Zootaxa 5220 (1): 001–081
https://www.mapress.com/zt/

Monograph

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

https://doi.org/10.11646/zootaxa.5220.1.1
http://zoobank.org/urn:lsid:zoobank.org:pub:A49322AD-8E50-412D-84E3-E7C2D07EDBEC

ZOOTAXA

5220

Australian Opilonini (Coleoptera: Cleridae: Clerinae) part I: A revised taxonomy for Australian *Opilo* Latreille including descriptions of new genera and species

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Magnolia Press
Auckland, New Zealand

Accepted by R. Gerstmeier: 29 Oct. 2022; published: 15 Dec. 2022

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(*Zootaxa* 5220)

81 pp.; 30 cm.

15 Dec. 2022

ISBN 978-1-77688-654-8 (paperback)

ISBN 978-1-77688-655-5 (Online edition)

FIRST PUBLISHED IN 2022 BY

Magnolia Press

P.O. Box 41-383

Auckland 1041

New Zealand

e-mail: magnolia@mapress.com

https://www.mapress.com/zt

ISSN 1175-5326 (Print edition)

ISSN 1175-5334 (Online edition)

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Abstract

The species- and genus-level taxonomy of Australian species assigned to *Opilo* Latreille is assessed and revised in the context of a morphological species concept. Australian species are deemed not congeneric with *Opilo mollis* (Linnaeus), the type species of *Opilo* Latreille. Species are grouped into genera by degree of difference observed in states of the tegmen, median lobe, antennal scape, basitarsi, hindwing, elytral striae and pronotal disc. Examination of 1,259 specimens resulted in recognition of 6 genera and 44 species, 36 of which are new to science. The following new genera are proposed: *Ancyropilus* **gen. nov.**; *Culcipternulus* **gen. nov.**; *Infectostriatus* **gen. nov.**; *Monilonotum* **gen. nov.**; *Notopilo* **gen. nov.**; *Platynotum* **gen. nov.**. Three infraspecific taxa described as 'varieties', viz, *Opilo congruus* var. *abdominalis* Schenkling, 1901, *Notoxus congruus* var. *femoralis* Westwood, 1849 and *Opilo pascoei* var. *doddi* Schenkling, 1906, are elevated to species status, with *Opilo abdominalis* (occupied by *Opilo abdominalis* Fairmaire, 1891) requiring a replacement name. The 44 species recognised in this revision are: *Ancyropilus brigalowae* **sp. nov.**; *Ancyropilus emmotti* **sp. nov.**; *Ancyropilus exossuarius* **sp. nov.**; *Ancyropilus hornensis* **sp. nov.**; *Ancyropilus labris* **sp. nov.**; *Ancyropilus monteithi* **sp. nov.**; *Ancyropilus noonbahensis* **sp. nov.**; *Ancyropilus packsaddlensis* **sp. nov.**; *Ancyropilus simplex* **sp. nov.**; *Ancyropilus tricolor* **sp. nov.**; *Culcipternulus mareebensis* **sp. nov.**; *Infectostriatus absentis* **sp. nov.**; *Infectostriatus differens* **sp. nov.**; *Monilonotum bunyense* **sp. nov.**; *Monilonotum doddi* (Schenkling, 1906) **stat. rev.**, **comb. nov.** (transferred from *Opilo*); *Monilonotum eburneocincta* (Gorham, 1878) **comb. nov.** (transferred from *Opilo*); *Monilonotum pascoei* (Gorham, 1876) **comb. nov.** (transferred from *Opilo*); *Monilonotum rufiventre* (Gerstmeier, 1990) **comb. nov.** (transferred from *Olesterus*); *Monilonotum sundholmi* **sp. nov.**; *Notopilo beswickensis* **sp. nov.**; *Notopilo brevistriatus* **sp. nov.**; *Notopilo calicis* **sp. nov.**; *Notopilo cambageicola* **sp. nov.;** *Notopilo confusus* **sp. nov.**; *Notopilo congruus* (Newman) **comb. nov.** (transferred from *Opilo*); *Notopilo elstoni* **sp. nov.**; *Notopilo eremosus* **sp. nov.**; *Notopilo gerstmeieri* **sp. nov.**; *Notopilo interfabulatus* **sp. nov.**; *Notopilo katherinensis* **sp. nov.**; *Notopilo lawnhillensis* **sp. nov.**; *Notopilo magnus* **sp. nov.**; *Notopilo obesus* **sp. nov.**; *Notopilo reduncus* **stat, rev., nom. nov.** (replacement name for *Opilo abdominalis* Schenkling, 1901); *Notopilo tanybasilaris* **sp. nov.**; *Notopilo tompricensis* **sp. nov.**; *Notopilo variipes* (Chevrolat) **comb. nov.** (transferred from *Opilo*); *Notopilo xanthoimprocerus* **sp. nov.**; *Notopilo xanthoprolatus* **sp. nov.**; *Platynotum bulli* **sp. nov.**; *Platynotum culgoense* **sp. nov.**; *Platynotum femorale* (Westwood) **stat. rev.**, **comb. nov.** (transferred from *Opilo*); *Platynotum foveosetosa* **sp. nov.**; *Platynotum gracile* **sp. nov.**. The available names *Opilus congruus* Newman, 1842 and *Opilus femoralis* Westwood, 1849, are respectively corrected to *Opilo congruus* Newman, 1842 and *Opilo femoralis* Westwood, 1849 in accordance with Article 11.9.3.2 of the Code (ICZN 1999). Lectotypes are designated for *Opilo abdominalis* Schenkling, 1901, *Opilo congruus* Newman, 1842, *Opilo femoralis* Westwood, 1849, *Opilo variipes* Chevrolat, *Opilo doddi* Schenkling, 1906 and *Opilo pascoei* Gorham, 1876.

Key words: Australian Biological Resources Survey, Bush Blitz, Cleroidea, taxonomic revision, identification keys

Introduction

Bush Blitz is a multi-million-dollar Australian Government initiated project supporting nature discovery, particularly field collection of specimens and resultant taxonomic research projects. Since the program began in 2010, Bush Blitz has aided in the discovery of over 1,700 new species (DAWE 2021). Bush Blitz-supported collecting by the second author during 2009–2010 in Culgoa Floodplain National Park QLD and across the border in Culgoa National Park NSW (see ABRS 2014a, b) resulted in the discovery of six undescribed clerid beetle species: one each in the genera *Eleale* Newman and *Phlogistomorpha* Hintz, plus four assumed *Opilo* Latrielle species. A Bush Blitz Tactical Taxonomy (TTC210-04) grant was subsequently awarded to the authors to support description of the Bush

Blitz-collected *Opilo* species, plus revise the taxonomy of the described Australian species of *Opilo* and describe additional new species discovered during the project. The grant funded a two-week trip to Europe, where the first author located type material, and arranged specimen loans from natural history collections in London, Brussels, Paris, Munich and Müncheberg, and a three-day visit to the Australian National Insect Collection in Canberra. What began as a 12-month project with an estimated ten new *Opilo* species quickly grew in scale with four times the number of undescribed species and numerous genera and species group complexes eventually recognised.

The genus *Opilo* Latreille (1802) was erected for the widely distributed Palearctic species *Attelabus mollis* Linnaeus, the type of the genus by monotypy (ICZN 1999: Article 68.3). At that time *Opilo* was one of only eight clerid genera, viz. *Clerus* Geoffroy, *Notoxus* Fabricius, *Tillus* Olivier, *Korynetes* Herbst, *Trichodes* Herbst, *Necrobia* Olivier, *Enoplium* Latreille and *Opilo* Latreille. Over the next 100 years the genus-group names *Opilo* and *Notoxus* were applied haphazardly to clerine species with coarsely facetted eyes, securiform terminal palpomeres, clavate antennae, simple claws, and three ventral tarsal pads. Gahan (1910) argued for priority of *Notoxus* Fabricius but *Opilo* was finally accepted after Corporaal (1949), aware or not of Klug's (1842) previous clarification of the nomenclature, demonstrated *Notoxus* Geoffroy to be valid within Anthicidae (Coleoptera). Most of the 75 valid species catalogued under *Opilo* by Corporaal (1950) remain assigned to the genus, the monophyly of which is yet to be tested. Nineteen species of *Opilo* have been described since 1950 (Korge 1960, Winkler 1960, Miyatake 1965, Winkler 1974, Yoshimichi 2004, Gerstmeier 2010, Zappi & Pantaleoni 2010, Bahillo de la Puebla & Lopez-Colon 2011, Gerstmeier 2017, Gerstmeier 2021).

Seven Australian species were originally described within *Notoxus* and nine within *Opilo.* One replacement name and three species 'varieties' were also proposed for Australian *Opilo*. Most of those taxa have been re-assigned to other genera, i.e., *Notoxus porcatus* Fabricius and *Notoxus cribripennis* Dupont to *Eunatalis* Schenkling, *Opilo floccosus* Schenkling to *Metademius* Schenkling, *Notoxus ephippium* Boisduval to *Trogodendron* Spinola and *O. patricius* Klug to *Neoscrobiger* Blackburn, or synonymised, i.e., *Notoxus pulcher* White and *Notoxus sexnotatus* with *Neoscrobiger patricius* (Klug), *Notoxus maerens* Westwood and *O. incertus* Macleay with *Tarsostenus univittatus* (Rossi) (Corporaal 1950). *Notoxus apicalis* White (occupied by *Notoxus apicalis* Chevrolat) was given the replacement name *Opilo whitei* Gorham (Gorham 1876) and later transferred to the genus *Orthrius* (Bartlett 2021).

