

**NEW OR LITTLE-KNOWN CRANE-FLIES FROM  
NEW GUINEA (Diptera: Tipulidae)**  
Part 1

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In the series of reports proposed under the above general title, I hope to develop further our rapidly expanding knowledge of the crane-fly fauna of New Guinea and its satellite islands. In recent years numerous species of these flies have been collected in all three of the major political divisions of New Guinea, the number known to me at the present time being approximately 450 species, a small proportion of which are still in press. In this series of papers emphasis is placed on illustrating the various species, particularly the male genitalia which provided the most important specific characters.

An account of the progressive increase in knowledge of the Papuan Tipulidae has been given in another report<sup>2</sup>. In this I have listed the principal investigators and collections, beginning with Wallace in 1858 and continuing to the present date. Important early collections were made in the 1930's, especially by the late Mr. Frank H. Taylor and by Miss Lucy Evelyn Cheesman. Outstanding later series of these flies resulted from the Third Archbold Expedition (Lambertus Johannes Toxopeus) to the Snow Mountains in Netherlands New Guinea, and the Fourth Archbold Expedition (Geoffrey M. Tate and Leonard M. Brass) to Papua, including Goodenough Island. A further very important series of these flies is considered in the present paper, being based on materials taken in 1955 by J. Linsley Gressitt in two widely separated areas of New Guinea. An account of this expedition has been presented by Gressitt in a paper that should be consulted in conjunction with the present report as it concerns the various localities and habitats mentioned.<sup>3</sup> A part of the Gressitt materials was discussed by the writer in the paper above cited; a further portion is considered at this time while the remainder will be treated in a succeeding part under the present series title. The types resulting from this rich and interesting collection are preserved in the Bishop Museum, Honolulu.

**COMPOSITION OF THE PAPUAN CRANE-FLY FAUNA**

From the materials now available it is possible to provide a basic list of the genera

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1. Contribution from the Entomological Laboratory, University of Massachusetts.
  2. Alexander, C. P. New or little-known Tipulidae from Eastern Asia (Diptera), XLVII. *Philippine Jour. Sci.*, 89, June 1960 (in press).
  3. Gressitt, J. L. Entomological investigations in New Guinea Mountains. *Hawaiian Ent. Soc., Proc.* 16: 47-69, 10 figs., including map; 1956.

and subgenera known from New Guinea. While it appears that numerous further species will be discovered in the future it now seems that relatively few additional genera and subgenera will be found and that the species will fall chiefly in the groups listed below. One of the surprises of the survey of Papuan Tipulidae has been the relatively small number of endemic generic or subgeneric groups, the only ones found to this date being two subgenera, *Rhyncholimonia* (in *Helius*) and *Parepiphragma* (in *Epiphragma*).

As emphasized by Gressitt and others, the Papuan insect fauna is essentially Oriental in nature but with many Australian elements, including in the crane-flies the genera *Habromastix*, *Ptilogyna*, *Paralimnophila*, *Gynoplistia* and *Amphineurus*. Other groups that appear unquestionably to be of Antarctic or Australian origin include *Austrolimnophila* and *Tasiocera* (*Tasiocera*). A few other genera appear to have their centers of distribution in New Guinea, such including *Papuatipula* (in *Tipula*), *Dapanoptera* (in *Limonia*), *Rhampholimnobia* (in *Helius*), and *Papuaphila* (in *Paralimnophila*).

The largest and most conspicuous Tipulid genera in the local fauna include *Dolichopeza*, *Tipula*, *Limonia*, *Helius*, *Austrolimnophila*, *Gynoplistia*, *Trentepohlia*, *Gonomyia*, *Molophilus*, *Styringomyia*, and *Toxorhina*. Other characteristic genera, but with few or single species, are *Megistocera*, *Nephrotoma*, *Orimarga*, *Epiphragma*, *Elephantomyia*, *Conosia*, *Teucholabis*, *Erioptera*, and *Tasiocera*. Worthy of special comment is the subgenus *Eriocera* (in *Hexatoma*), still known to me from a single species occurring in the Hollandia area. *Eriocera* is one of the largest and best known of all groups of Tipulidae, being represented by a host of species in the Oriental region, including Java and Borneo. Farther to the east the number of species decreases rapidly, with very few occurring in Australia and none in either New Caledonia or New Zealand. *Austrolimnobia* (in *Sigmatomera*) is known in this region only from the Prince of Wales Island in Torres Strait and thus is slightly extra-limital to the area under consideration. Other members of the subgenus occur in southeastern Australia, Tasmania and New Zealand, with still others in southern South America.

#### GENERIC AND SUBGENERIC GROUPS OF PAPUAN CRANE-FLIES

Tanyderidae	<i>Radinoderus</i> Handlirsch
Tipulidae	
Tipulinae	<i>Megistocera</i> Wiedemann
	<i>Brachypremna</i> Osten Sacken
	<i>Habromastix</i> Skuse
	<i>Ptilogyna</i> Westwood
	<i>Ctenacroscelis</i> Enderlein
	<i>Dolichopeza</i> Curtis
	Subgenus <i>Dolichopeza</i>
	<i>Nesopeza</i> Alexander
	<i>Scamboneura</i> Osten Sacken
	<i>Nephrotoma</i> Meigen
	<i>Tipula</i> Linnaeus
	Subgenus <i>Acutipula</i> Alexander
	<i>Indotipula</i> Edwards
	<i>Papuatipula</i> Alexander
	<i>Tipulodina</i> Enderlein

## Cylindrotominae

## Limoniinae

## Limoniini

*Stibadocera* Enderlein*Limonia* MeigenSubgenus *Limonia**Libnotes* Westwood*Laosa* Edwards*Dapanoptera* Osten Sacken*Discobola* Osten Sacken*Rhipidia* Meigen*Idioglochina* Alexander*Dicranomyia* Stephens*Alexandriaria* Garrett*Geranomyia* Haliday*Thrypticomya* Skuse*Pseudoglochina* Alexander*Euglochina* Alexander*Helius* St. FargeauSubgenus *Helius**Eurhamphidia* Alexander*Rhampholimnobia* Alexander*Rhyncholimonia* Alexander*Antocha* Osten SackenSubgenus *Orimargula* Mik*Orimarga* Osten SackenSubgenus *Orimarga*

## Lechriini

*Lechria* Skuse*Ceratolimnobia* AlexanderSubgenus *Xipholimnobia* Alexander

## Hexatomini

*Epiphragma* Osten SackenSubgenus *Epiphragma**Eupolyphragma* Alexander*Parepiphragma* Alexander*Austrolimnophila* Alexander*Taiwanomyia* Alexander*Paralimnophila* AlexanderSubgenus *Papuaphila* Alexander*Gynoplistia* Westwood*Hexatoma* LatreilleSubgenus *Eriocera* Macquart*Elephantomyia* Osten SackenSubgenus *Elephantomyodes* Alexander

## Eriopterini

*Conosia* van der Wulp*Sigmatomera* Osten SackenSubgenus *Austrolimnobia* Alexander*Trentepohlia* BigotSubgenus *Trentepohlia*

- Paramongoma* Brunetti  
*Mongoma* Westwood  
*Plesiomongoma* Brunetti  
*Anchimongoma* Brunetti  
*Teucholabis* Osten Sacken  
*Riedelomyia* Alexander  
*Gonomyia* Meigen  
     Subgenus *Gonomyia*  
         *Idiocera* Dale  
         *Lipophleps* Bergroth  
*Cheilotrichia* Rossi  
     Subgenus *Empeda* Osten Sacken  
*Erioptera* Meigen  
     Subgenus *Erioptera*  
         *Meterioptera* Alexander  
         *Ctenerioptera* Alexander  
         *Ilisia* Rondani  
*Tasiocera* Skuse  
     Subgenus *Tasiocera*  
*Molophilus* Curtis  
     Subgenus *Molophilus*  
*Amphineurus* Skuse  
     Subgenus *Amphineurus*  
*Styringomyia* Loew  
*Toxorhina* Loew  
     Subgenus *Toxorhina*  
         *Ceratocheilus* Wesché

A key to the foregoing genera and subgenera will be published in Part II of this series of reports.

