

NEW OR LITTLE-KNOWN TIPULIDAE (DIPTERA).
CX. ORIENTAL-AUSTRALASIAN SPECIES.

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THE first discussion of the crane-flies of the Third Archbold Expedition to New Guinea will be found in Part CVI of the present series of papers. At this time some interesting species of *Cylindrotominae*, *Hexatomini* and *Eriopterini* are discussed.

As before I particularly wish to express my deep thanks to Dr. M. A. Lieftinck for the privilege of retaining certain type specimens in my collection.

Stibadocera nana, sp. n.

Size very small (wing of male 5.3 mm.); general coloration of head and thorax brownish-yellow; legs very pale brown, the outer tarsal segments, at least of the posterior legs, snowy white; wings weakly tinged with brownish-yellow; *Sc* short, both sections of *Rs* straight and subequal, *R*₂₊₃ straight, cell 2nd *A* unusually short and narrow.

Male.—Length about 5 mm.; wing 5.3 mm.

Rostrum and palpi black. Antennæ with basal segments light brown, flagellum more brownish-yellow; antennæ broken beyond base, the flagellar segments elongate, with coarse, erect, scattered verticils. Head brownish-yellow.

Thorax partly destroyed by insect pests, from the remainder apparently with the notum light brown, the pleura more yellowed. Halteres infuscated. Legs with the coxæ and trochanters yellow; femora and tibiae very pale brown to brownish-yellow; posterior basitarsi pale brown on about the proximal two-thirds, the remainder of tarsi white; tarsal segments of the other legs broken. Wings (fig. 1) weakly tinged with brownish-yellow: veins brown. Venation: *Sc* short, extending beyond the origin of *Rs* for a distance less than $r-m$, *Sc*₂ at tip of *Sc*₁ and longer; both sections of *Rs* subequal and straight; *R*₂₊₃ straight, slightly oblique; *m-cu* close to midlength of *M*₃₊₄; cell 2nd *A* unusually short and narrow.

Abdomen dark brown.

Hab. Netherlands New Guinea.

Holotype, ♂, Rattan Camp, altitude 1,200 metres, 2nd March, 1939 (*Toxopeus*).

Stibadocera nana is the most distinct of the various species of the genus so far discovered in New Guinea. It differs strikingly in the very small size and in all details of venation, especially *Sc*, *R* and 2nd *A*.

*Contribution from the Entomological Laboratory, University of Massachusetts.

Stibadocera perangusta, sp. n.

Size large (wing 10 mm.); general coloration of head and thorax chestnut brown, surface polished, impunctate; antennæ of male about one-third longer than the body or wing, flagellar segments with abundant, very long, outspreading setæ; legs brownish-yellow, outer tarsal segments white; wings brownish-yellow, *Sc* long, R_{2+3} gently oblique, sinuous; cell 2nd *A* very long and narrow, virtually parallel-sided.

Male.—Length about 9 mm.; wing 10 mm.; antenna about 13.5 mm.

Female.—Length about 9.5 mm.; wing 10 mm.

Rostrum very reduced, brown; palpi black. Antennæ of male elongate, about one-third longer than the wing; scape and pedicel light brown, flagellum darker brown; flagellar segments elongate-cylindrical, with very long, pale, outspreading setæ that are subequal in length to the segments; antennæ of female short. Head chestnut-brown.

Thorax dark chestnut-brown, surface polished, without distinct punctuation. Halteres with stem dusky, knob pale brown. Legs with coxæ reddish-brown; trochanters obscure yellow; femora and tibiæ brownish-yellow; tarsi pale brown, the outer segments snowy white, slightly more extensively so on the posterior legs. Wings (fig. 2) brownish-yellow, unpatterned; veins light brown. Venation: *Sc* long, Sc_1 ending nearly opposite *r-m*, Sc_2 at its tip; R_{2+3} gently oblique and sinuous; *m-cu* at near midlength of M_{3+4} ; vein 2nd *A* long, the cell very narrow, almost parallel-sided.

Abdominal tergites of male vaguely bicoloured, brown, darker outwardly, the bases of the intermediate segments slightly obscure yellow; hypopygium dark brown; in female, abdomen more uniformly infuscated.

Hab. Netherlands New Guinea.

Holotype, ♂, Moss Forest Camp, altitude 2,800 metres, 3rd November, 1938 (*Toxopeus*). *Allotopotype*, ♀, 31st October, 1938.

Among the regional described species, the present fly is most similar to *Stibadocera daymanensis* Alexander and *S. luteipennis* Alexander. It is best told from these related species by the venation, such as the very long and narrow cell 2nd *A*.

Austrolimnophila (Austrolimnophila) accola, sp. n.

General coloration of mesonotum light grey, the anterior part of præscutum light brown, the colour continued backward over the dorsal pleurites; antennæ with flagellar segments bicoloured; halteres and legs yellow, femora vaguely patterned with darker; wings pale yellow, with a spotted and dotted brown pattern; R_{2+3+4} unusually short, *m* oblique, about one-half longer than the basal section of M_3 ; male hypopygium with the tergal lobes blackened, obtuse; proximal end of basistyle with a long pendant setuliferous lobe; inner dististyle expanded and decurved at outer end; ædeagus free.

Male.—Length about 10 mm.; wing 12 mm.; antenna about 3.8 mm.

Rostrum dark brown; palpi black. Antennæ moderately long, as shown by the measurements; scape and pedicel light brown, flagellar

segments bicoloured, the narrow bases light brown, the much more extensive outer ends yellow ; verticils short and sparse, setæ unusually short. Head dark grey ; anterior vertex very narrow, about one-half the diameter of the scape.

