face of basistyle, much as in most species of *Limonia*. Outer dististyle shorter than the inner, narrowed to the simple obtuse apex. Gonapophyses with the mesal hook very long and conspicuous.

LUZON, Laguna Province, above Majayjay, Mount Banahao, altitude over 500 meters, June 3, 1928 (*R. C. McGregor*); holotype, male.

Helius arcuarius is a very distinct species, in the darkened costal margin of the wing agreeing most closely with *H. fumicosta* Edwards, an otherwise entirely different fly. In the peculiar arcuation of vein R_{2+3} , it agrees with *H. longinervis* Edwards, a member of the subgenus *Eurhamphidia* Alexander, with r-m placed before the fork of Rs. The genus *Helius* includes a wide range of types, some of which well warrant subgeneric separation.

LECHRIA LUZONICA sp. nov. Plate 1. fig. 11.

General coloration shiny chestnut brown, the pleura more yellowish; antennæ black, the first scapal segment yellow; head dark gray; legs brownish black; cell 1st M_2 of moderate length; m-cu about one and one-half times its length beyond the fork of M and some distance before the level of r-m.

Male.—Length, about 5 millimeters; wing, 5.5.

Female.—Length, about 6 millimeters; wing, 7.

Rostrum brownish yellow; palpi brownish black. Antennæ with the first scapal segment yellow, the remainder of the organ black; flagellar segments suboval. Head dark gray; eyes above broadly contiguous.

Mesonotum shiny chestnut brown, the pleura more yellowish. Halteres brown, the base of the stem yellowish. Legs with the coxæ and trochanters yellowish; femora brownish black, the

bases narrowly and vaguely paler; tibiæ and tarsi dark brown. Wings (fig. 11) subhyaline, the costal region more yellowish; veins brownish black, C, Sc, and R paler. Venation: Sc₂ at tip of Sc₁, both lying shortly beyond the fork of Rs; cell 1st M₂ relatively short (as compared with *L. philippinensis*); m-cu about one and one-half times its length beyond the fork of M, at about one-third the lower face of cell 1st M₂; r-m lying distinctly distad of m-cu.

Abdominal tergites dark brown medially, paler brownish yellow laterally; sternites obscure yellow; eighth segment blackened; male hypopygium brownish yellow.

LUZON, Bulacan Province, San Jose del Monte, July 8, 1928 (*R. C. McGregor*); holotype, male; allotype, female; paratypes, three males and females.

Lechria luzonica seems to be most closely allied to *L. philippinensis* Alexander, despite the appearance of cell 1st M₂, which is more like the normal condition in the genus. From *L. lucida* de Meijere and *L. bengalensis* Brunetti, it differs notably in the coloration of the body and legs, as well as in the details of venation. A figure of the venation of *Lechria philippinensis* Alexander (fig. 12) is given for comparison.

Key to the Philippine species of Lechria Skuse.

Wings (fig. 12) with the costal cell brown; cell 1st M₂ very long and narrow, m-cu only a short distance before the level of r-m, fully twice its length beyond the fork of M; abdominal segments obscure yellow, at base narrowly cross-banded with brown.

L. philippinensis Alexander.

Wings (fig. 11) with the costal cell yellowish; cell 1st M₂ of normal size, m-cu some distance before the level of r-m, about one and one-half times its length beyond the fork of M; abdominal tergites obscure yellow with a brown dorsomedian stripe; sternites uniformly yellow *L. luzonica* sp. nov.

ERIOCERA FLAVIDIBASIS sp. nov.

General coloration brownish black, sparsely pruinose; antennal scape black, the flagellum brownish yellow; legs entirely brownish black; wings dark brown, the broad base and a conspicuous discal area yellow; cell M₁ present but tending to be evanescent by atrophy; abdomen brownish black.

Male.—Length, about 11 millimeters; wing, 14.

Rostrum and palpi black. Antennæ short, the scapal segments black, sparsely dusted with gray; flagellum conspicuously brownish yellow, the outermost segments a little darker. Head dull brownish gray.