Currently, four Australian species and three named varieties (seven available names) are assigned to *Opilo*, viz. *O. congruus* Newman, *O. congruus* var. *abdominalis* Schenkling, *O. congruus* var. *femoralis* Westwood, *O. eburneocinctus* Gorham, *O. pascoei* Gorham, *O. pascoei* var. *doddi* Schenkling, and *O. variipes* Chevrolat. Formerly included in the Australian Faunal Directory (AFD), likely due to being listed as cosmopolitan in Corporaal's (1950) world catalogue, *Opilo mollis* (Linnaeus) was removed from the AFD by Bartlett (2018) after not one literature- or specimen-based record of *O. mollis* in Australia could be located.

In this paper, the generic assignment and species status of the aforementioned Australian *Opilo* species and varieties are assessed along with those of hitherto unidentified *Opilo*-like specimens borrowed for this work, and the resulting taxonomy reported. Keys for the identification of all genera and species recognised in this revision are provided. Images representing diagnostically significant morphological characters including the tegmina, median lobes and pygidia of males, the dorsal habitus of each species, and distribution maps, are presented.

Materials and methods

This revision is based on 1259 specimens borrowed from the following private and institutional insect collections:

Australian insect collections (932 specimens):

AM	Australian Museum, Sydney, New South Wales
ANIC	Australian National Insect Collection, Canberra, ACT
JSBC	Private Collection of Justin S. Bartlett, Brisbane, Queensland
NMV	Museum Victoria, Carlton, Victoria
NTMAG	Northern Territory Museum and Art Gallery, Darwin, Northern Territory
QDPC	Queensland Primary Industries Insect Collection, Brisbane, Queensland

QM	Queensland Museum, South Brisbane, Queensland
SAMA	South Australian Museum, Adelaide, South Australia
VRBC	Private Collection of Vratislav Richard Bejšák-Colloredo-Mansfeld. Sydney, New South Wales
WADA	Department of Agriculture and Food, South Perth, Western Australia
WAM	Western Australian Museum, Welshpool, Western Australia

Non-Australian insect collections (327 specimens):

IRSNB	Institut Royal des Sciences naturelles de Belgique, Brussels, Belgium
MNHN	Muséum nationale d'Histoire naturelle, Paris, France
NHML	Natural History Museum, London, United Kingdom
RGCM	Private Collection of Roland Gerstmeier, Munich (now deposited in ZSM)
SDEI	Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany
ZMHB	Museum für Naturkunde, Humboldt-Universität, Berlin, Germany
ZSM	Zoologische Staatssammlung, Munich, Germany

A Nikon SMZ1500 stereo dissecting microscope fitted with an eyepiece graticule was used to examine and measure specimens. Elytral widths were measured at the point of greatest humeral width. Head width is the space between the lateral-most margin of each eye; eye separation is the narrowest frontal width in relation to entire head width. Specimen images were constructed with the aid of Helicon Focus montage software from photographs taken through the SMZ1500 with a Prior Proscan II stepping-motor and a Nikon DS U2/DS-Ri1 digital image capture system. The genus component of species group available names originally published with the incorrect spelling *Opilus*, are corrected to *Opilo* in accordance with Article 11.9.3.2 (ICZN 1999). Coining of new generic and specific epithets was aided by reference to Brown (1956) with all newly proposed taxa jointly authored by 'Bartlett & Lambkin'. Index Animalium (Smithsonian Institution Libraries 2006) Nomenclator Zoologicus (uBio 2005) and Index of Organism Names (Clarivate Analytics 2022) databases were consulted for determining availability of new genus-group names. Lawrence *et al.* (2021) is followed for hindwing venation nomenclature and Bartlett (2021) for terminology of general external morphology and the aedeagus. Following Lawrence and Ślipiński (2013) and Gerstmeier (2015), the term 'tarsal pad' is preferred over 'tarsal sole' (Gerstmeier 2017) ('sole' being a human anatomical term not traditionally applied to the Insecta) to replace the term pulvillus which is confined to the Diptera (see Gordh and Headrick 2001). A tarsal pad may be weakly to strongly lobate, or primarily setose. The term 'intrafoveal seta' is proposed to describe the single posteriorly directed seta stemming from the anterior wall of the pit of an elytral fovea (i.e., puncture). An intrafoveal seta may be very short, or long and spanning the entire foveal diameter (Figs 23, 24). Specimen data is replicated verbatim with '//' placed between data transcribed from different labels. Species distribution is plotted over a desaturated high resolution satellite map of Australia (NASA 2002) to show topography, with an additional colour layer indicating National Reserve System Terrestrial Ecoregions (DAWE 2012). Abbreviations of Australian states and territories is as follows: ACT (Australian Capital Territory); NSW (New South Wales); NT (Northern Territory); Qld (Queensland); SA (South Australia); Vic (Victoria); WA (Western Australia).

Systematics

The following genera and species are recognised in this revision.

Ancyropilus **gen. nov.**
- *brigalowae* species group
  - *Ancyropilus brigalowae* **sp. nov.**
  - *Ancyropilus emmotti* **sp. nov.**
  - *Ancyropilus exossuarius* **sp. nov.**

Ancyropilus labris **sp. nov.**
Ancyropilus monteithi **sp. nov.**
Ancyropilus noonbahensis **sp. nov.**
Ancyropilus packsaddlensis **sp. nov.**
Ancyropilus simplex **sp. nov.**
Ancyropilus tricolor **sp. nov.**
hornensis species group
Ancyropilus hornensis **sp. nov.**
Culcipternulus **gen. nov.**
Culcipternulus mareebensis **sp. nov.**
Infectostriatus **gen. nov.**
Infectostriatus absentis **sp. nov.**
Infectostriatus differens **sp. nov.**
Monilonotum **gen. nov.**
pascoei species group
Monilonotum bunyense **sp. nov.**
Monilonotum doddi (Schenkling, 1906) **stat. rev., comb. nov.**
Monilonotum pascoei (Gorham, 1876) **comb. nov.**
Monilonotum sundholmi **sp. nov.**
rufiventre species group
Monilonotum eburneocincta (Gorham, 1878) **comb. nov.**
Monilonotum rufiventre (Gerstmeier, 1990) **comb. nov.**
Notopilo **gen. nov**
beswickensis species group
Notopilo beswickensis **sp. nov.**
Notopilo calicis **sp. nov.**
Notopilo eremosus **sp. nov.**
Notopilo tompricensis **sp. nov.**
Notopilo xanthoimprocerus **sp. nov.**
Notopilo xanthoprolatus **sp. nov.**
cambageicola species group
Notopilo cambageicola **sp. nov.**
Notopilo interfabulatus **sp. nov.**
Notopilo lawnhillensis **sp. nov.**
Notopilo tanybasilaris **sp. nov.**
congruus species group
Notopilo congruus (Newman, 1842) **comb. nov.**
reduncus species group
Notopilo magnus **sp. nov.**
Notopilo reduncus **stat. rev., nom. nov.**
= *Opilo congruus* var. *abdominalis* Schenkling, 1901 (occupied)
variipes species group
Notopilo brevistriatus **sp. nov.**
Notopilo gerstmeieri **sp. nov.**

Notopilo variipes (Chevrolat, 1874) **comb. nov.**

Not assigned to a species group

Notopilo confusus **sp. nov.**

Notopilo elstoni **sp. nov.**

Notopilo katherinensis **sp. nov.**

Notopilo obesus **sp. nov.**

Platynotum **gen. nov.**

Platynotum bulli **sp. nov.**

Platynotum culgoense **sp. nov.**

Platynotum femorale (Westwood, 1849) **stat. rev., comb. nov.**

Platynotum gracile **sp. nov.**

Platynotum foveosetosa **sp. nov.**

Systematic Position

In having distinct baso-lateral pronotal pits, clavate antennae with a more-or-less filiform flagellum, a deep ocular notch, well-developed distally incised ventral tarsal pads, externally open procoxal cavities and a tegmen with tegminal arms fused to phallobase, the taxa under study are easily assignable to the subtribe Opilonina of the clerine tribe Opilonini (Bartlett 2021).

Within a molecular phylogeny-estimate of Cleridae based on nuclear and mitochondrial rDNA (28S, 16S and 12S) plus COI of circa 70 clerid genera (Gunter *et al.* 2013), *Notopilo reduncus* stat. rev., **nom. nov.** (as *Opilo congruus* var. *abdominalis*) and *Notopilo confusus* **sp. nov.** (as '*Opilo* sp 1') were nested within a clade containing only taxa of Opilonitae *sensu* Bartlett (2021). *Olesterus tuberculosus* Gerstmeier was sister taxon to the *Notopilo* **gen. nov.** clade which, with *Odontophlogistus* Elston, formed one of three sub-clades containing only Australian clerine genera (i.e., *Neoscrobiger, Scrobiger, Trogodendron, Zenithicola, Phlogistus, Phlogistomorpha*). Dieropsini, represented by European and North American *Trichodes* Herbst, was the basal-most clade of Opilonitae and sister group to the three Australian sub-clades all, with the possible exception of *Odontophlogistus*, assignable to Opilonina (Fig. 186).

