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XVIII.—*New or little-known Tipulidæ (Diptera).*—XLIX.
Australasian Species. By CHARLES P. ALEXANDER, Ph.D.,
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THE crane-flies discussed at this time are Australian Hexatomine species, chiefly belonging to the genera *Limnophila* and *Gynoplistia*. As before, the great majority of the species were taken in New South Wales and Victoria by Mr. F. Erasmus Wilson, to whom all such types have been returned. Other material discussed herewith was taken by Mr. Tregellas and Miss Wood, in the Wilson Collection; by Messrs. Campbell, Hill, Tillyard, and Tonnoir, taken at and near Mt. Kosciusko, the types returned to Dr. Tonnoir; and by Mr. Mathews in West Australia and by Mr. Robinson in northern New South Wales, in the present writer's collection. I wish to express my deep thanks to all who have so efficiently co-operated in this study of the Australian Tipulidæ.

Epiphragma erasmi, sp. n.

Male.—Length about 7–9 mm; wing 7–10 mm.

Allied to *Epiphragma hardyi*, Alexander (S. Queensland, N. New South Wales), in the characters of the numerous supernumerary cross-veins and spurs in cell *C* and the
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presence of three dark rings on all the tibiæ. It differs in the following regards:—

Head with the centre of the vertex dark grey, with the two brown spots less evident. Mesonotal præscutum with the stripes buffy, the intermediate pair divided by a very conspicuous dark brown median vitta that is much darker than the stripes themselves. Halteres longer. Femora yellow, with two dark brown rings, the outermost subterminal in position, leaving the apex conspicuously yellow, this almost as extensive as the subterminal pale ring; in *hardyi* the apex is broadly darkened, with only an incomplete pale spot; tibiæ yellow, with three black rings, the dark apex narrowest, less than one-fourth as extensive as the yellow subterminal ring; in *hardyi*, the dark apex is extensive, being approximately equal to the basal dark ring and about one-half as long as the yellow subterminal ring; tarsi pale yellowish brown, the terminal segments darkened. Wings with the ground-colour pale yellow, the dark spotted and dotted pattern not or scarcely confluent, and thus not extensively concealing the ground-colour; in *hardyi* the dark pattern is very extensive, appearing as confluent spots and dots that largely conceal and restrict the deeper yellow ground-colour. Costal fringe somewhat shorter and less conspicuous.

Hab. New South Wales, Victoria.

Holotype, ♂, Belgrave, Victoria, in fern-gully, January 13, 1929 (*F. E. Wilson*).

Paratopotypes, ♂, 1 damaged specimen of doubtful sex, February 6, 1928 (*F. E. Wilson*); ♂ ♀, January 26, 1930 (*F. E. Wilson*). *Paratype*, ♂, Rous, Richmond R., New South Wales, March 23, 1923 (*V. J. Richmond*).

I take great pleasure in naming this fly in honour of my friend Mr. F. Erasmus Wilson, who has built up one of the most important collections of Australian Tipulidæ. The smallest measurements pertain to the Richmond River male.

Bergrothomyia tregellasi, sp. n.

General coloration brownish yellow, the præscutum with four dark brown stripes; antennæ and legs black; wings subhyaline, with a restricted brown pattern; R_{2+3+4} shorter than R_2 alone.

Male.—Length, excluding rostrum, about 8 mm.; wing 8 mm.; rostrum about 1.2 mm.

Female.—Length, excluding rostrum, about 9.5 mm.; wing 8.6 mm.; rostrum about 1.1 mm.

Rostrum and palpi black, the former exceeding in length the remainder of head. Antennæ black throughout, slightly longer than the rostrum; flagellar segments elongate, with verticils that slightly (φ) or considerably (σ) exceed the segments in length; terminal segment about two-thirds the penultimate. Head buffy grey, the central region of vertex dark brown; anterior vertex wide.

Pronotum brownish grey, darker medially. Mesonotal præscutum brownish yellow, with four conspicuous black stripes, the intermediate pair not reaching the suture; tuberculate pits and pseudosutural foveæ black, the præscutum being strongly constricted at the level of the latter; scutum heavily yellow pollinose, each lobe with two brown areas; scutellum and postnotum brown, heavily yellow pollinose, especially the latter. Pleura grey, vaguely variegated with darker. Halteres yellow, the base of the knobs a little darker. Legs with the coxæ and trochanters pale ochreous; legs black, the femoral bases paler. Wings subhyaline, with a sparse dark brown pattern; stigma large, oval; very narrow and restricted dark seams at origin of R_s , along cord and outer end of cell 1st M_2 , and as a marginal seam in the radial field; veins black. Venation: Sc_1 ending just before the fork of R_s , Sc_2 at its tip; R_{2+3+4} shorter than R_3 alone; R_2 subequal to R_{1+2} , a little beyond the fork of R_{2+3+4} ; cell 1st M_2 large; $m-cu$ more than two-thirds its length beyond the fork of M .

Abdominal tergites dark brown, the basal rings of the segments subglabrous and paler, producing more or less distinct bands; sternites brownish yellow. Ovipositor with the valves dark brown, very long and straight.

Hab. Victoria.

Holotype, φ , Belgrave, March 3, 1929 (*T. Tregellas*).

Allotype, σ , Mt. Donna Buang, above Warburton, altitude 3000–3800 feet, March 2, 1930 (*F. E. Wilson*).

Paratype, 1 φ , with the allotype.

This interesting crane-fly is named in honour of the collector of the type-specimen, Mr. T. Tregellas. *Bergrothomyia tregellasi* is very distinct from the two allied forms by the nearly unmarked wings.

Limnophila recedens, sp. n.

General coloration dark brown; antennæ (σ) elongate; halteres long, yellow, the knobs infuscated; wing with a strong brown tinge; numerous macrotrichia in cells of

wing beyond cord; Sc_1 long; cell R_3 sessile or nearly so; cell M_1 present; male hypopygium with each gonapophysis terminating in a simple point.

Male.—Length about 7 mm.; wing 7.6 mm.; antenna about 3 mm.

Rostrum and palpi black. Antennæ black throughout, elongate (♂), as shown by the measurements; flagellar segments subcylindrical, with coarse erect setæ and scattered, slightly longer verticils; terminal segment small, oval, not exceeding one-third the length of the penultimate. Head dark brown, with a sparse yellowish pollen.

