

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

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At this time I am continuing the discussion of the crane-flies taken on the Third Archbold Expedition to the Snow Mountains of Netherlands New Guinea by the late Dr. L. J. Toxopeus. An account of the itinerary of the expedition, the established collecting stations and other matters are given in Part 106 of this series of papers. As before, I am greatly privileged in being permitted by Dr. M. A. Lieftinck to retain in my personal collection certain species that are represented by single specimens. The present intensive study on the Tipulidae of New Guinea has been greatly facilitated by this appreciated action. As before such species are indicated by the words "Alexander Collection".

Gynoplistia (Gynoplistia) toxopei, sp. n.

General coloration of thorax brownish black, the pteropleurite clear light silvery; antennæ 20-segmented, with fourteen or fifteen branched segments in the male, eleven in the female; head fulvous; wings pale yellow, heavily patterned with brown; cell M^1 present; abdomen of male black, segments two to five, inclusive, light orange, in the female with these segments banded with brown; male hypopygium with the tergite produced medially; both apical lobes of basistyle elongate, the shorter ventral one with exceedingly long setæ; dististyle strongly curved; phallosome produced into two strong divergent spinelike gonapophyses.

Male.—Length about 12 mm.; wing 9.5 mm.; antenna about 3.5 mm.

Female.—Length about 15–16 mm.; wing 12–13 mm.; antenna about 3–3.2 mm.

Male. Rostrum orange; palpi with basal segment yellow, outer segments brown. Antennæ 19 or 20-segmented; formula $2+2+13+3$ or $2+2+12+3$; scape and pedicel yellow, proximal six or seven flagellar segments with stem yellow, all branches and outer segments black; longest branch about two-fifths the length of the flagellum and only about one-fourth longer than the two proximal branches; terminal branch about one-half longer than the segment; vestiture of branches abundant but very short and inconspicuous. Head fulvous.

Thoracic notum almost uniformly dark brown or brownish black, praescutal interspaces and central region of scutum more pruinose; mediotergite conspicuously variegated with fulvous at near midlength. Pleura brownish black, the pteropleurite clear light silvery, forming a

* Contribution from the Entomological Laboratory, University of Massachusetts.

very conspicuous band. Halteres dark brown, base of stem somewhat paler. Legs with coxæ dark brown, trochanters more castaneous; femora yellow; tibiae brownish yellow, tips narrowly blackened; tarsi brown, passing into black. Wings (fig. 1) with the ground pale yellow, the prearcular area brighter yellow; a conspicuous dark brown pattern that includes a major area at stigma and backward over the anterior cord; wing tip somewhat narrowly paler brown; small brown marks at arculus and origin of R_s ; larger pale brown clouds over posterior cord, at two-thirds the length of cell 1st A and at midlength of cell 2nd A , the last slightly involving cell 1st A ; veins brown, light yellow in the prearcular field. Macrotrichia of outer veins relatively numerous but small, on R_{2+3+4} , R_3 , R_4 , R_5 and a very few on M_1 . Venation: Cell M_1 subequal to its petiole; cell 1st M_2 relatively small, with $m-cu$ before midlength.

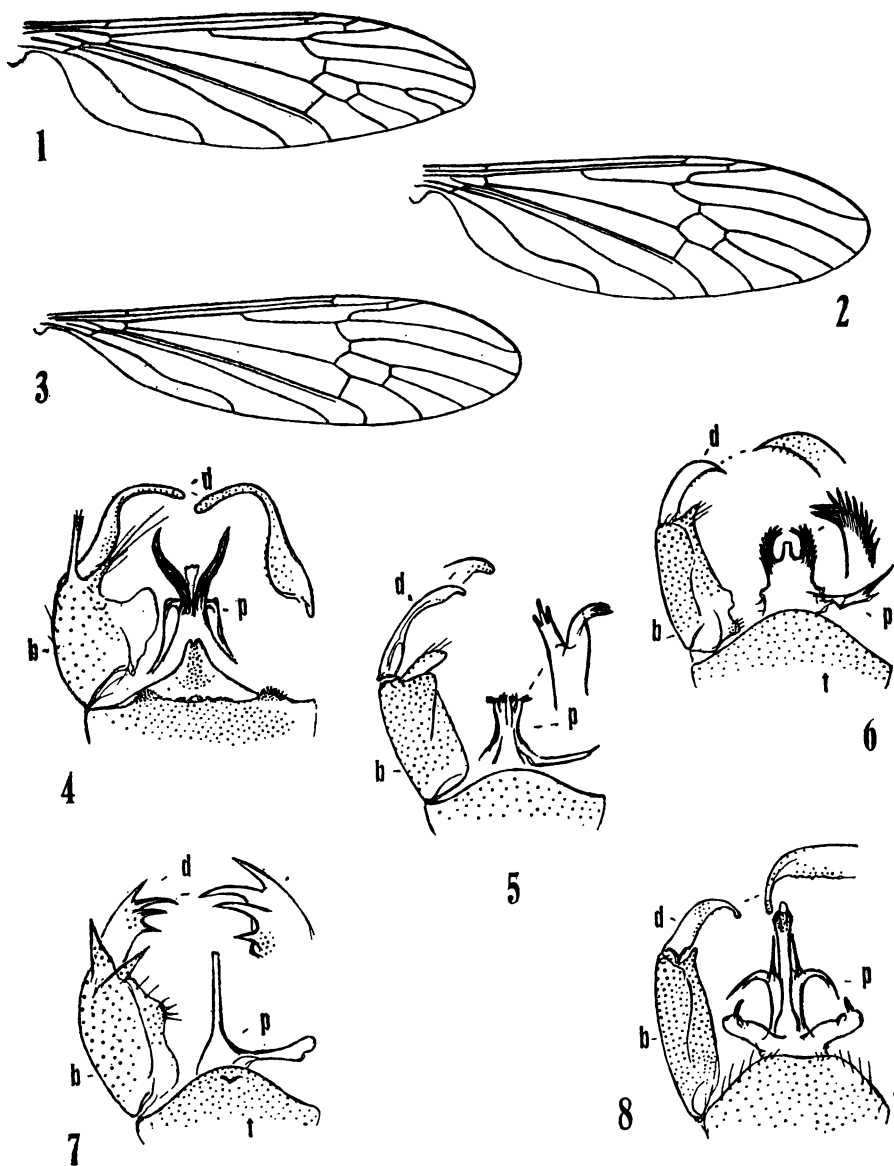
Abdomen with the first tergite fulvous above, dark brown on sides; succeeding four segments light orange, their basal rings pale yellow; outer segments, including apex of the sixth, with the hypopygium, black. Male hypopygium (fig. 4) with the tergite strongly produced medially, the apex of the lobe microscopically notched; posterior margin of sternite with two widely separated low rounded darkened knobs. Basistyle, b , with mesal flange very large, densely silken setulose; dorsal apical lobe very long and slender, more than one-third the length of the body of style, with short setæ that are concentrated at apex; ventral apical lobe smaller, with exceedingly long setæ over the whole length, the longest about one and one-half times the length of the lobe. Dististyle, d , strongly curved, dilated on lower margin of basal half, surface with abundant scattered microscopic punctures that bear exceedingly minute setulæ. Phallosome, p , produced into two strong divergent spinelike gonapophyses.