Genus-level taxonomy

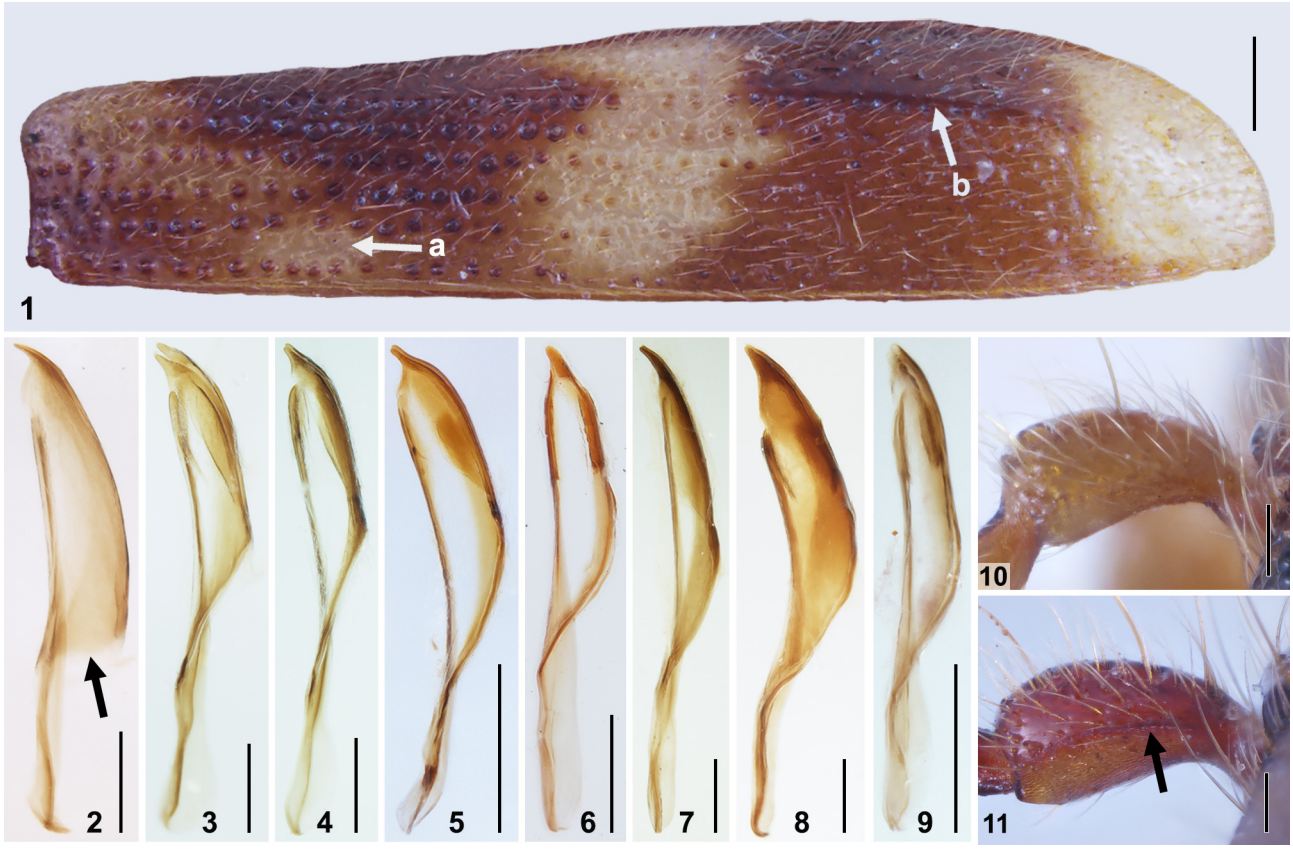
The genera *Bosquetoclerus* Menier, *Ekisius* Winkler, *Phloiocopus* Spinola and *Opilo* Latreille presently accommodate all Opilonina species with coarsely facetted eyes. *Bosquetoclerus* and *Ekisius* collectively contain four brachypterous species from Yunnan and Tibet while *Phloiocopus*, differentiated from *Opilo* mainly by the extended terminal antennomeres of males, contains 51 species from Africa, Madagascar, the Arabian Peninsula and Turkey. *Opilo* on the other hand, with 84 species and a distribution spanning all OldWorld regions, might be viewed as a 'catch all' genus in need of revision. Historical assignment of Australian Opilonina with coarsely facetted eyes to *Opilo* is evaluated here for the first time.

Non-congenericity of Australian '*Opilo*-like' species with *Opilo mollis* (Linnaeus) is supported by the following morphological differences: elytral base with at least eight striae clearly marked by punctation (*O. mollis* with only six, Fig. 1); interstice between first and second elytral stria not widened (widened in *O. mollis*, Fig. 1a); apical half of elytra with pre-marginal carinate ridge absent (present in *O. mollis*, Fig. 1b); rear face of antennal scape commonly carinate (plain in *O. mollis*); male tegmen with sclerotisation of tegminal plate components, i.e. tegminal arms + preparameroid sclerites, continuous (Figs 3–11) (apparently desclerotised in *O. mollis*, Fig. 2). The resulting system of genera, based primarily on states of the tegmen, median lobe, antennal scape, basitarsi, hindwing, elytral striae and pronotal disc, is presented below.

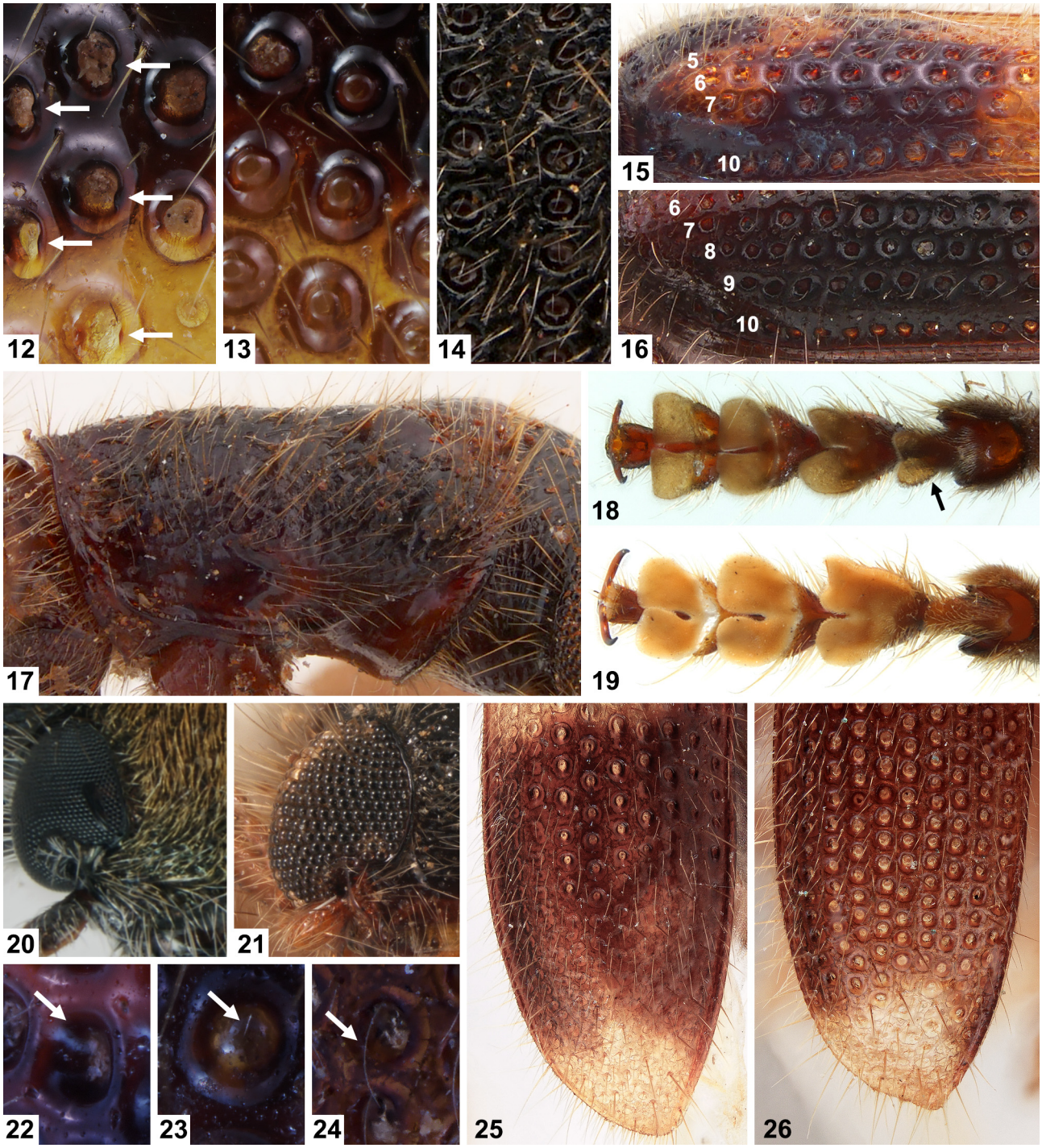
Key to genera

Entry into the following key assumes that specimens were collected in Australia or surrounding islands and that they have already been identified to the subtribe Opilonina (see Bartlett 2021).