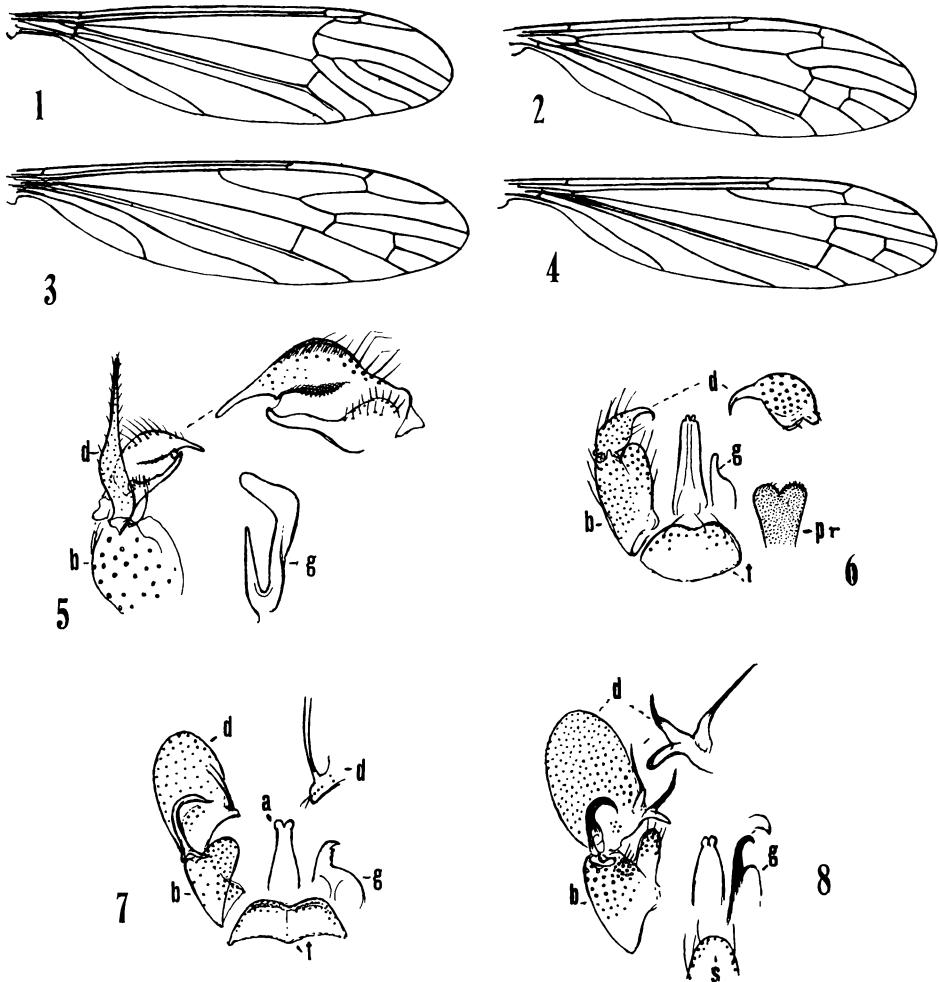
#### TIPULINAE

*Scamboneura tagensis* Alexander, n. sp.      Figs. 1, 5.

Mesonotal praescutum yellow with three nitidous brownish black stripes, scutal lobes brownish black; femora and tibiae obscure yellow; wing hyaline to faintly tinged with yellow, cell Sc more yellowed; male hypopygium with gonapophysis conspicuously bent beyond midlength. Length of ♂ about 14 mm; wings 13. Length of ♀ about 14 mm; wings 14.

Frontal prolongation of head light yellow, including the nasus, palpi and mouthparts. Antenna of male broken; in female, scape and pedicel brownish yellow, flagellum brown, flagellar segments long-oval. Head light yellow, posterior vertex with a linear dark brown central area, more narrowed anteriorly.

Pronotum light yellow. Mesonotal praescutum with the ground obscure yellow, with three nitidous brownish black stripes, the interspaces infuscated at midlength; scutum yel-



Figs. 1-8. 1, *Scamboneura tagensis* n. sp., venation; 2, *Limonia (Limonia) edax* n. sp., venation; 3, *Limonia (Geranomyia) hesosyne* n. sp., venation; 4, *Limonia (Geranomyia) tanytrichiata* n. sp., venation; 5, *Scamboneura tagensis* n. sp., ♂ hypopygium; 6, *Limonia (Limonia) edax* n. sp., ♂ hypopygium; 7, *Limonia (Geranomyia) hesosyne* n. sp., ♂ hypopygium; 8, *Limonia (Geranomyia) tanytrichiata* n. sp., ♂ hypopygium. (Symbols: a, aedeagus; b, basistyle; d, dististyle; g, gonapophysis; pr, proctiger; t, tergite)

low medially, lobes extensively brownish black; scutellum obscure yellow, parascutella slightly more darkened; mediotergite with central portion light brown, lateral border broadly yellow, pleurotergite yellow. Pleura yellow, anepisternum and dorsopleural membrane weakly darkened. Haltere brownish black, base of stem narrowly yellow. Legs with all coxae and trochanters yellow; femora and tibiae obscure yellow, tarsi slightly darker outwardly (claws broken). Wing (fig. 1) nearly hyaline in male, vaguely tinged with yellow in female; cell Sc tinted with yellow; stigma small, brown; veins dark brown in male, paler in female. Venation: cord only slightly arcuated;  $R_{2+3}$  subequal to or shorter than

the basal section of  $R_{4+5}$ ; medial forks deep, cell  $M_1$  approximately  $5 \times$  its petiole; m-cu about  $1/2 \times$  its own length beyond fork of  $M$ .

Abdominal tergites handsomely patterned; basal rings yellow, the broader posterior annuli bluish nacreous, the areas narrowly bordered on either end by black; hypopygium blackened. Male hypopygium (fig. 5) with the lateral tergal lobes flattened, tips obtuse, each with a double marginal row of blackened peglike spines. Outer dististyle, d, widened and sinuous at base, outer  $1/2$  strongly narrowed, tip obtuse, all setae short. Inner dististyle with beak long and slender, the low dorsal crest darkened; lower margin back from the beak with a low outer tooth and with microscopic serrations more basally; outer margin of style with long yellow setae, shortest near the beak. Gonapophysis, g, conspicuously bent beyond midlength, as figured. Sternite 8 with a conspicuous central trilobed cushion, all lobes densely covered with short setae, central lobe largest.

Holotype ♂, Tage Lake, Wisselmeren Area, Neth. New Guinea, 4-VIII-1955 (Gresitt). Allotopotype, ♀.

*Scamboneura tagensis* is readily told from *S. nigrodorsalis* Alexander, of the Torricelli Mountains, North-east New Guinea, by the coloration of the mesonotum and by the structure of the male hypopygium.

## LIMONIINAE

### LIMONIINI

*Limonia* (*Limonia*) *edax* Alexander, n. sp. Figs. 2, 6.

Size medium (wings of ♂ 7.5 mm); general coloration of notum brown, pleura with a diffuse brownish black longitudinal stripe; antenna black throughout; knob of haltere obscure yellow; legs light brown; wing strongly tinged with brown, sparsely patterned with darker brown; ♂ hypopygium with the single dististyle narrowed into a compressed blade, tip acute; apical lobes of aedeagus very small. Length of ♂ about 6.5 mm; wings 7.5.

Rostrum dark brown, palpi black. Antenna black; flagellar segments short-oval, the outer ones longer. Head brown; anterior vertex narrow, about as wide as  $2 \frac{1}{2}$  rows of ommatidia.

Pronotum dark brown, with sparse long black setae. Mesonotum chiefly brown, without clearly differentiated pattern, central part of praescutum slightly darker. Pleura brown with a vague diffuse brownish black longitudinal stripe. Haltere with stem dusky, narrowly yellowed at base, apex of knob obscure yellow. Legs with coxae and trochanters obscure yellow; remainder of legs light brown; claws small, the slender teeth grouped at base. Wing (fig. 2) strongly tinged with brown, with a sparse darker brown pattern, including small areas at origin of  $R_s$ , cord and outer end of cell 1st  $M_2$ ; stigma very small, subcircular; veins brown. Costal fringe moderately long. Venation:  $Sc_1$  ending just beyond midlength of  $R_s$ ,  $Sc_2$  a short distance back from tip; free tip of  $Sc_2$  lying just basad of  $R_2$ , with a minute basal spur of  $R_{1+2}$  persisting; cell 1st  $M_2$  shorter than distal section of  $M_{1+2}$ ; m-cu a short distance beyond fork of  $M$ .

Abdomen, including hypopygium, dark brown. Male hypopygium (fig. 6) with the tergite, t, transverse, narrowed outwardly, posterior border gently emarginate, slightly thicken-

ed; no central thickening. Proctiger, pr, elongate, widened outwardly, apex with a small notch, surface with very abundant setae. Basistyle, b, large, its area fully  $5 \times$  that of the dististyle; ventromesal lobe terminal in position. Dististyle, d, single, oval, produced into a compressed blade that is decurved into an acute point. Gonapophysis, g, elongate, the mesal-apical lobe straight, tip acute. Aedeagus elongate, narrowed outwardly, terminating in two very small lobes.

Holotype ♂, Okaitadi, Wisselmeren Area, Neth. New Guinea, 1,800 m, 8-VIII-1955 (Gressitt).

*Limonia (Limonia) edax* is quite distinct from other regional members of the typical subgenus, differing especially in the coloration of the body and halteres and in the structure of the male hypopygium. The much larger *L. (L.) brunneilata* Alexander belongs to a different group of the subgenus.

