

XIX.—*New or little-known Tipulidæ (Diptera).—XXXIV. Australasian Species.* By CHARLES P. ALEXANDER, Ph.D., F.E.S., Massachusetts Agricultural College, Amherst, Massachusetts, U.S.A.

IN the present instalment the writer has continued his consideration of the Australian and Tasmanian species of the great genus *Molophilus*. The species herein described belong for the most part to the *ruficollis* subgroup of the *gracilis* group, the typical form of which (*ruficollis*, Skuse) was figured in the preceding part under this general title. In this subgroup, which is very extensively developed in Australia and Tasmania, the ventral lobe of the basistyle is the only one that is well preserved and it is unarmed at the apex. The only known species of the *verticalis* group (*verticalis*, sp. n.) is likewise described at this time. This group is distinguished by the great development of the dorsal lobe of the basistyle, which is produced at apex into a spinous point or blade.

As before, the majority of the species discussed at this time were collected in New South Wales, Victoria, South Australia, and Tasmania by Dr. André Tonnoir, to whom the types have been returned. Additional species were collected by Messrs. Walter Heron, Ferguson, and Mackerras in New South Wales, and by Mr. Hardy in Tasmania. I express my sincere thanks to the above-named gentlemen for their kind co-operation in making known this rich crane-fly fauna.

Molophilus amicus, sp. n.

Belongs to the *gracilis* group, *ruficollis* subgroup; general coloration pale brownish yellow; halteres with brown knobs; wings tinged with greyish yellow, the base and costal region more saturated yellow; male hypopygium with the ventral lobe of the basistyle unarmed apically; outer dististyle short-stemmed, the two arms conspicuous, one acutely pointed; basal dististyle a pale arcuated blade with four small spinous tubercles near apex.

Male.—Length (excluding head) about 3 mm.; wing 4.3 mm.

Head of the unique type lacking.

Pronotum brownish testaceous. Mesonotum pale brownish yellow, shiny, with conspicuous erect black setæ. Pleura more yellowish. Halteres pale, with brown knobs. Legs

with the coxæ and trochanters pale yellow; femora brown, paler basally; fore legs broken; tibiæ and tarsi passing into darker brown. Wings tinged with greyish yellow, the base and costal region more yellowish; veins a trifle darker, with relatively sparse and short brown setæ. Venation: *r* ending about opposite *r-m*; vein 2nd *A* ending about opposite the caudal end of the oblique *m-cu*.

Abdomen pale brown, the hypopygium somewhat more yellowish. Male hypopygium with the ventral lobes of basistyle prolonged into a slender lobe, the tip unarmed except for a cluster of four or five setæ; outer face of style with scattered setæ, the mesal edge with tiny erect setulæ. Outer dististyle bifid, the stem paler than the arms, relatively short and stout, the outer arm a long, slender, black spine that is about equal in length to the stem, the tip acute, just before apex on the mesal face with a microscopic denticle; inner arm much shorter, dilated into a broadly oval blade, the outer edge thinner and paler. Basal dististyle a flattened arcuated blade, a little dilated beyond the base, the tip narrowly darkened, before the apex with an oblique linear row of four small tubercles, each set with a stout microscopic spine. Ædeagus long, straight, slender, about one-half longer than the basal dististyle.

Hab. Tasmania.

Holotype, ♂, King River, altitude 500 feet, February 4, 1923 (*A. Tonnoir*).

Molophilus ampliatus, sp. n.

Male.—Length about 3.3 mm.; wing 4.2–4.3 mm.

Female.—Length about 3.2 mm.; wing 4.5 mm.

Closely allied to *M. lucidipennis*, Skuse, differing chiefly in the structure of the male hypopygium.

Lateral pretergites of præscutum a trifle brightened. Halteres pale, the knobs faintly infuscated, the setal covering dark. Wings with *m-cu* beyond the fork of *M*.

Male hypopygium with the ventral lobe of the basistyle produced into a relatively short blade that is slightly dilated outwardly and obliquely truncated at apex; margin of apex with a delicate fringe of setulæ and scattered conspicuous setæ; outer face of style with a few scattered setæ. Outer dististyle smaller, the apex darkened, the apical spine gradual, gently curved, the basal spine a little smaller, but long and acute, the margin of the style between these two spines U-shaped; basad of the basal spine, near mid-length of the style, a long, slender, digitiform lobule, pale in colour,

provided with a couple of setigerous punctures. Inner dististyle quite as in *lucidipennis*, bent upon itself near base, the long distal portion sinuous, the tip acute. *Æ*deagus long, slender, in slide-preparations appearing almost straight, extending caudad to opposite two-thirds the length of the dilated ventral lobe of the basistyle.

The female has the antennæ correspondingly shorter, the flagellar segments short-oval. Ovipositor and genital segment reddish horn-colour; tergal valves of ovipositor long, slender, the tips bent slightly upwards.

Hab. Tasmania.

Holotype, ♂, Cradle Valley, January 10, 1923 (*A. Tonnoir*).

Allotype, ♀, Mt. Field, December 18, 1922 (*A. Tonnoir*).

Paratopotypes, 7 ♂♂, 2 ♀♀, January 10-13 and 24-27, 1923; *paratypes*, 1 ♂, with the allotype, 1 ♂, Adventure Bay, December 31, 1922 (*A. Tonnoir*).

Molophilus exiguus, sp. n.

Belongs to the *gracilis* group, *ruficollis* subgroup; size small (wing, ♂, under 3 mm.); general coloration testaceous brown, the pleura dark greyish brown; vein *2nd A* short and straight, ending some distance before the short transverse *m-cu*; male hypopygium with the basistyle unspined at tip; basal dististyle bifid.

Male.—Length about 2.3 mm.; wing 2.6 mm.