Mesonotum dark brown; tuberculate pits lacking; pseudo-sutural foveæ limited to a small marginal depression; posterior sclerites of mesonotum dark brown. Pleura dark brown, the region of the wing-root somewhat brighter. Halteres elongate, yellow, the knobs infuscated. Legs with the coxæ brown; trochanters yellow; remainder of legs black, the femoral bases restrictedly brightened. Wings with a strong brown suffusion, the oval stigma slightly darker brown; veins dark brown. Numerous macrotrichia in cells beyond the cord, lacking in the extreme bases of cells R_3 , R_4 , and R_5 . Venation: Sc_1 ending shortly beyond the base of cell R_3 , Sc_2 some distance from its tip, Sc_1 alone nearly twice $m-cu$; Rs long; cell R_3 sessile or nearly so, R_{2+3+4} being very short to lacking; R_2 a trifle shorter than R_{1+2} ; inner ends of cells R_4 , R_5 , and 1st M_2 in oblique alignment, the last most proximad; cell M_1 present, subequal to its petiole; cell 1st M_2 small; $m-cu$ about one-half its length beyond the fork of M .

Abdomen brownish black, the hypopygium more brownish yellow. Male hypopygium with the median region of the tergite with a shallow rounded notch. Outer dististyle entirely blackened, a simple gently curved rod, its apex very shallowly and weakly bifid, the entire style clothed with abundant erect coarse setæ. Gonapophyses appearing as flattened plates, the apical point stout but simple. *Ædeagus* relatively short.

Hab. Victoria.

Holotype, ♂, Mt. Donna Buang, above Warburton, altitude 3800–4000 feet, in forest of southern beech and sassafras, December 14, 1930 (*F. E. Wilson*).

Limnophila recedens is allied to species such as *L. pilosipennis*, Alexander, differing conspicuously in the dark brown coloration, together with the venation, notably the long Sc_1 and the sessile or subsessile cell R_3 .

Limnophila longicellula, sp. n.

General coloration dark brown, pollinose; præscutal stripes very short, black; halteres obscure yellow; wings yellow, with a brown pattern; R_{2+3+4} relatively long, about one-half Rs ; cell 1st M_2 very long, exceeding any of the veins beyond it.

Male.—Length about 5.3 mm.; wing 6.2 mm.

Rostrum black, sparsely pollinose. Antennæ black throughout, short, if bent backward not extending far beyond the head. Head dark, with a heavy yellow pollen.

Pronotum dark brown, the posterior notum more yellowish laterally. Mesonotal præscutum dark, heavily yellow pollinose, the usual stripes black, very abbreviated, especially the intermediate pair, which appear as elongate-oval areas behind the tuberculate pits; pseudosutural foveæ and tuberculate pits black, the latter placed far behind the cephalic margin of the sclerite; remainder of mesonotum chiefly dark brown, the median region of scutum obscure yellow. Pleura dark-coloured, including the dorso-pleural membrane. Halteres obscure yellow. Legs with the coxæ and trochanters obscure yellow; remainder of legs broken. Wings yellow, with a relatively heavy brown pattern that is restricted to the vicinity of the veins, including areas at h , bases of cells R and M , origin of Rs , fork of Sc , stigma, cord, and outer end of cell 1st M_2 ; marginal seams at ends of veins R_3 , R_4 , and less conspicuously on the medial veins; axillary region darkened; veins pale, darker in the infuscated areas. Venation: Sc_1 ending shortly before the fork of Rs , Sc_2 near its tip; Rs long, angulated and short-spurred at origin; R_{2+3+4} elongate, about one-half Rs ; R_2 just beyond the fork of R_{3+4} ; cells 1st M_2 unusually long, exceeding any of the veins beyond it, cell M_1 correspondingly small; basal section of M_3 long, subequal to the distal section; $m-cu$ more than its own length beyond the fork of M .

Abdomen brownish black, including the hypopygium. Male hypopygium with the basistyles elongate, relatively slender. Outer dististyle a blackened, nearly straight rod, the outer apical angle produced into a blackened spine, the outer surface with abundant appressed spinulæ. Inner dististyle pale, broad-based, with a small setiferous axillary lobe. Interbasal lobe appearing as a flattened squamulose plate, the outer end broadly oval, the inner end more pointed. Gonapophyses produced into a long, slender, sinuous point. *Ædeagus* very short.

Hab. Victoria.

Holotype, a broken ♂, Belgrave, in dark fern-gully, March 31, 1929 (*F. E. Wilson*).

Limnophila longicellula is generally similar to *L. jucunda*, Alexander, differing especially in the venation and details of structure of the male hypopygium.

Limnophila angusticellula, sp. n.

General coloration dark brown, the postnotum grey; legs yellow, the tips of the femora and tibiæ dark brown; wings pale brownish, with a restricted darker brown pattern; *Rs* weakly angulated at origin; R_{2+3+4} relatively short, only about two-thirds to three-fourths R_{2+3} , the latter nearly three times R_2 ; cell 1st M_2 long and narrow, exceeding any of the veins beyond it.

Female.—Length about 7 mm.; wing 8.2 mm.

Rostrum and palpi black. Antennæ brownish black throughout, relatively short, if bent backward not attaining the wing-root; flagellar segments subcylindrical, the verticils exceeding the segments; terminal segment longer than the penultimate. Head yellowish grey, the anterior vertex brighter yellow.

Mesonotum chiefly dark brown, badly crushed in the unique type; scutellum paler; postnotum grey. Pleura brownish grey, the dorso-pleural region dark; pteropleurite a little paler. Halteres obscure yellow. Legs with the coxæ brownish yellow; trochanters obscure yellow; femora yellow, the tips rather narrowly but conspicuously dark brown; tibiæ yellow, the tips infuscated; tarsi yellow, the terminal segments infuscated; legs with conspicuous erect setæ. Wings pale brownish, with a restricted but conspicuous darker brown pattern, distributed as follows:—Post-arcular in cells *R* and *M*; origin of *Rs*, continued across cell *M* to vein *Cu*; along the cord and as a seam along Cu_1 ; outer end of cell 1st M_2 more narrowly darkened; stigma elongate, paler brown; R_2 narrowly seamed with darker; veins pale brown, darker in the infuscated areas. Venation: *Sc* relatively short, Sc_1 ending about opposite three-fourths *Rs*, Sc_2 a short distance from its tip; *Rs* long, weakly angulated at origin; R_{2+3+4} about two-thirds to three-fourths R_{2+3} , the latter nearly three times R_2 ; R_2 a little longer than R_{1+2} ; cell R_3 deep, the veins enclosing it gently sinuous; anterior cord in oblique alignment; cell 1st M_2 unusually long and narrow, exceeding any of the veins beyond it; *m* transverse, less than one-half as long as the arcuated basal

section of M_3 ; cell M_1 shallow, about two-thirds longer than its petiole; $m-cu$ more than its length beyond the fork of M . A weak spur on vein M at near mid-length, jutting distad into cell M , is possibly adventitious.

