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New or little-known Tipulidæ (Diptera).—LXXXVIII.

Oriental-Australasian Species. By CHARLES P.

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THE species discussed herewith are Australasian, being chiefly from the Solomons and New Hebrides, New Zealand, and from eastern and western Australia. The materials were taken by Miss Cheesman and by Messrs. C. O. Berg, A. B. Gurney, E. P. Hodgkin, R. T. Holway, Harry Hoogstraal, Jean Laffoon, W. E. Long, Robert Staples, A. L. Tonnoir, and Reginald B. Wells, to all of whom I express my thanks for this co-operation in making known the rich crane-fly fauna of the region. Except where stated to the contrary, the types of the novelties are preserved in my personal collection of these flies.

Plusiomyia wellsi, sp. n.

Size large (wing, male, over 27 mm.); general coloration of mesonotum brownish grey, variegated by darker brown; thoracic pleura striped longitudinally with brown and silvery; flagellar segments two to seven, inclusive, each with two branches that are about as long as the segments; wings variegated with whitish subhyaline and dark brown, the former including a broad complete crossband beyond the cord, the latter the unbroken wing-tip; cell M_1 very short petiolate: m-cu oblique, subequal to the distal section of vein Cu_1 .

Male.—Length about 34 mm.; wing 27.5 mm.; antienna about 9 mm.

Frontal prolongation of head relatively long, slightly exceeding the remainder of head, chestnut-brown; nasus small, dark-coloured; palpi black. Antennæ (male) relatively long, dark brown, the flagellar branches even darker brown; first flagellar segment elongate, with a single small spur on lower face before tip; segments two to seven, inclusive, each with a pair of branches that are a trifle longer than the segments, inserted at the extreme base; terminal four segments simple, subequal in length to the combined proximal flagellar segments. Head above light grey, broadly more infuseated along the eyes.

Pronotal scutum silvery white, forming the anterior end of a broad dorsopleural stripe; scutellum brown, forming the anterior end of an upper stripe along the dorsopleural region and lateral border of præscutum. Mesonotal præscutum with the disk virtually covered by four brownish-grey stripes that are not or scarcely differentiated from the interspaces, this discal area narrowly separated from the brown præscutal border by a whitish line beginning at the humeral angle, extending to the suture; centres of scutal lobes dark grey, the median area more infuscated; suture very deep; postnotum pruinose. Pleura striped longtitudinally with brown and silvery, being chiefly of the latter colour, the central brown stripe extending from the cervical region to the base of the abdomen, passing above the fore coxe and through the base of haltere; lower stripe restricted to the ventral sternopleurite. Halteres brownish black, the apex of knob a trifle paler brown. Legs with all coxe heavily silvery pruinose; trochanters brown, sparsely grey pruinose; remainder of legs dark reddish brown, the tips of the femora and tibiæ not or very narrowly darkened; tarsi passing into black. Wings with the ground whitish subhyaline, handsomely patterned with dark brown, this including the prearcular field, costal border, nearly the proximal half of cells R and M, nearly the outer half of cell R and adjoining parts of the stigmal region, a broad seam over m-cu and outer section of vein Cu1, and the broad wing-tip; outer ends of cells Cu, 1st A and 2nd A slightly greyish, merging internally with the whitened discal area; outer white band broad, completely traversing the wing, including all of cell $1st M_2$, nearly the proximal half of the outer radial cells, broad bases of cells 2nd M2 an d M_3 , and more than half the area of cell M_4 ; a linear, more greyish streak in cell R_1 before the stigma; veins brown, yellow in the whitened areas. Venation: Cell \boldsymbol{M}_1 very short-petiolate; $m\text{-}c\boldsymbol{u}$ oblique, subequal to the distal section of vein Cu_1 .

Dr. C. P. Alexander on

Abdominal tergites reddish brown, sparsely pruinose, the lateral borders broadly dark brown, the posterior margins more narrowly darkened; sternites even more reddened, with a central dark vitta; subterminal segments more heavily grey pruinose; hypopygium relatively small, black.

Hab. South Queensland.

Holotype, & Lamington Plateau, Macpherson Range, Binna Burra Lodge, altitude 2590 feet, January 1948 (R, B, Wells).

I am very pleased to name this fine species for the collector, Mr. Reginald B. Wells. The fly is most like Plusiomyia olliffi Skuse and P. pandoxa Alexander, differing from all known species by the pattern of the wings, especially the broad entire white cross-band beyond the cord and the uniformly darkened wing-apex.

Macromastix (Macromastix) arenaria, sp. n.

General coloration of thorax yellow, the disk of the præscutum polished black; head above polished black; femora yellow, the tips broadly black; wings brownish grey, the prearcular and costal fields brighter brown; Rs subequal to R_{2+3} ; abdomen black, the basal tergites vellow on either side of a dorsal median stripe; male hypopygium with the tergite very narrow, the caudal margin shallowly emarginate; dististyle a long curved vellow blade, provided with retrorse setæ.

Male.—Length about 10-11 mm.; wing 13-14.5 mm.; antenna about 1-1·1 mm.

Frontal prolongation of head polished yellow, the dorsum narrowly black, including the nasus. Antennæ (male) short; scape brown, pruinose, pedicel brown. flagellum black; first flagellar segment subequal to or longer than the succeeding two taken together. Head above polished black.

Pronotum light yellow. Disk of præscutum polished black; scutal lobes black, obscured by a grey pruinosity; remainder of notum polished obscure yellow, the posterior border of the mediotergite with two more darkened areas. Pleura vellow, whitish pollinose; ventral sternopleurite polished black. Halteres with stem yellow, knob brownish black. Legs with the coxæ and trochanters vellow, pollinose: femora yellow, the tips broadly blackened, including the outer half of the fore femora and about the outer fourth of the others; tibiæ brown, the base very narrowly darkened, the tip more broadly so: tarsi black: claws simple. Wings brownish grey, the prearcular and costal fields, with vein Cu2 lying behind Cu, brighter brown; stigma barely differentiated from the costal border; veins dark brown, paler brown on the

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costa and other brighter parts; veins glabrous. Ven a tion: Rs subequal to R_{2+3} ; vein R_{1+2} pale, suberect to oblique; cell M_1 deep, its petiole from about one-third to one-half m; cell 2nd A relatively broad.