***Limonia (Geranomyia) hedosyne* Alexander, n. sp. Figs. 3, 7.**

General coloration of mesonotum chestnut, surface sparsely pruinose, pleura reddish brown; rostrum long; legs pale brown; wing whitened, with a restricted but conspicuous brown pattern that is chiefly costal in distribution; Sc and cell 1st  $M_2$  long, m-cu before fork of M, costal fringe short; male hypopygium with the two rostral spines very long, from a common basal tubercle. Length of ♂, excluding rostrum, about 5.5 mm; wings 6.5; rostrum about 3.

Rostrum elongate, slightly exceeding  $1/2$  the remainder of body, brownish black. Antenna black, basal segments slightly pruinose; basal flagellar segments suboval, the outer ones more elongate, all longer than their verticils. Head behind dusky gray, the center of posterior vertex clearer gray; anterior vertex silvery, strongly elevated in drying.

Pronotum and pretergites light yellow. Mesonotal praescutum chiefly chestnut, surface pruinose, with vague indications of stripes, including a narrow darker central vitta; scutum testaceous medially, lobes dark brown, surface pruinose; scutellum obscure yellow, disk vaguely grayish; mediotergite dark brown, surface pruinose, pleurotergite more reddened. Pleura light reddish brown, including the dorsopleural region. Haltere with stem pale, knob darkened. Legs with coxae tinged pale green; trochanters yellow; remainder of legs pale brown, with vague greenish tints; outer tarsal segments dark brown. Wing (fig. 3) with the ground whitened, with a restricted but conspicuous brown pattern that is chiefly costal in distribution, including 7 such areas, the 1st above arculus, not including cell C; 2nd at  $1/4$  the length of cell R, extending from C to M; 3rd area at origin of Rs, extending from C almost to M, narrowed behind; 4th mark narrow, at end of Sc, extending to fork of Rs but more or less broken; 5th area stigmal, large, oval, its center obscure yellow; outer 2 costal markings at ends of veins  $R_3$  and  $R_{4+5}$ , the last small; other narrow, more darkened seams at cord and outer end of cell 1st  $M_2$ ; paler marginal clouds at ends of veins, largest at  $M_3$  and 2nd A, very small on Cu and 1st A, lacking on  $M_{1+2}$ ; costal interspaces much wider than the darkenings; veins yellow, darker in the patterned areas. Costal fringe short. Venation: Sc long,  $Sc_1$  ending before to nearly opposite fork of Rs,  $Sc_2$  near its tip; cell 1st  $M_2$  long, exceeding any of the veins beyond it; m-cu more than  $1/2$  its length before fork of M.

Abdominal tergites brownish yellow, sternites paler. Male hypopygium (fig. 7) with

the tergite, t, transverse, narrowed outwardly, posterior border shallowly emarginate. Sternite 9 large, posterior end subtruncate, outer 1/2 with strong setae. Basistyle, b, small, its area about 1/3 that of the ventral dististyle; ventromesal lobe large. Dorsal dististyle, d, a very strongly curved hook, tip acute. Ventral dististyle fleshy, rostral prolongation small, with 2 very long spines from a common basal tubercle. Gonapophysis, g, entirely pale, mesal-apical lobe stout, its lower margin vaguely erose. Aedeagus, a, pale, apical lobes obtuse.

Holotype ♂, Enarotali, Wisselmeren Area, Neth. New Guinea, 2,000 m, 5-VIII-1955 (Gressitt).

*Limonia (Geranomyia) hedosyne* is quite distinct from other described regional members of the subgenus having patterned wings, such as *L. (G.) tanytrichiata* n. sp., in the coloration of the body and wings, very short costal fringe, and especially the male hypopygium, including the unusually long rostral spines.

***Limonia (Geranomyia) tanytrichiata* Alexander, n. sp. Figs. 4, 8.**

Size relatively large (wings of ♂ 8.5 mm); mesonotal praescutum with disk chestnut brown, the borders light yellow, pleura yellow; legs brown, femoral bases restrictedly yellowed; wing tinged with yellow, with a restricted brown pattern, costal fringe of ♂ long and conspicuous; ♂ hypopygium with the rostral spines large and powerful, the inner one produced into a needlelike spine; mesal-apical lobe of gonapophysis erect. Length of ♂: body, excluding rostrum, about 6.5 mm; wings 8.5; rostrum about 2.8.

Rostrum black, of moderate length. Antenna black. Head posteriorly dark gray; anterior vertex narrowly silvery, the color produced backward to the occiput; anterior vertex reduced to a capillary strip that is less than the width of 2 rows of ommatidia.

Cervical region brown. Pronotum yellow. Mesonotal praescutum with disk chestnut brown, the 3 usual stripes fused into a shield, the interspaces not or scarcely differentiated, lateral border broadly light yellow; scutum yellow medially, lobes chestnut brown, posterior calli yellow; scutellum yellow; mediotergite more reddish yellow, the lateral margins, with the pleurotergite, yellow. Pleura yellow. Haltere with stem yellow, knob obscure brownish yellow. Legs with coxae yellow; trochanters greenish yellow; remainder of legs brown, femoral bases restrictedly yellowed. Wing (fig. 4) tinged with yellow, the costal border and especially cell Sc deeper yellow; a restricted brown pattern that includes the oval stigma and a series of 4 darker areas in cell Sc, the 2nd and 3rd widely separated; a very pale cloud at origin of Rs; very narrow to scarcely evident darkened seams over cord and outer end of cell 1st M<sub>2</sub>; veins light brown, more yellowed in the costal interspaces. Costal fringe of ♂ very long and conspicuous. Venation: Sc relatively long, Sc<sub>1</sub> ending about opposite midlength of Rs, Sc<sub>2</sub> near its tip; cell 1st M<sub>2</sub> subequal to or slightly longer than distal section of vein M<sub>1+2</sub>; m-cu a little longer than the distal section of Cu<sub>1</sub>, placed at or shortly beyond the fork of M.

Abdominal tergites reddish brown, basal sternites and hypopygium more yellowed. Male hypopygium (fig. 8) with the basistyle, b, small, its area less than 1/2 the ventral dististyle, ventromesal lobe relatively slender. Dorsal dististyle, d, a curved pale sickle, its tip acute. Ventral dististyle with rostral prolongation slender, the usual 2 spines stout and conspicuous, the outer shorter and stouter, inner spine expanded on basal 1/2, thence narrowed into a needlelike spine; apex of prolongation with small weak setae. Gonapophysis, g, with mesal-



apical lobe erect, its apex decurved into an acute point.

Holotype ♂, Kabebe, Mount Otto, NE New Guinea, 2,210 m, 23-VI-1955 (Gressitt).

*Limonia (Geranomyia) tanytrichiata* differs from other regional members of the subgenus having patterned wings, including *L. (G.) hedosyne* n. sp., in the venation, long costal fringe, and especially the structure of the male hypopygium, particularly the rostral prolongation of the ventral dististyle.

#### ERIOPTERINI

*Molophilus (Molophilus) belone* Alexander, n. sp.      Fig. 9.

Belongs to the *gracilis* group, allied to *perhirtipes*; general coloration dark brown, including 3 praescutal stripes; front yellow, posterior part of head dark brown; knob of haltere light yellow; legs brown, with conspicuous erect setae; wing suffused with brown, veins and macrotrichia darker brown; vein 2nd A nearly straight, ending some distance before m-cu; ♂ hypopygium with apex of basistyle narrowed into a setiferous lobe; 2 very unequal dististyles, the longer style simple, about 1/2 longer than the aedeagus; 2nd style distinct, appearing as a strongly curved blackened rod, the obtuse tip slightly dilated. Length of ♂ about 4.2 mm; wings 5.

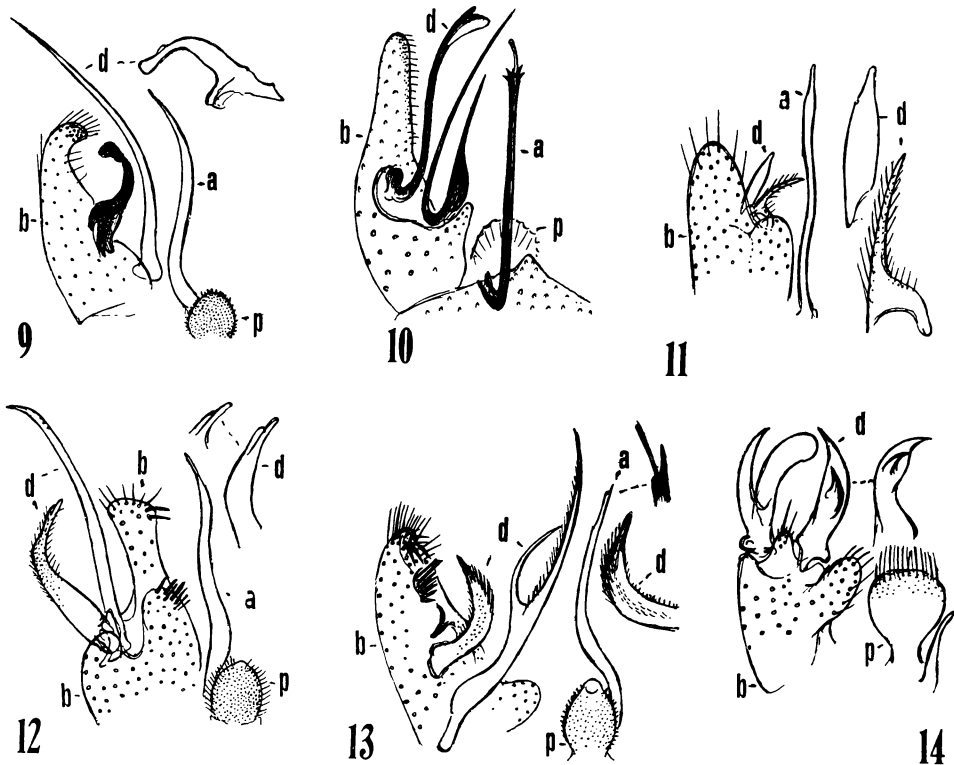
Rostrum and palpi brownish black. Antenna with scape brown, the enlarged pedicel yellowed; flagellum broken. Front yellow; posterior part of head dark brown, vaguely paler on center of posterior vertex and the anterior orbits.