Mesonotum dark brownish gray, the præscutum with three more glabrous, nearly concolorous stripes. Pleura brownish black, dusted with gray, the pleurotergite transversely ribbed with finer lines. Halteres brownish black. Legs entirely brownish black, all legs relatively stout. Wings strongly suffused with brown; wing base broadly light yellow, the color including all the prearcular region, the basal third of cell C and the narrower bases of cells Sc, 1st A, and 2d A, the former a little deeper in color than the two latter; the discal pale area relatively narrow in cell R₁, slightly wider behind, not crossing Cu, pale yellow in color. Venation: Cell M₁ present, in both wings of the type, vein M₁ represented only by a basal spur, the apex atrophied; m-cu beyond midlength of cell 1st M₂, about twice the distal section of Cu₁.

Abdomen brownish black, subnitidous, the caudal margins of the tergites narrowly paler; hypopygium black, with long conspicuous yellow setæ.

LUZON, Mountain Province, Benguet, Adaoay, April, 1924; holotype, male.

By Edwards's key to the Philippine species of *Eriocera*,¹¹ *E. flavidibasis* runs to couplet 9. It agrees with *E. griseicollis* Edwards in the retention of cell M₁ and the stout legs, differing in the coloration of the body, antennæ, and wings. From *E. crassipes* Bezzi, the present species differs in the stout fore and middle legs, the general coloration and venation.

ERIOCERA GLABRIVITTATA sp. nov.

General coloration black, the mesonotal præscutum velvety black, the usual three stripes shiny plumbeous black; femora yellow, the tips broadly blackened; wings broad, the base, especially in the anal cells, and a broad discal area whitish; cell M₁ lacking; abdominal tergites subnitidous, blue-black; basal shield of ovipositor brown, densely covered with an appressed golden pubescence.

Female.—Length, about 16 millimeters; wing, 15.

Rostrum and palpi black. Antennæ broken. Head black, sparsely pollinose.

Mesonotal præscutum velvety black, the usual three stripes separate, shiny plumbeous black; centers of the scutal lobes similarly glabrous; scutellum black, sparsely pruinose. Pleura black. Halteres brownish black. Legs with the coxæ and trochanters black; femora yellow, the tips broadly blackened; tibiæ

¹¹ Notulæ Entomologicae 6 (1926) 38-39.

black, on at least one leg (detached) just beyond the base and extending for about one-half the length of the sclerite brownish yellow; tarsi black. Wings broad, suffused with dark brown, the prearcular region extensively brighter, almost whitish, in the costal region passing beyond h; bases of both anal cells broadly whitened, the remainder of these cells grayish; a broad, conspicuous, whitish crossband before the cord, this generally parallel-sided, extending from R to Cu; veins pale brown, more yellowish in the discal pale area. Venation: Cell M_1 lacking; m-cu immediately before midlength of cell 1st M_2 .

Abdominal tergites blue-black, subnitidous, without pale markings; sternites more reddish brown. Ovipositor with the dorsal shield brown, densely covered with an appressed golden pubescence; valves elongate, slender, reddish horn color.

LUZON, Mountain Province, Benguet, Pauai (Haight's place), altitude about 2,450 meters, April 1, 1925 (*Francisco Rivera*); holotype, female.

By means of Edwards's key to the Philippine species of *Eriocera*,¹² the present species runs to couplet 3, disagreeing with both included species in the diagnostic characters indicated above.

ERIOCERA CARBONIPES sp. nov.

General coloration of head and thorax dark grayish black, the præscutum with three glabrous plumbeous black stripes that are confluent behind; legs and halteres entirely black, the former relatively slender; wings dark brown, the bases of the anal cells and a conspicuous area before the cord white; cell M_1 lacking; abdomen shiny blue-black, the hypopygium black.

Male.—Length, about 12 millimeters; wing, 12.8.

Rostrum and palpi black. Antennæ with the scape black; flagellum broken. Head dull grayish black.

Mesonotal præscutum dull black, with three shiny plumbeous black stripes that are entirely confluent behind, the humeral inter-spaces being restricted to elongate triangles; posterior sclerites of mesonotum similarly dark leaden gray. Pleura black, sparsely pruinose, especially on the pleurotergite. Halteres black. Legs relatively slender, entirely black. Wings dark brown, the bases of the anal cells broadly whitened; costal cell before h a little pale; a conspicuous white discal area before cord, extending from vein R_1 to Cu_1 ; veins dark brown. Vena-

¹² Loc. cit.

tion: Cell M_1 lacking; m-cu at midlength of cell 1st M_2 , more than twice the distal section of Cu_1 .

