

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

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IN the present paper I am discussing part of the materials taken on the Third Archbold Expedition to the Snow Mountains of Netherlands New Guinea by the Entomologist, Dr. Lambertus Johannes Toxopeus. A discussion of the itinerary of the expedition, the chief collecting stations, and other matters of interest are provided in the preceding part of this series of reports. The species here treated all belong to the great antipodal genus *Gynoplistia* Westwood which evidently is very rich in species in New Guinea. Through the kindness of Dr. M. A. Lieftinck and the other authorities of the Leiden Museum I am privileged to retain the types of various species that are represented by unique specimens, such species being indicated in the text by the words "Alexander Collection". Types of other species and other materials are preserved in the Government Museum of Natural History, Leiden, and in the American Museum of Natural History, New York.

Gynoplistia (Gynoplistia) echionis, sp. n.

General coloration of head and thorax fulvous yellow; abdomen with basal five segments orange, the outer ones purplish black; antennæ of female 16-segmented, with eight branched segments, the longest branch approximately four times the segment; legs yellow, the tips of the femora narrowly darkened, outer tarsal segments brownish black; wings almost uniformly brown, the prearcular field yellow; cell M_1 present.

Female.—Length about 11–11.5 mm.; wing 10–10.5 mm.

Rostrum brown, with long coarse yellow setæ; palpi dark reddish brown. Antennæ of female 16-segmented, the formula 2+2+6+6; scape and pedicel reddish yellow, succeeding segments bicoloured, the incisures yellow, branches dark brown, the axis at their origins paler brown; outer simple segments pale brown; branch of second flagellar segment nearly twice the segment itself; longest branch (about flagellar segments five or six) nearly four times the segment. Head fulvous yellow, shiny; anterior vertex broad.

Thorax uniformly fulvous yellow, unpatterned; vestiture of notum yellow, sparse. Halteres yellow. Legs with the coxæ and trochanters fulvous; trochanters yellow; femora yellow, the tips very narrowly and weakly darkened; tibiæ and proximal two tarsal segments obscure yellow, the outer segments brownish black. Wings (fig. 1) broad, ground colour almost uniformly brown, virtually unpatterned, the costal border and a vague cloud over the anterior cord more darkened; prearcular field abruptly light yellow. Outer radial veins and anterior branch of M

* Contribution from the Entomological Laboratory, University of Massachusetts.

with macrotrichia. Venation: Sc_1 ending about opposite the fork of R_s , Sc_2 near its tip; R_{2+3+4} about one-half the arcuated basal section of R_5 ; R_{1+2} and R_2 pale and weak; cell M_1 subequal to its petiole; $m-cu$ at near one-third to one-fourth the length of cell 1st M_2 ; vein 2nd A strongly sinuous.

Abdomen with basal five segments orange, the outer ones purplish black; base of genital shield deeper black. Ovipositor with apex of genital shield and the cerci horn coloured, hypovalvæ darker.

Hab. Netherlands New Guinea.

Holotype, ♀, Araucaria Camp, altitude 800 metres, March 12th, 1939 (*Toxopeus*). *Paratype*, ♀, Rattan Camp, altitude 1,200 metres, February 17th, 1939 (*Toxopeus*).

The only approximately similar regional species is *Gynoplistia* (*Gynoplistia*) *albizonata* Alexander, which has the thorax and wings much the same but the legs and abdomen entirely different.

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

General coloration of entire body black, light grey pruinose, more heavily so on the thoracic pleura and proximal segments of abdomen; antennæ of male with seven or eight branched segments, the branches short; bases of femora yellow, the tips blackened, more broadly so on the fore legs; wings conspicuously bicoloured, with more than the proximal half obscure yellow, the outer part, including the cells beyond cord, dark brown, the pale basal part slightly patterned with brown; outer medial veins glabrous; cell M_1 deep, about twice its petiole; male hypopygium with the single dististyle flattened, at apex narrowed into a stout point; gonapophysis appearing as a simple blade, its outer third extended into an exceedingly slender straight spine.

Male.—Length about 9 mm.; wing 8 mm.; antenna about 2 mm.

Rostrum black, heavily grey pruinose; palpi brownish black. Antennæ of male short, 16-segmented, the formula being $2+2+5+7$ or $2+2+6+6$; black, the incisures of the more proximal flagellar segments restrictedly obscure yellow; flagellar branches relatively short, the longest (about flagellar segment five or six) approximately twice the segment; outer simple segments subglobular to short-oval, the terminal one about one-half longer than the penultimate; eighth flagellar segment simple or with a short spur, as indicated in the above formulæ. Head transverse, broad, black, pruinose; anterior vertex unusually broad, about four times the diameter of the scape.

Pronotum brown, heavily light grey pruinose. Mesothorax black, heavily pruinose, to give a grey appearance, very heavily so on the pleura; pseudosutural foveæ black. Halteres short, stem brown, knob dark brown. Legs with the coxæ heavily light grey pruinose; trochanters brownish black; femora black, the bases broadly obscure yellow, on the fore legs including nearly the proximal third, on the hind legs about two-thirds; fore tibiæ dark brown, the tips still darker, posterior tibiæ obscure yellow, with about the apical fifth dark brown; tarsi black.

Wings (fig. 2) conspicuously bicoloured, with slightly more than the proximal half obscure yellow, the outer part, from just before cord to the tip, dark brown; stigma inconspicuous, a trifle darker; cells *C* and *Sc* dark brown, the latter slightly more so; in the pale basal portion, small dark areas occur in base of cell *R*, at origin of *Rs*, and in about the proximal half of cell *Cu*; posterior arcular field slightly yellowed, including the veins; remaining veins brownish black. Veins beyond cord unusually glabrous, including *R*₄ and the entire outer medial field, veins *R*₃₊₄, *R*₃ and *R*₅ with small trichia. Venation: *Sc* short, *Sc*₁ ending opposite or just before the fork of *Rs*, *Sc*₂ near its tip; *R*₂₊₃₊₄ short; base of vein *R*₂₊₃ atrophied or subobsolete; cell *M*₁ deep, about twice its petiole; cell 1st *M*₂ relatively small, with *m-cu* at near midlength; vein 2nd *A* very strongly sinuous.

