

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

THE crane-flies discussed at this time are all members of the genus *Molophilus* that were taken in Western Australia by the late Dr. Eustace W. Ferguson ; in New South Wales by Mr. Heron ; and in Victoria by Messrs. Barrett, Borch, Hill, and Wilson. I am especially indebted to Mr. Wilson for the very considerable amount of time and labour that he has devoted to the Victorian Tipulidæ. Except where stated to the contrary, the types of the new species are preserved in my collection.

Collections of crane-flies taken by Mr. F. Erasmus Wilson on the Bogong High Plains, Victoria, at an altitude of from 5600 to 6000 feet, appear to represent the highest altitude at which these flies have been taken in Australia. Various small series have been taken on Mt. Kosciusko, in southern New South Wales, at altitudes of from 5000 to 5500 feet, by Messrs. Goldfinch, Nicholson, and Tillyard, with occasional specimens of *Clytocosmus helmsi*, Skuse, at an even higher altitude. On the Barrington Tops, in eastern New South Wales, the extensive series of Tipulidæ taken by the members of the University of Sydney Expedition of 1925 (Proc. Linn. Soc. N.S.W. liii. pp. 51–70, 1928) were secured at an altitude of about 5000 feet. Since numerous Tipulidæ new to science were taken on the Bogong High Plains, the following brief summary of conditions is supplied :—

“ *Little Plain* : Altitude 5700 feet, lying close to Mt. Fainter (6160 feet). It is a more or less open bit of country with here and there clumps of Snow Eucalypts (*Eucalyptus coriacea*, var. *alpina*) and patches of low-growing shrubs, such as *Hovea longifolia*, *Bossiaea foliosa*, *Prostanthera cuneata*, and others. Elsewhere it is snow-grass (*Poa cæspitosa*) tussocks, with patches of sphagnum bog.

“ *Tarn* : Altitude between 5600 and 5700 feet. This was one of the most delightful spots visited, and almost unknown except to a few cattlemen. On one side is an almost perpendicular wall about 400 feet high, its top a serried mass of rock. Two other sides are grassy slopes, thickly wooded with Snow Eucalypts and various shrubs, whilst the remaining side provides the outlet to the lakelet. The little pool is only about 100 by 50 yards, but has a thick fringe of sedges (*Carex*) around its margin. The whole place is absolutely

sheltered from the fierce gales and is a perfect little Eden. By far the greater number of specimens of Tipulidæ were collected along the margins of tiny streams flowing through sphagnum bog valleys." (*F. E. Wilson.*)

The interesting article by Mr. Wilson ("Some Alpine Birds," *Vict. Nat.* vol. xlv. p. 296, February 1928) should be consulted.

Molophilus barretti, sp. n.

Belongs to the *plagiatus* group; mesonotal præscutum and scutellum reddish brown, the remainder of the notum and pleura dark brown; knobs of halteres dark brown; male hypopygium with the outer arm of the outer dististyle conspicuously setiferous; basal dististyle conspicuously bifid, the outer arm a little shorter than the inner, the surface denticulate.

Male.—Length about 3.2–4 mm.; wing 4–4.8 mm.

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

Rostrum and palpi black. Antennæ of moderate length, if bent backward extending to shortly beyond the wing-root; flagellar segments oval; basal segments a little paler than the brown flagellum. Head brownish grey.

Mesonotal præscutum rather bright reddish brown, especially medially, the lateral margins and the scutum darker; scutellum reddish brown; postnotum dark brown. Pleura dark brown, the surface sparsely pruinose. Halteres pale brown, the knobs strongly darkened. Legs with the coxæ dark, the middle and posterior coxæ paler apically; trochanters yellowish brown; femora brown, with dark macrotrichia, the bases obscure yellow; tibiae and tarsi dark brown; fore tibia (σ) with the subbasal annulus darker brown, but scarcely enlarged. Wings subhyaline, the veins pale. Venation R_{4+5} subequal to R_{2+3} ; petiole of cell M_3 more than twice $m-cu$; vein 2nd A relatively short, ending some distance before the level of $m-cu$.

Abdomen dark brown, the hypopygium obscure yellow. Male hypopygium with the apical beak of the basistyle blackened, with a small basal shoulder on outer margin. Outer dististyle bifid, the outer arm more slender and densely provided with conspicuous setæ. Basal dististyle with the main axis broad-based, the structure conspicuously bifid, the outer arm shorter, subequal in length to the thickened base, gently curved, the surface with conspicuous denticles; inner arm about one-half longer, a direct prolongation of the main axis, the apex weakly bifid; surface of arm with about three setiferous punctures; main axis brown, the arms

blackened. *Ædeagus* long and conspicuous, blackened, longer than the basal dististyle.

Hab. Victoria.

Holotype, ♂, Black Rock, altitude 100 feet, May 20, 1927 (C. Barrett).

Allotype, ♀, Ferntree Gully, from timbered hillside in open sunny situations, altitude 700–800 feet, April 15, 1928 (F. E. Wilson).

Paratopotype, ♂; *paratypes*, several ♂ ♀, with the allotype; 7 ♂ ♂, Bayswater, May 20, 1928 (F. E. Wilson).

This very distinct *Molophilus* is named in honour of Mr. Charles Barrett, Honorary Editor of the 'Victorian Naturalist.'

Molophilus pauperculus, sp. n.

Belongs to the *plagiatus* group; general coloration light brown or fulvous-brown; wings tinged with yellowish, the base brighter; vein *2nd A* short, ending far before the level of *m-cu*; male hypopygium with the basal dististyle a simple slender blackened rod, the apex terminating in a spine, with two or three smaller blunt teeth immediately before the tip.

