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NEW OR LITTLE-KNOWN TIPULIDÆ
(DIPTERA).—LXXVIII. ORIENTAL-
AUSTRALASIAN SPECIES.

New or little-known Tipulidæ (Diptera). — LXXVIII. Oriental - Australasian Species. By CHARLES P. ALEXANDER, Ph.D., F.R.E.S., University of Massachusetts, Amherst, Massachusetts, U.S.A.

THE novelties discussed herewith are all from New Guinea, where most of them were collected by Miss Lucy Evelyn Cheesman. The general references to Miss Cheesman's stations have been given in the preceding part under this title. The types resulting from this series of specimens are preserved in the British Museum (Natural History). A further lot of material that includes many interesting species was purchased from ex-Captain Harry Hoogstraal, who collected them near Hollandia, Dutch New Guinea, between October 1944 and April 1945. Most of such specimens were taken at trap-lights set in tropical rain-forest, all at altitudes of less than 1000 feet. The types of these latter species are preserved in my personal collection of these flies. I am greatly indebted to Miss Cheesman and to Mr. Hoogstraal for the particular care and attention that they devoted to these fragile insects.

Stibadocera papuana, sp. n.

Thorax yellow, the præscutum with four narrow black stripes; legs black, variegated with snowy white, including the narrow tibial bases, the broad tip of the fore tibia and the outer tarsal segments; wings with a faint brownish-yellow tinge, unpatterned; free tip of Sc_2 atrophied; vein 2nd A equal in length to basal section of Rs , the cell narrow.

Female.—Length about 9 mm.; wing 8·8 mm.; antenna about 2 mm.

Rostrum very reduced, dark chestnut brown; palpi brownish black. Antennæ brownish black; in female flagellar segments long-cylindrical, with scattered coarse setæ that are much shorter than the segments. Head shiny, the front pale; posterior vertex similarly yellow, the broad anterior vertex with a black transverse band behind the antennæ.

Prothorax concealed beneath dense mold. Mesonotal præscutum polished yellow, without punctures; four narrow black stripes, the intermediate pair separated by a ground vitta of subequal width, the stripes ending at near two-thirds the length of the sclerite; lateral stripes widely separated and less evident; posterior sclerites of notum more opaque, the scutal lobes vaguely patterned with irregular brown lines. Pleura polished yellow, the pleurotergal membrane and pleurotergite more yellowish white; a restricted black pattern, most evident on the propleura, sternopleurite and ventral pleurotergite. Halteres long and slender, blackened, knobs elongate. Legs with the coxæ polished yellow, more or less lined with blackish; trochanters yellow; femora blackened, the bases yellow, broadest on the fore legs where it involves nearly one-half the total length of the segment, much narrower on the remaining legs; tibiæ black, the base narrowly whitened; tip of the fore tibia, only, snowy white, including the vestiture and involving nearly the distal sixth of the segment; fore and middle basitarsi dark brown, the extreme tips whitened, the remainder of tarsi white; on posterior legs the basitarsi snowy white on the outer two-fifths, the remaining tarsal segments similarly coloured. Wings with a faint brownish-yellow tinge, entirely unpatterned; veins brown, relatively conspicuous against the ground. Venation Sc_1 ending a short distance before origin of R_s , Sc_2 more than three times as long, placed near its tip; basal section of R_s elongate, the outer section subequal in length to $r-m$, anterior branch of R_s (R_{2+3}) long and sinuous, not quite four times $r-m$; no sign of free tip of Sc_2 ; cell 1st M_2 relatively large, pentagonal, m about three-fifths the basal section of M_3 ; second section of M_{1+2} subequal to the distal section of M_3 ; $m-cu$ at near midlength of M_{3+4} .

subequal to the distal section of Cu_1 ; cell 2nd A unusually narrow, vein 2nd A being about as long as the basal section of Rs .

Abdominal tergites dark brown, the margins of the outer segments broadly more blackened, the surface with vague more bluish reflections; basal sternites darkened, the subterminal ones more yellowed. Ovipositor with a single well-developed pair of valves, evidently the cerci; these latter long and conspicuously blackened, strongly narrowed to the acute tips; dorsal edge microscopically serrulate, the surface flattened and the rows of teeth evidently double, in general appearance suggesting the serrations in the Tenthredinidæ; hypovalvæ reduced.

Hab. Papua.

Holotype, ♀, Mondo, altitude 5000 feet, January–February 1934 (*Cheesman*); No. 149.

This is the first record of the genus or of the subfamily *Cylindrotominæ* from the Papuan subregion. The other described Oriental species are *Stibadocera bullans* Enderlein, *S. fasciata* Edwards, *S. metallica* Alexander, *S. opalizans* Alexander, *S. pumila* Alexander, and *S. quadricellula* (Brunetti). All of these have the free tip of Sc_2 preserved and with the legs uniformly darkened. The variegated legs of the present insect suggest the condition in the allied genus *Stibadocerella* Brunetti, and the narrowed cell 2nd A may indicate an approach to the condition in *Stibadocerella* where vein and cell 2nd A are lacking.

Lechria angustaxillaris, sp. n.

Size medium (wing, male, 7.5 mm.); mesonotum chiefly brownish yellow, unpatterned; legs dark brown, the outer tarsal segments extensively light yellow; wings nearly hyaline; $r-m$ far distad, the second section of vein M_{1+2} and m subequal; cell 1st M_2 long and narrow, exceeding in length the main stem of M ; cell 2nd A narrow; abdomen yellow, the tergites with a transverse dark brown triangle.

Male.—Length about 5.5 mm.; wing 7.5 mm.

Rostrum light yellow; palpi dark. Antennæ brownish black, the pedicel somewhat paler flagellar segments subcylindrical, a little thicker at outer end, slightly exceeding in length the longest verticils. Head holoptic,

anterior vertex lacking; posterior vertex dark brown, sparsely pruinose.