1 Eyes coarsely-facetted (Fig. 21); tibial spur formula 1–2–2 . . . . . (genera treated here) ... **2**
- Eyes finely-facetted (Fig. 20) (if eye facets seemingly intermediate between coarsely and finely facetted, then tibial spur formula not 1–2–2) . . . . . Opilonina genera not treated here
2 (1) Tarsi with four ventral pads (basitarsi bearing a small but distinct pad) (Fig. 18) . . . . . ***Culcipternulus* gen. nov.**
- Tarsi with three ventral pads (basitarsi lacking a distinct pad) (Fig. 19) **3**
3 (2) Eighth and ninth elytral striae reduced or absent (Fig. 15) . . . . . ***Infectostriatus* gen. nov.**
- Elytra, at most, with eighth stria absent in basal half only (ninth stria intact) (Fig. 16) **4**
4 (3) Pronotal disc flat in appearance (Fig. 17), moderately to conspicuously compressed, always broadest in middle (Figs 176–180) . . . . . ***Platynotum* gen. nov.**
- Pronotal disc more rotund, or, if flat in appearance then broadest anteriorly (as in Figs 157–161) **5**
5 (4) Elytral striae terminating abruptly at or before last one-third of elytral length (Figs 151–155), band-like fascia, if present (absent only in *M. bunyense* **sp. nov.**, see Fig. 151), white; at least profemora strongly clavate; antennal scape not carinate (as in Fig. 10) . . . . . ***Monilonotum* gen. nov.**
- If elytral striae terminate abruptly AND punctures lack internal nodules, then band-like fascia yellow AND femora, at most, very weakly clavate; antennal scape carinate (Fig. 11) **6**
6 (5) Elytral punctures always lacking internal nodules (as in Figs 13, 14), striae always complete to apices (Fig. 26), most species with complex distribution of interstrial setae (Fig. 14) (only *A. hornensis* **sp. nov.** with simple rows of setae) . . . . . ***Ancyropilus* gen. nov.**
- Elytral punctures variable, most commonly with internal nodules (Fig. 12), if nodules absent (as in Fig. 13) then striae becoming weakly impressed between band-like fascia and apices (Fig. 25); interstrial setae less complex, mostly in simple, singular rows (Figs 12, 13) . . . . . ***Notopilo* gen. nov.**



FIGURES 1–11. (1) *Opilo mollis*, elytron (1a) first interval broad, (1b) pre-apical ridge; (2–9) tegmina, lateral—(2) *Opilo mollis* (arrow showing weakly sclerotised tegminal arm region); (3) *Notopilo* cf. *lawnhillensis*; (4) *Notopilo gerstmeieri*, paratype; (5) *Notopilo obesus*, paratype; (6) *Infectostriatus differens*, holotype; (7) *Notopilo congruus*; (8) *Culcipternulus mareebensis*, paratype; (9) *Ancyropilus tricolor*, paratype; (10–11) antennal scape—(10) *Opilo mollis* (carina absent); (11) *Notopilo congruus* (arrow showing carina) (scale bars: Figs 1–9, 0.5 mm; Figs 10–11, 0.1 mm).



FIGURES 12–26. (12) *Notopilo variipes* elytra, detail showing foveate punctures with conspicuous lateral nodules; (13) *Notopilo congruus* elytra, detail showing foveate punctures without lateral nodules; (14) *Ancyropilus monteithi* elytra, detail showing densely setose intervals; (15) *Infectostriatus absentis* (paratype) elytra, eighth & ninth elytral stria absent; (16) *Notopilo obesus* (holotype) elytra, eighth & ninth elytral stria intact; (17) *Platynotum bulli* (paratype), flat pronotal disc (lateral view); (18) *Culcipternotus mareebensis* (paratype) tarsus, with four ventral pads; (19) *Notopilo reduncus* tarsus, with three ventral pads; (20) *Olesterus australis* eye, finely-facetted; (21) *Notopilo confusus* eye, coarsely-facetted; (22) *Monilonotum pascoei* elytra, detail showing intrafoveal seta apparently absent; (23) *Ancyropilus brigalowae* (paratype) elytra, detail showing short intrafoveal seta; (24) *Platynotum foveosetosa* (holotype) elytra, detail showing very long intrafoveal seta; (25) *Notopilo reduncus* elytra, showing puncture rows (striae) terminating before apex; (26) *Platynotum femorale* elytra, showing elytral puncture rows terminating mostly near apex.

Ancyropilus gen. nov.

ZooBank registration: urn:lsid:zoobank.org:act:AD29FEC9-897B-414B-B9BC-672F416BF2DE

Gender. Masculine.

Type species. *Ancyropilus monteithi* **sp. nov.**

Diagnosis. Intrafoveal seta short but visible under magnification; ninth elytral stria present; lateral rims of elytral punctures without internal nodules; most elytral striae reaching apices; ventral pad absent from all basitarsi; tegmen ventral sinus equal to, or longer than, dorsal sinus, anterior margin of pre-parameroid area weakly sclerotised; spicular fork V-shaped; median lobe with conspicuous rearward-directed apico-lateral spine.

Description. Eyes coarsely-facetted, strongly emarginate above supra-antennal elevations, separated by 0.36–0.96 eye widths; antennal scape with carina bordering each side of flattened rear face; sensory face of terminal maxillary palpomere approximately 1–2 times longer than inside margin; sensory face of terminal labial palpomere approximately 1.9–3 times longer than inside margin; genae and submentum wrinkled; pronotum 1.1–1.35 times longer than wide, middle broader than anterior pronotal arch (most species) or as broad as pronotal arch (*A. monteithi* **sp. nov.** and *A. simplex* **sp. nov.**), disc generally heavily punctate (smoother in appearance only in *A. exossuarius* **sp. nov.**), central discal impression often obscure, rarely distinctly sulcate; elytra 2.27–3.16 times longer than wide at humeri, punctures without nodules, eighth stria variable, beginning from base to within transverse maculate fascia, all or most striate reaching apical macula, interstriae of most species with more than one seta across strial width (only *A. hornensis* **sp. nov.** with rows of singular setae), short, fine, intrafoveal seta present; hindwing with CuA_{3+4} and CuA_1 cross-veins complete, MP_{3+4} basad of CuA_1 short (most species) or substantially extended (observed only in *A. noonbahensis* and *A. simplex*), never completely absent; tarsi each with three well-developed ventral pads; spicular fork V-shaped; tegmen ventral sinus equal to, or longer than, dorsal sinus; median lobe with conspicuous rearward-directed apico-lateral spine.

Etymology. The generic epithet *Ancyropilus* (from Greek 'ankyra' meaning anchor, and the genus *Opilo*) refers to the backward-directed apico-lateral spines of the median lobe evident in all dissected males.

Remarks. Conspicuous rearward-directed lateral spines of the median lobe are found in *Ancyropilus, Culcipternulus* and *Infectostriatus*, though the spines are less pronounced in the latter genus. Putatively, mutual synapomorphies of *Ancyropilus, Culcipternulus* and *Infectostriatus* in relation to eachother could be the loss of elytral puncture nodules in *Ancyropilus* and *Culcipternulus* versus the reduction in number of elytral striae in *Infectostriatus*, plus development of ventral basitarsal pads in *Culcipternulus* versus reduction in length of tegminal ventral sinus in *Ancyropilus* and *Infectostriatus*. *Ancyropilus hornensis* sp. nov., with unique parameroid lobe apices and reduced interstrial vestiture, is on the other hand retained within *Ancyropilus* as synapomorphic character development appears to be unidirectional.

Key to species of *Ancyropilus*

1	Each elytral interstice with a neat singular row of setae	***hornensis* species group (*Ancyropilus hornensis* sp. nov.)**
-	At least some elytral interstices with several setae across interval width (elytra often appearing densely setose as a result)	**2 (*brigalowae* species group)**
2 (1)	Elytral apices with a small pale macula isolated from outer and sutural margins, or apical macula completely lacking	**3**
-	Elytral apices with macula complete to outer and sutural margins	**4**
3 (2)	Legs entirely black; apical macula completely lacking (Fig. 146)	***Ancyropilus simplex* sp. nov.**
-	Legs not entirely black; apical macula not meeting margins (Fig. 144)	***Ancyropilus noonbahensis* sp. nov.**
4 (2)	Femora predominantly yellow, only extreme base black; lateral bulge of pronotum shallow (Fig. 143)	***Ancyropilus monteithi* sp. nov.**
-	At least basal half of femora black, and/or pronotum clearly rounded or angulate laterally	**5**
5 (4)	Elytral fascia rounded before or at suture	**6**
-	Elytral fascia straight or angulate and crossing suture	**7**
6 (5)	Elytra between base and fascia two-tone brown and black (Fig. 147)	***Ancyropilus tricolor* sp. nov.**
-	Elytra between base and fascia unicoloured black (Fig. 138)	***Ancyropilus brigalowae* sp. nov.**
7 (5)	Elytral fascia extending along suture for a short distance (Fig. 142)	***Ancyropilus labris* sp. nov.**
-	Elytral fascia not extending along suture	**8**
8 (7)	Eighth elytral stria beginning between fascia and base	***Ancyropilus exossuarius* sp. nov.**
-	Eighth elytral stria beginning within fascia, or at anterior margin of fascia	**9**
9 (8)	Elytra without humeral maculation (Fig. 139)	***Ancyropilus emmotti* sp. nov.**
-	Elytra with humeral maculation (Fig. 145)	***Ancyropilus packsaddlensis* sp. nov.**

brigalowae species group

Diagnosis. Members of the *brigalowae* species group have at least some elytral interstices with several setae across between puncture rows which, in some species (e.g., *A. monteithi* **sp. nov.**), results in the elytra appearing vested with a thick setal mat of short hairs; most elytral striae reaching apices.