Outer abdominal segments chiefly blackened, very sparsely pruinose, the first two tergites yellow on either side of the more intensely blackened median stripe; basal sternites yellow, the succeeding ones black; hypopygium brownish black. Male hypopygium with the tergite very wide and narrow, the caudal margin very broadly and shallowly emarginate, the posterior border with abundant small setæ, the punctures crowded. Dististyle a long curved yellow blade, provided with numerous retrorse vellow setæ.

Hab. West Australia.

Holotype, 3, Dongara, among sand dunes at sea-level, August 29, 1947 (E. P. Hodgkin). Paratopotype, 1 3.

The only described generally similar species is *Macromastix* (*Macromastix*) nigropolita Alexander, from the Blue Mountains, New South Wales, which differs in all details of venation and structure of the male hypopygium.

Nephrotoma laffooni, sp. n.

Belongs to the *melanura* group; general coloration of thorax yellow, the præscutum with three nacreous stripes that are narrowly bordered by velvety black, the latter including a spot opposite the anterior end of the lateral stripe, interspaces uniformly blackened; antennæ with scape and pedicel yellow, flagellum black; halteres darkened; legs brownish black to black; wings with a dusky suffusion, the stigma and cell *Sc* darkened; abdomen of male chiefly yellow, with a blackened subterminal ring; male hypopygium with the caudal margin of the ninth tergite bearing four lobes; beak of inner dististyle unusually long and slender; gonapophysis bispinous.

Male.—Length about 12 mm.; wing 12.5 mm.; antenna about 4.5 mm.

Female.—Length about 16–18 mm.; wing 13–14 mm.

Frontal prolongation of head obscure yellow, weakly infuscated on apical portion of dorsum and on the sides beneath; nasus brownish black, with black setæ; palpi dark brown. Antennæ with scape and pedicel yellow,

Same in Long. Not. Hickory of Pr. Postilie

flagellum black; flagellar segments very gently incised; longest verticils shorter than the segments. Head opaque orange, the occipital brand concolorous and inconspicuous; vertical tubercle low and entire.

Pronotum yellow, vaguely patterned with dusky on sides. Mesonotal præscutum with the restricted ground colour yellow, the disk chiefly covered by three polished brownish nacreous stripes that are narrowly bordered by velvety black, including the interspaces and a spot opposite the anterior end of lateral stripe, this reaching the lateral border; scutum yellow, the lobes with brownish nacreous areas that are bordered on their anterior and mesal portions by velvety black; scutellum yellow, the central part with an obscure brownish spot; postnotum uniformly yellow, the mediotergite with a few black setæ on the posterior lateral portions. Pleura yellow, unpatterned; dorsopleural membrane a trifle paler yellow. Halteres dark brown to brownish black, the base of stem restrictedly pale. Legs with the coxæ and trochanters yellow; remainder of legs brownish black to black, the femoral bases restrictedly paler. Wings with a dusky suffusion, the stigma and cell Sc still darker; vague dusky seams along anterior cord, m-cu and in outer radial field. No stigmal trichia. Venation: Sc_1 preserved; Rs oblique, straight, a little longer than the basal section of R_{4+5} ; cell $\frac{1}{4}$ st M_2 small, rectangular; m-cu close to fork of M, usually on base of M_4 just beyond the fork.

Abdomen with basal segments obscure orange; tergite two with a weak median infuscation, the succeeding two segments with narrowly darkened borders; segments six to eight, inclusive, black, forming a broad subterminal ring; hypopygium chiefly obscure fulvous orange. In the female, abdomen orange, the segments with blackened posterior borders on both sternites and tergites, becoming more extensive on the outer segments but not forming an uninterrupted ring as in male. Male hypopygium with the region of the ninth sternite produced ventrad and slightly cephalad into a scoop-shaped or prow-like lobe. Ninth tergite yellow, narrowly infuscated medially; lateral angles produced caudad into triangularly pointed lobes, the surface of each with about 15 to 18 blackened pegs; caudal emargination with two shorter obtuse lobes

or blades that are separated by a narrow median split, each of these lobes with their lateral portions similarly provided with blackened points. Outer dististyle a flattened blade, widest across midlength, thence narrowed to the apex. Inner dististyle small, the beak unusually long and narrow, lower beak short and obtuse; a lateral flange extending from the lower beak across the face of the style; dorsal margin not elevated into a crest, provided with long yellow setæ. Gonapophysis a flattened bispinous blade, the outer spine longer than the subterminal one. Eighth sternite with the caudal margin broadly emarginate, the central portion with a dense brush of long setæ.

Hab. New Hebrides.

Holotype, &, Second Channel Area, Espiritu Santo, October 1943-August 1944 (Jean Laffoon). Allotopotype,

 \mathcal{Q} . Paratopotypes, $7 \mathcal{Q}$.

This handsome crane-fly is named for Mr. Jean Laffoon, to whom I am indebted for several interesting Tipulidæ from the Pacific Area. The fly is quite distinct from other species of the group described from New Guinea and the Solomons, differing in the coloration of the body, particularly the head and thorax, and in the structure of the male hypopygium. It appears to be closer to certain species in New Guinea, as Nephorotoma speculata (de Meijere), than to species known from the Solomons.

Limonia (Libnotes) quinque-geminata, sp. n.

General coloration yellow, the mesonotal præscutum, scutum and mediotergite with conspicuous brownish-black areas; femora yellow, the tips conspicuously blackened; wings yellow, handsomely patterned with brown, the veins yellow except in the darkened areas; abdomen yellow, tergites three to seven, inclusive, each with a pair of blackened spots on basal portion; male hypopygium with a compact pencil of about eight or nine rostral spines.

Male.—Length about 11 mm.; wing 15 mm.

Female.—Length about 8.5–9 mm.; wing 11.5–12 mm.

Rostrum obscure yellow; palpi with basal segments light yellow, the outer ones broken. Antennæ with scape light brown, pedicel darker brown; flagellum broken. Head light grey in front and on posterior orbits, the posterior vertex reddish chestnut; anterior vertex

reduced to a capillary strip that does not exceed in width a single row of ommatidia, a trifle narrower in male than in female.