Rostrum and palpi brownish black. Antennæ (♂) of moderate length, if bent backward extending to shortly beyond the wing-root; scapal segments ochreous brown, the flagellum dark brown; flagellar segments oval with a conspicuous, erect, pale pubescence. Head grey.

Pronotum brownish testaceous, the lateral pretergites narrowly yellowish. Mesonotal præscutum light testaceous brown, the median line narrowly greyish; pseudosutural foveæ linear, shiny reddish brown; scutum and scutellum concolorous with the præscutum, the postnotum dark greyish brown. Pleura dark greyish brown. Halteres relatively short, brownish testaceous, the stem a little darker. Legs with the coxæ and trochanters brown; femora and tibiæ testaceous brown, with dark setæ, the tarsal segments passing into brown; fore legs broken. Wings comparatively narrow, with a light yellow tinge, the veins brownish yellow with slightly darker brown macrotrichia. Venation: *r* approximately in alignment with *r-m*, the latter connecting with *R*₅ shortly beyond its origin; vein *2nd A* unusually short and

straight, ending some distance before the short transverse *m-cu*.

Abdomen dark brown, including the hypopygium. Male hypopygium with the ventral lobe of the basistyle produced caudad into a broad fleshy lobe, the mesal-apical angle more conspicuously setiferous than the remainder, but otherwise unarmed. Dististyles two, arising close together, the outer with a long stem, shallowly bifid at apex, the outer arm gently curved, the apex truncated and blackened; inner arm a triangular arched blade. Basistyle a little longer and stouter, gently curved to the acute blackened apex, before the tip with a slender acute spine; apex of style beyond the spine about twice the length of the latter. *Ædeagus* relatively short but slender, arcuated.

Hab. Tasmania.

Holotype, ♂, Zeehan, altitude 200-300 feet, February 1924 (*G. H. Hardy*); collector's number 372.

Type in the collection of the Queensland University Museum.

Molophilus adamantinus, sp. n.

Male.—Length about 3.2 mm.; wing about 4 mm.

Closely allied to *M. exiguus*, sp. n., from which it differs especially in the larger size and wing-venation. The structure of the male hypopygium is very similar in the two species.

Antennæ shorter, if bent backward scarcely attaining the wing-root; scapal segments ochreous, the flagellar segments dark brown, oval. Præscutum narrowly pruinose laterally; scutal lobes each with two darker dashes, the median area slightly greyish. Pleura reddish brown, sparsely pruinose. Halteres pale, the knobs more infuscated. Legs with the femora pale, darkened toward the tip; tibiæ yellow, the tips and a conspicuous, dilated, subbasal ring on fore tibia (♂) darkened; tarsi pale, passing into brown at tips. Wings rather broad, with a pale yellowish tinge, the veins darker yellow; macrotrichæ pale brown. Venation: *r* lying proximad of *r-m*, the basal section of R_{2+3} very short and strongly arcuated; vein *2nd A* long, ending nearly opposite the cephalic end of the long oblique *m-cu*. Abdomen dark brown, the hypopygium a trifle lighter in colour. Male hypopygium very similar in colour to that of *M. exiguus*, differing only in minor details. Basal dististyle longer and more slender, the apical spine longer, more slender, and gently curved at tip, the lateral spine erect, placed at about two-thirds the length of the style.

Hab. Tasmania.

Holotype, ♂, Lake Margaret, altitude 2500 feet, February 3, 1923 (*A. Tonnoir*).

The most obvious differences between the present species and *M. exiguus* lie in the shorter antennæ, the venation, especially the longer vein *2nd A* and the long oblique *m-cu*, and the hypopygium.

Molophilus apricus, sp. n.

Belongs to the *gracilis* group, *ruficollis* subgroup; general coloration dark brown; antennæ short, dark throughout; anterior lateral pretergites conspicuously light yellow; halteres infuscated, the knobs conspicuously light yellow; wings with a strong brownish tinge, the veins darker brown; male hypopygium with the basistyle short and stout, the ventral lobe broad and flattened, the dististyles lying at its base, both heavily blackened, the basal style terminating in an acute sickle-shaped point.

Male.—Length about 4.5–4.6 mm.; wing 5.5–6 mm.

Female.—Length about 5 mm.; wing about 5.5 mm.

Rostrum brown, the palpi darker brown. Antennæ short, if bent backward not attaining the wing-root, brownish black throughout; flagellar segments short-oval to short-cylindrical, in the male appearing almost moniliform. Head dark brownish grey, with relatively short yellow setæ; a more or less distinct ochreous spot behind each antennal fossa.

Pronotum obscure yellow. Anterior lateral pretergites clear light yellow, the posterior pretergites obscure. Mesonotum dark grey, the præscutum with a narrow dark brown median stripe that is slightly narrowed behind; humeral region strongly tinged with reddish; scutellum with a reddish cast. Pleura dark leaden-brown, including the dorso-pleural membrane; tegular region restrictedly yellow. Halteres infuscated, the knobs abruptly and conspicuously light yellow. Legs with the coxæ leaden-brown, the fore coxæ a little paler; trochanters dark brown; remainder of legs dark brown, the terminal tarsal segments passing into black. Wings with a strong brown tinge, the veins conspicuously darker brown. Venation: *r* lying some distance beyond the level of *r-m*; *m-cu* unusually long, sinuous, longer than the short petiole of cell *M*₃; vein *2nd A* gently sinuous, extending to just beyond the cephalic end of *m-cu*.

Abdomen dark brown, including the hypopygium, the latter with conspicuous fringes of yellow setæ on the tergum and ventral lobe of basistyle. Male hypopygium with the basistyle very short and stout, the ventral lobe relatively short and wide, flattened, the apex obtuse and fringed with

yellow setæ. The dististyles lie at the base of this ventral lobe, appearing unusually open and exposed; outer style a small, arcuated, black rod, the apex shallowly bifid; inner dististyle longer, the base stouter and nearly straight, the apical half or less more slender, sickle-shaped, narrowed to the acute apex; between these two styli lies a small, acute, tooth-like spine. In a position of rest, the sickle-shaped ends of the basal dististyles lie decussate across the genital chamber.