Male.—Length about 2.6 mm.; wing 3.3 mm.

Rostrum ochreous; palpi pale, the outer segments darker. Antennæ (♂) of moderate length only; scapal segments ochreous; flagellum brownish testaceous, with elongate verticils. Head fulvous-yellow.

General coloration of thorax light brown or fulvous-brown, the posterior sclerites somewhat darker. Halteres obscure yellow. Legs with the coxæ and trochanters obscure yellow; remainder of legs obscure yellow, clothed with dark setæ, the tarsal segments passing into darker. Wings tinged with yellow, the base brighter; veins yellowish, the macrotrichiaë dark brown; costal fringe long and conspicuous. Venation: vein *2nd A* relatively short, ending far before *m-cu*.

Abdomen brownish yellow, the hypopygium somewhat brighter. Male hypopygium with the beak of the basistyle stout, the apex subacute. Outer dististyle with the stem short and stout, the arms broadly flattened. Inner dististyle a simple slender blackened rod, the base expanded, pale, the distal half gently curved to an acute spine, the inner margin immediately before the apex with two or three smaller blunt teeth. Phallosomic structure an oval cushion, the apex truncated, the surface with microscopic setulæ. *Ædeagus* long and slender.

Hab. New South Wales.

Holotype, ♂, Brooklana, Eastern Dorrigo, altitude about 2000 feet, December 25, 1927 (*W. Heron*).

Molophilus bogongensis, sp. n.

Belongs to the *plagiatus* group; general coloration light grey; antennæ (♂) short, the flagellar verticils very long; halteres dusky; legs blackened; wings with a strong brownish suffusion; male hypopygium with the stem of the outer dististyle very broad and flattened; basal dististyle a blackened curved rod that bears an appressed lateral spine on outer margin at near three-fourths its length.

Male.—Length about 2.8 mm.; wing 3.2 mm.

Rostrum and palpi black. Antennæ (♂) short, if bent backward ending some distance before the wing-root, apparently only 15-segmented; flagellar segments oval, with long, unilaterally arranged verticils, the longest more than three times the segments. Head light grey.

Pronotum grey, the anterior lateral pretergites light yellow. Mesonotum light grey, the præscutal interspaces with conspicuous black setiferous punctures; humeral region brightened; pseudosutural foveæ elongate, brown, conspicuous; scutellum reddish brown. Pleura grey. Halteres dusky. Legs with the coxæ and trochanters dark; remainder of legs chiefly blackened. Wings with a strong brown suffusion; stigmal region somewhat more infumed; base of the costal region more yellowish, especially vein *R*; veins a little darker than the ground-colour. Venation: R_{2+3} nearly perpendicular at origin; R_2 lying immediately proximad of $r-m$; petiole of cell M_3 more than twice $m-cu$; vein 2nd *A* long, ending beyond the base of the petiole of cell M_3 .

Abdomen dark greyish brown; hypopygium dark. Male hypopygium with the apical beak of the basistyle conspicuous, relatively slender, the tip subacute. Outer dististyle with the stem very broad and flattened, much wider than any part of the basal dististyle, the apex bifid, the inner arm more slender and blackened. Basal dististyle a blackened curved rod, gradually narrowed to the elongate apical spine, at near three-fourths the length on the outer margin bearing a smaller appressed spine. Phallosomic structure oval in outline, smooth. Ædeagus relatively elongate, longer than either of the dististyles, constricted near base.

Hab. Victoria.

Holotype, ♂, Bogong High Plains, altitude 5600–6000 feet, January 1928 (*F. E. Wilson*).

Type returned to Mr. Wilson.

Molophilus fuscolineatus, sp. n.

Belongs to the *plagiatus* group; most closely allied to *longicornis*, Skuse, differing in the coloration and structure of the male hypopygium.

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

Rostrum and palpi dark brown. Antennæ with the scapal segments obscure yellow, the flagellar segments brownish testaceous with the apical pedicels paler; antennæ elongate, only a little shorter than the body. Head pale brownish testaceous.

Mesonotum light brown, including almost the entire præscutum, the scutum, and the scutellum, the postnotum a little darker; lateral and humeral regions of præscutum darker. Pleura yellow, the dorsal region dark brown to form a broad dorso-pleural stripe extending from the pronotum to the postnotum. Halteres dark brown, the base of the stem narrowly pale. Legs with the coxæ and trochanters yellow; remainder of legs pale, the fore and middle legs with conspicuous dark setæ that obscure the ground-colour; posterior legs much longer and paler in colour. Wings with a faint brownish tinge, the veins with abundant long dark macrotrichiæ, the costal fringe elongate; veins pale brown. Venation: R_2 immediately before the level of $r-m$; vein 1st A elongate, ending some distance beyond the proximal end of cell M_3 ; vein 2nd A relatively short, ending opposite the caudal end of $m-cu$.

Abdominal tergites dark brown, the sternites more brownish yellow. Male hypopygium very similar to that of *M. longicornis*, Skuse, in the shape of the basistyle, outer dististyle, and basal dististyle, the latter with four microscopic spinulæ in a close row near the blackened tip. Phallosomic structure very remarkable, bottle-shaped, heavily blackened, terminating in a strongly sinuous black spine. Ninth tergite deeply emarginate, the lateral lobes slender; a small slender median lobule at base of the emargination.

Hab. New South Wales, Victoria.

Holotype, ♂, Ulong, Eastern Dorrigo, New South Wales, altitude about 2000 feet, January 12, 1927 (*W. Heron*).

Paratype, ♂, Millgrove, Victoria, November 20, 1927 (*F. E. Wilson*).

