

New genera and new species of the subfamily Aleocharinae from Australia (Coleoptera, Staphylinidae)

ROBERTO PACE

Via Vittorio Veneto, 13 – 37032 Monteforte d'Alpone (Verona), Italy (pace.ent@tiscali.it)

Abstract

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Two new genera and four new species of the tribe Athetini are described and illustrated: *Leptostiba paolettii* sp. nov., *Aloconota maculiventris* sp. nov., *Ischyrodyodops thomsonae* gen. nov. and sp. nov., and *Notioantilogiusa rara* gen. nov. and sp. nov. The genus *Aloconota* Thomson is new for the Australian region. *Oligota pusillima* (Gravenhorst) (a possible biological control for pest mites) is reported for the first time from vineyards and shelterbelts in Victoria and Southern Australia.

Keywords

Coleoptera, Staphylinidae, Aleocharinae, taxonomy, Australia.

Introduction

The Australian fauna of the subfamily Aleocharinae is still little known. Recent scientific expeditions have led to the description of many new taxa (Pace, 1982, 1985, 2003, 2005). The wealth of species of the subfamily Aleocharinae is not only a result of the great ecological differences across Australia, but also because species of Aleocharinae tend to occupy different ecological niches with consequent evolutionary differentiation of the structures of the mouth.

Material and methods

I have examined 11 determined specimens of *Oligota asperiventris* Fauvel, 1878, in the South Australian Museum of Adelaide and specimens collected from pitfall traps at Sadliers vineyard, Glen View Road, Yarra Glen, Victoria (37°39'33"S, 145°22'21"E) by Linda J. Thomson, Zoology Department, University of Melbourne, Victoria, Australia. This method of capture of Staphylinidae in Australia explains the high percentage of new species and new genera here described.

The generic diagnoses for the Aleocharinae from Australia is essentially based on the mouthparts, particularly the ligula, and partially on the tarsal formula and the spermatheca.

The specific diagnoses are essentially based on the form of the aedeagus in lateral and ventral view and on that of the internal copulatory pieces. The spermatheca also provides reliable and stable diagnostic characters.

Given the small body size of Aleocharinae species from Australia, it is essential to mount the aedeagus, spermatheca, mouthparts and tarsi in Canada balsam for microscopic examination. Body parts prepared in Canada balsam are included on fillets of plastic laminate pierced with the same pin as the

sample to which they belong. Species determinations have been made through the comparison of the aedeagus, spermatheca and other anatomical parts, against specimens and types I have examined from the Oriental and Australian faunas.

The descriptions are limited to the main characters such as the microsculpture and the granularity that are not visible photographically. The author's conviction is that a photo or sketch, even if defective, is worth a lot more than a minute and long description for future recognition of the species.

In the present paper the median lobe of the aedeagus (deprived of the two lateral parameres that obscure the median lobe), is called, for reasons of brevity and clarity, the "aedeagus".

The holotypes of the new species are preserved in the Museum of Victoria (MV), Melbourne, Victoria, Australia.

Systematics

Hypocyphitini

Oligota pusillima (Gravenhorst, 1806)