In the female that is associated with this species, the petiole of cell M_3 is somewhat longer and there are other slight differences from the male.

Hab. Tasmania.

Holotype, ♂, Strahan, February 5, 1923 (*A. Tonnoir*).

Allotype, ♀, Adventure Bay, January 1, 1923 (*A. Tonnoir*).

Paratopotype, ♂, February 1924 (*G. H. Hardy*), collector's number 399; *paratype*, ♂, Geeveston, December 8, 1922 (*A. Tonnoir*).

The paratopotype is in the collection of the University of Queensland.

Molophilus cerberus, sp. n.

Belongs to the *gracilis* group, *ruficollis* subgroup; general coloration dark brown; antennæ relatively short; legs and wings brown; male hypopygium with the outer dististyle deeply bifid, the outer arm long, slender, sinuous, approximately four times the length of the short straight inner arm.

Male.—Length 4.5 mm.; wing 5.4–5.8 mm.

Female.—Length about 5.5–5.7 mm.; wing 7.7–7.8 mm.

Rostrum and palpi brownish black. Antennæ relatively short, if bent backward (♂) not attaining the wing-root, brownish black throughout; flagellar segments oval, with a short pale pubescence and relatively short verticils. In the female the antennæ are a little shorter with the basal segments a trifle paler. Head dark grey, with numerous short yellow setæ.

Pronotum dark brownish grey. Lateral pretergites conspicuously light sulphur-yellow, narrowly interrupted just beyond the pseudosutural foveæ, becoming more conspicuous at the tegular region. Mesonotum dark plumbeous brown. Pleura similar, the dorso-pleural membranes conspicuously light yellow. Halteres pale, the knobs light yellow. Legs with the coxæ concolorous with the pleura; trochanters brown; remainder of legs dark brown; fore tibiæ (♂) with

a slightly enlarged sub-basal ring. In the female the femora and tibiæ are more yellowish, the terminal tarsal segments passing into dark brown. Wings with a strong brown tinge, the longitudinal veins more or less seamed with darker; veins slightly darker brown, especially R_5 ; macrotrichia darker brown. Venation: r lying approximately opposite $r-m$; vein *2nd A* relatively long, ending opposite one-half to one-third the length of the petiole of cell M_3 . In the female, vein *2nd A* is even longer, in cases extending almost to the base of cell M_3 .

Abdomen brownish black, with conspicuous yellow setæ; hypopygium dark, with long yellow setæ. Male hypopygium relatively short and stout, the basistyle with the ventral lobe produced into a stout finger-like appendage. Dististyles somewhat approximated at base, the outer style with a long slender stem, bifid at apex, the outer arm long, slender, strongly curved to the acute tip; inner arm a short blunt spur that is only about one-fourth the length of the outer arm. Basal dististyle a long, slender, gently curved rod, the tip acute, the ventral margin with microscopic appressed spinules, the base of the style more dilated. \mathcal{A} edeagus relatively short. Ovipositor with the valves very long and slender, strongly upcurved to the acute tips; sternal valves long and slender, straight.

Hab. Tasmania.

Holotype, ♂, Cradle Valley, January 11, 1923 (*A. Tonnoir*).

Allotopotype, ♀, January 16, 1923 (*A. Tonnoir*).

Paratopotypes, 3 ♂♂, 1 ♀, January 16-27, 1923 (*A. Tonnoir*).

Molophilus erebus, sp. n.

Belongs to the *gracilis* group, *ruficollis* subgroup; general coloration dark brown; antennæ of male of moderate length; wings with a strong brown tinge, broadly washed with paler before the cord; petiole of cell M_3 short; male hypopygium with the ventral lobe of basistyle slender, tapering; basal dististyle a simple sinuous rod, the apex dilated into a blade.

Male.—Length about 4.5-5 mm.; wing 5.5-6.5 mm.

Female.—Length about 5.5 mm.; wing 7.3 mm.

Rostrum and palpi dark brown. Antennæ (♂) relatively elongate, if bent backward extending to about opposite the second abdominal segment; flagellar segments elongate-oval to fusiform, with a conspicuous, erect, white pubescence and subequal unilaterally arranged black verticils. In the female

the antennæ are shorter, but still extend to beyond the wing-root. Head dark brownish grey.

Pronotum obscure brownish yellow, the anterior lateral pretergites narrowly obscure yellow. Mesonotum dark brown, the humeral region of the præscutum restrictedly obscure yellow; pseudo-sutural foveæ black. Pleura dark brown, the dorso-pleural membrane a little paler. Halteres with the extreme base and knobs light yellow, the remainder of the stem weakly infuscated. Legs with the coxæ weakly infuscated, especially the posterior coxæ; trochanters obscure yellow; femora yellowish brown, the tips narrowly infuscated; tibiæ light brown, the tips narrowly infuscated; terminal tarsal segments passing into darker brown; hind tarsi shorter than the tibiæ. Wings with a strong brown tinge, with conspicuous paler washes before the cord and in cells *Cu* and 1st *A*; veins darker than the ground-colour, especially *R*₅ and *Cu*₁; macrotrichiæ dark brown. Venation: *r* lying some distance beyond the level of *r-m*; basal section of *R*₂₊₃ nearly twice as long as *R*₅; petiole of cell *M*₃ short, about equal to or a little longer than the weakly sinuous *m-cu*; vein 2nd *A* relatively elongate, ending about opposite mid-length of the petiole of cell *M*₃.