Molophilus fuscolineatus has a hypopygium that greatly

resembles *M. longicornis*, Skuse. Through the kindness of Dr. Mackerras and the late Dr. Ferguson, I was able to examine and figure the hypopygium of the type of the latter species in 1925. My notes and figures make no mention of the conspicuous blackened bottle-shaped phallosomic structure, as described above for *fuscolineatus*. The details of coloration of the two forms are likewise distinct.

Molophilus eurygramma, sp. n.

Belongs to the *plagiatus* group, *annulipes* subgroup; size small; wings yellow, with a broad conspicuous brown spot at the base, extending from the costal region to the 1st Anal vein.

Female.—Length about 2.8 mm.; wing 3.6 mm.

Rostrum and palpi brown. Antennæ pale basally, the flagellum pale brown. Head yellowish white, the centre of the vertex variegated with brown.

Pronotum whitish. Mesonotal præscutum with three light fulvous stripes that are quite confluent, the median stripe becoming darker in front; humeral region and lateral margins broadly white; scutum light fulvous; scutellum white; postnotum obscure brownish yellow, a little darker on the cephalic portion. Pleura white, the dorso-pleural region somewhat darker. Halteres white. Legs with the coxæ and trochanters whitish; femora white, with two distinct black rings, the broadest one subterminal, the narrower one just beyond mid-length of the segment, the pale ring between a little more extensive than the widest dark annulus, the pale apex subequal to the latter or a little less extensive; tibiæ and tarsal segments 1 to 3 white, with the tips narrowly blackened or infuscated; terminal tarsal segments uniformly darkened. Wings with a strong yellowish tinge; a broad conspicuous brown area at the level of the arculus, extending from the costal margin at *h*, across the arculus to vein 1st *A*; veins yellow, the macrotrichiæ darker. Venation: vein 1st *A* relatively elongate, extending to nearly opposite the proximal end of cell *M*₃; petiole of the latter more than twice *m-cu*.

Abdomen obscure yellow, the caudal margins of the tergites narrowly paler; sternites clearer yellow. Ovipositor with the long valves relatively straight, reddish horn-colour.

Hab. New South Wales.

Holotype, ♀, Ulong, Eastern Dorrigo, altitude about 2000 feet, January 13, 1927 (*W. Heron*).

Molophilus opulus, sp. n.

Belongs to the *gracilis* group, *ruficollis* subgroup; knobs of halteres bright yellow; legs darkened, without conspicuous pale rings; fore tibiæ (♂) with an extensive black subbasal ring; wings greyish yellow, the base and costal region brighter yellow; wing-disk with four conspicuous areas of long black macrotrichiæ; male hypopygium with the outer dististyle pale, long and slender, beyond the base strongly bent upon itself; inner dististyle a powerful black rod that is narrowed at apex into a curved hook-like spine.

Male.—Length about 4.2 mm.; wing 4.7 mm.

Rostrum and palpi black. Antennæ (♂) of moderate length, if bent backward extending about to the base of the abdomen; scape obscure brownish yellow, the flagellum dark brown; flagellar segments fusiform, with long, unilaterally arranged verticils and a conspicuous white pubescence. Head dark brown.

Pronotum obscure brownish yellow. Mesonotum dark brownish black, the præscutum brightened on either side of the median dark stripe. Pleura blackened, the propleura paler. Halteres pale, the knobs bright yellow. Legs with the coxæ obscure yellow; trochanters brownish yellow; femora yellowish brown, the basal third black, the segment clothed with conspicuous dark setæ, when denuded showing the ground-colour; tibiæ and tarsi darker brown; fore tibiæ (♂) with an extensive black ring that is more than twice as wide as the basal portion of the segment alone. Wings greyish yellow, the base and costal region brighter yellow; veins pale brown, more flavous in the yellow areas; macrotrichiæ pale brown; costal fringe darker brown; four conspicuous areas of longer black setæ on the anterior cord, fork of *M*, at near mid-length of the distal section of *R*₅, and near the base of *Cu*₁. Venation: vein 2nd *A* relatively long, ending about opposite the cephalic end of *m-cu*.

Abdomen black, the hypopygium brighter. Male hypopygium short and broad. Ventral lobe of basistyle broad at base, the apical portion unusually slender. Both dististyles arising close together in the notch of the basistyle; outer dististyle very long and slender, pale in colour, near base strongly bent upon itself, the apex split into two pale somewhat divergent flattened lobes. Inner dististyle a powerful black rod that is narrowed to an apical curved hook-like spine; base of style produced into a short, blunt, blackened lobe, beyond which the stem is very narrow, thence gradually

widened to beyond two-thirds the length. *Ædeagus* long and stout.

Hab. New South Wales.

Holotype, ♂, Brooklana, Eastern Dorrigo, altitude about 2000 feet, May 7, 1928 (*W. Heron*).

Paratopotype, ♂.

Molophilus wilsoni, sp. n.

Belongs to the *gracilis* group, *ruficollis* subgroup; antennæ (♂) elongate, approximately as long as the body; general coloration brown; halteres and legs darkened; wings dusky; male hypopygium with the basistyle a simple gently curved rod, the outer margin on distal half with conspicuous setiferous spines; phallosomic structure terminating in a crown of four subequal black spines.

Male.—Length about 4–4.2 mm.; wing 5.6–6.2 mm.; antenna about 3.9–4.1 mm.

Rostrum and palpi black. Antennæ (♂) approximately as long as the body, black throughout; flagellar segments elongate-fusiform, with long out-spreading verticils. Head brownish black.

