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**The Limoniinae (Diptera: Tipulidae) of Australia
X. New species of *Toxorhina* LOEW, *Limonia* MEIGEN,
Austrolimnophila ALEXANDER, *Gynoplistia* MACQUART
and *Molophilus* CURTIS**

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Abstract: Eleven species of the genera *Toxorhina* LOEW, *Limonia* MEIGEN, *Austrolimnophila* ALEXANDER, *Gynoplistia* MACQUART and *Molophilus* CURTIS are described as new.

Key words: Limoniinae, new species, Australia.

Introduction and methods

The Australian species of *Toxorhina* LOEW, *Limonia* MEIGEN, *Austrolimnophila* ALEXANDER, *Gynoplistia* MACQUART and *Molophilus* CURTIS were revised by THEISCHINGER (1992b, 1993, 1994b, 1996b). These revisions were updated by THEISCHINGER (1994a, 1996a, 1999). Another attempt is made here to update the above work.

Largely the methods used in the revisions and outlined by THEISCHINGER (1992a) are also followed in this paper.

Descriptions

***Toxorhina (Ceratocheilus) yamma* spec. nov. (Fig. 1)**

Description (♂): Head largely greyish- to brownish black; antennae greyish brown; rostrum and palps brownish black. Thoracic terga largely dark brownish grey, scutum with lateral margins brownish yellow, scutellum paler, and mediotergite darker greyish yellow; pleura largely dark greyish brown, with dull yellow longitudinal stripe above coxae. Coxae pale greyish yellow, trochanters yellowish grey; remainder of hind leg greyish yellow to brownish grey; other legs missing. Wings with the 2 branches of M kind of crossing near wing margin (this could be irregular); membrane very slightly suffused with brownish grey; halteres with stem pale grey and knob yellowish white. Abdomen largely brownish- to greyish yellow, generally sides and posterior edges of terga and sterna greyish brown, segment 9 almost completely brownish grey. Wing length 4.6 mm.

Genitalia: Hypopygium, Fig. 1.

F e m a l e unknown.

R e m a r k s : Not very close to any other described species.

D i a g n o s t i c c h a r a c t e r s : Tergum 9 of male with broad, square median projection; pair of larger gonostyli with bend simply and evenly rounded, pair of smaller gonostyli bifid.

M a t e r i a l e x a m i n e d : Holotype ♂: Queensland, Kroombit Tops State Forest, 800 m, 31.10-2.11.1999, D. Bickel (ANIC).

D i s t r i b u t i o n : Queensland.

N a m e : Yamma (= Australian Aboriginal word for „simple“) refers to the pair of simple gonostyli.

Limonia (Limonia) atwatye spec. nov. (Fig. 2)

D e s c r i p t i o n : Head largely black; rostrum, palps and antennae greyish brown. Thoracic terga largely greyish brown, pleura greyish yellow to pale greyish brown. Legs greyish yellow to pale greyish brown. Wings with cell dm closed; membrane very slightly suffused with pale greyish brown; halteres dull whitish- to pale grey. Abdominal terga greyish brown with sides and posterior edge somewhat darker, sterna whitish- to yellowish grey with posterior edge pale brown. Wing length, male 4.8-5.1 mm, female 5.2-5.3 mm.

M a l e g e n i t a l i a : Hypopygium, Fig. 2.

R e m a r k s : Most similar to *L. (L.) cairnensis* ALEXANDER.

D i a g n o s t i c c h a r a c t e r s : Cell dm closed; tergum 9 of male with deep median notch; gonostyli with small basal flap and with slender, curved apex; parameres with apex expanded.

M a t e r i a l e x a m i n e d : Holotype ♂: Queensland, 17.37°S/145.34°E, Massey Creek, 1000 m, 2-30.11.1995, malaise trap; L. Umback (ANIC); Paratypes: Queensland: 2♂♂, 1♀, same data as holotype (ANIC); 4♂♂, 1♀, 17.28°S/145.29°E, Longlands Gap, 1150 m, 1-30.11.1995, malaise trap; L. Umback (ANIC); 1♂, 17.33°S/145.32°E, Mt Fisher, 1150 m, 30.11.1995-3.1.1996, malaise trap, L. Umback (ANIC); 2♂♂, 17.27°S/145.29°E, Hugh Nelson Range, 1150 m, 1-30.11.1995, malaise trap, L. Umback (ANIC).