Abdominal tergites purplish black, light grey pruinose, especially on the more proximal segments; hypopygium black. Male hypopygium (fig. 4) with the inner apical lobe of the basistyle, *b*, much smaller than the dististyle, broad-based, the glabrous apical third narrowed into an acute spine; inner apical lobe obtuse, with long coarse setæ. Dististyle, *d*, flattened, the outer margin at base with strong setæ, the remaining surface with delicate scattered microscopic setulæ and a few pale punctures; apex narrowed into a stout spinous point. Gonapophyses, *p*, appearing as simple divergent spines, broader basally, the outer third exceedingly slender.

Hab. Netherlands New Guinea.

Holotype, ♂, Lower Mist Camp, altitude 1,500 metres, January 28th, 1939 (*Toxopeus*); Alexander Collection.

Among the regional species having the wing pattern dimidiata, the present fly is most similar to *Gynoplistia* (*Gynoplistia*) *evelynæ* Alexander, of Papua, agreeing well in the pattern and venation of the wings, differing conspicuously in the body coloration and in the structure of the antennæ and male hypopygium.

Gynoplistia (*Gynoplistia*) *scimitar subscimitar*, subsp. n.

Male.—Length about 11–11.5 mm.; wing 9 mm.; antenna about 3.8 mm.

Generally similar to typical *scimitar* Alexander (Edie Creek, North-east New Guinea, 6,550 feet, February 1935, collected by F. H. Taylor), differing in details of coloration and slight characters of the hypopygium.

Tips of fore femora extensively blackened, the colour involving about the outer eighth of the segment; tips of middle and posterior femora more extensively blackened, on the latter including the about distal seventh; posterior femora more or less darkened on proximal half, in cases being distinctly infuscated. Male with the hypopygium more blackened, especially the dististyle. Apical lobe of basistyle larger and more bladellike. Both races have the paired lobes on the posterior border of the ninth tergite but in slide mounts these tend to become decurved and less evident.

Hab. Netherlands New Guinea.

Holotype, ♂, Sigi Camp, altitude 1,500 metres, February 17th, 1939 (*Toxopeus*). *Paratopotypes*, 2 broken ♂♂.

Gynoplistia (Gynoplistia) wilhelmina, sp. n.

Size large (wing of male 14–19 mm.); antennæ of male 17 to 19-segmented, with from 13 to 15 long-branched segments; head and thorax conspicuously pruinose; knobs of halteres dark brown; legs brown to dark brown; wings whitish subhyaline, patterned with brown; male hypopygium with the basistyle terminating in two acutely pointed lobes, the dististyle lying in the notch; phallosome with the lateral gonapophyses very strong, incurved; margin of ædeagus with a small straight spine on either side; female subapterous, wings about one-half as long as the body, legs of female conspicuously hairy.

Male.—Length about 13–17 mm.; wing 14–19 mm.; antenna about 4.5–5 mm.

Female.—Length about 13.5 mm.; wing 6 mm.

Male. Rostrum brownish yellow; palpi black. Antennæ 17 to 19-segmented, the formula being $2+2+11+2$ to $2+2+13+2$; antennæ black throughout, or in cases, with the scape and pedicel slightly more brightened; longest branches about three-fifths as long as the flagellum, last branch much shorter than the segment; branches of basal two flagellar segments subequal in length, slightly less than three times the segment; terminal segment longer than the penultimate. Head reddish brown to darker brown, sparsely pruinose, more heavily so in front.

Pronotum chestnut brown. Mesonotal praescutum opaque, broadly chestnut in front and on sides, disc grey with four brown stripes, the intermediate pair very narrowly separated; scutal lobes dark brown, grey pruinose; scutellum and postnotum chestnut brown. Pleura chestnut brown, very heavily grey pruinose. Halteres with stem pale yellow, knob dark brown. Legs with coxæ darkened, grey pruinose; trochanters brown; femora brown, in cases with the tips more darkened; remainder of legs brown to dark brown; vestiture of legs relatively short and inconspicuous, the outer femoral setæ less than one-half the diameter of the segment. Wings (fig. 3) with the ground whitish subhyaline, patterned with brown, including areas at arculus, origin of *Rs*, stigma and anterior cord, and more narrowly over the posterior cord, outer end of cell 1st M_2 , and as still narrower seams over most veins behind the radial field; cell *C*, *Sc*, outer end of radial field and the apices of the Anal cells paler brown; in more heavily patterned individuals with darkened areas at near midlength of both Anal veins; veins brown, lighter brown in the anterior fields of wing. Macrotrichia of wing veins unusually sparse, with series on veins R_{2+3+4} , R_{2+3} , R_4 and R_5 , lacking in medial field behind vein M_1 . Venation: *Rs* long; cell M_1 present, usually subequal to or longer than its petiole, in cases shorter; *m-cu* at or before midlength of cell 1st M_2 .

Abdomen usually brownish yellow, the basal tergal rings somewhat brighter yellow, in cases the colour more uniform ; posterior borders more or less darkened ; sternites more uniformly brownish yellow ; a narrow brownish black subterminal ring, involving chiefly the eighth segment ; hypopygium castaneous. Male hypopygium (fig. 5) with the tergite very large, the posterior border convexly rounded. Basistyle, *b*, with two apical lobes, both pointed and setiferous, one more slender. Dististyle, *d*, slender, the apical emargination not or scarcely evident. Phallosome, *p*, with the lateral gonapophyses very strong, appearing as powerful acute spines that appear incurved to decussate in slide mounts ; a small slender spine on either side of ædeagus.

Female. Characters generally as in the male. Antennæ 16-segmented, the formula $2+8+6$; longest branches at and near base of flagellum, about one-half longer than the segment ; last branch a mere stout tubercle, about one-half as long as the segment ; terminal segment largest, about one-half longer than the penultimate. Legs relatively short, very conspicuously hairy, setæ erect and very abundant, the longest fully equal to the diameter of the femur and much exceeding that of the tibia or tarsus. Wings semiatrophied, less than one-half the body, the dark pattern distinctly evident and arranged generally as in the male. Venation : distorted but in general arrangement approximately as in the fully-winged male.

Hab. Netherlands New Guinea.

Holotype, ♂, Scree Valley Camp, altitude 3,800 metres, September 11th, 1938 (*Toxopeus*). *Allotype*, ♀, East of Wilhelmina Top, 3,600 metres, September 3rd, 1938 (*Toxopeus*). *Paratopotypes*, 9 ♂♀, with the type, August 31st–September 18th, 1938. *Paratypes*, 1 ♂, Letterbox Camp, 3,600 metres, September 12th, 1938 ; 1 ♂, Wilhelmina Top, 4,000 metres, September 1938 (*Withold*).