Remarks. Groupings based on elytral fascia shape (rounded or square at suture) and pronotal form (laterally rounded or angulate) did not correlate with tegminal characteristics. Further attempts to recognise natural groupings within the *brigalowae* species group based on morphology were, therefore abandoned.

Ancyropilus brigalowae sp. nov.

ZooBank registration: urn:lsid:zoobank.org:act:5FE312F1-ECFE-445D-9DE1-1E9929AD35A1
(Figs 23, 27, 66, 102, 138; Map 1)

HOLOTYPE ♂: **Queensland**: QLD: 24°49′Sx149°45′E, Brigalow Res. Stn. site 2, 12 Oct 2001, vine scrub, Monteith, Burwell, 10210, pyr-brigalow trunks, 170m (QM, type reg. T258544). **PARATYPES** (11): **Queensland**: QLD: 24°49′Sx149°45′E, Brigalow Res. Stn. site 2, 13Oct2001, Pyrethrum, Monteith.Burwell, 170m, brigalow trunks, 10222 (4, QM); QLD: 24°49′Sx149°45′E, Brigalow Res. Stn. site 2, 12 Oct 2001, vine scrub, Monteith, Burwell, 10210, pyr-brigalow trunks, 170m (1, QM); Qld: 26.427°Sx150.506°E, Barakula SF, site 12, 406m, 1-15 Dec 2009, G.B. Monteith & F. Turco, Malaise. 19193 (1, QM); QLD: 26°25′Sx148°55′E, Mt Basset, 3km NNE, 13Dec2001, vine scrub, G.B. Monteith, 520m, Pyrethrum. 10264 (1, QM); 77km S of Jericho, Qld. T.M.S. Hanlon, Ex. Dead standing Bursaria incana // Coll. 28 August 1999 Emerged 20 Sep.1999 // K 304511 (1, AM); Carnarvon Rge. Q. 20 Dec., 1938. N. Geary / K 304560 (1, AM); Australia, QLD, Dawson River/Kreuzung Capricorn Hwy, 14.11.1991 leg R. Gerstmeier (1, RGCM). **New South Wales**: Warialda N.S.W. // Australia C.E. Clarke Collection B.M. 1957-24. // Opilo congruus Newman det. G. Ekis 1985 (1, NHML).

Diagnosis. Pronotum rounded to weakly tuberculate laterally, disc densely punctate, with three small glabrous regions (one baso-medially, one either side of central impression); elytra dark with orange fasciate and apical maculations (humeral maculae absent), the transverse fascia curved at the suture, punctation without nodules, 8th stria beginning near base (first few punctations sometimes well spaced), striae 1–9 reaching apical macula, interstriae densely setose; femora yellow and brown, tarsi with three ventral tarsal pads.

Ancyropilus brigalowae **sp. nov.** is most similar to *A. tricolor* **sp. nov.** though differs from it by the U-shaped internal margin of the tegminal dorsal sinus (more V-shaped in *A. tricolor*) and the colouration of the pronotum and elytral base (black rather than brown).

Description. *Habitus*: Fig. 138. *Total length*: 6–7.5 mm (holotype, 6.9 mm). *Head*: Cranium black, clypeus and supra-antennal elevations reddish-black, anteclypeus, labrum, antennae and palpi orange to orange-brown; eyes separated by about 0.52–0.8 eye widths (holotype, 0.72); vertex and frons relatively dense with irregular punctation, frons below narrowest point with transversly arcuate rugosity; clypeus with circular punctation basally, smooth before anteclypeus; genae and submentum wrinkled; exterior margins of terminal palpomeres about 1.5–2 times (maxillae) and 3 times (labium) the length of inside edges; antennae reaching base of pronotum or almost; eyes and most of cranium vested with long erect pale setae, frons and vertex densely distributed with slightly shorter finer medially-directed setae. *Prothorax*: Dark brown; pronotum 1.1–1.21 times longer than wide (holotype, 1.21), sides rounded (or subtly tuberculate due to shape and position of lateral impression), middle slightly wider than pronotal arch; subapical depression deeply v-shaped; central impression punctate, non-sulcate; disc convex, densely punctate, a longitudinal glabrous stripe basally, an ovoid glabrous tumescence either side of central impression; lateral impression extending antero-ventrally (resulting in a subtle lateral tubercle); well distributed with fine short setae and sparsely with longer erect setae. *Pterothorax*: Ventrites brown, with fine pale posteriorly- or medially-directed setae; elytra (Fig. 23) black to dark brown with orange markings (each elytron with a large apical angulate macula and a broad central fascia which curves at the suture), length to width ratio 2.5–2.74:1 (holotype, 2.45:1); 8th stria beginning near base (first few punctations widely spaced in some specimens), punctation distinct to apical macula (only tenth stria terminating before apical macula); punctation circular, without nodules; epipleurae extending half way into apical maculae; interstriae dense with short, fine, setae (>2 per puncture, often two setae across interstrial width), plus longer thicker erect setae (<1 per puncture); hindwing with CuA_{3+4} and CuA_1 cross-veins complete,

MP_{3+4} basad of CuA_1 crossvein small (but not completely absent). *Legs*: Basal one-third to two-fifths of profemora and basal half to three-fifths of meso- and metafemora yellow, remaining apical portions of femora, plus tibiae and tarsi, dark brown; ventral tarsal pads yellowish; profemora moderately swollen, other femora slender. *Abdomen*: Ventrites light to dark brown. *Male genitalia*: Tegmen (Fig. 27) widest in middle, narrowed between the middle and broad parameroid lobes, apices not conspicuously acuminate or digitiform, dorsal sinus slightly less than one-quarter tegmen length, internal limit rounded, inner margins weakly diverging towards broad opening, ventral sinus of similar length, tegminal arms tapering gradually to meet broad spatulate apodeme, apodeme about one-quarter tegmen length; median lobe as in Fig. 66; pygidium as in Fig. 102.

Etymology. The specific epithet *brigalowae* refers to Brigalow (*Acacia harpophylla*), on which part of the type series was collected.

Variation. The seventh elytral stria of the specimen from Warialda, New South Wales, begins near the sixth punctation of the eigth stria; the seventh stria of all other specimens begins near the elytral base.

Biology. Adults have been collected during September, October and December using Malaise traps or by spraying bark with pyrethrum. In central Queensland this species has been collected from *Acacia harpophylla* (pyrethrum bark spray) and from dead, standing, *Bursaria incana*.

Distribution (Map 1). *Ancyropilus brigalowae* **sp. nov.** is known from localities within the Queensland Brigalow Belt and from Warialda in northern New South Wales.

Ancyropilus emmotti sp. nov.

ZooBank registration: urn:lsid:zoobank.org:act:18D73014-582C-423F-8E7C-F74742DE7F3E
(Figs 28, 67, 103, 139; Map 1)

HOLOTYPE ♂: **Queensland**: Qld: 24.142°Sx143.196°E, 4km SSE HS Noonbah Station (NB3 M). 188m, 19Jan-7Feb2009. Malaise. A. Emmott. 17255. Sandy plain, Ghost gums (QM, type reg. T258545). **PARATYPES** (33): **Queensland**: same data as holotype (5, QM); Qld: 3.7km S HS Noonbah Station (NB4 M), 186m, 24.141°Sx143.19°E, 19Jan-7Feb2009. Malaise. A. Emmott. Dense Gidgyea scrub. 17254 (1 ♀, 1, QM); Qld:26.728°Sx142.651°E Plevna Downs, Tompilly Hill Base (PD6 M) 187m 24Apr-24Jul 2008. G Turner, R Mackenzie. Malaise. Gidgee. 17320 (1 ♀, 1, QM); Qld: 26.541°Sx142.516°E Plevna Downs, 2.3km SSW Arima (PD2 M) Malaise. 25Nov-17Dec 2008. Gidgee. R. Mackenzie. 134m. 17292 (1, QM); Qld: 26.541°Sx142.516°E Plevna Downs, 2.3km SSW Arima (PD2 M) Malaise. 13 Jan-3 Apr 2008. 132m. R.Mackenzie. Gidgee 17284 (1, QM); Qld: 26.67°Sx142.577°E 2.5km WNW Plevna Downs HS (PD3 M) 133m. Gidgee 15 Mar-3 Apr 2009. Malaise. R. Mackenzie. 17317 (1, QM); Qld:26°40.3′Sx142°34.6′E Plevna Downs Hstd, 2.5km WNW. Malaise Trap, Gidgee. 12-29 Dec 2007. 130m. N. Starick, Lambkin & R. Mackenzie. 15998 (1 ♀, QM); Aust: QLD: 40km N Noccundra, dry creek bed 27°29″56′S:142°38″24′E 02-09-i-99 Malaise trap P.Bouchard, C. Lambkin, D. Yeates, N. Power (1, QM); Australia: n Qld Mt. Isa (within 10km) 23-31.XII.1990 R.I. Storey at light (1, QDPC). **New South Wales**: NSW:29.047°Sx146.996°E Culgoa NP, 8km WNW Cawwell HS, Diemunga Lagoon (CGN2M) Malaise. 22Nov-21Dec 2009 C.Lambkin, B.Schiebaan N.Starick. Coolibah 19302 (1, QM). **Northern Territory**: 23.59 S 133.56 E N.T. Ewaninga Area M.V. Light 19 Dec. 1987 J. & I. Archibald (3, NTMAG).