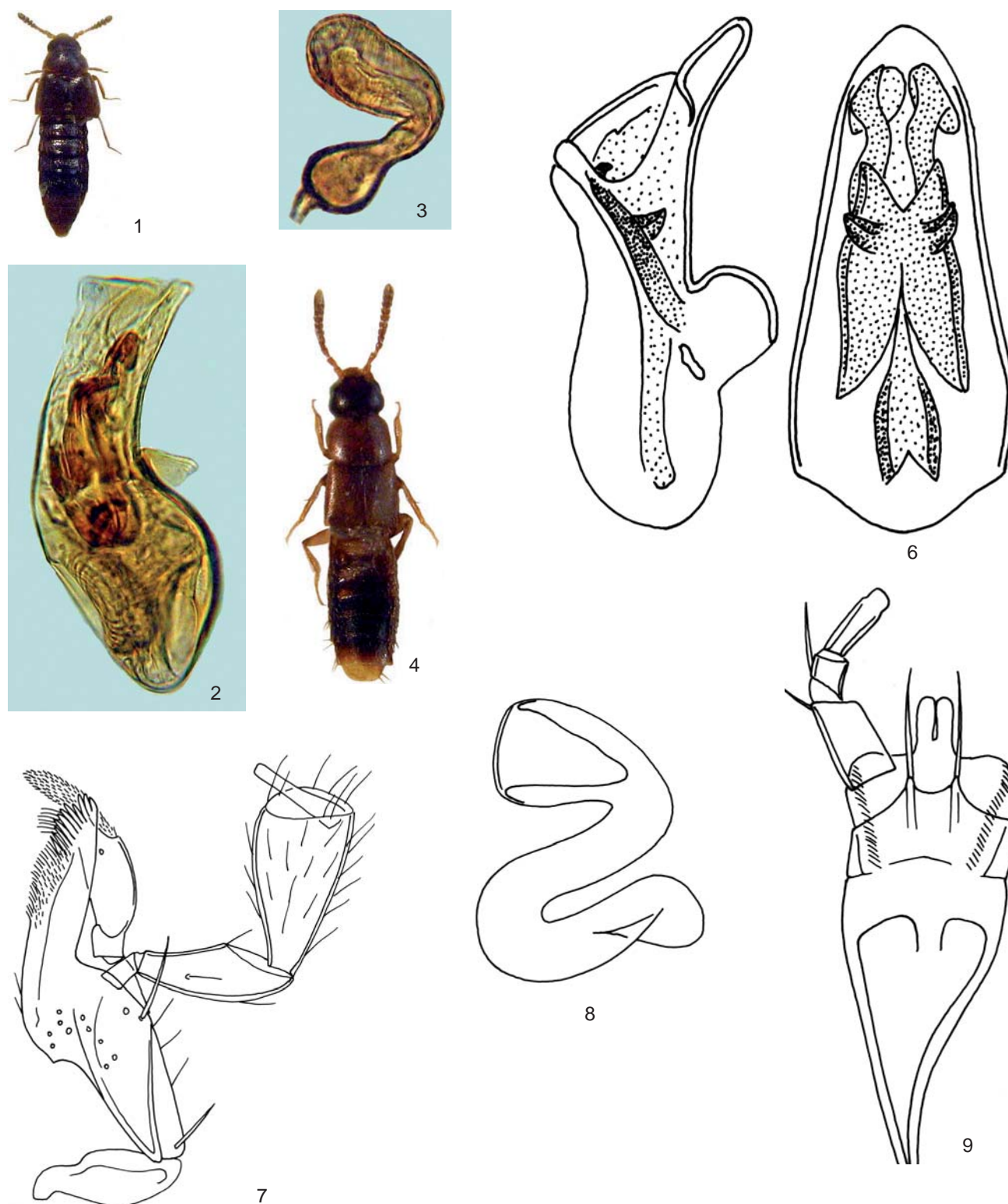
Figures 1–3

Aleochara pusillima Gravenhorst, 1806: 175

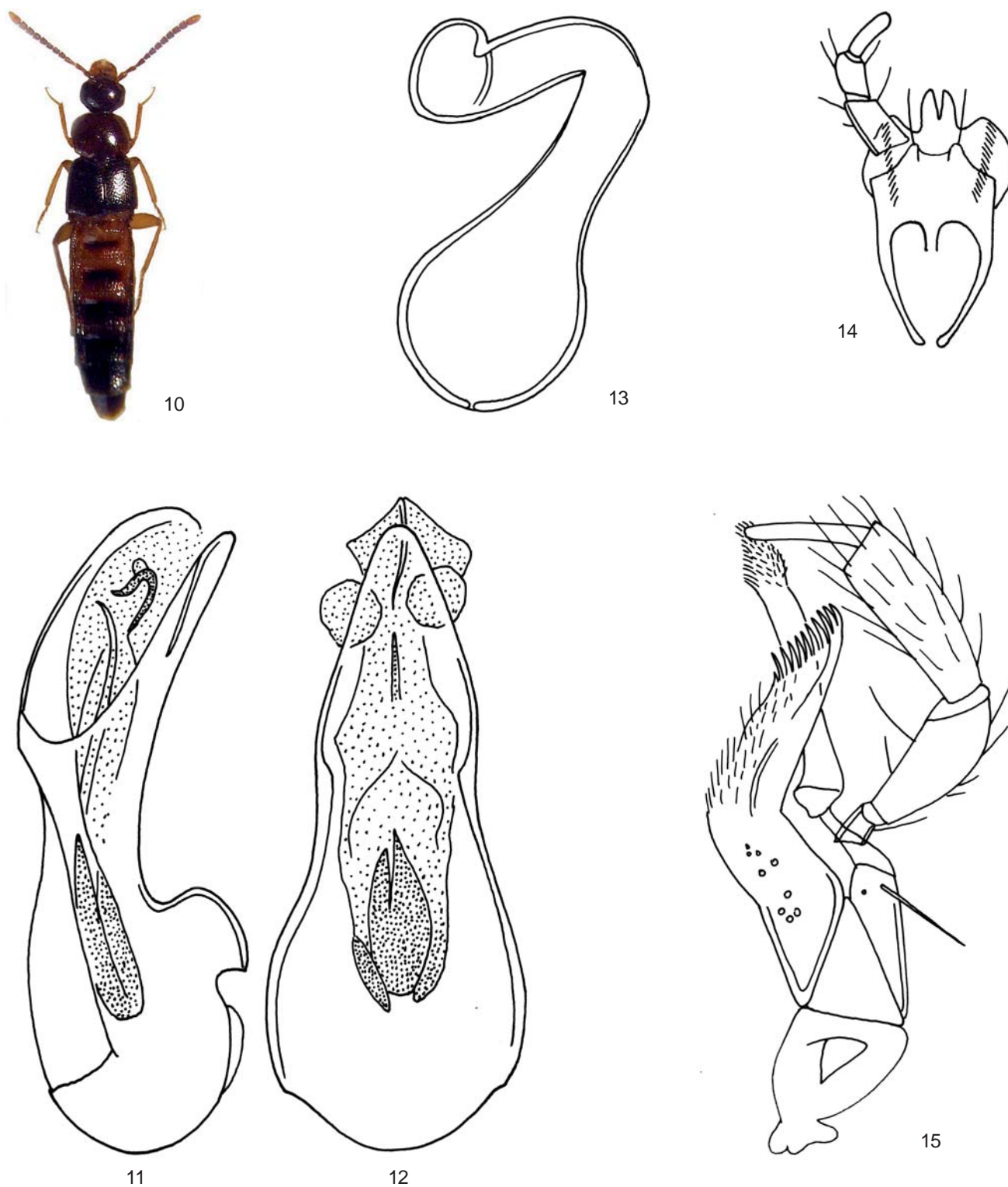
Oligota pusillima: Thomson, 1860: 262

Material examined. 3 ♂♂ and 3 ♀♀ Midwa, October 2004, Cra farms A1910, David Sharley; 1 ♂ and 2 ♀♀, Berri, S. Australia 20296, *Oligota asperiventris* ? Fvl. South Australian Museum; 2 ♂♂ and 1 ♀, Kempton, Tas.: Lea 9508, *asperiventris* ? Tas., South Australian Museum; 1 ♀, Adelaide, Blackburn, 6994 Ad., *asperiventris* Fvl., South Australian Museum; 1 ♂, Swan R., Lea, 1738, South Australian Museum.

Note. It is very probable that *O. asperiventris* Fauvel, 1878 is a junior synonym of *O. pusillima*.



Figures 1–9. Habitus, aedeagus in lateral and ventral view, spermatheca, maxilla with maxillary palpus and labium with labial palpus. 1–3: *Oligota pusillima* (Gravenhorst, 1806), specimens from Australia; 4–9: *Leptostiba paolettii* n. sp. Scale bars habitus: fig. 1 = 1.2 mm, fig. 4 = 2.1 mm. Other scale bars = 0.1 mm.



Figures 10–15. Habitus, aedeagus in lateral and ventral view, spermatheca, labium with labial palpus and maxilla with maxillary palpus. 10–15: *Aloconota maculiventris* n. sp. Scale bar habitus: fig. 10 = 2.8 mm. Other scale bars = 0.1 mm.

Distribution. Cosmopolitan species with a possible role in biological control of pest mites (M.G. Paoletti in litt.).