Pronotum castaneous, pale yellow behind, with a large brownish-black area on either side of posterior half. Mesonotal præscutum pale yellow, still paler and bulbous on anterior portion, with a transverse row of four black spots just beyond midlength, the intermediate pair in cases more confluent; scutum yellow, each lobe with a major black spot that crosses the lateral end of the suture and barely invades the posterior margin of the præscutum; mediotergite testaceous yellow, with a major black area on either side of the midline, usually not reaching either the anterior or posterior border, in cases reaching the abdomen behind. Pleura and pleurotergite reddish yellow, with a sparse whitish bloom, unpatterned. Halteres elongate, pale yellow, knob brownish yellow, its base more darkened. Legs with coxæ and trochanters yellow; femora yellow, the tips rather narrowly but abruptly and very conspicuously blackened, the amount subequal on all legs, involving about the distal tenth of the segment; remainder of legs light yellow, the tips of the tibiæ and the outer tarsal segments more darkened; legs with short spinous setæ in male, normal and hairlike in the female. Wings with a pale yellowish ground, the costal border more saturated; a restricted but conspicuous brown pattern, as follows: Arculus: cord and outer end of cell 1st M_2 ; tip of Sc; R_2 and free tip of Sc_2 ; ends of both Anal veins; wing-tip clear in male, restrictedly darkened in extreme outer ends of cells R_2 and R_3 in female; veins yellow, conspicuously dark brown in the patterned areas. Venation: Sc_1 ending shortly before level of inner end of vein m; free tip of Sc_2 and R_2 in virtual transverse alignment, with a longer spur of R_{1+2} jutting beyond; Rs oblique, less than twice m-cu; cell 1st M_2 long, m arcuated, nearly twice as long as the transverse basal section of \boldsymbol{M}_3 ; all outer radial and medial veins deflected strongly caudad at tips, R_3 terminating at the wing-tip; m-cu beyond one-fourth to one-third the length of cell 1st M2; Anal veins convergent near bases, veins 2nd A elongate when compared with related species.

Abdomen of male yellow, tergites three to seven, inclusive, with a pair of large blackened spots on either

side near base, on tergite three more or less confluent across the midline; sternites and hypopygium vellow. In the paratype female, the dark pattern is even more extensive, the third tergite with an additionl blackened posterior border, the succeeding areas tending to be united at the midline by a capillary connection. Ovipositor with cerci small and slender, the tips simple, acute; base of genital shield more or less darkened. Male hypopygium with the tergite broad, its caudal margin gently emarginate; proctiger very broad, the central area glabrous, the sides with abundant setoid spinous points. Dorsal dististyle a strong sinuous rod, the tip acute, decurved... Rostrum or ventral dististyle with eight or nine spines forming a compact tuft or stout pencil near the base of the prolongation, each spine more or less obtuse or shallowly bifid at apex.

Hab. New Hebrides.

Holotype, &, Second Channel Area, Espiritu Santo, October 1943-August 1944 (Jean Laffoon). Allotopotype,

 \bigcirc . Paratopotype, $1 \, \hat{} \bigcirc$.

Limonia (Libnotes) quinque-geminata is allied to species such as L. (L.) aurantiaca (Doleschall), L. (L.) illecebrosa Alexander, and others, differing conspicuously in the details of coloration of the body and wings, venation, and, especially, the structure of the male hypopygium.

Limonia (Dicranomyia) sus, sp. n.

Belongs to the *punctulata* group; size small (wing, male, less than 5 mm.); thoracic pleura with a narrow blackish longitudinal stripe; wings with the usual pattern of the group, the costal cell and vein M with accessory spots; male hypopygium with a single rostral spine, placed on ventral margin of the prolongation, curved strongly upward, suggesting in appearance a boar's tusk; gonapophysis with mesal-apical lobe a curved black spine.

Male.—Length about 3 mm.; wing 4.7 mm.

Rostrum and palpi black. Antennæ black throughout; flagellar segments oval, the outer ones more elongate. Head dark grey; anterior vertex narrow, about two-thirds the diameter of the scape.

Pronotum brown. Mesonotum brown, with a yellow pollen, the præscutum darker medially, the lateral stripes not defined; posterior sclerites more pruinose. Pleura brown, yellow pollinose below, more pruinose posteriorly, with a narrow brownish-black longitudinal stripe extending from the cervical region across the dorsal pleurites, passing through the root of the halteres to the abdomen. Halteres with the stem yellow, knob brownish black. Legs with the coxæ and trochanters yellow, the fore coxæ a trifle darker basally; remainder of legs broken. Wings with a greyish tinge, restrictedly patterned with brownish grey in the usual punctulata pattern; a series of relatively few darkenings in cell Sc and a second one along vein M; veins yellow, darker in the patterned areas. Venation: Sc_1 ending a short distance beyond the origin of Rs; r-m short; cell 1st M_2 long, exceeding any of the veins beyond it.

Abdomen dark brown. Male hypopygium with the tergite large, transverse, caudal margin with a deep and narrow median notch, the lobes low and obtuse. Dorsal dististyle stout, moderately curved, the tip acute. Ventral dististyle relatively small, its total area not exceeding that of the basistyle; rostral prolongation darkened outwardly, the tip truncate; a single strong black rostral spine, placed on the ventral margin of the prolongation, curved upward, suggesting the tusk of a boar, whence the specific name. Gonapophysis with mesal-apical lobe a

curved black spine.

Hab. Northern Netherlands New Guinea.

Holotype, &, Hollandia, altitude 1000 feet, at light,

January 21, 1945 (Harry Hoogstraal).

In another paper ("Insects of Guam, I," Bernice P. Bishop Museum, Bull. 172, p. 197, 1942) I have listed the rather numerous species of the punctulata group. The present fly is quite distinct from all these flies, differing conspicuously in the structure of the male hypopygium. It is perhaps as close to Limonia (Dicranomyia) punctulata (de Meijere) as to any other, and the type specimen was associated in nature with this latter species.

Teucholabis (Teucholabis) solomonensis, sp. n.

Allied to *delandi*; general coloration of thorax orange, the præscutum with a continuous black saddle on the posterior portion, not crossing the suture; scutellum

orange; wings narrow, weakly infuscated, including clouds before and beyond the cord; no sharply delimited marginal seam in outer radial field; abdomen black.