Diagnosis. Pronotum more angulate than rounded laterally, disc heavily punctate, glabrous areas in middle, at base and either side of central impression; elytra dark with orange fasciate and apical maculations (humeral maculae absent), fascia convergent towards, and meeting at, the suture, punctation lacking nodules, 8th stria beginning within fascia, all striae reaching apical maculae; femora yellow basally, brown apically, tarsi with three ventral tarsal pads.

Description. *Habitus*: Fig. 139. *Total length*: 6.7–9 mm (holotype 7 mm). *Head*: Cranium black, submentum and gula often orange to orange-brown, clypeus and supra-antennal elevation with a deep reddish hue, anteclypeus and labrum orange, palpi and antennae orange-brown to brown; eyes separated by 0.36–0.6 eye widths (holotype 0.5); vertex and frons densely punctate, between eyes punctate-rugulose, clypeus with few punctations; genae and submentum wrinkled; ratio of exterior to interior edges of terminal palpomeres about 1.7:1 (maxillae) and 2:1 (labium); antennae not reaching base of pronotum; eyes and most of cranium vested with erect pale setae, frons with shorter finer medially-directed setae. *Prothorax*: Blackish to dark-brown; pronotum 1.14–1.26 times longer than wide (holotype 1.16), sides weakly angulate, middle wider than pronotal arch; subapical depression

v-shaped, meeting shallow central impression; disc densely punctate, a medial glabrous stripe from base to central impression, area either side of central impression weakly tumescent, partially glabrous; short fine multi-directional setae (forming subtle swirls adjacent to glabrous areas) and long erect setae. *Pterothorax*: Ventrites brown to orange, with numerous pale, posteriorly- to posteromedially-directed setae; elytra blackish-brown with orange markings (each elytron with a large apical macula and an angulate transverse fascia which narrows towards, and meets at, the suture—its anterior margin at basal one-third); length to width ratio 2.43–2.67:1 (holotype 2.66); 8th stria beginning within fascia, between seventh and eleventh punctation of 7th stria, all striae ending at or within apical macula, punctation lacking nodules, punctations posterior of fascia slightly smaller than those anterior to fascia, epipleurae extending into apical maculae, interstriae with very fine short semi-erect setae and less frequent longer thicker erect setae, several setae often across interstical width; hindwing with CuA_{3+4} and CuA_1 cross-veins complete, MP_{3+4} basad of CuA_1 crossvein small (but not completely absent). *Legs*: Basal two-thirds of femora yellow, apical third dark brown (on average); tibiae and tarsi dark brown, ventral tarsal pads yellowish; meso- and metafemora slender, profemora slightly swollen. *Abdomen*: Ventrites orange. *Male genitalia*: Tegmen (Fig. 28) broadest near middle, narrowing before expanding again before apically acuminate parameroid lobes, dorsal sinus about one-fifth tegmen length, wide open, sides slightly convergent, internal lateral opening with short membranous lobes bearing a brush-like row of very short setae, ventral sinus deeper (about one-quarter tegmen length), length of apodeme unclear due to gradual convergence of tegminal arms (though seemingly a little less than one-quarter tegmen length); median lobe as in Fig. 67; pygidium as in Fig. 103.

Variation. The punctures of the 7th stria, within the area anterior of the elytral fascia, in one specimen from Noonbah, are not linear but are staggered in a 'zig-zag' arrangement. This may incorrectly be interpreted as representing a broken 8th stria, however, on this specimen the 8th stria clearly begins just posterior of the anterior margin of the fascia.

Etymology. We name this species after Mr Angus Emmott, avid naturalist, and owner of Noonbah Station near Longreach.

Biology. Specimens were collected in October and November (NSW), November to July (Qld), November and December (NT), August, November and February (WA).

Distribution. Map 1 shows the distribution of *Ancyropilus emmotti* **sp. nov.** type specimens only. Additional specimens, from New South Wales, the Northern Territory and northern Western Australia were examined, but not designated as types.

Remarks. The species group name *Notopilo emmotti*, published in the 2009-2010 Bush Blitz survey report for north-western New South Wales and southern Queensland (ABRS 2014a) with no accompanying description and without reference to a name-bearing type, is deemed unavailable (ICZN 1999, Article 16.4).

Ancyropilus exossuarius sp. nov.

ZooBank registration: urn:lsid:zoobank.org:act:56A289C5-8C26-45DD-B2D2-C9E6F31AD5AD
(Figs 29, 68, 104, 140; Map 1)

HOLOTYPE ♀: **Queensland**: Qld, Plevna Downs. Tompilly Hill base (PD6). 187m 26.725°Sx142.651°E 16Sept-2Oct2008. Malaise Lambkin, Mackenzie, Starick. Eucalyptus 16278 (QM, type reg. T258546). **PARATYPES** (10): **Queensland**: Qld: 26.67°Sx142.577°E 2.5km WNW Plevna Downs HS (PD3 M) 133m. Gidgee 15 Mar-3 Apr 2009. Malaise. R. Mackenzie. 17317 (1 ♀, QM); Qld: Plevna Downs. 12.7km SSE HS (PD8). Malaise 26.786°Sx142.648°E 16Sept-2Oct2008. Starick, Lambkin, Mackenzie. 145m Eucalyptus 16285 (1 ♂, 2, QM); Qld:26.541°Sx142.516°E Plevna Downs, 2.3km SSW Arima (PD2 M) Malaise. 13 Jan-3 Apr 2008. 132m. R.Mackenzie. Gidgee 17284 (1 ♂, QM); Qld: 26.728°Sx142.651°E Plevna Downs, Tompilly Hill Base (PD6 M) 187m 24Apr-24Jul 2008. G Turner, R Mackenzie. Malaise. Gidgee. 17320. (1 ♀, 1, QM); Qld: 28.813°Sx144.462°E Currawinya NP. 4km NW HQ (CW3M) dense Mulga. 10-26Sep2008. 145m. A. Townsend & J. Burke. Malaise trap. 17227 (1 ♀, 1, QM); Qld: 24.135°Sx143.201°E 3.5km SE HS Noonbah Stn (NB1M) 182m Malaise. Eastern Dead Finish scrub 22Sep-20Oct2008. 17261 Lambkin, Starick, Emmott (1, QM).

Diagnosis. Pronotum rounded to weakly tuberculate, disc reflective in appearance, moderately punctate and weakly punctate-rugulose with impunctate areas, central impression not sulcate, tumescent areas either side of central impression indistinct; elytra dark with yellow-orange maculae (each elytron with a small faint humeral

macula, a large central fasciate macula which converges slightly towards the suture, plus an apical macula which meets the external and sutural margins), punctation without nodules, 8th stria beginning anterior to half way between base and fascia (between 2nd and 7th punctation of 7th stria), all ten striae reaching apical macula, basal and apical punctation similar in diameter, often more than one seta across interstrial width (particularly basal half); femora yellow and brown, tarsi with three ventral tarsal pads.

Ancyropilus exossuarius **sp. nov.** is superficially similar in appearance to *Notopilo cambageicola* **sp. nov.** (due to pronotal shape, general colouration and elytral maculation), though is easily recognised by the elongation of the elytra (length to width ratio of about 3:1 or longer) and elytral punctation, which lack nodules and do not differ significantly in diameter from the base to apex.

Description. *Habitus*: Fig. 140. *Total length*: 5.9–8 mm (holotype, 8 mm). *Head*: Vertex and frons black, clypeus reddish-brown, anteclypeus semi-transparent orange, labrum, antennae and palpi orange to orange-brown; eyes separated by about 0.53–0.71 eye widths (holotype, 0.65); vertex and upper part of frons punctate-rugulose, lower part of frons (above epistomal suture) transversely rugulose with occasional punctation near eye margins; clypeus with lateral punctation; genae and submentum wrinkled; exterior margins of terminal palpomeres about 1.5 times (maxillae) and 2 times (labium) the length of inside edges; antennae reaching near base of pronotum; eyes and cranium with long erect pale setae, frons and vertex with denser shorter medially-directed setae. *Prothorax*: Black to brownish, pronotal arch and basal collar often paler than disc, prosternum brownish-black (if pronotum black) or paler brown (if pronotum brown); pronotum about 1.2–1.35 times longer than wide (holotype, 1.24), sides rounded to weakly tuberculate, middle wider than pronotal arch; subapical depression v-shaped, central impression reasonably deep though obscure, not sulcate; disc with a smooth, reflective, general appearance, punctate near middle, punctate-rugulose laterally, a glabrous stripe basally from central impression, shorter semi-glabrous areas either side from base, a weak ovoid partly glabrous tumescence either side of central impression; lateral impression conspicuous, obscurly-shaped, positioned above weak lateral tubercle; disc with fine short multi-directional setae and sparser long erect setae. *Pterothorax*: Ventrites brown, with fine pale posteriorly- or medially-directed setae; elytra dark brown with yellow-orange markings (each elytron with a small faint humeral macula, a large central fasciate macula which converges slightly towards the suture, plus an apical macula which meets the external and sutural margins), length to width ratio 2.94–3.16:1 (holotype, 3.05:1); 8th stria beginning anterior to half way between base and fascia (between 2nd and 7th punctation of 7th stria), all ten striae reaching apical macula; punctation circular, without nodules, basal and apical punctation similar in diameter, punctures within striae close together (creating an appearance of neat straight rows of punctures); epipleurae extending into apical maculae; interstriae with short fine setae (usually more than one per puncture), plus erect setae only slightly longer or of similar length (one every two or three punctures), striae often with more than one seta across interstrial width (mostly in basal half); hindwing with CuA_{3+4} and CuA_1 cross-veins complete, MP_{3+4} basad of CuA_1 crossvein small (but not completely absent). *Legs*: Approximately basal three-fifths of femora yellow, remaining parts of femora brown (dark brown then paler brown near joint); tibiae and tarsi brown, tibial carinae darker; ventral tarsal pads yellowish; meso- and metafemora slender, profemora weakly swollen. *Abdomen*: Ventrites brown. *Male genitalia*: Tegmen (Fig. 29) with tegbase slightly wider than parameroid lobes, slightly narrowed between middle and robust parameroid lobes, apex tapered to a digitiform process, dorsal sinus about one-fifth tegmen length, inner margins weakly converging internally, internal limit curved, ventral sinus longer and broader than dorsal sinus, length of apodeme about one-fifth tegmen length; median lobe as in Fig. 68; pygidium as in Fig. 104.