Thorax chiefly brownish yellow, unpatterned, the pleura and pleurotergite pale yellow. Halteres with stem yellow, knob darkened. Legs with the coxæ and trochanters yellow; remainder of legs dark brown, the apical fourth of basitarsi and segments two and three light yellow; outer tarsal segments dark brown. Wings nearly hyaline, the narrow stigmal region darker; costal border as far as wing-tip less evidently darkened, the colour continued basad along the posterior wing border as an even narrower seam, ending about at vein *Cu*; veins dark brown, conspicuous against the ground, those in the prearcular and basal costal field paler brown. Venation: *Sc*₁ ending beyond the fork of *Rs*, *Sc*₂ near its tip; *r-m* connecting with *Rs* about its own length before fork; veins *R*₃ and *R*₄₊₅ approximated at margin, narrowing cell *R*₃; *r-m* far distad, the second section of vein *M*₁₊₂ subequal in length to *m*; cell 1st *M*₂ long and narrow, exceeding in length the main stem of *M*; *m-cu* at near two-fifths the length of cell 1st *M*₂; cell 2nd *A* narrow; anterior arcus weakly preserved.

Abdomen short; tergites yellow, each with a transverse dark brown triangle, the point behind; sternites and hypopygium light yellow.

Hab. Dutch New Guinea.

Holotype, ♂, Hollandia, at light in rain forest, April 20, 1945 (*Hoogstraal*).

Lechria angustaxillaris is entirely different from the previously described members of the genus, particularly in the wing venation, as the shape of cell 1st *M*₂ and the unusually narrow cell 2nd *A*. In the pale outer tarsal segments it agrees with the otherwise very different *L. albidipes* Alexander, of North-east New Guinea, and *L. leucopeza* de Meijere, of Java.

Lechria delicatior, sp. n.

Size small (wing, male, 6 mm.); thoracic dorsum almost uniformly light cinnamon brown, the pleura yellow; legs passing through brownish yellow to brown; wings subhyaline, the costal border more yellowed; *r-m* slightly oblique, about its own length before the fork of *Rs* and

opposite midlength of cell 1st M_2 ; $m-cu$ before one-third the length of cell 1st M_2 ; cell 2nd A relatively wide.

Male.—Length about 4.2 mm.; wing 6 mm.

Rostrum brownish yellow; palpi brownish black. Antennæ with scape brownish yellow; pedicel and flagellum black; flagellar segments nearly cylindrical, with short verticils. Head dark grey, holoptic in male.

Thoracic dorsum almost uniformly light cinnamon brown, the pleura and pleurotergite somewhat clearer yellow. Halteres medium brown, the basal half of stem pale yellow. Legs with all coxæ pale yellow to yellowish testaceous, the tips narrowly darkened; trochanters yellow; femora brownish yellow outer segments darker brown, including the tarsi. Wings subhyaline, the costal border more yellowed; veins brown. Venation angle of shirring at union of veins R_1 and R_2 conspicuous; $r-m$ slightly oblique, about its own length before the fork of R_s and at midlength of cell 1st M_2 , the latter subequal in length to the stem of vein M $m-cu$ less than twice its length beyond the fork of M or before one-third the length of cell 1st M_2 ; cell 2nd A relatively wide, especially on basal half; anterior arcus very pale to subatrophied.

Abdomen short tergites weakly bicoloured, the basal half or less of each tergite brown, the apex obscure yellow sternites and hypopygium yellow.

Hab. Dutch New Guinea.

Holotype, ♂, Hollandia, at light in rain forest, November 23, 1944 (*Hoogstraal*).

Lechria delicatior is closest to *L. rufithorax* Alexander, of Northern Queensland, differing in the small size, paler, more delicate veins, and in details of coloration and venation. In *rufithorax* the tips of the femora are narrowly but conspicuously darkened.

Trichoneura umbrosa, sp. n.

General coloration brownish black, with two longitudinal silvery stripes on thorax, the more dorsal over the pretergites, the lower one across the pleura; legs black, the tarsi paling to obscure yellow wings with a strong blackish tinge; R_{2+3} about four-fifths as long as R_3 alone; $m-cu$ beyond two-thirds the length of cell 1st M_2 .

Female.—Length about 3 mm. wing 3.2 mm.

Rostrum and palpi black. Antennæ black; basal flagellar segments oval, the outer ones passing into cylindrical; verticils long and conspicuous. Head dark grey.

Thorax chiefly brownish black, patterned with whitish or silvery, including the narrow pretergites as far back as the wing root, and a somewhat broader pleural stripe extending from above the fore coxæ to beneath the halteres, including the dorsal sternopleurite. Halteres white, the apex of knob a little more darkened. Legs with the coxæ and trochanters darkened; remainder of legs black, the tarsi paling to obscure yellow. Wings with a strong blackish tinge; veins darker than the ground. Venation Sc relatively short, Sc_1 ending about opposite three-fourths the length of Rs , Sc_2 very close to its tip R_{2+3} about four-fifths as long as R_3 alone; basal section of R_{4+5} and $r-m$ subequal; cell 1st M_2 a little shorter than the distal section of M_3 ; $m-cu$ beyond two-thirds the length of cell 1st M_2 or about its own length before the fork of M_{3+4} cell 2nd A broad; anterior arculus preserved.

Abdomen dark brown. Ovipositor with both the cerci and hypovalves very long and slender, virtually straight.

Hab. Dutch New Guinea.

Holotype, ♀, Hollandia, at light in rain forest, January 10, 1945 (*Hoogstraal*). *Paratopotype*, ♀, January 17, 1945.

Among the various Oriental species hitherto discovered, the present fly is most like *Trichoneura umbripennis* Alexander, of Southern India. The other species, chiefly from Java and the Philippines, have the wings much paler and with other differences. The present insect differs in slight details of coloration of the body and wings and it seems certain that the still unknown male will very probably furnish further and stronger specific characters. The genus had not been recorded from the Australasian Region.

Epiphragma (Epiphragma) fuscoterminalis, sp. n.

Size relatively small (wing, female, 8 mm.); antennæ with the basal three segments yellow, remainder black; mesonotal præscutum with three brownish-grey stripes, bordered on sides with brownish black; legs yellow,

femora with three dark brown rings, the last of which is terminal in position; wings very pale yellow, heavily patterned with dark brown, the areas in the anal cells much reduced; cell 1st M_2 relatively small, less than one-half as long as distal section of vein M_3 .

Female.—Length about 8.5 mm.; wing 8 mm.

Rostrum brownish yellow; palpi dark brown. Antennæ with scape, pedicel and fusion-segment yellow, remainder of flagellum dark brown. Head above yellow, sericeous on front and anterior vertex, more fulvous behind.