Male.—Length about 6.5 mm.; wing 6 mm. Female.—Length about 7 mm.; wing 5 mm.

Rostrum and palpi black, the former nearly as long as the remainder of head. Antennæ with proximal four segments brown, the outer ones blackened; flagellar segments oval, with conspicuous verticils. Head grey,

especially conspicuous in front.

Thorax orange, the mesonotum conspicuously patterned with black, on the præscutum this appearing as a continuous transverse black saddle on the posterior half of the sclerite, representing the usual three stripes which are entirely confluent; median region of saddle slightly produced cephalad, not reaching the anterior margin; none of the stripes reaches the posterior præscutal border. the margin of which, with the suture, is orange; each scutal lobe with a conspicuous black area; scutellum orange; mediotergite more or less darkened. Pleura and pleurotergite orange. Halteres blackened. Legs about as in delandi; fore and middle femora both with about the outer half blackened, the former a little less extensively so; posterior femora uniformly black; tibiæ and basitarsi obscure yellow, with darkened tips; remainder of tarsi black. Wings more strongly infuscated than in delandi, especially evident as extensive suffusions before and beyond the cord, the latter with a conspicuous seam, as in delandi; no sharply delimited marginal seam in outer radial field, as in delandi; veins brown, those at wing-base somewhat brighter. Wings narrower than in delandi. Venation almost the same in the two species.

Abdomen uniformly black.

Hab. Solomons.

The most similar species is *Teucholabis* (*Teucholabis*) delandi Alexander, of northern New Guinea, which has been compared throughout the description. This is the most easterly occurrence of the genus in Melanesia.

Teucholabis (Teucholabis) gurneyana, sp. n.

Mesonotum brown or reddish brown, contrasting with the black pleura and pleurotergite; antennæ of male black, relatively elongate; legs black; wings obscure yellow, conspicuously patterned with brown spots and washes; abdomen black; male hypopygium with a single simple dististyle.

Male.—Length about 4 mm; wing 4 mm. Female.—Length about 5 mm.; wing 5.2 mm.

Rostrum black, relatively long, approximately equal to the remainder of head; palpi black. Antennæ black throughout, in male unusually long for a member of this genus, if bent backward extending to somewhat beyond the wing-root; flagellar segments oval to long-oval, strongly constricted between the segments; in addition to the verticils, which exceed the segments, a conspicuous erect pubescence is present. Antennæ of female shorter. Head of male obscure yellow, darker in female.

Pronotum obscure yellow above, brownish black on sides. Mesonotum brown, the præscutum more reddish brown in front, the lateral borders and pretergites paling to yellow. Pleura and pleurotergite, with the sternum, black, contrasting with the pale dorsum, the line of demarcation passing through the dorsopleural region. Halteres black. Legs with the coxæ blackened; trochanters a trifle paler; remainder of legs black, the femoral bases a trifle more brightened. Wings with the ground obscure yellow, with a relatively heavy brown pattern, including spots and washes in base of cell R, origin of Rs, cord and outer end of cell 1st M2, and the tips of the Anal veins and R₄; stigma a trifle darker brown; other dusky washes in various ceals, especially M, Cu and those beyond the cord: veins brown, a trifle darker in the patterned portions. Costal fringe relatively long. Venation: Sc_1 ending about opposite one-fifth the length of Rs; R_{1+2} and R_{2+3+4} subequal; branches of Rs generally parallel on about the proximal half, thence strongly divergent, R_5 ending close to the wing-tip; cell 1st M_2 elongate, subequal to vein M_{1+2} beyond it in female, shorter in male; m-cu shortly beyond the fork of M; cell 2nd A narrow, as compared with related species.

Abdomen of male black throughout; female with the cerci horn-yellow. No distinct sternal pockets in male. Male hypopygium with the basistyle short and stout, unarmed. Dististyle single, appearing as a subcultrate darkened blade that narrows to an acute point, at base on outer margin with two elongate setæ; at base of style with a further dusky lobe or extension.

Hab. Solomons.

Holotype, 3, Bougainville Island, July 10, 1944 (A. B. Gurney). Allotopotype, \mathfrak{P} , beneath fallen log on side of gully, Empress Augusta Bay, altitude 650 feet, September 23, 1944 (Robert Staples).

This interesting crane-fly is named for Dr. Ashley B. Gurney, Custodian of the Orthoptera and allied orders in the United States, National Museum. In its patterned wings and conspicuous body pattern the fly is very different from all other regional members of the genus, including the only other one from the Solomons, Teucholabis (Teucholabis) solomonensis, sp. n.

Gonomyia (Lipophleps) bougainvilleæ, sp. n.

Mesonotum brown, the posterior margin of the scutellum obscure yellow; pleural pale stripe only moderately conspicuous; legs light brown; wings pale brown, vaguely patterned with pale areas and darker brown clouds; Sc short,; male hypopygium with the outer dististyle complex; phallosome symmetrical, with two spinous points on either side.

Male.—Length about 3 mm.; wing 2·7-2·8 mm. Female.—Length about 3·3 mm.; wing 3 mm.

Rostrum and palpi black. Antennæ black, the scape and pedicel paler above; verticils of male very long, as common in the subgenus. Head obscure buffy yellow, the centre of the posterior vertex darkened.

Pronotum and anterior pretergites yellow. Mesonotum brown, the posterior margin of scutellum obscure yellow; pleurotergite and a transverse band across the centre of the mediotergite yellow. Pleura pale brown, with a moderately conspicuous yellowish-white longitudinal stripe. Halteres dusky, the knob variegated with yellow. Legs with the coxe yellow, the bases narrowly darkened, least so on the fore pair; trochanters obscure brownish yellow; remainder of legs brownish yellow to light brown.

the terminal tarsal segments darker. Wings broad, the ground colour pale brown, the stigma and a vague band over the cord somewhat darker brown; conspicuous paler areas before and beyond the cord on distal half of wing; veins very pale brown, those comprising the cord somewhat darker. Venation: Sc short, Sc_1 ending a distance before origin of Rs about equal to two-thirds the length of the latter; branches of Rs strongly divergent, cell R_4 at margin approximately three times as extensive as cell R_2 ; m-cu close to the fork of M.

