The Limoniinae (Diptera: Tipulidae) of Australia
VII. The genera *Austrolimnophila* ALEXANDER,
*Epiphragma* OSTEN SACKEN, *Leolimnophila* gen. nov.,
*Tipulimnoea* gen. nov. and *Paralimnophila* ALEXANDER
(all tribe Limnophilini)

G. THEISCHINGER

Abstract: The Australian species of *Austrolimnophila* ALEXANDER,
*Epiphragma* OSTEN SACKEN, *Leolimnophila* gen. nov.,
*Tipulimnoea* gen. nov. and *Paralimnophila* ALEXANDER (all tribe Limnophilini) are reviewed. Two taxa of
the genus group and 30 taxa of the species group are described as new. Descriptive
information of the hitherto undescribed sex is presented for 23 taxa (15♂♂, 8♀♀).
Lectotypes are designated for 2 species. There are new combinations, changes in
status and taxonomic rank, and additions to synonymy. Diagnostic characters and
distributional data are presented for all taxa of the species group.

Introduction

The species of *Austrolimnophila* ALEXANDER, *Epiphragma* OSTEN SACKEN, *Leolim-
nophila* gen. nov., *Tipulimnoea* gen. nov. and *Paralimnophila* ALEXANDER (all tribe Limnophilini) known from Australia were described by WESTWOOD (1835), SKUSE
(1890) and ALEXANDER (1921-1978). More detail is given in brief introductory notes
under the appropriate taxa of the genus group. As with recently revised genera
(THEISCHINGER 1992b, 1993, 1994b), the previously available literature does not pro-
vide workable means for specific identifications. In order to facilitate future work on
Australian Limoniinae, most available types of the above genera were studied and in
conjunction with large numbers of fresh specimens, were used in this paper for inter-
pretations and identifications of previously described species. These, together with the
Descriptions of many new forms and much additional, mainly distributional, informa-
tion are presented below. It should be mentioned that the family group name Hexato-
mini is replaced by Limnophilini following STARY (1992).
Descriptive terminology

The terminology used for wing venation and genitalia roughly follows ALEXANDER & BYERS (1981), however, without using subscript numerals for divisions of veins. In detail it is presented with a labelled illustration under each supraspecific taxon (see there).

Methods

Much as in the introductive paper to this series (THEISCHINGER 1992a) and in previous revisions (THEISCHINGER 1992b, 1993, 1994b).

Identifications

As in the introductive paper to this series (THEISCHINGER 1992a).

Acknowledgements

For kind support of the present study in many different ways, I wish to thank the following persons: Prof. Dr R.L. Kitching, Dr G.B. Monteith and Ms M. Schneider (Brisbane), Ms E.A. Bugledich, Dr D.H. Colless, Dr P.S. Cranston, Ms W. Lee, Dr I.D. Naumann, Dr K.R. Norris, Dr D. Rentz, Dr E.F. Riek and Dr A. Wells (Canberra), Mr G. Williams (Lansdowne), Dr A. Neboiss and Dr K. Walker (Melbourne), Dr D.J. Bickel, Dr G. Cassis, Mr L. Müller and Mrs C.M. Theischinger (Sydney), Mag. F. Gusenleitner and Dr F. Speta (Linz, Austria), Mr G.F. Hevel, Dr W.N. Mathis and Ms H. Williams (Washington D.C., U.S.A.). I also wish to acknowledge a Visitor's Fellowship awarded by the Smithsonian Institution, Washington D.C., U.S.A., enabling me to study the world famous ALEXANDER Collection, and last but not least I am extremely grateful to Dr O.S. and Mrs C. Flint for accommodation so kindly provided in Washington D.C.

Abbreviations

Apart from abbreviations in common use, and abbreviations for taxonomic terms and geographical regions of Australia, both listed in the introductive paper to this series (THEISCHINGER 1992a), the following abbreviations are used:
a) for authors

ALEX. = ALEXANDER
MACQ. = MACQUART
OST. SACK. = OSTEN SACKEN
WEST. = WESTWOOD

b) for institutions and collections:

AM = Australian Museum, Sydney
ANIC = Australian National Insect Collection, Canberra
BMNH = Natural History Museum, London, England
GT = Collection Günther Theischinger
HOPE = Hope Entomological Collections, University of Oxford, Oxford, England
MV = Museum of Victoria, Melbourne
NMNH = National Museum of Natural History, Washington D.C., U.S.A.
QM = Queensland Museum, Brisbane
SAM = South Australian Museum, Adelaide
UQ = University of Queensland, Brisbane

others:

ca = circa
Ck(s) = Creek(s)
c. u. = collector unknown
dist. = district
F. P. = Forest Park
ft = feet
Hwy = Highway
Is. = Island
jn = junction
km = kilometer(s)
mi. = miles
Mt = Mount
Mtn = Mountain
Mts = Mountains
Nat. Res. = Nature Reserve
n. o. d. = no other data
N. P. = National Park
nr = near
Pen. = Peninsula
Pt = Point
R. = River
Ra. = Range(s)
Rd = Road
Ref. = Refuge
Res. = Reserve
Rwy = Railway
S. F. = State Forest
s. l. = same locality
s. str. = sensu stricto
S.U.Zool.Exp. = Sydney University Zoological Expedition
trib. = tributary
vic. = vicinity
Systematics

Genus *Austrolimnophila* ALEXANDER (Figs 1-3, 13-21)


*Polymoria* authors, not PHILIPPI 1865, misidentification.

Type species of *Austrolimnophila* ALEXANDER: *Limnophila eutaeniata* BIGOT 1888, by original designation.

Seven species described from Australia by ALEXANDER (1924a, 1928a, 1928d, 1937) and SKUSE (1890) were listed under *Austrolimnophila* (*Austrolimnophila*) by OOSTERBROEK (1989). In the present study, six of them are considered to belong in *Austrolimnophila* s. str., whereas the seventh, *A. electa* (ALEX.), appears to belong elsewhere, possibly in *Limnophila* MACQ. Four species are described as new.

Habitat of larva: According to ALEXANDER (1967) the immature stages of all species occur in decaying wood.

Distribution: All zoogeographical regions.

Only one subgenus in Australia: *Austrolimnophila* ALEXANDER.
Subgenus *Austrolimnophila* ALEXANDER (Figs 1-3, 13-21)


*Polymoria* authors, not PHILIPPI 1865, misidentification.

Type species of *Austrolimnophila* ALEXANDER: *Limnophila eutaeniata* BIGOT 1888, by original designation.

**Definition:** Rostrum markedly shorter than remainder of head; antennae generally filiform, rarely moniliform, with verticillar hairs of basal flagellomeres not longer than those flagellomeres. Tibial spurs present. Wing (Figs 1, 2): cell C without supernumerary crossvein(s); Sc1 clearly present and not much less strongly developed than Sc2; four branches of R reaching the margin; anterior arculus absent; Rs not curved step-like; R1+2 slightly curved, less than half as long as R3; R2 well beyond fork of R2+3+4; crossvein r-m from slightly before, to well beyond, first fork of Rs, and and from markedly shorter than, to about as long as, basal section of R5; distal section of M1+2 shorter than cell M1; bscu situated well before distal side of discal cell (dm); A2 almost straight; squama without macrotrichiae. Male hypopygium (Fig. 3): segment 9 (s9) a complete ring with mediodorsal posterior excision of variable size and shape and without dorsal appendix; interbases (i) developed; aedeagus (ae) with very wide base.

**Distribution:** All zoogeographical regions. In Australia: eastern, south-western.

Species in Australia:

*A. antiqua* (SKUSE)
*A. collesssiana* sp. n.
*A. danbulla* sp. n.
*A. interventa* (SKUSE)
*A. irwinsmithae* ALEX.
*A. lewisiana* sp. n.
*A. munifica* ALEX.
*A. norrisiana* sp. n.
*A. pristina* (ALEX.)
*A. relicta* ALEX.

*Austrolimnophila* (*Austrolimnophila*) *irwinsmithae* ALEXANDER (Fig. 13)


**Primary type:** Holotype ♀: Tasmania, Mount Wellington, bred from larva collected 13.2.1921, pupated 8-10.3.1921, emerged 18.3.1921, V. Irwin-Smith (supposedly in ANIC); not found.
Published records: Tasmania: Mount Wellington (ALEXANDER 1937: 343).

Previously known only from female.

Description of male: Structure and colouration much as described for female (ALEXANDER 1937). Wing length 6.8-7.6 mm.

Genitalia: Male hypopygium, Fig. 13.

Remarks: Not very similar to any other described species from Australia.

Diagnostic characters (male): tergum 9 with very deep notch between long and narrow posterior lobes; aedeagus winged.

New records: Tasmania: cks nr Cradle Mtn (GT); 12 mi. S Deloraine, 2200 ft (ANIC); Pelion (ANIC).

Distribution: Tasmania.

Austrolimnophila (Austrolimnophila) interventa (SKUSE) (Figs 2a, 14)


Primary type: Holotype ♀: Queensland, northern Queensland (?) (ANIC); seen.

Published records: Queensland: northern Queensland (?) (SKUSE 1890: 851). New South Wales: Brooklana, Dorrigo, 2000 ft; Dorrigo (both ALEXANDER 1944: 6).

Previous illustrations: SKUSE 1890: Pl. XXII, fig. 24 (wing).

Previously known only from female.

Description of male: Structure and colouration much as described for female (SKUSE 1890). Wing length 9.0-11.5 mm.

Genitalia: Male hypopygium, Fig. 14.

Remarks: Similar to A. norrisiana sp. n.

Diagnostic characters: dark wing pattern rather sparse; tergum 9 of male with rather shallow u-shaped notch between short, wide, posterior lobes.

New records: Queensland: Cunninghams Gap, 2500 ft (ANIC); 5 mi. S Kenilworth (ANIC); Lamington N. P., Green Mts (ANIC); Mt Edith Forest Rd, 1.5 mi. off Danbull Rd (ANIC). New South Wales: Banda Res. (GT); Barrington House (ANIC); Barrington Tops (GT); Brooklana, E Dorrigo, 2000 ft (NMNH); Chricster S. F., ca 35 km N Dungog, 905 m (ANIC); Cobcroft Ck, Weirikimbea N. P., 1110 m (GT); Cockerawombea Ck, 23 km NW Bellangry, 730 m (GT); Dingo Tops F. P., NW Wingham, 950 m (GT); Dorrigo (NMNH); Dorrigo N. P. (ANIC); Dorrigo N. P., 2700 ft (ANIC); Dorrigo N. P., Never Never area (GT); Dorrigo N. P., Never Never area, Sassafras Ck, 750 m (GT); Fitzroy Falls, 2500 ft (ANIC); Gloucester Tops, 1280 m (GT); Lorien...
Ref., 3km N Lansdowne, nr Taree (GT); Macquarie Pass (GT); Minnamurra Falls (ANIC); Mt Hyland N. P. (GT); Mt Tomah (NMNH); Mt Wilson (ANIC, GT); Nadgee Nat. Res., Nadgee R. (GT); Nadgee Nat. Res., nr Eden (GT); Pulpit Hill Ck. Megalang Valley (MV); Royal N. P., Waterfall (ANIC); Somersby Falls (GT); Thirlmere Lakes, nr Picton (GT); Watagan Forest (GT). Victoria: Britannia Ck, 6 km S of Warburton (MV); Cabbage Tree Ck (ANIC); 5 East Genoa (ANIC); Erinundra Ck, 15 km N of Club Terrace (MV); Hordern Vale (ANIC); Hordern Vale, Otway Pen. (NMNH); Lilly Pilly Gully, Wilson's Promontory (MV); Maroondah (MV); Otway Ra., Mait's Rest Scenic Res. (ANIC); Rocky R., Murrungowar, Gippsland (ANIC); Toorlo Arm, Gippsland (ANIC); Wilson's Promontory Chinaman's Ck (ANIC). Tasmania: Great Forester R., 5 km NW Forester (MV); Lilydale (MV); National Park (ANIC, NMNH).

Distribution: Queensland (NEQ, SEQ), New South Wales (NEN, SEN), Victoria, Tasmania.

*Austrolimnophila* (*Austrolimnophila*) *norrisiana* spec. nov. (Fig. 15)

Description: Head largely brownish grey; rostrum and palps dark greyish brown; scape and pedicel pale greyish brown, basal flagellomere very large and greyish black, remaining flagellomeres with basal half brownish black and distal half pale greyish yellow. Thoracic terga largely dark greyish brown, scutum with pale greyish brown, mainly longitudinal stripes and lines; pleura pale greyish yellow. Wings whitish grey subhyaline, mottled with lots of very small pale grey spots; narrowly black along crossveins, transverse sections of longitudinal veins and along some longitudinal vein endings; Rs very long, almost perpendicularly bent near origin; r-m markedly beyond fork of Rs. Halteres with stem yellowish grey and knob dark greyish brown. Abdomen greyish brown, dorsally darker than ventrally; male and female terminalia somewhat darker than the rest. Wing length, male 9.0-9.5 mm, female 10.5-11.6 mm.

Genitalia: Male hypopygium, Fig. 15.

Remarks: Similar to *A. interventa* (SKUSE).

Diagnostic characters: dark wing pattern rather sparse; tergum 9 of male with very deep v-shaped median notch between moderately long, wide, posterior lobes.


Distribution: Western Australia (SWA).

Name: Dedication to Dr K.R. Norris of Canberra who collected this species first in 1936.
**Austrolimnophila (Austrolimnophila) collessiana** spec. nov. (Figs 3, 16)

**Description** (♂): Head largely grey; rostrum and palps brownish black; scape, pedicel and basal flagellomere dull greyish yellow, remaining flagellomeres largely dull greyish yellow with more or less distinct and defined, markedly darker, basal ring. Thoracic terga largely dull greyish yellow; sides of scutum and entire laterotergite blackish brown; pleura largely pale greyish yellow, blackish brown only dorsally along sides of scutum and laterotergite. Coxae pale greyish yellow; trochanters greyish brown; remainder of legs greyish- to blackish brown with extreme base of tibiae somewhat brightened. Wings whitish subhyaline, mottled with black; large black patches along crossveins, transverse sections of longitudinal veins and at all longitudinal vein endings; comparatively few small dark spots; r-m beyond fork of Rs. Halteres greyish brown, stem paler than knob. Abdomen largely greyish brown with sterna 1, 2, 7 and 8 markedly darker than the rest. Wing length 8.9-9.4 mm.

**Genitalia**: Hypopygium, Figs 3, 16.

Female unknown.

**Remarks**: Similar to *A. lewisiana* sp. n.

**Diagnostic characters** (male): dark wing pattern very distinct, regional and including few small spots; tergum 9 with wide median excision between short subtriangular posterior lobes.

**Material examined**: **Holotype** ♂: Queensland, 5-8 mi. Mount Lewis Road off Mossman-Mount Mulloy Road, 22.4.1967, D.H. Colless (ANIC). **Paratypes**: Queensland: 1 ♂, same data as holotype (ANIC); 1 ♂, Mount Edith Forest Road, 1.5 mi. off Danbull Road, 6.5.1967, D.H. Colless (ANIC).

**Distribution**: Queensland (NEQ).

**Name**: Dedication to Dr D.H. Colless, former curator of Diptera in ANIC, Canberra.

---

**Austrolimnophila (Austrolimnophila) lewisiana** spec. nov. (Fig. 17)

**Description**: Head largely dark grey; rostrum and palps brownish black; scape, pedicel and basal flagellomere greyish yellow, remaining flagellomeres largely greyish yellow with more or less distinct and defined, markedly darker, basal ring. Thoracic terga largely pale and dark greyish yellow; sides of scutum and laterotergite blackish brown; pleura largely pale greyish yellow, blackish brown only dorsally, adjacent to sides of scutum and laterotergite. Coxae pale greyish yellow; trochanters greyish brown; remainder of legs greyish yellow to greyish brown. Wings whitish subhyaline,
rather indistinctly mottled with blackish grey; larger black patches along crossveins, transverse sections of longitudinal veins and at all longitudinal vein endings; many small dark spots; r-m slightly beyond fork of Rs. Halteres with stem greyish brown and knob largely brownish black. Abdomen largely greyish brown with sterna 1, 2, 7 and 8 darker than the rest. Wing length, male 8.7-8.8 mm, female 8.1 mm.

Genitalia: Male hypopygium, Fig. 17.

Remarks: Similar to A. collesiana sp. n.

Diagnostic characters (male): dark wing pattern indistinct, rather uniform and including many small spots; tergum 9 hardly notched medially between poorly defined posterior lobes.

Material examined: Holotype ♂: Queensland, 5-8 mi. Mount Lewis Road off Mossman-Mount Mullow Road, 22.4.1967, D.H. Colless (ANIC). Paratypes: Queensland: 1♂, same data as holotype (ANIC); 1♀, Mount Edith Forest Road, 1.5 mi. off Danbull Road, 6.5.1967, D.H. Colless (ANIC); 4♂♂, 2♀♀, Devil's Thumb, 12 km NW of Mossman, 1000m, rainforest, 5.9.1992, I.D. Naumann (ANIC).

Distribution: Queensland (NEQ).

Name: Lewisianus 3 = Latinized for "from Mt Lewis".

Austrolimnophila (Austrolimnophila) antiqua (SKUSE) (Figs 2b, 18)


Epiphragma (Epiphragma) antiqua (SKUSE); ALEXANDER, Trans. R. ent. Soc. Lond. 99: 384 (1948).


Primary type: Lectotype ♂, by present designation, of Limnophila antiqua SKUSE: New South Wales, either Sydney or Blue Mountains (but no locality label) (ANIC); seen; additionally labelled "Lectotype ♂ Limnophila antiqua SKUSE, designated by G. Theischinger 1995".

Published records: New South Wales: Sydney; Blue Mts (both SKUSE 1890: 850); Brooklana, Dorrigo, 2000 ft; Dorrigo (both ALEXANDER 1944: 6).

Previous illustrations: SKUSE 1890: Pl. XXII, fig. 23 (wing); Pl. XXIV, fig. 63 (male hypopygium).

Genitalia: Male hypopygium, Fig. 18.

Remarks: Not very similar to any other described species from Australia.

Diagnostic characters (male): tergum 9 with narrow shallow u-shaped notch between short narrow posterior lobes; median lobe of interbase double-pointed.

New records: Queensland: Bald Rock N. P. (UQ); Binna Burra (ANIC); Binna Burra, 2700 ft (ANIC); Carnarvon Gorge (GT); Conondale Ra., Bundaroo Ck (GT); Cunningham's Gap, 2500 ft
**Austrolimnophilia (Austrolimnophilia) relicta** ALEXANDER (Fig. 19)


**Primary type:** Holotype ♂: Tasmania, Hartz Mountains, 10.12.1922, A. Tonnoir (ANIC); seen.

**Published records:** Tasmania: Adventure Bay; Hartz Mts; Mt Farrel; Mt Field (all ALEXANDER 1928a: 87).

Previously known only from male.

**Description of female:** Structure and colouration much as described for male (ALEXANDER 1928a). Wing length 12.5-13.3 mm.

**Genitalia:** Male hypopygium, Fig. 19.
Remarks: Not very similar to any other described species from Australia.

Diagnostic characters: femora pale with black tip; tergum 9 of male with shallow, moderately wide notch between rather narrow short posterior lobes; interbase medially distinctly double-branched.

New records: Tasmania: Ewart Ck (ANIC); Fortescue Bay, Tasman Pen. (GT); Frodshams Pass, nr Mt Wedge (GT); Hartz Mts N. P., 740 m (ANIC); Huon-Picton R. jn (ANIC); 10 mi. W of Maydena (ANIC); Milshake Hills Res. (GT); Mt Bobs Ra., Pine Lake, 680 m, W of Hartz Mts (GT); Mt Field, Lyrebird Walk, 700 m (GT); Mt Wellington, Cave 1 (ANIC); Mt Wellington, Cave 2 (ANIC); Pelion Hut, 3 km S Mt Oakleigh, 860 m (ANIC); Strahan (ANIC); 10 mi. E of Strahan (ANIC); 42°41'S/145°49.5'E (ANIC).

Distribution: Tasmania.

Austrolimnophila (Austrolimnophila) pristina (ALEXANDER) (Fig. 20)


Austrolimnophila pristina (ALEXANDER); ALEXANDER, Proc. Linn. Soc. N.S.W. 53: 57 (1928).


Primary type: Holotype ♀: Victoria, no other data (MV, NMNH); seen.

Published records: Victoria: no other data (ALEXANDER 1924a: 506); Mt Donna Buang, above Warburton, 4000 ft (ALEXANDER 1943: 91).

Previously known only from female.

Description of male: Structure and colouration much as described for female (ALEXANDER 1924a). Wing length 13.5-18.0 mm.

Genitalia: Male hypopygium, Fig. 20.

Remarks: Very similar to A. munifica ALEX.

Diagnostic characters: size large (wing length >13 mm); distinct dark patches at longitudinal vein endings; interbase with base narrow and median lobe moderately long and wide.