Pronotum and pretergites light yellow. Mesonotal praescutum with the ground orange yellow, best indicated on the humeri, disk with 3 brown stripes, the central one not reaching the suture; scutum yellowed on central area, lobes extensively dark brown, posterior ends yellow; scutellum grayish brown, parascutella yellow; mediotergite brown, yellowed laterally, pleurotergite brownish yellow; praescutal setae sparse but very long. Pleura dark brown, the ventral sternopleurite paler. Haltere with base of stem light yellow, outer end weakly infuscated, knob light yellow. Legs with coxae and trochanters yellow, with long yellow setae; remainder of legs brown, with conspicuous erect setae, especially evident on posterior leg; outer tarsal segments brownish black. Wing suffused with brown, prearcular and costal fields slightly more yellowed; veins and macrotrichia darker brown. Venation:  $R_2$  lying shortly beyond level of r-m; petiole of cell  $M_3$  about  $3 \times$  m-cu; vein 2nd A relatively short, nearly straight, ending some distance before m-cu.

Abdomen dark brown, including the hypopygium. Male hypopygium (fig. 9) with the basistyle, b, narrowed outwardly into a narrow lobe, its obtuse tip slightly decurved, with a concentration of strong setae. Dististyles, d, 2, subterminal; basal style a very long simple spine, gradually narrowed to the acute tip, subequal in width and about 1/2 longer than the generally similar aedeagus, the latter extended into a hairlike point; outer style much smaller, appearing as a simple blackened structure, broad at base, narrowed and strongly curved to the slightly expanded obtuse tip, before apex with a low flange. Phallosomic plate, p, oval, obtuse, surface with very abundant delicate setulae.

Holotype ♂, Nondugl, NE New Guinea, 8-VII-1955 (Gressitt).

*Molophilus (Molophilus) belone* is allied to *M. (M.) perhirtipes* Alexander, of Netherlands New Guinea, agreeing in the conspicuously hairy legs and in the general structure



Figs. 9-14. 9, *Molophilus (Molophilus) belone* n. sp., ♂ hypopygium; 10, *Molophilus (Molophilus) bifilamentosus* Alexander, ♂ hypopygium; 11, *Molophilus (Molophilus) ceaenoleucus* n. sp., ♂ hypopygium; 12, *Molophilus (Molophilus) chleuastes* n. sp., ♂ hypopygium; 13, *Molophilus (Molophilus) dicranostylus* n. sp., ♂ hypopygium; 14, *Molophilus (Molophilus) gressittianus* n. sp., ♂ hypopygium. (Symbols: a, aedeagus; b, basistyle; d, dististyle; p, phallosome)

of the male hypopygium, differing in the details of the latter, including the basistyle, dististyles and phallosome.

***Molophilus (Molophilus) bifilamentosus* Alexander** Fig. 10.

*Molophilus (Molophilus) bifilamentosus* Alexander, 1947, Ann. Mag. Nat. Hist. (11) 14: 276-278.

The type was from Mount Tafa, Papua, 2,560 m, March 1934 (Cheesman); type in BRIT. MUS. (NAT. HIST.).

Male hypopygium (fig. 10) with the ventral lobe of basistyle, b, produced into a stout fingerlike lobe, its mesal face with abundant erect setulae. Both dististyles, d, arising close together; outer style very long and slender, strongly sinuous at base, bifid at tip, the inner arm a pale triangular blade; basal style profoundly bifid into 2 needlelike spines, the outer one longer, extending caudad about to the end of the outer style, inner spine about 3/4 as long, more expanded on basal 1/2, the surface with a few scattered setigerous punc-

tures. Aedeagus, a, a very powerful blackened rod, at apex with a crown of several short acute points, beyond which a slender filamentous projection extends for a short distance. Phallosomic plate, p, broad, its margin not clearly defined, more or less scalloped. Region of tergite 9 produced caudad into a central lobe.

The most similar regional species is *Molophilus (Molophilus) prolatus* n. sp.

***Molophilus (Molophilus) celaenoleucus* Alexander, n. sp. Fig. 11.**

Size small (wing of ♂ 3.8 mm); general coloration of thorax and abdomen piceous black; pronotum, dorsopleural membrane and knob of haltere snowy white; head cinnamon brown; antenna short, outer flagellar segments decreasing in size; wing subhyaline, veins brown; ♂ hypopygium with the basistyle terminating in 2 obtuse lobes, with 2 unusually small and simple dististyles in the notch; aedeagus elongate. Length of ♂ about 2.6 mm; wings 3.8.

Rostrum reddish brown; palpi dark brown. Antenna short, scape and pedicel dark brown, flagellum testaceous yellow; basal flagellar segments oval, the outer ones progressively smaller, becoming short-oval; verticils of the more proximal segments elongate, exceeding the segments, those of outer segments much shorter. Head rich cinnamon brown; anterior vertex broad.

Pronotum and anterior pretergites, with the dorsopleural region, snowy white, contrasting with the piceous black notum and slightly more reddened pleura; vestiture of notum lacking. Haltere with stem darkened basally, the large knob snowy white. Legs with coxae and trochanters dark brown; remainder of legs broken. Wing subhyaline; veins brown, with long conspicuous brownish black trichia. Venation:  $R_2$  about  $1/2 R_{2+3}$ , lying basad of level of r-m; petiole of cell  $M_3$  long, fully  $3 \times$  m-cu; vein 2nd A ending just before level of posterior end of m-cu; a single wing of the unique type remains.

Abdomen, including hypopygium, black. Male hypopygium (fig. 11) small and inconspicuous. Basistyle, b, terminating in 2 obtuse lobes, the ventral one larger, both with scattered strong setae, those of the smaller dorsal lobe very long, exceeding the dististyles in length. Dististyles, d, unusually small and inconspicuous, placed close together in the notch between the lobes of basistyle; outer style a flask-shaped darkened rod, apex narrowed to a pale obtuse point, before tip with a single small pale tubercle; inner style a trifle longer, enlarged at base, soon narrowed into a slender rod, provided throughout its length with long coarse setae, the outer ones about  $2 \times$  the diameter of the style. Aedeagus, a, very long and slender, narrowed at apex. Phallosomic plate broadly oval, surface of outer  $1/2$  with abundant relatively short setae.

Holotype ♂, Enarotali, Wisselmeren Area, Neth. New Guinea, 1,800 m, 3-VIII-1955 (Gressitt).

*Molophilus (Molophilus) celaenoleucus* is entirely different from other known regional species in the body coloration and in the very simple structure of the male hypopygium.

***Molophilus (Molophilus) chleuastes* Alexander, n. sp. Fig. 12.**

Belongs to the *gracilis* group, *ruficollis* subgroup; general coloration of mesonotum clove brown, pronotum and pretergites light yellow, pleura dark brown; legs very long, dark

brown; wing subhyaline, veins and trichia darker; ♂ hypopygium with ventral lobe of basistyle long-produced, dorsal lobe shorter, both with strong spinoid setae; dististyles unequal, the outer style a long slender glabrous rod with 3 or 4 microscopic punctures before tip, inner style more than 1/2 as long, its outer 1/2 with conspicuous setae, apex divided into 2 short appressed points; aedeagus elongate. Length of ♂ about 3.8 mm; wings 4.5; hind femur about 3.5.

Rostrum and palpi black. Antennae with scape brownish yellow, pedicel clearer yellow, basal 2 flagellar segments light brown, remainder broken; basal segments long, indicating a somewhat elongate antenna; segments with very long erect verticils at near midlength, these exceeding the segments in length. Head brownish yellow, center of vertex darker brown.