Female. Characters as in the male, including the general coloration of the head and thorax. Antennæ 20-segmented; formula 2+2+9+7; branches shorter than in male, the longest about one-fifth the flagellum. Tips of posterior femora narrowly dark brown, of the other femora slightly clouded. Wing pattern heavier, in cases with the dark band at cord broad and virtually crossing the wing. Abdomen with segments two to five orange, conspicuously patterned with black, varying from broad lateral triangles in the Bernhard paratype to broad complete bands that are equal in extent or exceed the pale bases; subterminal segments uniformly darkened; genital shield orange.

Holotype, ♂, Hollandia, near sea-level, June 26, 1938 (*Toxopeus*). *Allotopotype*, ♀, June 29, 1938. *Paratopotypes*, 3 ♀♀, June 22–27, 1938. *Paratype*, 1 ♀, Bernhard Camp B, altitude 100 metres, April 10, 1939 (*Toxopeus*).

I dedicate this attractive fly to the collector, Dr. Lambertus Johannes Toxopeus. It is closest to species such as *Gynoplistia* (*Gynoplistia*) *biroana* Alexander, *G. (G.) flavizona* Alexander, and *G. (G.) nigrithorax* Alexander, all agreeing in the fulvous head and generally blackened

Figs. 1-8.



1. *Gynoplistia* (*Gynoplistia*) *toxopei*, sp. n.; venation. 2. *Gynoplistia* (*Gynoplistia*) *cianoiceps*, sp. n.; venation. 3. *Gynoplistia* (*Gynoplistia*) *monozostera*, sp. n.; venation. 4. *Gynoplistia* (*Gynoplistia*) *toxopei*, sp. n.; male hypopygium. 5. *Gynoplistia* (*Gynoplistia*) *deacantha*, sp. n.; male hypopygium. 6. *Gynoplistia* (*Gynoplistia*) *bispica*, sp. n.; male hypopygium. 7. *Gynoplistia* (*Gynoplistia*) *cianoiceps*, sp. n.; male hypopygium. 8. *Gynoplistia* (*Gynoplistia*) *monozostera*, sp. n.; male hypopygium. (Symbols: b, basistyle; d, dististyle; p, phallosome.)

thorax, differing among themselves in the structure of the male hypopygium, particularly the tergite, apical lobes of the basistyle, and the phallosome.

Gynoplistia (Gynoplistia) decacantha, sp. n.

Size medium (wing of male about 13 mm.); head and thorax dull black; abdomen with the first segment black, the succeeding segments orange, outer segments darker; legs and halteres black; wings tinged with brown, costal border and stigma darker, disk with a restricted darker pattern; cell M_1 present; male hypopygium with the tergite narrowly transverse; ventral apical lobe of basistyle a flattened cultriform blade; phallosome with each gonapophysis bearing five blackened peglike spines arranged in two groups.

Male.—Length about 11 mm.; wing 13.5 mm.

Rostrum and palpi black. Antennæ with scape and pedicel black; flagellum broken. Head dull black, surface pruinose; anterior vertex broad, about three times the diameter of the scape.

Thorax black, surface opaque by a brownish grey bloom, pleura more heavily pruinose. Halteres black throughout. Legs with coxæ and trochanters brownish black, sparsely pruinose; remainder of legs dark brown to brownish black. Wings tinged with brown; costal border, including the stigma and cells C and Sc , darker brown; a very restricted paler brown pattern, including a small area at origin of Rs and a broader seam over the anterior cord; posterior cord and outer end of cell 1st M_2 not or scarcely darkened; veins brown. Macrotrichia small but relatively abundant on veins R_4 , distal section of R_5 , M_{1+2} , M_1 and M_2 , with a few further trichia on R_{2+3+4} near R_2 ; R_{1+2} glabrous. Venation: Cell M_1 subequal to or shorter than its petiole; $m-cu$ shortly before midlength of cell 1st M_2 .

Abdomen with first segment black, succeeding segments orange, unpatterned; outer segments, including the hypopygium, darker. Male hypopygium (fig. 5) with the tergite narrowly transverse, posterior border gently convex; setæ long but relatively sparse. Basistyle, b , with the ventral apical lobe a flattened cultriform blade, its lower or cephalic half without setæ. Dististyle, d , relatively stout, the apex narrowed, forming a shallow emargination on lower edge. Phallosome, p , with the gonapophyses subtending the shorter aedeagus, each divided into two pale arms that are tipped with blunt spines, the outer arm with two larger spines, the inner with three small pegs; apex of lateral arm of phallosome suddenly produced into a long straight spine.