Abdomen brownish black, the genital segment obscure yellow. Ovipositor with the tergal valves very long and slender, yellowish horn-colour.

Hab. Victoria.

Holotype, ♀, Healesville, April 21, 1929 (*E. E. Wilson*).

Although generally similar to *L. longicellula*, sp. n., the present fly appears to represent an entirely distinct species, distinguished chiefly by the venation of the radial field.

Limnophila brunneistigma, sp. n.

Belongs to the *jucunda* group; general coloration of mesonotum shiny castaneous, the postnotum and pleura black; antennal flagellum light yellow; legs yellow, conspicuously setiferous; wings pale yellow, the oval stigma dark brown; abdomen blackened, the caudal margins of the segments narrowly yellow.

Male.—Length about 4.2–4.4 mm.; wing 5.2–5.6 mm.

Female.—Length about 5.2 mm.; wing 6 mm.

Rostrum and palpi dark brown. Antennal scape dark brown, the flagellum conspicuously light yellow; antennæ (♂) relatively short, if bent backward not reaching the wing-root. Head black, sparsely pruinose.

Pronotum brownish black, the anterior lateral pretergites obscure yellow. Mesonotal præscutum shiny light castaneous, more blackened anteriorly; scutum castaneous; scutellum broad, infuscated, paler caudally; postnotum blackened. Pleura conspicuously blackened. Halteres yellow. Legs yellow, the outer tarsal segments infuscated; segments of legs with long, conspicuous, erect setæ. Wings pale yellow, the oval stigma conspicuous, dark brown; veins yellow. Venation: Sc_1 ending about opposite three-fourths the length of R_s , Sc_2 not far from its tip; R_2 longer than R_{2+3} , sometimes at fork of R_{3+4} , about one-half R_{1+2} ; cell M_1 small; $m-cu$ at near mid-length of cell 1st M_2 ; wing widest just behind the termination of vein 2nd A .

Abdomen blackened, the caudal margins of the segments narrowly and obscurely yellow; hypopygium chiefly brownish yellow. Male hypopygium with the outer dististyle a straight blackened rod, the apex truncated, the outer apical angle a powerful appressed spine, with a few tiny appressed teeth on its outer face. *Ædeagus* very short.

Hab. Victoria.

Holotype, ♂, Belgrave, in dark fern-gully, March 31, 1929 (F. E. Wilson).

Allotopotype, ♀.

Paratopotypes, 5 ♂ ♂.

Limnophila brunneistigma is allied to *L. suspecta*, Alexander, and related forms, differing from all in the peculiar pattern of the wings.

Limnophila kershawi, Alexander.

The discovery of the race described herewith as *cumberlandensis* has made it necessary to review the present species. There now appear to be three distinct races or, perhaps, varieties, distinguished by the pattern of the wings, together with slight structural differences that appear to be constant. *L. k. dandenongensis*, subsp. n., has the wings nearly immaculate, *L. k. cumberlandensis*, subsp. n., has them heavily patterned, while typical *kershawi* occupies an intermediate position.

Limnophila kershawi dandenongensis, subsp. n.

Differs from the typical form in the almost uniformly yellow wings, which are unmarked basad of the cord with the exception of a very small brown spot at origin of *Rs* and sometimes at tip of vein *2nd A*. In *kershawi* there is a postarcular dark pattern in cell *R*, while the markings of the distal portions of the wing are usually heavier. Male hypopygium with the interbasal structures relatively short and broad, not produced caudad into a long tapering point. Gonapophyses unusually broad and flattened, the outer margin and surface with abundant microscopic spinulæ.

Hab. Victoria.

Holotype, ♂, Sassafras, Dandenong Range, October 19-20, 1922 (A. Tonnoir); returned to Dr. Tonnoir, as a paratype of *kershawi*.

Allotopotype, ♀.

Paratopotype, ♂; *paratypes*, ♂, Millgrove, April 7, 1928 (F. E. Wilson); ♂ ♀, Mt. Donna Buang, above Warburton, altitude 3800-4000 feet, in forest of southern beech and sassafras, December 14, 1930 (F. E. Wilson).

Limnophila kershawi cumberlandensis, subsp. n.

Generally similar to the typical form (Ann. & Mag. Nat. Hist. ser. 10, vol. i. pp. 219-220, 1928), differing in the more heavily-patterned wings and details of structure of the

male hypopygium. Wings with the ground-colour more whitish than yellow, the costal and subcostal cells strongly infumated, their outer ends clearer; dark wing-pattern very heavy, including the usual darkened apices of cells R_2 and R_3 ; a conspicuous band along the cord; spots at base of cell R , origin of Rs , tip of Sc , outer end of cell 1st M_2 , and as extensive marginal clouds on the medial, cubital, and anal veins; a conspicuous dark seam on Rs beyond mid-length of the vein; axilla darkened. Male hypopygium with the interbasal processes appearing as long, nearly straight blades that are broadest at base, thence slightly narrowed, the apex obtuse. Gonapophyses narrower than in *dandenongensis*.

Hab. Victoria.

Holotype, ♂, Cumberland Valley, near Marysville, November 10, 1928 (*F. E. Wilson*).

Paratypes, several of both sexes, Walhalla, April 18–22, 1930 (*F. E. Wilson*).

Limnophila brachyptera, sp. n.

Nearly apterous, at least in the female sex; antennæ 15-segmented, the terminal segment long; legs long, the segments with conspicuous setæ; halteres pale, the knobs very weakly developed; wings about as long as the halteres.

Female.—Length about 11 mm.; wing about 1 mm.