This characteristic high mountain *gynoplistia* was the single most numerous species of the genus in the collection. It is well distinguished from other large-sized regional forms by the opaque body colour and especially by the somewhat characteristic hypopygium. The nearest relative is *Gynoplistia* (*Gynoplistia*) *nivicola*, sp. n., next described. I believe that the association of the subapterous female with the male of this species is correct despite the striking differences in the leg vestiture in the two sexes. The record above given of the occurrence in the Snow Mountains at 4,000 metres (13,000 feet) marks the highest altitude at which species of this genus ever have been taken.

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

Allied to *wilhelmina* ; general coloration of mesonotum and pleura fulvous brown ; antennæ of male 16-segmented, with eleven long-branched segments ; knobs of halteres dull yellow ; legs brown ; wings yellowed, with a restricted dark brown pattern ; macrotrichia of outer wing veins reduced in number ; male hypopygium with the basistyle terminating

Figs. 1-8.

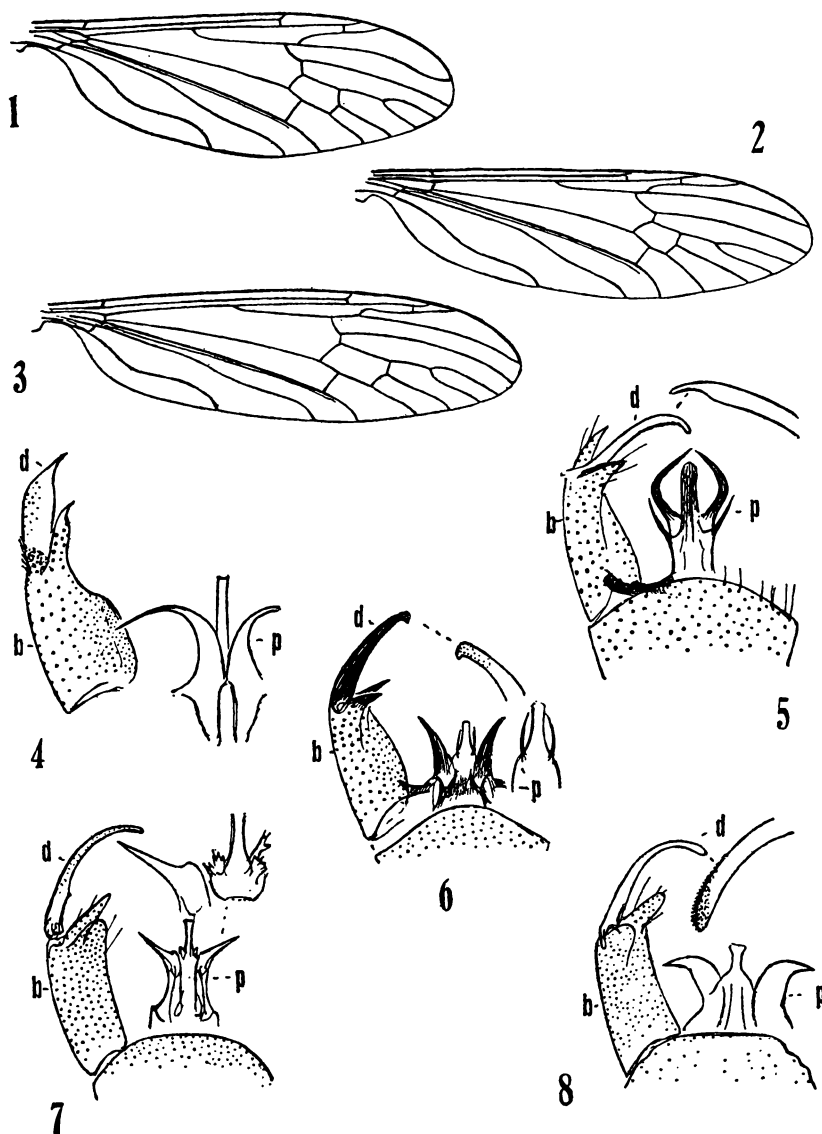


fig. 1.—*Gynoplistia* (*Gynoplistia*) *echionis*, sp. n.; venation; 2. *Gynoplistia* (*Gynoplistia*) *leptacantha*, sp. n.; venation; 3. *Gynoplistia* (*Gynoplistia*) *wilhelmina*, sp. n.; venation; 4. *Gynoplistia* (*Gynoplistia*) *leptacantha*, sp. n.; male hypopygium; 5. *Gynoplistia* (*Gynoplistia*) *wilhelmina*, sp. n.; male hypopygium; 6. *Gynoplistia* (*Gynoplistia*) *nivicola*, sp. n.; male hypopygium; 7. *Gynoplistia* (*Gynoplistia*) *hera*, sp. n.; male hypopygium; 8. *Gynoplistia* (*Gynoplistia*) *leto*, sp. n.; male hypopygium. (Symbols: b, basistyle; d, dististyle; p, phallosome.)

in two blackened spines ; dististyle terminating in a small decurved to weakly cultrate beak ; phallosome including two short divergent gonapophyses, the aedeagus with two slender marginal spines.

Male.—Length about 14–16 mm. ; wing 12–16 mm. ; antenna about 2.8–3.1 mm.

Rostrum brown, palpi slightly darker. Antennæ of male 16-segmented, the formula $2+2+9+3$; scape and pedicel brownish yellow, flagellum and branches black, pedicels of three basal segments paler ; longest branch (about flagellar segment four or five) a little less than one-half the flagellum ; last branch a mere tubercle. Head dark brown, paler behind ; median depression on anterior vertex conspicuous.

Pronotum fulvous brown. Mesonotum fulvous brown, the surface of praescutum and scutal lobes subnitidous ; posterior sclerites somewhat more yellowed ; vestiture of praescutum very small and sparse. Pleura fulvous brown, pteropleurite sparsely pruinose, best seen when viewed at an oblique angle. Halteres obscure brownish yellow, knob dull yellow. Legs with coxæ and trochanters light brown ; remainder of legs brown, outer tarsal segments slightly darker. Wings yellowed, with a restricted darker pattern ; brown areas at arculus, origin of *Rs*, stigma and cord, outer end of cell 1st M_2 , fork of M_{1+2} , and along outer medial veins ; a further small area in cell 1st *A* beyond midlength, in transverse alignment with the area at origin of *Rs* ; wing tip in outer radial field less evidently darkened ; weak suffusions in costal field, cell *M*, basal half of cell *Cu* and outer half of 2nd *A* ; veins pale brown, darker in the more heavily patterned areas. Macrotrichia of outer veins reduced in number, including a complete series on outer section of vein R_5 , with a short series on M_1 . Venation : cell M_1 nearly twice its petiole ; *m-cu* before midlength of cell 1st M_2 .