Pronotum and pretergites light sulphur yellow. Mesonotal praescutum clove brown, without pattern; scutal lobes darker; posterior border of scutellum vaguely yellowed; pronotum and pleura dark brown. Haltere with stem infuscated, apex of knob paling to yellow. Legs with coxae and trochanters brown; remainder of legs dark brown, the color produced by dense setae; legs relatively long, especially the hind pair, where the femur is only slightly less than the body. Wings subhyaline, veins light brown, macrotrichia long and conspicuous, darker brown. Venation:  $R_2$  lying shortly before level of r-m; petiole of cell  $M_3$  slightly less than  $2 \times m-cu$ ; vein 2nd A long, ending opposite m-cu.

Abdomen, including hypopygium, dark brown. Male hypopygium (fig. 12) with the basistyle, b, produced at apex into a longer ventral and shorter more obtuse dorsal lobe, both lobes with a few strong spinoid setae that are obtuse at tips; ventral lobe obliquely truncated at apex, with additional long slender setae. Dististyles, d, 2, the outer a long slender rod that narrows gradually to an acute point, surface glabrous, before apex with 3 or 4 microscopic punctures; inner style more than 1/2 as long, broad at base, apex split into 2 short appressed points, one slightly longer and more slender, basad of these points with conspicuous erect setae. Phallosome, p, oval, apex slightly produced, surface of plate with abundant conspicuous long and delicate setulae. Aedeagus, a, of moderate length, gently sinuous, basal 1/2 slightly broader and more darkened, apex long and very slender.

Holotype ♂, Daulo Pass, NE New Guinea, 2,400 m, 13-VI-1955 (Gressitt).

In the structure of the male hypopygium, *Molophilus (Molophilus) chleuastes* is entirely distinct from other regional species.

***Molophilus (Molophilus) dicranostylus* Alexander, n. sp.      Fig. 13.**

Belongs to the *gracilis* group, *ruficollis* subgroup; mesothorax almost uniformly fulvous brown; head fulvous yellow, center of posterior vertex darkened; haltere dark brown; wing brownish yellow; ♂ hypopygium with basistyle produced apically into a lobe that bears 2 groups of strong setae; outer dististyle a small curved rod that narrows into a long spine; basal style elongate, at near midlength forking into 2 unequal branches, the longer axial one provided with setae. Length of ♂ about 4 mm; wings 4.8; antenna about 1.2.

Rostrum and palpi black. Antenna moderately long, as shown by the measurements; scape and pedicel yellow, weakly infuscated beneath; basal flagellar segments yellow, outer ones passing into brown; segments long-oval, shorter than the conspicuous verticils and very long pale setae. Head light fulvous yellow, center of posterior vertex broadly infuscated.

Pronotum and pretergites light yellow. Mesonotum almost uniformly fulvous brown; pseudosutural foveae reddened, inconspicuous; posterior sclerites of notum and the pleura not or scarcely darker. Haltere dark brown. Legs with coxae and trochanters brownish yellow; remainder of legs broken. Wing brownish yellow; veins darker yellow. Venation:  $R_2$  some distance before level of r-m; petiole of cell  $M_3$  slightly more than  $1\frac{1}{2}$  m-cu; vein 2nd A long, ending shortly beyond level of m-cu.

Abdomen dark brown, hypopygium slightly more yellowed. Male hypopygium (fig. 13) with the tergite broadly transverse, posterior border very gently convex, lateral angles more produced. Basistyle, b, terminating in a small decurved oval lobe, provided with strong setae; before apex near the insertion of dististyles with a further concentration of even stronger spinoid setae; lower margin of style opposite the dististyles with a slender darkened spine; proximal end of style produced into an oval lobe, provided with relatively few setae. Dististyles, d, subterminal; outer style appearing as a relatively small curved rod, narrowed into a long apical spine, on outer margin before the spine with several appressed setae; basal style distinctive, longer than the basistyle, proximal  $\frac{1}{2}$  stout, forking into 2 unequal spines, the long axial branch very gradually narrowed into a long spine, its mesal edge with numerous setae; lateral branch about  $\frac{2}{3}$  as long, very slender, gently curved and narrowed to an acute point. Phallosomic plate, p, suboval, surface with abundant short setulae. Aedeagus, a, elongate, sinuous on proximal  $\frac{1}{2}$ , narrowed into a point, the penis further extended as a long pale filament.

Holotype ♂, Nondugl, NE New Guinea, 8-VII-1955 (Gressitt).

*Molophilus (Molophilus) dicranostylus* is entirely distinct from other regional species in the structure of the male hypopygium, including especially the basistyle and both dististyles.

***Molophilus (Molophilus) gressittianus* Alexander, n. sp.      Fig. 14.**

Belongs to the *gracilis* group, *ruficollis* subgroup; general coloration of praescutum and scutum reddish brown, postnotum and pleura darker brown; antenna short, yellow, pedicel chiefly darkened; legs black; wings pale yellow, restrictedly patterned with darker; hypopygium with 2 terminal dististyles, both bifid, inner style with arms acute; phallosome pale, broad, outer  $\frac{1}{3}$  with long delicate setae. Length of ♂ about 3.5–4 mm; wings 4.5–5; antenna about 0.7–0.8. Length of ♀ about 4.5–5.5 mm; wings 5–6.

Rostrum and palpi black. Antenna short; scape testaceous yellow, pedicel obscure yellow at base, apex broadly infuscated, flagellum yellow; flagellar segments oval, shorter than their verticils. Head dark brown.

Pronotum yellow, scutellum and pretergites lighter yellow. Mesonotal praescutum reddish brown, humeral region broadly light yellow; scutum reddish brown, scutellum and postnotum darker brown. Pleura dark brown, dorsopleural region paler. Haltere light yellow. Legs with coxae and trochanters yellow; remainder of legs black, the genua very narrowly and insensibly yellowed. Wing pale yellow, the prearcular and costal fields clearer yellow; narrow darkenings extend from the stigma over the anterior cord and again over the posterior cord, best evidenced by the dark trichina; a dusky cloud before outer end of cell 2nd A; veins yellow, darker in the patterned parts. Costal fringe moderately long, especially on outer  $\frac{1}{2}$  of wing. Venation:  $R_2$  and r-m nearly in transverse alignment; petiole of cell  $M_3$  about  $2 \times$  m-cu; vein 2nd A ending nearly opposite the posterior end

of m-cu.

Abdomen obscure brownish yellow, bases of tergites narrowly pale brown, sternites brownish yellow; hypopygium yellow. Male hypopygium (fig. 14) short and compact; ventral lobe of basistyle, b, elongate, with numerous pale setae. Dististyles, d, terminal, both bifid; outer style glabrous, pale, forked beyond the short base into 2 flattened blades, the outer narrower and more or less pointed, inner blade obtuse at apex; inner style smaller, blackened, terminating in an acute spine, with a slightly smaller lateral spine at near midlength. Phallosome, p, a pale depressed-flattened plate, its outer 1/3 with long delicate setae. Aedeagus unusually small and slender.

Holotype ♂, Daulo Pass, NE New Guinea, 2,400 m, 13-VI-1955 (Gressitt). Allotopotype ♀, pinned with the type. Paratopotypes, ♂, ♀, 13 to 15-VI-1955. Paratypes: ♂, Enarotali, Neth. New Guinea, 1,800 m, 30-VII-1955 (Gressitt); 1 ♂, Mount Dayman, Papua, Maneau Range, 2,230 m, 17-VI to 19-VI-1953 (Geoffrey M. Tate); Archbold IV, in AM. MUS. NAT. HIST.