Pronotum light brown. Mesonotal præscutum in front light brown, the colour continued backward over the dorsal pleurites ; posterior part of præscutum light grey, with faint indications of intermediate pale brown stripes ; posterior sclerites of notum light grey, centres of scutal lobes patterned with light brown. Pleura light grey, darkened dorsally, as described. Halteres elongate, pale yellow. Legs with coxæ light brown, sparsely pruinose ; trochanters brownish-yellow ; femora obscure yellow, the bases and a subterminal ring vaguely infuscated ; remainder of legs yellow. Wings (fig. 3) pale yellow, the costal border not or scarcely darker, patterned with larger brown spots ; relatively sparse smaller dots in various cells, particularly in the basal and medial fields ; a series of relatively small marginal brown spots, largest on R_3 and the anal veins ; the major costal darkenings are above arculus, origin of R_s , stigma and anterior cord, and R_{1+2} ; seams on posterior cord and fork of M_{1+2} very reduced ; veins yellow, weakly darkened in the patterned areas. Venation : R_{2+3+4} unusually short, anterior cord moderately oblique ; cell M_1 about three times its petiole ; m gently arcuated, oblique, about one-half longer than the transverse basal section of M_3 ; $m-cu$ beyond midlength of M_{3+4} .

Abdomen obscure yellow, restrictedly patterned with light brown ; hypopygium brownish-yellow. Male hypopygium (fig. 6) with the tergite, t , narrowed outwardly, terminating in two smooth blackened lobes with obtusely rounded tips, surface of each lobe with a small blackened point. Basistyle, b , with the apical blades as figured, the smaller one obtuse at tip ; proximal end of style with a long pendant or reflexed pale lobe, bent outwardly, its surface with very abundant erect setulæ. Outer dististyle, d , with the basal cushion large, obtuse, the surface with very short setulæ and microscopic points ; inner style broadly dilated and decurved at outer end. Phallosome, p , with the interbase a decurved compact simple hook ; ædeagus free.

Hab. Netherlands New Guinea.

Holotype, ♂, Moss Forest Camp, altitude 2,800 metres, 11th October, 1953 (*Toxopeus*) ; Alexander Collection, through Lieftinck.

The structure of the male hypopygium readily distinguishes the present fly from the other generally similar regional species, such as *Austrolimnophila* (*Austrolimnophila*) *excelsior* Alexander.

Austrolimnophila (*Austrolimnophila*) *dislocata*, sp. n.

Size medium (wing about 10 mm.) ; mesonotum brownish-grey, the anterior third of præscutum brownish-black, this colour continued backward over the dorsal pleurites ; antennæ moderately long, the flagellar segments weakly bicoloured ; legs and halteres yellow ; wings light yellow, with a restricted brown pattern of small spots that are

restricted to the veins and forks ; R_{2+3+4} long, nearly equal to R_s ; male hypopygium with the posterior border of the tergite terminating in two smooth blackened lobes that are separated by a broadly rounded notch ; a conspicuous lobe at proximal end of mesal face of basistyle ; outer dististyle with the basal cushion elongate, provided with abundant scabrous points ; interbase bispinous.

Male.—Length about 10 mm. ; wing 10.5 mm. ; antenna about 3.6 mm.

Female.—Length about 10–11 mm. ; wing 10–11 mm. ; antenna about 2.8–3 mm.

Rostrum brown ; palpi dark basally, the outer segments obscure yellow. Antennæ of male moderately long, less than one-half the length of the wing ; scape black, pedicel chestnut brown, flagellum weakly bicoloured, segments yellow with narrow, weakly infuscated bases ; segments elongate with dense, erect, white setulæ and short verticils. Head blackened, sparsely pruinose ; anterior vertex reduced to a narrow line.

Pronotum dark brown. Mesonotal præscutum medium brown, grey pruinose, with nearly the anterior third brownish-black, the two colours separated by a narrow light grey line, the anterior darkening continued backward as a broad band over the lateral præscutal borders onto the dorsal pleurites to the abdomen ; posterior sclerites of notum grey, the scutellum and base of mediotergite more infuscated. Pleura brown, brownish-black dorsally, as described. Halteres yellow. Legs with the fore coxæ light brown, the remainder darker brown ; trochanters yellow ; remainder of legs yellow, the fore femora slightly darker with yellow tips. Wings (fig. 4) light yellow, the costal border concolorous ; a very restricted brown pattern of small spots that are restricted to the veins and forks, distributed as follows : Origin of R_s ; fork of Sc , continued backward over the fork of R_{2+3+4} ; R_{1+2} and R_3 ; cord, outer end of cell 1st M_2 and fork of M_{1+2} ; further small marginal spots, largest on Cu and 2nd A , lacking on R_5 , very small on M_1 ; veins yellow, darker in the patterned areas. Costal fringe short. Venation : Sc moderately long, Sc_1 ending nearly opposite or slightly beyond the fork of R_{2+3+4} , Sc_2 at its tip ; R_{1+2} much longer than R_2 ; R_{2+3+4} long, nearly equal to R_s ; cell M_1 from two to two and one-half times its petiole ; cell 1st M_2 small, subrectangular ; $m-cu$ at or beyond midlength of M_{3+4} .