Pronotum uniformly pale yellow. Mesothorax partly destroyed by insect pests, but most of the essentials remain; præscutum with three brownish-grey stripes that are virtually confluent, being separated by more yellowish interspaces; lateral border of præscutum brownish black, this colour at anterior end continued inward around the cephalic end of the lateral stripes; scutal lobes similar in colour to the præscutal stripes; postnotum chiefly darkened. Pleura pale brown, the surface sparsely pruinose, more or less patterned with black, more heavily and conspicuously so behind beneath the wing root and on the pleurotergite; ventral sternopleurite darkened. Halteres yellow, the base of knob weakly darkened. Legs with the fore coxæ yellow, the remaining pairs dark brown; trochanters yellow; femora yellow with three conspicuous dark brown rings, the first at near mid-length, the last apical in position, about one-half as wide as the subterminal yellow ring; tibiæ yellow with two narrow brown rings at midlength and on proximal fifth, with indications of a further vague subterminal darkening; tarsi yellow. Wings patterned somewhat as in *fuscodiscalis*, differing in details; ground-colour very pale yellow with a heavy solid brown pattern, with very pale brown to barely evident darkenings surrounding certain of the darkened centres, especially in the costal interspaces, there being no such cloud beyond the stigma, so the semicircular ring here is incomplete on its distal portion; marginal darkenings at ends of longitudinal veins small, not continued backward along the veins as in *fuscodiscalis*; darkenings in anal cells much reduced, when compared to *fuscodiscalis*, especially so in cell 1st A ; darkened discal area more or less interrupted by pale spots. Venation cell 1st M_2 relatively small, less

than one-half as long as the distal section of vein M_3 ; m only a trifle longer and more arcuated than the basal section of vein M_3 ; $m-cu$ almost its own length beyond the fork of M .

Abdominal segments chiefly yellow, the outer ones more or less patterned with light brown, most distinctly so on the outer sternites; cerci relatively short but powerful, gently uncurved to the acute tips; hypovalvæ appearing as very long, strongly compressed blades that extend nearly to the tips of the cerci.

Hab. Papua.

Holotype, ♀, Ishurava, altitude 3000 feet, July 1933 (*Cheesman*); No. 195.

The most similar regional species is *Epiphragma* (*Epiphragma*) *fuscodiscalis* Alexander, of eastern New Guinea, which differs in the coloration of the body, antennæ, legs and wings, as indicated above. All other described Papuan members of the genus have the outer dark femoral ring subterminal in position.

Epiphragma (?) *infracta*, sp. n.

General coloration dark; antennæ short, 11-segmented, the segments oval; femora yellow, the apices dilated and blackened; tibiæ and tarsi uniformly black wings brownish yellow, with a broad brown band at cord, together with additional smaller markings; weak super-numerary cross-veins near outer end of cell C cell R_3 sessile; anterior arculus preserved.

Female.—Length about 10 mm.; wing 8.5 mm.

The unique type is very moldy and the coloration can be described only in the most general terms.

Rostrum dark; palpi black. Antennæ short, apparently only 11-segmented; flagellar segments oval, with verticils that much exceed the segments. Head evidently dark grey.

Thorax black, probably with a grey pruinosity in fresh specimens, more evident on the ventral pleurites. Halteres broken. Legs with all coxæ dark, more or less pruinose; trochanters brownish yellow; femora yellow, the apices more dilated, abruptly blackened, including approximately the outer fifth or sixth; tibiæ and tarsi brownish black, provided with abundant black setæ tibial spurs present. Wings with the ground brownish yellow, the prearcular

and costal areas clearer yellow ; a broad darker brown band at the cord, beginning as two separate seams over the fork of *Sc* and the tip of R_{1+2} , united behind vein *R*, covering all of cell 1st M_2 , thence narrowed to the posterior margin ; very small marginal spots at ends of longitudinal veins, the largest at R_3 , R_4 and 2nd *A* ; additional small dark spots at origin of *Rs* and behind this on vein *M* at near one-third the length ; still smaller spots in cell *C*, some surrounding weak cross-veins, as described later ; no dark area over fork of M_{1+2} ; veins brownish yellow, slightly darker in the patterned portions. Macrotrichia of veins beyond cord relatively numerous on veins R_3 and R_4 , more sparse to lacking on R_5 and the medial veins. Venation : two or three weak cross-veins in cell *C* ; Sc_1 ending shortly beyond the fork of *Rs*, Sc_2 near its tip ; *Rs* long, square and spurred at origin ; cell R_3 sessile, there being a short element R_{4+5} ; cell M_1 subequal to its petiole ; cell 1st M_2 small, pentagonal, with *m-cu* before midlength ; anterior arculus present.

Abdomen black, more or less pruinose. Ovipositor with the cerci yellow horn colour, very long and slender, gently upcurved.

Hab. Dutch New Guinea.

Holotype, ♀, Cyclops Mountains, Sabron, Camp 2, altitude 2000 feet, July 1936 (*Cheesman*).

A very distinct crane-fly whose systematic position is very doubtful. I am referring it to *Epiphragma* merely as a receptacle until more material, particularly the male sex, becomes available. There is a decided possibility that it may belong to the genus *Gynoplistia*, subgenus *Paralimnophila* Alexander, in which case it would represent the greatest reduction in number of antennal segments so far made known. The preserved anterior arculus is more as in *Paralimnophila* than in *Epiphragma* and allies.

Gynoplistia (Gynoplistia) flavizona, sp. n.

Thorax brownish black, subopaque ; antennæ (male) 17-segmented, with 12 branched segments ; head fulvous ; femora yellow, the tips very narrowly darkened, slightly more so on the posterior legs ; wings yellow, patterned with brown, very sparsely so in cells basad of the cord basal four abdominal segments orange, the sides of the

first blackened; succeeding segments opaque black basistyle at apex on mesal face with a small finger-like lobe; dististyle a strongly curved twisted rod; phallosomic apophyses simple.

Male.—Length about 8.8–9 mm. wing 9–9.2 mm.; antenna about 3.6–3.8 mm.