Abdominal tergites bicoloured, medium brown, the basal rings obscure yellow, the amount of the latter colour decreasing on the outer segments ; seventh and succeeding segments brownish black ; sternites with the yellow pattern more reduced, most extensive on segments two to four, inclusive. Male hypopygium (fig. 6) with the tergite large, its posterior border strongly convex. Basistyle, *b*, relatively stout, with two apical lobes, both modified into blackened spines, one more slender and acute. Dististyle, *d*, single, lying in the notch between the apical lobes of the basistyle, gradually narrowed outwardly, the small tip decurved and weakly cultrate. Phallosome, *p*, including two short divergent gonapophyses and a somewhat smaller aedeagus, the latter on either side with a slender marginal spine.

Hab. Netherlands New Guinea.

Holotype, ♂, East of Wilhelmina Top, 3,600 metres, September 3rd, 1938 (*Toxopeus*). *Paratopotype*, ♂, September 8th, 1938.

While it evidently is allied to *Gynoplistia* (*Gynoplistia*) *wilhelmina*, sp. n., the present fly is distinct in the diagnostic features listed above, including the coloration of the body and halteres and structure of the antennæ and male hypopygium. A paratype male is much smaller than the other

specimens (the smallest measurements given) and has the darkened wing pattern more extensive yet seems certainly conspecific.

Gynoplistia (Gynoplistia) plumbeicolor, sp. n.

Size large (wing of female 14 mm.); mesonotum almost uniformly light grey, the praescutum with vague indications of three very slightly differentiated darker grey stripes, pleura clear grey; antennæ of female 19-segmented, with nine branched segments; knobs of halteres dark brown; femora brownish black, tibiæ and tarsi a trifle paler; wings creamy yellow, heavily patterned with medium brown, including four more or less distinct crossbands on cephalic part of wing.

Female.—Length about 17 mm.; wing 14 mm.; antenna about 3.2 mm.

Apex of rostrum rounded, grey; palpi brownish black. Antennæ of female 19-segmented, the formula being 2+2+7+8; scape and pedicel brownish black, proximal three or four flagellar segments with the incisures yellow, the swollen intermediate part of stem and the branch brownish black, the yellow colour decreasing in amount on the outer segments, the outer ones uniformly brownish black to black; branch of flagellar segment one nearly twice the segment, of the second nearly three times; longest branch (about flagellar segment four) nearly four times the segment; outer branches progressively shorter, the last branch subequal to the segment; outer simple segments oval. Head grey.

Pronotum grey, the posterior border of scutellum more castaneous. Mesonotum almost uniformly light grey, with vague indications of three very slightly differentiated darker grey praescutal stripes; no tuberculate pits; pseudosutural foveæ large and conspicuous, light chestnut brown; posterior sclerites of notum and the pleura almost uniformly grey, the scutal lobes with vaguely darker grey centres; pleura clearer grey, dorsopleural region and the pretergites more chestnut brown. Halteres with stem buffy, knob dark brown. Legs with coxæ grey pruinose; trochanters brownish black, sparsely pruinose; femora brownish black; tibiæ and basitarsi a trifle paler, with narrowly blackened tips; tarsi passing into brownish black. Wings with the restricted ground creamy yellow, the heavy medium brown pattern appearing as four more or less distinct crossbands on cephalic part of wing, placed at arculus, origin of *Rs*, cord and the broad wing tip; cells *C*, *Sc*, *M* and *Cu* almost uniformly darkened, the last a trifle brightened near outer end; brightenings beyond cord very restricted but extending across the wing beyond the stigma and cell 1st *M*₂; before the cord are major ground areas in cell *R*, before and beyond origin of *Rs*, and including the basal halves of the Anal cells; veins brownish yellow, clearer yellow in the ground areas. Macrotrichia on veins beyond cord including *R*₂₊₃, *R*₄, distal section of *R*₅ and *M*₁. Venation: *R*₂₊₃₊₄ about one-third to two-fifths the basal section of *R*₅; *m* about one-third to nearly one-half the length of petiole of cell *M*₁; *m-cu* at near two-fifths the length of cell 1st *M*₂.

Abdomen above dark brown or brownish black, the more proximal segments tinged with reddish ; sternites dark reddish brown, sparsely pruinose. Valves of ovipositor long and slender, especially the cerci.

Hab. Netherlands New Guinea.

Holotype, ♀, Moss Forest Camp, altitude 2,700 metres, October 19th, 1938 (*Toxopeus*) ; Alexander Collection.

Most similar to species such as *Gynoplistia* (*Gynoplistia*) *wilhelmina*, sp. n., and *G. (G.) nivicola*, sp. n., differing in the coloration of the body and wings, structure of the antennæ, and in the full-winged condition of the female sex (female not known in *nivicola*).

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

Size medium (wing of male 12.5 mm.) ; head and thorax dull black ; abdomen with segments one and six to nine inclusive black, the intermediate ones clear orange-yellow ; antennæ of male 16-segmented, with eleven branched segments ; legs black, femoral bases yellowed ; wings obscure yellow, heavily patterned with brown ; cell M_1 present ; phallosome of male hypopygium with divergent spine-like gonapophyses.

Male.—Length about 13 mm. ; wing 12.5 mm. ; antenna about 3 mm.

Rostrum reddish brown above, blackened on sides, with abundant black setæ ; palpi brownish black. Antennæ of male 16-segmented ; formula $2+2+9+3$; scape and pedicel brownish yellow, at near mid-length narrowly ringed with brown, flagellum and branches black ; longest branch only about one-third to one-half longer than the basal ones ; terminal branch a mere tubercle. Head above dull black, restrictedly yellowed on genæ adjoining lower margin of eye.