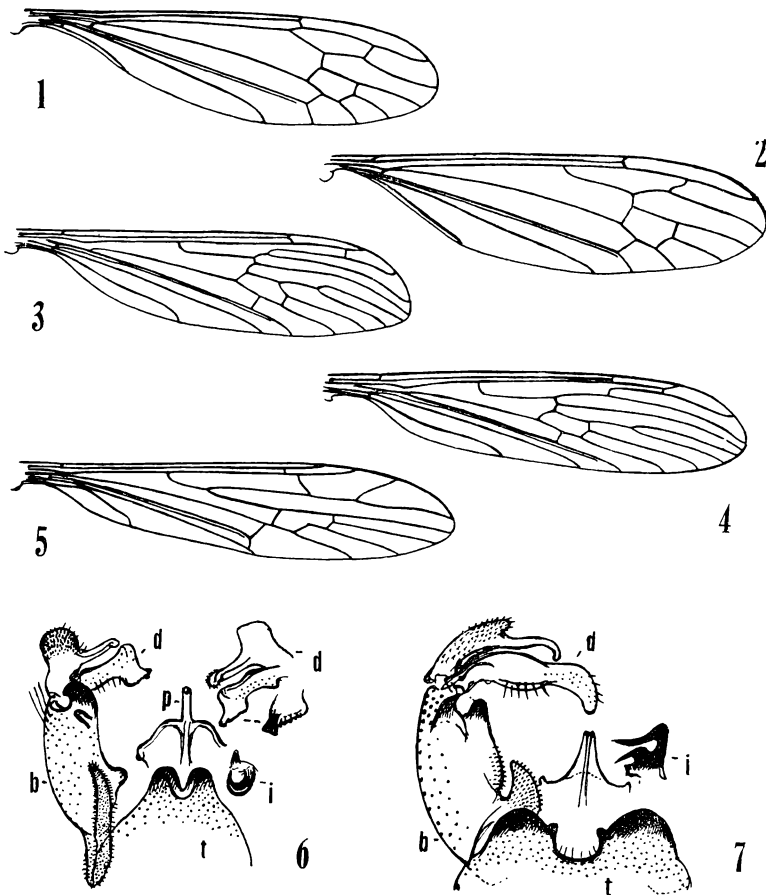
Abdomen dark brown, the posterior borders of the tergites narrowly yellow, pleural membrane darkened ; sternites obscure yellow, outer segments more darkened ; hypopygium dark. Male hypopygium (fig. 7) with the tergite, t , large, the posterior border with a heavily blackened plate on either side of a broadly rounded emargination ; lateral plates smooth, their inner part further produced into a small lobe. Basistyle, b , with part of the scabrous area on mesal face of proximal end separated from the remainder of the body of the style by a deep emargination so as to appear as a separate lobe ; two apical blades, the lower one obtuse at tip ; outer surface of apex of style with long yellow setæ. Dististyles, d , as shown ; outer style with the basal

lobe elongate, separated from the body of style by a deep notch, surface with abundant scabrous points, outer end of style slender, sinuous ; inner style longer, the outer blade with smooth rounded margins, the decurved tip obtuse. Interbase, *i*, bispinous, there being a smaller acute spine below the elongate apical point. Ædeagus relatively slender, subtended for most of its length by a narrow flange or wing.

Hab. Netherlands New Guinea.

Holotype, ♂, Lower Mist Camp, altitude 1,450 metres, 30th January, 1939 (*Toxopeus*). *Allotopotype*, ♀, with the type. *Paratopotype*, 1♀,

Figs. 1-7.



1. *Stibadocera nana*, sp. n. ; venation. 2. *Stibadocera perangusta*, sp. n. ; venation.
 3. *Austrolimnophila* (*Austrolimnophila*) *accola*, sp. n. ; venation. 4. *Austrolimnophila* (*Austrolimnophila*) *dislocata*, sp. n. ; venation. 5. *Trentepohlia* (*Mongoma*) *elegantissima*, sp. n. ; venation. 6. *Austrolimnophila* (*Austrolimnophila*) *accola*, sp. n. ; male hypopygium. 7. *Austrolimnophila* (*Austrolimnophila*) *dislocata*, sp. n. ; male hypopygium. (Symbols : *b*, basistyle ; *d*, dististyle ; *i*, interbase ; *p*, phallosome ; *t*, tergite).

altitude 1,600 metres, 15th January, 1939 ; *paratype*, 1♀, Sigi Camp, altitude 1,500 metres, 18th February, 1939 (*Toxopeus*).

Austrolimnophila (*Austrolimnophila*) *dislocata* is most similar to species such as *A.* (*A.*) *linae* Alexander, differing in the size and coloration. The structure of the male hypopygium shows strong characters in the tergite, basistyle, both dististyles and the interbase.

Trentepohlia (*Mongoma*) *elegantissima*, sp. n.

Mesonotal præscutum with margins broadly yellow, the disk almost covered by four brown stripes, postnotum and pleura brown ; knobs of halteres dark brown ; femora obscure yellow with a narrow brownish-black subterminal ring, the slightly broader tip whitened ; base of tibiæ similarly whitened, followed by a more blackened ring ; wings whitish, heavily patterned with brown, including broad seams over most of the veins ; R_{2+3+4} very long ; abdominal tergites yellow, sternites dimidiate, chiefly dark brown with greyish-yellow posterior borders.

Female.—Length about 9.5 mm. ; wings 10 mm.

Rostrum brown, both the maxillary and labial palpi darker brown. Antennæ of female relatively long, if bent backward extending nearly to the wing root, brown throughout ; flagellar segments long-cylindrical, exceeding the verticils in length. Anterior vertex narrow, grey, posterior part of head brown, the orbits pale ; a more or less distinct median carina on vertex.