Abdomen shiny blue-black, the hypopygium black.

LUZON, Mountain Province, Ifugao, Kiangan, altitude about 1,000 meters, March, 1925 (*Francisco Rivera*); holotype, male.

By Edwards's key to the Philippine species of *Eriocera*,¹³ the present species runs to couplet 9, disagreeing with both included species in the slender legs. It closely resembles *E. glabrivittata* sp. nov., differing most conspicuously in the entirely black legs.

TRENTEPOHLIA (MONGOMA) LUZONENSIS Edwards. Plate 1, fig. 13.

Trentepohlia (Mongoma) luzonensis EDWARDS, Notulae Entomologicae 6 (1926) 37-38.

Edwards's unique type, a female, was from Mount Banahao, collected in June, 1914, by Boettcher. I have seen a few additional specimens of both sexes from the same locality, collected above Majajjay, by Mr. A. C. Duyag. The male sex has not been described and is herewith characterized as allotype. The present material is in better preservation than the type and a few additional facts are noted.

Female.—Length, 13 millimeters; wing, 9; fore leg, femur, 12.5; tibia, 16.2; tarsus, about 12.5; hind leg, femur, 13.5; tibia, 14.2; tarsus, about 8.5.

Allotype.—Male. Antennæ with the basal segment dark brown, paler beneath; second segment obscure yellow; basal segment of flagellum yellowish, the outer segments darkened; flagellar segments elongate, without long conspicuous verticils.

Mesonotal præscutum chiefly yellow, the broad lateral margins blackened; a narrower median black vitta begins behind the cephalic margin and ends before the suture, being replaced by a pale yellow vitta that continues backward onto the postnotum; scutal lobes extensively blackened, the median area and scutellum more testaceous yellow. Pleura reddish yellow, the pteropleurite and posterior pleurotergite more blackened. Legs very long and slender, as shown by the above measurements. Wing (fig. 13) whitish hyaline, the costal margin yellow; veins black, C, Sc, and R conspicuously yellow; prearcular veins and the base of cell Cu_1 narrowly yellow; stigma dark brown; very narrow dark seams on m-cu and adjoining portions of vein Cu_1 ; a dark spot between anal veins near origin. Venation: Rs long and

¹³ Loc. cit.

nearly straight; R_{2+3+4} long, gently sinuous; R_2 a little longer than R_{3+4} ; tips of R_3 and R_4 pale; proximal end of cell M_3 a little basad of that of cell R_5 ; apical fusion of Cu_1 and 1st A slight.

Abdominal tergites chiefly dark brown, the outer segments more extensively brownish yellow; terminal segments blackened; sternites more yellowish, the caudal margins of the outer segments blackened.

The middle legs, broken in the type, have the tips of the tibiae broadly blackened, as in the fore legs.

LUZON, Laguna Province, above Majayjay, Mount Banahao, May 10, 1928 (*A. C. Dwyag*); allotype, male, and two additional specimens.

TRENTEPOHLIA (MONGOMA) POLIOCEPHALA sp. nov. Plate 1, fig. 14.

General coloration light yellow; head light gray; legs testaceous yellow, only the terminal tarsal segments slightly darkened; wings subhyaline, veins pale brown; cell 1st M_2 small; inner end of cell M_3 proximad of that of cell 2d M_2 ; apical fusion of veins Cu_1 and 1st A subequal to m.

Male.—Length, about 4 millimeters; wing, 4.6.

Female.—Length, about 4.8 millimeters; wing, 5.

Rostrum yellow, the palpi very slightly darker. Antennae relatively long, in male, if bent backward, extending about to the base of the halteres; basal segments yellowish testaceous, the flagellar segments beyond the base dark brown; flagellar segments subcylindrical, gradually decreasing in size outwardly; verticils relatively inconspicuous. Head light gray, the anterior vertex very narrow.