Thorax brownish black, surface opaque, posterior sclerites and praescutal interspaces more pruinose ; anterior pretergites and adjoining posterior edge of pronotal scutellum castaneous, the posterior margins of scutal lobes similarly brightened. Pleura brownish black, apparently heavily pruinose in fresh specimens. Halteres blackened, the base of stem restrictedly fulvous. Legs with coxæ and trochanters brownish black, pruinose ; remainder of legs dark brown to brownish black, the femoral bases restrictedly yellowed, involving the proximal fourth or fifth of the segment. Wings with the restricted ground obscure yellow, heavily patterned with brown, including darker brown areas at arculus, origin of R_s , and a major mark extending from the stigma backward over the cord, narrowed behind ; smaller dark areas at h , outer end of cell 1st M_2 and fork of M_{1+2} ; extensive somewhat paler brown clouds at wing tip and along margin in cubital and anal cells ; veins Cu , M and R_5 extensively seamed with brown ; cells C and Sc darkened ; veins brown. Sparse but long macrotrichia on distal section of veing R_5 , with fewer scattered trichia on R_3 , R_4 and M_1 . Venation : R_{2+3+4} very short, subequal to R_2 ; cell M_1 about one-half longer than its petiole ; $m-cu$ at near midlength of cell 1st M_2 . The right wing of the type has cell M_2 open by the almost complete atrophy of m .

Abdomen with basal segment brownish black, two to five, inclusive, clear orange-yellow, outer segments blackened ; abdominal vestiture short and sparse. Male hypopygium (fig. 7) with the tergite large, its posterior border convexly rounded, vestiture relatively small and sparse. Basistyle, *b*, with two apical lobes, the ventral one long and slender, narrowed to the obtuse tip, with strong setæ to the apex. Dististyle, *d*, slender, gently curved to the narrowly obtuse tip, surface with scattered microscopic setæ and roughened points. Phallosome, *p*, relatively small, appearing as two horn-like gonapophyses subtending the small ædeagus, at base of the narrowed part of the latter with small irregular tubercles tipped with microscopic setulæ, as figured ; apophyses straight, narrowed into acute spines.

Hab. Netherlands New Guinea.

Holotype, ♂, East of Wilhelmina Top, 3,600 metres, August 30th, 1938 (*Toxopeus*) ; Alexander Collection.

Gynoplistia (*Gynoplistia*) *hera* is most similar to species such as *G. (G.) leto*, sp. n., and *G. (G.) nigrithorax* Alexander, differing in all details of coloration and, where this is known, in the structure of the male hypopygium.

Gynoplistia (Gynoplistia) leto, sp. n.

Size large (wing of male nearly 15 mm.) ; antennæ 17-segmented, with twelve long-branched segments ; head and praescutum dull black, pronotum variegated with black and fulvous ; legs black, femoral bases restrictedly yellow ; wings yellow, heavily patterned with brown ; cell *M*₁ present ; abdomen with basal seven segments fulvous or orange, their basal rings more yellowed, outer segments darkened ; male hypopygium with the apex of the dististyle microscopically scabrous ; phallosome with the gonapophyses appearing as strong horns, the tips acute.

Male.—Length about 16 mm. ; wing 14·8 mm. ; antenna about 3·8 mm.

Rostrum cinnamon brown to brown, with long and conspicuous porrect setæ ; palpi black. Antennæ of male 17-segmented, the formula 2+2+10+3 ; scape and pedicel dark brown, the base of former more reddened ; flagellum black, apices of proximal six or seven segments narrowly yellowed ; longest branch (about flagellar segment six) about two-fifths the length of the entire organ ; last branch slightly longer than the segment ; terminal segment longer than the penultimate. Head behind dull black.

Pronotal scutum fulvous on disc, bordered by black, scutellum black, the posterior angles obscure orange. Mesonotal praescutum dull black, surface more or less pruinose, with four more reddish brown or liver-coloured stripes that are poorly evident against the ground ; scutal lobes liver brown, more or less pruinose ; scutellum obscure yellow, pruinose ; postnotum orange, more or less pruinose ; praescutal vestiture very reduced and sparse, on posterior half only. Pleura reddish brown,

conspicuously pruinose, especially on the pteropleurite and sternopleurite. Halteres with stem obscure yellow, knob dark brown. Legs with the coxæ brown, pruinose ; trochanters brownish yellow ; remainder of legs black, femoral bases restrictedly obscure yellow, more evidently so on the fore pair. Wings with the ground yellow, heavily and conspicuously patterned with brown, including major areas at arculus, origin of R_s and especially at stigma, the last triangular, its point over $r-m$; narrower brown areas over posterior cord, outer end of cell 1st M_2 , fork of M_{1+2} , a spot at near two-thirds the length of vein 1st A , and as narrow seams over the medial veins ; wing tip and outer end of cell 2nd A broadly paler brown ; costal border slightly brownish yellow ; veins brownish yellow, darker brown in the patterned areas. Macrotrichia of outer veins relatively sparse, except for a complete series on outer section of R_5 and a few on distal ends of R_4 and M_1 . Venation : cell M_1 nearly twice its petiole ; $m-cu$ before midlength of cell 1st M_2 .

Abdomen with basal seven tergites fulvous, the proximal rings more yellowed ; sternites orange, with yellow basal rings ; outer segments and hypopygium darkened. Male hypopygium (fig. 8) with the tergite large, its posterior border truncate. Basistyle, b , with both apical lobes fleshy and obtuse at tips, the longer and more slender one ventral in position. Dististyle, d , appearing as a simple gently curved rod, narrowed to the obtuse tip, the apical fifth with abundant microscopic scabrous points to appear roughened. Phallosome, p , drawn slightly larger than remainder ; gonapophyses appearing as two strong horns, outcurved to the acute blackened points ; ædeagus small, its head pale.

Hab. Netherlands New Guinea.

Holotype, ♂, Moss Forest Camp, 2850 metres, August 22nd, 1938 (*Toxopeus*) ; Alexander Collection.

The most similar regional species is *Gynoplistia* (*Gynoplistia*) *hera*, sp. n., in the darkened head and thorax and the extensively fulvous abdomen, differing evidently in the structure of the antennæ and male hypopygium. The scabrous apex of the dististyle is especially noteworthy.

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

General coloration of body black, abdominal tergites three and four variegated with yellow ; antennæ of female 16-segmented, with nine long-branched segments ; halteres black ; legs black, all tibiæ with a broad white ring on basal half, proximal tarsal segments brightened ; wings whitish, conspicuously patterned with brown ; cell M_1 very deep, its petiole a little shorter than m .