New records: New South Wales: Fairy Bower, nr Bundanoon (GT); Newnes Rwy Tunnel nr Lithgow (ANIC); Pretty Ck, Mt Kosciusko (ANIC). Victoria: Acheron R. (ANIC, GT); Belgrave (NMNH); Bonang R., Bendoc Rd (GT); Cameron Ck, nr Marysville (GT); Cement Ck, 1800 ft (ANIC); Cumberland Ck (ANIC); Cumberland Ck, 3000 ft (ANIC); Lake Mtn (ANIC); Lake Mtn, 3500 ft (ANIC); Lake Mtn, 4000 ft (ANIC); Lake Min, Dugout (ANIC); Lake Mtn, Dugout, 4420 ft (ANIC); Lake Mtn, Echo Flat, Dugout (ANIC); 0.5 mi. S Marysville (ANIC); Mt Baw Baw, 3800 ft (ANIC); Mt Donna Buang (GT); Sherbrooke (ANIC); Spring Hill, 4000 ft (ANIC).

Distribution: New South Wales (SEN), Victoria.
**Austrolimnophila (Austrolimnophila) munifica** ALEXANDER (Fig. 21)


**Primary type:** Holotype ♀: New South Wales: Barrington Tops, Jan. 1925, S.U.Zool.Exp. (ANIC); seen.

**Published records:** New South Wales: Barrington Tops (ALEXANDER 1928d: 57).

Previously known only from female.

**Description of male:** Structure and colouration much as described for female (ALEXANDER 1928d). Wing length 13.5-15.6 mm.

**Genitalia:** Male hypopygium, Fig. 21.

**Remarks:** Similar to *A. pristina* (ALEX.).

**Diagnostic characters:** size large (wing length >13 mm); longitudinal vein endings not marked with distinct dark patches; interbase with base narrow and median lobe long, narrow and pointed.

**New records:** New South Wales: Gloucester Tops, 1280 m (GT). Victoria: Millgrove (NMNH); Mt Donna Buang (GT).

**Distribution:** New South Wales (NEN, SEN), Victoria.

---

**Austrolimnophila (Austrolimnophila) danbulla** spec. nov.

**Description:** Head largely dark greyish brown, including rostrum, palps and most of flagellum of antennae; scape, pedicel and basal flagellomere brownish yellow. Thoracic terga pale to dark greyish brown; pleura dark greyish brown dorsally and ventrally, pale greyish yellow between. Coxae largely greyish yellow, trochanters greyish brown; remainder of legs brownish yellow to yellowish brown, femora with three broad markedly darker rings in distal half, tibiae with blackish brown subbasal ring. Wings whitish yellow to pale greyish brown with distinct and rather large blackish brown patches along crossveins, transverse sections of longitudinal veins and at endings of R3 and R4; Rs perpendicularly bent and with substantial spur near origin; r-m about level with fork of Rs; cell M1 subequal in length to vein M3. Halteres with stem greyish brown and knob greyish brown and yellow. Abdomen greyish brown, dorsally darker than ventrally, sterna 1, 2, 7 and 8 markedly darker than other sterna. Wing length 10.2 mm.

Male unknown.

**Remarks:** Not very similar to any other described species from Australia; similar in wing pattern to *Epiphragma terraereginae* ALEX.
Diagnostic characters (female): large spur at bend of Rs; cell M1 unusually long.


Distribution: Queensland (NEQ).

Name: From Danbulla, near the type locality; treated as a noun in apposition.

Genus *Epiphragma* Osten Sacken (Figs 4, 5, 22-25)


Six species described from Australia under *Epiphragma* Osten Sacken by Alexander (1922b, 1922c, 1928a, 1931b) were listed under this genus by Oosterbroek (1989). one of them under subgenus *Epiphragma* and the other five under "subgenus uncertain". As a result of the present study, two of Alexander's species are now regarded as synonyms, and the remaining four species are all considered to belong in *Epiphragma* s. str. In addition, one species described by Alexander (1921b) and listed by Oosterbroek (1989) under *Limnophila*, is transferred to *Epiphragma* s. str., and one species is described as new.

Habitats of larvae: According to Alexander (1967) the larval habitat is similar to that of *Ausrolimnophila* species: decaying wood.

Distribution: Palaearctic, Nearctic, Neotropical, Oriental and Australian regions.

Only one subgenus in Australia:

*Epiphragma* OSTEN SACKEN.

**Subgenus *Epiphragma* OSTEN SACKEN (Figs 4, 5, 22-25)**


Type species: *Limnophila pavonina* OSTEN SACKEN 1860 (*= Limnobia fasciapennis* SAY 1823), designated by COQUILLETT, 1910: 539.

Definition: Rostrum markedly shorter than remainder of head; antennae filiform-moniliform, with verticillar hairs of basal flagellomeres not longer than those flagellomeres. Tibial spurs present. Wing (Fig. 4): cell C with supernumerary cross-vein(s); Sc1 clearly present and not much less strongly developed than Sc2; four branches of R reaching the margin; anterior arculus absent; Rs not curved step-like; R1+2 slightly curved, about as long as R2, less than half as long as R3; R2 well beyond fork of R2+3+4; crossvein r-m about level with first fork of Rs and about as long as basal section of R5; distal section of M1+2 shorter than cell M1; bscu situated well before distal side of discal cell (dm); A2 almost straight; squama without macrotrichiae. Male hypopygium (Fig. 5): segment 9 (s9) a complete ring with mediodorsal posterior lobe or excision of variable size and shape and without dorsal appendix; interbases (i) developed; aedeagus (ae) with very wide base.

Distribution: Palaearctic, Nearctic, Neotropical, Oriental and Australian regions. In Australia: eastern, including Lord Howe Island.

Species in Australia:

*E. (E.)* collessi sp. n.
*E. (E.)* hardyi ALEX.
*E. (E.)* howensis ALEX.
*E. (E.)* illingworthi (ALEX.)
*E. (E.)* meridionalis ALEX.
*E. (E.)* terraereginae ALEX.

**Epiphragma (Epiphragma) howensis ALEXANDER**


Primary type: Holotype ♂: Lord Howe Island, A.M. Lea (SAM, NMNH); seen.
**Published records:** Lord Howe Island (ALEXANDER 1922b: 242).

Known only from male.

**Original Description:** Generally similar to *E. terraereginae* ALEX., differing as follows: Antennae elongate, if bent backward extending to considerably beyond the base of the abdomen; flagellar segments 1-3 orange yellow, segments 4-8 yellow, the bases narrowly infuscated; remainder of flagellum dark brown. Head with a blackish dash on either side of the vertex, adjoining the inner margin of the eye. Mesonotal praeascutum with the yellow posterior half quadrilineate with dark brown; scutal lobes dark brown; scutellum light brownish yellow with a narrow brown median line; postnotum indistinctly trilineate with brown. Pleura dark brown. Legs long and slender, yellow, unmarked with darker. Wings with the pattern nearly as in *E. terraereginae*, but the darker circles at the basal deflection of Cu1, outer end of cell first M2, and the fork of M1+2 deeper coloured, conspicuously margined with pale conspicuous yellow spots in the outer ends of cells R2 to first A. Venation: R2+3 a little longer than the basal deflection of Cu1; petiole of cell M1 long, approximately twice as long as the basal deflection of Cu1. Abdomen dark brown. Length about 11.5 mm; wing 12 mm; antennae about 4.5 mm.

**Remarks:** Very similar to *E. meridionalis* ALEX. and *E. terraereginae* ALEX.

**Diagnostic characters:** antennae with basal segments of flagellum largely pale and distal segments uniformly dark; legs uniformly pale without dark rings; wing pattern including large dark spot with narrow white margins; about 10 dark spots along anterior wing margin between supernumerary crossvein and apex.

**New records:** None.

**Distribution:** Known only from Lord Howe Island.

---

**Epiphragma (Epiphragma) meridionalis** ALEXANDER (Fig. 22)


**Primary type:** Holotype ♂: Tasmania, Strahan, 5.2.1923, A. Tonnoir (ANIC); seen.

**Published records:** Victoria: Ferntree Gully (ALEXANDER 1928a: 88). Tasmania: Burnie; Strahan; Tullah; Zeehan (all ALEXANDER 1928a: 88).

Previously known only from male.

**Description of female:** Structure and colouration much as described for male (ALEXANDER 1928a). Wing length 7.8-11.0 mm.
Genitalia: Male hypopygium, Fig. 22.

Remarks: Very similar to *E. howensis* ALEX. and *E. terraereginae* ALEX.

Diagnostic characters: antennae with most of flagellum bicolored (dark ringed with pale); tibiae pale, ringed with darker; about 5 dark spots along anterior wing margin between supernumerary crossvein and apex; dark spot on supernumerary crossvein usually longer than wide; male with the two distal spines of interbase small and not well separated.

New records: New South Wales: Brown Mtn, nr Bega (ANIC); Brown Mtn, nr Nimmitabel (GT). Victoria: Acheron R. (GT); Acheron Way, 1900 ft (ANIC); headwaters and falls of Aire R, Otway Ra. (GT); Barringo Camp, Mt Macedon area (MV); Bellol Ck, nr Marysville (GT); Britannia Ck, 6 km S of Warburton (MV); Cameron Ck, nr Marysville (GT); Cape Otway (ANIC); Upper Carlisle R., 8 km SSW of Gelibrand (MV); Cascades, nr Marysville (GT); Cement Ck (GT); Colac (ANIC); Cumberwell Falls, SE of Marysville (MV); Hordern Vale (ANIC); 17 mi. SW Lake Mtn, 3000 ft (ANIC); Maroonah (ANIC); Millgrove (MV); Mt Erica (GT); Murrindindi R. (MV); Sherbrooke (ANIC); Spring Hill, 4000 ft (ANIC); Taggerty R. (GT); Toorongo Falls (ANIC); 15 S Treasure's, 3900 ft (ANIC); Warburton, 1000 ft (ANIC); Warburton, 1750 ft (ANIC); Warburton, 2150 ft (ANIC). Tasmania: W Arthur Plains (MV); Collinsvale "Fairy Glen", 300 m (ANIC); Cox Bight (MV); Ewart Ck (ANIC); Franklin R., Proine Cave (ANIC); Franklin R., 20 km SW Derwent Bridge (MV); Olga-Hardwood R. (MV); Helyer R., Murchison Hwy (GT); Helyer R., S of Wynyard (GT); Huon-Picton R. jr (MV); Lake Pedder (MV); Lightning Plains, Jane R., 400 m (GT); Melaleuca inlet (MV); Melaleuca, nr Bathurst Harbour (ANIC); Milkshake Hills Res. (GT); 4 km N of Mt Barrow, 800 m (GT); Mt Field, Lyrebird Walk, 700 m (GT); Mt Wellington (ANIC); Patons Rd, S of Lemonthyme (GT); Russell Falls (ANIC); Russell Falls N. P. (MV); Sandy Bay (GT); 10 mi. E Strahan (ANIC).

Distribution: New South Wales (SEN), Victoria, Tasmania.

*Epiphramgra (Epiphramgra) terraereginae* ALEXANDER (Figs 5, 23)


Primary type: Holotype ♀: Queensland, Cairns district, A.M. Lea (SAM); not seen.

Published records: Queensland: Cairns dist. (ALEXANDER 1922b: 241).

Previously known only from female

Description of male: Structure and colouration much as described for female (ALEXANDER 1922b). Wing length 8.7-10.5 mm.

Genitalia: Hypopygium, Figs 5, 23.

Remarks: Very similar to *E. howensis* ALEX. and *E. meridionalis* ALEX.

Diagnostic characters: antennae with most of flagellum uniformly dark; tibiae pale ringed with darker; about 5 dark spots along anterior wing margin between
supernumerary crossvein and apex; dark spot on supernumerary crossvein usually wider than long; male with the two distal spines of interbase large and well separated.

**New records:** Queensland: Hugh Nelson Ra., 1150 m (ANIC); Mt Edith Forest Rd, 1 mi. off Danbulla Rd (ANIC); Mt Spec, 875-880 m (ANIC); Tolga (UQ); Wallacha Falls, Palmerston Hwy (ANIC); Wongabel S. F. (ANIC); Yungaburra (S. F. 452) (ANIC).

**Distribution:** Queensland (NEQ).

**Epiphragma (Epiphragma) hardyi** ALEXANDER (Fig. 24)


**Primary types:** Holotype (sex unknown) of *Epiphragma hardyi* ALEXANDER: Queensland, Queensland National Park, Macpherson Range, 3000 ft, 27.2.1921, G.H. Hardy (QM); not seen. Holotype δ of *Epiphragma wilsoniana* ALEXANDER: New South Wales, Mount Wilson, Blue Mountains, 19.11.1921, A. Tonnoir (ANIC); seen. Holotype δ of *Epiphragma erasmi* ALEXANDER: Victoria, Belgrave, in fern-gully, 13.1.1929, F.E. Wilson (MV); seen.


**Genitalia:** Male hypopygium, Fig. 24.

**Remarks:** An extremely variable species, particularly in the colouration of the legs. Very similar to *E. illingworthi* (ALEX.).

**Diagnostic characters:** most of antennal flagellum uniformly dark; tibiae largely pale, often with several more or less extensive dark rings; wing pattern not including large dark spots with narrow white margins.

**New records:** Queensland: Bald Mtn area (UQ); Baldwin Swamp Fauna Res., Bundaberg (ANIC); Binna Burra (ANIC); Bunya Mts (GT); Conondale Ra., Bundaroo Ck (GT); Cunningham's Gap (ANIC); Dawson Ck, Mt Nebo, Brisbane (NMNH); Eungella Ra., 45 mi. W of Mackay, 1400-2400 ft (ANIC); Erurimula, Miriam Vale dist., Goomburra F. P. (GT); S Kenilworth (ANIC); Lamington N. P. (GT); Lamington N. P., Green Mountains (ANIC); Lamington N. P., O'Reillys (ANIC); Maleny (ANIC); Monto dist., Bulburin, 540 m (AM); Mt Cotton, Eripah Ck, nr Victoria (Brisbane vic.) (NMNH); Mt Tamborine (ANIC); Mt Tennyson-Woods, nr Mt Glorious (AM); Woombye, nr Nambour (ANIC). New South Wales: Upper Allyn R. (ANIC); Banda Res. (GT); Barrington House (ANIC); Barrington Tops (GT); Bateman's Bay (ANIC); Bawley Pt (ANIC); Bowral (ANIC); Brooklana, E Dorrigo, 2000 ft (NMNH); Bruxner Park, nr Cofts Harbour (UQ); Cabbage Tree Ck, Clyde Mt (ANIC); Calga (GT); Clyde Mt (Landslip) (ANIC); Cobcroft Ck, Werrikimbe N. P., 1110 m (GT); Cockerawombeeba Ck, 23 km NW Bellangry, 730 m (GT); Dorrigo (NMNH); Dorrigo N. P. (GT); Dorrigo N. P., 2400 ft (ANIC); Dorrigo N. P., Never Never area (GT); E Dorrigo (NMNH); Engadine (GT); Glou-
cester Tops, 1280 m (GT); Heathcote Brook (GT); Heathcote Ck (GT); 0.5 km SE Lansdowne, 0-10 m (GT); Lorien Ref., 3 km N Lansdowne, nr Taree (GT); Macquarie Pass (GT); Macquarie Rivulet (GT); Mangrove Mts, N of Sydney (GT); Maria R. S. F., nr Kempsy (UQ); Minnamurra Falls (GT); Mt Dromedary (GT); Mt Hyland N. P. (GT); Mt Keira (GT); Mt Royal, Barrington Tops (GT); Mt Wilson (GT, NMNH); Nadgee S. F., Maxwell's Ck, 400 m (GT); New England N. P. (ANIC); Pt Lookout, New England N. P. (ANIC, GT); Somersby Falls (GT); Stewart Brook S. F., Mt Royal Ra. (AM); Termeil (ANIC); Towra Pt, Botany Bay (GT); Wahroonga (AM); Watagan Forest (GT); Wallaroo S. F. (ANIC); Weismantels (ANIC); Wilson R. Res., 15 km NW Bellangry, 244 m (GT); Windy Ck, Geehi Dam (GT); N Yarras, Forbes R. (GT). Victoria: Acheron R. (ANIC); Bogong (ANIC); Bogong, Howmans (ANIC); Cabbage Tree Ck (ANIC); Cann R. (ANIC); Cann R., 1500 ft (ANIC); 15 mi. of Cann R., 1500 ft (ANIC); Cumberland Falls, SE of Marysville (ANIC); E Gippsland, Club Terrace (ANIC); Lilly Pilly Gully, Wilson's Promontory (MV); Maroondah (ANIC); Marysville-Cumberland Ck (ANIC); Millsite, 1000 m, nr Mt Baw Baw (MV); Mt Baw Baw, 3800 ft (ANIC); Mt Erica (GT); Noorinhee (MV); Rocky R., Murrungowar (ANIC); Sherbrooke (ANIC); Simpson's Ck, Gippsland (ANIC); Spring Hill, 4000 ft (ANIC); 15 S Treasure's, 3000 ft (ANIC); Wallagauragh (ANIC); Warburton, 2150 ft (ANIC); Wilson's Promontory, Chinaman's Ck (ANIC).

Distribution: Queensland (NEQ, SEQ), New South Wales (NEN, SEN), Victoria.

Epiphragma (Epiphragma) illingworthi (ALEXANDER), comb. nov.

Limnophila illingworthi ALEXANDER, Can. Ent. 53: 210 (1921).


Primary type: Holotype ♂: Queensland, Babinda, 7.8.1920, J. F. Illingworth (NMNH); seen.

Published records: Queensland: Babinda (ALEXANDER 1921b: 211).

Previously known only from male.

Description of female: Structure and colouration much as described for male (ALEXANDER 1921b). Wing length 8.1-10.5 mm.

Genitalia: Male hypopygium much as in E. hardyi ALEX. (Fig. 24).

Remarks: A variable species; some populations with tips of femora dark, others with tips of femora pale. Very similar to E. hardyi ALEX.

Diagnostic characters: most of antennal flagellum uniformly dark; tibiae largely dark, usually with pale basal ring only; wing pattern not including large dark spots with narrow white margins.
New records: Queensland: 21 km NE of Atherton, foot of Mt Haig (ANIC); 11 km W by N of Bald Hill, McIlwraith Ra., 500 m (ANIC); Babinda (NMNH); Bartle Frere track, 200 m (GT); Birthday Ck, 6 km NW by W of Paluma (ANIC); The Boulders, Babinda (ANIC); The Boulders, 6.4 km NW of Babinda (ANIC); Herberton Ra. S. F. (ANIC); Kuranda Ra. S. F. (ANIC); Mossman Gorge (ANIC); 5-8 mi. Mt Lewis Rd off Mossman-Mt Mulloy Rd (ANIC); Mt Spurgeon, 1250 m (GT); 9 km ENE of Mt Tozer (ANIC); 11 km ENE of Mt Tozer (ANIC); Tully R., 175 m (GT); Wongabel S. F., nr Atherton (ANIC).

Distribution: Queensland (CY, NEQ).

Epiphragma (Epiphragma) collessi spec. nov. (Fig. 25)

Description: Head largely greyish black, including palps; rostrum greyish brown; antennae of male about half as long as wings, of female about 1/3 length of wings, 16-segmented in both sexes; scape and pedicel greyish brown; flagellomeres with basal portion brownish black, distal portion whitish yellow, the dark amount increasing from basal segment which is about half dark and half pale to the entirely dark terminal segment(s). Thoracic terga dark greyish- to blackish brown, scutum with pale greyish brown, mainly longitudinal lines; pleura greyish- to blackish brown. Procoxa largely dark greyish brown, meso- and metacoxa largely greyish yellow; trochanters greyish yellow; femora greyish yellow with two or three ill-defined broad darker rings; tibiae greyish brown, basal portion somewhat paler and with darker subbasal ring; tarsi and claws greyish brown. Wings whitish subhyaline, richly mottled with greyish brown; larger and darker patches particularly along anterior margin and broadly along crossveins and transverse sections of longitudinal veins; 1 supernumerary crossvein between C and Sc at about midway between level of origin and fork of Rs; Rs almost perpendicularly bent close to origin; R1+2 and R2 subequal in length. Halteres greyish brown. Abdomen brownish grey, dorsally somewhat darker than ventrally. Wing length, male 7.2-8.3 mm, female 9.1 mm.

Genitalia: Male hypopygium, Fig. 25.

Remarks: Similar in colouration to E. hardyi ALEX, and E. illingworthi (ALEX.)

Diagnostic characters: antennae very long, those of male longer than 1/2 wing length, those of female about 1/3 wing length, most of flagellum bicolored (dark, ringed with pale); wing pattern not including large dark spots with narrow white margins; tergite 9 of male without posteromedian process.

Material examined: Holotype  ♂: Queensland, Mount Edith, 4-7 mi. off Danbulla Road, 27.4.1987, D.H. Colless (ANIC). Paratypes: Queensland: 1 ♂, The Boulders, Babinda, 10.5.1967, D.H. Colless (ANIC); 1 ♂, The Boulders, 6.4 km NW of Babinda. 8.7.1971 Z. Liepa (ANIC); 1 ♂, Mount Edith Forest Road, 1.5 km off Danbulla Road, 6.5.1967, D.H. Colless (ANIC); 1 ♂, Kuranda Range State Forest, 20.4.1967, D.H. Colless (ANIC); 1 ♂, 1 ♀, Mount Lewis Road, 900 m, rainforest creek, 16.4.1994, D. Bickel, pans (GT).
Distribution: Queensland (NEQ).