Cervical sclerites dark brown ; pronotum paler brown. Mesonotal præscutum with the lateral margins broadly yellow, the disk with four brown stripes, the intermediate pair vaguely separated by a capillary ground line, the stripes behind paler brownish-yellow, merging with the interspaces ; lateral stripes uniformly darker brown, crossing the suture onto the scutal lobes ; posterior sclerites of notum dark brown, the mediotergite sparsely pruinose, central area of scutum broadly light yellow. Pleura, pleurotergite and sternum brown, the dorsal sternopleurite and adjoining part of pteropleurite a trifle darker. Halteres with stem pale, the outer end, with the knob, dark brown. Legs with the coxæ and trochanters brownish-yellow ; femora obscure yellow, with a narrow brownish-black subterminal ring that is a little narrower than the whitened apex ; tibiæ light brown, the base whitened, subequal in amount to the femoral tip, followed by an area that is somewhat darker than the remainder of the ground ; tarsi brown. Wings (fig. 5) with the ground whitish, heavily patterned with brown ; prearcular field, cells *C* and *Sc*, and outer margins of distal radial cells more yellowed ; the brown pattern includes broad seams over *Rs*, cord, outer end of cell 1st M_2 , R_2 and adjoining veins, veins R_3 and R_4 and vein 2nd *A* ; narrower brown seams over the remaining veins, broadest along *Cu*, narrowest over veins M_3 and M_4 ; subapical spots in cells R_4 , R_5 and 2nd M_2 , forming an oblique band to the margin ; posterior border of wing narrowly seamed with brown, extending from the wing tip back to the base, broadest in the anal field, including the axilla ; veins brown, *Sc* more yellowed.

Venation : R_s short, arcuated, only a little longer than veins R_2 or $m-cu$; R_{2+3+4} very long, nearly twice R_{3+4} ; basal section of R_5 approximately one and seven-tenths to nearly twice R_s ; R_3 and R_{3+4} subequal, R_4 gently sinuous ; basal section of M_3 long, angulated and short-spurred, either section longer than m ; apical fusion of Cu_1 and 1st A more than one-half longer than the distal section of the former.

Abdominal tergites yellow, sternites dimidiate, chiefly dark brown with greyish-yellow posterior borders, these narrower on the outer segments ; genital segment yellow. Cerci yellow, strongly upcurved.

Hab. Netherlands New Guinea.

Holotype, ♀, Moss Forest Camp, altitude 2,800 metres, 24th October, 1938 (*Toxopeus*) ; Alexander Collection.

Trentepohlia (Mongoma) elegantissima is entirely different from all other regional species in the strikingly patterned wings.

Gonomyia (Lipophleps) cryophila, sp. n.

Size large (wing 6.5 mm. or more) ; mesonotum dark brown, the posterior border of scutellum yellow ; pleura dark brown with a broad yellowish white longitudinal stripe ; antennæ of male elongate, flagellar segments with dense white erect setæ ; halteres yellow ; legs dark brown : wings milky white, veins very pale yellowish-brown, Sc long ; male hypopygium with the outer apical lobe of basistyle long-produced, the two dististyles subterminal ; outer styles slightly asymmetrical on the two sides, simple, each abruptly tipped with a black spine.

Male.—Length about 5–5.3 mm. ; wing 6.5–7 mm.

Female.—Length about 6–6.5 mm. ; wing 7–8 mm.

Rostrum yellow ; palpi brownish-black. Antennæ black ; flagellar segments of male elongate, with dense erect white setæ. Head dark brown.

Cervical region and pronotum light yellow, the latter including also the pretergites and dorsopleural region. Mesonotum chiefly dark brown, the posterior border of scutellum restrictedly yellow ; sides of the mediotergite and most of the pleurotergite lighter brown. Pleura dark brown with a broad yellowish-white longitudinal stripe, beginning behind the fore coxæ, widened behind, reaching the base of the abdomen. Halteres with stem whitened, knob yellow. Legs uniformly dark brown, including the fore coxæ. Wings (fig. 8) milky white, veins very pale yellowish-brown. Venation : Sc long, Sc_1 ending about opposite two-fifths to nearly midlength of the unusually long R_s ; basal section of R_5 oblique, subequal to m ; $m-cu$ at or close to the fork of M .

Abdomen dark brown, hypopygium more yellowed. Male hypopygium (fig. 14) with the outer apical lobe of the basistyle, b , long-produced ; two subterminal dististyles, b , the longer one unequal on the two sides, one being more slender and about one-third longer than the other, both tipped with a black spine that is surrounded basally by erect setæ ; inner style relatively long, pale, narrowed at tip which bears one fasciculate

seta, the other one on outer margin of style beyond midlength, very long and slender, nearly as long as the style itself ; other setæ relatively short and normal. Phallosome, *p*, about as shown, including a major flattened structure and two pale, pointed elements, the longer one evidently representing the ædeagus.

Hab. Netherlands New Guinea.

Holotype, ♂, Scree Valley Camp, altitude 3,800 metres, 22nd September, 1938 (*Toxopeus*). *Allotopotype*, ♀, pinned with the type. *Paratopotypes*, 4♂♀, 20th to 24th September, 1938 ; *paratypes*, 2♂♀, East of Wilhelmina Top, altitude 3,600 metres, 30th August 1938 (*Toxopeus*).

This high-altitude crane-fly is quite distinct from all other described species that centre about *Gonomyia* (*Lipophleps*) *ægina* Alexander, being closest to *G. (L.) dispar* Alexander, from which it is readily told by the structure of the male hypopygium. The almost equally large associated species, *G. (L.) siculifera*, sp. n., belongs to a different group of the subgenus, the male hypopygium having terminal dististyles.

Gonomyia (Lipophleps) fuscofemorata, sp. n.

Allied to *ischyria* ; rostrum and front light yellow ; antennal scape and pedicel light yellow, flagellum black ; mesonotum black, the scutellum broadly yellow ; pleura black, grey pruinose beneath and posteriorly, dorsopleural membrane light yellow ; legs with the trochanters yellow, femora dark brown to brownish-black, the posterior pair almost uniformly darkened.

Female.—Length about 5.5–6 mm. ; wing 6–6.5 mm.

Rostrum yellow ; palpi brownish-black. Antennæ with scape and pedicel light yellow, flagellum black ; flagellar segments long-oval, subequal to or a very little shorter than the verticils. Head behind dark brown.