Abdomen dark brown, including the hypopygium. Male hypopygium with the ventral lobe of basistyle very long, slender, tapering gradually to the narrowly obtuse apex, the mesal face with abundant delicate erect to retrorse setulæ; dorsal lobe of basistyle broadly expanded. Outer dististyle slender, bifid at apex, the outer arm a narrow, flattened, curved blade, the inner arm a small dilated blade. Basal dististyle very conspicuous, simple, the basal half or more slender, sinuous, then dilated into a broad, flattened, curved blade, the apex gradually narrowed to an acute point, the outer margin of the blade microscopically serrulate; face of blade covered with abundant microscopical setulæ. Ovipositor with the bases darkened, the tergal valves yellowish, very elongate.

Hab. Tasmania.

Holotype, ♂, Zeehan, February 7, 1923 (*A. Tonnoir*).

Allotype, ♀, Cradle Valley, January 12, 1923 (*A. Tonnoir*).

Paratypes, 1 ♂, 1 ♀, with the allotype, January 12-26, 1923 (*A. Tonnoir*).

Molophilus lyratus, sp. n.

Belongs to the *gracilis* group, *ruficollis* subgroup; antennæ short; head pale brownish yellow, the anterior vertex almost fulvous; knobs of halteres yellow; fore tibiæ (♂) with a

conspicuous subbasal black ring; male hypopygium with a conspicuous lyriform structure, the arms protruding between the large ninth tergite and the long narrow basistyles.

Male.—Length about 5 mm.; wing 6 mm.

Rostrum pale brown; palpi dark brown. Antennæ short, if bent backward extending to just beyond the wing-root; scapal segments ochreous; flagellar segments brown, passing into darker brown outwardly; flagellar segments oval, clothed with a very short inconspicuous pubescence and longer conspicuous verticillate setæ that are a little longer than the segments themselves. Head pale brownish yellow, the anterior vertex almost fulvous, the orbits narrowly pale yellow.

Pronotum yellow, the lateral pretergites paler yellow, this colour becoming obsolete near the level of the pseudosutural foveæ. Mesonotal præscutum yellowish grey, with three broad, subconfluent, brown stripes, restricting the colour to the interspaces and laterally; humeral region vaguely brightened; scutum brown, the lobes darker laterally and posteriorly, the posterior lateral region of each produced into a small yellow tubercle to the wing-base; scutellum vaguely more yellow; postnotal mediotergite brown, the lateral margins with a narrow strip of yellow on either side. Pleura brown, the sterno-pleurite and meron more reddish brown, the anepisternum darker. Halteres pale, the knobs yellow. Legs with the coxæ and trochanters reddish brown; femora yellow, the tips infuscated; tibiæ brownish yellow, the tips infuscated; fore tibia (σ) with a conspicuous, feebly dilated, subbasal, black ring that is a trifle more than its own length beyond the base; basitarsi pale brown, the remainder of the tarsi darker brown. Wings with a strong yellowish tinge, the veins darker yellow; macrotrichiæ pale brown, only moderately long and dense. Venation: vein 2nd *A* moderately long, extending to a short distance beyond the base of the petiole of cell M_3 .

Male hypopygium relatively long and narrow, of very unusual structure. Ninth tergite large, arched, narrowed apically, appearing as a conical plate with the apex narrowly truncated. From beneath this plate arises a remarkable lyriform chitinized structure that presumably represents a phallosome, the two arms slender, narrowed gradually to the acute tips which jut caudad from between the tergal plate and the elongate basistyles. Basistyles ventral, slender, lying parallel and closely approximated, the apex of each obtuse, unarmed, provided with rather abundant delicate yellow setæ. Outer dististyle relatively small, the apex slender blackened

a subbasal more flattened and obtuse arm of approximately equal length. Basal dististyle a nearly straight powerful black rod, the extreme apex a little enlarged and provided with two or three obtuse teeth on the lower or inner face; lower face of style with a conspicuous sub-basal spine directed toward the apex of the style, the axil densely set with black spinous pegs that extend in a row along the lower face of the style almost to the tip. *Ædeagus* slender, extending caudad to opposite the tips of the lyre.

Hab. Tasmania.

Holotype, ♂, Hobart, January 13, 1923 (*A. Tonnoir*).

Molophilus perdistinctus, sp. n.

Belongs to the *plagiatus* group; general coloration dark brown; antennæ of male elongate, the flagellar segments only moderately enlarged at base; wings tinged with brown; male hypopygium with the basal dististyle small, slender, bent into a boomerang-shaped structure; gonapophyses fused into a blackened central mass that terminates in two strong horns.

Male.—Length about 4 mm.; wing 5 mm.

Female.—Length about 4.5 mm.; wing 5.2 mm.

Rostrum and palpi dark brown. Antennæ (♂) elongate, in the unique type broken at the eighth segment, if entire presumably extending to opposite mid-length of the abdomen; flagellar segments fusiform, the base of each segment only feebly enlarged, gradually narrowed to the short, shiny, terminal pedicel; antennæ dark brown throughout, with a conspicuous erect white pubescence and unilaterally arranged verticils. Head dark brown.

Thorax dark brown, the humeral region of the præscutum only narrowly and indistinctly brightened. Halteres dark, the knobs brown. Legs with the coxæ yellow, the fore coxæ more infuscated; trochanters yellow; remainder of legs brownish yellow, the tarsi passing into brown, the segments with brown macrotrichiæ, some of which are suberect. Wings with a uniform brown tinge, the veins darker brown; veins *R*, *R*₅, and *Cu*₁ darker; macrotrichiæ darker brown. Venation: *r* lying a short distance beyond *r-m*; vein 2nd *A* extending to shortly beyond the origin of the petiole of cell *M*₃, the veins only slightly sinuous and closely paralleling the anal margin of the wing.