Abdominal tergites brown, the lateral and caudal borders very narrowly yellow; sternites somewhat more uniformly brownish yellow; hypopygium fulvous yellow. Male hypopygium with the dististyles terminal. Outer dististyle complex, consisting of a slender outer arm that bears a powerful flattened blade at base, the latter extended into a long black spine; a further small blackened spine or denticle at base of the slender main arm. Inner dististyle a slender simple rod, gently curved to a short slender terminal spine, the lower surface with about eight strong setæ. Phallosome symmetrical, with two spinous points on either side, the outer pale, the slightly longer lower spine more blackened.

Hab. Solomons.

Holotype, \mathcal{J} , Empress Augusta Bay, Bougainville Island, altitude 40 feet, December 31, 1944 (Robert Staples). Allotopotype, \mathcal{I} , pinned with type. Paratopotypes, $\mathcal{I}\mathcal{I}$, December 31, 1944—January 9, 1945 (Robert Staples).

The most similar species seems to be Gonomyia (Lipophleps) diacantha Alexander, of the Oriental Region. This has the general plan of structure of the male hypopygium somewhat the same, as in the present fly, but with all details of the dististyles and phallosome distinct.

Gonomyia (Lipophleps) hodgkini, sp. 11.

General coloration of mesonotal præscutum deep yellow. with three brown stripes; pleura chiefly yellow, with two brown longitudinal stripes; antennæ with basal two segments yellow, the flagellum black; Sc_1 ending opposite or just before the origin of Rs; abdomen bicolored, the tergites brown, their posterior borders broadly yellow; male hypopygium with the mesal face of basistyle at

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proximal end produced into an elongate lobe; outer dististyle a simple blackened rod that narrows to the obtuse tip; inner style a circular outer yellow blade, at its base on outer margin with a powerful blackened arm.

Male.—Length about 4·2-4·3 mm.; wing 4·8-5 mm.

Rostrum obscure brownish yellow; palpi brown. Antennæ with the scape and pedicel yellow, flagellum black; flagellar segments oval. Head yellow, the centre of the vertex infuscated.

Pronotum and pretergites pale yellow. Mesonotal præscutum deep yellow, with three brown stripes, the median one more or less split on more than the posterior half; pseudosutural foveæ pale; scutal lobes each with two confluent brown areas; median region of scutum pale yellow with a brown mark extended on to the base of the otherwise yellow scutellum; mediotergite chiefly yellow, the posterior border infuscated on either side. Pleura chiefly yellow, with two longitudinal brown stripes, the dorsal one narrow and sometimes poorly evident, beginning at the extreme base of the fore coxe, crossing the ventral anepisternum, much narrower to nearly obsolete on the pteropleurite, again becoming evident on the ventral postnotum; ventral sternopleurite and meron similarly darkened to produce the ventral stripe. Halteres yellow. Legs with the coxe and trochanters yellow; femora brownish yellow, the tips conspicuously brownish black; tibiæ obscure brownish yellow, the tips, with the tarsi, dark brown. Wings brownish grey, the prearcular and costal fields, with vein Cu, more yellowed; stigma only a little darker than the ground, diffuse; veins brown, yellow in the brightened areas. Venation: Sc_1 ending opposite or before the origin of Rs, Sc₂ a short distance from the tip; anterior branch of Rs very gently sinuous; basal section of R_5 variable in length, cell R_4 thus varying in width at base; m-cu a short distance before fork of M.

Abdominal tergites bicoloured, brown, the posterior borders broadly yellow; sternites more uniformly yellow; hypopygium more castaneous yellow. Male hypopygium with the mesal face of basistyle at proximal end produced into an elongate lobe that narrows to the tip. Outer dististyle a simple blackened rod, narrowed to the obtuse apex. Inner dististyle consisting of a circular outer yellow blade that is densely clothed with yellow

setæ, at base on outer margin with a powerful blackened arm that is about one-half the size of the outer style. Phallosome consisting of two broadly flattened plates and two elongate rods that present a more or less lyriform appearance, their tips slightly divergent.

Hab. West Australia.

Holotype, S, Coal Seam, Irwin River, August 28, 1947

(E. P. Hodgkin). Paratopotypes, 5 \mathfrak{P} .

I am very pleased to name this very distinct fly after the collector, Professor E. P. Hodgkin, to whom I am indebted for some particularly interesting Tipulidæ. There is no regional species with which the fly can be compared, the most similar being forms such as *Gonomyia* (Lipophleps) slusei Alexander, with the hypopygium quite distinct.

Erioptera (Meterioptera) thaumasta, sp. n.

Size relatively large (wing, female, 4.5 mm.); thorax conspicuously patterned, the dorsum chiefly obscure yellow, the cephalic half of præscutum abruptly whitened, this pattern thence continued caudad over the pleura as a broad stripe; legs yellow, the tips of the femora and tibiæ abruptly blackened; wings light yellow, with a broad pale brown band beyond the cord, the outermost cells somewhat paler brownish yellow; R_{2+3+4} about twice r-m; m-cu about two-thirds its length before the fork of M; vein 2nd A straight.

Female.—Length about 4.5 mm.; wing 4.5 mm.

Head lost. Pronotum extensively whitened, restrictedly patterned with darker. Čephalic half of præscutum whitened, forming the anterior end of a very broad and conspicuous white pleural stripe that covers most of the pleura, reaching the postnotum behind; median part of the whitened section of the præscutum with faint indications of a more reddened stripe; posterior sclerites of notum obscure vellow, on the præscutum being separated from the white anterior half by a brown transverse band, somewhat paler on the median portion; sides and posterior border of mediotergite similarly infuscated. Halteres with base of stem darkened, the remainder broken. Legs with the coxæ dark brown; trochanters somewhat paler; remainder of legs light yellow, the tips of the femora and tibiæ narrowly but

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conspicuously blackened, a little more extensively so on femora. Wings conspicuously dimidiate, basad of cord chiefly light yellow, the cells immediately beyond cord pale brown, the outer half of this field slightly more brownish yellow but still darker than the cells basad of cord; costal border narrowly more intense yellow, this continued almost to the wing-tip; veins yellow, a trifle darker in the dusky band beyond the cord. Venation: R_{2+3+4} relatively long and straight, about twice r-m; m-cu about two-thirds its length before the fork of M; vein 2nd A straight, without apical sinuosity.