Mesonotum brown, the postnotum somewhat darker. Pleura brownish yellow, the ventral sclerites brighter; dorso-pleural membrane dark brown. Halteres dark brown. Legs with the coxæ and trochanters obscure yellow; remainder of legs obscure brownish yellow, passing into black, the segments clothed with a conspicuous erect black pubescence. Wings relatively broad, with a dusky tinge, the veins and macrotrichiaë dark brown. Venation: R_2 lying just distad of the level of $r-m$; petiole of cell M_3 only a trifle longer than $m-cu$; vein *2nd A* ending just beyond the caudal end of $m-cu$.

Abdomen dark brown, the hypopygium obscure brownish yellow. Male hypopygium with the ventral lobe of the basistyle relatively slender. Both dististyles placed close together in the notch of the basistyle. Outer dististyle with the stem rather short and slender, the outer arm slender, nearly as long as the stem, the inner about one-half as long and more expanded. Inner or basal dististyle a simple slender rod, only gently curved, on the outer margin of distal half with conspicuous setiferous spines or tubercles, at the apex of the style more evidently spinous and non-setiferous. Phallosomic structure very conspicuous, terminating in a crown of four subequal black spines. *Ædeagus*

slender, on basal two-thirds with a subtending flange on either side.

Hab. Victoria.

Holotype, ♂, Millgrove, April 7, 1928 (*F. E. Wilson*).

Paratopotype, ♂, April 7, 1928; *paratypes*, 2 ♂♂, Warburton, altitude 3500–4000 feet, April 9, 1928 (*C. H. Borch*).

Type returned to Mr. Wilson.

I take great pleasure in naming this fine *Molophilus* after Mr. F. Erasmus Wilson, to whom our greatest advance in knowledge of the Victorian Tipulidæ is due.

Molophilus immutatus, sp. n.

Belongs to the *gracilis* group, *ruficollis* subgroup; antennæ (♂) short; rostrum obscure yellow; mesonotal præscutum with three brown stripes, the lateral margins yellow; pleura chiefly darkened; legs black; wings brownish grey, the veins stout; male hypopygium with the inner dististyle a powerful, strongly angulated rod, the distal half a long straight spine, with a smaller lateral spine on outer margin at bend of the style.

Male.—Length about 3.5 mm.; wing 4.4 mm.

Rostrum and front light yellow; palpi brownish black. Antennæ (♂) short, black throughout, if bent backward extending to shortly beyond mid-distance to the wing-root. Head dark grey.

Pronotum dark brown; anterior lateral pretergites light sulphur-yellow. Mesonotal præscutum obscure brownish yellow, with three dark brown stripes, the interspaces only a little paler; humeral region and the broader lateral margins yellow; scutum dark brown, the posterior lateral callosities obscure reddish yellow; scutellum similarly obscure reddish yellow; postnotal mediotergite dark brown, paler in front, the lateral margins more yellowish. Pleura chiefly dark brown, the dorsal sternopleurite somewhat brightened; dorso-pleural region pale yellow. Halteres pale, the knobs light yellow. Legs with the coxæ brown; trochanters brownish yellow; remainder of legs black, relatively long and conspicuous. Wings with a brownish-grey suffusion, the base and costal region more yellowish; veins brown, relatively stout and conspicuous; macrotrichia relatively short, dark brown. Venation: R_2 lying a short distance distad of $r-m$; $m-cu$ very oblique in position; vein 2nd A relatively long, gently sinuous, ending shortly beyond the caudal end of $m-cu$.

Abdomen brown, including the hypopygium. Male hypopygium with the basistyle stout, the ventral lobe broad and obtuse; a small curved mesal spine near base of ventral lobe. Outer dististyle slender, gently curved, the apex only weakly notched. Inner dististyle a powerful strongly angulated rod, the base dilated, at near mid-length bent at a right angle into a long straight spine that narrows to the acute point, the surface with a few setiferous punctures; on outer face at point of angulation bearing an acute spine. Phallosomic structure nearly as in *prælatus*, appearing as a median chitinized structure that terminates in two divergent to recurved spines. Ædeagus subtended by a pale flange.

Hab. Victoria.

Holotype, ♂, Millgrove, April 7, 1928 (*F. E. Wilson*).

Type returned to Mr. Wilson.

Molophilus immutatus is related to the larger *M. prælatus*, Alexander, differing conspicuously in the coloration and structure of the dististyles of the male hypopygium. In *prælatus* what was originally described as the outer dististyle (*Ann. & Mag. Nat. Hist. ser. 9, vol. xx. pp. 53-54, 1927*) would appear morphologically to be the inner style.

Molophilus mimicus, sp. n.

Male.—Length about 4–4.4 mm.; wing 4.8–5.3 mm.

Female.—Length about 4.5 mm.; wing about 4.6 mm.

Belongs to the *gracilis* group, *ruficollis* subgroup; closely related to *M. flavoannulatus*, Alexander (Western Australia), from which it differs in details of the male hypopygium, especially the structure of the basal dististyle and the gonapophyses.

Rostrum and palpi black. Antennæ with the first scapal segment above rather bright yellow, the remaining segments dark brown. Head dark brown. Pronotum dark; anterior lateral pretergites yellow. Mesonotum brownish black, the median region of the scutum obscure yellow. Pleura brownish black, the propleura above the fore coxa a little variegated with yellow. Halteres dusky, the base of the stem yellow. Legs with the fore coxæ darkest; femoral tips broadly blackened, the subterminal ring narrow. Wings virtually as in *flavoannulatus*; petiole of cell M_3 longer, more than twice *m-cu*. Abdomen black, the hypopygium obscure yellowish brown. Male hypopygium with the apical lobes of the basistyle shorter and stouter than in *flavoannulatus*. Outer dististyle with the stem longer and more slender,

the outer arm narrowed into an acute black spine. Basal dististyle a slender curved black rod, gradually narrowed to the acute tip, before this point with a group of setæ, more numerous on the outer face. Gonapophyses heavily blackened, each produced backward into a long acute spine, the body of the apophysis massive, narrowed caudally into a long curved spine, the outer concave margin along this curvature with numerous long setæ.