Rostrum greyish brown, the palpi dark brown. Antennæ 15-segmented, the basal segment dark brown, sparsely pruinose, the second scapal and basal portion of first flagellar segment yellow; remainder of antennæ dark brown; flagellar segments oval, gradually decreasing in size outwardly, the terminal segment equal in length to the preceding two segments combined, and evidently the result of fusion. Head brownish grey.

Thorax relatively small, the postnotal mediotergite shortened; notum brownish yellow, the præscutum darker medially in front; pseudosutural foveæ black, large and conspicuous, sinuous in shape; no tuberculate pits. Pleura yellowish grey, the dorso-pleural region clearer yellow. Legs long and relatively stout, the segments with conspicuous outspreading setæ; coxæ yellowish grey; trochanters yellow; femora, tibiæ, and basitarsi yellow, the tips weakly darkened; remainder of tarsi dark brown. Halteres pale, slender, about as long as the wing, the knobs scarcely developed. Wings generally pale, greatly reduced in size, as shown by the measurements; basal portion of wing narrowed, the distal two-thirds dilated into a broad blade; costal margin with

long conspicuous trichia on distal half, these greatly reduced in number on proximal half; one powerful radial vein provided with numerous trichia on a little less than the outer half; a few other trichia on veins behind the radial field.

Abdomen relatively long and slender; tergites dark brown, the sternites more yellowish. Ovipositor with the valves long and slender, yellowish horn-colour.

Hab. New South Wales.

Holotype, ♀, Club Lake, Mt. Kosciusko, altitude 6000 feet, January 28, 1930 (*R. J. Tillyard*).

Limnophila brachyptera cannot be associated with any species so far described. It is very different from *L. subapterogyne*, Alexander, the only other *Limnophila* known from Australia in which the wings of the female are greatly reduced.

Limnophila acuspinosa, sp. n.

General coloration grey; mesonotal præscutum with a darker median stripe; antennæ short in both sexes; halteres yellow; legs chiefly black; wings relatively long and narrow, pale yellow, the stigmal area a trifle darker; R_{2+3+4} long, in alignment with R_s , about one-half as long as the straight anterior branch of R_s ; R_2 near the fork of R_{3+4} ; cell M_1 present; abdomen black, the hypopygium abruptly fulvous-yellow; male hypopygium with the tip of the outer dististyle a long simple black spine.

Male.—Length about 5.5 mm.; wing 6.4–6.5 mm.

Female.—Length 6–7 mm.; wing 6–7.8 mm.

Rostrum brownish black; palpi short, black. Antennæ short in both sexes, black throughout; flagellar segments oval, becoming smaller and somewhat shorter outwardly, the terminal segment larger than the penultimate; verticils delicate, longer than the segments. Head grey.

Mesonotal præscutum light reddish brown, sparsely pruinose, darker brown medially in front, the lateral stripes little or scarcely apparent; no tuberculate pits; pseudo-sutural foveæ relatively small, lying not far from the lateral margin; scutum brown, sparsely pruinose; scutellum light grey, margined posteriorly with paler; postnotal mediotergite small, obscure yellow. Pleura with the propleura, anepisternum, and sternopleurite conspicuously grey, the posterior pleurites more testaceous-brown. Halteres pale yellow. Legs with the fore coxæ brown, sparsely pruinose, the remaining coxæ pale; trochanters brownish yellow; femora brownish yellow, passing into black; remainder of legs

black ; legs relatively long and slender, with conspicuous sub-apressed setæ ; tibial spurs setiferous, except at tips. Wings relatively long and narrow, pale yellow, the stigmal area a little darker ; veins brownish yellow. Macrotrichia of veins relatively sparse, mostly beyond the level of the cord. Venation : Sc_1 ending just before the level of the anterior end of $r-m$, Sc_2 at its tip ; Rs in alignment with R_{2+3+4} , this vein about one-half the nearly straight anterior branch of Rs ; R_2 shortly beyond the fork of R_{3+4} and about two-fifths the length of R_{1+2} ; inner ends of cells R_4 , R_5 , and 1st M_2 in subtransverse to oblique alignment, in the latter case cell 1st M_2 most basad ; $r-m$ arcuated ; cell M_1 present, shorter than its petiole ; $m-cu$ about one-half to one-third its length beyond the fork of M .

Abdominal tergites black, the hypopygium conspicuously fulvous-yellow ; sternites more pruinose, the basal segments more yellowish. Male hypopygium with the outer dististyle pale, terminating in an unusually long, slender, blackened point, gradually narrowed to the slightly curved acute tip ; style provided with numerous long setæ. Gonapophyses appearing as flattened pale blades, the tips bifid and microscopically toothed. Ædeagus relatively elongate, more or less spiraloid within the sheath. Ovipositor with the genital segment obscure fulvous, the tergal valves long and nearly straight.

Hab. New South Wales.

Holotype, ♂, Wentworth Falls, Blue Mts., October 20-30, 1930 (*F. E. Wilson*).

Allotopotype, ♀.

Paratopotypes, 3 ♂ ♀.

Limnophila acuspina is readily told from allied species of the genus in the Australian fauna by the diagnostic features listed, especially the structure of the male hypopygium.

Ischnothrix (Ischnothrix) grampiana, sp. n.

General coloration grey, variegated with black ; antennal flagellum black, the basal segment (♀) subequal to the succeeding two combined ; præscutum with broad brownish black on anterior half, this divided behind to enclose an elongate-oval grey area that reaches the suture ; wings whitish, with a heavy dark brown pattern that consists of solid areas in most cells ; vein R_3 oblique.

Female.—Length about 8-8.5 mm. ; wing 7.5-8 mm.

Rostrum black, with a yellowish-grey pollen ; palpi black. Antennæ black, the scapal segments dark brown ; first

flagellar segment (♀) elongate, subequal to or exceeding the following two taken together; remaining flagellar segments gradually decreasing in length outwardly, the distal segments crowded, the terminal segments more or less fused; verticils relatively short and inconspicuous, on the intermediate segments shorter than the segments alone. Head dark brown, with a heavy yellowish-grey pollen, the centre of the vertex with a small brown spot.