Basal abdominal segments dark brown; intermediate segments destroyed by Corrodentia; outer segments brownish vellow.

Hab. Solomons.

Holotype, a broken ♀, Halava, Florida Island, December 1943 (R. T. Holway).

This very distinct fly requires no comparison with other described regional members of the subgenus. The most similar of these is Erioptera (Meterioptera) sziladyi Alexander, but the resemblance is not close.

Amphineurus (Nothormosia) longi, sp. n.

Allied to edentulus; thorax almost uniformly brownish yellow; antennæ (male) elongate; wings brownish yellow, with a restricted brown pattern; cord, especially m-cu, very oblique; male hypopygium with the outer arm of the outer dististyle a small blackened spine bearing a single seta on lower face; intermediate arm with conspicuous teeth; gonapophyses stout.

Male.—Length about 5.5 mm.; wing 6.5 mm.; antenna about 6 mm.

Rostrum brownish vellow; palpi conspicuously blackened. Antennæ (male) elongate, exceeding the body: scape and pedicel vellow, flagellum dark brown; flagellar segments elongate-subcylindrical or very slightly narrowed at outer end, with very long outspreading verticils over most of the length. Head greyish brown; anterior vertex greatly reduced.

Thorax almost uniformly pale brownish yellow, the humeral region of the præscutum restrictedly vellow. Notum, excepting the postnotum, with long conspicuous black setæ; pleura glabrous. Halteres brownish yellow.

Legs with the coxe and trochanters obscure yellow; remainder of legs brownish yellow, the outer tarsal segments somewhat darker. Wings brownish yellow, with a restricted but conspicuous darker brown pattern, appearing as spots over Sc_2 , along the cord, tip of R_{1+2} , and as tiny marginal spots on all longitudinal veins: stigma somewhat darker yellow, infuscated at both ends, tip of R_{1+2} and R_2 . Venation: Cord, especially m-cu, very oblique, much more so than in edentulus; m-cu sinuous, about its own length before the fork of M.

Abdomen pale vellowish brown, the hypopygium somewhat darker. Male hypopygium with the tergite terminating in two relatively narrow divergent blackened lobes, these much narrower than the notch between them. Apical lobe of basistyle shorter than the intermediate arm of dististyle. Outer dististyle with the outer arm a very small blackened spine that is shorter than a tergal lobe, with a single seta on lower face, the tip truncated or broken; intermediate arm with conspicuous teeth, these not subobsolete as in edentulus. Inner dististyle dilated before the subapical spine, the lower margin microscopically crenulate. Gonapophysis much stouter than in edentulus.

Hab. New Zealand (North Island).

Holotype, 3, Swanson, North Auckland, in kauri forest association, September 9, 1946 (W. E. Long).

I take unusual pleasure in naming this fly for Mr. Wilfred E. Long, to whom we are indebted for numerous Tipuloidea taken in the kauri forests in northern New Zealand. Amphineurus (Nothormosia) longi is closest to A. (N.) edentulus Alexander and A. (N.) insulsus Hutton, particularly the former, differing in the venation and in all details of the male hypopygium.

Amphineurus (Amphineurus) kingi, sp. n.

Allied to lyriformis; general coloration of præscutum almost uniformly pale brown, the remainder of notum and the pleura brownish black; wings with a weak brownish ground, more suffused in the stigmal region, more brightened across Rs; Rs relatively short, square and more or less spurred at origin; male hypopygium with the outer gonapophyses slender on basal portion, the outer half strongly dilated, extended into a strong apical spine; inner gonapophyses with basal half expanded, the outer half bent mesad into a long sinuous spine.

Male.—Length about 4.5-4.6 mm.; wing 5-5.2 mm.

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

Rostrum and palpi black. Antennæ relatively short in both sexes, brownish black; flagellar segments long-oval,

with conspicuous verticils. Head grey.

Pronotum brownish yellow, the pretergites obscure yellow. Mesonotal præscutum almost uniformly pale brown, the posterior sclerites of the notum and the pleura brownish black. Halteres with stem obscure yellow, the knob conspicuously light yellow. Legs with all coxae and trochanters obscure yellow; remainder of legs brown, the colour produced particularly by brown setæ and elongate scales; terminal tarsal segments dark brown. Wings with a weak brownish ground, more suffused in the stigmal region, more brightened across Rs, in cases forming a distinct pale area at this point; prearcular field more yellowed; veins light brown, the macrotrichia abundant, dark brown. Venation: Rs relatively short, square and spurred at origin; R_{2+3+4} subequal to basal section of R_5 ; cell 1st M_2 small, with m-cu near its base; vein 2nd A gently sinuous.

Abdomen dark brown, the elongate lobes of the basistyle in the male somewhat paler; surface of abdomen densely covered with flattened scales from slender petioles that leave normal setigerous punctures; fewer very elongate scale-like setæ. Male hypopygium with the basistyles long-produced. Outer dististyle with a strong tooth or tooth-like spine on mesal face at near midlength; inner dististyle a simple, strongly curved rod, its tip acute. Outer gonapophysis distinct, appearing as a simple rod, the basal half a slender stem, the outer half dilated to three or more times this width, thence narrowed into a long apical spine; surface of expanded portion with scattered setigerous punctures. Inner gonapophysis with basal half expanded, the outer half bent mesad into a long sinuous or feebly angulated spine, on its basal third with a few scattered elevated setigerous punctures. Ovipositor with valves very long, conspicuous, the hypovalvæ broader and a trifle longer than the cerci.

Hab. New Zealand (North Island).

Holotype, J. Swanson, North Auckland, altitude 100 feet, in kauri forest association, October 27, 1946 (W. E. Long). Allotopotype, \Q. Paratopotypes, \(\frac{1}{2}\).

This fly is named for Mr. H. G. King, from whom I have received several interesting Tipulidæ from the vicinity of Auckland. The most similar species is Amphineurus (Amphineurus) lyriformis Alexander, with which it was associated at the type locality. The structure of the male hypopygium, particularly of the gonapophyses, readily separates the two flies.

Molophilus (Molophilus) cristiferus, sp. n.

Belongs to the macrocerus group; general coloration of thorax and abdomen dark brown, the humeral region of præscutum obscure vellow; male hypopygium with the basal dististyle a powerful blackened rod that narrows into a straight black spine, along the face with a longitudinal continuous row of powerful blackened spinous setæ that form a distinct crest.