Hab. Western Australia.

Holotype, ♂, Pemberton, August 28, 1926 (*E. W. Ferguson*).

Allotopotype, ♀.

Paratopotypes, 2 ♂ ♂.

Type returned to Dr. Ferguson.

Molophilus vulpinus, sp. n.

Belongs to the *gracilis* group and subgroup; general coloration fulvous; centre of vertex light grey; male hypopygium with the ventral lobe of the basistyle produced apically into an acute pale spine that lies in the same plane as the lobe itself; inner dististyle a long gently curved horn, bearing a small lateral spine.

Male.—Length about 4 mm.; wing 5 mm.

Female.—Length about 4.8 mm.; wing 5.5 mm.

Rostrum and palpi black. Antennæ (♂) of moderate length, if bent backward extending about to the wing-root; scape and basal segment of flagellum light yellow, the remainder of the flagellum dark brown; flagellar segments long-oval, the verticils conspicuous. The antennæ of the female appear distinctly longer than those of the male, if bent backward extending almost to the halteres, the segments subcylindrical, with shorter verticils, only the scapal segments light yellow. Head obscure fulvous, the posterior vertex extensively light grey, the occiput medially light sulphur-yellow.

Pronotum light sulphur-yellow, the anterior lateral pretergites more whitish yellow. Mesonotum bright fulvous-brown, the humeral region of the præscutum a little lighter, the pseudosutural foveæ almost concolorous; lateral margins of the postnotal mediotergite and mesal margin of the pleurotergite light yellow. Pleura light fulvous-brown, the dorsal pleurites darker, the dorso-pleural membrane and ventral pleurites brighter, more yellowish. Halteres pale brown. Legs with the coxæ and trochanters testaceous-yellow, the fore coxæ darker; femora yellowish brown, the

bases clearer yellow; tibiæ and tarsi light brown, the terminal segments dark brown; posterior tibiæ elongate and clearer yellow. Wings fulvous-yellow, the veins darker yellow; macrotrichiæ brown. Venation: R_{4+5} short, in the male only a little longer than the basal section of R_5 , in the female about twice this length; $m-cu$ oblique, about two-thirds the petiole of cell M_3 ; vein *2nd A* long, extending to nearly opposite mid-length of $m-cu$.

Abdomen brown, the posterior margins of the tergites narrowly obscure yellow; genital segment obscure fulvous. Male hypopygium with what is apparently the ventral lobe of the basistyle stout, at apex produced caudad into a long straight pale spine that lies in the same direction as the lobe itself; surface of lobe with longitudinal rows of microscopic setulæ and a few longer setæ; mesal and dorsal lobes of basistyle less developed. Both dististyles lie close together at the base of the ventral lobe. Outer dististyle very broad at base, bifid at apex, the lateral arm a powerful, gently curved, black spine; inner arm shorter and stouter, at apex produced into a black spike-like spine; the two arms of the style enclose an oval notch. Inner dististyle longer, appearing as a gently curved horn, at near mid-length bearing a small, straight, lateral spine. *Ædeagus* elongate.

Hab. Victoria.

Holotype, ♂, Ringwood, altitude about 400 feet, September 4, 1927 (*C. Barrett*).

Allotopotype, ♀, in the National Museum, Victoria.

Molophilus morulus, sp. n.

Belongs to the *gracilis* group and subgroup; general coloration grey, the præscutum with four brown stripes; scutellum behind more reddish brown; knobs of halteres dark brown; male hypopygium with all lobes of basistyle setiferous; both dististyles branched, all branches acutely pointed.

Male.—Length about 4 mm.; wing 5 mm.

Female.—Length about 4.5 mm.; wing 5 mm.

Rostrum grey; palpi dark brown. Antennæ (♂) relatively short, if bent backward extending about to the wing-root, brown throughout; flagellar segments oval. Head grey.

Anterior lateral pretergites greyish white. Mesonotal præscutum dark brownish grey, with four slightly darker brown stripes; pseudosutural foveæ distinct, black; remainder of mesonotum dark brownish grey, the scutellum

behind broadly more reddish brown. Pleura dark grey, the dorso-pleural region dusky. Halteres obscure brownish yellow, the knobs dark brown. Legs with the fore coxæ dark brown, the remaining coxæ light brown, darker basally; femora brownish yellow to brown, darkening outwardly; tibiæ obscure yellow to brown, the tips more darkened; tarsi passing into brown; fore legs (σ) broken. Wings relatively narrow, tinged with yellow, the axillary region darkened; veins light brown, Cu_1 darker; macrotrichiæ dark brown. Venation: R_2 lying a little distad of the basal section of R_5 ; $m-cu$ from one-half to two-fifths the petiole of cell M_3 ; vein *2nd A* relatively short, ending opposite the caudal end of $m-cu$ or nearly so.

Abdomen dark brownish grey, the hypopygium brighter. Male hypopygium with the dorsal lobe of the basistyle stout and provided with setæ and delicate setulæ to the narrow apex; ventral lobe more clavate, flattened, narrowed basally, similarly clothed with setæ and setulæ, these not conspicuously retrorse; mesal lobe about as long, the margin of the apex smooth, obtuse. Outer dististyle deeply bifid, both arms produced into long slender black spines, the outer arm with microscopic appressed denticles along margin at base. Inner dististyle longer, appearing as a powerful black rod, the lateral margin at near mid-length bearing an acute black spine, the elongate apex beyond this point stout, with microscopic denticles and microscopic setulæ, the tip a stout powerful spine. \mathcal{A} edeagus long and nearly straight.