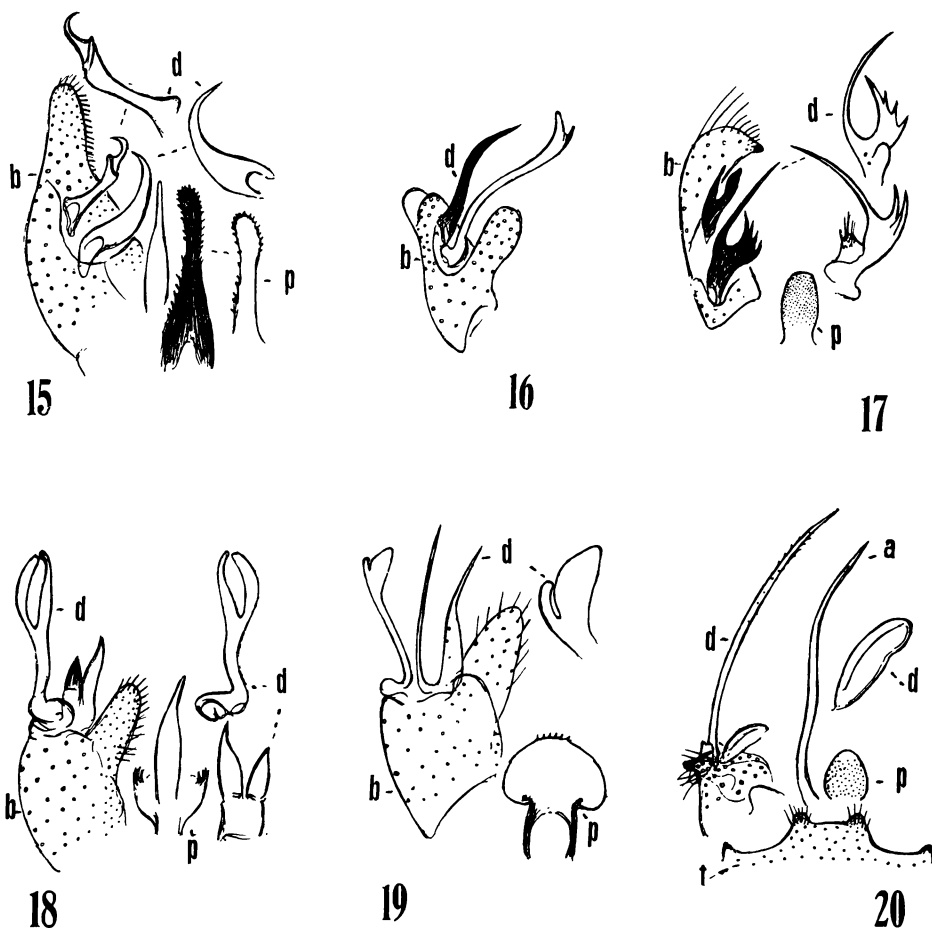
This distinct fly is named in honor of the collector, distinguished student of the Phytophagous Coleoptera. The structure of the male hypopygium separates this species from all other regional allies such as *Molophilus (Molophilus) kokodanus* Alexander (fig. 16).

***Molophilus (Molophilus) ixine* Alexander, n. sp.      Fig. 15.**

Belongs to the *gracilis* group, *ruficollis* subgroup; mesonotal praescutum brownish yellow with a broad central darker brown stripe, posterior sclerites of notum and the pleura dark brown; antenna with scape yellow, pedicel chiefly dark brown, flagellum light brown; legs black; wing pale yellow, restrictedly patterned with pale brown, delimited by conspicuous areas of black trichia; ♂ hypopygium with apical lobe of basistyle densely covered with long delicate setae; dististyles subterminal, simple, subequal in size, both terminating in acute spines; phallosome a long black rod, the surface with microscopic spinules; aedeagus pale yellow, shorter than the phallosome. Length of ♂ about 4.2-4.4 mm; wings 4.8-5.3; antenna about 1.

Rostrum and palpi black. Antenna moderately long, as shown by the measurements; scape light yellow, pedicel narrowly yellow at base, darker at apex, flagellum light brown; flagellar segments elongate, with a long pale erect pubescence, the more proximal segments with still longer verticils. Head dark brown.

Pronotum dark brown, pretergites narrowly light yellow. Mesonotal praescutum brownish yellow with a broad central dark brown stripe that does not reach the suture; pseudosutural foveae elongate, reddish; posterior sclerites of notum and the pleura dark brown. Haltere light yellow. Legs with the coxae and trochanters yellow, the latter more darkened apically, especially the middle and hind pairs; remainder of legs black, the genua vaguely more brightened. Wing pale yellow, patterned with pale brown, most evident as darkened areas of trichia, the parts involved including the cord, costal region and centers of the Anal cells, remaining trichia paler, the vestiture of the darkened patches longer and somewhat stouter; veins yellow. Venation:  $R_2$  lying distad of level of r-m; petiole of cell  $M_3$  about  $1\frac{1}{2}\times$  m-cu; vein 2nd A gently sinuous, ending about opposite posterior end of m-cu.



Figs. 15-20. 15, *Molophilus (Molophilus) ixine* n. sp., ♂ hypopygium; 16, *Molophilus (Molophilus) kokodanus* Alexander, ♂ hypopygium; 17, *Molophilus (Molophilus) perproductus* Alexander, ♂ hypopygium; 18, *Molophilus (Molophilus) proftigatus* n. sp., ♂ hypopygium; 19, *Molophilus (Molophilus) prolatus* n. sp., ♂ hypopygium; 20, *Molophilus (Molophilus) triepiurus* n. sp., ♂ hypopygium. (Symbols: a, aedeagus; b, basistyle; d, dististyle; p, phallosome)

Abdomen brownish black, hypopygium obscure yellow. Male hypopygium (fig. 15) with the tergite narrowed outwardly, the posterior border truncate to very shallowly emarginate. Basistyle, b, produced into a conspicuous apical lobe that is covered with abundant very long delicate setae, with fewer scattered bristles. Dististyles, d, subterminal, both simple; outer style with an oblique elevated collar before the more narrowed curved apex; inner style subequal in length, appearing as a stout curved spine that narrows to an acute apical spine. Phallosome, p, a long black rod, its surface with microscopic spinules, the more proximal ones larger and stouter. Aedeagus shorter than the phallosome, yellow, broad basally, narrowed evenly and very gradually to the slender tip.

Holotype ♂, Goroka, NE New Guinea, 1,700 m, 25-VI-1955 (Gressitt). Paratype ♂,

Miramar, NE New Guinea, 27-VI-1955 (Gressitt).

*Molophilus (Molophilus) ixine* is entirely distinct from other known regional species in the structure of the male hypopygium, especially the phallosomic rod.

***Molophilus (Molophilus) kokodanus* Alexander** Fig. 16.

*Molophilus (Molophilus) kokodanus* Alexander, 1947, Ann. Mag. Nat. Hist. (11) 14: 275-276.

Types from Kokoda, Papua, 365 m, VI-VIII-1933, and Mount Tafa, Papua, 2,560 m, III-1934 (Cheesman); BRIT. MUS. (NAT. HIST.).

Male hypopygium (fig. 16) with the basistyle, b, short and stout; ventral lobe long, directed caudad and mesad; 2 short dorsal lobes or parts of a single structure, one a glabrous plate, the other setiferous. Two dististyles, d, that arise close together at base of the dorsal lobes, the outer a sinuous black rod that narrows gradually to the acute apex; inner style a little longer, pale, sinuous, bearing a darkened lateral spine before the produced pale apical blade.

***Molophilus (Molophilus) perproductus* Alexander** Fig. 17.

*Molophilus (Molophilus) perproductus* Alexander, 1947, Ann. Mag. Nat. Hist. (11) 14: 274-275.

Type from Mount Tafa, Papua, 2,700 m, III-1934 (Cheesman); BRIT. MUS. (NAT. HIST.).

Male hypopygium (fig. 17) with the beak of basistyle, b, short and stout, blackened. Outer dististyle, d, unequally bifid, the outer arm a slender spine, the inner a more flattened sinuous blade, both arms black; basal style appearing as an unusually long slender black spine and a broader lobe, at apex of outer margin bearing 3 or 4 spines, near base of the enlarged portion with a stout paler lobe. From the unique type it appears that the shape of the basal dististyles of the 2 sides may be slightly different, one showing 4 spines, the other 3. Phallosomic plate, p, suboval, apex slightly truncated, surface very densely covered with delicate erect pale setulae. Aedeagus slender, straight.

***Molophilus (Molophilus) proffigatus* Alexander, n. sp.** Fig. 18.

Belongs to the *gracilis* group, *ruficollis* subgroup; general coloration of thorax uniformly yellow; haltere yellow; legs black; wing yellowish subhyaline, with a vague darkened cloud over anterior cord; ♂ hypopygium with dististyles terminal, outer style deeply forked beyond midlength, inner style much smaller, divided at apex into 2 acutely pointed darkened arms; aedeagus relatively short, the basal 2/3 broader. Length of ♂ about 4-4.2 mm; wings 4.4-5. Length of ♀ about 4.3 mm; wings 4.2.

Rostrum and palpi black. Antenna relatively short; scape and pedicel light brown, basal flagellar segments yellow, outer ones darker; pale setae of segments shorter than the long black verticils. Head blackened.

Thorax almost uniformly yellow, the posterior sclerites somewhat clearer yellow. Haltere light yellow. Legs with coxae and trochanters light yellow, remainder of legs black.



Wing yellowish subhyaline, with a vague darkened cloud over the anterior, cord best indicated by the more conspicuous black macrotrichia; veins yellow, macrotrichia brown. Venation:  $R_2$  in transverse alignment with r-m; petiole of cell  $M_3$  nearly  $2 \times$  m-cu; vein 2nd A ending just before level of posterior end m-cu.

Abdomen dark brown, hypopygium more yellowed. Male hypopygium (fig. 18) with the outer lobe of basistyle, b, nearly terminal, provided with moderately long setae. Dististyles, d, terminal; outer style longer, stem slender, strongly bent before midlength, forking into 2 subequal arms, the axial one a more slender rod that narrows gradually to the obtuse blackened tip, lateral arm a more flattened blade; inner style shorter, forking into 2 slightly unequal arms, both darkened and acutely pointed at tip. Phallosomic plate, p, not clearly visible, apparently transverse, its outer part microscopically toothed, as shown. Aedeagus unusually short, basal  $2/3$  broad, outer end narrow.