Abdomen dark brown, including the hypopygium. Male hypopygium with the basistyles produced apically into a small tubercle that is further produced into a small chitinized beak, the whole structure suggestive of the head

and beak of a bird, the tubercle beset with delicate setæ. Dististyles widely separated at origin by membrane; outer dististyle a powerful blackened rod, gently curved, the apex terminating in two points, the outer a short straight arm, the inner a little longer, gently curved. Basal dististyle very slender, small, shaped somewhat like a boomerang, the bend at near one-third the length, the distal two-thirds a little enlarged, the apex blunt, the surface of the style with a few microscopic punctures. Gonapophyses fused into a massive blackened central mass, the caudo-lateral angles produced into conspicuous horns; in the unique type one horn is gently curved, the other directed caudad. Ædeagus very small. Ninth tergite an oval setiferous lobe. Ovipositor with the tergal valves slender, gently upcurved to the acute tips.

Hab. Tasmania.

Holotype, ♂, Cradle Mt., January 27, 1923 (*A. Tonnoir*).

Allotopotype, ♀.

Molophilus inelegans, sp. n.

Belongs to the *gracilis* group, *ruficollis* subgroup; general coloration dark brown, the pleura conspicuously dark grey; halteres obscure yellow; legs light yellowish brown, the tips of the tarsi darker; wings with R_{4+5} short; male hypopygium with the gonapophyses and ædeagus very long and slender.

Male.—Length about 3·8 mm.; wing 4·7 mm.

Rostrum and palpi dark brown. Antennæ relatively short, if bent backward scarcely reaching the wing-root; scapal segments light brown, the flagellum darker brown; flagellar segments oval, with a dense erect pale pubescence. Head dark brownish grey.

Pronotum dark. Lateral pretergites pale whitish yellow, becoming darkened beyond the level of the pseudosutural foveæ. Mesonotum uniformly dark brown, the setæ of the præscutum small and inconspicuous; pseudosutural foveæ elongate, shiny reddish brown; humeral region a little tinged with reddish; scutellum more testaceous brown; postnotum dark grey. Pleura uniformly dark grey, the dorso-pleural membrane dark. Halteres obscure yellow. Legs with the coxæ and trochanters obscure yellow; femora light yellowish brown, with relatively sparse and inconspicuous darker brown trichia; tibiae yellowish brown, the tips narrowly darker; fore tibiae (♂) with the basal region very slightly dilated, but not darkened; tarsi passing into dark brown. Wings slightly greyish, the veins brown;

macrotrichiæ darker brown. Venation: r lying almost opposite or just beyond $r-m$, the basal section of R_{2+3} short, arcuated; R_{4+5} very short, not much longer than $r-m$; vein 2nd A ending opposite the base of the petiole of cell M_3 .

Abdomen dark brown, the hypopygium a little paler, especially the tips of the styli, which appear bleached. Basistyles relatively stout, the base with relatively small setæ, the apex rather abruptly narrowed into a pale flattened lobe with more numerous conspicuous setæ. Outer dististyle dusky, a slender rod, the basal half arched into a half-cylinder, the apex gradually narrowed to the subacute tip. Inner dististyle with the stem strongly curved, the apex dilated into a conspicuous pale flattened blade that bears two spines, a larger one near the base on the lower margin, and a small straight spine placed more distally on the upper margin; disk of the blade with about fifteen delicate setiferous punctures. Gonapophyses very powerful, appearing as slender curved horns, the tips more blackened, acute. Aedeagus exceedingly elongate, slender, arcuated, in a position of rest jutting beyond the other elements of the hypopygium, shortly before its apex a little dilated.

Hab. New South Wales.

Holotype, ♂, Waterfall, November 1921 (*A. Tonnoir*).

M. inelegans is allied to *M. froggatti*, Skuse, and *M. gigas*, Alexander.

Molophilus poliocephalus, sp. n.

Belongs to the *gracilis* group, *ruficollis* subgroup; general coloration reddish brown, the head brown with a conspicuous blue-grey area on centre of vertex; wings greyish yellow, the base darkened; male hypopygium with the inner dististyle terminating in a long spine with a small acute spine in its axil.

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

Female.—Length about 3.5 mm.; wing 3.7 mm.

Rostrum and palpi brownish black. Antennæ of male moderately elongate, if bent backward extending to just before the base of the abdomen; first scapal segment dark, the second scapal and basal flagellar segments yellow, the terminal segments passing into pale brown; flagellar segments (♂) elongate-fusiform, with a conspicuous erect white pubescence and with unilaterally arranged verticils. In the female, the antennæ are shorter, pale almost to the end. Head brown, the vertex with a conspicuous blue-grey area.

Mesonotum pale to dark reddish brown, the lateral margin of the præscutum narrowly yellowish, the posterior sclerites of the mesonotum slightly pruinose. Pleura dark brown. Halteres pale, the knobs testaceous yellow. Legs with the coxæ brownish testaceous; trochanters yellow; remainder of legs pale brown, the apices of the tibiæ narrowly darkened, the terminal tarsal segments darker. Wings with a greyish-yellow tinge, the costal region clearer yellow, the base conspicuously darkened, this colour including the basal third of cell *2nd A*; veins darker yellow than the ground-colour. Macrotrichia relatively dense, brown. Venation: *r* lying beyond the level of *r-m*, the basal section of R_{2+3} thus being nearly one-half longer than R_{4+5} ; vein *2nd A* terminating about opposite the caudal end of *m-cu*.