Athetini

Key to the Australian species of the genus *Leptostiba* Pace, 1985 in the *L. profundior* Pace, 2005 species-group

1. Body black-brown, antennae brown unicoloured, micropterous species, flightless, apical introflexion of the distal bulb of the spermatheca does not exceed the level of the basal angle of the distal bulb of the same spermatheca. Length 2.03 mm. Australia: Benlomon N.P *L. pratensis* Pace, 2005
- Bicoloured or tricolour body, antennae bicoloured, species able to fly, apical introflexion of the distal bulb of the spermatheca catch the level of the basal angle of the distal bulb of the same spermatheca 2
2. Eyes as long as the temples, elytrae dirty yellow, apex of the aedeagus narrow, ventrally viewed, proximal portion of the spermatheca clearly shorter than intermediary portion of the same spermatheca. Length 1.7 mm. Australia: Kosciusko *L. bidens* Pace, 2003
- Eyes shorter than temples, elytrae brown or yellow-brown, apex of the aedeagus wide ogival, proximal portion of the spermatheca as long as the intermediary portion of the same spermatheca 3
3. Head black-brown, 4th and 5th antennomeres longer than wide, 11th antennomere brown with apex reddish, median furrow of the pronotum, principal inside genital armour of the aedeagus long. Length 2.02 mm. Australia: Tasmania *L. profundior* Pace, 2005
- Head black, 4th and 5th antennomeres transverse, 11th antennomere unicoloured brown, median furrow of the pronotum absent, principal inside genital armour of the aedeagus short. Length 2.1 mm. Australia: Saldiers *L. paolettii* sp. nov.

Leptostiba paolettii sp. nov.

Figures 4–9

Holotype: ♂, Australia, Saldiers 33.18, pitfall trap, 17–24.11.2005, leg. L.J. Thomson (MV T-20007).

Paratype: 1 ♀, same origin but 34.19.

Description. Length 2.1–2.2 mm. Body shiny, yellow-brown, head black, 3rd free urotergite brown, 4th and 5th black with yellow-brown posterior border, antennae brown with yellow-brown basal antennomere. 2nd antennomere longer than 1st, 3rd longer than 2nd, 4th feebly transverse, 5th to 10th transverse, 11th as long as the 2 preceding antennomeres together. Eyes shorter than temples that have posteriorly widened. Reticulation of head and pronotum superficial, but evident on concave forehead. Clearly visible reticulation of the elytrae, that of the abdomen transverse and superficial. Granularity of the head close and very superficial, that of the pronotum and elytrae evident, that of the 4 free basal urotergite close and superficial

and that of the 5th free urotergite very sparse. Posterior median of the pronotum flattening. 6th free urotergite of the male plurilobate to the posterior border among 2 short lateral thorns. Aedeagus figs 5–6, spermatheca fig. 8, maxilla with maxillary palpus fig. 7, labium with labial palpus fig. 9.

Comparative notes. The deep apical introflexion of the distal bulb of the spermatheca places the new species into the Australia *L. profundior* species-group.

Etymology. The new species is dedicated to Dr. Maurizio G. Paoletti, Padua University.

Aloconota maculiventris sp. nov.