Hab. Victoria.

Holotype, σ , Ringwood, altitude about 400 feet, September 4, 1927 (*C. Barrett*).

Allotopotypes, ♀ .

Paratopotypes, 2 σ σ .

Molophilus aplecta, sp. n.

Belongs to the *pervagatus* group; head yellow; mesonotal præscutum and scutum orange; postnotum dark brown; pleura yellow, striped longitudinally with dark brown; femora and tibiæ yellow; wings pale yellow, with a brown pattern; male hypopygium with the outer dististyle a simple curved horn-like structure, the tip nearly acute; both basal dististyles simple, their tips acute.

Male.—Length about 3.4 mm.; wing 4.2 mm.

Rostrum and palpi brownish black. Antennæ (σ) relatively long, if bent backward extending about to the root of the halteres; scape pale yellow; flagellum pale brown, with

very long white setæ; flagellar segments fusiform. Head pale yellow.

Mesonotum pale orange, the scutellum more testaceous, the postnotal mediotergite dark brown. Pleura pale yellow, striped longitudinally with dark brown. Halteres pale yellow. Legs with the coxæ and trochanters pale yellow; femora and tibiæ yellow, with pale setæ; terminal tarsal segments infuscated. Wings relatively broad, pale yellow, with a sparse brown pattern as follows: a dusky seam from the stigma along the anterior cord; posterior cord and a conspicuous seam along vein Cu_1 ; axillary region, near mid-length of cell *2nd A*; veins pale yellow, darker in the infuscated areas; macrotrichiæ pale, variegated with patches of black trichiæ, including subapical areas on all the veins beyond the cord. Venation: R_2 lying just distad of $r-m$; petiole of cell M_3 about one-half longer than $m-cu$; vein *2nd A* ending opposite the caudal end of $m-cu$.

Abdomen pale, darker laterally; hypopygium chiefly yellow. Male hypopygium with the apex of the basistyle narrowed into a small beak-like structure, somewhat as in the *plagiatus* group. Outer dististyle a simple curved, slightly flattened, horn-like structure, gradually narrowed to the nearly acute apex. Both basal dististyles simple and subequal in length, the outer style pale basally, narrowed to the acute apex, the distal third with scattered setigerous punctures. Inner basal dististyle stouter and more nearly straight, the distal third blackened, the apex an acute spine. *Ædeagus* pale and broadly flattened.

Hab. New South Wales.

Holotype, ♂, Brooklana, Eastern Dorrigo, altitude about 2000 feet, May 6, 1928 (*W. Heron*).

Molophilus exquisitus, sp. n.

Belongs to the *pervagatus* group; most closely allied to *M. gracillimus*, Alexander; scutellum brownish black, concolorous with the scutum and postnotum; fore tibiæ (♂) with a swollen subbasal ring; all femora with two dark brown rings on distal half; wings greyish, the macrotrichiæ pale brown, with distinct patches of longer black trichiæ on the anterior and posterior cords and as an interrupted subbasal cross-band; male hypopygium with the outer basal dististyle flattened, the tip abruptly narrowed into a needle-like spine; inner basal dististyle very slender, only about three-fifths the length of the outer style.

Male.—Length about 2.8 mm.; wing 3.5 mm.

Rostrum and palpi dark brown. Antennæ dark, the basal segment yellow. Head obscure brownish yellow.

Mesonotum light brown, the anterior lateral pretergites narrowly whitish; scutum, scutellum, and postnotum brownish black. Pleura dark brown. Halteres light yellow throughout. Legs with the coxæ obscure yellow; trochanters yellow; femora yellow, each with two conspicuous dark brown rings, one terminal, the other at near three-fifths the length of the segment, slightly narrower and less intense in colour than the terminal ring; the yellow sub-terminal annulus enclosed is narrowest on the middle femora, broader on the other legs where it is approximately as extensive as the terminal dark ring; tibiæ obscure yellow, the tips narrowly darkened; fore tibiæ (♂) with a slightly enlarged, darkened, subbasal ring; tarsi pale brownish yellow, the terminal segments darkened. Wings with a greyish tinge, the base yellowish; veins pale, the macrotrichiæ pale brown, longer and brownish black to form conspicuous patches on the anterior cord, fork of *M* and adjoining veins, and as a broken subbasal band on veins *M*, *Cu*, *1st A*, and *2nd A*; costal fringe long and conspicuous. Venation: vein *1st A* long, ending opposite the proximal end of cell *M*₃.

Abdomen dark brown, the hypopygium paler. Male hypopygium with the outer basal dististyle a long conspicuous rod, the basal four-fifths broadly flattened, the distal fifth abruptly narrowed and prolonged into a slender needle-like point, at the base of this latter portion with a conspicuous double crest of long erect spines. Inner basal dististyle relatively short, not more than three-fifths the length of the outer, very slender, appearing as a delicate straight simple rod, the tip acute.

Hab. New South Wales.

Holotype. ♂, Ulong, Eastern Dorrigo, altitude about 2000 feet, December 31, 1926 (*W. Heron*).

Molophilus exquisitus is allied to *M. pulchripes*, Skuse, and *M. gracillimus*, Alexander, in the structure of the male hypopygium being closer to the latter, but in the coloration, especially of the fore tibiæ and the scutum, agreeing better with the former species. The structure of the male hypopygium is distinct from either species.