Holotype ♂, Daulo Pass, NE New Guinea, 2,400 m, 13-VI-1955 (Gressitt). Allotype ♀, Sigi Camp, Station 14, Neth. New Guinea, 1,500 m, 26-II-1939 (Toxopeus); Archbold Expedition III. Paratype a broken ♂, with the allotype, 24-II-1939.

*Molophilus (Molophilus) profligatus* superficially resembles *M. (M.) gressittianus* n. sp. and some further allied species, differing in the very distinctive male hypopygium. The forked outer dististyle is particularly noteworthy being quite different from the somewhat comparable condition found in *M. (M.) dicranostylus* n. sp.

***Molophilus (Molophilus) prolatus* Alexander, n. sp.      Fig. 19.**

Belongs to the *gracilis* group, *ruficollis* subgroup; general coloration of thorax reddish brown, posterior sclerites of the notum and the pleura darker brown; antenna short; haltere light yellow; legs yellow, tips of femora narrowly dark brown, of the tibiae more narrowly so; wing yellow; ♂ hypopygium with dististyles terminal in position, outer style long and slender, at apex dilated, dividing into 2 unequal arms, the larger blade triangular; inner style profoundly bifid, its outer arm long, needlelike, inner arm broader basally, terminating in a straight spine; phallosomic plate glabrous, broader than long, apex obtuse, extreme margin with 7 or 8 microscopic points. Length of ♂ about 3.5 mm; wings 4.6; antenna about 0.8.

Rostrum and palpi light brown. Antenna short; scape brown, pedicel darker, flagellum testaceous, slightly darker basally; segments elongate, verticils exceeding the segments, black, coarse. Head brown; eye large.

Pronotum brownish yellow. Mesonotum light reddish brown, unpatterned, posterior sclerites dark brown. Pleura brown, patterned with yellow. Haltere light yellow. Legs with coxae and trochanters light yellow; femora yellow, tips narrowly but conspicuously dark brown, tibiae yellow, the tips still more narrowly darkened; basitarsi yellow, outer ends and remainder of tarsi dark brown. Wing yellow, prearcular and costal fields clearer yellow; veins yellow, trichia darker. Venation: Petiole of cell  $M_3$  about  $1/2$  longer than m-cu.

Abdomen dark brown, hypopygium slightly more yellowed. Male hypopygium (fig. 19) with the ventral lobe of basistyle, b, apical in position. Two terminal dististyles, d, the outer simple, elongate, very strongly bent at base, apex slightly dilated, unequally bifid, the larger blade triangular, pale, the small outer arm closely appressed, slender; inner style

profoundly bifid, including a longer needlelike arm and a somewhat shorter and broader blade, at about 2/3 its length narrowed into a straight spine. Phallosomic plate, p, glabrous, broader than long, apex obtuse, with 7 or 8 microscopic points.

Holotype ♂, Mount Otto, NE New Guinea, 2,100–2,600 m, 22–VI–1955 (Gressitt).

*Molophilus (Molophilus) prolatus* is distinguished from other generally similar species by the structure of the male hypopygium, including both dististyles and the phallosomic plate. The most similar such species is *M. (M.) bifilamentosus* Alexander, from Papua, which is re-described and figured in this report (fig. 10), which differs not only in hypopygial details but in the coloration of the body and legs.

***Molophilus (Molophilus) triepiurus* Alexander, n. sp.      Fig. 20.**

Belongs to the *plagiatus* group; general coloration brownish gray, pronotum and pretergites china-white; haltere light yellow; wing faintly darkened, prearcular and costal fields slightly more yellowed; ♂ hypopygium with the posterior border of tergite; 2 very unequal dististyles, the longer a simple spine that is generally similar in shape and size to the aedeagus; inner style long-oval, glabrous. Length of ♂ about 4.8–5 mm; wings 5–5.8; antenna about 1.3–1.5.

Rostrum dark gray, palpi black. Antenna relatively long; scape and pedicel dark brown, first flagellar segment yellowed basally, darker at tip, remainder of flagellum dark brown; segments elongate, provided with long erect pale setae and somewhat shorter black verticils. Head light gray, anterior orbits more yellowed.

Pronotum and pretergites china-white. Mesonotum dark brownish gray, praescutum with indications of a slightly darker central stripe, pseudosutural foveae black; posterior sclerites of notum and the pleura dark brownish gray, posterior border of scutellum broadly paler brown. Haltere light yellow. Legs with coxae dark brown, posterior pair more yellowed apically; trochanters brownish yellow; remainder of legs broken. Wing faintly darkened, the prearcular and costal fields slightly more yellowed, veins light brown. Venation:  $R_2$  lying shortly beyond level of r-m; petiole of cell  $M_3$  about  $2\frac{1}{2} \times$  m-cu; vein 2nd A ending about opposite the posterior end of m-cu.

Abdomen, including hypopygium, brownish black. Male hypopygium (fig. 20) with the tergite, t, transverse, central area of posterior border produced, especially laterally, into darkened lobes that are provided with long delicate setae, lateral posterior angles more narrowly produced. Basistyle with apical lobes small and only slightly produced, the lateral one a small blackened point surrounded by coarse setae. Two very unequal dististyles, d; outer style a long simple nearly straight rod, narrowed very gradually into a long terminal spine, surface of outer 1/2 with appressed microscopic spinules and interpolated very small setulae; inner style an elongate-oval glabrous structure, apparently split longitudinally by a delicate line. Phallosomic plate, p, oval, apex obtuse, surface, with exceedingly small and delicate setulae. Aedeagus, a, elongate, approximately equal in length and diameter to the outer dististyle, the hypopygium thus appearing to have 3 approximately equal elongate spines.

Holotype ♂, Mount Wilhelm, NE New Guinea, 2,700 m, 4–VII–1955 (Gressitt). Paratype ♂, Mist Camp, Station 10, 1,800 m, 4–I–1939 (Toxopeus); Archbold Expedition III.

The most similar regional species include *Molophilus (Molophilus) belone* n. sp. and *M. (M.) stylopappus* Alexander, which likewise have the outer dististyle of the male hypopygium long and needlelike, differing especially in other details of hypopygial structure.

### Erioptera Meigen

#### Ctenerioptera new subgenus

Characters generally as in subgenus *Meterioptera* Alexander. All flagellar segments distinct. Wing with vein 2nd A straight. Male hypopygium (figs. 21, 22, 23) not inverted; apex of outer dististyle bearing a double comb of flattened teeth, their tips obtuse.

Type of subgenus—*Erioptera (Ctenerioptera) pectinella* n. sp. (Papuan subregion). Other species include *E. (C.) derasa* Edwards (Borneo), *E. (C.) ferruginosa* Brunetti (South India), *E. (C.) sziladyi* Alexander (New Guinea).

*Erioptera abrasa* Edwards (Journ. Fed. Malay States Mus. 14: 101, pl. 2, fig. 47 (♂ hypopygium); 1928) from Pahang presumably also belongs to this subgenus but Edwards did not describe the male hypopygium and his figure is not sufficiently detailed. The outer dististyle and the tergal region are quite distinct from the other species referred here but the outline of the inner style is sufficiently close to suggest the present reference.

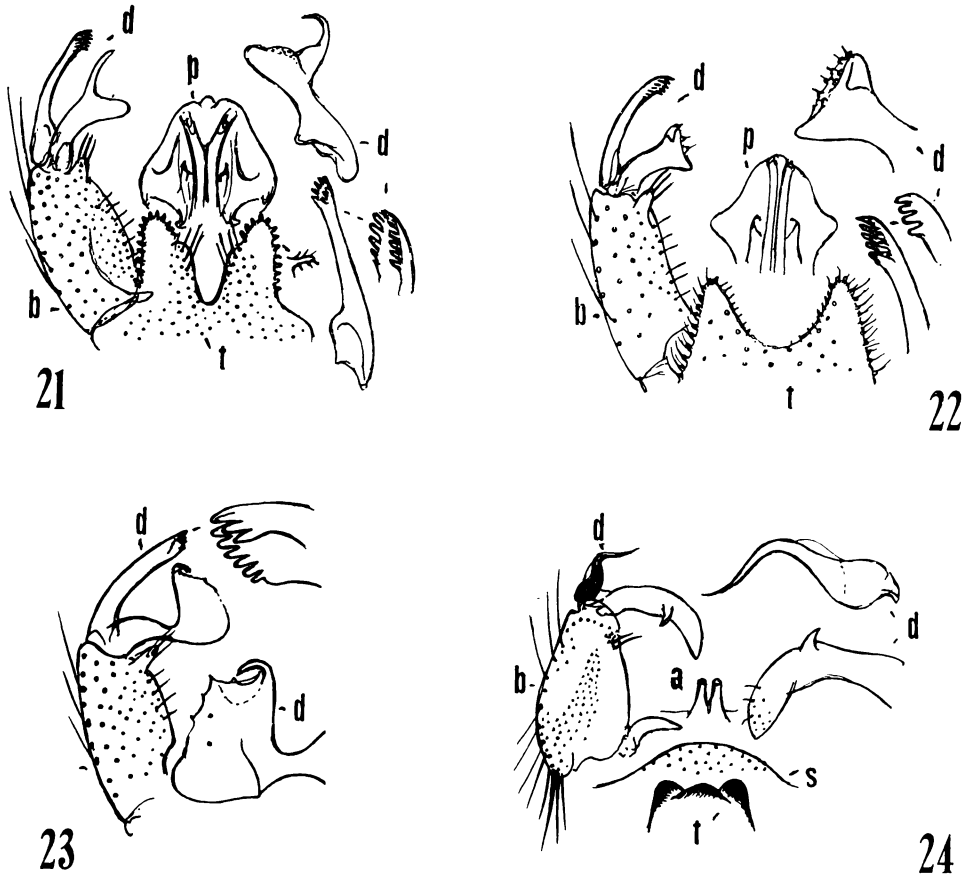
#### *Erioptera (Ctenerioptera) pectinella* Alexander, n. sp. Fig. 21.