Rostrum and palpi orange. Antennæ (male) 17-segmented, the formula being $2+2+10+3$; scape and pedicel orange; basal flagellar segments with stems yellow, at about midlength of the organ passing through brown to black; all flagellar branches black; longest branch (about flagellar segment five or six) approximately one-half as long as the entire flagellum or from seven to eight times as long as the segment; last branch a little less than twice the segment. Head uniformly fulvous.

Thorax brownish black, subopaque, the mesonotal vestiture small and sparse. Halteres black, the base of the stem reddened. Legs with all coxæ and trochanters black; femora yellow, the tips very narrowly and inconspicuously darkened, more evident on the posterior pair; tibiæ brownish yellow, the tips slightly darker; tarsi brownish black. Wings with the ground-colour yellow, the prearcular and costal fields even more saturated; cells basad of cord unusually free from markings, there being a small quadrate area at origin of R_s , with an even smaller darkening beneath it in cell $1s/A$; further small areas at arculus and at midlength of cell $2nd\ A$; a broad conspicuous brown band at cord, extending from C backward, narrowed behind, especially over $m-cu$ to the margin; cell $1st\ M_2$ solidly darkened or virtually so; wing tip rather narrowly somewhat paler brown, extending basad to the level of the fork of M_{1+2} ; veins dark brown, somewhat paler brown in the pale areas, the basal veins bright yellow. All outer radial veins with setæ, sparse on R_3 and R_4 , abundant and complete on R_5 ; a few on petiole of cell M_1 , the other outer medial veins glabrous. Venation: R_{2+3+4} short, a little more than one-half $r-m$; cell R_2 at margin nearly one-third cell R_3 cell M_1 subequal to its petiole; $m-cu$ about opposite one-third the length of cell $1st\ M_2$; vein $2nd\ A$ strongly sinuous.

Abdomen with the basal tergite orange, blackened on sides; segments two to four, inclusive, opaque orange.

the succeeding segments opaque black, the large hypopygium piceous black with the appendages even more intensely blackened. Male hypopygium with the caudal border of the tergite strongly produced and narrowed, terminating in two small divergent lobes. Basistyle at apex on mesal face with a small finger-like lobe that bears six or seven strong black setæ, some of which are truncated at tips; on mesal face at base with a low cushion that is densely covered with erect yellow setulæ. Dististyle single, apical in position, appearing as a simple strongly curved rod, angularly bent at near midlength, the apex narrowly obtuse; surface glabrous; outer surface at apex microscopically tuberculate or serrulate. Phallosome consisting of twisted lateral apophyses that narrow gradually into acute spines and shorter, nearly straight, spikelike inner apophyses, the latter about twice the length of the weak pale ædeagus.

Hab. Papua.

Holotype, ♂, Kokoda, altitude 1200 feet, September–October 1933 (*Cheesman*) No. 112. *Paratopotypes*, 2 ♂♂ Nos. 101, 112.

The most similar described species is *Gynoplistia* (*Gynoplistia*) *biroana* Alexander, which differs especially in the details of structure of the male hypopygium, particularly of the ninth tergite, armature of the basistyle, and the phallosome.

Gynoplistia (*Gynoplistia*) *flavizona intuta*, subsp. n.

Characters as in the typical form, differing as follows:—Male having the antennæ 18-segmented, the formula being $2+2+12+2$; longest branch about three-fifths the length of the flagellum. Pleura with a pale transverse area occupying the epimeron.

Hab. Western New Guinea.

Holotype, ♂, Njau-limon, south of Mount Bougainville, altitude 300 feet, February 1936 (*Cheesman*). *Allotopotype*, ♀. *Paratopotype*, 1 ♀.

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

Mesonotum blackened, the præscutum and scutal lobes with bluish reflections, the postnotum and pleura heavily grey pruinose; antennæ (male) with nine branched segments; femora yellow, the tips scarcely darkened;

wings hyaline, restrictedly patterned with brown; cell R_3 sessile; abdomen black, with two yellow rings, on bases of segments three and four; male hypopygium with the dististyle apical in position, heavily blackened, unequally bifid at apex; phallosome simple in structure.

Male.—Length about 8 mm.; wing 6 mm.

Rostrum reddish brown; palpi brown. Antennæ (male) 16-segmented, the formula being $2+2+7+5$; scape, pedicel and axes of basal flagellar segments yellow, the nine or ten outer segments and all branches black; longest branch (about flagellar segment five) nearly one-half as long as the entire flagellum. Head brownish black, polished.

Pronotum black, heavily pruinose. Mesonotum almost uniformly black, with bluish reflections, most evident on the præscutum and on the scutal lobes mediotergite pruinose, heavily so on the sides. Pleura and pleurotergite heavily grey pruinose. Halteres short, stem yellowish brown, knob dark brown. Legs with all coxæ black, heavily grey pruinose; trochanters black, the fore pair a trifle brightened; femora yellow, the tips scarcely darkened; tibiæ and basitarsi obscure yellow or brownish yellow; outer tarsal segments uniformly blackened. Wings hyaline, restrictedly patterned with brown, including an arcular darkening a relatively small area over origin of R_s , not involving cell C nor reaching vein M behind; a small vague cloud on vein 1st A , in transverse alignment with the former area; a larger marking at stigma and over the anterior cord, darker in the stigmal portion; posterior cord and outer end of cell 1st M_2 not or scarcely darkened; wing tip paler brown, extending basad nearly to the proximal end of cell M_1 , veins dark brown. Venation Sc relatively short, Sc_1 ending about opposite the fork of R_s , Sc_2 at its tip; R_s relatively long, exceeding in length its anterior branch; cell R_3 sessile, R_{2+3} arising as a separate unit, the element R_{4+5} punctiform to very short; cell M_1 present, subequal in length to its petiole, cell 1st M_2 rectangular, with $m-cu$ just beyond one-fourth the length; vein 2nd A strongly sinuous.

Abdomen black, the basal segments with strong bluish reflections, on the intermediate ones more greenish outer segments and hypopygium more uniformly

blackened ; bases of segments three and four broadly light yellow, producing two conspicuous complete rings, on segment three a little narrower than the darkened apex, on segment four more nearly equal in extent ; basal abdominal segments virtually glabrous, the fifth and succeeding segments with conspicuous black setæ. Male hypopygium with the median region of the tergite produced slightly caudad, the actual apex truncated or very weakly concave. Basistyle with two blackened lobes on mesal face, the more basal one largest ; no apical lobes or spines. Dististyle a powerful curved horn that is unequally split at outer end, the longest or axial spine glabrous, the shorter arm with a few scattered setæ. Phallosome appearing as two simple blades representing the apophyses and a median structure that is expanded at apex into a cordate lobe bearing a blackened flange, with a lacuna on either side of the latter.