D i s t r i b u t i o n : Queensland.

N a m e : Atwatye (= Australian Aboriginal word for „gap“) refers to the deep median notch of male tergum 9.

Austrolimnophila (Austrolimnophila) aka spec. nov. (Fig. 3)

D e s c r i p t i o n (♂) : Head largely dark grey; rostrum and palps dark brown; antennae largely yellow, flagellomeres 2-13 with base greyish brown, terminal segment completely greyish brown. Dorsal half of thorax dark brown, ventral half pale brownish yellow. Coxae pale brownish yellow, trochanters brown; femur of fore leg dark greyish brown with base yellow, tibia, tarsus and claws pale to dull yellow; femur, tibia, tarsus and claws of hindleg dull yellow; middle legs missing. Wing membrane suffused with pale brownish grey and speckled with patches of dark greyish brown all over, the patches slightly darker in costal cell, slightly larger at origin of Rs, anterior portion of cord and along wing margin at the end of all longitudinal veins; halteres pale greyish brown. Abdomen dorsally largely greyish yellow, ventrally greyish brown. Wing length 7.7 mm.

G e n i t a l i a : Hypopygium, Fig. 3.

F e m a l e unknown.

R e m a r k s : Most similar to *A. (A.) antiqua* (SKUSE).

D i a g n o s t i c c h a r a c t e r s : Male tergum 9 with very shallow median notch between very short angular lobes.

M a t e r i a l e x a m i n e d : Holotype ♂: Queensland, 17°7'S/145°37'E, Robson Creek, Atherton, January 1996, malaise trap, H. Mitchell (ANIC).

D i s t r i b u t i o n : Queensland.

N a m e : Aka (= Australian Aboriginal word for „old woman“).

***Gynoplistia (Gynoplistia) williamsi* spec. nov. (Fig. 4)**

D e s c r i p t i o n : Head largely black on top, yellow behind and underneath; rostrum yellow; palps with basal segment pale greyish yellow, second segment darker, third darker again, and terminal segment almost black. Antennae with scape, pedicel and base of the two basal flagellomeres yellow, rest greyish- to brownish black; generally 19-20-segmented in male, formula 2+2+12-13+2-4, 17-segmented in female, formula 2+2+6-9+4-7. Thoracic terga largely shiny brownish black; only scutellum brown and posterior half of mediotergite yellow; pleura largely dark yellow, sternopleuron with extensive black patch. Coxae, trochanters and femora dark yellow; male tibiae largely black with about second third of pro- and metatibiae brightened up to brownish yellow, female tibiae largely yellow with only apex of meso- and metatibia darkened; tarsi and claws almost black. Wings subhyaline; costal and subcostal cells basally yellow; black patches at origin of Rs, across cord (with most of cell dm clear) and an ill-defined small dark streak in cell A1 near end of vein A2. Halteres with stem yellow and knob greyish yellow. Abdomen dark yellow. Wing length, male 5.8-7.8 mm, female 6.5-7.9 mm.

M a l e g e n i t a l i a : Hypopygium, Fig. 4.

R e m a r k s : Possibly a species of the *G. (G.) viridis* group of THEISCHINGER (1993) but not particularly close to any other described species.

D i a g n o s t i c c h a r a c t e r s : Abdomen completely dark yellow in both sexes; tergum 9 of male with subtriangular lateral lobes.

M a t e r i a l e x a m i n e d : Holotype ♂: New South Wales: Dooragan N. P., North Brother Mtn, 450 m, subtrop. rainforest, 24.11-24.12.1999, malaise trap, G. Williams (ANIC). Paratypes: 6♂♂, 2♀♀, same data as holotype (ANIC); 1♂, 1♀, same locality and conditions as holotype, 1-30.3.1999 (ANIC).