Pronotum and pretergites very pale yellow. Mesonotal præscutum and scutum black, the surface vaguely pruinose ; scutellum broad, yellow, parascutella slightly infuscated ; postnotum brownish-black, polished. Pleura polished brownish-black, the ventral part, including the lower pteropleurite, meron, and less evidently the sternopleurite with a blue-grey pruinosity ; dorsopleural membrane light yellow. Halteres uniformly light yellow. Legs with the coxæ basally broadly dark brown, pruinose, the tips obscure yellow ; trochanters yellow ; femora dark brown to brownish-black, the bases of the fore pair more yellowed ; middle femora slightly blacker basally than on the intermediate portion ; posterior femora with a not or scarcely indicated paler subterminal ring ; tibiæ light brown, tarsi more blackened. Wings (fig. 9) brownish-yellow, stigma and axillary region not or scarcely more darkened ; veins brownish yellow. Venation : *Sc* short, *Sc*₁ ending a distance before origin of *Rs* about equal to one-fourth the length of the latter which is angulated at base ; *R*₂₊₃₊₄ and *R*₄ subequal in length or the latter longer, virtually straight and in longitudinal alignment ; vein *R*₃ oblique, about as long as the distance on costa between veins *R*₁₊₂ and *R*₃ ; cell *R*₅ strongly

narrowed at margin ; M_{3+4} only a little shorter than vein M_4 ; $m-cu$ shortly before fork of M .

Abdomen brownish-black, both the tergites and sternites narrowly bordered laterally with yellow. Ovipositor with the genital shield brownish-black ; valves, especially the cerci, long and slender.

Hab. Netherlands New Guinea.

Holotype, ♀, Ibèlè Camp, altitude 2,250 metres, 27th November, 1938 (*Toxopeus*). *Paratopotypes*, 3 ♀♀, 25th November to 2nd December, 1938.

In its extensively darkened femora, the present fly is closest to *Gonomyia (Lipophleps) ischyria* Alexander, of Papua, differing in details of coloration, especially of the head, thorax and legs.

Gonomyia (Lipophleps) monura, sp. n.

Size medium (wing of male about 4 mm.) ; general coloration of thorax black, pruinose, pleura with a longitudinal pale stripe ; knobs of halteres infuscated ; femora light brown, tips broadly darker brown, preceded by a vague more yellowed ring ; wings weakly tinged with brown, Sc ending shortly beyond origin of R_s ; male hypopygium with the tergite large, posterior border shallowly emarginate, with a lobe at either end ; three dististyles ; phallosome terminating in a long blackened spine, larger than the pale aedeagus.

Male.—Length about 4 mm. ; wing about 4 mm.

Rostrum and palpi black. Antennæ with scape blackened ; pedicel yellow above, blackened beneath ; flagellum black, in male the segments with very long verticils. Head buffy yellow, the centre of the posterior vertex extensively infuscated.

General coloration of thorax blackened, pruinose to produce a plumbeous appearance ; pseudosutural foveæ black ; anterior pretergites yellow, more obscured behind ; scutellum darkened. Pleura black, grey pruinose, with an obscure pale longitudinal stripe, beginning behind the fore coxæ, extending to the abdomen, more silvery pruinose on the pteropleurite. Halteres pale yellow, knob infuscated. Legs with the coxæ and trochanters brownish-black ; femora light brown, tips broadly darker brown, preceded by a vague more yellowed ring, narrower but better delimited on the posterior femora ; tibiæ and tarsi dark brown. Wings (fig. 10) weakly tinged with brown ; veins light brown. Venation : Sc_1 ending shortly beyond origin of R_s , Sc_2 a short distance removed ; anterior branch of R_s gently sinuous ; basal section of R_5 relatively long, about one-third $r-m$; $m-cu$ at fork of M .

Abdomen, including hypopygium, brownish black. Male hypopygium (fig. 15) with the tergite, t , large, narrowed behind, the posterior border very broadly and shallowly emarginate, each outer angle produced into a stout pale lobe with abundant setulæ on inner face. Dististyles, d , terminal, three in number ; outer style a long curved blade, its outer third flattened and twisted ; intermediate style a small compact structure, its outer end with dense relatively short black setæ ; inner style a little

longer, dilated at outer end, provided with very long setæ, including the two usual paler fasciculate ones, the latter shorter than some of the normal bristles. Phallosome, *p*, a depressed-flattened pale plate, at apex produced ventrad into a long blackened spine; ædeagus likewise long and slender, smaller and paler, but with somewhat the same conformation.

Hab. Netherlands New Guinea.

Holotype, ♂, Mist Camp, altitude 1,800 metres, 4th January, 1939 (*Toxopeus*); Alexander Collection.

Gonomyia (Lipophleps) monura is quite distinct from other somewhat similar regional species in the structure of the male hypopygium. Such species include especially *G. (L.) acus* Alexander and some allied forms.

Gonomyia (Lipophleps) siculifera, sp. n.

Size large (wing 6 mm. or more); mesonotum brown, pleura darker, with a yellowish-white longitudinal stripe; legs brown, femoral tips broadly brownish-black, preceded by an obscure yellow ring; wings weakly tinted, *Sc*₁ ending shortly beyond the origin of *Rs*; male hypopygium with the tergite deeply emarginate, the lobes with few long setæ; three dististyles, the outer a long slender glabrous rod; phallosome very complex, including a depressed-flattened central plate that bears three spines on either side, additional to a recurved central one.

Male.—Length about 5 mm.; wing 6.2 mm.

Female.—Length about 5.5 mm.; wing 6–7 mm.

Rostrum and palpi black. Antennæ with the scape and pedicel blackened beneath, yellow above, flagellum black: flagellar segments elongate, with the usual very long verticils in the male. Head infuscated above, restrictedly patterned behind and on the posterior orbits.