Holotype, ♂, Lake Habbema, altitude 3,225 metres, August 23, 1938 (*Toxopeus*).

In its general appearance, *Gynoplistia (Gynoplistia) decacantha* somewhat resembles a small *G. (G.) hera* Alexander, but has the structure of the male hypopygium quite distinct. The structure of the phallosome is more suggestive of *G. (G.) achlys* Alexander which in all other regards is a very different fly.

Gynoplistia (Gynoplistia) bispica, sp. n.

Size medium (wing of male 9 mm.) ; general coloration of head and thorax dull black ; antennæ of male 16-segmented, with ten branched segments ; femora darkened, with a conspicuous yellow subterminal ring ; wings yellow, patterned with dark and paler brown ; macrotrichia of outer veins reduced in number ; cell M_1 present ; male hypopygium with the gonapophyses blackened, each with about a dozen strong spines.

Male.—Length about 11 mm. ; wing 9 mm. ; antenna about 2 mm.

Rostrum and palpi black. Antennæ of male 16-segmented ; formula $2+2+8+4$; scape dark reddish brown, remainder of organ black, the apices of flagellar segments one and two reddened ; longest branch (about flagellar segment five) less than one-third the flagellum ; last branch shorter than the segment ; terminal segment only a little longer than the penultimate. Head black, subopaque ; anterior vertex broad, about three times the diameter of scape.

Thoracic dorsum brownish black, the colour obscured by a sparse bloom ; scutellum and postnotum paler brown and more heavily pruinose. Pleura dark brown, variegated by obscure brownish yellow on the ventral anepisternum, the surface pruinose. Halteres with stem yellow, knob infuscated. Legs with coxæ brown, pruinose ; trochanters brown ; femora obscure brownish yellow basally, outer ends broadly blackened, the extreme tips vaguely pale, the darkened apex preceded by a subequal obscure yellow ring, the central area less infuscated ; tibiæ and tarsi black. Wings yellow, conspicuously patterned with dark and paler brown ; darkest areas beyond arculus, at origin of R_s and as a major mark at stigma that extends backward to M ; narrower dark seams over posterior cord, outer end of cell 1st M_2 , form of M_{1+2} , and as single spots near midlength of each anal vein ; the paler brown pattern includes cells C and Sc , the broad wing tip and the narrower posterior border ; a broad brown seam over most of the length of vein M , narrowest near base, widened outwardly ; veins brown, slightly darker in the patterned areas. Macrotrichia of outer veins long but greatly reduced in number, including only about ten on distal two-thirds of vein R_5 and one or two on R_4 , lacking on R_3 and the branches of M . Venation : Veins R_3 and R_4 strongly divergent, cell R_2 at margin very narrow ; cell M_1 a little longer than its petiole ; $m-cu$ before midlength of cell 1st M_2 .

Basal abdominal segments reddish brown, their posterior borders dull black, basal tergal rings narrowly obscure yellow ; outer segments, including hypopygium, dull black. Male hypopygium (fig. 6) with the posterior border of tergite convexly rounded. Apical lobe of basistyle, b , very small, with relatively few setæ. Dististyle, d , conspicuous, appearing as a broad gently curved blade that narrows to an acute point, the lower edge on about the outer third with a row of microscopic setuliferous tubercles. Phallosome, p , distinctive, the strong gonapophyses much longer than the reduced ædeagus, each apophysis black,

strongly spined, especially on the outer surface where there are some ten to twelve subappressed points, additional to two longer terminal ones ; lateral arm of phallosome extended laterad into an acute spine.

Holotype, ♂, Moss Forest Camp, 2,800 metres, October 14, 1938 (*Toxopeus*) ; Alexander Collection.

Gynoplistia (*Gynoplistia*) *bispica* is most similar to *G. (G.) attrita* Alexander, of Northeast New Guinea, which still is known only from the female sex. The present fly differs evidently in the coloration of the halteres and legs and in the somewhat unusual reduction in number of macrotrichia of the outer wing veins.

Gynoplistia (*Gynoplistia*) *cianocephs*, sp. n.

Belongs to the *jucunda* group ; general coloration of thorax black, with slight greenish reflections ; head metallic blue-green ; antennæ of male 16-segmented, with eleven long-branched segments ; femora yellow, tips broadly black, bases of hind femora more or less darkened ; wings brownish yellow, patterned with darker ; cell M_1 lacking ; male hypopygium with the dististyle quadrispinous ; phallosome with ædeagus long and slender, gonapophyses apparently lacking ; arms of phallosome expanded at outer ends.

Male.—Length about 8.5–9 mm. ; wing 7.5–8 mm. ; antenna about 2.8–2.9 mm.

Rostrum and palpi black. Antennæ 16-segmented ; formula 2+2+9+3 ; black, apex of pedicel and first three flagellar segments narrowly yellow ; longest branch (flagellar segment four or five) from about two-fifths to nearly one-half the entire organ ; last branch a mere tubercle. Head metallic blue-green.

Pronotum dull black. Mesonotum black, with vague greenish reflections, subnitidous ; posterior sclerites somewhat more opaque ; vestiture of praescutum and scutellum short but abundant. Pleura grey pruinose. Halteres black. Legs with coxæ grey pruinose ; trochanters black ; fore and middle femora yellow, the apical fourth or fifth abruptly blackened, extreme base darkened ; posterior femora in cases black, with a broad yellow ring beyond midlength, in the paratype with the basal darkening less evident ; remainder of legs brownish black to black. Wings (fig. 2) brownish yellow, costal region and apex vaguely and gradually darker ; a restricted darker brown pattern, including areas at arculus, origin of *Rs* and over the stigma and anterior cord ; narrower and less evident darkenings over posterior cord and outer end of cell 1st M_2 ; vague cloudings in cells *M*, *Cu* and 1st *A*, forming a broken crossband ; veins light brown, a trifle darker in the patterned areas. Macrotrichia of veins very reduced, with virtually complete series on R_4 and distal section of R_5 , lacking on the medial veins. Venation : Cell M_1 lacking ; *m-cu* before midlength of cell 1st M_2 .