General coloration of thorax light brown, pleura yellowed; knob of haltere dark brown; legs brownish yellow; wing brownish yellow; ♂ hypopygium with the tergite large, lobes elongate, separated by a deep U-shaped notch; inner dististyle with stem stout, head moderately dilated, its outer margin produced into a long curved pale horn. Length of ♂ about 4.5–4.8 mm; wings 5.5–5.8.

Rostrum light yellow; palpi with proximal 2 segments yellow, outer 2 brownish black. Antenna with scape yellow, remainder darker; pedicel almost as long as the scape; all flagellar segments distinct, the basal ones not crowded; outer flagellar segment longer, exceeding the verticils. Front and anterior vertex yellowed, center of posterior vertex darker; vertex with numerous black setae.

Pronotum yellowed. Mesonotum light brown, vaguely patterned with darker, most evident on scutal lobes and as a central line on praescutum; scutellum weakly darkened on central part; mediotergite dark brown, posterior 1/2 paler. Pleura chiefly yellow, sparsely pruinose. Haltere with stem yellow, knob dark brown. Legs with fore coxae dark brown, remaining coxae and all trochanters yellow; remainder of legs brownish yellow. Wing brownish yellow, prearcular and costal fields clearer yellow; veins light brown, outer end of Sc pale; trichia darkened. Venation: m-cu before fork of M; vein 2nd A nearly straight.

Abdomen dark brown, posterior borders of segments narrowly paler, hypopygium more yellowed. Male hypopygium (fig. 21) with the tergite, t, large, posterior border produced into 2 long lobes that are separated by a deep and narrow U-shaped notch; lobes with outer apical angle farther produced, their surface and lateral margins extended into pale fingerlike lobules that bear delicate setulae, mesal parts of lobes with major setae. Basistyle, b, with apical dorsal lobe relatively small, subequal in length to its longest apical



Figs. 21-24. 21, *Erioptera* (*Ctenerioptera*) *pectinella* n. sp., ♂ hypopygium; 22, *Erioptera* (*Ctenerioptera*) *derasa* Edwards, ♂ hypopygium; 23, *Erioptera* (*Ctenerioptera*) *sziladyi* Alexander, ♂ hypopygium; 24, *Toxorhina* (*Toxorhina*) *megatricha* n. sp., ♂ hypopygium. (Symbols: a, aedeagus; b, basistyle; d, dististyle; p, phallosome; s, sternite; t, tergite)

setae. Outer dististyle, d, slender, apex with a double comb of blunt teeth, as in the subgenus; inner style with stem stout, head only moderately dilated, about 2 × the diameter of the stem, outer margin produced into a long curved pale horn. Phallosome, p, broader than long, apex obtuse.

Holotype ♂, Nondugl, NE New Guinea, 8-VII-1955 (Gressitt). Paratopotype ♂. Paratype ♂, Wau, NE New Guinea, 1,020 m, 18-XII-1933 (F. H. Taylor). The paratype previously was recorded as being *Erioptera* (*Ctenerioptera*) *sziladyi* Alexander (Linn. Soc. N. S. W., Proc. 66: 332, fig. 30, ven.; 1936).

*Erioptera* (*Ctenerioptera*) *pectinella* is most readily told from *E. (C.) sziladyi* Alexander, by the structure of the male hypopygium, particularly the inner dististyle. I am here adding further notes on this species and *E. (C.) derasa* Edwards.

**Erioptera (Ctenerioptera) sziladyi** Alexander      Fig. 23.

*Erioptera (Meterioptera) sziladyi* Alexander, 1934, Philippine Jour. Sci. **54**: 468-469, pl. 1, fig. 23 (ven.), pl. 2, fig. 34 (♂ hypopygium).

Described from Sattelberg, Huon Gulf, NE New Guinea, taken 20-30-IX-1898 by Ludwig Biró. Still known only from the unique type but evidently quite distinct from other regional members of the subgenus in the hypopygial structure. The tergite of the type was not sufficiently well preserved to permit description. I am again figuring the inner dististyle (fig. 23, d), emphasizing the unusually large head and very narrow stem, with the outer apical lobe small and recurved.

**Erioptera (Ctenerioptera) derasa** Edwards      Fig. 22.

*Erioptera derasa* Edwards, 1931, Jour. Fed. Malay Mus. **16**: 498, fig. 5 (♂ hypopygium).

Described from Samawang, North Borneo, taken at low altitudes, VII-IX-1927. Edwards describes the outer dististyle as having a blunt blackened tip, the inner style as being somewhat expanded and bilobed apically. The description is insufficient, particularly as regards the outer style (fig. 22, d). The tergite, t, is about as figured by Edwards except for the fimbriate outer margins of the lobes which are as in the other known member of the subgenus. The above figure and notes are based upon a paratype male received in exchange from Edwards.

**Toxorhina (Toxorhina) megatricha** Alexander, n. sp.      Fig. 24.

Mesonotal praescutum with the disk covered by 3 confluent dark grayish brown stripes; rostrum shorter than the wing; antenna with scape and pedicel yellow, flagellum black; knob of haltere dark brown; wing subhyaline, unpatterned, m-cu at fork of M; abdominal tergites light brown, sternites yellowed, subterminal segment darker; ♂ hypopygium with tergal plate small, apex trilobed; macrotrichia at cephalic end of basistyle strong, some large and more or less fasciculate; interbase a narrow gently curved pale blade; outer dististyle elongate, sinuous, narrowed into a long spine; arms of aedeagus very short. Length of ♀, excluding rostrum, about 6.8-7 mm; wings 6-6.5; rostrum about 5-5.2.

Rostrum brownish black, shorter than the wing. Antenna with scape and pedicel light yellow to brownish yellow, flagellum black. Head light gray, more yellowish gray on the narrow anterior vertex; setae of posterior vertex sparse, black.

Cervical region brownish black. Mesonotal praescutum with disk covered by 3 confluent dark brownish gray or plumbeous stripes, the humeral region and narrower lateral borders obscure yellow; remainder of notum grayish brown, posterior borders of scutal lobes and the scutellum narrowly obscure yellow, parascutella yellowed. Pleura chiefly medium brown, dorsal sternopleurite light gray, producing a diffuse stripe; metapleura light yellow. Haltere light yellow, knob dark brown. Legs with coxae and trochanters light yellow; remainder of legs brown but appearing darker because of the abundant black setae. Wing subhyaline, unpatterned, base yellowed; veins brown, macrotrichia black. Macrotrichia on Rs and its branches,  $M_{1+2}$  and  $M_3$ , lacking on  $M_{3+4}$  and  $M_4$ . Venation:  $Sc_1$  ending opposite origin of Rs; m-cu at fork of M, subequal in length to distal section of  $Cu_1$ .

Abdominal tergites light brown, subterminal segment and genital shield darker, sternites yellow to brownish yellow; in ♂ segment 9 darkened, the remainder of hypopygium brownish yellow; bases of abdominal tergites unusually glabrous, outer setae small. Male hypopygium (fig. 24) with the tergal plate, t, blackened, small, apex with 3 obtuse lobes, the lateral pair narrower. Basistyle, b, with proximal end produced cephalad, obtuse, with a concentration of strong setae, some unusually large and more or less fasciculate; interbase a narrow gently curved pale blade, its tip subacute. Outer dististyle, d, elongate, sinuous, narrowed into a long spine; inner style elongate, with a strong lateral spine but without a basal spine, as in *acanthobasis*. Aedeagus, a, with the arms very short.

Holotype ♀, Enarotali (Enagotadi), Wisselmeren Area, 2,000 m, 5-VIII-1955 (Gressitt). Allotopotype a broken ♂. Paratopotypes 2 ♀.

*Toxorhina (Toxorhina) megatricha* is most similar to *T. (T.) acanthobasis* Alexander, from which it differs especially in hypopygial characters, including the tergite, basistyle and inner dististyle.