Hab. Papua.

Holotype, ♂, Mafulu, altitude 4000 feet, January 1934 (Cheesman).

Gynoplistia (*Gynoplistia*) *dixantha* is a very distinct species, superficially most like *G. (G.) chalybeata* Alexander, differing very conspicuously in all details of coloration of the body, legs and wings.

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

Allied to *perjucunda* ; mesonotum brownish fulvous, with no indication of markings ; pleura dark reddish fulvous, the mesepimeron more pruinose ; antennæ (female) 16-segmented, with seven branched segments femora yellow, the tips narrowly blackened ; wings very pale yellow, including cells *C* and *Sc* ; a restricted brown pattern, the largest area a complete band at cord, narrowed and paler behind cell *M*, lacking ; abdomen polished fulvous, the seventh segment black.

Female.—Length about 8 mm. ; wing 8 mm.

Rostrum very short, fulvous ; palpi yellow. Antennæ (female) 16-segmented, the formula being $2+2+5+7$; scape and pedicel yellow ; axes of proximal two or three flagellar segments more or less yellowed at the incisures, the remaining segments and all branches black ; longest branch (about flagellar segment four) nearly four times the segment. Head polished fulvous.

Pronotum orange. Mesonotum brownish fulvous, the surface more or less polished, with no indication of brown stripes or transverse areas. Pleura and pleurotergite dark reddish fulvous, the mesepimeron somewhat more pruinose. Halteres with stem yellow, brightest on proximal third, knob brownish black. Legs with all coxæ and trochanters fulvous yellow; femora yellow, the tips rather narrowly but conspicuously black, on the fore legs, including about the outer tenth; tibiæ and tarsi black. Wings with the ground-colour very pale yellow, including cells *C* and *Sc*; a restricted brown pattern, including small darker areas at arculus and origin of *Rs*, and a larger but narrow band extending from the stigma across the wing at the cord, becoming paler behind; similar paler brown areas include the wing tip, outer end of cell 1st M_2 and a spot at near two-thirds the length of vein 1st *A*; veins brown, a trifle darker in the patterned areas. Relatively sparse and scattered macrotrichia on all outer radial branches, lacking on the medial ones. Venation *Rs* long, strongly angulated at origin, *Sc*₁ ending opposite fork of *Rs*, *Sc*₂ at its tip; *R*₂₊₃₊₄ very short, cell *R*₃ virtually sessile; vein *R*₂₊₃ nearly perpendicular and angulated at origin; *Rs* in alignment with *R*₄; cell *M*₁ lacking; *m-cu* at near one-third the length of cell 1st M_2 ; vein 2nd *A* strongly sinuous.

Abdomen polished fulvous, the intermediate tergites more or less darkened, possibly due to a discoloration; basal sternites yellow seventh segment uniformly black; succeeding segments, including the genital shield, fulvous.

Hab. Papua.

Holotype, ♀, Mafulu, altitude 4000 feet, January 1934 (*Cheesman*).

The most similar regional species is *Gynoplistia* (*Gynoplistia*) *perjucunda* Riedel, which differs in the colour pattern of the body and wings. In the female sex of this latter species the dark pattern of the wing is very extensive, reducing the yellow ground.

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

Generally similar to *perjucunda*; antennæ (male) with 14 branched segments; thorax orange, with two transverse black girdles that completely encircle the body,

the first at the level of the mesepisternum, the second at the level of the pleurotergite, the mesepimeron silvery; posterior femur with a broad subbasal black ring, followed by a yellow one of subequal width; wings pale yellow, heavily patterned with brown; cell M_1 lacking; abdomen black, ringed with orange-yellow; phallosome of hypopygium consisting of three pairs of slender blackened rods.

Male.—Length about 8.5–9 mm.; wing 8–9 mm.
antenna about 3.5–4 mm.

Rostrum orange; palpi yellow. Antennæ (male) 18- or 19-segmented, the formula $2+2+12+2$ or $2+2+12+3$; scape and pedicel chestnut brown; stems of the proximal three or four flagellar segments yellow at the incisures, the remainder of the organ, including the branches, black; longest branches, at near midlength of organ, about one-half as long as the entire flagellum. Head orange.

Pronotum and mesonotum orange, the latter with two narrow black transverse girdles, the anterior one occupying the posterior half of the præscutum, crossing the dorso-pleural membrane and involving the entire mesepisternum and mesosternum; posterior girdle including the cephalic half of mediotergite, continued ventrad over the pleurotergite, metapleura and meron, on the pleura the two dark transverse areas separated by a slightly narrower silvery band on the mesepimeron; scutum and scutellum orange; propleura orange. Halteres with stem yellow, knob blackened. Legs with all coxæ black or brownish black; trochanters testaceous yellow fore and middle femora obscure yellow, the tips narrowly darkened; tibiæ brownish black; tarsi black, posterior femora with the extreme base yellow, followed by a broad blackish ring that occupies about two-fifths the length of the sclerite; a broad yellow subterminal ring of subequal width, the narrow tip blackened; tibiæ and basitarsi obscure brownish yellow, the tips and remainder of tarsi darkened. Wings with the ground pale yellow, with a heavy brown pattern; anterior prearcular field and cells C and Sc uniformly brownish black; a small confluent dark area at origin of Rs and a major one over the region of the stigma and anterior cord, narrowed behind; isolated dark spots over outer end of cell 1st M_2 , at two-thirds the length of vein 1st A and at near midlength of vein 2nd A

wing tip broadly paler brown, the pattern continued basad along the posterior border, becoming very narrow in the anal field; veins brown, scarcely darker in the patterned areas. All outer radial veins and the distal section of vein M_{1+2} with numerous trichia. Venation Sc_1 ending about opposite the fork of R_{2+3+4} , Sc_2 at its tip; R_{2+3+4} about twice $r-m$; anterior branch of Rs lying close to and generally parallel to R_{1+2} ; cell M_1 lacking; $m-cu$ shortly before midlength of cell 1st M_2 ; vein 2nd A very strongly sinuous.