Pronotum light brown in front, the scutellum and anterior pretergites light yellow. Mesonotal præscutum almost uniform brown, pseudo-sutural foveæ black; median region of scutum broadly light grey, lobes brownish-grey; scutellum obscure yellow, with a darkened spot at base; mediotergite silvery pruinose, broadly darkened behind, anterolateral angle and adjoining part of pleurotergite yellowed, the remainder of the latter more darkened. Pleura dark brown, sparsely pruinose, with a conspicuous yellowish-white longitudinal stripe extending from and including the fore coxæ to the base of the abdomen. Halteres yellow, knob weakly darkened. Legs with the fore coxæ as described, remaining coxæ dark brown; trochanters light brown; femora brown, tips broadly brownish-black, preceded by a diffuse but evident yellow ring; tibiæ and tarsi brown, the tips of the segments narrowly darkened; outer tarsal segments uniformly dark brown. Wings (fig. 11) faintly tinted, the costal border slightly more yellowed; veins very light brown. Venation: *Sc*₁ ending just beyond the origin of *Rs*; basal section of *R*₅ about one-half *m*; branches of *Rs* gently arched beyond origin; *m-cu* before the fork of *M*.

Abdominal tergites, including hypopygium, brownish-black, the posterior borders of the segments narrowly grey, more evident in the female ; sternites paler brown. Male hypopygium (fig. 16) with the tergite, *t*, conspicuous ; posterior border produced into long lobes that are separated by a slightly wider notch, the lobes with sparse elongate setæ. Basistyle, *b*, with sparse long bristles on outer surface and more numerous shorter setæ on mesal face. Dististyles, *d*, three, terminal in position ; outer style glabrous, very long, subequal in length to the basistyle, narrowed very gradually to a point ; intermediate style a yellow oval lobe that is densely covered with short setulæ ; inner style subequal in length but narrower, with long setæ, the usual fasciculate pair not or poorly differentiated. Phallosome, *p*, unusually complex and distinctive, including a major depressed-flattened plate, on either side with three long spines, the outer one largest, in addition to a recurved central blackened spine ; additional to the above a pair of divergent blackened structures that subtend the ædeagus (shown separately in figure, lower right).

Hab. Netherlands New Guinea.

Holotype, ♂, Scree Valley Camp, altitude 3,800 metres, 22nd September, 1938 (*Toxopeus*) ; Alexander Collection. *Allotopotype*, ♀, with the type. *Paratype*, ♀, Mountain lake east of Wilhelmina Top, altitude 3,450 metres, 15th August, 1938 (*Toxopeus*).

Gonomyia (*Lipophleps*) *siculifera* is most similar in its general appearance to another large-sized high alpine member of the subgenus, *G.* (*L.*) *cryophila*, sp. n., which belongs to a distinct group, with the venation and details of structure of the male hypopygium quite distinct.

Toxorhina (*Ceratocheilus*) *nymphæ*, sp. n.

Size large (wing of female 8.5 mm., rostrum about 7 mm.) ; mesonotal præscutum reddish-brown, light grey laterally, the posterior sclerites of the notum darker ; pleura pale with a conspicuous blackish dorsal longitudinal stripe ; halteres and legs yellow ; wings pale yellow with three pale brown crossbands, the first basal, second at the cord, third at wing tip ; anterior branch of *Rs* oblique, ending at or near the tip of R_{1+2} closing cell R_1 ; cell 1st M_2 closed, elongate ; abdomen fulvous orange, the basal tergite blackened.

Female.—Length, excluding rostrum, about 11 mm. ; wing 8.5 mm. ; rostrum about 7 mm.

Rostrum elongate, approximately four-fifths the body, black throughout. Antennæ with scape dark brown, the slightly larger pedicel orange, flagellum black. Head grey, the small corniculus and surrounding region, together with the orbits more yellowed ; anterior vertex relatively narrow, a little exceeding the diameter of the scape.

Sides of pronotum blackened. Disk of mesonotal præscutum reddish-brown, the broad lateral borders light grey ; scutum and scutellum dark brown, the posterior border of the latter narrowly obscure yellow ; medio-

tergite plumbeous grey, darker in front. Pleura dorsally with a conspicuous blackish stripe extending from the cervical region to and including the first abdominal tergite, narrowest beneath the root of the halteres; ventral pleural region pale, light grey pruinose; ventral sternopleurite pale brown. Halteres obscure yellow. Legs with coxæ pale brown, pruinose; trochanters yellow; remainder of legs yellow, the colour somewhat obscured by darker setæ. Wings (fig. 12) with the ground pale yellow, with three pale brown crossbands, the first basal, extending from the arcular region to beyond the level of the termination of vein *2nd A*, extending more distad in the costal and anal fields, more basad in cell *2nd A*, narrowest at vein *Cu*; second band nearly parallel-sided, about equally distributed on either side of the cord, including nearly the proximal half of cell *1st M*₂; a slightly isolated cloud over outer end of cell *1st M*₂; third band occupying the narrow wing tip, its inner edge concave, more or less conforming to the outline of the wing tip: pre-arcular field light yellow; veins light yellow, brown in the patterned areas. Rather sparse macrotrichia on veins beyond cord, including *R*₅, distal section of *M*₁₊₂ and outer end of the penultimate section, and outer two-thirds of *M*₃. Venation: Anterior branch of *Rs* oblique, ending at or close to the tip of *R*₁₊₂ so cell *R*₁ is slightly open to very narrowly closed at margin; cell *1st M*₂ closed, elongate, a trifle shorter than the distal section of vein *M*₁₊₂; *m-cu* from about one-half to two-thirds its length beyond the fork of *M*.

Abdomen with basal tergite black, the remainder fulvous orange. Valves of ovipositor long and slender, straight.

Hab. Netherlands New Guinea.