Name: Dedication to Dr D.H. Colless of Canberra who collected the species.

Leolimnophila gen. nov. (Figs 6, 7, 26, 27)

Type species: Limnophila pantherina ALEXANDER 1922, by present designation.

Definition: Rostrum markedly shorter than remainder of head; antennae filiform, with verticillar hairs of basal flagellomeres not longer than those flagellomeres. Tibial spurs present. Wing (Fig. 6): cell C without supernumerary crossvein(s); Sc1 clearly present and not less strongly developed than Sc2; four branches of R reaching the margin; anterior arculus absent; Rs not curved step-like; R1+2 almost straight, several times as long as R2, more than half as long as R3; R2 well beyond fork of R2+3+4; crossvein r-m slightly beyond first fork of Rs and about as long as basal section of R5; distal section of M1+2 much shorter than cell M1; bscu situated well before distal side of discal cell (dm); A2 almost straight; squama without macrotrichiae. Male hypopygium (Fig. 7): segment 9 (s9) a complete ring with mediodorsal posterior lobe and with hairy dorsal appendix (da); ventral lobe (vl) of gonocoxite (ge) strongly produced posteromedially; a large brush (b) near base of inner gonostylus; interbases (i) developed; aedeagus (ae) with very wide base.

Figs 6, 7. Leolimnophila spp.: 6, wing venation; - 7, pantherina (ALEX.), male hypopygium, dorsal aspect. Abbreviations: ae = aedeagus; b = brush; da = dorsal appendix; i = interbases; s9 = segment 9; vl = ventral lobe of gonocoxite.
Remarks: Not similar to any described species of Limnophila MACQ. from Australia; more similar to some species of Austrolimnophila ALEX. and Epiphragma OST. SACK.

Diagnostic characters: as given above, under "Definition".


Name: A combination of the generic names Leo and Limnophila; Leo refers to the hairy brush near the base of inner gonostylus which resembles the tip of a lion's tail.

Species in Australia:

L. pantherina (ALEX.)
L. tigris sp. n.

Leolimnophila pantherina (ALEXANDER), comb. nov. (Figs 7, 26)


Primary type: Holotype \( \delta \): Victoria, Black Spur, Dividing Range, 16.5.1901, W. Ashby (SAM); not seen.

Published records: New South Wales: Blundell's, A.C.T.; Dorrigo, 2600 ft; Wentworth Falls, Blue Mts (all ALEXANDER 1944: 8). Victoria: Black Spur, Dividing Ra. (ALEXANDER 1922b: 246).

Previously known only from male.

Description of female: Structure and colouration much as described for male (ALEXANDER 1922b). Wing length 11.0-13.0 mm.

Genitalia: Male hypopygium, Figs 7, 26.

Remarks: Very similar to L. tigris sp. n.

Diagnostic characters (male): tergum 9 with trapezoidal posteromedian lobe and hairy dorsal appendix wider than posterolateral lobes.

New records: Queensland: Bunya Mts (MV). New South Wales: Brown Mtn, nr Bega (ANIC); Clyde Mt (Landslip) (ANIC); Dorrigo (NMNH); Dorrigo N. P. (ANIC); Mt Wilson (NMNH, GT); Watagan Forest (GT). Victoria: Belgrave (NMNH); Dromana (ANIC); Marysville (MV); Rocky R., Murrungowar (ANIC); Sherbrooke (ANIC); Toorongo Falls (ANIC). Tasmania: Burnie (NMNH); Russell Falls (ANIC); St Columba Falls, Pyengana (MV).

Distribution: Queensland (SEQ), New South Wales (NEN, SEN), Victoria, Tasmania.
Leolimnophila tigris spec. nov. (Fig. 27)

Description: Head largely greyish- to pale brownish yellow, including rostrum and palps; scape and pedicel pale greyish yellow; most flagellar segments with basal half greyish yellow and distal half greyish brown; vertex brown to black. Pronotum and scutellum pale greyish yellow; prescutum and mediotergite greyish yellow and greyish brown, anteriorly and posteriorly markedly darker; postscutum and laterotergite largely greyish brown; pleura pale greyish yellow except for episternum which is greyish brown. Coxae and trochanters pale greyish yellow; remainder of legs greyish-to brownish yellow with apex of femora and extreme base and apex of tibiae blackened; apex of basal four tarsal segments slightly darkened. Wing venation yellowish- to blackish brown; membrane hyaline, slightly suffused with greyish yellow and mottled with greyish- to blackish brown all over, particularly in costal cell; larger dark patches at origin of Rs, in pterostigma area, along the cord and along bscu. Halteres with greyish brown stem and greyish yellow and greyish brown knob. Abdomen largely pale greyish- to brownish yellow with greyish brown pattern, including two pairs of lateral spots and a large posteromedian patch in most terga and an anterior patch in most sterna; segments 8 and 9 of male, and female cerci and hypogynial valves largely greyish brown. Wing length, male 9,7-11,0 mm, female 10,8-11,5 mm.

Genitalia: Male hypopygium, Fig. 27.

Remarks: Very similar to L. pantherina (ALEX.).

Diagnostic characters (male): tergum 9 with subtriangular posteromedian lobe and hairy dorsal appendix narrower than posterolateral lobes.

Material examined: Holotype ♂: Queensland, Lamington National Park, Green Mountains, Earthwatch Australia (ANIC). Paratypes: 2♂ 2♀, same data as holotype (ANIC, GT).

Distribution: Queensland (SEQ); known only from Green Mountains.

Name: Tigris, -is (= Latin for "tiger") refers to the rich wing pattern; used in apposition to the generic name.
**Tipulimnoea gen. nov.** (Figs 8, 9, 28)

**Type species:** *Gynoplistia woodhilli* ALEXANDER 1951. by monotypy.

**Definition:** Rostrum markedly shorter than remainder of head; antennae with basal three or four flagellomeres with lower surface bulging, others subcylindrical. Tibial spurs absent. Wing (Fig. 8): cell C without supernumerary crossvein(s); Sc2 much more strongly developed than Sc1; four branches of R reaching the margin; anterior arculus (anta) preserved; Rs not curved step-like; R1+2 almost straight, about as long as R2, less than half as long as R3; R2 just beyond fork of R2+3+4; crossvein r-m about level with first fork of Rs, about as long as basal section of R5; distal section of M1+2 about as long as cell M1; bscu situated well before distal side of discal cell (dm); A2 sinuous; squama without macrotrichiae. Male hypopygium (Fig. 9): segment 9 (s9) a complete ring without dorsal posteromedian lobe or dorsal appendix; ventral lobe of gonocoxite not produced posteromedially; interbases (i) developed; aedeagus (ae) long and thin.

**Remarks:** Not similar to any other described species from Australia.

**Diagnostic characters:** as given above, under "Definition".

**Distribution:** Australian region. In Australia: south-eastern.

**Name:** A combination of *Tipula* and *Limnoea*, both generic names within Tipulidae; refers to mixture of tipuline and limoniine characters.

Only one species in Australia:

*T. woodhilli* (ALEX).
**Tipulimnoea woodhilli** (ALEXANDER), comb. nov. (Figs 8, 9, 28)


Paralimnophila (Paralimnophila) woodhilli (ALEXANDER); OOSTERBROEK & JONAS, Catalogue of the Australian-Oceanian Tipulidae (Insecta, Diptera): 130 (1986).

**Primary type:** Holotype ♂: Victoria, Dartmoor, Jan. 1940, F.E. Wilson (MV).

**Published records:** Victoria: Dartmoor (ALEXANDER 1951: 590).

**Genitalia:** Male hypopygium, Figs 9, 28.

**Remarks:** Not similar to any other described species from Australia.

**Diagnostic characters:** as given above, under *Tipulimnoea* g. n.

**New records:** New South Wales: A.C.T. (ANIC); Mongarlowe (ANIC). Victoria: Cape Otway (MV); Latrobe R. Survey, St. 17 Tanjil R. (MV); Latrobe R. Survey, St. 17A Tanjil jn (MV); 12 km SE Merrijig, Howqua R. (MV); Thomson R., upstream Cowwarr weir (MV). Tasmania: Leven R., nr Heka (MV); Olga R. (MV).

**Distribution:** New South Wales (SEN), Victoria, Tasmania.

**Genus Paralimnophila** ALEXANDER (Figs 10-12, 29-88)


**Type species:** Limnophila leucophaeata SKUSE 1890, by monotypy.

40 species-group taxa of *Paralimnophila* ALEXANDER described from Australia by ALEXANDER (1921a, 1922a, 1922b, 1923b, 1924a, 1928b, 1928d, 1929, 1930, 1931b, 1934, 1937, 1943, 1951, 1978), SKUSE (1890) and WESTWOOD (1835) were listed under *Paralimnophila* s. str. by OOSTERBROEK (1989). Cerozodia minuscula ALEX., listed under *Gynoplistia* s. str. by OOSTERBROEK (1989) was transferred to *Paralimnophila* s. str. by THEISCHINGER (1993). As a result of the present study, four of the species-group taxa listed by OOSTERBROEK (1989) are now regarded as synonyms; *Paralimnophila hemmingseniana* ALEX. is transferred to *Limnophila* MACQ., and a new genus was established for *Paralimnophila woodhilli* (ALEX.) in this paper. In addition 24 species are described as new.

**Habitat of larvae:** ALEXANDER (1931a) specifies for *Gynoplistia* (*Paralimnophila*) species "on vertical faces of cliffs or rocks, in or beneath a scum of algal growth, with percolating or trickling water; hygropetric, in rapid-flowing streams,"
coming to dryer places to pupate. He (Alexander 1931a) considers a number of habitats as probably suitable for Gynoplistia in which genus he apparently includes Paralimnophila. Those habitats are: a) in or beneath wet to saturated mats or cushions of mosses and liverworts, growing on earth or rocks, generally near streams; b) sandy, gravelly, or loamy soil, with slight humus, at margin of streams or ponds; c) rich organic earth or mud, as at margins of rills, streams, lakes, or other bodies of water; in swamps or marshes; in leaf-mold or drift at stream-margins; wet spots in woods; d) beneath leaf-mold in rich, moist to saturated humus soil in woods; e) in wet saturated decaying wood; in fermenting sap beneath bark.

Distribution: Neotropical and Australian regions. Only one subgenus in Australia: Paralimnophila Alexander.

Figs 10-12. Paralimnophila (Paralimnophila) spp.: 10, wing venation; - 11, 12, leucophaeata (SKUSE), male hypopygium: 11, dorsal aspect; - 12, ventral aspect. Abbreviations: ae = aedeagus; anta = anterior arculus; dl = dorsal pair of lobes; ml = median pair of lobes; vl = ventral pair of lobes; s9 = segment 9.
Subgenus *Paralimnophila* ALEXANDER (Figs 10-12, 29-88)


**Type species**: *Limnophila leucophaeata* SKUSE 1890, by monotypy.

**Definition**: Rostrum markedly shorter than remainder of head; antennae usually at least partly pectinate, rarely moniliform-filiform. Tibial spurs present. Wing (Fig. 10): cell C without supernumerary crossvein(s); Sc1 clearly present and more strongly developed than Sc2; four branches of R reaching the margin; anterior arculus (anta) preserved; Rs not curved step-like; R1+2 strongly curved, considerably longer than R2, less than half as long as R3; R2 well beyond fork of R2+3+4; crossvein r-m well beyond first fork of Rs and markedly shorter than basal section of R5; distal section of M1+2 shorter than cell M1; bscu situated well before distal side of discal cell (dm); A2 generally of moderate length and s-curved, exceptionally very short and almost straight; squama without macrotrichiae. Male hypopygium (Figs 11, 12): segment 9 (s9) not a complete ring and without dorsal appendix; interbases not developed; aedeagus (ae) rather short and slim; aedeagal complex including one, two or three pairs of lobes (dl, ml, vl).

**Distribution**: Neotropical and Australian regions. In Australia: northern, eastern, south-western.

Species in Australia:

- *albofasciata* (ALEX.)
- *alice* sp. n.
- *artursiana* sp. n.
- *aurantiennis* (ALEX.)
- *barockee* sp. n.
- *barringtonia* (ALEX.)
- *bicincta* (ALEX.)
- *bingelima* sp. n.
- *boobootella* sp. n.
- *christine* sp. n.
- *cooloola* sp. n.
- *danbulla* sp. n.
- *decincta* (ALEX.)
- *dobrotworskyi* sp. n.
- *eucrypta* (ALEX.)
- *eungella* sp. n.
- *flammeola* ALEX.
- *flavipes* (ALEX.)
- *fraudulenta* ALEX.
- *fuscodorsata* (ALEX.)
- *gingera* sp. n.
- *gingerensis* (ALEX.)
- *gracilirama* (ALEX.)
- *grampiana* sp. n.
- *guttulicosta* (ALEX.)
- *harrisoni* (ALEX.)
- *hybrida* sp. n.
- *incompta* (ALEX.)
- *indecora* (ALEX.)
- *kosciuska* (ALEX.)
- *leucophaeata* (SKUSE)
- *macquarie* sp. n.
- *maxwelliana* sp. n.
- *minuscula* (ALEX.)
- *mossmanensis* sp. n.
- *murdunna* sp. n.
- *mystica* (ALEX.)
- *neboissi* sp. n.
- *pallidicornis* (ALEX.)
pectinella (ALEX.)
pewingi sp. n.
praesignis (ALEX.)
puella ALEX.
punctipennis (WEST.)
remulsa (ALEX.)
rieki sp. n.
serraticornis (ALEX.)
setulicornis (ALEX.)
shewani (ALEX.)
signifera (ALEX.)
stolida (ALEX.)
stradbrokensis ALEX.
styligera (ALEX.)
tarra sp. n.
terania sp. n.
umicincta (ALEX.)
victoria (ALEX.)
wataganensis sp. n.
wilsoniana (ALEX.)
winta sp. n.

The order of specific treatment in this paper follows the degree of complexity in the structure of the aedeagal complex (one, two, three pairs of lobes).

Paralimnophila (Paralimnophila) dobrotworskyi spec. nov. (Figs 29, 30).

Description (♂): Head largely greyish- to blackish brown, including rostrum, palps and antennae; antennae 13-segmented, moniliform. Thoracic terga greyish- to bluish brown pruinose, scutum with darker longitudinal stripes; pleura bluish grey pruinose. Coxae greyish- to bluish brown pruinose; trochanters pale greyish brown; femora greyish yellow merging into greyish- and blackish brown at about 1/2 length: tibiae, tarsi and claws greyish- to blackish brown. Wings greyish subhyaline; cells C and Sc dark greyish brown; larger indistinct patches of brownish grey just beyond halfway between arculus and origin of Rs, posteriorly along base of Rs, in pterostigma area, proximally along basal section of R5, at end of R3, and along some crossveins and other transverse sections of longitudinal veins. Halteres greyish brown. Abdomen largely greyish brown. Wing length 6.6-6.8 mm.

Genitalia: Hypopygium, Figs 29, 30; aedeagal complex possibly with only one pair of separated lobes.

Female unknown.

Remarks: Not similar in hypopygial structure to any other described species from Australia. Diagnostic characters (male): size small (wing length <7 mm); antennae 13-segmented, moniliform; aedeagal complex with only one pair of separated lobes clearly detectable.


Distribution: Western Australia (SWA); known only from near Pemberton.

Name: Dedication to the late Dr N. Dobrotworsky, prolific student of Australian Tipulidae.
Paralimnophila (Paralimnophila) incompta (ALEXANDER) (Fig. 31)


Primary type: Holotype ♀: New South Wales, Sydney 21.9.1921, G.H. Hardy (NMNH); seen.

Published records: New South Wales: Sydney (ALEXANDER 1928b: 241).

Previously known only from male.

Description of female: Antennae 15-segmented, moniliform (as in male). Colouration much as described for male (ALEXANDER 1928b). Wing length 8.8-8.9 mm.

Genitalia: Male hypopygium, Fig. 31; aedeagal complex with only the ventral pair of medially fused lobes.

Remarks: Very similar in hypopygial structure to P. indecora (ALEX.).

Diagnostic characters: no distinct wing pattern.

New records: Queensland: Montville (UQ); Samford Valley, 14 mi. WNW Brisbane (NMNH); 2 km E of Mt Norman, 1000 m (NMNH). New South Wales: Bowraville (ANIC); Bulli (GT); Dorrigo (NMNH); Fitzroy Falls, 3600 ft (ANIC).

Distribution: Queensland (SEQ); New South Wales (NEN, SEN).

Paralimnophila (Paralimnophila) indecora (ALEXANDER) (Fig. 32)


Pseudolimnophila indecora (ALEXANDER); ALEXANDER, Proc. Hawaii. ent. Soc. 5: 258 (1923).


Gynoplistia (Paralimnophila) indecora (ALEXANDER); ALEXANDER, Victorian Nat. 60: 91 (1943).


Primary type: Holotype ♀: Western Australia, Warren River, W.D. Dodd (SAM); not seen.

Published records: Tasmania: King Is. (ALEXANDER 1922b: 247). Western Australia: Perth (ALEXANDER 1923c: 258); Warren R. (ALEXANDER 1922b: 247).

Previously known only from female.

Description of male: Antennae 15-segmented, moniliform (as in female). Colouration much as described for female (ALEXANDER 1922b). Wing length 8.2-11.3 mm.
Genitalia: Male hypopygium, Fig. 32; aedeagal structure with only the ventral pair of medially fused lobes.

Remarks: According to Alexander (1922b, 1924b) closely related to Limnophila oliveri ALEX. from New Zealand. Very similar in hypopygial structure to P. incompta (ALEX.).

Diagnostic characters: wing pattern quite distinct.

New records: Victoria: Bulleen (ANIC); Scott's Ck, S of Cobden (ANIC); Stradbrooke (ANIC); Stratford (ANIC). Western Australia: Albany (ANIC); Bunbury (ANIC); 9 mi. SE of Busselton (ANIC); Cape Le Grand (ANIC); Darlington (ANIC); Deep Dene (ANIC); Denmark (ANIC); 33 E Esperance (ANIC); Fremantle (ANIC); Gingin (ANIC); John Forest N. P., 8 km E of Midland (MV); Ludlow Forest, Busselton (AM); Mandjiljung (ANIC); Marradong Rd, 15 km SE Dwellingup (AM); Moore R. (ANIC); 15 mi. S Mumballup (ANIC); Nedlands (ANIC); North Bannister (ANIC); Pemberton (ANIC); 25 NW Pemberton (ANIC); Perth (ANIC); Porongurup Ra. (ANIC); Swan R., 35 km NE of Perth Walyunga N.P. (MV); Vasse (ANIC).

Distribution: Victoria, Tasmania, Western Australia (SWA).

Paralimnophila (Paralimnophila) minuscula (Alexander) (Figs 33, 34)


Gynoplistia (Gynoplistia) minuscula (ALEXANDER); OOSTERBROEK & JONAS, Catalogue of the Australian-Oceanian Tipulidae (Insecta, Diptera): 112 (1986).

Paralimnophila minuscula (ALEXANDER); THEISCHINGER, Stapfia 29: 2 (1993).


Published records: Tasmania, Wilmot (Alexander 1922b: 250).

Genitalia: Male hypopygium, Figs 33, 34.

Remarks: Very similar in hypopygial structure to P. grampiana sp. n.

Diagnostic characters (male): size moderate (wing length >9.5 mm); antennae markedly less than half as long as wings, with flagellomeres short and branches accordingly not widely separated.
New records: New South Wales: Alpine Ck (ANIC); Alpine Ck, Snowy Mts Hwy (ANIC); Blue Mts (ANIC); Fish R. (ANIC, NMNH); Kiandra, Alpine Ck (ANIC); Kosciusko (ANIC); Kosciusko N. P., Dead Horse Gap, 5190 ft (ANIC); Mt Kosciusko (NMNH); 10 km W of Robertson (ANIC). Victoria: Bogong High Plains, 5600-6000 ft (NMNH); Delegate R., Bendoc Rd (GT); Holland Ck, 2 km S of Tolmie (MV); Melbourne (MV); Rocky Plains, Benambra Rd (GT). Tasmania: 3 mi. Brickmakers Bay (MV); Clarence Lagoon (GT); Condominium Ck (MV); Derwent R., 2 km NW Derwent Bridge (MV); Geeveston (ANIC); Huon-Picton R. jn (MV); Huon Plains (MV); Lake Pedder (MV); Leven R., nr Heka (MV); National Park (MV, NMNH); Olga-Hardwood R. (MV); Strahan (MV); 10 mi. E of Strahan (ANIC); Waldheim, Cradle Mtn N. P. (MV); Wedge R. (MV); Wilmot (ANIC, NMNH).

Distribution: New South Wales (SEN), Victoria, Tasmania.