Mesonotal præscutum with a greyish ground-colour, variegated with brownish black; a very broad median dark stripe that divides at near mid-length, the arms enclosing an elongate-oval grey area; humeral region narrowly lined with black; an interrupted brownish-black sublateral line; scutum grey, each lobe with brownish-black areas; posterior sclerites of mesonotum grey, the scutellum with a black spot on either side of median line at base. Pleura grey, the dorsal sclerites more yellowish grey, with two narrow dark brown longitudinal stripes, the more dorsal shorter, occupying the area between the anepisternum and sternopleurite, the longer ventral stripe crossing the sternopleurite on to the pteropleurite. Halteres pale yellow, the knobs conspicuously whitish, their basal portions a little dusky. Legs with the coxæ grey, the base of the fore coxæ dark brown; trochanters obscure yellow; femora yellow basally, the distal half passing into black, the extreme tip narrowly pale yellow; a narrow subterminal yellow ring, the broad subterminal annulus enclosed between these pale areas more intensely black; tibiæ obscure yellow, the bases and tips rather narrowly blackened; tarsi black, the proximal ends of basitarsi slightly paler. Wings whitish to pale grey, with an unusually conspicuous dark brown pattern that appears as broken, relatively small, solid brown spots arranged as in other related species, not pale grey as in *australasiæ*, and more broken into isolated areas than in *lawsonensis*; costal cell almost unvariegated, except at base and apex; marginal spots and seams at ends of all longitudinal veins; veins black, the prearcular region and cell Cu_1 pale yellow. Venation: R_s long, more than one-half longer than the petiole of cell R_3 ; vein R_2 slightly oblique, the distance on costa between R_{1+2} and R_2 about three-fourths the latter vein; $m-cu$ at fork of M .

Abdomen black, the extreme caudal margins of the tergites pale; genital shield of ovipositor blackened basally; the remainder dark castaneous; valves long and slender, dark brown, the tips pale.

Hab. Victoria.

Holotype, ♀, Grampians, Silver Band Falls, in fern-gully, October 1928 (*F. E. Wilson*).

Paratype, ♀, Grampians, not in fern-gully, October 1928 (*F. E. Wilson*).

Ischnothrix grampiana, although allied to *I. australasiæ* (Skuse), appears to be very distinct in the pattern of the body and wings.

Ischnothrix (Ischnothrix) mathewsi, sp. n.

Male.—Length about 5·2 mm.; wing 6 mm.; antenna about 5·6 mm.

Generally similar to *I. (I.) australasiæ* (Skuse) in general appearance, differing especially in the very simple structure of the male hypopygium.

Antennæ (♂) distinctly longer than the body, as shown by the measurements; first scapal segment brown, the succeeding four segments yellowish testaceous, the remainder passing into dark brown, the sutures very restrictedly pale; flagellar segments elongate-cylindrical, decreasing in length outwardly, clothed with conspicuous erect pale setæ. Head discoloured. Mesonotum grey, variegated with brown, the pattern largely discoloured and obliterated. Pleura extensively pruinose. Halteres pale, the apices of the knobs infuscated. Legs with the coxæ darkened basally, the tips pale; trochanters pale; femora obscure yellow, with a very broad black subterminal ring; tibiæ obscure yellow, both ends narrowly darkened; tarsi obscure yellow, passing into dark brown. Wings whitish subhyaline, with a sparse brown pattern arranged about as in *australasiæ*, but more ocelliform, especially in the medial, cubital, and anal fields; a continuous subterminal dark line in cells R_5 to M_4 , paralleling the outer margin of the wing. Venation: Sc_2 at tip of Sc_1 ; R_3 very short, nearly erect; distance on costa between tips of R_{1+2} and R_3 subequal to the latter vein; R_4 at apex curved slightly cephalad, cell R_3 being relatively small; basal section of M_3 relatively short, subequal to M_4 , $m-cu$ just before the fork of M .

Abdominal segments obscure brownish yellow, the lateral margins darkened; subterminal segments black; hypopygium yellow. Male hypopygium with the phallosome very simple in structure, the broad liguliform ædeagus subtended on either side by a flattened plate that narrows into a rod terminating in two acute decussate spines.

Hab. West Australia.

Holotype, ♂, Perth, May 4, 1927 (*W. H. Mathews*).

This interesting *Ischnothrix* is named in honour of the collector of the type-specimen.

Gynoplistia (Xenolimnophila) flindersi, sp. n.

General coloration brownish grey, the præscutum with four dark brown stripes; antennæ (♂) 16-segmented, the basal flagellar segments very weakly serrulate; wings whitish subhyaline, with restricted brown pattern.

Male.—Length about 19 mm.; wing 16.5–17 mm.

Rostrum reddish brown; palpi dark brown, short. Antennæ apparently only 16-segmented; basal segments reddish yellow, the flagellum brownish black; basal four or five flagellar segments very weakly and insensibly serrate at outer end, this condition barely indicated; outer segments subcylindrical, with long verticils; terminal segment very long, subequal to the preceding two taken together. Head reddish brown, with a sparse grey bloom.

Pronotum grey. Mesonotal præscutum brownish grey, with four dark brown stripes that are narrowly margined with grey, the intermediate pair becoming obsolete some distance before the suture; lateral stripes crossing the suture and suffusing the scutal lobes; scutellum more reddish brown; postnotum reddish brown, more pruinose in front, with a faintly darker median vitta. Pleura reddish, with a heavy grey pruinosity, the ventral sternopleurite darker; dorso-pleural region dusky. Halteres elongate, yellow, the knobs dark brown. Legs with the coxæ reddish, grey-pruinose; trochanters castaneous-brown; femora reddish brown, the tips very slightly darker; tibiæ reddish brown, the outer half passing into brownish black; tarsi black. Wings relatively narrow, whitish subhyaline, with a restricted brown pattern; prearcular region and cell *C* yellowish; cell *Sc* somewhat darker; restricted brown areas at origin of *Rs* and on anterior cord; still narrower dark seams on posterior cord, outer end of cell 1st *M*₂, along the longitudinal veins beyond cord, and as a broader seam along *Cu*; stigma pale brown; veins dark brown. Venation: *R*₂₊₃₊₄ straight, subequal to the deflection of *R*₅; upper branch of *Rs* strongly sinuous, cell *R*₃ deep; cell *M*₁ about one-half longer than its petiole; *m-cu* at mid-length of cell 1st *M*₂; vein 2nd *A* only gently sinuate.

Abdomen relatively elongate; tergites reddish brown, very sparsely pruinose; basal sternites reddish brown, the outer segments passing into darker brown; hypopygium reddish brown.