Abdomen black, with vague purplish reflections. Male hypopygium (fig. 7) with the posterior border of tergite convexly rounded, subtruncate across apex, with the central part more or less decurved into a small

tubercle. Basistyle, *b*, with two apical lobes, both acutely pointed at tips and with strong setæ; mesal face of style beyond midlength with a low darkened tubercle provided with stout black setæ. Dististyle, *d*, black, stout, terminating in four strong spines. Phallosome, *p*, with the ædeagus unusually long and slender; gonapophyses very reduced or lacking; phallosomic arm expanded at outer end.

Holotype, ♂, Moss Forest Camp, 2,600 metres, November 2, 1938 (*Toxopeus*). *Paratopotype*, ♂, 2,800 metres, October 15, 1938 (*Toxopeus*).

There are no closely related species hitherto described, the most similar including *Gynoplistia* (*Gynoplistia*) *lieftinckiana* Alexander, *G. (G.) luteoannulata* Alexander, and *G. (G.) perjucunda* Riedel, all differing in coloration and, especially, in the structure of the antennæ and male hypopygia. The two species next described, *G. (G.) parajucunda* and *G. (G.) metajucunda*, should be compared.

Gynoplistia (*Gynoplistia*) *parajucunda*, sp. n.

Belongs to the *jucunda* group; general coloration dull black, the postnotum and pleura silvery pruinose; abdominal tergites black, with strong purplish reflections; antennæ 16-segmented, with nine long-branched segments; posterior femora black with a narrow obscure yellow ring; wings brownish yellow, patterned with dark and lighter brown, the latter including the wing tip; vein R_{2+3} perpendicular at origin, cell R_3 very extensive at margin.

Female.—Length about 14 mm.; wing 12 mm.; antenna about 3 mm.

Rostrum and palpi black. Antennæ of female 16-segmented; formula $2+2+7+5$; black, the apices of the proximal four flagellar segments narrowly pale; branches long, the longest (about flagellar segment five) approximately three and one-half times the segment and only a little longer than the branch of segment two; last branch less than one-half the segment; terminal segment longer than the penultimate. Head darkened, appearing dull black on slide mounts, possibly with metallic reflections in fresh specimens.

Thorax dull black; praescutum with a pair of concolorous stripes that are delimited by lines of light brown pollen; pseudosutural foveæ large, black, suboval; median region of scutum and posterior parts of scutal lobes more reddish brown; postnotum heavily light grey or silvery pruinose, the central part of the mediotergite blackened. Pleura heavily light grey pruinose. Halteres with stem light brown, the base, together with the knob, dark brown. Legs with coxæ light grey pruinose; trochanters black; fore femora yellow, the apical fourth black; remaining femora black, with a narrow obscure yellow ring before the subequal tip, most evident on the hind legs; tibiæ brown, the broad base and narrower tip black; tarsi black. Wings brownish yellow, patterned with slightly darker brown and with two still darker areas at origin of *Rs* and over the stigma and anterior cord; the paler brown pattern includes the broad wing tip and an extensive area at midlength of cell *Cu*, extended posteriorly into cell 1st *A*; a weak broken mark at mid-

length of vein M ; $m-cu$ virtually unpatterned; cell C pale brown; veins light brown, darker in the clouded areas. Macrotrichia on veins R_4 and R_5 , lacking on other veins beyond the cord. Venation: R_s relatively long, exceeding the distal section of M_{1+2} ; R_{2+3+4} very short, R_{2+3} perpendicular at origin; veins R_3 and R_4 strongly divergent, cell R_2 at margin only about one-fifth as extensive as cell R_3 ; cell M_1 lacking; cell 1st M_2 relatively small, with $m-cu$ at near one-third the length; cell 2nd A broad.

Abdominal tergites black, with strong purplish reflections, sternites more brownish black. Ovipositor small; genital shield black, pruinose.

Holotype, ♀, Moss Forest Camp, 2,700 metres, October 29, 1938 (*Toxopeus*); Alexander Collection.

The most similar species include *Gynoplistia* (*Gynoplistia*) *cyaniceps*, sp. n., and *G.* (*G.*) *metajucunda*, sp. n., which differ in the coloration of the body, legs and wings, and in the details of venation.

Gynoplistia (*Gynoplistia*) *metajucunda*, sp. n.

Belongs to the *jucunda* group; mesonotum black, more pruinose behind; antennæ 16-segmented, with nine branched segments in the female, these branches unusually long for this sex; head above metallic green; halteres black; fore and middle femora yellow, the extreme base and tip blackened, posterior femur with nearly the basal half blackened; wings dimidiate, the apex very broadly brown, the base yellow, restrictedly patterned with brown; macrotrichia of veins small and restricted; vein R_4 strongly upcurved at tip; abdomen polished black, subterminal segments pruinose.

Female.—Length about 12 mm.; wing 10.5 mm.; antenna about 2.3 mm.

Rostrum brown; palpi with first segment cinnamon brown, the remainder brownish black. Antennæ of female 16-segmented; formula $2+2+7+5$; scape and pedicel yellow, proximal three flagellar segments yellow, with black branches, remainder of organ uniformly blackened; branches unusually long for the female sex, the longest (about flagellar segment five) nearly four times the segment; last branch about one-half the segment; terminal segment one-third longer than the penultimate. Head above metallic green, the area delimited, surface roughened; genæ and lower surface brown.