Female.—Length about 13 mm. ; wing 10.5 mm.

Rostrum and palpi black. Antennæ of female 16-segmented, the formula $2+2+7+5$; brownish black, the incisures of the branched segments broadly yellow ; branches unusually long for the female sex, longest branch (about flagellar segment four or five) about five times the segment, of segment nine subequal to the segment ; terminal segment about one-third longer than the penultimate. Head black.

Thoracic dorsum polished black, the posterior borders of the scutal lobes restrictedly obscure yellow ; humeral region of praescutum and the pretergites reddish ; praescutum with sparse scattered setæ. Pleura crushed, apparently black, probably with some grey pruinosity. Halteres short, black, base of stem restrictedly paler. Legs with coxæ, trochanters and femora black, the latter conspicuously hairy ; tibiæ black, with a broad white ring about its own length beyond base, the vestiture of this annulus white ; basal two segments of tarsi obscure yellow, tips restrictedly darkened, outer tarsal segments brownish black. Wings (fig. 9) with the ground whitish, conspicuously patterned with brown ; costal border paler brown ; darkest areas include a postarcular mark, a spot at midlength of vein *2nd A* ; an incomplete broken crossband at origin of *Rs*, with areas in cells *R*, *M*, *Cu* and into *1st A* ; a major mark at stigma, continued backward to *r-m* ; narrower dark brown seams at *h*, cord, outer end of cell *1st M*₂ and fork of *M*₁₊₂ ; wing tip somewhat paler brown ; veins brown, *C* and *Sc* more brownish yellow. Small but abundant macrotrichia on veins beyond cord as far back as *M*₁. Venation : *R*₂₊₃₊₄ about one-half *R*₂₊₃ ; cell *1st M*₂ relatively small, rectangular, with *m-cu* at near one-fourth its length ; cell *M*₁ very deep, its petiole a little shorter than *m*.

Abdomen black, with purple reflections ; third and fourth segments with a yellow transverse ring, the former more distinct ; genital segment and ovipositor orange.

Hab. Netherlands New Guinea.

Holotype, ♀, Rattan Camp, 1,200 metres, March 1st, 1939 (*Toxopeus*) ; Alexander Collection.

Readily told from *Gynoplistia* (*Gynoplistia*) *albizonata* Alexander (Morobe District, New Guinea), the other generally similar regional species having white tibial rings, by the entirely different body coloration and wing pattern. The venation of the medial field of the wing of the present fly is noteworthy.

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

Head reddish brown ; mesonotum brownish black to black, polished, with green reflections, these more purplish on pleura, pteropleurite pruinose legs black wings blackened, conspicuously variegated with whitened areas, cells *C* and *Sc* uniformly darkened ; cell *M*₁ present ; *M*₃ at or before the outer fork of *M*, *m* obliterated ; abdomen purplish black to reddish brown, with purple reflections.

Female.—Length about 10–12 mm. ; wing 9–11 mm.

Rostrum brown, narrowly blackened medially above ; palpi brownish black. Antennæ of female broken beyond the pedicel, basal two segments reddish brown. Head polished reddish brown.

Pronotum dull black. Mesonotum polished brownish black to black, with greenish reflections ; praescutum virtually glabrous, with sparse scattered setæ on the posterior interspaces. Pleura and pterotergite black, the reflections more purplish ; pteropleurite delicately sculptured,

Figs. 9-15.

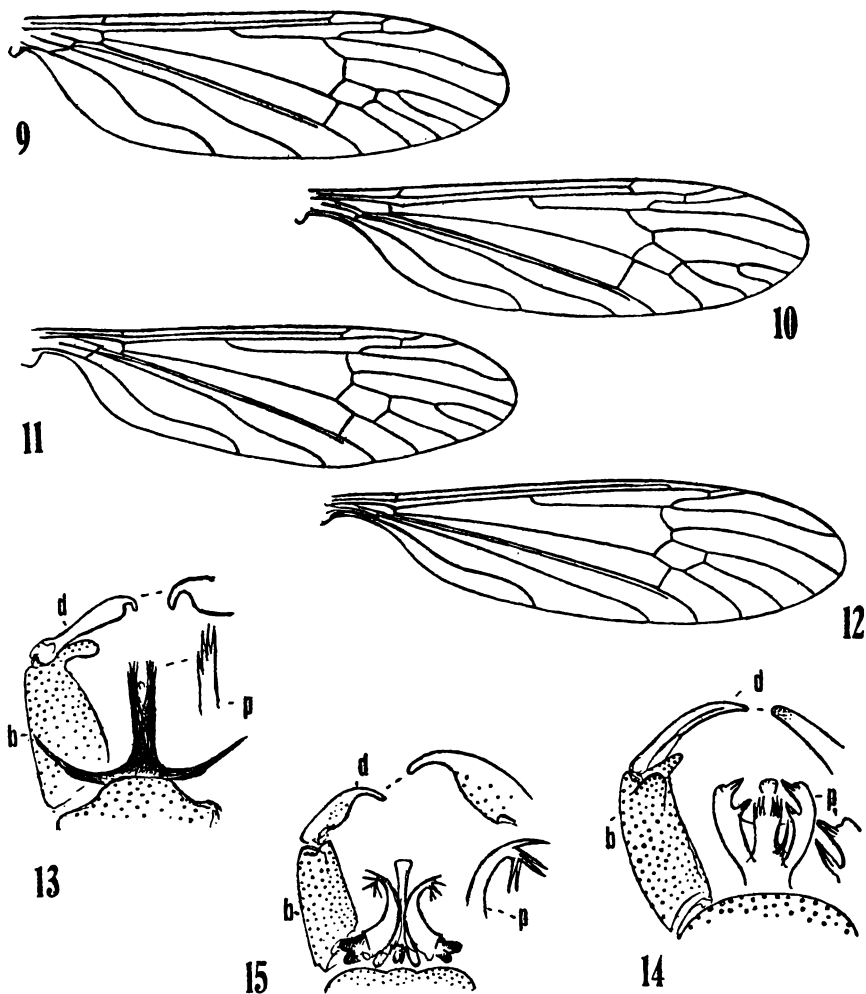


Fig. 9.—*Gynoplistia* (*Gynoplistia*) *longifurcula*, sp. n.; venation; 10. *Gynoplistia* (*Gynoplistia*) *peramoena*, sp. n.; venation; 11. *Gynoplistia* (*Gynoplistia*) *achlys*, sp. n.; venation; 12. *Gynoplistia* (*Gynoplistia*) *habbema*, sp. n.; venation; 13. *Gynoplistia* (*Gynoplistia*) *achlys*, sp. n.; male hypopygium; 14. *Gynoplistia* (*Gynoplistia*) *polycantha*, sp. n.; male hypopygium; 15. *Gynoplistia* (*Gynoplistia*) *habbema*, sp. n.; male hypopygium. (Symbols: b, basistyle; d, dististyle; p, phallosome.)