D i s t r i b u t i o n : New South Wales.

N a m e : Dedication to Dr G. Williams.

***Molophilus (Austromolophilus) gurara* spec. nov. (Fig. 5)**

D e s c r i p t i o n (♂): Head largely brownish grey, pale yellow anteriorly and along eye margins; palps and antennae greyish brown except for scape which is pale greyish yellow. Thoracic terga yellowish brown anterior to, greyish brown posterior to, transverse suture; pleura dark greyish brown, with pale greyish yellow patch on sternopleuron and near wing base. Coxae and trochanters pale greyish yellow; other leg segments missing. Wings slightly suffused with whitish grey; ill-defined but markedly darker patches along cord and CuA; halteres greyish white. Abdomen largely dark greyish brown, hypopygium somewhat paler. Wing length 3.4 mm.

Genitalia : Hypopygium, Fig. 5.

Female unknown.

Remarks : Most similar to *M. (A.) exquisitus* ALEXANDER.

Diagnostic characters : Male with outer branch of inner gonostylus strongly bowed, the distal portion setose to densely spinulate, and with hair-like arched „tail“, and inner branch less than half as long as outer.

Material examined : Holotype ♂: New South Wales, Dooragan National Park, North Brother Mountain, 450 m, subtropical rainforest, 1-30.3.1999 (malaise trap), G. Williams (ANIC).

Distribution : New South Wales.

Name : Gurara (= Australian Aboriginal word for „tail“) refers to the tail-like apex of the outer branch of the inner gonostylus.

***Molophilus (Austromolophilus) smithersi* spec. nov. (Fig. 6)**

Description (♂): Head largely greyish brown, greyish yellow along eye margins; palps pale greyish brown; antennae greyish yellow with pedicel greyish brown. Thorax yellowish- and greyish brown. Coxae and trochanters greyish yellow; femora of fore and hind legs greyish yellow with greyish brown ring at about 2/3 length and brown apex, tibiae yellowish grey with base and apex brown, tarsi and claws pale greyish brown; middle legs missing. Wings slightly suffused with pale yellowish brown; halteres pale greyish yellow. Abdomen reddish brown. Wing length 3.7-4.0 mm.

Genitalia : Hypopygium, Fig. 6.

Female unknown.

Remarks : Most similar to *M. (A.) subasper* ALEXANDER.

Diagnostic characters (male): Outer branch of inner gonostylus forming kind of right angle, and with extremely thin apex.

Material examined : Holotype ♂: New South Wales, Tuglo Wildlife Refuge, 48 km N Singleton, rainforest edge, 20.2.1989, malaise trap, C. Smithers (ANIC). Paratypes: 1♂, same data as holotype (ANIC); 1♂, same locality and conditions as holotype, 18.9.1988 (ANIC).

Distribution : New South Wales.

Name : Dedication to Dr C. Smithers.

***Molophilus (Austromolophilus) mina* spec. nov. (Fig. 7)**

Description : Head largely dark greyish brown, greyish yellow along eye margins; palps and antennae greyish brown, only scape greyish yellow. Thorax dark greyish brown with dull yellow patch on sternopleuron. Coxae and trochanters greyish yellow to yellowish brown; femur of fore leg greyish yellow with greyish brown ring at about 2/3 length and dark brown apex, tibia yellowish grey with base and apex dark brown, tarsus and claws pale greyish brown; other legs missing. Wings slightly suffused with very pale greyish brown, somewhat darker along cord and CuA; halteres pale greyish yellow. Abdomen with terga and sterna reddish- to greyish brown and hypopygium slightly paler. Wing length, male 3.7-4.1 mm, female 4.1 mm.

Male genitalia : Hypopygium, Fig. 7.

Remarks: This species which is similar to *M. (A.) tersus* ALEXANDER and *M. (A.) tugloensis* sp. n. was illustrated as *M. (A.) ?tersus* ALEXANDER by THEISCHINGER (1992b).