Thorax entirely light yellow, unmarked. Halteres short, pale yellow. Legs with the coxae and trochanters pale yellow; remainder of legs testaceous yellow, the terminal tarsal segments scarcely darkened; a few conspicuous long black setae at tips of femora. Wings (fig. 14) subhyaline, the costal region slightly more yellowish; veins pale brown, those of the costal region slightly more yellowish. Venation: R_s a trifle longer than the basal section of R_5 ; R_2 about one-half its length before the fork of R_{3+4} ; cell R_4 large; cell 1st M_2 small, irregularly hexagonal; basal section of M_3 long, arcuated, the inner end of the cell lying proximad of cell 2d M_2 ; m-cu about two-thirds its length before the fork of M ; apical fusion of Cu_1 and 1st A subequal to m.

Abdomen brownish yellow, including the hypopygium, the caudal margins of the segments a little paler.

The allotype female is generally similar to the male, differing as follows: Pleura and abdomen darker, this probably caused by decomposition of tissues within the body; cell 1st M_2 a little more elongate.

LUZON, Laguna Province, above Majayjay, Mount Banahao, altitude over 500 meters, May 26, 1928 (*R. C. McGregor and Francisco Rivera*); holotype, male; allotype, female.

By the author's key to the Philippine species of *Trentepohlia*,¹⁴ *T. poliocephala* runs to couplet 3, differing from both included species in the diagnostic characters as listed. In its pale yellow coloration and small size, the present form agrees with *T. (M.) flava* (Brunetti), of India. The latter species differs from all known members of the subgenus *Mongoma* in having the distal section of Cu_1 reaching the wing margin and not fused apically with 1st A.

TRENTEPOHLIA (MONGOMA) SAXATILIS sp. nov. Plate 1, fig. 15.

General coloration dark brown, the pleura obscure brownish yellow; legs very long and slender; femora dark brown, the tips abruptly pale yellow; tibiæ and tarsi pale; wings with a faint dusky tinge, cells C and Sc a little darker; vein R_3 conspicuously arcuated, the inner end of the cell being broadly obtuse; cell 1st M_2 relatively short; inner end of cell R_5 proximad of cells 2d M_2 or M_3 ; apical fusion of veins Cu_1 and 1st A short.

Male.—Length, about 8 millimeters; wing, 8; fore leg, femur, 12; tibia, 15.8; tarsus, about 16; middle leg, femur, 14; tibia, 14.5; tarsus, about 14. Other males show the following measurements: Length, 8 to 9 millimeters; wing, 8 to 9.

Female.—Length, 10 to 11 millimeters; wing, 9 to 10.

Rostrum yellow; maxillary palpi dark brown. Antennæ dark brown. Head dark gray, the vertex with a conspicuous median carina.

Pronotum brown, paler laterally. Mesonotum dark brown, the humeral region of præscutum narrowly yellow; median region of scutum obscure yellow. Pleura obscure brownish yellow, the dorsopleural region dusky. Halteres dark brown, the extreme base of the stem yellow. Legs very long and slender, as shown by the above measurements; coxæ and trochanters yellowish testaceous; femora dark brown, their bases restrictedly pale, their tips abruptly and rather broadly (1.2 millimeters) pale yellow; tibiæ and tarsi dirty white to pale yellow, the tibiæ beyond base very vaguely darkened; no con-

¹⁴ Philip. Journ. Sci. 33 (1927) 302.

spicuous setal adornments on legs. Wings (fig. 15) with a faint dusky tinge, cells C and Sc a little darker; wing apex narrowly darkened; space between branches of Cu darkened; some of the longitudinal veins vaguely seamed with brown; veins dark brown. Venation: R_2 about its own length before the fork of R_{3+4} ; R_3 conspicuously arcuated, the inner end of the cell broadly obtuse; cell 1st M_2 relatively short, the veins beyond it correspondingly elongated; inner end of cell R_5 proximad of the other cells beyond cell 1st M_2 ; inner ends of cells 2d M_2 and M_3 nearly in alignment, subequal; apical fusion of Cu_1 and 1st A short to very short.

Abdominal tergites dark brown; sternites obscure brownish yellow; hypopygium dark.

LUZON, Laguna Province, above Majayjay, Mount Banahao, altitude over 500 meters, May 26 to 29, 1928 (*R. C. McGregor*); holotype, male; allotype, female; paratypes, twelve males and females.