Holotype, ♀, Mist Camp, altitude 1,800 metres, 12th January, 1939 (*Toxopeus*); Alexander Collection.

Toxorhina (Ceratocheilus) nymphea is entirely distinct from all other regional members of the subgenus, differing especially in the pattern of the wings and in the venation, as the virtually closed cell *R*₁ and the elongate cell *1st M*₂.

Toxorhina (Ceratocheilus) toxopeana, sp. n.

Size large (wing of female over 7 mm., in cases up to 10.5 mm.); rostrum longer than the body or wing; mesonotal præscutum light chestnut brown, the lateral margins light grey; thoracic pleura with a very broad brownish-black, longitudinal stripe; legs brown, the genua vaguely whitened; wings whitish, the cephalic fourth more yellowed, the entire surface with a coarsely reticulated brown pattern; vein *R*₃ suberect, ending some distance beyond the termination of *R*₁₊₂; cell *M*₂ open by the atrophy of *m*; abdomen dark brown, the basal sternites and the hypopygium more reddish-brown.

Male.—Length, excluding rostrum, about 8 mm.; wing 8 mm.; rostrum about 12 mm.

Female.—Length, excluding rostrum, about 9–12 mm.; wing 7.5–10.5 mm.; rostrum about 11–13 mm.

Rostrum very long, in smaller specimens being approximately one-half longer than the body, dark brown throughout. Antennæ black, the three basal segments more or less pruinose ; elongate setæ reduced in number to about five. Head light grey ; anterior vertex of male relatively narrow, about two-thirds the diameter of the scape or approximately equal to two and one-half rows of ommatidia ; setæ of head long and conspicuous.

Pronotum and cervical region black. Disk of præscutum chiefly occupied by three light chestnut brown to darker clove brown stripes, the humeral region more yellowed, the lateral borders behind the humeri light grey ; scutal lobes light to dark brown ; posterior sclerites of notum reddish brown, more or less pruinose, especially the scutellum and central region of the præscutum. Pleura and pleurotergite chiefly covered by a very broad brownish-black longitudinal stripe, the ventral pleurites narrowly yellowed immediately below the dark stripe, passing into reddish-brown on the ventral sternopleurite and sternum. Halteres orange-yellow. Legs with coxæ and trochanters obscure yellow ; femora brown, appearing more blackened because of the dense black setæ, the bases restrictedly paler ; genua very narrowly and vaguely whitened ; tibiæ and tarsi brown to pale brown. Wings (fig. 13) with the ground whitish with about the cephalic fourth more yellowed ; a coarsely reticulated brown pattern, including major areas beyond arculus, at origin of *Rs* and over the anterior branch of *Rs*, extended backward over the remainder of wing as seams and crossbands that enclose circular or oval areas of the ground ; cell R_3 with the dark rays narrower, about three or four in number ; cells *C* and *Sc* pale brown, unpatterned ; veins brown, costa and the prearcular veins paler. Venation ; Sc_1 ending beyond one-third the length of *Rs*, Sc_2 close to the origin of the latter ; vein R_3 suberect, the distance on *C* between R_{1+2} and R_3 more than two-thirds the length of the latter vein ; cell M_2 open by the atrophy of *m* ; cell M_3 short, subequal to or shorter than its petiole ; *m-cu* very variable in position, at, before or some distance beyond the fork of *M*.

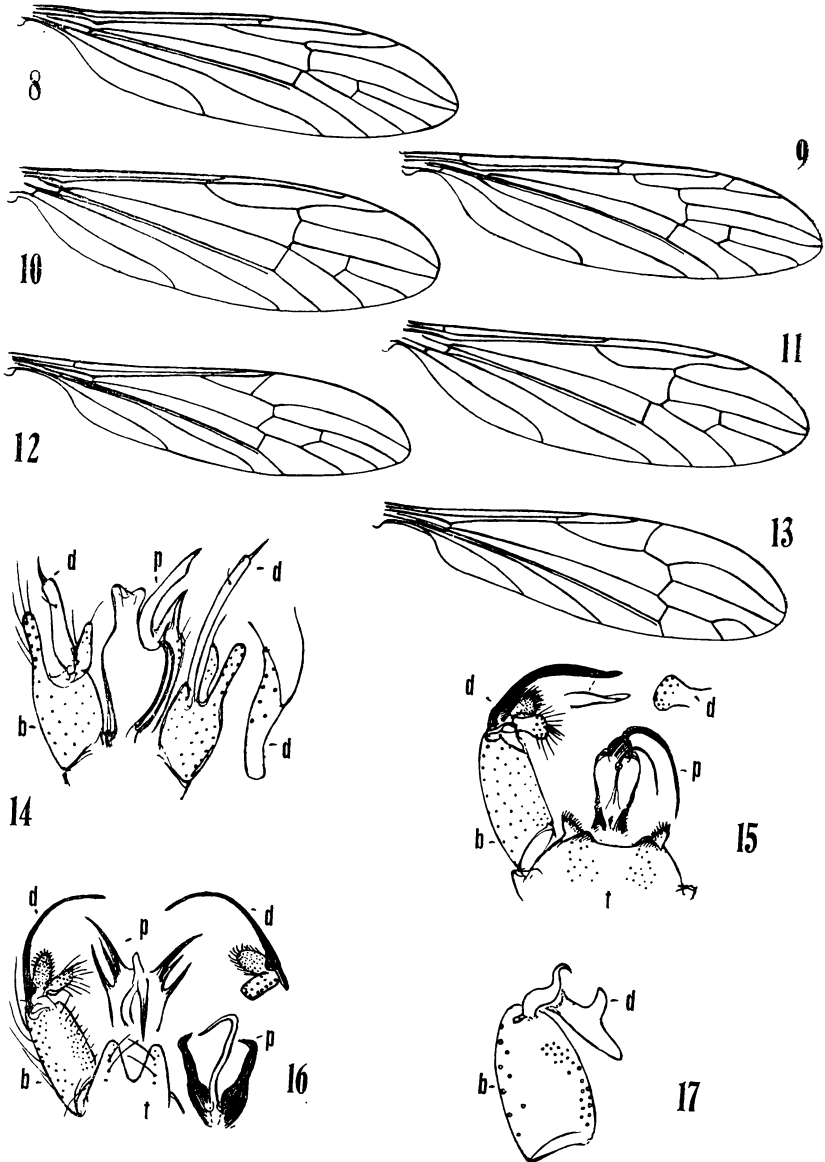
Abdomen dark brown, sparsely pruinose, hypopygium slightly more reddish-brown ; in the female sternites slightly more reddish-brown. Ovipositor with the valves, especially the cerci, dark reddish-brown, nearly straight and very slender.