Abdominal tergites dark brown, the sternites more reddish brown, the caudal margins of the segments narrowly paler, more evident in the male; in the female, the tergites with a more or less distinct longitudinal dark median line. Male hypopygium with the basistyles relatively stout, the ventral lobe prolonged caudad beyond the level of the dististyles, appearing flattened to subclavate, the mesal face with conspicuous erect setæ and abundant microscopic setulæ. Dististyles placed close together in the notch at the base of the lobe of the basistyle; outer dististyle a massive, sub-square, fleshy lobe that has two rows of setiferous tubercles along the mesal face, each of these rows terminating in a powerful spine; the entire surface of this style is closely set with microscopic setulæ, in addition to the larger setæ. Inner dististyle longer, the base dilated, a little less than the apical half bent at a right angle and gradually narrowed into a long chitinized point, the outer margin near the bend with a few microscopic tubercles; in the axil of the bend a smaller, acute, black spine. Ædeagus relatively slender and elongate. Ovipositor with the tergal valves nearly straight.

Hab. New South Wales.

Holotype, ♂, Dorrigo, 1922 (*Walter Heron*).

Allotopotype, ♀.

Type in the writer's collection.

Molophilus capitatus, sp. n.

Closely allied to *M. poliocephalus*, sp. n., differing chiefly in the structure of the male hypopygium.

Male.—Length about 3.8 mm.; wing 4.5 mm.

Rostrum and palpi brownish black. Antennæ with the scapal segments dusky at base, the tips broadly light yellow,

the flagellum brownish black; flagellar segments elongate-oval, with a conspicuous erect white pubescence and unilaterally arranged black verticils. Head light yellow, the centre of the vertex with a conspicuous blue-grey area.

Pronotum light yellow, with a small dorso-median brown spot, the lateral margins infuscated. Lateral pretergites narrowly whitish yellow. Mesonotal præscutum rather light brown, the margins paler; scutellum and postnotum more testaceous brown; thoracic setæ relatively sparse and short. Pleura light brown. Halteres pale, the knobs light yellow, the stem a little infuscated. Legs with the coxæ and trochanters yellowish testaceous, the posterior coxæ brighter; femora brown, the bases broadly paler; tibiæ pale brown, the tips darkened; fore tibia (δ) with a relatively narrow, shiny, black sub-basal ring; tarsi passing into brownish black. Wings with a faint yellowish-brown tinge, the base not conspicuously darker; veins and macrotrichiæ darker brown. Venation: *r* almost opposite *r-m*; vein 2nd *A* ending opposite *m-cu*.

Abdomen brown, the hypopygium more yellowish. Male hypopygium with the ventral lobe of the basistyle armed with longer stouter setæ. Outer dististyle similar to that in *M. poliocephalus*, the outer tooth simple, the lower or more basal tooth flattened into a serrulate plate; a curious, flattened, ribbon-like structure appears to arise from this style, directed caudad, the tip a small spine, before the apex on either side with small serrations. Inner dististyle with the axillary spine smaller. The long ribbon-like appendage on the outer dististyle of the male hypopygium does not occur in *poliocephalus*, being replaced by a microscopic spur.

Hab. South Australia, New South Wales.

Holotype, δ , Adelaide, South Australia, October 20, 1921 (*A. Tonnoir*).

Paratype, δ , Woy Woy, New South Wales, September 2, 1923 (*J. Mackerras*); specimen returned to Dr. E. W. Ferguson.

Molophilus tortilis, sp. n.

Belongs to the *gracilis* group, *ruficollis* subgroup; closely allied to *M. poliocephalus*, sp. n.; head cream-yellow, the centre of the vertex with a large oval grey spot; male hypopygium with the ventral lobe of the basistyle with very long setæ; inner dististyle forked to mid-length, the arms sinuous.

Male.—Length about 3.8 mm.; wing 4.7 mm.

Rostrum and palpi brownish black. Antennæ dark brown,

the flagellum broken. Head light cream-yellow, the centre of the vertex with a large oval grey spot.

Pronotum light sulphur-yellow. Mesonotum reddish brown, the præscutum with a faint bluish cast; pseudosutural foveæ dark reddish brown, but little evident against the ground-colour; lateral pretergites light sulphur-yellow; scutellum a trifle more testaceous. Pleura dark brown. Halteres dusky, the knobs infuscated. Legs with the coxæ and trochanters testaceous; remainder of legs dark brown, the fore legs broken. Wings with a faint dusky tinge, the veins a little darker, the macrotrichiæ dark brown. Venation: vein 2nd *A* ending opposite or a very short distance beyond *m-cu*.

Abdomen dark brown, the hypopygium more yellowish. Male hypopygium with the ventral lobe of the basistyle well developed, slender, the mesal face with very long, powerful, erect setæ, these only a little shorter than the lobe itself; other lobes of basistyle poorly developed. Outer dististyle a short, powerful, clavate lobe, entirely darkened, the base narrow, widened to a collar before the apex, the conical tip suddenly produced, sparsely setiferous; the collar-like ring is produced on the outer margin into a black, gently curved, spiny lobe. Inner dististyle elongate, very deeply forked, the longest arm about as long as the stem, strongly twisted at base, thence extended into a long straight spine; inner arm shorter than the stem, the apex blackened, the extreme tip suddenly curved, acute. Ædeagus relatively long and slender.

Hab. New South Wales.

Holotype, ♂, Balmoral, near Sydney, May 19, 1923 (*E. W. Ferguson*); Collector's No. 80.

Type returned to Dr. Ferguson.

Molophilus sigma, sp. n.

Belongs to the *gracilis* group, *ruficollis* subgroup; general coloration light reddish brown; basal segments of antennæ yellow; head yellow, the centre of the vertex with a small grey spot; ventral pleurites dark brown; knobs of halteres light yellow; male hypopygium with the outer dististyle an oval, densely setiferous lobe, with a powerful, curved, black spine at base; basal dististyle a long, simple, strongly sinuous rod, extended at apex into a blackened spine.

Male.—Length about 3.5 mm.