Hab. Tasmania.

Holotype, ♂, Flinders Island (*Miss Wood*).

Paratopotype, ♂.

Gynoplistia flindersi is very distinct from the two previously described species of the subgenus *Xenolimnophila*, differing from *G. (X.) fergusoni* (Alexander) by the very different wing-pattern and from *G. (X.) zaluscodes* (Alexander) by the fully-winged condition of the male sex.

Gynoplistia (Paralimnophila) signifera, sp. n.

General coloration grey, the præscutum with three narrow brownish-black stripes; scutal lobes each with two clearly defined brownish-black areas; pleura with a conspicuous brownish-black longitudinal stripe; legs black, the genua narrowly whitened; tarsi chiefly yellowish white; wings whitish, with a heavy brown pattern; *m-cu* more than one-half its length beyond the fork of *M*.

Female.—Length about 18 mm.; wing 16 mm.

Rostrum short, grey; palpi black. Antennæ broken beyond the ninth segment; basal segment dark brown, the remaining segments light reddish brown; all flagellar segments (1 to 7) with a conspicuous apical tooth, these becoming smaller on the outer segments and presumably becoming obsolete by flagellar segment 9 or 10. Head light grey, with a capillary brown median line.

Mesonotal præscutum light grey, with three narrow but conspicuous brownish-black stripes, the median stripe narrowed on the posterior side, the lateral stripes narrow; posterior interspaces and sublateral portions of sclerite with a weak brown suffusion; pseudosutural foveæ large, reddish brown; scutal lobes grey, each with two brownish-black areas, the posterior one largest; scutellum reddish brown, pruinose; postnotal mediotergite grey, with a median linear black line in front, ending in a point at near two-thirds the length of the sclerite; cephalic lateral portions of sclerite darkened; caudal margin of sclerite with a circular clouded area on either side of median line. Pleura grey, with a broad conspicuous black longitudinal stripe extending from the cervical region to the pleurotergite. Halteres yellow, the knobs blackened. Legs with the femora black, the bases narrowly obscure yellow; genua narrowly but conspicuously pale, dusted with white, the amount of the area subequal on both femora and tibiæ; remainder of tibiæ black; basitarsi with the proximal half darkened, the distal half and segments 2 and 3 yellowish white; terminal tarsal segments brown. Wings whitish, with a heavy brown pattern, including

cells *C* and *Sc*; stigma oval, brownish black; conspicuous dark brown areas at origin of *Rs*, at near one-fourth the length of cell *R*, along the cord, and as conspicuous seams at forks of veins *R*₃, *M*₁₊₂, and the veins beyond the cord; distal third of vein *M*, outer end of cell 1st *M*₂, and washes in ends of the anal cells somewhat paler brown; veins dark brown to black. Venation: fork of *R*₂₊₃₊₄ about opposite *r-m*; *m-cu* more than one-half its length beyond the fork of *M*.

Abdomen dark grey, the segments narrowly pale on lateral margins; basal sternites paler, the outer segments more infuscated.

Hab. Victoria.

Holotype, ♀, mountains above Warburton, March 1930 (*F. E. Wilson*).

Gynoplistia (Paralimnophila) signifera is most similar to *G. (P.) præsignis*, Alexander, in the general coloration of the mesonotal præscutum, with three clearly defined brownish-black stripes on a grey ground, differing conspicuously in the pattern of the legs. In the latter character the present fly is most similar to *G. (P.) stylicera*, Alexander, which has a very different præscutal pattern.

Gynoplistia (Paralimnophila) eucrypta, sp. n.

Size small (wing, ♂, under 7.5 mm.); all tarsi cream-coloured; wings narrow, greyish, the oval stigma dark brown; *m-cu* at fork of *M*; male hypopygium with the inner dististyle unequally bilobed at apex; gonapophyses at apex produced into a long sinuous spine, the mesal angle at base of spine evenly rounded.

Male.—Length about 8 mm.; wing 7.2 mm.; antenna about 4.8 mm.

Rostrum pruinose; palpi black. Antennæ black throughout, 16-segmented, the formula being 2 + 13 + 1; last branch shorter than the terminal segment; setæ of flagellar segments relatively long and conspicuous. Head brown, the orbits broadly grey.

Mesonotal præscutum grey, with three brown stripes, the interspaces suffused with brown; pseudosutural foveæ black, conspicuous; scutal lobes brown; remainder of mesonotum grey. Pleura clear light grey. Halteres pale, the knobs infuscated. Legs with the coxæ yellow, a trifle infuscated on outer face; femora black, the bases obscure yellow; tibiæ black; tarsi cream-coloured, the proximal two-thirds or more of basitarsi black; last tarsal segments darkened.

Wings narrow, greyish, the stigma oval, dark brown; barely evident dark clouds at origin of *Rs*, along cord, and outer end of cell 1st M_2 ; veins dark. Venation: R_{2+3+4} longer than R_{2+3} : *m-cu* at fork of *M*.

Abdominal tergites dark brown, sparsely pruinose; sternites and hypopygium somewhat paler brown. Male hypopygium with the outer dististyle expanded at apex into a conspicuous blade, the outer apical angle further produced into an acute black spine. Inner dististyle with the apex unequally bilobed at apex, there being a small blunt tubercle before the wider apex. Phallosome somewhat as in *miseranda*, the gonapophyses being narrowed into long, sinuous, tail-like points; mesal-apical angles of gonapophyses evenly rounded, not produced into acute spikes as in *miseranda*. Superimposed over the gonapophyses is a flattened plate set with abundant short spines to produce a mace-like effect, somewhat as in *puella*, but with the teeth smaller and less distinct; mesal portions of these plates further elevated into larger and more conspicuous spines.

Hab. New South Wales.

Holotype, ♂, Blundell's, F.C.T., altitude 3000 feet, January 7, 1930 (*A. Tonnoir*).

Among the small species of the subgenus *Gynoplistia* (*Paralimnophila*) *miseranda*, Alexander, is the closest ally of the present species, the two differing most evidently in the nature of the phallosomic structures of the male hypopygia.