By the author's key to the Philippine species of *Trentepohlia*,¹⁵ the present species runs to *T. (M.) tenera* (Osten Sacken) in couplet 2. It is a larger species, with very long legs, the femoral tips abruptly pale; vein R_3 arcuated, the inner end of the cell obtuse; inner end of cell R_5 lying proximad of the other cells beyond 1st M_2 , and other characters.

The following detailed notes on the occurrence of the species are of unusual interest and value:

"May 28, 1928. On sides of damp rocks, adjoining a small stream. About a dozen, clustered on dark side of a damp rock, just above a mountain stream. They vibrate up and down, as do many other species of this family of flies.

"May 29, 1928. Crane flies on damp, more or less mossy rocks along small forest stream. One, two, or three flies together on vertical or overhanging side of rock, the surface damp and more or less covered with short moss. Water usually directly underneath the flies. The flies are not easily disturbed and can be captured with a wide-mouthed bottle. They never cease their rather fast rocking motion. When disturbed, they fly only a short distance, but take a long time before settling on a rock again. In two cases, only, I saw them hanging from fern leaves, in copulation. I disturbed one pair before I realized the conditions. The second pair I watched for ten minutes, but could not detect much because the upper fly was continually in motion and this moved the lower fly. The larger individual (female) hung with from two to four feet on the pinnae of a drooping fern frond. The smaller (male) seemed to hang with the legs in the opposite direction."—R. C. MCGREGOR. A sketch from life

¹⁵ Loc. cit.

of this pair shows the female with the front pair of legs holding to two separate fern pinnæ, one additional middle leg similarly holding to a third pinna. The other legs hang free. The small male hung suspended, with all legs hanging free and in the opposite direction from those of his mate. This would seem to indicate that in mating, the genitalia are so twisted that the venter of the male lies on the same side as the dorsum of his mate.

"May 28, 1928. A few, on leaves of shrubs, usually on underside of leaf, one or two of this and related flies [as *Trentepohlia pennipes* Osten Sacken, *T. trentepohllii* Wiedemann, etc.] on a single leaf."—R. C. MCGREGOR and FRANCISCO RIVERA.

TRENTEPOHLIA (TRENTEPOHLIA) BAKERI Alexander.

Trentepohlia (Trentepohlia) bakeri ALEXANDER, Philip. Journ. Sci. 33 (1927) 304-305.

The unique type, a female, was from Mount Maquiling, Luzon, collected by Baker. A considerable series of specimens has recently been sent me by Mr. McGregor, taken at Binauanġan, Obando, Bulacan Province, Luzon, December 29, 1927, where they were found resting on leaves and twigs of mangroves (*R. C. McGregor*). Associated with this species were a lesser number of *Limonia (Geranomyia) circipunctata* Brunetti.

The present extensive series indicates the following range of characters: Rostrum, in some specimens, much paler than the palpi, obscure yellow. In most specimens, the mesonotal præscutum trivittate with brown, the lateral stripes being well indicated and separate from the median area. Besides the stigmal area, Cu, the cord, fork of R_{3+4} and vein R_5 are distinctly bordered by grayish. Sc_2 usually close to the tip of Sc_1 , in some cases at some distance from this tip, Sc_1 alone being approximately one-third the length of Rs.

TRENTEPOHLIA (TRENTEPOHLIA) HOLOXANTHA sp. nov. Plate 1, fig. 16.

General coloration of thorax and abdomen yellow, unmarked; head light gray, carinate; halteres and legs yellow; wings with a yellow suffusion, especially on the costal and apical portions; male hypopygium brownish black.

Male.—Length, about 7 millimeters; wing, 6; middle leg, femur, 10.7; tibia, 11; tarsus, about 6.

Rostrum and palpi brownish yellow. Antennæ obscure brownish yellow, the outer segments of the flagellum somewhat darker. Head light gray, the posterior vertex variegated with darker gray; posterior vertex carinate.

Thorax entirely shiny yellow, without markings. Halteres yellow. Legs yellow, only the four outer tarsal segments black-

ened. Wings (fig. 16) with a yellowish suffusion, the costal region and apex more-saturated yellow; veins yellow. Venation: Sc_2 lacking; R_{1+2} and R_3 likewise very weak and relatively indistinct; Rs relatively short, about two-thirds the basal section of R_5 ; R_{2+3+4} strongly approaching R_1 , R_2 being very short and faintly preserved; beyond R_2 , R_{3+4} bends strongly caudad; R_3 oblique; inner end of cell R_5 acute; apical fusion of Cu_1 and 1st A very short.