Molophilus loratus, sp. n.

Belongs to the *pervagatus* group; general coloration brown; head with the posterior orbits more yellowish;

femora with two brownish-black rings at and before tips; all tibiae with a more or less distinct dark subbasal ring; male hypopygium with both basal dististyles very long, slender, the tips narrowed to needle-like points.

Male.—Length about 3.6 mm.; wing 4.5 mm.

Female.—Length about 4.5 mm.; wing 5 mm.

Rostrum and palpi dark brown. Antennae with the first scapal segment brownish yellow, the remainder brown; antennae (σ) of moderate length, if bent backward extending about to the wing-root; flagellar segments oval, with a long conspicuous white pubescence and long, unilaterally arranged verticils. Head brownish grey, the posterior orbits narrowly yellow.

Anterior lateral pretergites restrictedly pale yellow. Mesonotum brown, the pseudosutural foveae blackish; scutellum and postnotum more greyish. Pleura brownish grey, the dorso-pleural region dusky. Halteres yellow. Legs with the coxae brownish yellow basally, their apices paler; trochanters yellowish testaceous; femora obscure yellow, brighter outwardly, the broad tips and a ring beyond mid-length brownish black, the yellow annulus enclosed subequal in width to the latter or a little narrower; tibiae yellow, the tips and a subbasal ring on all the legs brownish black, the latter tending to be less developed on the posterior and sometimes on the middle tibiae; tarsi passing into dark brown, the extreme proximal portions of the basitarsi yellow. In some female specimens, the basal dark ring of the tibiae is sometimes less developed. Wings yellowish, the axillary region darker; patches of dark setae in the stigmal region, fork of *Rs*, near base of cell *M*, near base of cell *2nd A*, and at near mid-length of vein *2nd A*; wing-membrane more or less clouded with dusky at these points; veins obscure yellow, the macrotrichiae dark brown. Venation: R_{4+5} reduced; *m-cu* about one-third the petiole of cell M_3 ; vein *2nd A* ending about opposite or shortly before the caudal end of *m-cu*.

Abdomen dark brown, the incisures somewhat paler; hypopygium a little brighter. Male hypopygium with the apical lobe of the basistyle produced, truncate. Outer dististyle a simple black rod from an enlarged base, the head dilated, oval. Both basal dististyles elongate, very slender, their tips acute; outer style stouter, more arcuated, narrowed gradually to near the tip which is produced into a needle-like spine; lateral margin of style with weak appressed teeth for about one-half the length of the style and extending almost to base; inner style a little longer, very

slender, needle-like, the basal fifth more yellowish horn-colour, the remainder blackened. *Ædeagus* subtended on either side by wide flanges.

Hab. Victoria.

Holotype, ♂, Ringwood, altitude about 400 feet, September 4, 1927 (*C. Barrett*).

Allotopotype, ♀.

Paratopotype, 1 ♀; 5 ♂ ♀, May 5, 1928 (*F. E. Wilson*); *paratypes*, 2 ♂ ♂, Bayswater, May 20, 1928 (*F. E. Wilson*).

In the elongate acicular basal dististyles, *Molophilus loratus* agrees most nearly with *picticeps*, Alexander (Tasmania), and *acutistylus*, Alexander (Victoria), differing from both in the coloration of the legs. In the subbasal dark band on all the tibiæ it is approached only by *pictipes*, Alexander (Tasmania).

Molophilus acutistylus, sp. n.

Belongs to the *pervagatus* group; general coloration dark brownish grey; scutellum brightened; wings yellowish with a broad dusky cross-band at the cord; male hypopygium with both basal dististyles long and slender, the tips acute.

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

Female.—Length about 3.8 mm.; wing 5 mm.

Rostrum and palpi black. Antennæ (♂) of moderate length, if bent backward extending to beyond the wing-root; first scapal segment dark, the succeeding four or five segments brown, the outer segments dark brown; flagellar segments long-oval, the outer ones shorter. Head dark brownish grey.

Pronotum dark, the scutellar lobes obscure orange, with long dark setæ. Anterior lateral pretergites and humeral region of the præscutum sulphur-yellow. Mesonotal præscutum and scutum brownish black, with a sparse yellow pollen; pseudosutural foveæ black; scutellum obscure fulvous; postnotum brownish black, sparsely pruinose. Pleural brownish black, sparsely pruinose, the cephalic portion of the pleurotergite with a group of long yellow setæ. Halteres yellow. Legs with the coxæ brownish black, the apices more reddish brown; trochanters brown; femora with the bases obscure yellow, passing through brown, the tips broadly blackened; tibiæ pale brown, the tips narrowly darker; fore tibiæ (♂) with a narrow dilated black ring; tarsi brownish black. Wings with a strong yellowish tinge; a broad dusky cross-band at the cord, completely traversing the wing; veins pale brown, the basal, costal, and cubital

veins more yellowish; macrotrichiae dark brown. Venation: R_{2+3} more than twice R_{4+5} ; petiole of cell M_3 only a little longer than $m-cu$; vein *2nd A* relatively elongate, extending to opposite or shortly beyond $m-cu$.

Abdomen brownish black. Male hypopygium with the basistyle narrowed outwardly, terminating in a small, slender, digitiform, fleshy lobe that is densely setiferous, bent strongly cephalad. Outer dististyle with the blackened head elongate but apparently simple. Both basal dististyles elongate, slender, their tips acute; outer style a little shorter and stouter, gently sinuous to the tip; inner style very slender, arcuated, a short distance before the elongate apex on outer face with a small group of tiny spinules and long setae, with a few others scattered on the adjoining margin.

Hab. Victoria.