Paralimnophila (Paralimnophila) grampiana spec. nov. (Fig. 35)

Description: Head blackish grey, including rostrum; palps blackish brown; antennae 16-segmented, formula 2+12+2, almost as long as wings, pale to dark greyish brown with branches darker than the rest. Thoracic terga grey, scutum with black longitudinal stripes; pleura blackish brown. Coxae and trochanters greyish- to brownish yellow; femora pale greyish brown in basal 1/4-1/3, merging into blackish brown for distal 2/3-3/4; tibiae blackish brown; tarsi with most of basitarsus and terminal segment blackish brown and rest dull greyish yellow to yellowish grey; claws black. Wings greyish subhyaline; cells C and Sc dark greyish brown; distinct blackish brown patches at origin of Rs, in pterostigma area and at end of R3; clouded with brown broadly at about halfway between arculus and origin of Rs, and more narrowly along longitudinal veins and crossveins, most notably in cord area. Halteres with stem pale greyish brown, knob blackish brown. Abdomen greyish brown, terga markedly darker than sterna. Wing length 7.9 mm.

Genitalia: Hypopygium, Fig. 35.

Female unknown.

Remarks: Very similar in hypopygial structure to P. minuscula (ALEX.).

Diagnostic characters (male): size small (wing length <8 mm); antennae almost as long as wings, with flagellomeres very long and branches accordingly widely separated.


Distribution: Victoria; known only from Grampians.

Name: Grampianus 3 = Latinized for "from Grampians".
**Paralimnophila (Paralimnophila) eucrypta** (ALEXANDER) (Fig. 36)


**Primary type:** Holotype ♂: New South Wales, Blundell's A.C.T., 3000 ft, 7.1.1930, A. Tonnoir (ANIC); seen.

**Published records:** New South Wales: Blundell's, A.C.T. (ALEXANDER 1931b: 161).

Known only from male.

**Genitalia:** Hypopygium, Fig. 36.

**Remarks:** Very similar in hypopygial structure to *P. setulicornis* (ALEX.).

**Diagnostic characters** (male): dorsal pair of lobes of aedeagal complex medially well rounded.

**New records:** New South Wales: Belmore Falls (ANIC); Blundell's, A.C.T. (NMNH); Govetts Leap, nr Blackheath, Blue Mts (GT); Mt Gingera, A.C.T. (NMNH); Kanangra Walls (GT). Tasmania: Butlers Gorge (GT); Hellyer R., S of Wynyard (GT).

**Distribution:** New South Wales (SEN), Tasmania.

---

**Paralimnophila (Paralimnophila) setulicornis** (ALEXANDER) (Fig. 37)


*Paralimnophila (Paralimnophila) setulicornis* (ALEXANDER); OOSTERBROEK & JONAS, Catalogue of the Australian-Oceanian Tipulidae (Insecta, Diptera): 129 (1986).

**Primary types:** Holotype ♂ of *Gynoplistia setulicornis* ALEXANDER: New South Wales, Mount Kosciusko, 24.11.1921, R.J. Tillyard (ANIC, NMNH); seen. Holotype ♂ of *Gynoplistia miseranda* ALEXANDER: Victoria, Bogong High Plains, 5600-6000 ft, Jan. 1928, F.E. Wilson (MV); seen.

**Published records:** New South Wales: Mt Kosciusko (ALEXANDER 1928b: 240). Victoria: Bogong High Plains, 5600-6000 ft (ALEXANDER 1930: 120).

**Genitalia:** Male hypopygium, Fig. 37.

**Remarks:** Very similar in hypopygial structure to *P. eucrypta* (ALEX.).

**Diagnostic characters** (male): dorsal pair of lobes of aedeagal complex medially drawn out into a point.

**New records:** New South Wales: Kosciusko N. P., Dead Horse Gap, 5190 ft (ANIC); Mt Kosciusko (GT); Perisher Ck, 1600 m (GT). Victoria: Bogong High Plains (ANIC); Mt Buller, 5750 ft (MV); Spring Hill, 4000 ft (ANIC).

**Distribution:** New South Wales (SEN), Victoria.
**Paralimnophila (Paralimnophila) puella ALEXANDER (Fig. 38)**


*Gynoplistia (Paralimnophila) puella* (ALEXANDER); ALEXANDER, Proc. Linn. Soc. N.S.W. 53: 63 (1928).


**Primary type:** Holotype ♀: Victoria, Ferntree Gully, 25.12.1917, c. u. (MV, NMNH); seen.

**Published records:** Victoria, Ferntree Gully (ALEXANDER 1924a: 512).

Previously known only from female.

**Description of male:** Antennae 17-segmented, formula 2+14+1. Colouration much as described for female (ALEXANDER 1924a). Wing length 7.6-9.3 mm.

**Genitalia:** Male hypopygium, Fig. 38.

**Remarks:** Somewhat similar in hypopygial structure to *P. eucrypta* (ALEX.) and *P. setulicornis* (ALEX.).

**Diagnostic characters** (male): ventral pair of lobes of aedeagal complex with medial margin denticulate.

**New records:** New South Wales: Brown Mtn, Bega dist. (ANIC). Victoria: Belgrave (NMNH); Belhel Ck, nr Marysville (GT); Ben Cairn, nr Millgrove, 2900-3200 ft (NMNH); Lake Mtn (ANIC); Lake Mtn, Echo Flat, 4570 ft (ANIC); Mongarlawe R., nr Clyde Mt (ANIC); Mt Baw Baw, 4400 ft (ANIC); Mt Donna Buang, above Warburton, 3000-3800 ft (NMNH); Sherbrooke (ANIC); Toorongo Falls (ANIC); mts above Warburton (NMNH).

**Distribution:** New South Wales (SEN), Victoria.

---

**Paralimnophila (Paralimnophila) pectinella ALEXANDER (Fig. 39)**


**Primary type:** Holotype ♂: Tasmania, National Park, Jan. 1933, F.E. Wilson (MV, NMNH); seen.

**Published records:** Tasmania: National Park (ALEXANDER 1937: 349).

Previously known only from male.

**Description of female:** Antennae 12-13-segmented, four basal flagellomeres slightly bulging ventrally. Colouration much as described for male (ALEXANDER 1937). Wing length 8.1-9.3 mm.
Genitalia: Male hypopygium, Fig. 39.
Remarks: Not very similar in hypopygial structure to any other described species from Australia.
Diagnostic characters (male): much of ventral pair of lobes of aedeagal complex spinulate.
New records: Tasmania: Lake Dobson (MV); Mt Field (GT); Pelion Hut, 3 km S Mt Oakleigh, 800 m (ANIC); Wedge R. (MV).
Distribution: Tasmania.

**Paralimnophila (Paralimnophila) fraudulenta** ALEXANDER (Fig. 40)


Primary type: Holotype ♀: New South Wales, Blue Mountains, 1.4.1922, E.W. Ferguson (AM, NMNH); seen.
Published records: New South Wales: Blue Mts (ALEXANDER 1924a: 513).

Previously known only from female.

Description of male: Antennae 16-segmented, formula 2+13+1. Colouration much as described for female (ALEXANDER 1924a). Wing length 7.9-9.8 mm.

Genitalia: Male hypopygium, Fig. 40.
Remarks: Somewhat similar in general appearance to *P. puella* ALEX.

Diagnostic characters: dark wing pattern consisting of rather small and well-defined patches; structure of aedeagal complex.

New records: New South Wales: 7 km E Lithgow (GT). Victoria: Acheron Way (ANIC); Buxton (ANIC); Delegate R., Bendoc Rd (GT); Gippsland, Cabbage Tree Ck (ANIC); Simpson's Ck, Gippsland (ANIC).
Distribution: New South Wales (SEN), Victoria.

**Paralimnophila (Paralimnophila) cooloola** spec. nov. (Fig. 41)

Description: Head largely dark greyish brown; rostrum yellowish brown; palps greyish brown; antennae greyish yellow to greyish brown, 17-segmented in male, formula 2+13-14+1-2, longest branches 3-4 times as long as their flagellomeres, 16-segmented in female, formula 2+5+9, with only slight ventral protuberances. Thoracic terga largely brown, scutum with indication of darker longitudinal pattern; dorsal half
of pleura and ventral corner of katepisternum dark greyish brown, most of ventral half of pleura greyish yellow. Coxae whitish yellow, trochanters yellowish brown; femora and tibiae brownish yellow to greyish brown with apex broadly darkened; tarsi with basitarsus and terminal segment greyish brown, rest yellowish white; claws greyish brown. Wings pale greyish subhyaline; dark greyish brown in cells C and Sc and along CuA/CuP; more or less distinct patches of greyish brown from arculus to about halfway between arculus and origin of Rs, at origin of Rs, in cord and pterostigma area and at end of R3; slightly clouded narrowly along all veins. Halteres yellowish- to greyish brown. Abdomen brown, terga darker than sterna. Wing length, male 6.0-7.4 mm, female 7.5 mm.

Genitalia: Male hypopygium, Fig. 41.

Remarks: Not very similar to any other described species from Australia.

Diagnostic characters: structure of antennae (see above); structure of aedeagal complex.

Material examined: Holotype ♂: Queensland, Searys Creek, near Rainbow Beach, 9.1.1986, G. Theischinger (ANIC). Paratypes: Queensland: 2♂♂, 1♀, same data as holotype (GT); 6♂, type locality, 6.12.1984, G. Theischinger (GT); 6♂, type locality, 9-10.2.1987, G. Theischinger (GT); 1♂, Mullen State Forest, 10.1.1986, G. Theischinger (GT).

Distribution: Queensland (SEQ).

Name: From Cooloola, the type locality; treated as a noun in apposition.

Paralimnophila (Paralimnophila) albofasciata (ALEXANDER) (Fig. 42)


Paralimnophila albofasciata (ALEXANDER); ALEXANDER, Studia ent. 20: 159 (1978).


Primary type: Holotype ♀: New South Wales, Dorrigo, ca 2000 ft, 15.1.1933, W. Heron (NMNH); seen.

Published records: New South Wales: Dorrigo, ca 2000 ft (ALEXANDER 1934: 258).

Previously known only from female.

Description of male: Antennae 20-segmented, formula 2+17+1. Colouration much as described for female (ALEXANDER 1934). Wing length 9.7 mm.

Genitalia: Male hypopygium, Fig. 42.

Remarks: Not very similar in hypopygial structure to any other described species from Australia. Similar in wing pattern to P. barringtonia (ALEX.) and P. victoria (ALEX.), both species known only from females.
Diagnostic characters: legs with knees dark and tarsi chiefly white; wings heavily cross-banded.

New records: New South Wales: Barrington Tops (GT); Barrington Tops, 1400 m (GT); Gloucester Tops, 1300 m (GT).

Distribution: New South Wales (NEN, SEN).

Paralimnophila (Paralimnophila) stradbrokensis ALEXANDER (Fig. 43)


Primary type: Holotype ♀: Queensland, North Stradbroke Island, 5.10.1972, Hemmingsen (ANIC); seen.

Published records: Queensland: North Stradbroke Is. (ALEXANDER 1978: 159).

Previously known only from female.

Description of male: Antennae 12-13-segmented, flagellomeres without branches or distinct protuberances. Colouration much as described for female (ALEXANDER 1978). Wing length 7.0-8.0 mm.

Genitalia: Male hypopygium, Fig. 43.

Remarks: Very similar in hypopygial structure to P. hybrida sp. n.

Diagnostic characters: antennae moniliiform-filiform; wing pattern distinct and rich; aedeagal complex with ventral pair of lobes slightly produced medially and dorsal pair very slender.

New records: Queensland: Searys Ck, nr Rainbow Beach (GT).

Distribution: Queensland (SEQ).

Paralimnophila (Paralimnophila) hybrida spec. nov. (Fig. 44)

Description: Head largely dark brown; rostrum yellowish brown; palps greyish brown; antennae yellowish brown, those of male 13-segmented, formula 2+5+6, the branches small, those of female 14-segmented, formula 2+4+8, bearing only small protuberances. Thoracic terga yellowish brown, scutum with indication of darker longitudinal pattern; pleura dark yellowish brown. Coxae and trochanters yellow; femora and tibiae yellowish brown with apex dark brown; tarsi whitish yellow with terminal segment slightly darkened; claws brown. Wings suffused with greyish yellow,
more intensively so in cells C and Sc; slightly darker patches or indications of such about halfway between arculus and origin of Rs, at origin of Rs, at Sc2, in pterostigma area, and at end of R3. Halteres greyish yellow. Abdomen greyish yellow to pale greyish brown. Wing length, male 7.3 mm, female 6.8 mm.

Genitalia: Male hypopygium, Fig. 44.

Remarks: Very similar in hypopygial structure to *P. stradbrokensis* ALEX.

Diagnostic characters: basal 4-5 flagellomeres of antennae branched or protuberant; wing pattern indistinct and poor; aedeagal complex with ventral pair of lobes not produced medially and dorsal pair moderately stout.


Distribution: Queensland (SEQ).

Name: Hybrida, -ae (= Latin for "halfbreed") refers to the structure of the male hypopygium which is very similar to that of *P. cooloola* sp. n.

*Paralimnophila (Paralimnophila) bicincta* (ALEXANDER) (Figs 45, 46)


Primary type: Holotype ♂: Tasmania, Cradle Valley, 12.1.1923, A. Tonnoir (ANIC); seen.

Published records: Tasmania: Cradle Valley; Geeveston (both ALEXANDER 1928b: 235).

Genitalia: Male hypopygium, Figs 45, 46.

Remarks: Not very similar to any other described Australian species.

Diagnostic characters: femora largely dark with well-defined pale subapical ring, tibiae dark with well-defined pale subbasal ring; dark wing pattern very extensive; outer gonostylus with subapical lobe long and narrow; dorsal pair of lobes of aedeagal structure apically strongly divergent.

New records: Tasmania: Cradle Valley, 950 m (ANIC); Corinna, Pieman R. (ANIC); Milks-hake Hills Res. (GT); Pelion Hut (ANIC).

Distribution: Tasmania.
**Paralimnophila (Paralimnophila) decincta** (ALEXANDER) (Figs 47, 48)


**Primary types:** Holotype δ of *Gynoplistia decincta* ALEXANDER: Tasmania, Zeehan, Feb. 1924, G.H. Hardy (QM); not seen. Holotype δ of *Gynoplistia decincta breviramus* ALEXANDER: Tasmania, Mount Field, 18.12.1922, A. Tonnoir (ANIC); seen.

**Published records:** Tasmania: Mt Field; Zeehan (both ALEXANDER 1928b: 238).

Previously known only from male.

**Description of female:** Antennae 13-15-segmented, formula 2+4-5+7-8. Colouration much as described for male (ALEXANDER 1928b). Wing length 12.0-12.5 mm.

**Genitalia:** Male hypopygium, Figs 47, 48.

**Remarks:** *P. decincta* is a very variable species, possibly a species complex. However, at the present, there is not enough material to decide about the status of variants, or, if *P. decincta breviramus* is a good species, a geographical component, or just an irregular form, of *P. decincta*.

**Diagnostic characters:** pleura dark; femora and tibiae without distinct pale ring; tarsi dark; much of cell M dark.

**New records:** Tasmania: D'Entrecasteaux R., source below Mt La Perouse, 840 m (MV); nr summit of Hartz Mts (GT); Lake Dobson (MV); Lightning Plains, Jane R., 400 m (GT); below Maxwell Ridge, trib. of Picton R., above Reservoir Lakes, 800 m (MV); Melaleuca Ck, nr Melaleuca (MV); Mt Bobs Ra., Pine Lake, 680 m, W of Hartz Mts (GT); Mt Field (GT); Mt Field, Wombat Moor (GT); Que R. area (GT); Wombat Moor N. P, 3500 ft (NMNH); Wedge R. (MV).

**Distribution:** Tasmania.

**Paralimnophila (Paralimnophila) wilsoniana** (ALEXANDER) (Figs 49, 50)

*Gynoplistia (Paralimnophila) wilsoniana* ALEXANDER, Victorian Nat. 60: 89 (1943).

*Paralimnophila (Paralimnophila) wilsoniana* (ALEXANDER); OOSTERBROEK & JONAS, Catalogue of the Australian-Oceanian Tipulidae (Insecta, Diptera): 130 (1986).

**Primary type:** Holotype δ: Victoria, Mount Donna Buang, above Warburton, 4000 ft, 21.1.1943, F.E. Wilson (MV); seen.

**Published records:** Victoria: Mt Donna Buang, above Warburton, 4000 ft (ALEXANDER 1943: 91).

Known only from male.
Genitalia: Hypopygium, Figs 49, 50.

Remarks: Not very similar to any other described Australian species.

Diagnostic characters (male): size large (wing length 17-19 mm); femora dark with pale subterminal ring; tibiae dark with pale subbasal ring; wing with wide v-shaped mark in pterostigma area; tergum 9 distinctly bilobed, lobes well rounded.

New records: Victoria: Lake Mtn (MV).

Distribution: Victoria.

Paralimnophila (Paralimnophila) praesignis (ALEXANDER) (Fig. 51)


Paralimnophila (Paralimnophila) praesignis (ALEXANDER); OOSTERBROEK & JONAS, Catalogue of the Australian-Oceanian Tipulidae (Insecta, Diptera): 129 (1986).

Primary type: Holotype ♂: Victoria, Bogong High Plains, 5600-6000 ft, Jan. 1928, F.E. Wilson (MV, NMNH); seen.

Published records: Victoria: Bogong High Plains, 5600-6000 ft (ALEXANDER 1930: 116).

Previously known only from female.

Description of male: Antennae 17-segmented, formula 2+9-10+5-6. Colouration much as described for female (ALEXANDER 1930). Wing length 14.3-15.5 mm.

Genitalia: Male hypopygium, Fig. 51.

Remarks: Similar in hypopygial structure to P. wilsoniana (ALEX.).

Diagnostic characters: structure of male antennae (see above); wing pattern consisting of very distinct, mostly small, dark patches; tergum 9 of male generally drawn out into two narrow pointed lobes.

New records: New South Wales: Boyd R. Crossing, Kanangra Rd, nr Oberon (ANIC); Jaouk, ca 3500 ft (ANIC); Kanagra Boyd (GT); Kiandra, 4500 ft (ANIC); Kosciusko N. P., Three Mile Dam, 1400 m (GT). Victoria: Delegate R., Bendoc Rd (GT); Mt Buffalo, 4500 ft (ANIC); Tea Tree Flat, Delegate R. (GT).

Distribution: New South Wales (SEN), Victoria.

Paralimnophila (Paralimnophila) aurantiipennis (ALEXANDER) (Fig. 52)


Gynoplistia (Paralimnophila) aurantiipennis (ALEXANDER); ALEXANDER, Proc. Linn. Soc. N.S.W. 53: 59 (1928).

Paralimnophila (Paralimnophila) aurantiipennis aurantiipennis (ALEXANDER); OOSTERBROEK & JONAS, Catalogue of the Australian-Oceanian Tipulidae (Insecta, Diptera): 127 (1986).

Primary type: Holotype ♀: New South Wales, Blue Mountains, 4.3.1922, E.W. Ferguson (AM); seen.

Published records: New South Wales: Blue Mts (ALEXANDER 1923b: 386).

Previously known only from female.

Description of male: Antennae 16-segmented, formula 2+10+4. Colouration much as described for female (ALEXANDER 1923b). Wing length 12.8 mm.

Genitalia: Male hypopygium, Fig. 52.

Remarks: Very similar in hypopygial structure to P. bingelima sp. n. and P. neboissi sp. n.; similar in general appearance to P. fuscodorsata (ALEX.), P. kosciuskana (ALEX.) and P. flammeola ALEX.

Diagnostic characters: legs without distinct pattern; wings orange to brown, darkened mainly in cells C and Sc only; tergum 9 of male pointed postero-medially; subapical lobe of outer gonostylus poorly developed; dorsal pair of lobes of aedeagal complex short; aedeagus long and strongly s-curved.

New records: New South Wales: Mt Murray, Jaouk, 6000 ft (ANIC, NMNH); Blue Mts (ANIC); Wentworth Falls (ANIC, GT).

Distribution: New South Wales (SEN).

Paralimnophila (Paralimnophila) bingelima spec. nov. (Fig. 53)

Description: Head largely greyish black; rostrum, palps, scape and pedicel from pale to dark greyish brown; antennae 16-segmented, formula 2+11+3 in male, with longest branches about twice the length of their flagellomeres, 2+8+6 in female; more basal flagellomeres greyish yellow, more distal ones, including all branches, greyish brown. Thoracic terga greyish brown, yellowish white along lateral margins of scutum; pleura yellowish- to greyish brown, dorsal portion markedly darker than more ventral portion. Legs orange- to greyish brown, femora with distinctly darker broad subapical ring, tibiae with apex slightly darkened. Wings strongly suffused with orange- to pale greyish brown and with large blackish brown patches as follows: cells C and Sc; cell R distal to arculus; at origin of Rs; pterostigma area; small washes of blackish brown at about 2/3 length of A1, along crossveins and most transverse sections of longitudinal veins and at some longitudinal vein endings. Halteres largely orange- to greyish brown. Abdomen orange- to greyish brown. Wing length, male 14.5 mm, female 17.0-19.0 mm.
Genitalia: Male hypopygium, Fig. 53.