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

General coloration polished black, the thoracic pleura and coxæ heavily pruinose; antennæ (♂) 17-segmented, with thirteen branched segments, these branches unusually long and slender; knobs of halteres blackened; legs with the femora black, yellow basally; all tibiæ black; tarsi black, the basitarsi a little brightened basally; wings whitish, with a heavy cross-banded dark brown pattern; cells *C* and *Sc* dark brown; cell M_1 present; abdomen violaceous-black; male hypopygium with two elongate dististyles, the outer one slender, at apex microscopically spinose.

Male.—Length about 7 mm.; wing 6.8 mm.

Rostrum grey; palpi black. Antennæ (♂) long and slender, if bent backward extending nearly to the third abdominal segment, black throughout; 17-segmented, the formula being 2+2+11+2; branches unusually long and slender, the longest (about flagellar segments 6 or 7) a little less than one-half the entire flagellum; branch of first

segment unusually elongate, more than three-fourths as long as the longest branch; last branch a trifle longer than the segment alone; terminal segment a little longer than the penultimate. Head grey, the anterior vertex wide.

Mesonotum polished black, smooth. Pleura, including all coxæ, black, heavily dusted with grey. Halteres brown, the knobs blackened. Legs with the coxæ pruinose, as described; trochanters obscure yellow; femora black, the bases of the segments restrictedly obscure yellow; all tibiæ black; tarsi black, the proximal third to half of the basitarsi, especially of the hind legs, more yellowish; remainder of tarsi black. Wings whitish, the prearcular region a trifle more yellowish; a heavy dark brown pattern, arranged as follows: cells *C* and *Sc*; a large area at one-third the length of cell *R*, confluent with a much larger area occupying the central half of cell *M*, the latter merging into areas in cell *Cu*, and a small cloud near the outer end of cell 1st *A*; a broad, nearly parallel-sided band from the stigma to posterior margin of wing, interrupted by a white central spot in cell 1st *M*₂; wing-tip darkened, more intensively in cell *R*₃; a darker oval cloud at fork of *M*₁₊₂; margin of apical third of cell 1st *A* clouded; veins brownish yellow, darker in the clouded areas. Venation: cell *R*₃ sessile, vein *R*₂₊₃ leaving *Rs* exactly at its fork; *m-cu* at or shortly beyond mid-length of cell 1st *M*₂.

Abdomen violaceous-black; hypopygium black. Male hypopygium without conspicuously developed apical lobes on basistyle. Two dististyles, the outer a little dilated at base, the apical half blackened and terminating in a group of from eight to ten spines. Inner dististyle approximately as long, appearing as a sinuous darkened rod. Two conspicuous black rods on either side of the ædeagus are interpreted as being gonapophyses, the innermost being a simple rod terminating in an acute spine, the lateral structure a flattened blade that terminates in two spinous points. Ædeagus simple.

Hab. New South Wales.

Holotype, ♂, Wentworth Falls, Blue Mts., October 20-30, 1930 (*F. E. Wilson*).

Gynoplistia (*Gynoplistia*) *tenuiflora* is very different from all described Australian species of this remarkable genus.

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

General coloration polished black, without distinct striation; antennæ 16-segmented, with ten branched segments; thoracic pleura black, without pubescence; wings with a

heavy brown pattern; cells *C* and *Sc* entirely darkened; abdomen, including hypopygium, black; male hypopygium with two dististyles, the outer profoundly bifid to form a forceps-like structure.

Male.—Length about 6.5 mm.; wing 6.5 mm.

Rostrum and palpi black. Antennæ 16-segmented, the formula being 2+2+8+4; black throughout; first branch about two and one-half times the segment; longest branch (flagellar segment 4 or 5) about one-half the flagellum; branch of tenth flagellar segment scarcely one-third the segment; terminal segment subequal to the penultimate. Head polished blue-black.

Mesonotum polished black, without conspicuous striolæ, the surface with scarcely indicated purplish reflections in certain lights. Pleura black, polished, without the usual appressed pubescence of the genus. Halteres brownish yellow, the knobs dark brown. Legs with the coxæ blackened; trochanters obscure yellow; femora yellow, the tips broadly blackened, the amount subequal on all legs; tibiæ black at both ends, more narrowly so at base, the intermediate portion of all tibiæ, including approximately one-half the segment, yellow; tarsi black. Wings whitish, the pre-arcular region yellow; a heavy dark brown pattern, including cells *C* and *Sc*; conspicuous areas at arculus, origin of *Rs*, along cord, and the wing-tip, the two latter confluent along the darkened caudal margin; a dusky wash in cells *M* and *Cu* adjoining vein *Cu*; veins brown, darker in the infuscated areas. Venation: *Rs* angulated at origin; veins *R*₃ and *R*₄ rather strongly divergent; cell *M*₁ present, a little longer than its petiole; cell 1st *M*₂ small, with *m-cu* at near mid-length.

Abdomen, including the hypopygium, black. Male hypopygium with the outer dististyle a powerfully constructed forceps, the base broad and stout, the outer arm of the forceps a strongly curved black spine, the inner arm slightly less curved, its apex prolonged into a chitinized spike. Inner dististyle shorter, appearing as a flattened blade, the apex a little dilated, truncated, the surface with microscopic punctures. Gonapophyses appearing as flattened, elongate, paddle-like blades, their tips whitened, obtuse. *Æ*deagus short, simple, the apex weakly notched.

Hab. New South Wales.

Holotype, ♂, Wentworth Falls, Blue Mts., October 20–30, 1930 (*F. E. Wilson*).

I cannot indicate any very close relative of this fly unless it is *Gynoplistia* (*Gynoplistia*) *histrionica*, Alexander, which

has a similar glabrous thoracic pleuron, but is otherwise a very different fly.

Gynoplistia (Gynoplistia) claripennis bifasciata, subsp. n.

Male.—Length about 9 mm. ; wing 8 mm.

Characters as in typical *claripennis*, Alexander, differing most evidently in the wing-pattern.

Antennæ 17-segmented, the formula being 2+2+10+3 ; black throughout ; longest branch about one-third the organ, somewhat shorter than in the typical form. Head black, transversely striate. Mesonotum polished black, with vague greenish reflexions, the præscutum smooth or nearly so. Pleura heavily pruinose. Halteres pale, the knobs weakly infuscated. Legs as in the typical form, the pale ring of the posterior tibiæ occupying a little more than one-fourth the length of the segment. Wings hyaline ; a band along cord and the narrow apex dark brown ; a small dark spot at origin of *Rs*. Abdomen greenish black, including the hypopygium. Male hypopygium having the general structure of the species.