Abdomen yellow, the hypopygium brownish black.

SIBUYAN, San Fernando, August 9, 1928 (*Francisco Rivera and A. C. Duyag*); holotype, male.

Trentepohlia holoxantha differs strikingly from all described species of the genus in the coloration and venation. The characters of carinate vertex, stout body, and long stout legs are noteworthy in the subgenus.

TEUCHOLABIS (TEUCHOLABIS) CONFLUENTA Alexander. Plate 1, fig. 17.

Teucholabis confluenta ALEXANDER, Philip. Journ. Sci. 27 (1925) 75-76.

The types were from Mount Maquiling, collected by Baker. An additional male was taken by Francisco Rivera, at Mount Irid, Rizal, Luzon, December, 1926. The wing of this species has never been figured and is shown on Plate 1, fig. 17.

CERATOCEILUS ROMBLONENSIS sp. nov. Plate 1, fig. 18.

General coloration rich brown; pleura yellow with a broad black dorso-longitudinal stripe; legs black; wings subhyaline, cells C and Sc infumed; R_{2+3+4} short, nearly perpendicular; cell M_2 open by the atrophy of m; abdominal tergites dark brown, the caudal margins narrowly pale; sternites obscure yellow.

Female.—Length, excluding rostrum, about 5.5 to 6 millimeters; wing, 4.3 to 4.5; rostrum alone, about 5.8 to 6.

Rostrum (female) approximately as long as the remainder of the body. Antennæ black throughout. Head dark gray, clearer gray on the anterior vertex and posterior orbits. Anterior vertex narrow, slightly less than the diameter of the first scapal segment.

Pronotum black. Mesonotal præscutum rich brown, the lateral margin narrowly pale, scutum brown, the median region more yellowish; scutellum and postnotum darker brown, the latter more pruinose. Pleura pale yellow with a broad dorsal black stripe, extending from the pronotum across the dorsal pleurites and dorsopleural membrane, passing through the root

of the halteres to the abdomen, the ventral margin straight and clearly delimited. Halteres yellow, the knobs dark brown. Legs with the coxæ and trochanters pale yellow; remainder of legs black. Wings (fig. 18) subhyaline, cells C and Sc infumed; veins black. Venation: Sc_1 ending about opposite one-third to one-fourth the length of Rs, Sc_2 some distance from its tip, opposite or shortly before the origin of Rs; R_{2+3+4} nearly perpendicular at origin, cell R_1 at margin narrow; cell M_2 open by atrophy of m; vein M_3 strong, arcuated; vein M_4 weak; m-cu about one-third its length before the fork of M.

Abdominal tergites dark brown, the caudal margins of the outer segments narrowly paler to produce an annulate appearance; sternites obscure yellow; genital shield dark; ovipositor with the valves dark horn color, very long and nearly straight.

TABLAS, Badajoz, August 27, 1928 (*Francisco Rivera and A. C. Duyag*); holotype, female; paratypes, two females.

Ceratocheilus romblonensis differs from all regional species by the open cell M_2 . The anterior vertex is narrow, without corniculus.

ILLUSTRATIONS

PLATE 1

- FIG. 1. *Scamboneura primæva* sp. nov., wing.
2. *Scamboneura psarophanes* Alexander, wing.
3. *Macgregoromyia benguetensis* gen. et sp. nov., wing.
4. *Limonia (Libnotes) igorota* sp. nov., wing.
5. *Limonia (Libnotes) banahaoensis* sp. nov., wing.
6. *Limonia (Libnotes) riverai* sp. nov., wing.
7. *Limonia (Libnotes) duyagi* sp. nov., wing.
8. *Limonia (Limonia) imperspicua* sp. nov., wing.
9. *Limonia (Euglochina) projecta* sp. nov., wing; 9a, wing apex, enlarged.
10. *Heliopsis (Heliopsis) arcuarius* sp. nov., wing.
11. *Lechria luzonica* sp. nov., wing.
12. *Lechria philippinensis* Alexander, wing.
13. *Trentepohlia (Mongoma) luzonensis* Edwards, wing.
14. *Trentepohlia (Mongoma) poliocephala* sp. nov., wing.
15. *Trentepohlia (Mongoma) saxatilis* sp. nov., wing.
16. *Trentepohlia (Trentepohlia) holoxantha* sp. nov., wing.
17. *Teucholabis (Teucholabis) confluenta* Alexander, wing.
18. *Ceratocheilus romblonensis* sp. nov., wing.