Remarks: Most similar in hypopygial structure to *P. aurantiipennis* (ALEX.) and *P. neboissi* sp. n.; similar in general appearance to *P. fuscodorsata* (ALEX.), *P. flammeola* ALEX. and *P. kosciuskana* (ALEX.).

Diagnostic characters: femora with dark subapical ring; wings orange to brown, not only darkened in cells C and Sc, but also with large dark patches adjacent to arculus, at origin of Rs and in pterostigma area; tergum 9 of male pointed posteromedially; subapical lobe of outer gonostylus large; dorsal pair of lobes of aedeagal complex short; aedeagus long and almost z-curved.

Material examined: Holotype $\delta$: Victoria, Cement Creek, near Warburton, 27.3.1972, A. Neboiss (MV). Paratypes: Victoria: 1 $\delta$, same data as holotype (MV); 1 $\sigma$, Belgrave, 21.3.1948, F.E. Wilson (MV); 2 $\sigma\varphi$, Cumberland Falls, SE of Marysville, 7.1.1971, A. Neboiss (MV); 1 $\delta$, 1 $\varphi$, Dee River, 2 km NW of Millgrove, 24.2.1975, Neboiss (MV).

Distribution: Victoria.

Name: Bingelima (= Australian Aboriginal word for "native orange tree") refers to the colouration.

*Paralimnophila* (*Paralimnophila*) *neboissi* spec. nov. (Fig. 54)

Description ($\delta$): Head largely brownish- to greyish black; rostrum brown; palps dark greyish brown; antennae 16-segmented, formula 2+7+7, the longest branches hardly longer than their flagellomeres; scape and pedicel brown, more basal flagellomeres yellowish brown, remaining flagellomeres, including all branches, greyish- to blackish brown. Thorax with some pruinescence; terga dark reddish- to blackish brown with indication of longitudinal stripes; pleura reddish- to blackish brown. Legs reddish- to dark greyish brown, only extreme base of tibiae yellowish brown. Wings whitish subhyaline with mostly large and well defined patches of blackish brown as follows: cells C and Sc; wing base; distally adjacent to arculus; at origin of Rs; cord including bscu and pterostigma area; wing apex; along media including CuA1; between CuA/CuA2 and A1, connected with patch at about 2/3 length in cell A1; at about 1/2 length of cell A2; along other transverse sections of longitudinal veins. Halteres with stem brown, knob blackish brown. Abdomen somewhat pruinose, largely greyish- to blackish brown. Wing length 19.3 mm.

Genitalia: Hypopygium, Fig. 54.

Female unknown.
Remarks: Most similar in hypopygial structure to the mainly orange to brown species *P. aurantiipennis* (ALEX.) and *P. bingelima* sp. n.; similar in general appearance to some pale and dark patterned species, e.g. *P. christine* sp. n.

Diagnostic characters (male): large size (wing length >19 mm); legs very dark without distinct pattern; wings whitish hyaline with well defined brownish black pattern; tergum 9 of male pointed posteromedially; subapical lobe of outer gonostylus well developed; dorsal pair of lobes of aedeagal complex short; aedeagus moderately long and s-curved.


Distribution: Victoria; known only from near Warburton.

Name: Dedication to Dr A. Neboiss of Melbourne who collected the species.

*Paralimnophila (Paralimnophila) fuscodorsata* (ALEXANDER) (Fig. 55)


Primary type: Holotype ♂: New South Wales, Barrington Tops, Jan. 1925, S.U.Zool.Exp. (ANIC); seen.

Published records: New South Wales: Barrington Tops (ALEXANDER 1928d: 59).

Genitalia: Male hypopygium, Fig. 55.

Remarks: Somewhat similar in hypopygial structure to *P. aurantiipennis* (ALEX.), *P. bingelima* sp. n. and *P. neboissi* sp. n.; similar in general appearance to *P. aurantiipennis* (ALEX.), *P. bingelima* sp. n., *P. flammeola* ALEX. and *P. kosciuskana* (ALEX.).

Diagnostic characters: legs without distinct pattern; wings darkened mainly in cells C and Sc only; tergum 9 of male pointed posteromedially; apical beak of outer gonostylus bowed, subapical lobe poorly developed; dorsal pair of lobes of aedeagal complex longer than aedeagus and with very slender apical spine.

New records: New South Wales: Barockee area, nr Ebor (GT); Barrington Tops (ANIC, GT); Barrington Tops, Horse Swamp (ANIC); Cathedral Rock N. P. (GT); 30 mi. W of Dorrigo, 4000 ft (ANIC); Dorrigo N. P. (ANIC), nr Ebor (GT); Gloucester Tops, 1300 m (GT); Styx R., 12 km S of Ebor (ANIC).

Distribution: New South Wales (NEN, SEN).
**Paralimnophila (Paralimnophila) barockee** spec. nov. (Fig. 56)

**Description:** Head brown with large black patch, a black spot at base of each antenna; rostrum brown; palps brownish black; antennae dark yellowish to greyish brown, 16-segmented, formula 2+8+6 in male, with longest branches hardly longer than their flagellomeres, 2+6-7+7-8 in female. Thoracic terga brown, scutum with darker longitudinal pattern; pleura dark yellowish brown. Coxae and trochanters dark yellowish brown; femora with basal 1/4-1/3 yellowish brown, merging into blackish brown for distal 2/3-3/4; tibiae, tarsi and claws blackish brown. Wings subhyaline; cells C and Sc blackish brown; distinct and well-defined patches of blackish brown just before halfway between arculus and origin of Rs, at origin of Rs, in pterostigma and cord area, at end of R3 and at fork of M1+2; cell M/CuA1 largely, cells R5, CuP, A1 and A2 partly clouded with dark brown. Halteres with stem pale, knob dark greyish brown. Abdomen largely brown, with terga 1 and 8 markedly darker, and terminalia markedly paler than the rest. Wing length, male 11.7-13.5 mm, female 12.5 mm.

**Genitalia:** Male hypopygium, Fig. 56.

**Remarks:** Similar in hypopygal structure to *P. praesignis* (ALEX.), *P. aurantiipennis* (ALEX.), *P. bingelima* sp. n., *P. neboissi* sp. n. and *P. fuscodorsata* (ALEX.).

**Diagnostic characters:** moderate size (wing length 11-14 mm); distinct wing pattern; tergum 9 of male usually with three rather long, pointed posterior lobes; aedeagus extremely long.

**Material examined:** **Holotype** ♀: New South Wales, Barockee area, near Ebor, 28.3.1993, G. Theischinger (ANIC). **Paratypes:** New South Wales: 1♂, 1♀, same data as holotype (GT); 1♂, Cathedral Rock, 21.11.1990, G. Theischinger and L. Müller (GT).

**Distribution:** New South Wales (NEN).

**Name:** From the Barockee area, the type locality; treated as a noun in apposition.

**Paralimnophila (Paralimnophila) flammeola** ALEXANDER (Fig. 57)


**Primary type:** **Holotype** ♀: Victoria, Ferntree Gully, 16.4.1922, C. Oke (MV); seen.

**Published records:** Victoria: Ferntree Gully (ALEXANDER 1924a: 510).

Previously known only from female.
Description of male: Antennae 16-segmented, formula 2+9+5. Colouration much as described for female (ALEXANDER 1924a). Wing length 12.4-13.8 mm.

Genitalia: Male hypopygium, Fig. 57.

Remarks: Very similar in hypopygial structure to P. kosciuskana (ALEX.); similar in general appearance to P. aurantiipennis (ALEX.), P. bingelima sp. n., P. fuscodorsata (ALEX.) and P. kosciuskana (ALEX.).

Diagnostic characters: femora with indication of a darker subapical ring; wings orange to brown, strongly darkened in cells C and Sc and with dark patches distally adjacent to arculus, at origin of Rs and in pterostigma area; apex of male tergum 9 widely truncate; dorsal pair of lobes of aedeagal complex long and thin; aedeagus in wide sheath (possibly a fused pair of lobes).

New records: Victoria: Bogong High Plains, 5000-6000 ft (NMNH); Bogong Plains, 5600-6000 ft (MV); Cann R. (ANIC); German Ck, Bright (GT); Myrtleford, Slaughteryard Ck (MV); Watchbed Ck, 1650 m, nr Falls Ck (GT).

Distribution: Victoria.

Paralimnophila (Paralimnophila) kosciuskana (ALEXANDER), stat. nov. (Fig. 58)


Primary type: Holotype ♀: New South Wales, Kosciusko, 11.2.1924, A.J. Nicholson (ANIC); seen.

Published records: New South Wales: Kosciusko (ALEXANDER 1929: 58).

Previously known only from female.

Description of male: Antennae 16-segmented, formula 2+8-9+5-6. Colouration much as described for female (ALEXANDER 1929). Wing length 12.4-16.2 mm.

Genitalia: Male hypopygium, Fig. 58.

Remarks: Very similar in hypopygial structure to P. flammeola ALEX.; similar in general appearance to P. aurantiipennis (ALEX.), P. bingelima sp. n., P. flammeola ALEX. and P. fuscodorsata (ALEX.).

Diagnostic characters: legs without any distinct pattern; wings orange to brown, strongly darkened in cells C and Sc only; apex of male tergum 9 narrowly truncate to slightly bilobed; dorsal pair of lobes of aedeagal complex long and thin; aedeagus in wide sheath (possibly a fused pair of lobes).
New records: New South Wales: Bendora, A.C.T. (ANIC); Kosciusko (ANIC); Perisher Valley, 1500 m, Mt Kosciusko (GT); Mt Gingera, A.C.T. (ANIC).

Distribution: New South Wales (SEN).

Paralimnophila (Paralimnophila) guttulicosta (ALEXANDER) (Fig. 59)


Primary type: Holotype ♀: New South Wales, Dorrigo, 14.10.1931, W. Heron (NMNH); seen.

Published records: New South Wales: Dorrigo (ALEXANDER 1934: 260).

Previously known only from female.

Description of male: Antennae 13-14-segmented, formula 2+5+6-7, longest branches hardly longer than their flagellomeres. Colouration much as described for female (ALEXANDER 1934). Wing length 9.9 mm.

Genitalia: Male hypopygium, Fig. 59.

Remarks: Most similar in hypopygial structure to P. terania sp. n.

Diagnostic characters: structure of male antennae (see above); wings with series of dark spots in cell C; median pair of lobes of aedeagal complex markedly longer than dorsal pair.

New records: New South Wales: Dorrigo N. P. (GT); Lorien Ref., 3 km N Lansdowne, nr Taree (GT).

Distribution: New South Wales (NEN).

Paralimnophila (Paralimnophila) terania spec. nov. (Fig. 60)

Description (♂): Head largely blackish brown; rostrum and palps greyish brown; antennae yellowish- to greyish brown, 14-segmented, formula 2+7-9+3-5, longest branches about 2.5 times as long as their flagellomeres. Thoracic terga brown; pleura dark brown. Coxae yellowish brown, trochanters yellow; femora and tibiae largely yellowish brown, apex of tibiae slightly darkened, knees pale yellow; tarsi whitish yellow; claws brown. Wings suffused with brownish yellow, more intensively so in cells C and Sc; more or less distinct patches of brown distally adjacent to arculus, at origin of Rs, at Sc2, and in pterostigma and cord area; some even less distinct and smaller clouds along other crossveins and transverse sections of longitudinal veins.
Halteres yellowish- to greyish brown, stem darker than knob. Abdomen greyish brown. Wing length 9.0-10.2 mm.

**Genitalia:** Hypopygium, Fig. 60.

**Remarks:** Most similar in hypopygial structure to *P. guttulicosta* (ALEX.).

**Diagnostic characters:** structure of male antennae (see above); wings with cell C slightly and uniformly darkened; median pair of lobes of aedeagal complex about as long as dorsal pair.


**Distribution:** Queensland (SEQ), New South Wales (NEN).

**Name:** From Terania Creek, the type locality; treated as a noun in apposition.

*Paralimnophila* (*Paralimnophila*) *rieki* spec. nov. (Fig. 61)

**Description** (δ): Head largely blackish grey, including rostrum; palps greyish brown; antennae 17-18-segmented, formula 2+13-14+2, longest branches about 5 times as long as their flagellomeres; scape and pedicel greyish yellow to greyish brown, flagellum including branches dark greyish- to blackish brown. Thoracic terga pale to dark grey, scutum with greyish black longitudinal stripes; pleura brownish grey. Coxae and trochanters largely greyish yellow; basal 1/3 of femora greyish yellow, distal 2/3 and tibiae brownish- to greyish black, only knees narrowly greyish brown; tarsi and claws pale to dark brownish grey. Wings strongly suffused with greyish yellow, more intensively so in cells C and Sc, only pterostigma area brownish grey. Halteres with stem dull yellow and knob greyish brown. Abdomen largely dark brownish grey. Wing length 9.0-10.6 mm.

**Genitalia:** Hypopygium, Fig. 61.

Female unknown.

**Remarks:** Not similar in colouration to any other described species from Australia; very similar in hypopygial structure to *P. maxwelliana* sp. n.

**Diagnostic characters** (male): wings almost uniformly greyish yellow, with only pterostigma area dark; dorsal pair of lobes of aedeagal complex strongly expanded apically (boot-like).

Distribution: Tasmania.

Name: Dedication to Dr E.F. Riek of Canberra who collected the species.

Paralimnophila (Paralimnophila) maxwelliana spec. nov. (Fig. 62)

Description: Head greyish black; rostrum and palps blackish brown; antennae of male 17-segmented, formula 2+14+1, longest branches about 5 times as long as their flagellomeres, flagellum of female missing; scape and pedicel yellow, flagellum of male including branches brownish black. Thorax blackish brown. Coxae and trochanters yellow; remainder of legs of male blackish brown with only basal 1/3 of femora and knees yellow, of female greyish- to brownish yellow with indistinct darker subapical ring in femora, apex of tibiae slightly darkened and terminal two tarsal segments and claws greyish brown. Wings whitish hyaline with extensive patches of greyish- to blackish brown as follows: cells C and Sc; wing base; near wing base and at origin of Rs; cord and pterostigma area; wing apex; most of cells M/CuA1, CuA/CuA2, CuP and A2; substantial portions of cells Rs along M/CuA1 and of cell A1 (distal 1/3). Halteres with stem pale yellow, knob pale and dark greyish brown. Abdominal terga largely greyish- to blackish brown, sterna dull greyish yellow with only distal edge broadly greyish brown, sternum 2 basally shining white. Wing length, male 11.1 mm, female 11.3 mm.

Genitalia: Male hypopygium, Fig. 62.

Remarks: Very similar in hypopygial structure to P. rieki sp. n.

Diagnostic characters: extensive dark wing pattern on whitish hyaline background; dorsal pair of lobes of aedeagal complex moderately expanded apically.

Material examined: Holotype ♂: Tasmania, 43°29'S/146°44'E, below Maxwell Ridge, tributary of Picton River, above Reservoir Lakes, 800 m, 15.2.1988, A. Neboiss (MV). Paratype: 1♀, same data as holotype (MV).

Distribution: Tasmania; known only from below Maxwell Ridge.

Name: Maxwellianus 3 = Latinized for "from Maxwell Ridge".

Paralimnophila (Paralimnophila) flavipes (ALEXANDER) (Fig. 63)


Primary type: Holotype ♂: Tasmania, Hobart, A.M. Lea (SAM); not seen.

Published records: Tasmania: Cradle Mtn; Hobart; Waratah (all ALEXANDER 1922b: 249).

Genitalia: Male hypopygium, Fig. 63.

Remarks: Similar in hypopygial structure to P. christine sp. n., similar in general appearance to P. praesignis (ALEX.).

Diagnostic characters: male antennae with more than 20 long branches; tarsi partly pale; structure of aedeagal complex.

New records: Tasmania: Andover (MV); Hobart, Strikland Ave (ANIC); Scottsdale (NMNH); 8 mi. E of Scottsdale (ANIC); Tyenna (NMNH); Tyenna R., nr Mt Field (GT); nr Wilmot (ANIC); Zeehan (NMNH).

Distribution: Tasmania.

Paralimnophilia (Paralimnophilia) christine spec. nov. (Fig. 64)

Description: Head brown with large black patch; rostrum yellowish brown; palps blackish brown; antennae with scape and pedicel yellowish brown and flagellum greyish- to blackish brown, 21-22-segmented, formula 2+17-18+1-2, in male, and 18-segmented, formula 2+6+10, in female. Scutum dark brown with black longitudinal lines, scutellum and mediotergite black; pleura brown with episternum and epimeron markedly paler than the rest. Coxae brown, trochanters greyish yellow; femora from dark greyish yellow at base to dark greyish brown just before knee, tibiae largely dark greyish brown, knees yellowish brown; tarsi with most or all of basitarsus and terminal segment greyish brown, rest pale greyish- to brownish yellow with subterminal segment slightly darkened. Wings whitish- to greyish hyaline; cells C and Sc blackish brown; well-defined patches of blackish brown distally adjacent to arculus, just before halfway between arculus and origin of Rs, at origin of Rs, in pterostigma and cord area (very extensive, leaving centre of dm whitish hyaline), at end of R3, at wing apex mainly between R4 and M2, between M/CuA1 and CuA, in basal 2/3 between CuA and A1, and in distal 1/3 of cell A1; cell A2 clouded with pale greyish brown all over and with narrow blackish brown longitudinal wash. Halteres with stem yellowish grey and knob dark greyish brown. Abdomen brown; terga 1 and 2 and distal 1/3 of most following terga darker than the rest. Wing length, male 13.6-14.8 mm, female 14.8-16.2 mm.

Genitalia: Male hypopygium, Fig. 64.
Remarks: Similar in hypopygial structure to *P. flavipes* (ALEX.); similar in general appearance to *P. neboissi* sp. n.

Diagnostic characters: structure of antennae (see above); size large (wing length >13.5 mm); dark wing pattern extensive; tarsi partly pale; structure of aedeagal complex.

Material examined: Holotype ♂: Tasmania, S-E, Hot Springs Creek, 18.2.1994, G. Theischinger (ANIC). Paratypes: Tasmania: 2 ♀♂, same data as holotype (GT); 1 ♂, near summit of Hartz Mountains, 20.2.1994, G. Theischinger (GT); 1 ♀, National Park, 19.2.1971, A. Neboiss (MV); 3 ♀♀, Russell Falls, National Park, 23.2.1967, A. Neboiss (MV).

Distribution: Tasmania.

Name: Dedication to my wife Christine.

Paralimnophila (*Paralimnophila*) *remulsa* (ALEXANDER) (Figs 65, 66)


Primary type: Holotype ♀: New South Wales, Ulong, Eastern Dorrigo, 19.10.1926, W. Heron (NMNH); seen.

Published records: New South Wales: Barrington Tops; Ulong, Eastern Dorrigo (both ALEXANDER 1928d: 60).

Genitalia: Male hypopygium, Figs 65, 66.

Remarks: Similar in hypopygial structure and in general appearance to the group of species centred around *P. harrisoni* (ALEX.) (see there).

Diagnostic characters: knees shiny yellowish white; structure of aedeagal complex.

New records: New South Wales: Upper Allyn R. (ANIC); Barrington Tops (GT); Barrington Tops, 5000 ft (ANIC); Barrington Tops, 1400 m (GT); Brooklana, E Dorrigo (NMNH); Cathedral Rock N. P. (GT); Dlgy R., 19 km NW of Rawdon Vale (MV); Dorrigo (NMNH); Ebor Falls (GT); Styx R., 15 km S of Ebor (MV).

Distribution: New South Wales (NEN, SEN).

Paralimnophila (*Paralimnophila*) *harrisoni* (ALEXANDER) (Figs 67, 68).


Primary type: Holotype ♂: New South Wales, Barrington Tops, Jan. 1925, S.U.Zool.Exp. (ANIC); seen.

Published records: New South Wales: Barrington Tops (ALEXANDER 1928d: 61).

Previously known only from male.

Description of female: Antennae 18-segmented, formula 2+8+8. Colouration much as described for male (ALEXANDER 1928d). Wing length 13.4 mm.

Genitalia: Male hypopygium, Figs 67, 68.

Remarks: Similar to P. pewingi sp. n. and P. tarra sp. n.

Diagnostic characters (male): ventral pair of lobes of aedeagal complex rather narrow; tip of aedeagus wide.

New records: Queensland: 2 km E of Mt Normann (NMNH). New South Wales: Bald Rock N. P. (ANIC); Barrington Tops (ANIC); Mooraback, Werrikimbe N. P., 980 m (GT).

Distribution: Queensland (SEQ), New South Wales (NEN, SEN).