Hab. New South Wales.

Holotype, ♂, Condor Creek, Canberra, F.C.T., November 15, 1929 (G. F. Hill).

Gynoplistia (Gynoplistia) pallidicosta, sp. n.

Belongs to the *melanopyga* group ; antennæ (♂) 19-segmented, with 12 or 13 branched segments ; of ♀ with 17 or 18 segments ; thorax black ; femora orange, the tips blackened, most extensively so on the posterior legs ; wings whitish cream-coloured, this including the costal cell ; prearcular cells orange ; most veins seamed with dark ; abdomen (♂) orange ; hypopygium with dististyle bidentate at apex.

Male.—Length about 14 mm. ; wing 10.5–11 mm.

Female.—Length about 16–17 mm. ; wing 12.5 mm.

Male.—Rostrum black, with conspicuous yellow setæ ; palpi black. Antennæ 19-segmented, the formula being 2+2+10+5 or 2+2+11+4 ; black throughout ; longest branch about one-third the organ. Head black, the anterior vertex with a median carina.

Pronotum black, with a golden-yellow pollen on sides. Mesonotum black, the præscutal stripes polished, smooth, the interspaces with conspicuous yellow setæ. Pleura dull black, with a dense grey pruinosity covering most of the surface ; ventral sternopleurite highly polished. Halteres light brown, the knobs brownish black. Legs with the coxæ

and trochanters black, the former heavily pruinose; femora orange, the tips broadly blackened, narrowest on the fore legs where it includes about the distal third; on middle legs including about one-half; on the posterior legs only the basal sixth or seventh brightened; tibiæ light brown, the bases narrowly, the tips more broadly blackened; tarsi black. Wings whitish cream-coloured, the prearcular region orange; cell *C* pale, cell *Sc* infuscated; a dark pattern includes the extreme bases of cells *R* and *M*; a spot at origin of *Rs*; and a larger area that includes the stigma and anterior cord; most of the veins distad of the cord, as well as the principal veins from *M* caudad, clouded with paler brown; veins dark brown, orange in the prearcular region. Venation: R_{2+3+4} very short; *m-cu* at from two-fifths to mid-length of cell 1st *M*₂.

Abdomen with the first segment black, the remainder orange, the outer segments a trifle more obscured; hypopygium orange. Male hypopygium with the dististyle conspicuously bispinous at apex, the outer spine slender, glabrous, the lower spine blunt at apex, its surface with short setæ. Ædeagus bifid, as in the group. Gonapophyses elongate, slender basally, the outer half expanded into a narrow blade, the apex further produced into a long angular black spine.

Female.—Characters almost as in male. Antennæ 17- or 18-segmented, the formula being $2+2+8+5$ or $2+2+8+6$; longest branch between three and four times as long as the segment. Abdominal tergites polished black, the incisures more yellow, especially well-defined on the caudal margins of the segments, the bright colour of the bases indicated only on the proximal segments; basal sternites more extensively orange; ovipositor orange.

Hab. New South Wales.

Holotype, ♂, Kiandra, January 26, 1930 (*R. J. Tillyard*).

Allotopotype, ♀, in copula with the type.

Paratopotypes, 1 ♂, 1 ♀; *paratypes*, 3 ♂ ♀, Tumbarumba, January 14, 1930 (*R. J. Tillyard*).

Gynoplistia (*Gynoplistia*) *pallidicosta* is most nearly allied to *G. (G.) melanopyga*, Schiner, and *G. (G.) westwoodi*, Skuse, differing in the coloration of the abdomen, the wing-pattern, and the details of structure of the male hypopygium.

Eriocera (*Eriocera*) *setifera*, sp. n.

General coloration grey, the præscutum with four blackish stripes; thoracic interspaces with long erect setæ; anterior

vertex produced into two small hairy tubercles; wings with a blackish tinge; Sc_1 ending opposite the fork of R_s ; cell 1st M_2 tending to be open by the atrophy of the basal section of M_3 ; $m-cu$ before the fork of M , shorter than the distal section of Cu_1 ; ovipositor with the cerci relatively short, pale.

Female.—Length about 9.5 mm.; wing 11 mm.

Rostrum and palpi reduced, black. Antennæ with the scape black; flagellum broken. Head grey; anterior vertical region produced into a small black hairy tubercle on either side of the median line.

Mesonotal præscutum grey, with four blackish stripes, the intermediate pair confluent anteriorly, narrowly separated behind; extreme cephalic portion of præscutum with a weak median carina; præscutal interspaces with numerous long erect black setæ; humeral region of præscutum with a depressed blackened area; posterior sclerites of mesonotum grey, with conspicuous erect black setæ. Pleura blackish, grey-pruinose; dorsal anepisternum, dorsal sternopleurite, and postnotal pleurotergite with conspicuous black setæ. Halteres obscure brownish yellow. Legs with the coxæ grey, with conspicuous setæ; trochanters black; femora brownish black, the bases more yellowish, the apices more blackened; tibiæ and tarsi passing into black. Wings with a blackish tinge, the veins darker. Macrotrichia of veins relatively small and inconspicuous. Venation: Sc_1 ending opposite the fork of R_s ; R_2 on R_3 just beyond the fork; R_{1+2} relatively long, approximately one-half R_{2+3} ; tip of vein R_3 atrophied; medial field tending to be evanescent, cell 1st M_2 being open by the atrophy of the basal section of M_3 , this character probably variable; $m-cu$ before the fork of M , shorter than the distal section of Cu_1 .

Abdomen black, pruinose; pleural membrane ochreous. Ovipositor with the tergal valves (cerci) relatively short, pale, approaching the fleshy type found in certain species.

Hab. New South Wales.

Holotype, ♀, Uriarra, near Canberra, F.C.T., altitude 2839 feet, January 11, 1929 (*T. G. Campbell*).

Eriocera setifera is very different from the other described Australian species of the genus, especially in the conspicuously hairy thorax. It is evidently more closely allied to *E. metallica* (Schiner) than to the North Queensland *E. aperta*, Alexander, and *E. australiensis*, Alexander. *Eriocera metallica* is readily told by the smooth thorax, metallic coloration of the body, pattern and venation of the wings, and the elongate valves of the ovipositor.