Rostrum and palpi brownish black. Antennæ moderately clougate, if bent backward extending to shortly beyond the

wing-root; scapal segments light yellow, flagellum pale brown; flagellar segments long-oval, with a dense erect pale pubescence and unilaterally arranged setæ. Head largely yellow, the centre of the vertex with a pruinose area; occiput darkened; genæ infuscated.

Pronotum light yellow, the propleura blackened. Lateral pretergites yellowish testaceous, becoming narrowed toward the wing-root; tegula light yellow. Mesonotum light reddish brown, with a vague bluish cast, the anterior portion of the præscutum brighter, the posterior præscutum and the scutum narrowly darkened laterally; pseudosutural foveæ pale; setæ of mesonotum short and relatively inconspicuous; scutellum and posterior portion of postnotal mediotergite somewhat brightened. Pleura dark brown ventrally, the dorso-pleural membranes, pteropleurite, and pleuro-tergite remaining light reddish brown. Halteres pale, the extreme base of the stem infuscated, the knobs conspicuously light yellow. Legs with the coxæ and trochanters yellowish testaceous, the fore coxæ darker; of the remaining legs, only a single incomplete posterior leg remains—this obscure yellow, the extreme tip of the tibia infuscated. Wings of the unique type broken.

Abdomen dark brown, the hypopygium more yellowish. Male hypopygium of very unusual structure. Basistyles relatively stout, the ventral lobe produced into a short clavate structure that is provided with microscopic spinulæ and a dense patch of long, powerful, retrorse setæ. The dististyles arise from the base of this lobe; outer style terminating in an oval, densely setuliferous lobe, at the base of which is a powerful, black, sickle-shaped spine. Basal dististyle a long, simple, strongly sinuous rod that terminates in a long, acute, black spine; before the apex of the style, provided with numerous microscopic setulæ. Ædeagus relatively long and stout, a little shorter than the basal dististyle.

Hab. Victoria.

Holotype, ♂, Sassafras, Dandenong Range, altitude 1000 feet, October 21, 1922 (*A. Tonnoir*).

Molophilus rasilis, sp. n.

Belongs to the *gracilis* group, *ruficollis* subgroup; general coloration shiny reddish brown; wings with a greyish-yellow tinge, the base and costal region more saturated yellow; abdomen dark brown; male hypopygium with the outer dististyle deeply and unequally bifid, the basal dististyle with two long lateral spines, the space between them with long erect setæ.

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

Rostrum and palpi dark brown. Antennæ relatively short, if bent backwards scarcely attaining the wing-root, dark brown throughout ; flagellar segments oval, with conspicuous verticils and a short but dense erect white pubescence. Head dark brown.

Pronotum dark brown. Mesonotum shiny reddish brown, the margins paler ; lateral pretergites narrowly yellowish ; scutum reddish brown, the caudal margin narrowly yellowish ; scutellum brownish testaceous ; postnotum shiny brown. Pleura shiny reddish brown. Halteres with the stem pale brown, yellow at base, the knobs obscure brownish yellow, with dark setæ. Legs with the coxæ testaceous yellow ; trochanters yellow ; femora yellow, the tips narrowly darkened, more extensively so on the fore legs ; tibiæ brownish yellow, the fore tibia (δ) darkened but scarcely dilated at base ; tarsi dark brown, the basitarsi somewhat paler at base. Wings with a greyish-yellow tinge, the base and costal region more yellowish ; veins yellowish brown, with long, pale brown macrotrichia. Venation: *r* lying shortly beyond the level of *r-m* ; vein *2nd A* moderately elongate, ending about opposite the caudal end of *m-cu*.

Abdomen dark brown, the hypopygium a little more yellowish. Male hypopygium with the ventral lobe of the basistyle produced into a long slender lobe, the mesal face with abundant setulæ and fewer scattered erect setæ that tend to become retrorse at the apex ; outer face of the lobe with fewer scattered large setæ ; dorso-mesal angle of basistyle produced into a low rounded lobe. Dististyles placed close together in the notch between the lobes of the basistyle ; outer dististyle with a short stout stem, the arms slender, especially the outer arm which is more than twice the length of the stem, sinuous, gradually narrowed to the slightly spatulate apex ; inner arm much shorter, about equal in length to the stem, gently arcuated. Basal dististyle a powerful blackened rod, terminating in a slender curved spine, with a similar straight spine on the face at about two-thirds the length of the style, the area between these spines with numerous very long erect setæ that are approximately as long as the spines. *Ædeagus* long and slender, tapering to the slender apex, in balsam mounts extending caudad to nearly opposite mid-length of the ventral lobe of the basistyle.

Hab. Tasmania.

Holotype, δ , Wilmot, January 8, 1923 (*A. Tonnoir*).

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Molophilus verticalis, sp. n.

Belongs to the *verticalis* group; general coloration reddish brown to dark brown, the pronotum and lateral pretergites conspicuously yellow; head yellow, the centre of the vertex grey; halteres yellow; wings yellow, the veins and macrotrichiae darker; male hypopygium with the dorsal lobe of the basistyle produced caudad into a stout lobe that terminates in a chitinized spine; outer dististyle profoundly bifid, each arm needle-like.

Male.—Length 3·8–4·5 mm.; wing 4·7–6 mm.

Female.—Length 4·5–4·6 mm.; wing 6–6·2 mm.

Rostrum and palpi black. Antennae of moderate length, if bent backward (♂) extending about to the wing-root; scape and basal segments of flagellum yellow, the organ passing into brown toward outer end; flagellar segments long-oval with an erect white pubescence and unilaterally-arranged verticils. Head ochre, the centre of the vertex largely grey. In the Mt. Field paratype, the head is uniformly grey.