Diagnostic characters (male): Outer branch of inner gonostylus with basal third rather straight and wide, with prominent spine before distal third and with apex drawn out into one or several long spines.

Material examined: Holotype ♂: New South Wales, Tuglo Wildlife Refuge, 48 km N Singleton, rainforest edge, 7.10.1988, malaise trap, C. Smithers (ANIC). Paratypes: 1 ♂, same data as holotype (ANIC); 1 ♂, same locality and conditions as holotype, 2.10.1988 (ANIC); 1 ♂, 1 ♀, same locality and conditions as holotype, 31.12.1988 (ANIC); 1 ♂, same locality and conditions as holotype, 11.6.1989 (ANIC).

Distribution: New South Wales.

Name: Mina (= Australian Aboriginal word for „spinifex“) refers to the spiny outer branch of the inner gonostylus.

***Molophilus (Austromolophilus) tugloensis* spec. nov. (Fig. 8)**

Description: Head largely pale greyish brown, greyish yellow along eye margins; palps pale greyish brown; antennae greyish yellow with pedicel greyish brown. Thorax greyish brown with small dull yellow patch on sternopleuron. Coxae and trochanters greyish yellow; femora of middle and hind legs greyish yellow with broad pale greyish brown ring at about 2/3 length and dark brown apex, tibiae yellowish grey with base and apex brown, tarsi and claws pale greyish brown; fore legs missing. Wings slightly suffused with pale yellowish brown, markedly darker along cord and CuA; halteres whitish grey to pale greyish yellow. Abdominal terga largely yellowish- to reddish brown, sterna dark greyish brown; hypopygium yellowish- to pale reddish brown. Wing length, male 3.9-4.3 mm, female 4.1 mm.

Male genitalia: Hypopygium, Fig. 8.

Remarks: Similar to *M. (A.) tersus* ALEXANDER and *M. (A.) mina* sp. n.

Diagnostic characters (male): Outer branch of inner gonostylus with basal third straight and thin, second third bearing large teeth and apical third very thin.

Material examined: Holotype ♂: New South Wales, Tuglo Wildlife Refuge, 48 km N Singleton, rainforest edge, 17.10.1988, malaise trap, C. Smithers (ANIC). Paratypes: 2 ♂♂, 1 ♀, same data as holotype (ANIC); 1 ♂, same locality and conditions as holotype, 20.2.1989 (ANIC); 1 ♂, same locality and conditions as holotype, 7.5.1989 (ANIC).

Distribution: New South Wales.

Name: Tugloensis = Latinized for "from Tuglo".

***Molophilus (Molophilus) werrikimbe* spec. nov. (Fig. 9)**

Description (♂): Head including palps and antennae greyish yellow to greyish brown. Thoracic terga and pleura dark reddish- to greyish brown, only scutellum dull greyish yellow. Coxae and trochanters greyish- to brownish yellow; other leg segments missing. Wings slightly suffused with whitish- to pale greyish yellow; halteres whitish yellow. Abdomen largely pale greyish- to very pale brownish yellow, lateral edges markedly darker, hypopygium yellowish brown. Wing length 3.2 mm.

Genitalia: Hypopygium, Fig. 9.

Female unknown.

Remarks: A member of the *M. (M.) plagiatus* group sensu THEISCHINGER (1988); possibly closest to *M. (M.) keda* THEISCHINGER.

Diagnostic characters: Inner gonostylus long, thin, bowed laterally near base.

Material examined: Holotype ♂: New South Wales, 31°15'S/152°14'E, Werrikimbe, December 1996, canopy fog, R. Kitching (ANIC).

Distribution: New South Wales.

Name: After the type locality, treated as a noun in apposition to the generic name.

***Molophilus (Molophilus) nini* spec. nov. (Fig. 10)**

Description (♂): Head largely brownish to blackish grey; rostrum, palps and antennae which are about as long as the wings brownish grey. Thoracic terga dark reddish- to greyish brown, pleura markedly paler. Coxae and trochanters greyish- to brownish yellow; femur of middle leg greyish yellow with apex greyish brown, tibia similar but somewhat darker, and tarsus and claws dark greyish brown; other legs missing. Wings slightly suffused with pale greyish brown; halteres whitish- to pale yellowish grey. Abdomen largely pale greyish brown, hypopygium markedly darker. Wing length 3.6 mm.