Male.—Length about 4 mm.; wing 4.5 mm.

Rostrum and palpi black. Antennæ with scape and pedicel black; a single flagellar segment remains, black, elongate-cylindrical, with numerous long outspreading verticils. Head dark brown.

Thoracic dorsum dark brown, the pretergites testaceous yellow; humeral region and lateral borders of præscutum obscure brownish yellow, postnotum and pleura still darker, brownish black. Halteres dark brown, the base of stem restrictedly pale yellow. Legs with all coxe and trochanters yellow; remainder of legs brownish black, the femoral bases restrictedly obscure yellow. Wings greyish subhyaline, the prearcular and costal fields very pale yellow; veins pale brown, the macrotrichia darker. Venation: R_2 almost in alignment with the basal section of R₅; petiole of cell M₁, about twice m-cu; vein 2nd A elongate, ending shortly beyond the cephalic end of m-cu.

Abdomen brownish black, the hypopygium black. Male hypopygium with the outer dististyle much as in the group. Basal dististyle a powerful blackened rod, gently curved and very gradually narrowed into a long straight spine; base of style on outer face with abundant erect setulæ, on inner face with much stouter setæ; face of the style with a row of powerful black spinous setæ or spines, the row continued as far distad as the base of the apical spine; outer setæ becoming more slender, the outermost more grouped or consolidated.

Hab. New Zealand (North Island).

Holotype, 3, Henderson, North Auckland, altitude 100

feet, in light bush, October 10, 1946 (W. E. Long).

The macrocerus group is restricted to New Zealand, including rather numerous species additional to the present fly. These include Molophilus (Molophilus) abruptus Alexander, M. (M.) heteracanthus Alexander, M. (M.) imberbis Alexander, M. (M.) inornatus Edwards, M. (M.) longiclavus Alexander, M. (M.) macrocerus Alexander, M. (M.) myersi Alexander, M. (M.) ohakunensis Alexander, M. (M.) porrectus Alexander, M. (M.) quadrifidus Alexander, M. (M.) recisus Alexander, M. (M.) remotus Alexander, and M. (M.) subuliferus Alexander, all differing from one another chiefly in the structure of the male hypopygium, particularly the basal dististyle. Among these species, the present fly is closest to subuliferus, yet is quite distinct.

Molophilus (Molophilus) cyatheticolus, sp. n.

Belongs to the *plagiatus* group; mesonotum pale yellowish brown, the præscutum with three clearer yellow stripes; wings with vein R_2 atrophied or apparently so; male hypopygium with the basal dististyle a very stout rod, at apex bent laterad into a weak head that terminates in a long upper spine, the head with unusually numerous elongate setæ.

Male.—Length about 3 mm.; wing 3.5 mm.

Rostrum yellow; palpi black. Antennæ short; scape and pedicel yellow, flagellum more testaceous brown; flagellar segments long-oval with truncated ends; verticils long and conspicuous, the longest nearly three times the

segments. Head obscure yellow.

Mesonotum pale yellowish brown, the præscutum with three clearer yellow stripes. Pleura and pleurotergite somewhat clearer yellow. Halteres with base of stem pale, the outer end and base of knob weakly infuscated, the apex of knob yellowed. Legs with the coxæ and trochanters yellow; remainder of legs yellow, the outer tarsal segments weakly infuscated. Wings with a faint greyish yellow tinge, the prearcular field and costal border

clearer yellow; veins obscure yellow, the trichia brown. Venation: Vein R_2 apparently atrophied, if present, invisible in balsam mounts; m-cu about one-half as long as the petiole of cell M_3 ; vein 2nd A only gently sinuous, ending opposite or before the posterior end of m-cu.

Abdomen brownish yellow, the hypopygium somewhat clearer yellow. Male hypopygium with the beak of the basistyle slender, blackened. Outer dististyle deeply bifid, the outer arm with the apex more expanded into a triangular blade, the inner arm obliquely truncated. Basal dististyle a very stout rod, at apex bent laterad into a weak head that terminates in a long upper spine and apparently a lower point or close pencil of blackened setæ, the entire apex surrounding the upper spine with abundant elongate setæ; surface of upper half with microscopic appressed spicules, a few on outer face before the spine longer and more conspicuous. Compared with flavidulus, the entire style is much stouter and the armature and vestiture of the head quite distinct.

Hab. New Zealand (North Island).

Holotype, 3, Henderson, North Auckland, altitude 100 feet, in tree-fern association, December 27, 1946

(W. E. Long).

The most similar described species is *Molophilus* (*Molophilus*) flavidulus Alexander, which has the basal dististyle of the male hypopygium much more slender and with the armature and vestiture of the apex quite different, as indicated above.

Molophilus (Molophilus) perlucidus, sp. n.

Belongs to the *plagiatus* group; thorax uniformly shiny yellow; head brown; legs obscure yellow; wings whitish subhyaline, the veins very pale, only a trifle darker than the ground; male hypopygium with the basal dististyle a small simple rod that narrows very gradually to the blunt tip, the blackened outer half with sparse appressed scabrous points.

Male.—Length about 3-3·2 mm.; wing 3·6-3·8 mm. Female.—Length about 3·5 mm.; wing 3·5 mm.

Rostrum and palpi brown. Antennæ short; scape and pedicel brown, flagellum more testaceous yellow or brownish yellow. Head brown.

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Thorax uniformly shiny yellow or orange-yellow; præscutal setæ sparse but long and conspicuous. Halteres with stem yellow, knob infuscated. Legs with all coxe and trochanters yellow; remainder of legs obscure yellow, the terminal tarsal segments infuscated. Wings whitish subhyaline; veins very pale yellow, only a triffe darker than the ground, scarcely apparent on slides; macrotrichia brown, costal fringe conspicuous. Venation: R_2 approximately opposite r-m; m-cu very faint, about one-half the petiole of cell M_3 ; vein 2nd A long, the outer half sinuous.