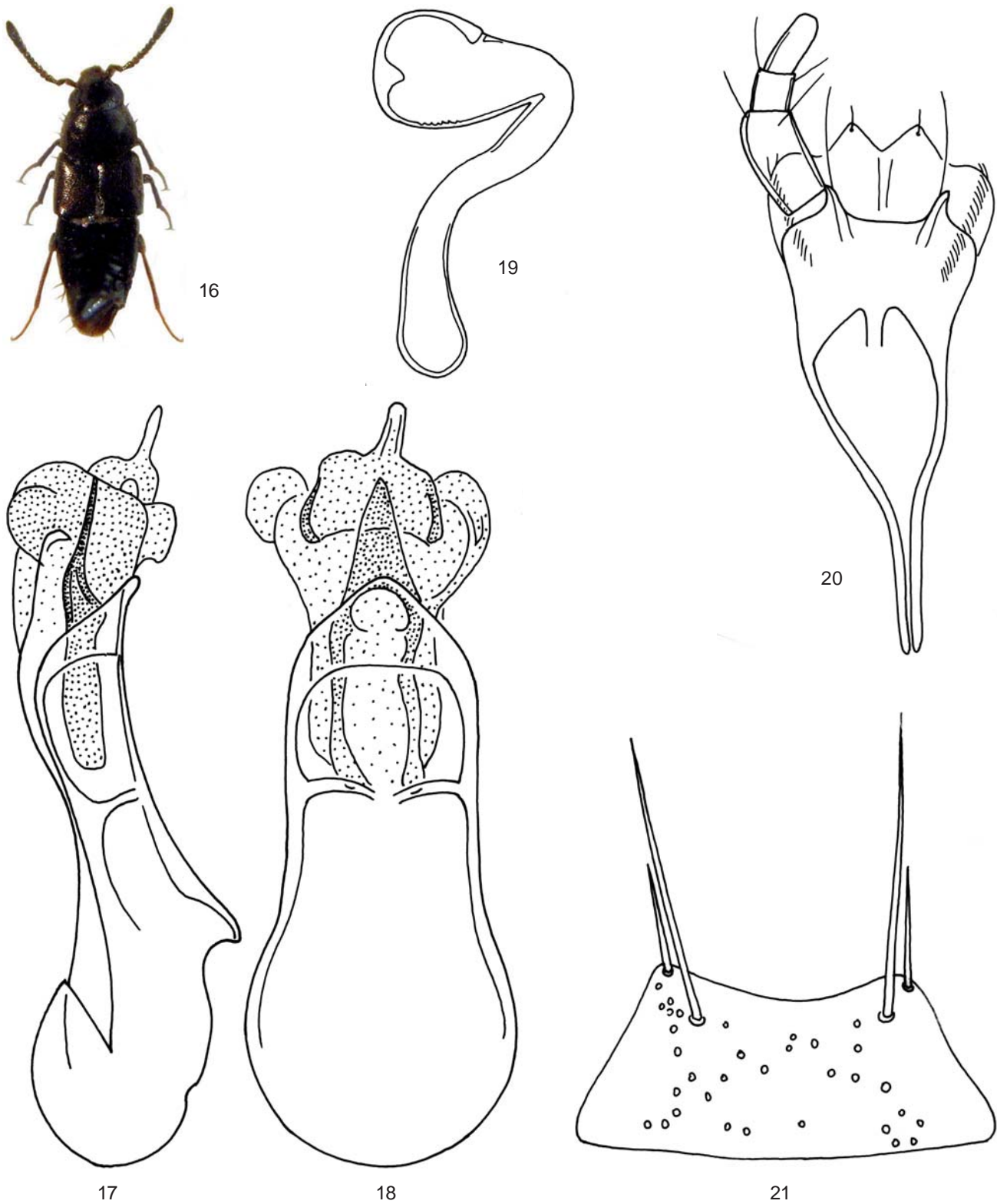
Figures 10–15

Holotype: ♂, Australia, Saldiers 185, pitfall trap, 17–24.11.2005, leg. L.J. Thomson (MV T-20008).

Paratypes: 4 ♀♀, Australia, Saldiers 186, pitfall trap, 17–24.11.2005, leg. L.J. Thomson; 1 ♀, Australia, Saldiers + 13, pitfall trap, 17–24.11.2005, leg. L.J. Thomson; 1 ♀, Australia, Saldiers 7.7, pitfall trap, 17–24.11.2005, leg. L.J. Thomson; 1 ♀, Australia, Saldiers n 1, pitfall trap, 17–24.11.2005, leg. L.J. Thomson; 1 ♂ and 1 ♀, Australia, Saldiers 9.6, Pitfall trap, 17–24.11.2005, leg. L.J. Thomson; 1 ♂, Australia, Saldiers: x 13, technique: pitfall trap, 17–24.11.2005, collector L.J. Thomson; 4 ♂♂ and 3 ♀♀, Australia, Saldiers: 10.6, technique: pitfall trap, 17–24.11.2005, collector L.J. Thomson.

Description. Length 2.8–2.9 mm. Body very shiny and brown, pronotum brown-reddish, basal free urotergites 1st and 2 yellow-reddish with brown-reddish median stain, pygidium yellow-brown, antennae brown with 8th to 10th antennomeres brown-reddish and 11th reddish, legs yellow. Eyes shorter than temples. 2nd antennomere shorter than 1st, 3rd a little longer than 2nd, 4th antennomeres to 7th longer than wide, the 3 following antennomeres as wide as long, 11th as long as the preceding 2 antennomeres together. Reticulation of the body absent. Punctuation of the head very superficial and missing on the longitudinal median band. Granularity of the pronotum evident and close, those of the elytrae protruding, also close. Granularity of the 2 basal free urotergites sparse and absent on the basal half, urotergites free 3rd and 4th with granules only to the posterior border, 5th free urotergite of the male with 5 salient carinae near the posterior border, the median carinae more salient than lateral ones. Aedeagus figs 11–12, spermatheca fig. 13, labium with labial palpus fig. 14, maxilla with maxillary palpus fig. 15.