Genitalia: Hypopygium, Fig. 10.

Female unknown.

Remarks: A member of the *M. (M.) plagiatus* group sensu THEISCHINGER (1988); similar to *M. (M.) kaandha* THEISCHINGER.

Diagnostic characters: Inner gonostylus with apex reminding of a buffalo head.

Material examined: Holotype ♂: New South Wales, Petroi Trail and Forest Camp, Lower Creek State Forest, 800-900 m, 19-20.12.1998, yellow pans, D. Bickel (ANIC).

Distribution: New South Wales.

Name: Nini (= Australian Aboriginal word for „buffalo“) refers to the shape of the inner gonostylus.

***Molophilus (Molophilus) wilto* spec. nov. (Fig. 11)**

Description (♂): Head largely brownish- to blackish grey; rostrum, palps and antennae which are about as long as the wings brownish grey. Thoracic terga dark yellowish- to greyish brown, pleura markedly paler. Coxae and trochanters greyish yellow; femur of middle leg greyish yellow with apex greyish brown, tibia greyish brown, tarsus and claws dark greyish brown; other legs missing. Wings slightly suffused with very pale greyish brown; halteres pale yellowish grey. Abdomen largely pale brownish grey, hypopygium dark greyish brown. Wing length 3.7 mm.

Genitalia: Hypopygium, Fig. 11.

Female unknown.

Remarks: A member of the *M. (M.) plagiatus* group sensu THEISCHINGER (1988); similar to *M. (M.) eboracensis* ALEXANDER.

Diagnostic characters: Inner gonostylus with apex reminding of an eagle's talon.

Material examined: Holotype ♂: New South Wales, 30°36'S/152°32'E, Ligues Scrub FR, Oakes State Forest, 780 m, 20-21.12.1998, yellow pans, D. Bickel (ANIC).

Distribution: New South Wales.

Name: Wilto (= Australian Aboriginal word for „eagle“) refers to the shape of the inner gonostylus.