Paralimnophila (Paralimnophila) pewingi spec. nov. (Fig. 69)

Description: Head largely greyish- to brownish black; rostrum pale brownish yellow; palps greyish brown; antennae 22-segmented in male, formula 2+19+1, longest branches almost 7 times as long as their flagellomeres, 16-17-segmented in female, formula 2+5-6+8-10; scape and pedicel brownish yellow, flagellum pale to dark greyish brown with all branches dark greyish brown. Thoracic terga dark greyish brown; pleura greyish brown, dorsal portion of katepisternum and ventral portion of laterotergite greyish yellow. Coxae and trochanters greyish yellow to greyish brown; femora and tibiae dark greyish brown, only basal portion of femora greyish yellow to greyish brown and knees yellow; tarsi with most of basitarsus, apex of all segments and all of terminal two segments greyish brown, remainder whitish yellow. Wings greyish subhyaline; cells C and Sc blackish brown; large blackish brown patches from arculus to about 2/3 way between arculus and origin of Rs, at origin of Rs, in cord and pterostigma area including base of cell R4, at end of R3, at wing apex and along cross-veins and transverse sections of longitudinal veins, most notably at fork of M1+2. Halteres greyish yellow to greyish brown. Abdomen largely greyish brown; terga markedly darker than sterna. Wing length, male 12.5 mm, female 14.6 mm.

Genitalia: Male hypopygium, Fig. 69.

Remarks: Similar to P. harrisoni (ALEX.) and P. tarra sp. n.
Diagnostic characters: base of cell R4 extensively and distinctly darkened; ventral pair of lobes of aedeagal complex very wide, dorsal pair long and strongly bent dorsad; tip of aedeagus narrow.


Distribution: New South Wales (SEN).

Name: Pewingi (= Australian Aboriginal word for "swamp hawk") refers to the strongly bent lateral element of the aedeagal complex and to the habitat of the species.

**Paralimnophila (Paralimnophila) tarr**a spec. nov. (Fig. 70)

Description: Head largely greyish black; rostrum greyish brown; palps blackish brown; male antennae 20-segmented, formula 2+16+2, longest branches close to 5 times as long as their flagellomeres; scape and pedicel brownish yellow, flagellum pale to dark greyish brown, all branches and the bases of more distal segments darker than bases of more proximal segments; female antennae 17-segmented, with basal 6 flagellomeres very slightly protuberant ventrally, greyish yellow to greyish brown. Thoracic terga largely greyish brown, scutum with paler and darker longitudinal stripes, much or at least posterior portions of scutellum pale yellowish grey; much of dorsal half of pleura and katepisternum dark greyish brown, anepisternum somewhat paler, remainder greyish yellow. Coxae pale brownish yellow; trochanters pale greyish brown, marked with darker; femora from greyish yellow at base to dark greyish brown immediately before knee, tibiae greyish brown with apex darkened, knees pale yellow; tarsi dull greyish- to whitish yellow, with most of basitarsus and two terminal segments greyish brown; claws greyish brown. Wings greyish subhyaline; cells C and Sc brownish black; a long trapezoidal blackish brown patch, with whitish hyaline centre along Rs, at origin of Rs; a large brownish black patch in pterostigma area; smaller and less distinct dark patches at fork of Rs, at end of R3 and along most crossveins and transverse sections of longitudinal veins. Halteres with stem greyish yellow and knob dark greyish brown. Abdominal terga largely blackish brown, sterna largely greyish yellow to pale greyish brown. Wing length, male 12.6-12.8 mm, female 13.0 mm.

Genitalia: Male hypopygium, Fig. 70.

Remarks: Similar to *P. harrisoni* (ALEX.) and *P. pewingi* sp. n.

Diagnostic characters: a long trapezoidal dark patch with whitish hyaline centre at origin of Rs; median pair of lobes of aedeagal complex slim and with long narrow tip.

Distribution: Victoria.

Name: From Tarra Valley, the type locality; treated as a noun in apposition.

Paralimnophila (Paralimnophila) unicincta (ALEXANDER) (Figs 71, 72)


Paralimnophila (Paralimnophila) unicincta (ALEXANDER); OOSTERBROEK & JONAS, Catalogue of the Australian-Oceanian Tipulidae (Insecta, Diptera): 130 (1986).

Primary type: Holotype ♂: Tasmania, Hartz Mountains, 10.12.1922, A. Tonnoir (ANIC); seen.

Published records: Tasmania: Hartz Mts; Mt Wellington (both ALEXANDER 1928b: 237).

Known only from male.

Genitalia: Hypopygium, Figs 71, 72.

Remarks: Not very similar to any other described Australian species.

Diagnostic characters: tibiae dark with well-defined pale subbasal ring; apex of aedeagus rather wide.

New records: Tasmania: Gordon R., 1 km above First split (MV); Mt Wellington (NMNH).

Distribution: Tasmania.

Paralimnophila (Paralimnophila) murdunna spec. nov. (Fig. 73)

Description: Head from largely dark orange grey to largely brownish black; rostrum, scape, pedicel and basal segment of palps greyish brown, remainder of palps greyish- to brownish black; antennae of male 23-segmented, formula 2+19+2, longest branches at least 7 times as long as their flagellomeres, of female 19-segmented, formula 2+9+8; flagellomeres from greyish yellow at base of flagellum to dark greyish brown at apex, branches of male brownish black. Thorax orange to pale greyish brown. Legs largely dull orange; femora with broad, tibiae with narrow apical ring; claws blackish brown. Wings strongly suffused with greyish orange, mostly well defined and larger patches of brownish black as follows: cells C and Sc; wing base; distally adjacent to arculus in anterior 2/3 of cell R; at origin of Rs; in pterostigma area; usually a dark spot in basal section of R5. Halteres with stem dark orange, knob greyish- to
blackish brown. Abdomen largely orange- to dark greyish brown. Wing length, male 13.0 mm, female 16.2-17.5 mm.

Genitalia: Male hypopygium, Fig. 73.

Remarks: Similar to all other large and mainly orange species of *Paralimnophila* from Australia [*P. aurantiipennis* (ALEX.), *P. bingelima* sp. n., *P. flavmeola* ALEX., *P. fuscodorsata* (ALEX.), *P. kosciuskana* (ALEX.)], but distinctly different in the structure of the male hypopygium.

Diagnostic characters: antennal structure (see above); wing base very dark; dorsal pair of lobes of aedeagal complex bearing several (3-4) large apical spines.

Material examined: Holotype ♂: Tasmania, Flinders Creek, 3 mi. Murdunna, 12.2.1965, J. Martin (ANIC). Paratypes: Tasmania: 1 ♀, D'Entrecasteaux Passage Exit Cave, 0.4 km into cave, Jan. 1993, A. Clarke (MV); 1 ♀, National Park, 19.2.1971, A. Neboiss (MV); 1 ♀, NE St Colomba Falls, Pyengana, 21.2.1971, A. Neboiss (MV).

Distribution: Tasmania.

Name: From Murdunna, the type locality; treated as a noun in apposition.

*Paralimnophila (Paralimnophila) gingera* spec. nov. (Fig. 74)

Description: Head largely dark bluish grey, pruinose, including rostrum; palps brownish black; antennae greyish- to blackish brown, those of male 18-segmented, formula 2+15+1, longest branches almost 5 times as long as their flagellomeres, those of female with basal 7 flagellomeres slightly protuberant ventrally (other flagellomeres missing). Thorax dark bluish grey, pruinose. Coxae and trochanters variably bluish grey, pruinose; femora and tibiae largely black, only basal portion of femora yellowish- to greyish brown and knees narrowly yellowish grey; tarsi with most of basitar-sus and terminal segment brownish black, subterminal segment greyish brown and remainder dull greyish- to yellowish white; claws black. Wings pale greyish subhyaline; cells C and Sc blackish brown; black patches halfway between arculus and origin of Rs, at origin of Rs, in pterostigma area, at end of R3, and along crossveins and transverse sections of longitudinal veins, most notably in basal section of R5 and at fork of M1+2. Halteres with stem greyish brown and knob black. Abdomen dark bluish grey, pruinose; female cerci yellowish- to greyish brown. Wing length, male 12.9 mm, female 16.2 mm.

Genitalia: Male hypopygium, Fig. 74.

Remarks: Similar to *P. styligera* (ALEX.) and *P. winta* sp. n.
Diagnostic characters: wings with dark patch between arculus and origin of Rs short; median pair of lobes of aedeagal complex apically slightly convergent and rounded.


Distribution: New South Wales (SEN); known only from Mt Gingera, A.C.T.

Name: From Mount Gingera, the type locality; treated as a noun in apposition.

*Paralimnophila (Paralimnophila) winta* sp. nov. (Fig. 75)

Description: Head largely blackish grey; rostrum and palps blackish brown; male antennae 20-segmented, formula 2+16-17+1-2, longest branches almost 6 times as long as their flagellomeres, greyish brown with more distal flagellomeres and all branches darker than scape, pedicel and bases of more proximal flagellomeres; female antennae 18-segmented, greyish brown, basal 7-8 flagellomeres very slightly protuberant ventrally. Thoracic terga largely greyish brown, scutum with brownish black longitudinal stripes; pleura greyish brown with dorsal half black. Coxae greyish brown, trochanters greyish yellow; femora from pale to dark greyish yellow in basal 1/3 to greyish-, even blackish brown, in basal 2/3, tibiae brownish black, knees yellow; tarsi with most of basitarsus and terminal segment blackdish brown, subterminal segment greyish brown and remainder yellowish white; claws brownish black. Wings greyish subhyaline; cells C and Sc brownish black; a long brownish black patch from just distal to arculus to 3/4 way between arculus and origin of Rs; a long subrectangular brownish black patch at origin of Rs and an almost black patch in pterostigma area; smaller and less distinct dark patches at fork of Rs, at end of R3 and along most crossveins and transverse sections of longitudinal veins, most notably along base of R5 and at fork of M1+2. Halteres with stem greyish brown and knob dark blackish brown. Abdomen greyish- to blackish brown, terga darker than sterna. Wing length, male 11.8-12.9 mm, female 15.3-16.2 mm.

Genitalia: Male hypopygium, Fig. 75.

Remarks: Similar to *P. gingera* sp. n. and *P. styligera* (ALEX.).

Diagnostic characters: wings with long dark patch from arculus to 3/4 way between arculus and origin of Rs; median pair of lobes of aedeagal complex apically slightly divergent and tapered.

Distribution: Victoria.

Name: Winta (= Australian Aboriginal word for "spear") refers to the shape of the pointed lateral element of the aedeagal complex.

Paralimnophila (Paralimnophila) styligera (ALEXANDER) (Fig. 76)


Paralimnophila (Paralimnophila) styligera (ALEXANDER); OOSTERBROEK & JONAS, Catalogue of the Australian-Oceanian Tipulidae (Insecta, Diptera): 130 (1986).

Primary type: Holotype ♂: Victoria, Bogong High Plains, 5600-6000 ft, Jan. 1928, F.E. Wilson (MV, NMNH); seen.

Published records: Victoria: Bogong High Plains, 5600-600 ft (ALEXANDER 1930: 118).

Genitalia: Male hypopygium, Fig. 76.

Remarks: Similar to P. gingera sp. n. and P. winta sp. n.

Diagnostic characters: medial and dorsal pair of lobes of aedeagal complex very long and slender, median pair apically slightly expanded and divergent.

New records: New South Wales: Perisher Ck, 1500 m (GT); Snowy R. (ANIC).

Distribution: New South Wales (SEN), Victoria.

Paralimnophila (Paralimnophila) artursiana spec. nov. (Fig. 77)

Description: Head largely dark greyish black, including rostrum and palps; antennae with scape and pedicel brownish yellow, flagellum including branches blackish brown; male antennae 21-segmented, formula 2+17-18+1-2; longest branches almost 6 times as long as their flagellomeres; female antennae 17-segmented, with basal 7-8 flagellomeres slightly protuberant ventrally. Thoracic terga bluish grey pruinose, scutum with black longitudinal stripes; pleura bluish grey pruinose. Coxae bluish grey pruinose, trochanters yellowish brown; femora with basal 1/3 yellowish brown, merging into blackish brown for distal 2/3; tibiae blackish brown with only extreme base brown; tarsi with basitarsus and terminal segment blackish brown and remainder dull greyish- to brownish yellow; claws brownish black. Wings yellowish- to brownish subhyaline; cells C and R greyish brown; rather indistinct dark greyish brown patches at origin of Rs, in pterostigma area, at end of R3, along crossveins and transverse
sections of longitudinal veins and, in some females, halfway between arculus and origin of Rs; brown clouds at wing apex and along M, CuA, and parts of A1 and A2. Halteres with stem whitish yellow, knob brownish black. Abdomen blackish brown; female terminalia yellowish- to greyish brown. Wing length, male 11.1-11.6 mm, female 10.3-14.8 mm.

Genitalia: Male hypopygium, Fig. 77.

Remarks: Very similar to *P. boobootella* sp. n.

Diagnostic characters: at the most 18 flagellomeres of male antennae branched; wing pattern indistinct, in male without dark spot halfway between arculus and origin of Rs; median pair of lobes of aedeagal complex apically somewhat divergent.


Distribution: Tasmania; known only from Arthur Plains.

Name: Dedication to Dr. Arturs Neboiss of Melbourne who collected the species.

*Paralimnophila (Paralimnophila) boobootella* spec. nov. (Fig. 78)

Description (♂): Head largely dark greyish black, including rostrum and palps; antennae 24-25-segmented, formula 2+20-21+2, longest branches about 7 times as long as their flagellomeres; scape and pedicel brown, flagellum including branches blackish brown. Thoracic terga bluish grey pruinose, scutum with black longitudinal stripes; pleura bluish grey pruinose. Coxae bluish grey pruinose, trochanters yellowish brown; profemur with basal 1/4 brownish yellow, merging into blackish brown and black for distal 3/4; protibia black; protarsus with basitarsus and terminal segment blackish brown and remainder dull greyish- to brownish yellow; claws black; other leg segments missing. Wings whitish subhyaline; cells C and Sc blackish brown; very distinct blackish brown patches about halfway between arculus and origin of Rs, at origin of Rs, in pterostigma and cord area, at end of R3, and along other crossveins and transverse sections of longitudinal veins; distinct dark brown clouds at wing apex and broadly along M, CuA, and parts of A1 and A2. Halteres with stem pale greyish brown, knob brownish black. Abdomen greyish- to blackish brown, somewhat pruinose. Wing length 12.4 mm.

Genitalia: Hypopygium, Fig. 78.

Female unknown.

Remarks: Very similar to *P. artursiana* sp. n.
Diagnostic characters (male): at least 20 flagellomeres of antennae branched; wing pattern very distinct, with dark spot halfway between arculus and origin of Rs; median pair of lobes of aedeagal complex apically somewhat convergent.


Distribution: Tasmania; known only from near Strahan.

Name: Boobootella (= Australian Aboriginal word for "feather from an emu's tail") refers to the elaborate antennae of the male.

Paralimnophila (Paralimnophila) eungella spec. nov. (Fig. 79)

Description (♂): Head largely blackish grey; rostrum and palps greyish- to blackish brown; antennae 15-segmented, formula 2+11-12+1-2. Longest branches close to 4 times as long as their flagellomeres; scape and pedicel yellow, flagellomeres largely greyish- to blackish brown including branches, basal 10 flagellomeres with portion distal of branch whitish- to greyish yellow. Thoracic terga largely grey to greyish brown, scutum with dark longitudinal stripes, most notably along midline and near lateral margins; pleura largely brownish black. Coxae largely yellow, basally somewhat darkened; trochanters pale yellow; femora greyish yellow with broad ill-defined subapical ring, tibiae largely blackish brown, knees and extreme apex of tibiae pale yellow; tarsi largely yellowish white, subterminal segment slightly, terminal segment markedly darkened; claws blackish brown. Wings greyish subhyaline; large brownish black patches as follows: cells C and Sc; wing base; distally adjacent to arculus; midway between arculus and origin of Rs; just before, at and just beyond origin of Rs; at R2 (connected with large patch in cord and pterostigma area); cord and pterostigma area; 2/3 way between origin and fork of Rs; endings of R3 and R4; less distinctly darkened along other crossveins and transverse sections of longitudinal veins and at most other longitudinal vein endings, and clouded broadly between R4 and M1. Halteres greyish- to blackish brown. Abdomen greyish- to blackish brown. Wing length 7.4-9.0 mm.

Genitalia: Hypopygium, Fig. 79.

Female unknown.

Remarks: Similar to P. danbulla sp. n.

Diagnostic characters (male): 11-12 flagellomeres of antennae branched; aedeagus moderately long; ventral lobes of aedeagal complex short and wide.

Distribution: Queensland (NEQ, SEQ).

Name: From Eungella, the type locality; treated as a noun in apposition.

Paralimnophila (Paralimnophila) danbulla spec. nov. (Fig. 80)

Description (♂): Head largely greyish black; rostrum greyish brown; palps brownish black; antennae ?14-segmented, formula 2+4+?8, longest branch hardly 1/2 length of its flagellomere, other branches hardly more than protuberances; scape and pedicel yellow, protuberant flagellomeres greyish yellow to pale greyish brown, remaining flagellomeres dark greyish brown. Thoracic terga largely yellowish brown, scutum with black longitudinal stripes, most notably along lateral margins; scutellum and mediotergite dark greyish brown; pleura yellowish- to greyish brown with black longitudinal stripe across most of dorsal half including laterotergite, and a shorter narrow longitudinal stripe just above meron and metacoxa. Coxae and trochanters greyish yellow; other segments of fore leg missing; meso- and metafemur pale to dark greyish brown with broad ill-defined brownish black subapical ring, meso- and metatibia largely greyish brown, knees and apex of metatibia yellow; meso- and metatarsi largely whitish yellow, most of mesobasitarsus greyish brown and terminal segment of middle leg somewhat darkened; claws greyish- to blackish brown. Wings greyish- to brownish hyaline; large blackish brown patches as follows: cells C and Sc; about halfway between arculus and origin of Rs; origin of Rs; cord and pterostigma area; endings of R3 and R4; fork of M and fork of M1+2; smaller dark patches at R2 and along other transverse sections of longitudinal veins. Halteres with base of stem greyish yellow, rest of stem and knob greyish- to blackish brown. Abdomen largely greyish- to blackish brown, terga markedly darker than sterna. Wing length 7.9 mm.

Genitalia: Hypopygium, Fig. 80.

Female unknown.

Remarks: Similar to P. eungella sp. n.

Diagnostic characters (male): only 4 flagellomeres of antennae branched; aedeagus very short; ventral lobes of aedeagal complex long and slender.


Distribution: Queensland (NEQ).

Name: From Danbulla, near the type locality; treated as a noun in apposition.
**Paralimnophila (Paralimnophila) gracilirama** (ALEXANDER) (Fig. 81)


**Primary type:** Holotype ♂: Tasmania, National Park, 11-15. I. 1933, F.E. Wilson (MV, NMNH); seen.

**Published records:** Tasmania: National Park (ALEXANDER 1937: 347).

Known only from male.

**Genitalia:** Hypopygium, Fig. 81.

**Remarks:** Not very similar to any other described species from Australia.

**Diagnostic characters:** femora obscure yellow, the tips broadly and abruptly blackened; tibiae yellow, the bases narrowly, the tips more broadly blackened; aedeagal complex with dorsal pair of lobes very thin and sharply pointed.

**New records:** Tasmania: no other data (GT); Mt Bobs Ra., Pine Lake, 680 m, W of Hartz Mts (GT).

**Distribution:** Tasmania.

**Paralimnophila (Paralimnophila) alice spec. nov.** (Fig. 82)

**Description:** Head largely reddish- to brownish black; rostrum brownish yellow; palps greyish brown; antennae 13-segmented, moniliform to filiform; scape and pedicel greyish yellow, flagellum from greyish yellow at base to greyish brown in distal portion. Thoracic terga largely brownish yellow to pale greyish brown, scutum with blackish brown longitudinal stripes, scutellum and mediotergite dark greyish brown; pleura pale yellow. Coxae and trochanters pale yellow; profemur pale greyish brown at base to blackish brown with apex black; protibia blackish brown with apex black; protarsus and claws blackish brown; other leg segments missing. Wings strongly suffused with yellowish brown to dark brown, markedly darker beyond cord than before cord; dark blackish brown patches at or just beyond origin of Rs in cord and pterostigma area, along distal side of dm and at fork of M1+2; A2 not s-curved and only approximately half as long as A1. Halteres with stem brownish yellow, knob brown. Abdomen largely yellow to orange; most terga with short wide basal patch and posterior margin blackish brown. Wing length, male 7.7 mm, female 8.3-9.2 mm.
**Paralimnophila (Paralimnophila) shewani** (ALEXANDER) (Fig. 83)


*Paralimnophila (Paralimnophila) shewani* (ALEXANDER); OOSTERBROEK & JONAS, Catalogue of the Australian-Oceanian Tipulidae (Insecta, Diptera): 129 (1986).

**Primary type:** Holotype ♂: New South Wales, Brooklana, Eastern Dorrigo, 2000 ft, 19.10.1927, W. Heron (NMNH); seen.

**Published records:** New South Wales: Brooklana, Eastern Dorrigo, 2000 ft (ALEXANDER 1929: 57).

Known only from male.

**Genitalia:** Hypopygium, Fig. 83.

**Remarks:** Similar to *P. leucophaeata* (SKUSE), *P. macquarie* sp. n., *P. mossmanensis* sp. n. and *P. wataganensis* sp. n.

**Diagnostic characters** (male): antennae 14-segmented, formula 2+9+3; dorsal pair of lobes of aedeagal complex forked into two sharply pointed lobes; aedeagus very long.