Hab. Netherlands New Guinea.

Holotype, ♂, Moss Forest Camp, altitude 2,800 metres, 12th October, 1938 (*Toxopeus*). *Allotopotype*, ♀, 18th October 1938. *Paratopotypes*, 3 ♀♀, 11th to 23rd October 1938 ; *paratype*, 1 ♀, Mist Camp, altitude 1,800 metres, 26th December 1938 (*Toxopeus*).

This particularly attractive fly needs no comparison with any of the species hitherto made known. I take great pleasure in dedicating it to the memory of the collector who has added so greatly to our knowledge of the insect fauna of New Guinea. Among other regional members of the subgenus, *Toxorhina* (*Ceratocheilus*) *toxopeana* is most similar to

Fig. 8-17.



8. *Gonomyia (Lipophleps) cryophila*, sp. n.; venation. 9. *Gonomyia (Lipophleps) fuscifemorata*, sp. n.; venation. 10. *Gonomyia (Lipophleps) monura*, sp. n.; venation. 11. *Gonomyia (Lipophleps) siculifera*, sp. n. & venation. 12. *Toxorhina (Ceratocheilus) nympha*, sp. n.; venation. 13. *Toxorhina (Ceratocheilus) toxopeana*, sp. n.; venation. 14. *Gonomyia (Lipophleps) cryophila*, sp. n.; male hypopygium. 15. *Gonomyia (Lipophleps) monura*, sp. n.; male hypopygium. 16. *Gonomyia (Lipophleps) siculifera*, sp. n.; male hypopygium. 17. *Toxorhina (Toxorhina) tenebrica*, sp. n.; male hypopygium. (Symobis; *b*, basistyle; *d*, dististyle; *p*, phallosome; *t*, tergite).

T. (C.) imperatrix Alexander, which has the wing pattern relatively heavy but not all reticulate, as in the present fly.

Toxorhina (Toxorhina) tenebrica, sp. n.

Size small (wing of male less than 4 mm., of female up to about 5 mm.) ; general coloration of thorax and abdomen black, the lateral præscutal border and a broad longitudinal stripe on the pleura light grey ; wings with a strong dusky tinge, more suffused in the outer radial field ; cell M_2 open by the atrophy of m ; male hypopygium with the outer dististyle a small curved apical structure ; inner style fleshy, with a stout subcultrate blade on margin.

Male.—Length, excluding rostrum, about 3.5 mm. ; wing 3.7 mm. ; rostrum about 3.1 mm.

Female.—Length, excluding rostrum, about 4.8–5 mm. ; wing 4.8–5 mm. ; rostrum about 2.8–3 mm.

Rostrum basally dark brown, paler on outer half. Antennæ relatively short, black throughout. Head dark grey.

Pronotum and cervical region black. Mesonotum black, the lateral præscutal border broadly light grey ; central region of scutum, scutellum and postnotum vaguely pruinose. Pleura, sternum and pleurotergite black, the first with a conspicuous light grey longitudinal stripe that extends from behind the fore coxæ to above the hind coxæ, broadest on the dorsal sternopleurite. Halteres brownish-black, the base of stem restrictedly obscure yellow. Legs with the coxæ and trochanters blackened ; remainder of legs dark brown to brownish-black, the dark colour produced in part by the abundant setæ. Wings with a strong dusky tinge, even more evident in the outer radial field ; veins brown. Abundant and conspicuous macrotrichia on veins, including R_s and R_5 , together with the outer medial branches except near the outer fork. Venation : Sc ending just beyond the origin of R_s ; $m-cu$ at or some distance beyond the fork of M , slightly longer than the distal section of vein Cu_1 ; cell 2nd A relatively narrow. In one wing of the holotype the distal section of M_{1+2} is represented by a long spur that is only slightly longer than the basal section.

Abdomen, including hypopygium, black. Male hypopygium (fig. 17) with the surface of the basistyle, b , with scattered strong setæ, including a group of about a dozen smaller punctures on mesal face at near midlength. Outer dististyle, d , a small curved apical structure, gradually narrowed to the acute tip, on outer half the concave edge of the spine with pale membrane ; inner style larger and more fleshy, on margin at near midlength with a stout subcultrate blade. Arms of ædeagus short.

Hab. Netherlands New Guinea.

Holotype, ♂, Rattan Camp, altitude 1200 metres, 5th March, 1939 (*Toxopeus*). *Allotopotype*, ♀, altitude 1,150 metres, 13th February, 1939. *Paratypes*, 1 ♀, Sigi Camp, altitude 1,500 metres, 19th February, 1939 ; 1 ♀, Mist Camp, altitude 1,800 metres, 3rd January, 1939 (*Toxopeus*).

Toxorhina (Toxorhina) tenebrica is readily told from all other regional species by the blackened thorax, darkened wings, and by the structure of the male hypopygium.