Abdomen ringed with orange-yellow and black, the yellow including the first segment, base of the second, and the broad bases of segments three to five, inclusive, on the fifth segment very extensive, on sternites three and four more narrowed; outer segments, including hypopygium, black, with slight purplish reflections. Male hypopygium with the posterior border of tergite broadly truncate. Basistyle relatively slender, unarmed, with long setæ. Dististyle apical, a blackened gently curved rod that narrows gradually to the obliquely truncated tip. Phallosome consisting of three pairs of blackened apophyses, the innermost very slender, bent strongly inward beyond midlength; the longest pair appear as stout simple horns that narrow very gradually into slender spines; smallest apophyses appearing as black horns, the tip curved into a spine. Ædeagus very small and slender.

Hab. Papua.

Holotype, ♂, Kokoda, altitude 1200 feet, September-October 1933 (*Cheesman*); No. 101. *Paratopotypes*, 2 ♂♂ No. 112.

Gynoplistia (*Gynoplistia*) *neojucunda* is most similar to *G. (G.) perjucunda* Riedel, which has the thoracic pattern somewhat the same. The present fly differs in the much larger size and in the coloration of the body, legs and wings.

Teucholabis (*Teucholabis*) *gorana*, sp. n.

Mesonotum reddish yellow, the posterior half of præscutum with two major black areas that are separated by a narrow ground vitta; halteres obscure yellow; fore femora yellow, the outer fourth black, middle and hind

femora yellow with a narrow brown ring just beyond midlength; wings obscure yellow, patterned with brown, including the broad tip; abdomen orange, the hypopygium abruptly blackened; male hypopygium with the basistyles obtuse, unarmed; inner dististyle branched.

Male.—Length about 4 mm.; wing 4.3 mm.

Rostrum relatively long and slender, blackened; palpi brownish black. Antennæ brownish black; flagellar segments oval, with long verticils. Head with central portion of vertex darkened, the remainder more reddened.

Prothorax reddish yellow. Mesonotum reddish yellow, the posterior half of præscutum on either side of a narrow pale median line polished black, scarcely reaching the suture behind, extending to the lateral border. Pleura and pleurotergite reddish yellow. Halteres obscure yellow. Legs with the coxæ and trochanters yellow; fore femora yellow, the outer fourth black; middle and hind femora yellow, with a narrow brown ring just beyond midlength, the apex on upper surface weakly darkened fore tibiæ and tarsi black; middle, and especially the posterior, tibiæ paler on basal half or more. Wings distorted, obscure yellow, patterned with brown, including a narrow complete band at cord and the much wider wing tip, the inner edge of the latter band lying at about midlength of cell 2nd M_2 a further brown spot in base of cell M ; veins brown, somewhat darker in the patterned portions. Costal fringe (male) of moderate length. Venation Sc_1 ending just beyond midlength of R_s R_{2+3+4} and R subequal, a little less than R_{+1} branches of R_s extending generally parallel to one another almost to their tips; cell 1st M_2 long, subequal to the distal section of M_{+1} . $m-cu$ less than its own length beyond the fork of M .

Abdomen orange-yellow, only the hypopygium brownish black. Male hypopygium with the basistyles obtuse, unarmed, the dististyles subapical in position. Outer style a simple curved blackened hook, the tip acute. Inner dististyle larger, likewise strongly curved, terminating in a sharp spinous point, near base bearing a strong lateral arm that is approximately one-half as long as the style, its apex suddenly acute.

Hab. Papua.

Holotype, ♂, Gora, with no further data ; United States National Museum.

Teucholabis (*Teucholabis*) *gorana* is most similar to *T. (T.) delandi* Alexander, differing conspicuously in the coloration of the thorax, abdomen and wings, and in the structure of the male hypopygium.

Teucholabis (*Teucholabis*) *biarmillata*, sp. n.

Mesonotal præscutum yellow with three confluent polished black stripes ; femora yellow, each with two black rings, the apical one slightly broader ; wings whitish subhyaline, without pattern ; costal fringe (male) long and conspicuous ; cell 1st M_2 very long and narrow, the distal section of vein M_{1+2} shorter than the second section ; abdominal tergites more or less bicoloured ; subterminal segments yellow hypopygium very small, shiny black.

Male.—Length about 4.8 mm. ; wing 5 mm.

Rostrum brownish piceous, only a little shorter than the remainder of head ; palpi black. Antennæ with scape and pedicel obscure yellow remainder of organ broken. Head in front black, pruinose, the posterior vertex and occiput more yellowed.

Pronotum brownish black medially above, more reddened on sides. Mesonotal præscutum yellow with three confluent polished black stripes that isolate yellow humeral triangles and a central spot at suture ; scutal lobes blackened ; scutellum more reddish brown ; medio-tergite chiefly blackened, the sides and the pleurotergite more reddened. Pleura chiefly reddish brown, the centre of the mesopleura more or less darker brown. Halteres with the short stem dusky, the large knob yellowed. Legs with the coxæ and trochanters reddish yellow ; femora yellow, each with two conspicuous black rings, the outermost including the tip ; inner ring narrower, separated from the apex by somewhat more than its own width ; tibiæ yellowish brown, the tips darker ; tarsi passing into black. Wings whitish subhyaline, unpatterned, even lacking a stigmal area ; veins obscure yellow, those along cord a trifle more darkened ; costa pale luteous. Costal fringe long and conspicuous, black. Venation : Sc long, Sc_1 ending about opposite three-fifths

R_s ; R and R_{2+3+4} subequal; cell 1st M_2 very long and narrow, the veins beyond it correspondingly short; distal section of M_+ shorter than the second section; $m-cu$ less than its own length beyond the fork of M .

Abdominal tergites more or less bicoloured, brown, the bases of the intermediate segments restrictedly obscure yellow; sternites more uniformly pale; subterminal segments yellow; hypopygium very small, shiny black.

Hab. Papua.

Holotype, ♂, Kokoda, altitude 1200 feet, July 1933 (*Cheesman*).

Teucholabis (*Teucholabis*) *biarmillata* is quite distinct from all other regional members of the genus in the pattern of the femora, and in the unmarked wings.