Pronotum yellow, more infuscated laterally. Lateral pretergites light sulphur-yellow, extending caudad to the concolorous tegula. Mesonotal reddish brown to dark brown, with a faint grey cast; pseudosutural foveae light chestnut-brown, inconspicuous; scutellum yellowish to testaceous; postnotum dark brown, the mediotergite with a yellow spot on either side. Pleura dark reddish brown, in some specimens distinctly pruinose; dorsal portion of the postnotal pleurotergite paler; dorso-pleural membrane more or less yellowish. Halteres yellow. Legs with the fore coxae brown, the other coxae and the trochanters yellow; femora obscure yellow, the tips vaguely darkened; tibiae light brown, the tips narrowly darker, fore tibia (♂) with a very narrow, dark brown, subbasal ring; tarsi passing into dark brown. Wings with a strong yellowish tinge, the veins and macrotrichiae darker yellow. Venation: *r* lying shortly beyond *r-m*; *m-cu* relatively short and straight, oblique; vein 2nd *A* ending opposite the proximal end of the petiole of cell *M*₃.

Abdomen clothed with conspicuous yellow setae, the tergites obscure yellow, with an interrupted darker dorso-median stripe. In a few specimens the abdomen is uniformly brown, the hypopygium usually more reddish brown. Male hypopygium with the basistyles relatively slender, the dorsal portion produced into a stout lobe, the outer lateral angle of which is further produced into a slender, sinuous, chitinized

blade or point, the style at base of this blade a little elevated and with a group of about eight powerful setæ. Mesal face of basistyle with a small lobe that is provided with strong spinous setæ. Outer dististyle profoundly bifid, each arm long and slender, needle-like, the outer arm longer, a little dilated before the acute blackened apex; inner arm more slender, a long, feebly sinuous, acicular black spine. Inner dististyle an elongate blackened rod, a little dilated before the slightly curved spinulose apex; the dilated portion of the style with a small tooth-like or wing-like expansion. *Ædeagus* long and slender, straight.

Hab. Tasmania.

Holotype, ♂, Fern Tree, Mt. Wellington, November 11, 1922 (*A. Tonnoir*).

Allotopotype, ♀.

Paratopotype, 1 ♂; *paratypes*, 1 ♂, Burnie, January 31, 1923; 2 ♂♂, St. Patrick's River, October 30–November 4, 1922; 1 ♂, 1 ♀, Cradle Valley, January 10–27, 1923; 1 ♂, Mt. Field, December 19, 1922; 2 ♂♂, National Park, December 16, 1922; 1 ♂, 1 ♀, Eaglehawk Neck, Tasman Peninsula, November 18, 1922; 5 ♂♂, Mt. Wellington, November 21–30, 1922; 1 ♂, Hartz Mts., December 10, 1922 (*A. Tonnoir*).

Molophilus verticalis reductus, subsp. n.

In the mountainous section of North-western Tasmania there occurs a large form of *verticalis* that is of great interest. The subspecies varies almost as widely in its general coloration as does the typical form, tending to have the thorax and abdomen more uniformly darker brown. The male hypopygium differs from the typical form in several regards. The dorsal lobe of the basistyle is much more slender and is not produced into a shoulder at the base of the narrowed apical portion, the few long setæ being placed along the mesal edge; the lobe narrows gradually to the very short chitinized apex. Outer dististyle with the outer arm dilated on basal half and here microscopically spinulose, the apical half a long straight slender spine; inner arm stouter and more sinuous. Inner dististyle more slender apically, without the conspicuous wing before the microscopically spinulose apex.

Holotype, ♂, Cradle Valley, January 12, 1923 (*A. Tonnoir*).

Paratopotypes, 3 ♂♂, January 24–27, 1923 (*A. Tonnoir*).

Molophilus furvus, sp. n.

Belongs to the *plagiatus* group; general coloration dark blackish grey; halteres with sulphur-yellow knobs; wings with a strong brownish tinge; vein *2nd A* short; male hypopygium with the basistyles elongate; basal dististyle a slender rod that is bent strongly ventrad at the apex into a blackened spine.

Male.—Length about 2.4 mm.; wing 3.2 mm.

Female.—Length about 2.7 mm.; wing 3.5 mm.

Rostrum and palpi black. Antennæ (σ) with the scape dark brown, the flagellum brownish black; moderately elongate, in σ if bent backward extending about to the base of the abdomen; flagellar segments fusiform, with conspicuous verticillate hairs. Head dark grey.

Pronotum dark brown. Mesonotum dark blackish grey, the humeral region of the præscutum vaguely more reddish. Pleura dark grey, the dorso-pleural membrane dark. Halteres pale, the knobs light sulphur-yellow. Legs with the coxæ and trochanters dark brown; remainder of legs brownish black, the femoral bases a little paler. Wings with a strong brownish tinge, the centres of the cells beyond the cord somewhat paler; veins darker brown; macrotrichiæ dark brown. Venation: *r* opposite to just beyond the level of *r-m*; *m-cu* long and gently arcuated; vein *2nd A* short, a trifle longer in the female, in the male ending about one-third its length before the level of the caudal end of *m-cu*.

Abdomen dark brown, including the hypopygium. Male hypopygium with the basistyles very elongate, the apex of each with a stout beak surrounded by numerous setæ. Dististyles rather widely separated at origin; outer style stout, shallowly bifid at apex, the outer arm longer flattened, the tip obliquely truncated; inner arm small. Basal dististyle a very long and slender, chitinized rod, the distal third sinuous and blackened, narrowed to the acute tip; in a position of rest, these styli lie on the dorsal face of the basistyle, directed caudad, the long acute apex ventrad. Ædeagus long, slender, straight. Ovipositor with the basal shields dark, the valves horn-coloured; dorsal valves very slender and acute, gently upcurved; sternal valves a little longer, nearly straight.

Hab. New South Wales.

Holotype, σ , Mt. Wilson, altitude 3475 feet, November 19, 1921 (*A. Tonnoir*).

Allotopotype, σ , in copula and pinned with type.

Paratopotype, σ .