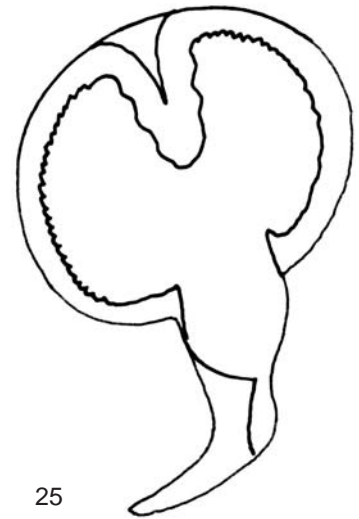
Comparative notes. This new species is the 2nd of the genus *Aloconota* Thomson for Australia after the cosmopolitan *Aloconota sulcifrons* (Stephens, 1832). The aedeagus and habitus is similar to *A. inaequalis* Cameron, 1944, from India, of which I have examined the male holotype thus labeled: Ghum Distr., Rongdong Valley, V-VI.1931, *Aloconota inaequalis* Cam., Type. The new species differs as follows: the yellow-reddish base of the abdomen is stained brown-reddish (abdomen entirely brown in *inaequalis*); the elytrae, measured from the humerus to the external posterior angle, are as long as the pronotum (much longer than the pronotum in *inaequalis*); the apex of the aedeagus is largely oval, ventrally viewed, (apex of the aedeagus blunt narrow in *inaequalis*). The female *inaequalis* is not known.



Figures 16–21. Habitus, aedeagus in lateral and ventral view, spermatheca, labium with labial palpus and mentum. 16–21: *Ischyrodyodops thomsonae* n. sp. Scale bars habitus: fig. 16 = 1.8 mm. Other scale bars = 0.1 mm.



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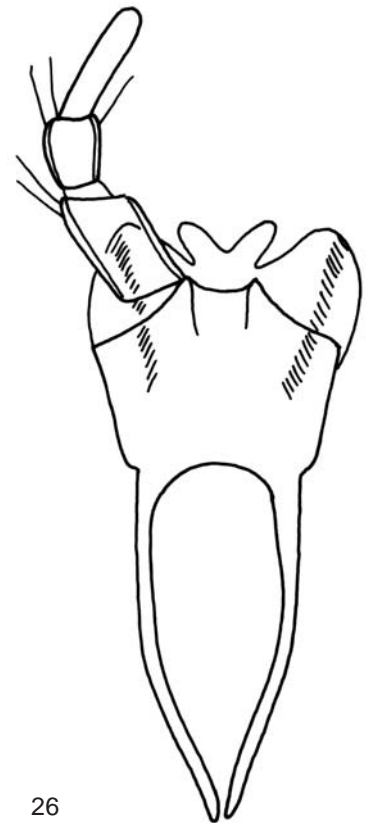
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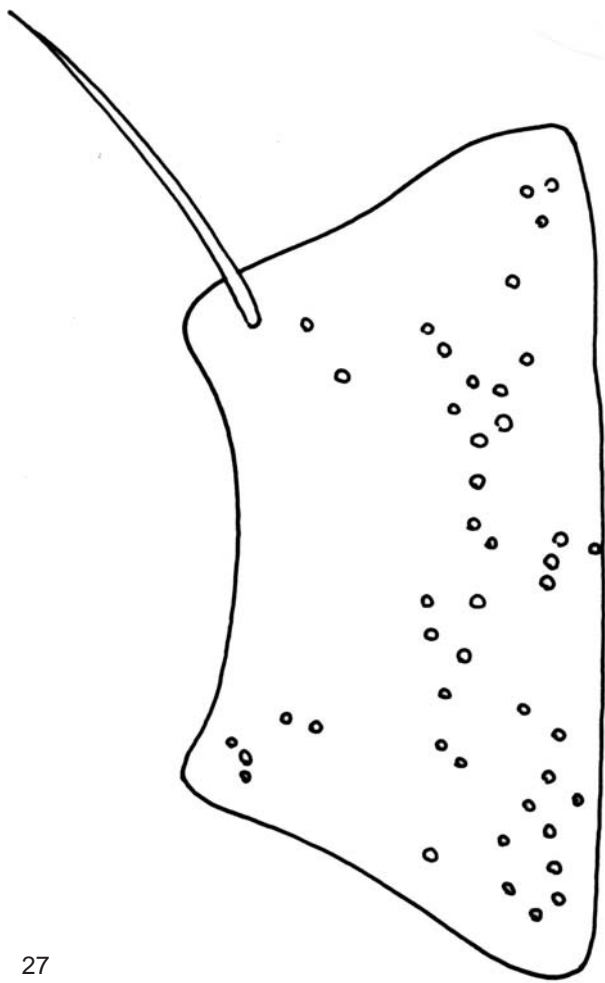