Pronotum dull brownish black. Mesonotal praescutum and scutum black, with faint greenish reflections; pseudosutural foveæ elongate, black; vestiture of praescutum short but abundant, slightly reclinate; scutellum black, with longer black setæ; postnotum dark coloured, heavily silvery grey pruinose, least so on posterior two-thirds of mediotergite. Pleura black, subnitidous. Halteres black. Legs with coxæ black, brown pollinose on fore pair, more silvery on posterior coxæ; trochanters black; fore and middle femora yellow, the extreme base and tip blackened; posterior femur with nearly the proximal half black, followed by a subequal yellow ring, the tip narrowly darkened; fore

and middle tibiae brownish yellow on central part, the base and tip slightly darker, hind tibiae brownish yellow, the basal third blackened ; basitarsi dark brown, remainder of tarsi black. Wings dimidiate, the cells beyond cord brown, the basal cells, including slightly more than one-half of the wing, light yellow, very restrictedly patterned with brown, including a small arcular spot, a slightly larger oval mark at origin of *Rs*, and a paler cloud at near midlength of vein 1st *A* ; stigma and region of anterior cord darker brown than the remainder of the wing apex ; cells *C* and *Sc* brownish yellow ; veins brown. Macrotrichia of veins small and reduced in number, lacking on R_{2+3} , R_3 and *M* ; R_4 with trichia on distal half, more numerous and crowded outwardly, on R_5 over virtually the whole length. Venation : *Rs* relatively long, nearly equal to the distal section of M_{1+2} ; R_4 strongly upcurved at tip ; basal section of R_5 oblique ; cell M_1 lacking ; *m-cu* at near one-third the length of cell 1st M_2 ; cell 2nd *A* broad on proximal half.

Abdomen polished black, the subterminal segments pruinose, especially the eighth sternite ; genital shield of cerci blackened above, of the hypovalvæ reddened ; cerci horn-yellow, strongly upcurved on outer third, tips subacute.

Holotype, ♀, Sigi Camp, altitude 1,500 metres, February 21, 1939 (*Toxopeus*) ; Alexander Collection.

The most similar regional species include *Gynoplistia* (*Gynoplistia*) *cyanoceps*, sp. n., and *G. (G.) parajucunda*, sp. n., all three being readily distinguished from one another by the pattern of the body, legs and wings.

Gynoplistia (Gynoplistia) monozostera, sp. n.

Belongs to the *jucunda* group ; size small (wing 7 mm. or less) ; general coloration of thorax polished black, pleura paler anteriorly ; antennæ of male 15-segmented, with ten branched segments ; halteres black ; femora obscure yellow, tips infuscated, tibiae and tarsi brownish black ; wings sybhyaline, conspicuously patterned with dark brown, chiefly at and beyond the cord, including the broad apex ; abdomen black, the first and fifth segments reddish yellow ; male hypopygium with the gonapophysis long and slender, the outer part unequally bispinous, with a further long straight spine at near midlength ; lateral arm of phallosome obtuse at tip, before apex with a blackened spinous point.

Male.—Length about 5.8–6 mm. ; wing 6.3–6.8 mm. ; antenna about 2.1–2.3 mm.

Female.—Length about 7 mm. ; wing 7 mm.

Rostrum and palpi brownish black. Antennæ of male 15-segmented ; formula 2+2+8+3 ; basal segments brown, flagellum, including branches, brownish black ; longest branch (about flagellar segment five or six) about two-fifths the entire organ, branches of segments one and two only a trifle shorter ; last branch a mere tubercle. Antennæ of female broken. Head fulvous.

Pronotum reddish brown. Mesonotum polished black or brownish black, humeral region of praescutum somewhat brightened. Pleura

blackened posteriorly, the anterior and ventral sclerites reddened. The allotype female has the entire thorax more uniformly polished black. Halteres black. Legs with the coxæ and trochanters reddish brown; femora obscure yellow, tips broadly infuscated; tibiæ and tarsi brownish black. In the female, legs more uniformly darkened, only the femoral bases restrictedly paler. Wings (fig. 3) subhyaline, conspicuously patterned with dark brown, chiefly at and beyond the cord, including a major area at the latter and the broad tip, the latter continued posteriorly around the margin, isolating the pale outer area; additional smaller darkening at arculus, origin of R_s , and at near two-thirds the length of vein 1st A ; veins brown. Macrotrichia on vein R_4 and outer two-thirds of R_5 , with a few on R_3 ; no trichia on M . Venation: Cell M_1 lacking; $m-cu$ about its own length beyond the fork of M ; cell 2nd A relatively narrow.

Abdomen black, the base and a narrow ring including segment five and the base of six reddish yellow; hypopygium black. Ovipositor with the elongate cerci yellow. Male hypopygium (fig. 8) with the posterior border of tergite truncated to very feebly emarginate, the border narrowly membranous. Basistyle, b , long and relatively slender; ventral apical lobe fleshy, with setæ throughout the length, the longest more than twice the lobe. Dististyle, d , black, appearing as a flattened blade, the apical fifth narrowed and decurved, its tip obtuse. Phallosome, p , with the ædeagus slender, longer than the subtending gonapophyses, the latter decurved, each narrowed into a long straight spine, with a smaller appressed denticle before the tip, at near midlength with a long straight spine; lateral arm of phallosome obtuse at apex, before tip with a blackened spinelike point, directed caudad.

Holotype, ♂, Mist Camp, 1,800 metres, December 26, 1938 (*Toxopeus*). Allotopotype, ♀, with the type, January 8, 1939. *Paratopotypes*, 2 ♂♂, December 26–28, 1938 (*Toxopeus*).

The most similar known species is *Gynoplistia* (*Gynoplistia*) *habbemae perdistincta* Alexander, which differs in the coloration and particularly in the structure of the male hypopygium.

Gynoplistia (*Gynoplistia*) *rubribasis*, sp. n.

Belongs to the *jucunda* group; general coloration of thorax polished black; head orange; antennæ of female 15-segmented, with seven branched segments; femora yellow, tips blackened; wings whitish, heavily patterned with dark brown; cell M_1 lacking; vein 2nd A curved very strongly into the margin; abdomen polished, the proximal three segments fulvous yellow, remainder purplish black; genital shield black.