Dr. C. P. Alexander on

Abdomen vellow, only the dististyle blackened. Male hypopygium with the beak of the ventral dististyle relatively short but slender, black. Outer dististyle with the outer arm a widely expanded blade, more or less pointed at apex, the inner arm a slender spine, its tip subacute. Basal dististyle a small simple rod, narrowed very gradually to the blunt tip, the outer half blackened. this portion with relatively few and scattered appressed scabrous points; at and close to apex with scattered erect setulæ. Ædeagus straight and slender.

Hab. New Zealand (North Island).

Holotype, J, Henderson, North Auckland, altitude 100 feet, in light bush, September 7, 1946 (W. E. Long).

Allotopotype, \mathcal{Q} . Paratopotypes, $\mathcal{Q}\mathcal{Q}$.

The two closest allies of the present fly are Molophilus (Molophilus) pallidulus Alexander and M. (M.) parvulus Alexander, both being yellow species with generally similar male hypopygia but differing in the structure of the latter, particularly the basal dististyle.

Molophilus (Molophilus) phallacanthus, sp. n.

Belongs to the plagiatus group; general coloration of mesonotum reddish brown to medium brown; legs chiefly obscure vellow; wings with a weak brownish tinge, the prearcular and costal fields more yellowed; male hypopygium with the beak of the basistyle slender; basal dististyle a slightly flattened, nearly straight, pale blade, the outer margin with appressed spinulose points; phallosomic plate large, expanded outwardly; ædeagus before apex with several appressed spinous points.

Male.—Length about 2.5 mm.; wing 2.8 mm.; antenna about 0.9 mm.

Female.—Length about 2.6 mm.; wing 2.8 mm.

Rostrum brown, palpi somewhat darker. Antennæ moderately long, dark brown; flagellar segments longoval, with conspicuous erect setæ, including one verticil of unusual length on each segment near base, these unilaterally distributed. In the female, antennæ shorter but still longer than usual in the plagiatus group. Head

brownish grev.

Pronotum and pretergites light yellow. Mesonotum almost uniformly reddish brown to medium brown, the surface very sparsely pruinose. Pleura yellow. Halteres obscure yellow. Legs chiefly obscure yellow to brownish vellow, only the outer segments a trifle darker. Wings relatively broad, with a weak brownish tinge, the prearcular and costal fields more yellowed; veins brownish vellow, the macrotrichia a triffe darker. Venation: R_{2} Iving a little diatad of the general level of r-m; petiole of cell M₂ about twice m-cu; vein 2nd A of moderate length, ending nearly opposite or just before m-cu.

Abdomen dark brown, the hypopygium testaceous vellow. Male hypopygium with the beak of the basistyle slender. Outer dististyle stout, the outer arm expanded. Basal dististyle a slightly flattened, nearly straight pale blade, the apex produced into a point; lower margin back from tip with a few scattered tubercles; surface of style along outer margin with appressed spinous points. Phallosomic plate large, expanded outwardly, the caudal border subtruncate to very gently emarginate, the surface glabrous. Ædeagus before apex with several appressed spinous points.

Hab. New Zealand (North Island).

Holotype, A. Lake Moana, on border between Auckland and Hawke's Bay, December 16-21, 1925 (A. L. Tonnoir).

Allotopotype, Q. Paratopotypes, 2 33.

Molophilus (Molophilus) phallacanthus has the male hypopygium superficially much like other regional species, such as M. (M.) curtivena Alexander, M. (M.) flavomarginatus Alexander, M. (M.) luteipygus Alexander, M. (M.) niveicinctus Alexander, M. (M.) philpotti Alexander and M. (M.) pictipleura Alexander. It differs from all in the conspicuously expanded phallosomic plate and especially in the spinous apex of the ædeagus, the latter being a character that had not been noted previously in this vast complex of species.

Toxorhina (Toxorhina) pulvinaria, sp. n.

Mesonotal præscutum with three virtually confluent greyish-brown stripes; wings with a weak brown tinge; Sc_1 ending opposite origin of Rs, the latter approximately three-fourths as long as R_5 ; abdominal tergites uniformly brown; male hypopygium with the median region of the tergite produced into a small lobe; apex of basistyle with a dense band of branched setæ; outer dististyle a slender curved spine.

Male.—Length, excluding rostrum, about 5.5 mm.; wing

4.5 mm.; rostrum about 6 mm.

Rostrum longer than the wing or remainder of body, dark brown. Antennæ with the scape brown, pedicel brownish yellow, flagellum dark brown. Head light grey; anterior vertex narrow, a little exceeding the diameter of scape; no corniculus.

Cervical region and pronotum dark brown. Præscutum very strongly projecting, with three virtually confluent greyish-brown stripes that are ill-delimited; lateral and humeral regions of præscutum obscure yellow; posterior sclerites of notum similarly dark brownish grey, the parascutella obscure yellow. Pleura chiefly pale yellow, pruinose, the dorsal pleurites darker. Halteres infuscated, the base of stem narrowly yellow. Legs with the coxæ yellow, the fore pair a trifle darker; trochanters yellow; remainder of legs broken. Wings with a weak brownish tinge, the prearcular and costal regions restrictedly more whitened; veins brown. Venation: Sc_1 ending opposite origin of Rs, the latter long, approximately three-fourths as long as its branch (R_5) ; basal section of M_{1+2} nearly twice r-m, the inner end of cell M_2 lying slightly basad of cell R_5 ; cell M_3 about equal in length to its petiole; m-cu subequal to distal section of Cu_1 , placed just beyond the fork of M; cell 2nd A relatively narrow.

Abdominal tergites uniformly brown, sternites obscure brownish yellow. Male hypopygium with the median region of tergite produced caudad into a small lobe, the tip darkened and provided with microscopic setulæ. Basistyle at apex with a dense band of punctures that bear pale branched setæ. Outer dististyle a slender curved spine. Inner dististyle larger, the rostral portion flattened, obtuse, the posterior outer angle produced into a short point. Gonapophysis a relatively small and inconspicuous blade. Branches of ædeagus short.

Hab. Northern Netherlands New Guinea, Papua. Holotype, &, Hollandia, April 18, 1945 (Harry Hoogstraal). Paratype, &, Kokoda, Papua, altitude 1200 feet, July-August 1933 (L. E. Cheesman); British Museum (Natural History).

The most similar regional species is *Toxorhina* (*Toxorhina*) trilineata Alexander, which still is known only from the female sex. This differs in the larger size, coloration of the body and wings, and in slight venational details.