avily grey pruinose, this less evident on adjoining sclerites. Halteres with stem obscure yellow, knob brownish black. Legs with coxæ and tibiae dull black; remainder of legs black, vestiture relatively short and inconspicuous. Wings (fig. 10) blackened, conspicuously streaked with whitish, including bands before and beyond origin of R_s , the former constricted or broken in cell Cu , the latter broad and complete; bases of Anal cells and a large discal area at and beyond outer end of 1st M_2 ; cells C and Sc uniformly blackened; veins dark brown, slightly brightened in the clear areas, the restricted prearcular field slightly more yellowed. Outer radial veins with abundant macrotrichia, the latter virtually lacking on M , with a sparse series on outer two-thirds M_1 ; stellate groups of microtrichia in the darkened bands, with the exception of the apical darkening. Venation: R_s in longitudinal alignment with R_4 ; R_{2+3+4} very short; vein M_3 at outer fork of M in paratype (figured) or before this fork (in holotype) where it is fused with M_{1+2} to form an element M_{1+2+3} that is about one-third as long as $m-cu$; the latter varies in position from about one-third to nearly one-half its length beyond the fork of M .

Abdomen varying from reddish brown to purplish black, the intermediate tergites restrictedly reddened at base; seventh segment and base of genital shield more blackened; ovipositor light brown, cerci shining outwardly to yellow.

Hab. Netherlands New Guinea.

Holotype, ♀, Sigi Camp, 1,500 metres, February 21st, 1939 (*Toxopeus*). *Paratype*, ♀, February 25th, 1939.

Gynoplistia (*Gynoplistia*) *peramoena* is quite distinct from all other regional species made known to the present time. Superficially it most suggests species such as *G. (G.) latibasalis* Alexander, of northwestern New Guinea, an entirely different fly. The stellate grouping of microtrichia on parts of the wing surface is noteworthy.

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

Size medium (wing of male over 8 mm.); general coloration of thorax dark brown, pleura more or less pruinose; antennæ of male 18-segmented, with thirteen long-branched segments; legs black, femoral bases restrictedly obscure brownish yellow; wings brownish yellow, patterned with dark brown; cell M_1 longer than its petiole; abdominal segments coloured, dark brown, basal rings brownish yellow; male hypopygium with the apex of basistyle produced into a single flattened blade; allosome with each gonapophysis closely appressed, produced caudad of four acute spines.

Male.—Length about 8.5–9 mm.; wing 8.3–9.5 mm.; antenna about 3 mm.

Rostrum brownish black; palpi black. Antennæ of male 18-segmented; formula 2+2+11+3; scape and pedicel reddish brown, flagellum brownish black to black, including branches; longest branch (about flagellar

segment five or six) nearly one-half the length of the flagellum, the outer ones progressively shorter, the last branch about one-half the segment ; branches of basal two flagellar segments long, subequal, fully four or five times the segment and about three-fourths as long as the longest branch ; terminal segment enlarged ; vestiture of branches relatively long and conspicuous. Head transverse, blackened and polished dorsally, slightly more pruinose on the broad posterior orbits ; anterior vertex broad, about two and one-half times the diameter of scape.

Pronotum yellowish brown to light brown. Mesonotum dark brown, surface subnitidous to weakly polished ; praescutal vestiture short and sparse. Pleura dark brown, opaque, extensively pruinose, especially on the pteropleurite and adjoining part of the mesepisternum. Halteres broken. Legs with coxæ and trochanters brown, opaque ; remainder of legs black, femoral bases restrictedly obscure brownish yellow. Wings (fig. 11) with the ground colour brownish yellow, moderately patterned with dark and lighter brown ; darker areas include a major mark extending from stigma over the anterior cord and a smaller spot at origin of R_s , scarcely reaching vein M behind ; posterior cord and outer end of cell 1st M_2 narrowly seamed with brown ; wing tip broadly paler brown ; costal border scarcely differentiated from the ground colour ; veins brown. Small but abundant macrotrichia on all outer veins from R_1 to M_3 , as well as the outer two-thirds of R_s ; lacking on M_4 and the posterior veins, including also M and Cu . Venation : R_{2+3+4} from about one-third to two-fifths the basal section of R_5 ; cell M_1 about one-third longer than its petiole ; cell 1st M_2 short-rectangular, with $m-cu$ at midlength.

Abdominal segments bicoloured, dark brown, the basal rings broadly brownish yellow ; subterminal segments uniformly darkened ; hypopygium brightened. Male hypopygium (fig. 13) with the posterior border of tergite broadly produced medially, the apex of the lobe truncated. Basistyle, b , relatively stout, at apex produced into a single flattened blade which is slightly widened outwardly, apex oblique lower angle rounded, surface with strong setæ except along lower margin. Dististyle, d , moderately broad and flattened, slightly expanded before the suddenly narrowed tip. Phallosome, p , with each gonapophysis produced directly caudad, terminating in four acute spines that are concolorous with the remainder of organ ; lateral arms of phallosome long, slender, spine-like.

Hab. Netherlands New Guinea.

Holotype, ♂, Mist Camp, 1,800 metres, January 12th, 1939 (*Toxopens*).

Paratopotype, ♂, January 14th, 1939. *Paratype*, ♂, Top Camp, 2,100 metres, January 19th, 1939.

Gynoplistia (*Gynoplistia*) *achlys* is readily distinguished from other generally similar regional members of the genus having 18-segmented antennæ in the male by the number of flagellar branches and, especially, the structure of the male hypopygium, particularly the phallosome.

Gynoplistia (Gynoplistia) polycantha, sp. n.