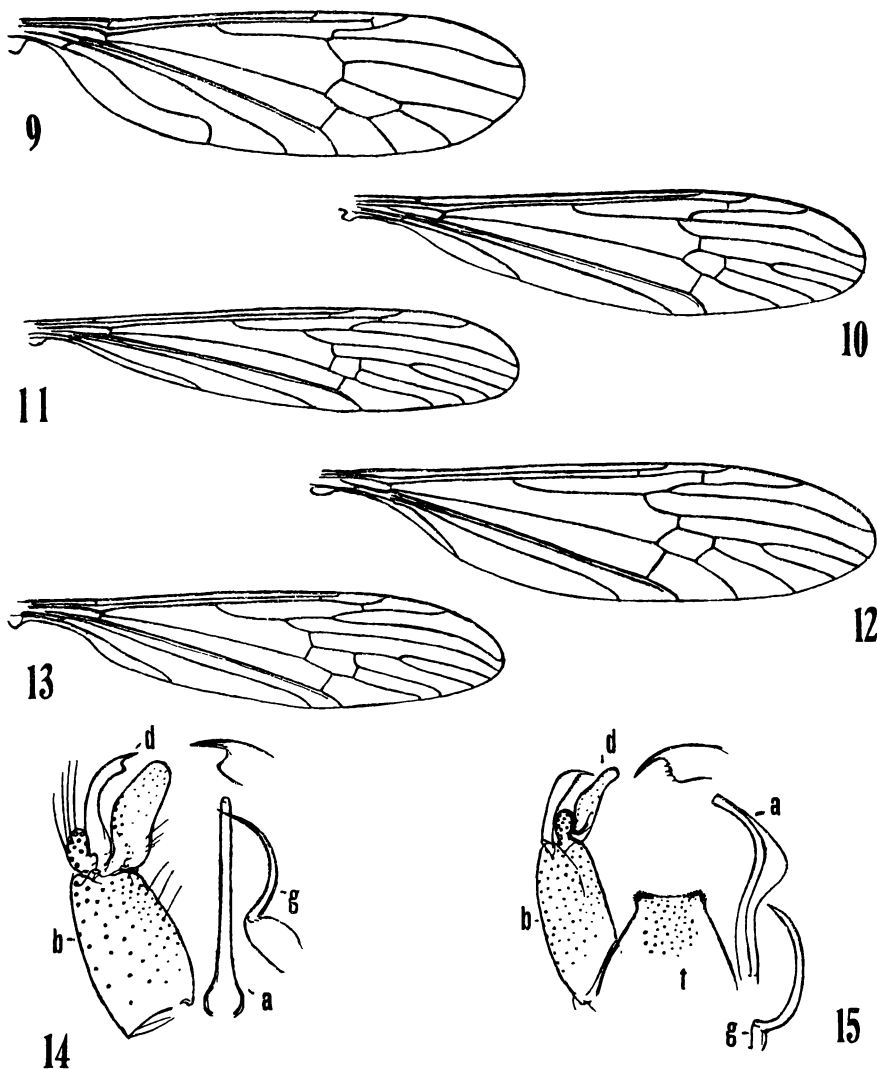
Female.—Length about 6.2 mm.; wing 5.5 mm.; antenna about 1.3 mm.

Rostrum reddish brown; palpi brown. Antennæ 15-segmented; formula 2+7+6; scape and pedicel reddish yellow, first flagellar segment brown, remainder of organ, including all branches, black; longest branch about twice the segment, last branch subequal to segment;

terminal segment about one-half longer than the penultimate. Head orange.

Thoracic dorsum polished black, virtually glabrous. Pleura polished black, with purplish reflections. Halteres black. Legs with coxæ

Figs. 9-15.



9. *Gynoplistia (Gynoplistia) rubribasis*, sp. n.; venation. 10. *Paralimnophila (Papuaphila) toxopeana*, sp. n.; venation. 11. *Paralimnophila (Papuaphila) sponsa*, sp. n.; venation. 12. *Paralimnophila (Papuaphila) angusticincta*, sp. n.; venation. 13. *Paralimnophila (Papuaphila) decorata*, sp. n.; venation. 14. *Paralimnophila (Papuaphila) sponsa*, sp. n.; male hypopygium. 15. *Paralimnophila (Papuaphila) angusticincta*, sp. n.; male hypopygium. (Symbols: a, aedeagus; b, basistyle; d, dististyle; g, gonapophysis.)

purplish black ; trochanters dark brown ; femora yellow, tips broadly black, including the outer third to fourth ; tibiae and tarsi black. Wings (fig. 9) with the ground whitish, heavily patterned with dark brown, including the costal field and large areas at arculus, origin of *Rs* and over the stigma and cord ; wing tip broadly somewhat paler brown ; a large darkened cloud in cells *Cu* and 1st *A*, in transverse alignment with the area at origin of *Rs* ; veins brown. Macrotrichia on veins R_{2+3} , R_3 , R_4 , R_5 , and sparsely on M_{1+2} . Venation : Tip of R_{1+2} and R_2 subatrophied or very faint ; R_{2+3+4} very short, R_{2+3} suberect at origin ; cell M_1 lacking, *m* short ; *m-cu* about one-half its length beyond the form of *M* ; vein 2nd *A* curved very strongly into the margin.

Abdomen polished, the proximal three segments fulvous yellow, the remainder purplish black ; genital shield black, cerci horn-yellow, gently upcurved.

Holotype, ♀, Sigi Camp, altitude 1,500 metres, February 24, 1939 (*Toxopeus*) ; Alexander Collection.

Gynoplistia (*Gynoplistia*) *rubribasis* is most similar to other small members of the *jucunda* group, including *G. (G.) habbema* *perdistincta* Alexander and *G. (G.) monozostera*, sp. n., differing evidently in the coloration, especially of the thorax and abdomen.

Paralimnophila (*Papuaphila*) *toxopeana*, sp. n.

Size relatively large (wing of female 10 mm.) ; general coloration black, including the antennæ, halteres and legs ; wings chiefly darkened, the anterior half of the basal part yellowed ; cell M_1 present, long ; abdomen elongate.