Variation. In one male specimen from Plevna Downs (QM code 17284) the spaces between punctures in the longitudinal plane are proportionally larger than in other specimens of the type series, giving the impression that the striae are less orderly.

Etymology. The specific epithet *exossuarius* (from Latin 'ex' meaning from and, Latin 'ossuarius' meaning place for the bones of the dead) refers to the type locality Plevna Downs, an area of central Queensland known for its rich fossil deposits.

Biology. Specimens were collected from January to July and in September and October using Malaise traps in eucalypt and gidgee habitats.

Distribution (Map 1). *Ancyropilus exossuarius* **sp. nov.** is known from three locations in western Queensland, from as far north as 24ºS, to near the NSW border.

***Ancyropilus labris* sp. nov.**
ZooBank registration: urn:lsid:zoobank.org:act:83E4BDA5-6482-4754-81FE-75BEC2A47566
(Figs 142; Map 1)

HOLOTYPE (sex unknown): **Western Australia**: Kununurra W.A. 12.xii.1983 A.Postle (ANIC). **PARATYPE**: **Western Australia**: Wyndham W.A. 11 Jan 30 T. Campbell (1 ♀, ANIC).

Diagnosis. Pronotum angulate (tuberculate) laterally, disc punctate-rugulose laterally, smoother above, either side of central impression strongly tumescent; elytra notably broader than pronotum, dark with orange humeral, fasciate and apical maculations, the transverse fascia widening broadly towards lateral margins and narrowly at suture (anteriorly running along suture longer than posteriorly), punctation without nodules, 8th stria beginning at 6th punctation of 7th stria, all striae terminating at apical macula, more than one seta across interstrial width; femora predominantly yellow basally, black or brown apically, tarsi with three ventral tarsal pads.

Description. *Habitus*: Fig. 142. *Total length*: 7.45–8.1 mm (holotype, 7.45 mm). *Head*: Cranium black, clypeus and supra-antennal elevations with reddish hue, anteclypeus semi-transparent orange, labrum and antennae orange-brown, palpi orange; eyes separated by about 0.5 eye widths; frons narrow, more rugulose than punctate, upper part of frons partly glabrous, lower part (above epistomal suture) transversely rugulose; clypeus punctate laterally, smoother medially; genae and submentum wrinkled; exterior margins of terminal palpomeres about 1.4 times (maxillae) and 2.3 times (labium) the length of inside edges; antennae not reaching base of pronotum; eyes and most of cranium vested with long erect setae, frons and vertex with shorter medially-directed setae. *Prothorax*: Black or dark brown; pronotum about 1.15 times longer than wide, robust, sides angular (tuberculate), widest in middle; subapical depression deeply v-shaped, central impression small and deep, a weak impression above lateral tubercle, either side of central impression strongly tumescent, in middle at base weakly tumescent; disc conspicuously punctate-rugulose laterally, disc above, and pronotal arch, smoother with smaller punctation; well-distributed with very fine short setae (sometimes in tuft-like clusters around tumescent parts) and fewer long erect setae. *Pterothorax*: Sternites brown, with fine pale posteriorly-directed setae; elytra notably wider than pronotum, black or dark brown with orange markings, each elytron with a large apical macula, a broad transverse fascia which widens towards lateral margins and expands just before suture (anteriorly running along suture longer than posteriorly), and a small, less well-defined, humeral macula; length to width ratio 2.27–2.45:1 (holotype, 2.45:1); 8th stria beginning near anterior margin of fascia, at about 6th punctation of 7th stria, all striae reaching apical macula; punctation circular, without nodules; epipleurae extending half way into apical macula; interstriae dense with very short, fine, setae (>3 per puncture, often several setae across interstrial width), plus slightly longer erect setae (<1 per puncture). *Legs*: Basal half of profemora and basal three-fifths of meso- and metafemora yellow, femora black or brown apically, tibiae and tarsi brown, ventral tarsal pads orange; profemora slightly swollen, other femora slender. *Abdomen*: Brown. *Male genitalia*: Unknown.

Etymology. The specific epithet *labris* (from Greek 'labrys', a double-bladed axe) refers to the shape of the elytral fasciate maculae.

Biology. Adults have been collected during December and January.

Distribution (Map 1). *Ancyropilus labris* **sp. nov.** is known only from two specimens collected in the north-eastern corner of Western Australia.

Remarks. Most abdominal dissections made during the present revision were done so for the purpose of documenting male morphology. The relatively swollen abdomen of the *A. labris* holotype is far more suggestive of a female than a male. The integrity of the specimen was therefore maintained as the risk of causing damage to the specimen for no diagnostic gain was deemed high.

***Ancyropilus monteithi* sp. nov.**
ZooBank registration: urn:lsid:zoobank.org:act:827B290A-91D3-4C2F-8089-0C260E6AA1EE
(Figs 14, 30, 69, 105, 143; Map 1)

HOLOTYPE ♂: **Queensland**: Qld: 16°58′Sx145°26′E Emerald Hill, Mareeba. 6-7 Nov 2004. G.B. Monteith. open forest. 11680 (QM, type reg. T258547). **PARATYPES** (12): **Queensland**: same data as holotype (8, QM); Dimbulah, 11.11.43 (1, QDPC); 12.39S 142.42E, QLD, 4km NE Batavia Downs, 11 Dec 1992–17 Jan 1993, Malaise

Trap, P.Zborowski (1, ANIC); Mutchilba, N.Q., Dec. 1933, A. D. Selby // F. E. Wilson Collection // COL-65676 (1, NMV); same data as previous except COL-65678 (1, NMV).

Diagnosis. Pronotum rounded laterally, disc dense with setae and fine punctation; elytra notably broader than pronotum, dark with orange fasciate and apical maculations (humeral maculae absent), the transverse fascia large and curved at the suture, punctation without nodules, 8th stria beginning between 7th and 12th punctation of 7th stria, at least striae 2–9 terminating at apical macula, interstriae densely setose (Fig. 14); femora predominantly yellow, terminally brown, tarsi with three ventral tarsal pads.

Description. *Habitus*: Fig. 143. *Total length*: 11.1–13.2 mm (holotype, 12.1 mm). *Head*: Cranium black, clypeus, supra-antennal elevations and submentum black, gula, anteclypeus and labrum orange, antennae and palpi brown to orange-brown; eyes separated by about 0.72–0.8 eye widths (holotype, 0.8); vertex and frons with dense network of punctation, most punctures circular though interstical surface irregularly-shaped, vertex finely rugulose at base, frons with a short impunctate strip near vertex, slightly raised at narrowest point, transversely rugulose below narrowest point; clypeus with circular punctation, smooth before anteclypeus; genae and submentum wrinkled; exterior margins of terminal palpomeres about 1–1.5 times (maxillae) and 1.9–2.2 times (labium) the length of inside edges; antennae reaching base of pronotum or almost; eyes and most of cranium vested with long erect orange setae, frons and vertex densely distributed with shorter setae. *Prothorax*: Black; pronotum 1.17–1.3 times longer than wide (holotype, 1.2), sides rounded, middle about as wide as anterior part; subapical depression deeply v-shaped, central impression slight, lateral sulci indistinct, surface rough in appearance, densely covered in network of tightly-packed punctations; well-distributed with very fine short setae (sometimes in tuft-like clusters on disc near subapical depression) and fewer long erect setae. *Pterothorax*: Sternites dark brown, dense with fine posteriorly-directed setae; elytra blackish with orange markings (each elytron with a large apical macula and a broad fascia which curves at the suture), length to width ratio 2.44–2.54:1 (holotype, 2.45:1), notably wider than pronotum; 8th stria beginning between 7th and 12th punctation of 7th stria, at least striae 2–9 reaching apical macula with most punctation well-marked (striae 1 and 10 sometimes ending before apical macula); punctation circular, without nodules; epipleurae extending half way into apical maculae; interstriae dense with short, fine, setae (>3 per puncture, often several setae across interstrial width), plus longer thicker erect setae (<1 per puncture); hindwing with CuA_{3+4} and CuA_1 cross-veins complete, MP_{3+4} basad of CuA_1 crossvein small (but not completely absent). *Legs*: Femora predominantly yellow, black just before tibia, tibia entirely black, tarsi dark brown, ventral tarsal pads orange; femora slender (profemora slightly thicker but not particularly swollen). *Abdomen*: Ventrites orange. *Male genitalia*: Tegmen (Fig. 30) slightly narrowing toward parameroid lobes, dorsal sinus about one-quarter tegmen length, open apically, internally tapering inward with a semi-circular excavation on each side at half its length, terminally curved, ventral sinus of similar length, tegminal arms tapering gently to meet apodeme, apodeme about one-quarter tegmen length; median lobe as in Fig. 69; pygidium as in Fig. 105.