Size small (wing of male 6 mm.) ; general coloration of mesonotum brown, highly polished ; halteres dark brown ; legs brown ; wings weakly infuscated, patterned with darker brown, cell M_1 present ; proximal abdominal segments bicoloured, basal rings yellow, apices brownish black, outer segments uniformly darkened ; male hypopygium with apical lobes of basistyle with long setae over their entire extent ; phallosome conspicuously armed with spinous points.

Male.—Length about 6 mm. ; wing 6 mm. ; antenna about 2.5 mm.

Rostrum brown, palpi darker brown. Antennae broken but apparently 16-segmented, the formula probably $2+2+9+3$; scape and pedicel light brown, flagellum darker, the apices of the more proximal segments restrictedly yellow ; in the single partially preserved antenna there are eight branched segments, the longest branch about six times the segment, terminal branch subequal to the segment. Head brown.

Thorax brown, the praescutum highly polished, with sparse but relatively long setae ; posterior sclerites of notum slightly paler. Pleura dark brown, the pteropleurite obscure yellow. Halteres dark brown, base of stem obscure yellow. Legs with coxae dark brown, trochanters slightly paler ; remainder of legs brown, the outer tarsal segments vaguely darker. Wings vaguely infuscated, patterned with darker brown, the markings not clearly delimited ; dark areas at arculus, origin of R_s , stigma and anterior cord, and more narrowly over posterior cord and outer end of cell 1st M_2 ; costal region and wing tip less evidently darkened ; veins light brown. Macrotrichia on veins of outer radial field and on veins M_1 and M_2 , on the latter few in number. Venation : R_{2+3+4} short ; cell M_1 about one-third longer than its petiole ; $m-cu$ before midlength of cell 1st M_2 .

Proximal abdominal segments bicoloured, basal rings yellow, apices brownish black, the amount of the latter decreasing on outer segments, the outer three or four uniformly darkened. Male hypopygium (fig. 15) with the posterior border of tergite broadly convex, the surface with unusually long setae. Basistyle, b , with two unequal apical lobes, both with unusually long setae over the whole extent. Dististyle, d , a long simple blade, narrowed to the subacute or narrowly obtuse tip ; face of style with a narrow longitudinal carina. Phallosome, p , with a strong armature of spinous points, arranged about as shown in the figure.

Hab. Netherlands New Guinea.

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

This unusually small member of the genus is readily told from all other generally similar regional species by the unusual armature of the phallosome of the male hypopygium.

Gynoplistia (Gynoplistia) habbema habbema, sp. n.

Belongs to the *jucunda* group ; general coloration brownish black to black ; antennae of male 16-segmented, with eight long-branched

segments ; halteres and legs black ; wings weakly tinged with brown, restrictedly and inconspicuously patterned with slightly darker brown ; cell M_1 lacking ; male hypopygium with apex of basistyle not produced into lobes ; phallosome with gonapophyses narrowed outwardly, each terminating in five blackened spines ; ædeagus slightly expanded at apex.

Male.—Length about 8–8.5 mm. ; wing 9–10 mm. ; antenna about 2–2.2 mm.

Rostrum and palpi brownish black. Antennæ of male black throughout, 16-segmented, the formula $2+2+6+6$; longest branch (about flagellar segment four) more than one-third the length of the organ or nearly five times the segment itself ; last branch usually shorter than the segment, in cases a little longer ; terminal six segments simple. Head polished black.

Thorax dull brownish black or black, pleura more or less pruinose, particularly the pteropleurite and ventral sternopleurite. Halteres brownish black. Legs brownish black ; vestiture moderately long but subappressed and relatively inconspicuous. Wings (fig. 12) weakly tinged with brown, restrictedly and inconspicuously patterned with slightly darker brown ; veins brown. Outer radial veins with macrotrichia, lacking on base of R_{2+3} and outer end of R_3 ; no trichia on M or its branches. Venation : tip of Sc_1 faint to atrophied ; R_{2+3+4} relatively short, about one-half the length of the more arcuated basal section of R_5 ; veins R_3 and R_4 divergent, cell R_3 at margin very extensive, a little less than twice cell R_4 ; cell M_1 lacking ; $m-cu$ at near midlength of cell 1st M_2 .

Abdomen relatively long, dark brown, the posterior borders more blackened ; hypopygium black. Male hypopygium (fig. 14) with the tergite relatively large, the posterior border slightly produced, the margin vaguely trilobed, the median lobe smallest ; setæ relatively long, scattered over the entire surface. Basistyle, b , slender, without apical lobes. Dististyle, d , large, about two-thirds as long as the basistyle, appearing as a flattened blade, the outer third gently curved and narrowed, tip obtuse ; surface with numerous pale punctures, without setæ or else these very small. Phallosome, p , with large paired gonapophyses, each narrowed on outer half, terminating in three long spines, with a further outer pale membrane that bears two smaller and paler spines ; ædeagus about as long as the outer lobe of the apophysis, its apex slightly expanded.

Hab. Netherlands New Guinea.

Holotype, ♂, Lake Habbema, 3,225 metres, August 2nd, 1938 (*Toxopeus*).
Paratopotypes, 2 ♂♂, July 30th, 1938.

Gynoplistia (*Gynoplistia*) *habbema* is the typical race, with a second that is described herewith occurring at lower altitudes. In their general appearance the two flies are very unlike yet from the peculiar structure of the male hypopygium I must consider them as being conspecific. The present fly has the darkened pattern of the wing very reduced and with the colour of the body, including the head, almost uniformly blackened.

Gynoplistia (Gynoplistia) habbema perdistincta, subsp. n.

In its general appearance very different from typical *habbema*, sp. n., yet agreeing so closely in the structure of the male hypopygium that I consider them as being conspecific, at least for the present.

Head reddish. Thorax polished black, with greatly reduced praescutal setæ. Halteres and legs brownish black. Wings with a heavy and conspicuous darkened pattern, including large brown areas at arculus and near base of Anal cells, origin of *Rs*, cord and wing tip, all areas clearly defined ; further narrower darkenings at end of cell 1st M_2 and at near two-thirds the length of vein 1st *A* ; costal field darkened. Abdomen black, the basal segment usually fulvous, in cases this colour obliterated.

Hab. Netherlands New Guinea.

Holotype, ♀, Mist Camp, 1,800 metres, January 1st, 1939 (*Toxopeus*).
Paratopotypes, ♂♀, January 5th–13th, 1939 ; *paratype*, Sigi Camp, 1,500 metres, February 18th–24th, 1939.