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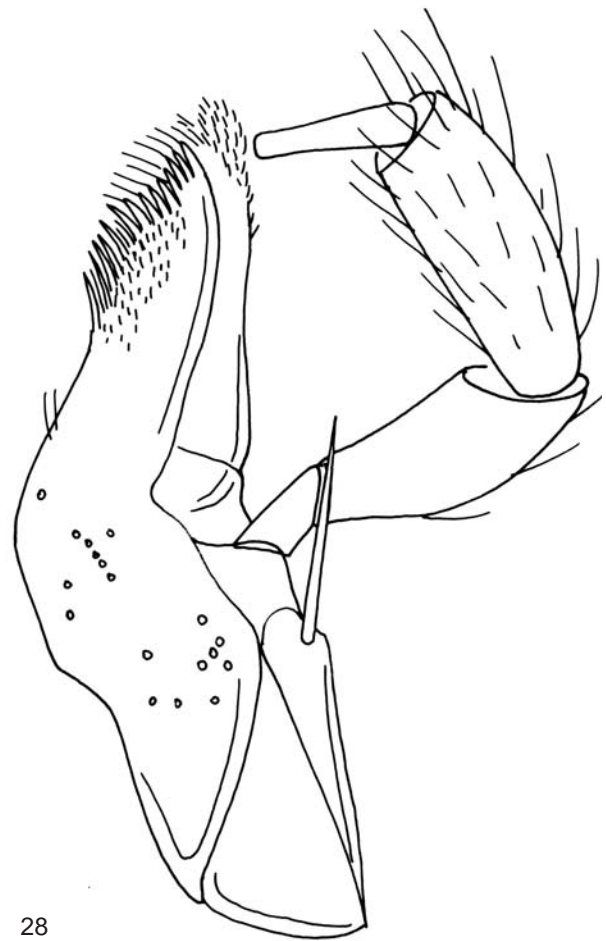


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Figures 22–26. Maxilla with maxillary palpus, apex of the maxilla, habitus, spermatheca and labium with labial palpus. 22–23: *Ischyrododyoys thomsonae* n. sp.; 24–26: *Notioantilogiusa rara* n. sp. Scale bar habitus: fig. 24 = 3.3 mm. Other scale bars = 0.1 mm.



27



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Figures 27- 28. Mentum and maxilla with maxillary palpus. *Notioantilogiusa rara* n. sp. Scale bars = 0.1 mm.

Etymology. The name of the new species means “stained abdomen”.

***Ischyrodyodoys* gen. nov.**

Figures 16–23

Type species: *Ischyrodyodoys thomsonae* sp. nov.

Diagnosis. The tarsal formula 4-5-5 and the form of the mouth parts indicate that this genus belongs to the tribe Athetini. With the ligula separated in 2 lobes wide at the base, the new genus is taxonomically close to *Aloconota* Thomson, 1858, but in the new genus the lobes are much broader, fig. 20, than those of *Aloconota*, fig. 14, and have an apical bristle, absent in *Aloconota*. The lacinia of the maxilles finishes in 2 strong canine teeth, fig. 23, not as in *Aloconota*, fig. 7. The anterior border of the mentum, fig. 21, is deeply arched in the new genus. In addition, the tapered form of the body in the new genus, is clearly different from that of the species of *Aloconota*.

Description. 11 antennomeres, pronotum more narrow in front than posteriorly, abdomen very narrow posteriorly. Labial palpus 3-jointed, ligula separated in 2 lobes with wide base and with a apical bristle, fig. 20, maxillary palpi 4-jointed, maxillae with 2 strong canine apical teeth of the lacinia, galea as long as the lacinia, with pubescent apical membrane, fig. 23. Trapezoidal mentum, with smaller base deeply arched posteriorly, fig. 21. Mesosternal process insinuated between the mesocoxae, which are slightly separated. Tarsal formula 4-5-5, 1st meso-metatarsomere as long as the 2 following tarsomeres together. Aedeagus figs 17–18, spermatheca fig. 19.