Molophilus (*Molophilus*) *perproductus*, sp. n.

Belongs to the *plagiatus* group; mesonotum light reddish yellow, the mediotergite deepening to brown; head, halteres and legs yellow; wings broad, tinged with yellow, the trichia and veins pale yellow; male hypopygium with the beak of the basistyle short and stout, blackened; basal dististyle produced into an unusually long slender spine, the opposite outer angle with three or four teeth; phallosomic plate densely setuliferous.

Male.—Length about 4.5 mm.; wing 6 mm.

Rostrum yellowish brown; palpi black. Antennæ moderately long, if bent backward apparently extending about to the wing root; scape and pedicel light yellow, flagellum pale brown; flagellar segments elongate, with long verticils that much exceed the segments in length. Head pale yellow.

Pronotum pale yellow. Mesonotum light reddish yellow, the pretergites and humeral region of præscutum light yellow, mediotergite deepening to brown. Pleura with a pale brown dorsal stripe that becomes confluent behind with the darkened postnotum, the ventral pleurites yellow. Halteres yellow. Legs with all coxæ and trochanters yellow; remainder of legs yellow, the outer tarsal segments infuscated; fore tibia without a darkened subbasal ring. Wings broad, tinged with yellow trichia and veins pale yellow, inconspicuous against the ground; costal fringe relatively short but dense. Venation: R_2 lying just beyond the level of $r-m$; petiole of cell M_3

about twice *m-cu*; vein 2nd *A* moderately sinuous, ending about opposite the cephalic end of the oblique *m-cu*.

Abdomen obscure yellow, the tergites with a more or less distinct brown central stripe; hypopygium yellow, the styli black. Male hypopygium with the beak of the basistyle short and stout, blackened. Outer dististyle unequally bifid, the outer arm a slender spine, the inner a more flattened sinuous blade, both arms black. Basal dististyle appearing as an unusually long slender black spine and a broader lobe, at apex of outer margin bearing three or four spines; near base of enlarged portion of style with a stout paler lobe. From the unique type it appears that the shape of the basal dististyles of the two sides may be slightly different, one showing four spines, the other three. Phallosomic plate suboval, the apex slightly truncated, the surface very densely covered with delicate erect pale setulæ. Ædeagus slender, straight.

Hab. Papua.

Holotype, ♂, Mount Tafa, altitude 9000 feet, March 1934 (*Cheesman*).

This is the first member of the *plagiatus* group to be described from New Guinea. It is abundantly distinct from the very numerous members of the group now known from either Australia or New Zealand, differing particularly in the somewhat remarkable basal dististyle of the male hypopygium, as described.

Molophilus (*Molophilus*) *kokodanus*, sp. n.

Belongs to the *gracilis* group, *ruficollis* subgroup; antennæ short in both sexes; legs brown, the extreme tips of the femora paler; wings weakly patterned; male hypopygium with the outer dorsal lobe of basistyle short, the dististyles virtually apical in position; outer dististyle a sinuous black rod, the inner style pale, sinuous, unequally bifid at apex.

Male.—Length about 4.5 mm. wing 4.8–5 mm.; antenna about 1 mm.

Rostrum brown; palpi darker brown. Antennæ short scape brown, remainder of organ darker brown flagellar segments oval. Head light brown.

Pronotum brown, the scutellum paler. Mesonotum dark brown, sparsely pruinose, the humeral triangles

conspicuously yellow. Pleura similarly brown, pruinose; dorsopleural membrane weakly darkened. Halteres yellow. Legs with the coxæ and trochanters yellow; femora dark brown, the extreme tips paler; tibiæ and tarsi dark brown. Wings with a weak yellowish tinge; cord and a more or less distinct area at near midlength of vein 2nd *A* pale brown; veins yellowish brown, macrotrichia darker. Venation R_2 lying just beyond the transverse level of $r-m$; $m-cu$ only a little shorter than the petiole of cell M_3 ; 2nd *A* sinuous, ending about opposite the posterior end of $m-cu$.

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

Hab. Papua.

Holotype, ♂, Kokoda, altitude 1200 feet, August 1933 (*Cheesman*); No. 89. *Paratopotype*, ♂, June–July 1933 (*Cheesman*); No. 132. *Paratype*, ♂, Mount Tafa, altitude 8500 feet, March 1934 (*Cheesman*); No. 174.

Very different from the other members of the subgroup in this region, especially in the patterned wings and in the structure of the male hypopygium. The paratype is considerably larger (length about 6 mm.; wing 6.5 mm.) and with slight differences in the hypopygium, particularly the outer dististyle where the apical point is longer, the subapical spine blackened. I do not consider it to be subspecifically distinct.

Molophilus (Molophilus) bifilamentosus, sp. n.

Belongs to the *gracilis* group, *ruficollis* subgroup; size medium (wing, male, 4.5 mm.); general coloration, of thorax dark brown, pruinose, the pleura more heavily so; antennæ short halteres pale yellow legs brown; wings subhyaline; male hypopygium with the outer dististyle very long and slender, unequally bifid at apex;

basal dististyle profoundly bifid into two needle-like spine that are slightly unequal; ædeagus a powerful blackened rod, before the short filamentous tip with a crown of spinous points.

Male.—Length about 4 mm. wing 4.5 mm. antenna about 0.55 mm.

Rostrum dark brown palpi brownish black. Antennæ (male) short, as shown by the measurements; scape and pedicel dark brown, the more proximal flagellar segments paler, the outer ones again passing into brown; flagellar segments oval, the longest verticils unilaterally distributed, more than twice the segments. Head brownish grey.

Pronotum obscure brownish yellow, the scutellum and pretergites clearer yellow. Mesonotum almost uniformly dark brown, with a sparse grey pruinosity; præscutal setæ few but very long and conspicuous. Pleura more strongly pruinose. Halteres uniformly pale yellow. Legs with the coxæ brown; trochanters yellow remainder of legs brown, the longer powerful posterior femora somewhat darker brown. Wings subhyaline; veins brownish yellow; trichia darker brown. Venation *m-cu* nearly one-third the petiole of cell M_3 ; vein 2nd *A* ending shortly beyond the level of the cephalic end of *m-cu*.