Female.—Length about 14 mm. ; wing 10 mm. ; antenna about 2 mm.

Rostrum dark, pruinose ; palpi black. Antennæ black throughout, 13-segmented, as common in the subgenus ; basal flagellar segments elongate-oval, the ends truncated, outer segments still longer ; longest verticils unilaterally arranged, exceeding the segments. Head black, grey pruinose ; anterior vertex broad, about four times the diameter of the scape.

Thorax almost uniformly black, including the dorsopleural region, but it seems probable that in fresh specimens a grey bloom is present, especially on the pleura ; praescutal vestiture short and sparse, that of the scutellum longer. Halteres light brown, knob a little darker. Legs with the coxæ black, sparsely pruinose to appear plumbeous ; trochanters reddish brown ; remainder of legs black, the bases of the fore femora restrictedly obscure yellow, including about the proximal sixth of the segment, middle and posterior femora uniformly black. Wings (fig. 10) with the basal and anterior parts yellow, the outer half strongly infuscated, beginning just before the cord, the stigmal area a trifle darker ; a small dark spot at origin of *Rs* ; a paler brown suffusion involving the cubital and anal cells and the outer two-thirds of *M* ; veins brown, paler in the brightened parts. Macrotrichia on veins beyond the cord, becoming more sparse in medial field, few and scattered on M_3 , lacking on M_4 .

Venation: Sc_1 longer than R_{2+3+4} ; R_{1+2} about twice R_2 ; vein R_4 deflected strongly toward wing tip; cell M_1 from one-third to nearly one-half longer than its petiole; cell 1st M_2 small, subrectangular, with *m-cu* at or just beyond midlength; vein 2nd A short, as in the subgenus.

Abdomen elongate, brownish black, slightly pruinose; genital shield deep chestnut. Ovipositor with the cerci very long and slender, very gently upcurved to the narrowly obtuse tips.

Holotype, ♀, Lower Mist Camp, altitude 1,450 metres, January 30, 1939 (*Toxopeus*); Alexander Collection.

I am honoured to dedicate this further species to the collector of this outstanding series of New Guinean Tipulidae. The subgenus *Papuaphila* Alexander (Rec. South Australian Mus., 8: 602; 1947) was assigned originally to *Limnophila* Macquart but now seems better placed as a subgenus of *Paralimnophila* Alexander. The latter genus had long been held to represent a subgenus of *Gynoplistia* Westwood but with the accession of new materials it appears to be a valid genus, with characters somewhat intermediate between *Limnophila* and *Gynoplistia*. The subgenus *Papuaphila*, as at present known, is restricted to New Guinea and the satellite islands to the west. It is best told from the typical subgenus by the reduction in number of antennal segments to 13 and by the very short vein 2nd A which ends some distance before the level of the origin of Rs . The present fly is entirely distinct from the other known species in the coloration of the body and wings.

Paralimnophila (Papuaphila) sponsa, sp. n.

General coloration of mesonotal praescutum fulvous; head and thoracic pleura darkened; halteres yellow; femora brown, the tips brownish black, preceded by a diffuse obscure yellow ring; wings yellow, patterned with brown; cell 1st M_2 short, almost square; cell M_1 present.

Male.—Length about 12 mm.; wing 11 mm.

Rostrum and palpi black, the former somewhat pruinose. Antennæ broken. Head dull plumbeous.

Pronotum dull fulvous, vaguely patterned with small brown spots. Mesonotal praescutum chiefly covered by four fulvous stripes, the interspaces very restricted to scarcely evident, lateral borders slightly pruinose; pseudosutural foveæ obscure yellow; setæ of praescutum yellow; posterior sclerites of notum dark brown, the midregion of scutum paler. Pleura chiefly dark brown, slightly patterned, pteropleurite paler. Halteres pale yellow. Legs with the coxæ and trochanters brown, sparsely pruinose; femora brown, the tips broadly brownish black, preceded by a somewhat broader but diffuse obscure yellow ring; tibiae light brown, tips narrowly darker; tarsi pale brown. Wings (fig. 11) with the ground yellow, patterned with brown, including cells C and Sc and dark areas at arculus, origin of Rs , stigma, anterior cord, tip of vein R_3 and wing apex as far as vein M_1 ; narrower seams on posterior cord, outer end of cell 1st M_2 and fork of M_{1+2} ; very narrow brown seams over vein R_5 and outer half of M ; prearcular field conspicuously

light yellow ; veins brown, darker in the patterned areas, light yellow at wing base. Short but abundant macrotrichia on veins beyond cord, lacking on R_{2+3} , R_3 and M_4 . Venation : Sc_1 ending about opposite the fork of R_{2+3+4} , the latter about one-half longer than the basal section of R_5 ; vein R_4 bent strongly toward wing tip, suddenly upcurved at outer end ; cell M_1 about one-half longer than its petiole ; cell 1st M_2 unusually short, almost square, with $m-cu$ just beyond midlength ; vein 2nd A relatively long for a member of the subgenus but ending some distance before origin of Rs , cell 2nd A very narrow.

Abdomen reddish brown, the basal tergite and outer segments, including the hypopygium, darker brown. Male hypopygium (fig. 14) with the outer dististyle, d , glabrous, terminal spine elongate ; inner style with the setæ of the outer basal lobe very long. Gonapophysis, g , appearing as a long and narrow gently curved rod that is extended into a very slender point. Aedeagus elongate.

Holotype, ♂, Rattan Camp, altitude 1,100 metres, March 2, 1939 (*Toxopeus*) ; Alexander Collection.

Paralimnophila (*Papuaphila*) *sponsa* is readily told from all other regional members of the subgenus that have cell M_1 present by the pattern and venation of the wings. The most similar of such species is *P. (P.) decorata*, sp. n.

Paralimnophila (*Papuaphila*) *decorata*, sp. n.