Etymology. The name of the neutral grammatical genus of the new genus means “Two strong teeth” from the ancient Greek ἰσχυρός = strong, δύο = two and ὀδούς = tooth.

***Ischyrodyodoys thomsonae* sp. nov.**

Figures 16–23

Holotype: ♂, Australia, Sadliers 185, technique: pitfall trap, date 17–24.11.2005, collector L.J. Thomson (MV T-20013).

Paratypes: 1 ♀, same origin; 3 ♂♂ and 1 ♀, Australia, Sadliers 24.2, Pitfall trap, 17–24.11.2005, leg. L.J. Thomson; 3 ♀♀, Australia, Sadliers 34.19, Pitfall trap, 17–24.11.2005, leg. L.J. Thomson; 1 ♂ and 2 ♀♀, Australia, Sadliers 23.1, Pitfall trap, 17–24.11.2005, leg. L.J. Thomson.

Description. Length 1.8–2.0 mm. Body shiny and black-brown, antennae black with basal antennomere brown, legs yellow-brown with brown femurs and tarsi yellow. Eyes longer than temples. 1st basal antennomere longer than 2nd, 3rd as long as 2nd, 4th antennomeres to 10th transverse, 11th antennomere as long as the 2 preceding antennomeres and a half together. Reticulation of the head and the pronotum absent, that of the elytrae very superficial. Punctuation of the head thin, dense and very superficial. Granularity of the pronotum dense and salient. Naked abdomen, without granularity or reticulation, with a basal sulcus, on the 5th urotergite 2 punctures and some on each lateral side. Aedeagus figs 17–18, spermatheca fig. 19.

Etymology. The new species is dedicated to Dr Linda J. Thomson, researcher of the Zoology Department, University of

Melbourne. She collected this new species together with other new species here described.

***Notioantilogiusa* gen. nov.**

Figures 24–28

Type species: *Notioantilogiusa rara* sp. nov.

Diagnosis. Similar to *Aloconota*, but with spermatheca more similar to that of the species of the tribe Bolitocharini than to the genus *Aloconota* and the ligula is separated in 2 very divergent lobes, fig. 26, and not in 2 parallel lobes as in *Aloconota*, fig. 14.

Description. 11 antennomeres, temples divergent posteriorly, pronotum narrower in front than posteriorly, with pubescence direct to the posterior on straight line, 2 basal furrows of the abdomen; wingless genus; labial palpi 3-jointed, ligula separated in 2 very divergent lobes, fig. 26, a little leaning paraglossae in front, maxillary palpi 4-jointed, galea a little longer than lacinia, fig. 28, trapezoidal mentum with smaller base a little deeply arched posteriorly, fig. 27; mesosternal process acute, extending two-thirds of the length of the mesocoxae, tarsal formula 4-5-5, first metatarsomere as long as the 2 preceding together. Spermatheca, fig. 25.

Etymology. The female name of the new genus means “What is southern contradiction” from the ancient Greek νότιος = southern, ἀντιλογία = contradiction and οὐσα = what it is. The contradiction consists of the form of the spermatheca typical of the tribe Bolitocharini in a body with characters of the tribe Athetini.

***Notioantilogiusa rara* n. sp.**

Figures 24–28

Holotype: ♀, Australia, Sadliers 32.1, pitfall trap, date 17–24.11.2005, leg. L.J. Thomson (MV T-20012).

Paratype: 1 ♀, same origin.

Description. Length 3.3 mm. Body shiny and brown, pronotum and elytrae brown-reddish, antennae black with the 2 basal antennomeres and the apex of 11th brown-reddish, legs yellow-brown with brown femurs and yellow tarsi. 2nd antennomere shorter than 1st, 3rd as long as 2nd, 4th to 10th strongly transverse, 11th as long as the 2 preceding antennomeres and a half. Eyes as long as the temples that are densely pubescent. Reticulation of the head and the pronotum absent, that of the elytrae superficial. Punctuation of the head and the pronotum dense, superficial and missing on the longitudinal median band of the head, that of the abdomen close and missing on the basal half of every free urotergites. Granularity of the elytrae close and evanescent. 2 basal furrows of the abdomen. Spermatheca, fig. 25.

Acknowledgements

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