Holotype, ♂, Cockatoo, May 14–19, 1927 (*G. F. Hill*).

Allotopotype, ♀.

Molophilus expansistylus, sp. n.

Belongs to the *pervagatus* group; general coloration dark brown, the pronotum, lateral pretergites, humeral region of præscutum, and scutellum yellowish; halteres with the knobs yellow; femora with the tips blackened, preceded by a yellowish ring; wings subhyaline, clouded with pale brown; male hypopygium with the outer basal dististyle a broadly expanded blade that is suddenly narrowed into a long acute apical spine.

Male.—Length about 3.6–3.8 mm.; wing 4.3–4.7 mm.

Rostrum and palpi black. Antennae (♂) of moderate length, if bent backward extending to the wing-root, brownish black, the first scapal segment beneath more yellowish. Head dark.

Pronotum sulphur-yellow, darker medially; lateral pretergites sulphur-yellow. Mesonotal præscutum dark brown, the humeral region obscure orange; scutum dark brown; scutellum obscure yellow, darker caudally, the parascutella dark; postnotum brownish black. Pleura brownish black, with a small, more or less evident yellow spot on the posterior margin of the sternopleurite. Halteres obscure yellow, the knobs clearer yellow, the extreme base of the stem restrictedly yellow. Legs with the coxæ brownish yellow, the posterior coxæ darker; trochanters obscure yellow; femora yellowish basally, at near mid-length passing into brown, the tips broadly blackened, with a slightly narrower subterminal yellow ring; tibiae light brown, the tips darkened; tarsi brownish black; fore

tibiæ (♂) with a slight blackened subbasal enlargement. Wings subhyaline, clouded with pale brown, especially in the stigmal region and along the cord; paler clouds in cells *R* and *M*, in the prearcular cells, axillary region of wing, in outer end of cell *2nd A*, and as a vague clouding beyond the cord; macrotrichiæ pale, more conspicuous and blackened along the cord; veins in basal region more yellowish, the outer veins pale brown, darker along the cord. Venation: R_{2+3} and R_{4+5} subequal; petiole of cell M_3 about two and one-half times *m-cu*; vein *2nd A* moderately long, extending to opposite or slightly beyond *m-cu*.

Abdomen, including the hypopygium, black. Male hypopygium with the outer dististyle trifid, there being a conspicuous lateral lobe on outer margin, separated from the bilobed apex by a deep notch. Outer basal dististyle a broadly expanded dark blade that is suddenly narrowed into a long acute apical spine. Inner basal dististyle shorter, extending to just beyond the expanded portion of the outer style, relatively stout, the apex feebly dilated into a head, the face and inner margin before apex with microscopic appressed serrulations. Ædeagus relatively long and slender, exceeding the longest dististyle, pale yellow in colour.

Hab. Victoria.

Holotype, ♂, Ringwood, altitude 400 feet, May 27, 1927 (C. Barrett).

Allotopotype, ♀.

Paratopotypes, 3 ♂♂, with the type; 4 ♂♂, September 4, 1927 (C. Barrett).

“Among shrubs, creepers and rushes, near streamside, dancing in scores and rarely alighting.”—C. Barrett.

Molophilus heroni, sp. n.

Belongs to the *pervagatus* group; head obscure yellow, the centre of the vertex infuscated; thorax dark greyish brown; legs yellowish, the tarsi darker; wings yellowish, the cord and anal cells clouded with pale brown; male hypopygium with the outer basal dististyle a flattened blade, terminating in a long, sinuous, tail-like prolongation.

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

Rostrum and palpi dark brown. Antennæ (♂) dark brown throughout, of moderate length, if bent backward extending to about opposite the wing-root or slightly

beyond; flagellar segments long-oval, with conspicuous whitish setæ and a few elongate verticils. Head obscure yellow, the centre of the vertex infuscated.

Pronotum dark brown, the scutellum and lateral pretergites pale sulphur-yellow. Mesonotum dark greyish brown, the humeral region of the præscutum restrictedly sulphur-yellow; postnotum still darker. Pleura concolorous with the postnotum. Halteres pale yellow, the knobs even brighter. Legs with the coxæ and trochanters yellow; femora and tibiæ yellowish; the middle femora with the distal half a little more infuscated; tarsi passing into brown beyond the base. Wings with a yellowish suffusion, the membrane sparsely variegated with pale brown, including a broad cross-band at the cord, this traversing the wing or approximately so, the cubital and anal cells similarly infused; veins pale, a little darker in the infuscated areas. Venation: R_{2+3} relatively short, about one-third longer than R_{4+5} ; vein 2nd *A* relatively long, ending opposite the caudal end of *m-cu*.

Abdomen dark brown, including the hypopygium. Male hypopygium with the outer dististyle simple, a little wider at base than at the obtuse apex. Outer basal dististyle a conspicuous flattened blade, the outer angle produced into a long, sinuous, tail-like portion that is about equal in length to the base itself; outer margin of the blade-like portion at near two-thirds the length bearing a long slender acute spine that is appressed to the margin of the style; a second smaller acute spine at the extreme base of the tail-like prolongation. Inner basal dististyle very long and narrow, subequal in length to the outer, the base constricted, the apex narrowed into an acute black spine; before this spine, the surface of the style bears a few setiferous tubercles and punctures.

Hab. New South Wales.

Holotype, ♂, Brookland, Eastern Dorrigo, altitude about 2000 feet, March 18, 1927 (*W. Heron*).

I take great pleasure in naming this very distinct *Molophilus* in honour of the collector, Mr. William Heron, to whom we are indebted for almost our sole knowledge of the very interesting Tipulid fauna of Eastern Dorrigo.