Abdomen dark brown. Male hypopygium with the ventral lobe of basistyle produced into a stout finger-like lobe, the mesal face with abundant erect setulæ. Both dististyles arising close together, the outer very long and slender, strongly sinuous at base, bifid at tip, the inner arm a pale triangular blade. Basal dististyle profoundly bifid into two needle-like spines, the outer longer, extending caudad about to the end of the outer style, the inner arm about three-fourths as long, more expanded on basal half, the surface with a few scattered setigerous punctures. Ædeagus a very powerful blackened rod, at apex with a crown of several short acute points, beyond which extends for a short distance a slender filamentous portion. Phallosomic structure broad, the margin not clearly defined, the surface more or less scalloped. Region of ninth tergite produced caudad into a central lobe.

Hab. Papua.

Holotype, ♂, Mount Tafa, altitude 8500 feet, March 1934 (*Cheesman*); No. 167.

The present fly is very different in hypopygial structure from all previously described members of the subgroup. The only one that is at all similar is *Molophilus* (*Molophilus*) *kokodanus*, sp. n., described previously.

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

Size very large (wing, female, over 8 mm.); rostrum subequal in length to the wing; mesonotum yellowish grey, the dorsal pleura with a broad brownish black dorsal stripe; legs brown; wings brownish yellow, heavily patterned with brown; anterior branch of *Rs* nearly transverse; cell M_2 open by the atrophy of *m*.

Female.—Length, excluding rostrum, about 8–8.5 mm.; wing 8.2–8.8 mm.; rostrum about 8.5–9 mm.

Rostrum very long and slender, subequal in length to the wing, dark brown throughout. Antennæ black, the pedicel grey at apex. Head grey or brownish grey, the front paler anterior vertex (female) about equal in width to the diameter of scape.

Cervical region and pronotum dark brown. Mesonotal præscutum yellowish grey with four conspicuous brown stripes, the intermediate pair separated only by a capillary grey vitta; lateral præscutal borders grey; scutal lobes conspicuously dark brown, the median area yellow or pale brown; posterior sclerites of notum paler brown, the mediotergite more yellowed behind. Pleura with a broad conspicuous brownish black dorso-longitudinal stripe ventral pleurites yellow, more or less grey pruinose. Halteres yellow. Legs with the coxæ and trochanters yellow, the fore coxæ a trifle darker; remainder of legs brown, the femoral bases restrictedly yellow. Wings with the ground brownish yellow, heavily patterned with brown, including a major postarcular area and a spot completely crossing cell *R* just before the origin of *Rs*; a nearly continuous narrower brown seam over the cord and anterior branch of *Rs*; more longitudinal streakings in cells *Cu* and 1st *A*; cells *C* and *Sc*, with the outer radial field, less evidently darkened; most of the veins in the ground areas very narrowly bordered by brown; veins brownish yellow, darker in the clouded portions. Venation anterior branch of *Rs* nearly transverse, more than twice as long as the basal section of R_5 ; cell M_2 open by the atrophy of *m* *m-cu* just before the fork of *M*.

Abdominal segments obscure yellow to reddish brown, the posterior borders darker brown; genital shield obscure yellow. Ovipositor with cerci very long and slender, gently upcurved at tip.

Hab. Dutch New Guinea.

Holotype, ♀, Mount Lina, Cyclops Mountains, altitude 3500–4500 feet, March 1936 (*Cheesman*). *Paratopotype*, 1 ♀, March 1936.

This striking species requires little comparison with other regional members of the subgenus. The great size and heavily patterned wings readily separate it from the nearest allied forms, such as *Toxorhina* (*Ceratocheilus*) *biroi* Alexander.

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

Size large (wing, female, 6.5 mm. or more); rostrum longer than the wing; mesonotum almost uniformly light reddish brown, contrasting abruptly with a broad black dorsopleural stripe; legs brown, the outer tarsal segments paling to obscure yellow wings with a weak brownish tinge, vaguely patterned with darker; anterior branch of *Rs* nearly erect, straight; cell *M* open by the atrophy of *m*; abdominal tergites uniformly brownish black.

Female.—Length, excluding rostrum, about 9.5–10 mm. wing 6.5–6.8 mm.; rostrum about 7.5–7.6 mm.

Rostrum dark brown, longer than the wing. Antennæ black, the outer flagellar segments broken basal fusion segment compact. Head brownish grey, the anterior vertex and orbits clearer grey anterior vertex narrow, less than the diameter of scape.

Cervical region and pronotum black. Mesonotum almost uniformly light reddish brown, unpatterned, bordered ventrally by a very broad dorsopleural black stripe that occupies the entire upper half or more of the pleura; ventral pleurites pale yellow, more or less pruinose. Halteres dusky. Legs with all coxæ and trochanters yellow; remainder of legs brown, the outer tarsal segments paling to obscure yellow. Wings with a weak brownish tinge, the origin of *Rs* and anterior branch of *Rs* vaguely and diffusely clouded with slightly darker brown; prearcular and costal fields more brownish yellow; veins brown. Venation *Sc*₁ ending nearly opposite midlength of *Rs*, *Sc*₂ far from its tip, only a short

distance beyond the origin of *Rs* ; anterior branch of *Rs* straight or virtually so, nearly erect, fully half as long as *Rs* ; vein *R*₅ deflected caudad, terminating at the wing tip ; cell *M*₂ open by the atrophy of *m* ; vein *M*₄ short, subequal to or shorter than the distal section of vein *M*₃₊₄ ; *m-cu* from about two-thirds to a little less than its own length beyond the fork of *M* cell 2nd *A* relatively wide.

Abdominal tergites brownish black, the sternites a trifle paler. Genital shield of ovipositor paler brown ; bases of hypovalvæ blackened ; valves of ovipositor elongate, slender, especially the cerci.

Hab. Dutch New Guinea.

Holotype. ♀, Hollandia, at light in rain forest, November 24, 1944 (*Hoogstraal*). *Paratopotype*, ♀, January 17, 1945 (*Hoogstraal*).

I take great pleasure in naming this fine species for Mr. Hoogstraal, to whom I am greatly indebted for many fine Tipulidæ. The species almost rivals *Toxorhina* (*Ceratocheilus*) *imperatrix*, sp. n., in size, despite the smaller wings. In all regards it is quite distinct from this fly and from all others so far made known from New Guinea.