General coloration of thorax dark reddish brown, praescutum with a narrow obscure yellow central vitta ; antennæ and halteres yellow ; legs dark brown, femora with a conspicuous subterminal yellow ring ; wings cream-coloured, with a conspicuous brown pattern ; R_{2+3+4} longer than R_{2+3} ; cell M_1 present.

Female.—Length about 15 mm. ; wing 13 mm. ; antenna about 1.8 mm.

Rostrum brownish grey ; palpi black. Antennæ with scape yellowish brown, remainder of organ more yellowed ; flagellar segments narrowed on outer half, a little shorter than the longest verticils. Head plumbeous grey, restrictedly patterned with lighter grey, including orbital spots on anterior vertex and less evident lateral and median lines on posterior vertex.

Cervical region and pronotum reddish brown, slightly patterned with darker. Mesonotal praescutum chiefly dark reddish brown, with a narrow but conspicuous obscure yellow central vitta ; pseudosutural foveæ pale, triangular in outline ; praescutal vestiture relatively long and conspicuous, yellow ; posterior sclerites of notum chiefly dark brown. Pleura and pleurotergite dark brown, variegated by more reddish areas, the largest on the lower pteropleurite and metapleura. Halteres yellow. Legs with the coxæ dark brown, more or less pruinose ; trochanters brownish yellow ; femora dark brown, with a conspicuous yellow subterminal ring, this slightly more extensive than the darkened tip ; tibiæ brown, tips dark brown ; tarsi dark brown. Wings (fig. 13) cream coloured, with a conspicuous brown pattern that includes large areas at

arculus, origin of R_s , stigma, anterior cord and outer ends of the radial cells ; similar but smaller areas over posterior cord, outer end of cell 1st M_2 , and as marginal spots at ends of veins R_5 to Cu_1 , inclusive ; anal veins without spots other than a pale brown cloud in outer half of cell 2nd A ; very pale brown washes in outer half of cell 1st A and along vein Cu ; cell C uniformly infuscated, Sc darkened basally, yellowed at outer end ; veins yellow, including those in the patterned areas. Macrotrichia on veins R_4 to M_2 , inclusive ; lacking on R_{2+3+4} , R_{2+3} , R_3 and M_3 . Venation : R_{2+3+4} exceeding R_{2+3} ; cell M_1 about two and one-half times its petiole ; $m-cu$ at near two-thirds the length of cell 1st M_2 ; vein 2nd A relatively short, ending far before the origin of R_s .

Abdominal tergites reddish brown, irregularly variegated by black and yellow, the latter appearing as scattered spots ; sternites more uniformly darkened, the basal segments more reddish brown ; abdomen with abundant yellow setae. Ovipositor with the cerci long and slender, gently upcurved to the subacute tips.

Holotype, ♀, Mist Camp, altitude 1,850 metres, January 31, 1939 (*Toxopeus*) ; Alexander Collection.

This handsome fly is most similar in its general appearance to *Paralimnophila* (*Papuaphila*) *euryphaea* (Alexander), of Papua and Northeast New Guinea, differing very evidently in the pattern and venation of the wing. The long vein R_{2+3+4} of the present fly is noteworthy.

Paralimnophila (*Papuaphila*) *angusticincta*, sp. n.

General coloration of thorax testaceous yellow, the pleura clearer yellow ; abdomen with proximal seven segments yellow, segment eight dark brown ; head dark brownish grey ; halteres and legs brown ; wings strongly tinged with brown, veins beyond cord with complete series of macrotrichia from vein R_1 through M_3 , inclusive ; cell M_1 present ; male hypopygium with the tergite large ; inner apical angle of outer dististyle microscopically roughened ; aedeagus strongly dilated before apex.

Male.—Length about 9 mm. ; wing 9 mm. ; antenna about 1.4 mm.

Rostrum and palpi black. Antennae with scape and pedicel testaceous brown, flagellum black ; flagellar segments more slender outwardly, the terminal one about one-third longer than the penultimate. Head dark brownish grey ; anterior vertex relatively broad, nearly four times the diameter of the scape.

Thoracic dorsum chiefly brownish yellow or testaceous yellow ; pseudo-sutural foveae large, infuscated ; posterior sclerites of notum and the pleura more yellowed ; dorsopleural region weakly infuscated. Halteres darkened. Legs with coxae and trochanters brownish testaceous, slightly darker than the pleura ; remainder of legs dark brown, femoral bases restrictedly obscure yellow. Wings (fig. 12) strongly tinged with brown, stigma not or scarcely indicated ; veins brown. Veins beyond cord with complete series of trichia on R_{2+3+4} , R_{2+3} , R_3 , R_4 , R_5 , M_1 , M_2 and M_3 , with a few at ends of R_s and M . Venation : R_{2+3+4} about two-thirds the arcuated basal section of R_5 ; cell M_1 nearly twice its petiole ; $m-cu$

about one-third to one-fourth its length beyond the form of M ; vein 2nd A unusually short, the cell narrow.

Abdomen with the proximal seven segments yellow, the posterior borders of the intermediate segments narrowly more darkened; segment eight dark brown, to form a narrow subterminal ring; hypopygium paler brown. Male hypopygium (fig. 15) with the tergite, t , large, slightly narrowed outwardly, posterior border truncate with the outer lateral angles slightly produced and darkened. Dististyles, d , as in the subgenus; outer style glabrous, its outer apical angle produced into a strong spine, the inner apical part microscopically roughened; inner style with unusually strong setæ on the basal lobule. Phallosome with each gonapophysis, g , relatively stout, gently narrowed into an acute point. Aedeagus, a , elongate, the upper margin strongly dilated before apex.

Holotype, ♂, Araucaria Camp, altitude 800 metres, March 20, 1939 (*Toxopeus*); Alexander Collection.

The most similar described regional species include *Paralimnophila* (*Papuaphila*) *fuscoabdominalis* (Alexander) and *P. (P.) terminalis* (Walker), both differing in the details of colour, especially of the abdomen. In the former species, the macrotrichia of the veins are more restricted, in the medial field lacking behind vein M_2 , there being none on M_3 .