**New records:** New South Wales: Upper Allyn R. (ANIC); Brooklana, Eastern Dorrigo (NMNH); Brooklana, Eastern Dorrigo, 2000 ft (NMNH).

**Distribution:** New South Wales (NEN, SEN).

**Paralimnophila (Paralimnophila) macquarie** spec. nov. (Fig. 84)

**Description:** Head largely greyish black; rostrum and palps dark greyish brown; antennae 15-segmented, formula 2+7+6 in male, longest branches 2-2.5 times as long.
as their flagellomeres, in female basal 6 flagellomeres ventrally slightly protuberant; male scape and pedicel greyish yellow and flagellum greyish brown, female antennae pale to dark greyish yellow. Thoracic terga largely yellowish- to greyish brown, scutum with some longitudinal pattern, scutellum greyish yellow, mediotorigate blackish brown; pleura blackish brown, including laterotergites. Coxae and trochanters whitish-to pale greyish yellow except for base of procoxa which is blackish brown; femora greyish yellow to greyish brown with broad ill-defined blackish brown subapical ring, tibiae largely blackish brown, knees whitish yellow; tarsi largely whitish yellow, basal half and apex of basitarsus of fore and middle leg, apex of segment 2, and most of terminal three segments of all legs greyish brown to black; claws blackish brown. Wings suffused with brownish grey; large blackish brown patches as follows: cells C and Sc from base to about level origin of Rs; distally adjacent to arculus; about 1/3 way between arculus and origin of Rs; at origin of Rs; pterostigma and cord area; end of R3; smaller and mostly more indistinct dark patches along crossveins and transverse sections of longitudinal veins and at most longitudinal vein endings; a particularly well defined black spot at Sc2; somewhat darkened along CuA. Halteres with stem pale greyish brown, knob greyish brown and dull yellow. Abdomen of male dark, of female pale greyish brown. Wing length, male 10.2 mm, female 10.8 mm.

**Genitalia**: Male hypopygium, Fig. 84.

**Remarks**: Similar to *P. leucophaeata* (SKUSE), *P. mossmanensis* sp. n., *P. shewani* (ALEX.) and *P. wataganensis* sp. n.

**Diagnostic characters**: dorsal pair of lobes of aedeagal complex with inner branch pointed and outer branch truncate and apically spinulate.


**Distribution**: New South Wales (SEN).

**Name**: From Macquarie Rivulet, the type locality; treated as a noun in apposition.

**Paralimnophila (Paralimnophila) wataganensis** nov. (Fig. 85)

**Description** (♂): Head largely greyish black; rostrum and palps greyish brown; antennae 19-segmented, formula 2+16+1, the longest branches at least 6 times as long as their flagellomeres, the last branch very short; scape and pedicel whitish yellow; basal 13 flagellomeres greyish brown, including the branches, only the portion distal to branch whitish yellow; distal 4 flagellomeres all greyish brown. Thoracic terga pale and dark greyish brown, scutum with some longitudinal stripes; pleura greyish yellow...
with blackish brown stripe taking most of dorsal third, including laterotergites. Coxae yellowish white; trochanters dull yellow and brown; femora greyish yellow to greyish brown with broad but ill-defined blackish brown subapical ring, tibiae brownish black with apex yellow, knees bright yellowish white; tarsi bright yellowish white, only proximal 2/3, except for extreme base, of basitarsus and terminal segment of fore and middle leg greyish brown; claws greyish brown. Wings suffused with brownish grey; larger dark greyish brown patches as follows: cells C and Sc; wing base; distally adjacent to arculus; halfway between arculus and origin of Rs; at origin of Rs; about 3/4 way between origin and fork of Rs; pterostigma area; end of R3; membrane somewhat brightened between some of these large dark patches, particularly distal of pterostigma area and distal of R3 ending; a number of small and less distinct patches, particularly along branches of M. Halteres with stem greyish brown, knob greyish brown and pale yellow. Abdomen greyish brown. Wing length 9.2 mm.

Genitalia: Hypopygium, Fig. 85.

Female unknown.

Remarks: Similar to P. leucophaeata (SKUSE), P. macquarie sp. n., P. mossmanensis sp. n. and P. shewani (ALEX.).

Diagnostic characters (male): antennae 19-segmented, formula 2+16+1; ventral pair of lobes of aedeagal structure with sclerotized part prominent, spine-like; aedeagus very short.


Distribution: New South Wales (SEN); known only from Watagan Forest.

Name: Wataganensis, -e = Latinized for "from Watagan Forest".

Paralimnophila (Paralimnophila) leucophaeata (SKUSE) (Figs 11, 12, 86, 87)


**Primary types:** Lectotype ♀, by present designation, of *Limnophila leucophaeata* SKUSE: New South Wales, Middle Harbour, nr Sydney, Skuse (ANIC); seen; additionally labelled "Lectotype ♀ Limnophila leucophaeata SKUSE, designated by G. Theischinger 1995". Holoctype ♀ of *Limnophila leucophaeata cairnensis* ALEXANDER: Queensland, Babinda, 10.11.1920, J.F. Illingworth (NMNH); seen. Holoctype ♂ of *Gynoplistia englishiae* ALEXANDER: New South Wales, Buckmaster's Crossing, Yass, 25.11.1933, K. English (NMNH); seen.

**Published records:** Queensland: Babinda (ALEXANDER 1921a: 560). New South Wales: Buckmaster's Crossing, Yass (ALEXANDER 1937: 345); Neutral Bay and Middle Harbour, nr Sydney (SKUSE 1890: 841).

**Previous illustrations:** SKUSE 1890: Pl. XXII, fig. 18 (wing).

**Genitalia:** Male hypopygium, Figs 11, 12, 86, 87.

**Remarks:** Similar in hypopygial structure to *P. mossmanensis* sp. n. *P. leucophaeata* is a variable species, and what has been described under *L. leucophaeata cairnensis* and *L. englishiae*, in my opinion, belongs in *P. leucophaeata*; I do not see sufficient evidence to distinguish geographical components.

**Diagnostic characters** (male): ventral pair of lobes of aedeagal complex widely separated, median and dorsal pair leaf-shaped.

**New records:** Queensland: Acacia Ridge, Brisbane (QM); 11 km W by N Bald Hill, McIlwraith Ra., 500 m (ANIC); Carinervon Gorge (GT); Eungella N. P. (GT); Jaxut S. F. (GT); Little Yabba Ck, nr Kenilworth (GT); Moses Ck, 4 km N by E of Mt Finnigan (ANIC); Mt Tamborine (GT); 3 km ENE of Mt Tozer (ANIC); Salvator Rosa N. P. (GT); Tamborine Bay (ANIC); Tibrogargan Ck (ANIC). New South Wales: n. o. d. (ANIC); Cangai Ck (GT); Gosford (ANIC); Horseshoe Ck, Kyogle (GT); Kanangra Walls (GT); Lane Cove (ANIC); Lorien Ref., 3 km N Lansdowne, nr Taree (GT); Mogo Ck, N of Sydney (GT); Warrabah N. P. (GT); Watagan Forest (GT); West Head (ANIC).

**Distribution:** Queensland (CY, NEQ, SEQ, SIQ), New South Wales (NEN, SEN).

*Paralimnophila (Paralimnophila) mossmanensis* spec. nov. (Fig. 88)

**Description** (♂): Head largely blackish grey; rostrum and palps dark greyish brown; antennae 17-segmented, formula 2+14+1, longest branches 4-5 times as long as their flagellomeres; scape and pedicel whitish yellow, flagellum including branches greyish brown. Thoracic terga largely greyish brown, scutum with blackish brown longitudinal pattern, scutellum blackish brown; pleura whitish yellow with black longitudinal stripe in dorsal half, including laterotergites, and partial narrow longitudinal stripe just above meron and metacoxa. Coxae and trochanters whitish yellow; femora pale to dark greyish brown with broad ill-defined blackish brown subapical ring, tibiae
blackish brown with apex yellowish white in fore and middle leg, apical 1/5-1/4 in hind leg, knees yellowish white; tarsi largely yellowish white, most of pro- and mesobasitarsus greyish brown, terminal segment of all legs slightly darkened; claws greyish-to blackish brown. Wings greyish subhyaline; rather indistinct greyish brown patches as follows: cells C and Sc; at origin of Rs; at fork of Rs; pterostigma area; end of R3; very slightly darkened along crossveins and transverse sections of longitudinal veins. Halteres greyish brown. Abdominal terga greyish brown, sterna largely brownish- to greyish yellow with only distal edge broadly greyish brown. Wing length 7.4-7.5 mm.

**Genitalia**: Hypopygium, Fig. 88.

Female unknown.

**Remarks**: Similar to *P. leucophaeata* (SKUSE), *P. macquarie* sp. n., *P. shewani* (ALEX.) and *P. wataganensis* sp. n.

**Diagnostic characters**: structure of antennae (see above); ventral lobes of aedeagal complex apparently at least largely reduced to horn-like structures; apex of both branches of dorsal lobes of aedeagal complex obtuse.


**Distribution**: Queensland (NEQ).

**Name**: Mossmanensis, -e = Latinized for "from Mossman Gorge".

**Paralimnophila (Paralimnophila) barringtonia** (ALEXANDER)


*Paralimnophila barringtonia* (ALEXANDER); ALEXANDER, Studia ent. 20: 159 (1978).


**Primary type**: Holotype ♀: New South Wales, Barrington Tops, Jan. 1925, S.U.Zool.Exp. (ANIC); seen.

**Published records**: New South Wales: Barrington Tops (ALEXANDER 1928d: 62).

Known only from female.

**Original Description**: Rostrum dark, sparsely pruinose; palpi black. Antennae with the scapal segments obscure brownish yellow; the first segment a little darker and vaguely pruinose; flagellum broken. Head light grey, the anterior vertex behind the antennal base a little darker. Pronotum buffy, the region between the scutum and scutellum darkened. Mesonotal prescutum with four dark grey stripes that are narrowly margined with dark brown, the humeral region and lateral margins obscure yellow,
sparsely pruinose; posterior interspaces moderately dark reddish brown, sparsely pruinose, paler than the stripes; pseudosutural foveae relatively long and narrow, dark reddish brown; scutum pale, sparsely pruinose, the centre of each lobe very extensively darkened, scutellum dark; postnotal mediotergite light grey, with a relatively indistinct median brown line. Pleura clear light grey, with a narrow but conspicuous velvety black stripe that extends from the cervical sclerites to beneath the wing root; anterior spiracle and a small spot on the dorsal pteropleurite blackened; dorsopleural region buffy behind. Legs with the coxae pale yellow, sparsely pruinose; trochanters yellow; femora black, the bases obscure yellow, the amount including approximately the basal third or fourth; extreme tips of femora and bases of the tibiae pale yellow, with white setae; remainder of tibiae black; basitarsi brownish black, the distal third white; tarsal segments 2-3 white, with pale setae; terminal two segments dark; two stout black spines at tip of each of tarsal segments 1 and 2. Wings with a whitish ground colour, heavily patterned with brown; cell C dark brown; cell Sc similar, the outer end more yellowish; large conspicuous brown clouds as follows: base of cell R; origin of Rs; a complete seam extending from the slightly darker stigma across the wing; outer end of cell 1st M2; tip of R3 and fork of M1+2; wing apex narrowly but not extensively darkened, deepest in cell R3; most of the longitudinal veins near the wing tip seamed with brown; a broad, paler brown seam on the distal half of vein M, with other along vein 1st A and and as marginal clouds in both anal cells; cell Cu1 darker brown; the whole effect thus produced is a heavily patterned wing; veins pale brown, darker in the infuscated areas, more yellowish in the posterior region of the wing base. Venation: R2+3+4 straight, subequal to R2+3; R2 a little less than one-half R1+2; cell M1 nearly twice its petiole; m-cu shortly before midlength of cell 1st M2. Halteres pale brown, the base of the stem restrictedly brightened, the knobs dark brown. Abdominal tergites brownish grey, more pruinose laterally; sternites more reddish brown, more dusky laterally, with a longitudinal row of black punctures on either side. Ovipositor with the tergal valves relatively slender, gently upcurved; valves reddish horn-coloured, the bases darker. Length about 19 mm, abdomen alone about 13.5 mm; wing 15.5 mm.

Remarks: Similar in general appearance to *P. albofasciata* (ALEX.) and *P. victoriae* (ALEX.).

Diagnostic characters: legs with knees white and tarsi chiefly white; wings cross-banded.

New records: None.

Distribution: New South Wales (NEN, SEN).
Paralimnophila (Paralimnophila) mystica (ALEXANDER)


Paralimnophila mystica (ALEXANDER); ALEXANDER, Studia ent. 20: 160 (1978).

Paralimnophila (Paralimnophila) mystica (ALEXANDER); OOSTERBROEK & JONAS, Catalogue of the Australian-Oceanian Tipulidae (Insecta, Diptera): 129 (1986).

Primary type: Holotype δ: New South Wales, Barrington Tops, Jan. 1925, S.U.Zool.Exp. (ANIC); seen; genitalia missing.

Published records: New South Wales: Barrington Tops (ALEXANDER 1928d: 63).

Known only from male.

Original Description: Rostrum dark brown, sparsely pruinose; palpi dark brown. Antennae with the scapal segments yellow; flagellum broken. Head dark grey. Pronotum buffy grey. Mesonotum brownish grey with four almost concolorous stripes, the intermediate pair behind a little brighter; intermediate stripes in front passing into grey; caudad of the level of the pseudosutural foveae, the stripes conspicuously margined with dark brown; lateral stripes grey, similarly margined with brown, the lateral margin being broader and more intensely coloured; lateral margin of sclerite clearer buffy grey; pseudosutural foveae large, pale; scutum pale brownish grey, each lobe with a slightly more brownish centre that is completely bordered with dark brown to form a conspicuous ring; scutellum and postnotum buffy grey, each with a capillary median brown vitta. Pleura almost covered by a broad black stripe that extends from the cervical sclerites across the pleurotergite, the narrow dorsopleural region buffy grey, the ventral portion of the sternopleurite concolorous. Legs with the coxae pale yellow, the basal half of the fore coxae infuscated; trochanters obscure yellow; femora obscure yellow, darkened outwardly, forming a relatively narrow subterminal brown ring before the narrow yellow apex; tibiae obscure yellow, the tips narrowly infuscated; basitarsi with the proximal three-fifths a trifle infuscated, most evident on the fore tarsi, the posterior basitarsi more uniformly pale yellow; remainder of the basitarsi and tarsal segments 2-4 obscure yellow; terminal tarsal segment dark brown. Wings with a creamy ground colour, handsomely spotted and clouded with brown; cell C infumed on basal portion; the largest brown clouds are near the base of cell R, at origin of Rs, the stigma, and as a broad seam on the anterior cord; smaller clouds, at base of vein M, on the posterior cord and outer end of cell 1st M2; tip of vein R3 and fork of M1+2 clouded; cell 1st A and 2nd A with a conspicuous pale brown wash near midlength; conspicuous darker brown marginal spots at ends of all longitudinal veins and on Sc2, that at 2nd A largest; a series of small dots on certain of the veins, including the outer end of vein M; Cu, one being larger; at base of R5 and along vein M3; a dusky wash in outer end of cell R5; veins pale, dark brown in the infuscated areas. Venation: R2+3+4 a little longer than R2+3 and R1+2; cell M1 longer than its petiole;
cell 1st M2 relatively short and deep, with m-cu at or shortly before midlength. Halteres pale brown, the base of the stem narrowly obscure yellow; the knobs dark brown. Abdomen brownish yellow, the segments narrowly margined laterally and caudally with darker brown; hypopygium dark brown. Male hypopygium as in the subgenus. Outer dististyle chitinized to the base, the stem relatively slender, the apex expanded, the outer apical angle a slender, curved spine, the inner apical angle a conspicuous obtuse lobe. Inner dististyle relatively long, the base very conspicuous, setiferous and elevated into two obtuse lobules; apex a flattened, obtuse blade. Length about 10 mm; wing 10 mm.

Remarks: Not similar in general appearance to any other described species from Australia; hypopygial structure largely unknown.

Possible diagnostic characters (male): wings creamy with very large dark patches adjacent to arculus, at origin of Rs, in pterostigma area and along basal section of R5, and with dark spots along distal section of R5.

New records: None.

Distribution: New South Wales (NEN, SEN).

*Paralimnophila (Paralimnophila) pallidicornis* (ALEXANDER)


*Paralimnophila (Paralimnophila) pallidicornis* (ALEXANDER); OOSTERBROEK & JONAS, Catalogue of the Australian-Oceanian Tipulidae (Insecta, Diptera): 129 (1986).

Primary type: Holotype ♀: Victoria, Cann River, Eastern Gippsland, Nov. 1928, J. Clark (MV, NMNH); seen.

Published records: Victoria: Cann R., E Gippsland (ALEXANDER 1930: 121).

Known only from female.

Original Description: Rostrum dark brown, sparsely pollinose; palpi dark brown. Antennae 17-segmented, the formula being 2+6+9; antennae pale brownish yellow, the terminal segments passing into darker; basal flagellar segments very weakly serrate, the branch, apical in position, very small. Head dark brown, with a conspicuous yellow pollen, the anterior vertex more pruinose; a median brown vitta on the vertex, this more or less trifid at anterior end. Mesonotal praescutum with the ground colour yellowish brown, the three stripes concolorous, but conspicuously margined with dark brown; an additional narrow dusky line on the posterior interspaces; median pale stripe split by a capillary still darker vitta, making a total of nine dark lines shortly before the suture; scutum yellowish brown, the median areas and centres of the lobes crossed by conspicuous dark lines; scutellum and postnotum yel-
lowish grey, with a capillary median brown vitta, the posterior margin of the postnotal mediotergite dusky. Pleura pale buffy yellow dorsally, beneath which a very broad, conspicuous, dark brown longitudinal stripe passing from the cervical region, above the fore coxae, crossing the ventral propleura and anepisternum, narrowed behind, ending at the posterior margin of the postnotal mediotergite, as described; ventral pleurites more pruinose. Legs with the coxae and trochanters pale yellow; femore brownish yellow, clearer basally, before the tips deepening to pale brown, the narrow tips abruptly pale yellow; tibiae pale yellowish brown, the extreme bases narrowly whitish, the tips narrowly darkened; tarsi yellowish white, the proximal half of the basitarsi a little darker, the tips of the individual tarsal segments narrowly darkened. Wings with a creamy yellow ground colour, the disk extensively variegated with a greyish wash, the ground colour most clearly distinguishable in the prearcular region, before and beyond the origin of Rs and in the outer ends of the marginal medial cells; cell C and cephalic margin of Sc brown; stigma broken, variegated brownish yellow and dark brown; extensive brown clouds in cell R, the most conspicuous being a rectangular one at origin of Rs; small and narrow darker brown areas at origin and fork of Rs, fork of R2+3+4, r-m, as narrow seams on m-cu, and outer end of cell 1st M2; more conspicuous spots at tip of R3 and fork of M1+2; outer radial cells rather conspicuously infuscated; veins chiefly dark brown. Venation: Rs very long, arcuated at origin; R2+3+4 shorter than the basal section of R5; R1+2 subequal to R2+3; cell M1 about twice its petiole; cell 1st M3 irregularly long-hexagonal, m less than half the basal section of M3; m-cu more than one-half its length beyond the fork of M. Halteres obscure yellow, the knobs brownish black. Abdominal tergites chiefly brown, somewhat darker sublaterally, the outer segments more pruinose; ovipositor with the basal half of the tergal valves and all of the sternal valves darkened, the remainder yellowish horn-colour. Tergal valves of ovipositor slender, gently upcurved to the acute tips. Length about 19 mm; wing 14 mm.

Remarks: Similarity assessment difficult.

Diagnostic characters: not available.

New records: None.

Distribution: Victoria.

**Paralimnophila (Paralimnophila) punctipennis (WESTWOOD)**

*Gynoplistia punctipennis* WESTWOOD, Annls Soc. Ent. Fr. 4: 682 (1835).

Paralimnophila (Paralimnophila) punctipennis (WESTWOOD); OOSTERBROEK & JONAS, Catalogue of the Australian-Oceanian Tipulidae (Insecta, Diptera): 129 (1986).

Primary type: Holotype ♀: Nova Hollandia (= Australia) (HOPE); not seen.

Published records: Nova Hollandia (= Australia) (WESTWOOD 1835: 682).

Known only from female.

Original Description: Capite and thorace cinereis; hujus dorso fusco, angulis humeralibus utrinque puncto nigricanti; abdomine faem. obscure fusco, elongato, stylo rufescenti; alis limpidis, costa tenui, maculisque nonnullis parvis (ad conjunctio-nem venarum transversarum) alteraque stigmaticali majori fuscis; pedibus longioribus subtestaceis; femoribus tibiisque ad apicem fuscis, tarsorum articulis 2-4 albidis; ant tennis faem. fuscis, basi pallidioribus, 16?articulatis, articulis 3-8 interne acute productis, vix ramosis. Long. corp. 7 lin. Exp. alar. 12 lin.