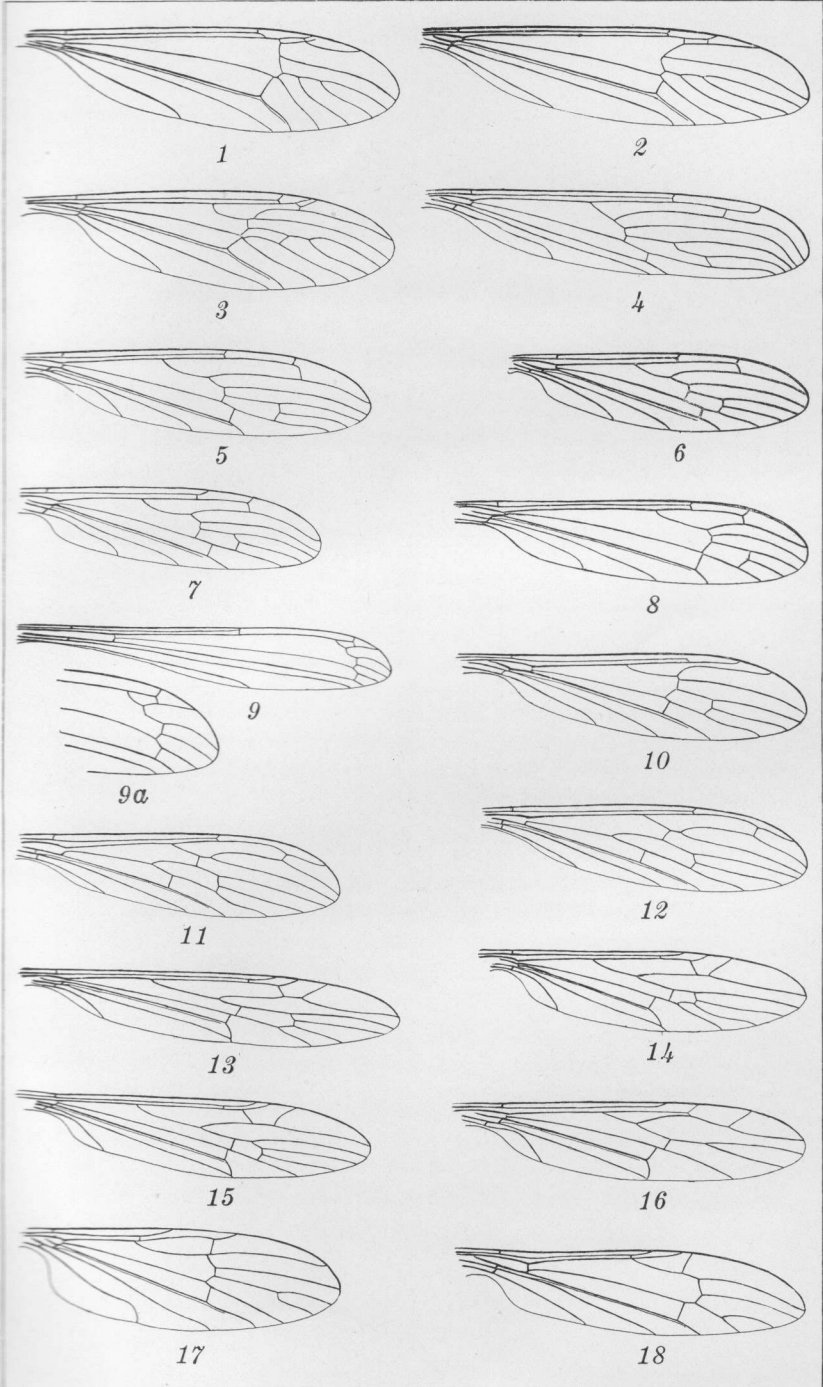


PLATE 1.