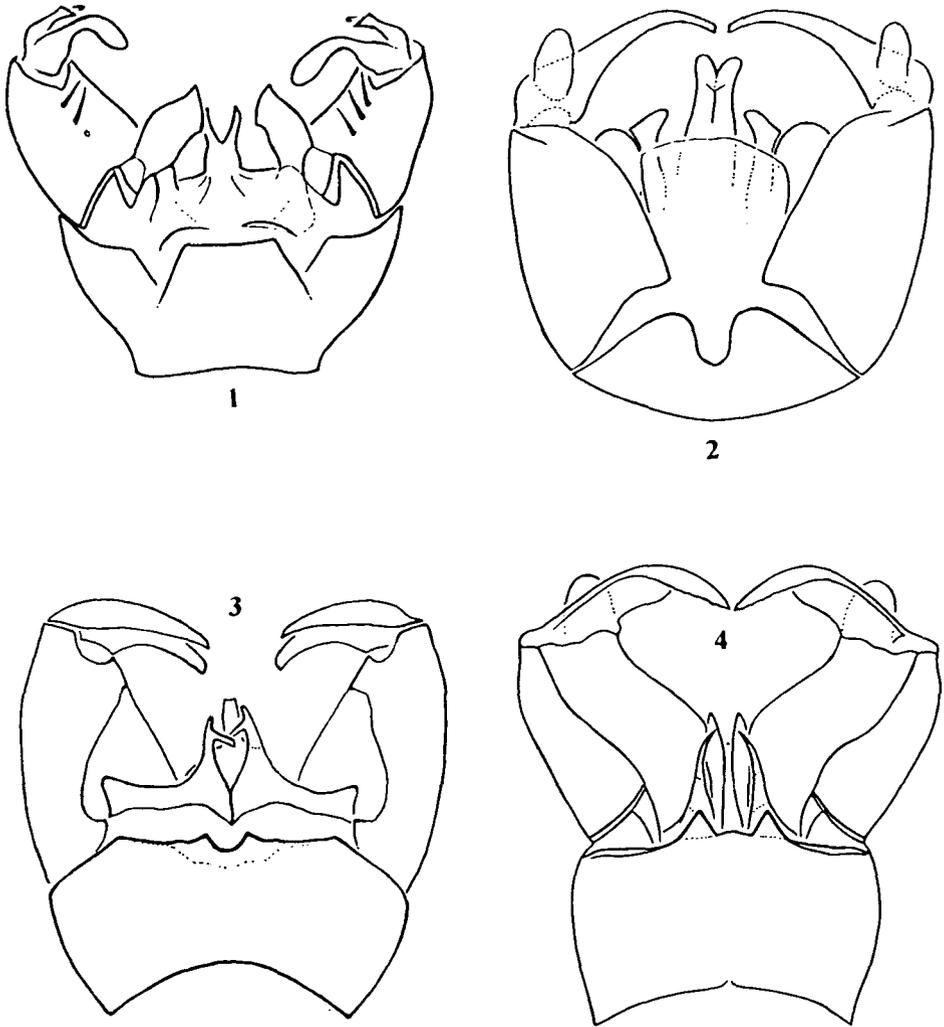
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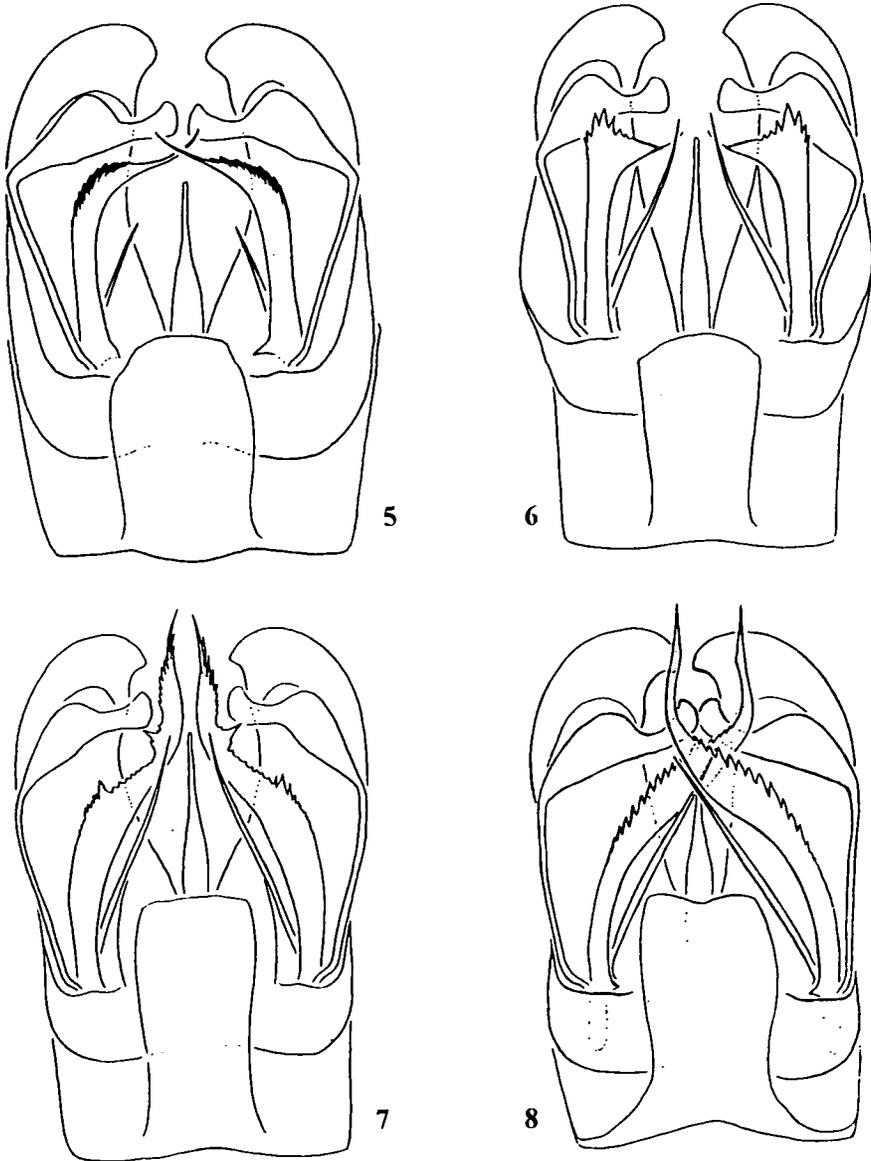
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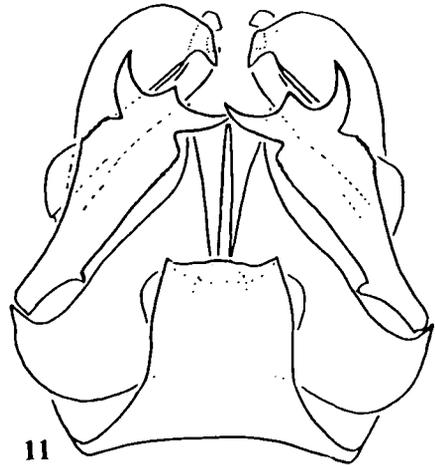
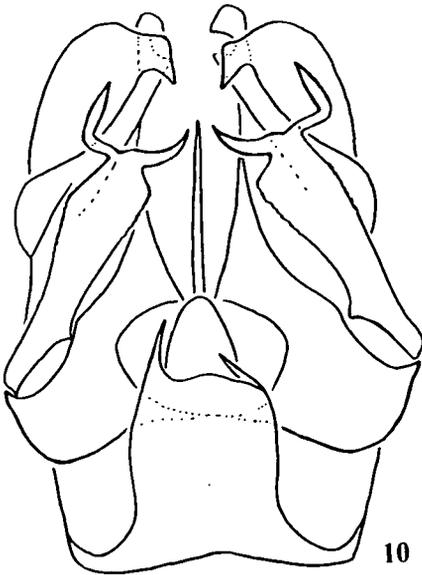
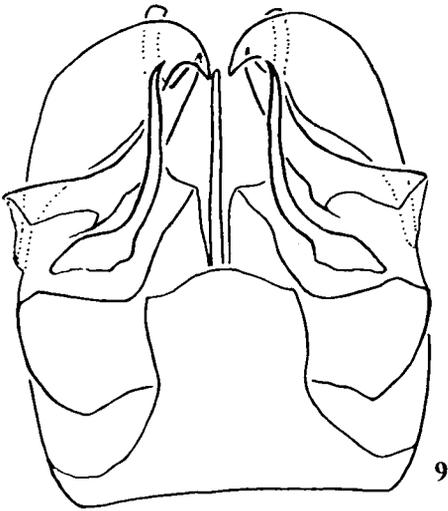
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Figs 1-4: Male hypopygium, dorsal aspect, of: 1 – *Toxorhina (Ceratocheilus) yamma* sp. n.; 2 – *Limonia (Limonia) atwatye* sp. n.; 3 – *Austrolimnophila. (Austrolimnophila) aka* sp. n.; 4 – *Gynoplistia (Gynoplistia) williamsi* sp. n.



Figs 5-8: Male hypopygium, dorsal aspect, of: 5 – *Austromolophilus (Austromolophilus) gurara* sp. n.; 6 – *A. (A.) smithersi* sp. n.; 7 – *A. (A.) mina* sp. n.; 8 – *A. (A.) tugloensis* sp. n.



Figs 9–11: Male hypopygium, dorsal aspect, of: **9** – *Molophilus (Molophilus) werrikimbe* sp. n.; **10** – *M. (M.) nini* sp. n.; **11** – *M. (M.) wilto* sp. n.

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