Remarks: According to ALEXANDER (1928b) Paralimnophila setulicornis (ALEX.) is similar to P. punctipennis but differing in colouration of legs.

Diagnostic characters: not available.

New records: ?None.

Distribution: Unknown.

Paralimnophila (Paralimnophila) serraticornis (ALEXANDER)


Primary type: Holotype ♀: New South Wales, Blue Mountains, 7.1.1922, E.W. Ferguson (AM); seen.

Published records: New South Wales: Blue Mts (ALEXANDER 1923b: 387).

Known only from female.

Original Description: Rostrum and palpi black. Antennae 18-segmented, black throughout, the basal segment pruinose; basal 9 or 10 flagellar segments produced at apex beneath into a conspicuous lobe, the organ thus appearing strongly serrate; terminal flagellar segments simple, the last elongate. Head dark grey, the vertex with a triangular brown mark with its point directed caudad. Mesonotal praescutum light grey, with three conspicuous brown stripes; a capillary median vitta and the interspaces still darker brown; scutal lobes brown, the median area weakly pruinose; scutellum
brownish medially; postnotum light grey with a capillary brown vitta that is clouded with paler brown at its cephalic end. Pleura light grey-pruinose, the dorsal pleurites darker. Legs with the coxae and trochanters dark grey-pruinose; femora brown, on the posterior legs soon passing into black, on the fore and middle legs with the pale bases very extensive; extreme tips of femora abruptly pinkish white; tibiae brownish black; metatarsi black with about the apical fourth or a little less creamy-white; terminal tarsal segments infuscated to blackened; paired spurs at tips of tarsal segments 1 and 2. Wings tinged with brown, more marked in the anal and cubital cells; cells C and Sc dark brown; a rather sparse dark brown pattern, distributed as follows: at origin of Rs and on vein R at mid-distance between arculus and origin of Rs; stigma; smaller brown spots at forks of Rs, R2+3, M1+2; along the cord and at the distal end of vein R2; wing apex faintly darkened; veins brownish black. Venation: Sc1 ending just before the tip of R2+3, Sc2 opposite the end of Rs; Rs nearly straight; r about three times its length before the arcuated distal section of R1; cell M1 from two to two and one-half times the length of its petiole; basal deflection of Cu1 close to proximal end of cell 1st M2. Halteres dark brown, the stem pale. Abdomen dark brown, grey-pruinose. Ovipositor with the slender elongate tergal valves horn-coloured, their bases darker. Length 15-17 mm; wing 14.5-15.5 mm.

Remarks: Similarity assessment difficult.

Diagnostic characters: not available.

New records: New South Wales: Kanangra Walls (GT); Mt Kosciusko (GT).

Distribution: New South Wales (SEN).

*Paralimnophila (Paralimnophila) signifera* (ALEXANDER)


*Paralimnophila (Paralimnophila) signifera* (ALEXANDER); OOSTERBROEK & JONAS, Catalogue of the Australian-Oceanian Tipulidae (Insecta, Diptera): 129 (1986).

Primary type: Holotype ♀: Victoria, mountains above Warburton, March 1930, F.E. Wilson (MV, NMNH); seen.


Known only from female.

Original Description: Rostrum short, grey; palpi black. Antennae broken beyond the ninth segment; basal segment dark brown, the remaining segments light reddish brown; all flagellar segments (1-7) with a conspicuous apical tooth, these becoming smaller on the outer segments and presumably becoming obsolete by flagellar segment 9 or 10. Head light grey, with a capillary brown median line. Mesonotal prae-
scutum light grey, with three narrow but conspicuous brownish black stripes, the median stripe narrowed on the posterior side, the lateral stripes narrow; posterior interspaces and sublateral portions of sclerite with a weak brown suffusion; pseudosutural foveae large, reddish brown; scutal lobes grey, each with two brownish black areas, the posterior one largest; scutellum reddish brown, pruinose; postnotal mediotergite grey, with a median linear black line in front, ending in a point at near two-thirds the length of the sclerite; cephalic lateral portions of sclerite darkened; caudal margin of sclerite with a circular clouded area on either side of the median line. Pleura grey, with a broad conspicuous black longitudinal stripe extending from the cervical region to the pleurotergite. Legs with the femora black, the bases narrowly obscure yellow; genua narrowly but conspicuously pale, dusted with white, the amount of the area subequal on both femora and tibiae; remainder of tibiae black; basitarsi with the proximal half darkened, the distal half and segments 2 and 3 yellowish white; terminal tarsal segments brown. Wings whitish, with a heavy brown pattern, including cells C and Sc; stigma oval, brownish black; conspicuous dark brown areas at origin of Rs at near one-fourth the length of cell R, along the cord, and as conspicuous seams at forks of veins R3, M1+2, and the veins beyond the cord; distal third of vein M, outer end of cell 1st M2, and washes in ends of the anal cells somewhat paler brown; veins dark brown to black. Venation: fork of R2+3+4 about opposite r-m; m-cu more than one-half its length beyond the fork of M. Halteres yellow, knobs blackened. Abdomen dark grey, the segments narrowly pale on lateral margins; basal sternites paler, the outer segments more infuscated. Length about 18 mm; wing 16 mm.

Remarks: Similarity assessment difficult.

Diagnostic characters: not available.

New records: Victoria: Millgrove, 1000 ft (NMNH).

Distribution: Victoria.

*Paralimnophila (Paralimnophila) stolida* (ALEXANDER)


*Paralimnophila (Paralimnophila) stolida* (ALEXANDER); OOSTERBROEK & JONAS, Catalogue of the Australian-Oceanian Tipulidae (Insecta, Diptera): 130 (1986).

Primary type: Holotype ♀: Victoria, mountains near Warburton, 3500-4000 ft, 9.4.1928, C.H. Borch (MV, NMNH); seen.

Published records: Victoria: mts nr Warburton, 3600-4000 ft (ALEXANDER 1930: 117).

Known only from female.
Original Description: Rostrum grey; palpi black. Antennae black throughout, the basal segment pruinose; basal 6 flagellar segments a little produced near apex, the longest serrulation (about flagellar segment 4) not exceeding one-third the segment; terminal segments broken, but from size of the last segments, the antennae presumably with not more than 16 segments. Head grey, the centre of the vertex extensively infuscated. Pronotum darkened, pruinose laterally. Mesonotal praeascutum yellowish grey, with four very conspicuous black stripes, the intermediate pair scarcely separated by a capillary vitta on anterior portion; pseudosutural foveae very large, black; posterior sclerites of mesonotum grey, the scutal lobes each with a large blackish area. Pleura dull grey dorsally, brighter bluish grey on the sternopleurite and the posterior sclerites; no distinct darkened pleural stripe; dorsopleural region more yellowish grey. Legs with the coxae pale brownish yellow, slightly infuscated at base; trochanters obscure yellow; femora obscure yellow basally, the tips broadly blackened; tibiae black; tarsi with the basitarsi blackened, the tips and segments 2 and 3 whitish, the terminal tarsal segments again darkened. Wings with the ground colour creamy, extensively variegated with darker; cells C and Sc uniformly infuscated; stigma oval, darker brown; the remaining dark pattern includes areas at origin of Rs; at near mid-distance between arculus and the first-named area; a circular dark area at outer end of R3; conspicuous seams along the cord and outer end of cell 1st M2; most of the veins beyond the cord, as well as the narrow wing apex; a seam on the distal two-fifths of M; and all but the base of Cu; anal cells extensively darkened; veins dark brown. Venation: R2+3+4 shorter than basal section of R5; R1+2 more than twice R2+3; cell M1 nearly twice its petiole; m-cu at mid-length of the relatively small cell 1st M2. Halteres pale, the knobs infuscated. Abdomen dark greyish brown; caudal margins of the intermediate sternites very narrowly and vaguely paler. Ovipositor with the long, nearly straight valves brownish horn-colour. Length about 15 mm; wing 11 mm.

Remarks: According to ALEXANDER (1931b) similar to P. praesignis (ALEX.) in the colouration of the thorax, to P. styligera (ALEX.) in leg pattern; in my opinion, closer to P. puella ALEX.

Diagnostic characters: possibly the very dark cells C and Sc.

New records: Victoria: Ben Cairn, nr Millgrove, 2900-3200 ft (NMNH); Otway Pen., Crowe's (NMNH).

Distribution: Victoria.

Paralimnophila (Paralimnophila) victoria (ALEXANDER)


Paralimnophila (Paralimnophila) victoria (ALEXANDER); OOSTERBROEK & JONAS, Catalogue of the Australian-Oceanian Tipulidae (Insecta, Diptera): 130 (1986).

Primary type: Holotype ♂: Victoria, C. French (BMNH); not seen.

Published records: Victoria: n. o. d. (ALEXANDER 1922a: 158).

Known only from male.

Original description: Rostrum and palpi dark brown. Antennae dark brown, the scapal segments slightly pruinose; only nine flagellar segments are present in the unique type, these all branched and with the branches in the same plane; the terminal pectinations are shortened and the total number of antennal segments is presumably not more than 16 or 18. Head dark, sparsely pruinose, clearer grey adjoining the inner margin of the eyes. Mesonotum clear grey, the praescutum with three black stripes; pseudosutural foveae conspicuous, triangular, black. Pleura dark, sparsely pruinose. Legs with the coxae black, sparsely pruinose; remainder of the legs dark brown, including the tarsi. Wings subhyaline, very heavily spotted and cross-banded with dark brown; cells C and Sc dark brown; arculus cell dark; a spot in cell R mid-distant between arculus and origin of Rs; a large quadrate area at origin of Rs; a very broad cross-band at the cord, including the stigma, continued caudad along the cord and outer end of cell 1st M2 to the caudal margin of the wing in cell Cu1, the centre of cell 1st M2 subhyaline; the terminal dark band occupies the wing tip, in the extreme outer end of cell 2nd R1; distal two-fifths of cells R2 and R3; about the distal half of cells R5 and 2nd M2; all of M1 and the extreme tip of M3; conspicuous brown clouds in the basal half of Cu, the outer quarter of cell 1st A, and the outer half of cell 2nd A; veins dark brown. Venation: Rs in alignment with R2+3; r near mid-distance between the fork of R2+3 and the tip of R1; cell 1st M2 rectangular; petiole of cell M1 elongate, only a little shorter than the cell itself; basal deflection Cu1 at one-third the length of cell 1st M2. Halteres dark brown. Abdominal tergites shiny brownish black, including the hypopygium; sternites slightly pruinose. Length about 13.5 mm; wing 12.2 mm.

Remarks: Very similar to P. albofasciata (ALEX.) and P. barringtonia (ALEX.).

Diagnostic characters: legs with knees and tarsi dark; wings heavily cross-banded.

New records: Victoria: n. o. d. (NMNH).

Distribution: Victoria.
References

ALEXANDER C.P. (1920): Undescribed species in the Osten Sacken collection of New Zealand crane-flies (Tipulidae, Diptera) — Insecutor Inscit. menstr. 8: 121-133.


Address of the author: Günther THEISCHINGER
20 Leawarra Street, Engadine, N.S.W. 2233, Australia.
Index

This alphabetical list includes all names of genus and species groups. For all names, reference to the next higher taxon (subgenus, genus, tribe) is given by the following abbreviations:

A ......Austrolimnophila, 22
AA ...Austrolimnophila (Austrolimnophila), 23
E ......Epiphragma, 31
EE .... Epiphragma (Epiphragma), 32
L ......Leolimnophila, 38
Lini ..Limnophilini, 42
P......Paralimnophila, 42
PP ....Paralimnophila (Paralimnophila), 44
T ......Tipulimnoea, 41

Reference is also given to the figure numbers in this paper and to the page numbers of the text (bold).

albofasciata (ALEX.), PP, 42, 52
alice sp. n., PP, 82, 76
antiqua (SKUSE), AA, 2b, 18, 27
artursiana sp. n., PP, 77, 72
aurantiipennis (ALEX.), PP, 52, 56
Austrolimnophila ALEX., A, 1-3, 13-21, 23
Austrolimnophila ALEX., Lini, 1-3, 13-21, 23
barockee sp. n., PP, 56, 60
barringtonia (ALEX.), PP, 81
bicincta (ALEX.), PP, 45, 46, 54
bingelima sp. n., PP, 53, 57
boobootella sp. n., PP, 78, 73
breviramus (ALEX.) [= decincta (ALEX.)], 55
cairnensis (ALEX.) [= leucophaeata (SKUSE)], 79
christine sp. n., PP, 64, 65
collessi sp. n., EE, 25, 37
collessiana sp. n., AA, 3, 16, 26
cooloola sp. n., PP, 41, 51
danbulla sp. n., AA, 30
danbulla sp. n., PP, 80, 75
decincta (ALEX.), PP, 47, 48, 54
dobrotworskyi sp. n., PP, 29, 30, 45
dobrotworskyi (ALEX.) [= leucophaeata (SKUSE)], 79
Epiphragma OST. SACK., E, 4, 5, 22-25, 31
Epiphragma OST. SACK., Lini, 4, 5, 22-25, 31
erasmi ALEX. [= hardyi ALEX.], 35
eucrypta (ALEX.), PP, 36, 49
eungella sp. n., PP, 79, 74
flammeola ALEX., PP, 57, 60
flavipes (ALEX.), PP, 63, 64
fraudulenta ALEX., PP, 40, 51
fuscodorsata (ALEX.), PP, 55, 59
gingera sp. n., PP, 74, 70
gracilirama (ALEX.), PP, 81, 76
grampiana sp. n., PP, 35, 48
guttulicosta (ALEX.), PP, 59, 62
hardyi ALEX., EE, 24, 35
harrisoni (ALEX.), PP, 67, 68, 66
howensis ALEX., EE, 32
hybrida sp. n., PP, 44, 53
illingworthi (ALEX.), EE, 36
incompta (ALEX.), PP, 31, 46
indecora (ALEX.), PP, 32, 46
interventa (SKUSE), AA, 2a, 14, 24
irwinsmithae ALEX., AA, 13, 23
kosciuskana (ALEX.), PP, 58, 61
Leolimnophila g. n., Lini, 6, 7, 26, 27, 38
leucophaeata (SKUSE), PP, 11, 12, 86, 87, 79
lewisiana sp. n., AA, 17, 26
macquarie sp. n., PP, 84, 77
maxwelliana sp. n., PP, 62, 64
meridionalis ALEX., EE, 22, 33
minuscula (ALEX.), PP, 33, 34, 47
miseranda (ALEX.) [= setulicornis (ALEX.)], 49
mossmanensis sp. n., PP, 88, 80
munifica ALEX., AA, 21, 30
murdunna sp. n., PP, 73, 69
mystica (ALEX.), PP, 83
neboissi sp. n., PP, 54, 58
norrisiana sp. n., AA, 15, 25
pallidicornis (ALEX.), PP, 84
pantherina (ALEX.), L, 7, 26, 39
Paralimnophila ALEX., Lini, 10-12, 29-88, 42
Paralimnophila ALEX., P, 10-12, 29-88, 42
pectinella (ALEX.), PP, 39, 50
pewingi sp. n., PP, 69, 67
praesignis (ALEX.), PP, 51, 56
pristina (ALEX.), AA, 20, 29
puella ALEX., PP, 38, 50
punctipennis (WEST.), PP, 85
relicta ALEX., AA, 19, 28
remulsa (ALEX.), PP, 65, 66, 66
rieki sp. n., PP, 61, 63
serraticornis (ALEX.), PP, 86
setulicornis (ALEX.), PP, 37, 49
shewani (ALEX.), PP, 83, 77
signifera (ALEX.), PP, 87
stolida (ALEX.), PP, 88
stradbrokensis ALEX., PP, 43, 53
styligera (ALEX.), PP, 76, 72
tarra sp. n., PP, 70, 68
terania sp. n., PP, 60, 62
terraereginae ALEX., EE, 5, 23, 34
tigris sp. n., L, 27, 40
Tipulimnoea g. n., Lini, 8, 9, 28, 41
unicincta (ALEX.), PP, 71, 72, 69
victoria (ALEX.), PP, 89
wataganensis sp. n., 85, 78
wilsoniana ALEX. [= hardyi ALEX.], 35
wilsoniana (ALEX.), PP, 49, 50, 55
winta sp. n., PP, 75, 71
woodhilli (ALEX.), T, 8, 9, 28, 42
Figs 13-16: Male hypopygium, dorsal aspect, of *Austrolimnophila*: 13: *irwinsmithae* ALEX.; - 14: *interventa* (SKUSE); - 15: *norrisiana* sp. n.; - 16: *collessiana* sp. n.
Figs 17-20: Male hypopygium, dorsal aspect, of *Australimnophila*: 17: *lewisiana* sp. n.; 18: *antiqua* (SKUSE); 19: *relictia* ALEX.; 20: *pristina* (ALEX.).
Figs 29-32: Male hypopygium, dorsal aspect, or, aedeagal complex, apex of outer gonostylus, and posterior margin of tergum 9 of male, of *Paralimnophila* (*Paralimnophila*): 29, 30: *dobrotworskyi* sp. n.; - 31: *incompta* (ALEX.); - 32: *indecora* (ALEX.).
Figs 33-36: Male hypopygium, dorsal aspect, or, aedeagal complex, apex of outer gonostylus, and posterior margin of tergum 9 of male, of *Paralimnophila* (*Paralimnophila*): 33, 34: *minuscula* (ALEX.); - 35: *grampiana* sp. n.; - 36: *eucrypta* (ALEX.).
Figs 37-40: Aedeagal complex, apex of outer gonostylus, and posterior margin of tergum 9 of male, of *Paralimnophila* (*Paralimnophila*): 37: *setulicornis* (ALEX.); - 38: *puella* ALEX.; - 39: *pectinella* (ALEX.); - 40: *fraudulenta* ALEX.
Figs 41-44: Aedeagal complex, apex of outer gonostylus, and posterior margin of tergum 9 of male, of *Paralimnophila* (*Paralimnophila*): 41: *cooloola* sp. n.; 42: *albofasciata* (ALEX.); 43: *stradbrokensis* ALEX.; 44: *hybrida* sp. n.
Figs 45-48: Male hypopygium, dorsal aspect, or, aedeagal complex, apex of outer gonostylus, and posterior margin of tergum 9 of male, of Paralimnophila (Paralimnophila): 45, 46: bicincta (ALEX.); - 47, 48: decincta (ALEX.).
Figs 49-52: Male hypopygium, dorsal aspect, or, aedeagal complex, apex of outer gonostylus, and posterior margin of tergum 9 of male, of *Paralinmphila* (*Paralinmphila*): 49, 50: *wilsoniana* (ALEX.); - 51: *praesignis* (ALEX.); - 52: *aurantiipennis* (ALEX.).
Figs 53-56: Aedeagal complex, apex of outer gonostylus, and posterior margin of tergum 9 of male, of *Paralimnophila* (*Paralimnophila*): 53: *bingelima* sp. n.; - 54: *neboissi* sp. n.; - 55: *fuscodorsata* (ALEX.); - 56: *barockee* sp. n.
Figs 57-60: Aedeagal complex, apex of outer gonostylus, and posterior margin of tergum 9 of male, of *Paralimnophila* (*Paralimnophila*): 57: *flammeola* ALEX.; - 58: *kosciuskana* (ALEX.); - 59: *guttulicosta* (ALEX.); - 60: *terania* sp. n.
Figs 61-64: Aedeagal complex, apex of outer gonostylus, and posterior margin of tergum 9 of male, of Paralimnophila (Paralimnophila): 61: rieki sp. n.; - 62: maxwelliana sp. n.; - 63: flavipes (ALEX.); - 64: christine sp. n.
Figs 69-72: Male hypopygium, dorsal aspect, or, aedeagal complex, apex of outer gonostylus, and posterior margin of tergum 9 of male, of *Paralimnophila* (*Paralimnophila*): 69: *pewingi* sp. n.; - 70: *tarra* sp. n.; - 71, 72: *unicincta* (ALEX.).
Figs 73-76: Aedeagal complex, apex of outer gonostylus, and posterior margin of tergum 9 of male, of Paralimnophila (Paralimnophila): 73: *murdunna* sp. n.; 74: *gingera* sp. n.; 75: *winta* sp. n.; 76: *styligera* (ALEX.).
Figs 77-80: Aedeagal complex, apex of outer gonostylus, and posterior margin of tergum 9 of male, of *Paralimnophila* (*Paralimnophila*): 77: *artursiana* sp. n.; - 78: *boobootella* sp. n.; - 79: *eungella* sp. n.; - 80: *danbulla* sp. n.
Figs 81-84: Aedeagal complex, apex of outer gonostylus, and posterior margin of tergum 9 of male, of *Paralimnophila* (*Paralimnophila*): 81: *gracilirama* (ALEX.); - 82: *alice* sp. n.; - 83: *shewani* (ALEX.); - 84: *macquarie* sp. n.
Figs 85-88: Male hypopygium, dorsal aspect, or, aedeagal complex, apex of outer gonostylus, and posterior margin of tergum 9 of male, of *Paralimnophilia* (*Paralimnophilia*): 85: *wataganensis* sp. n.; - 86, 87: *leucophaeata* (SKUSE); - 88: *mossmanensis* sp. n.