Etymology. We name this species after Dr Geoff Monteith, former Senior Curator of Queensland Museum Entomology, in acknowledgement of his lifelong commitment to entomology and species discovery in Queensland.

Biology. Adults have been collected during November and December. Mareeba specimens were collected in open forest. The Balavia Downs specimen was collected in a Malaise trap.

Distribution (Map 1). *Ancyropilus monteithi* **sp. nov.** is known from the Atherton Tableland and near Batavia Downs, Cape York Peninsula.

Ancyropilus noonbahensis sp. nov.

ZooBank registration: urn:lsid:zoobank.org:act:A18F8F55-4DCA-47F5-88F8-B4DAF5546A30
(Figs 31, 70, 106, 144; Map 1)

HOLOTYPE ♂: **Queensland**: Qld: 4km SE HS Noonbah Station (NB2 M), 198m, 24.137°Sx143.207°E, 19Jan-7Feb2009, Malaise, A. Emmott, Mulga, 17253 (QM, type reg. T258548). **PARATYPE**: **Queensland**: same data as holotype (1 ♀, QM).

Diagnosis. Pronotum robust, disc very densely punctate except narrow longitudinal stripe from central impression to pronotal furrow lacking punctation; elytra blackish-brown with orange fasciate and apical maculations, fasciae rounded before suture, humeral maculae absent, punctation lacking nodules, 8th stria

almost complete, only slightly shorter than 7th stria, all striae complete to apical maculae; femora yellow basally, brown apically, only profemora slightly swollen; tarsi with three ventral tarsal pads.

Ancyropilus noonbahensis **sp. nov.** is most similar to *Ancyropilus simplex* **sp. nov.** though differs from it by the tegmen with parameroid lobes entirely chitonised externally and U-shaped dorsal sinus, the femoral bases yellow, and the elytral apices clearly marked with a small yellow macula.

Description. *Habitus*: Fig. 144. *Total length*: 7.2–8 mm (holotype, 7.2 mm). *Head*: Cranium black (submentum and gula paler in holotype only), clypeus and supra-antennal elevations reddish-black, anteclypeus semi-transparent orange, labrum and pre-ultimate palpomeres orange, terminal palpomeres and antennae darker orange or brownish; vertex and frons with dense network of irregularly-shaped punctation which becomes transversely rugulose before epistomal suture, clypeus more punctate than rugulose basally, smooth apically; anterior clypeal margin broadly concave; eyes separated by 0.69–0.72 eye widths; genae wrinkled; terminal maxillary palpomeres with exterior margins about 2 (females and males) times the length of inside edges; terminal labial palpomeres with exterior margins about 2.5 (females and males) times the length of inside edges; antennae almost reaching base of pronotum; long and short, erect or medially-directed, pale setae. *Prothorax*: Blackish-brown; pronotum 1.14–1.22 times longer than wide, widest at the middle, sides almost angular in male holotype, more rounded in female paratype, lateral impression obscure, subapical depression v-shaped, not well-defined due distribution of punctation, central discal impression open; disc very densely punctate except a conspicuous slender impunctate longitudinal line from central sulcus to pronotal collar, pronotal arch and collar less densely punctate; pale fine multi-directional setae and thicker long erect setae. *Pterothorax*: Ventrites black or brownish, metaventrite conspicuously punctate, with short pale posteriorly-directed setae; elytra blackish-brown with orange maculations (each elytron with a small pre-apical macula and a broad fasciate band rounded at the suture); length to width ratio 2.61–2.79:1; punctation large, circular, anterior of fascia, smaller posterior of fascia, without internal nodules, all striae terminating near apex, 8th stria beginning near base; interstriae about as wide as corresponding punctures, with rows of fine erect setae (> 1/puncture) and longer erect setae every few punctures; epipleurae extending into apical curve; hindwing with CuA_{3+4} and CuA_1 cross-veins complete, MP_{3+4} substantialy extended basad of CuA_1 crossvein. *Legs*: Basal third of profemora and half or just less than half of meso- and metafemora yellow, apical two-thirds of profemora and half or slightly more than half of meso- and metafemora dark brown, tibiae and tarsi brown, ventral tarsal pads brownish-yellow; profemora slightly swollen, other femora more slender. *Abdomen*: Ventrites orange-brown. *Male genitalia*: Tegmen (Fig. 31) sinuate between equally broad base and parameroid lobes, parameroid lobes slightly bent inwards, apically with broad acumination, dorsal sinus slightly longer than one-quarter tegmen length, externally wide open, internal shape sub-spatulate, interrupted by opening with short membranous lobes which bear a row of setae, ventral sinus of similar length, apodeme about one-fifth tegmen length; median lobe as in Fig. 70; pygidium as in Fig. 106.

Etymology. The specific epithet, *noonbahensis*, refers to Noonbah Station, a property in western Queensland where the type specimens were collected.

Biology. The type series was taken in a single Malaise trap set up over the period 19 January to 7 February in mulga (*Acacia*) scrub.

Distribution (Map 1). *Ancyropilus noonbahensis* **sp. nov.** is known only from Noonbah Station in Western Queensland.

Ancyropilus packsaddlensis sp. nov.

ZooBank registration: urn:lsid:zoobank.org:act:E27871CE-9CEB-4109-B892-0C171352336E
(Figs 32, 71, 107, 145; Map 1)

HOLOTYPE ♂: **New South Wales**: Packsaddle, 111 mi. N Broken Hill, 21-24 Nov. 1969 // Malaise trap H.E. Evans, R.W. Matthews (ANIC). **PARATYPES** (4): **Queensland**: Qld: 26.67°Sx142.577°E 2.5km WNW Plevna Downs HS (PD3 M) 133m. 25 Nov 2008-17 Dec 2009. R. Mackenzie. Pitfall. Gidgee. 17317 (1 ♀, QM); Qld: 26.67°Sx142.577°E 2.5km WNW Plevna Downs HS (PD3 M) 131m. Gidgee. 15 Mar-3 Apr 2009. Malaise. R. Mackenzie. 17317 (1 ♀, 2, QM).

Diagnosis. Pronotum angulate to almost rounded laterally, disc heavily punctate, glabrous areas in middle at base and either side of central impression; elytra dark with orange humeral, fasciate and apical maculations, fascia (with anterior and posterior margins approximately parallel) meeting at the suture,

punctation lacking nodules, 8th stria beginning within fascia, at least striae 3–9 reaching apical maculae; femora yellow basally, brown apically, tarsi with three ventral tarsal pads.

Description. *Habitus*: Fig. 145. *Total length*: 6–7.1 mm (holotype 6.2 mm). *Head*: Cranium black to dark brown, submentum and gula bright orange, clypeus and supra-antennal elevation more reddish, anteclypeus orange, labrum, palpi and antennae orange-brown; eyes separated by 0.73–0.83 eye widths (holotype 0.73); vertex punctate, upper half of frons densely punctate, lower part punctate-rugulose until just before clypeus, clypeus with few punctations; genae and submentum wrinkled; ratio of exterior to interior edges of terminal palpomeres about 1.6:1 (maxillae) and 2.6:1 (labium); antennae not reaching base of pronotum; eyes and most of cranium vested with erect pale setae, frons with shorter finer medially-directed setae. *Prothorax*: Pronotal disc and arch variously dark and light brown (pronotal arch and a medial discal stripe often lighter than remainder of disc), basal collar and venter orange to yellowish; pronotum 1.2–1.24 times longer than wide (holotype 1.22), sides angulate to almost rounded, middle wider than pronotal arch; subapical depression v-shaped, meeting shallow central impression; disc densely punctate, a thin medial glabrous stripe from base to central impression (difficult to view in paler specimens), area either side of central impression weakly tumescent, partially glabrous; short fine multi-directional setae (forming subtle swirls adjacent to glabrous areas) and long erect setae. *Pterothorax*: Ventrites orange to yellowish, with numerous pale, posteriorly- to posteromedially-directed setae; elytra dark brown with orange markings (each elytron with a squarish humeral macula, a very broad transverse fascia which meets at the suture and large apical macula); length to width ratio 2.59–2.72:1 (holotype 2.63); 8th stria beginning within fascia (between its anterior margin and its middle), all striae reaching apical macula or striae 1, 2 and 10 not reaching apical macula, punctation lacking nodules, punctations posterior of fascia almost half the size of those anterior to fascia, epipleurae extending into apical maculae, interstriae with very fine short semi-erect setae and less frequent longer thicker erect setae, several setae often across interstical width; hindwing with CuA_{3+4} and CuA_1 cross-veins complete, MP_{3+4} basad of CuA_1 crossvein small (but not completely absent). *Legs*: Basal two-thirds of profemora and basal three-quarters of meso- and metafemora yellow, all femora apically dark brown; tibiae and tarsi brown, ventral tarsal pads yellowish; meso- and metafemora slender, profemora slightly swollen. *Abdomen*: Ventrites orange to yellowish. *Male genitalia*: Tegmen (Fig. 32) broadest near middle, narrowing before expanding again before apically acuminate parameroid lobes, dorsal sinus about one-quarter tegmen length, wide open, sides slightly convergent, internal lateral opening with short membranous lobes bearing a brush-like row of very short setae, ventral sinus about as deep, apodeme about one-quarter tegmen length; median lobe as in Fig. 71; pygidium as in Fig. 107.

Variation. The paler brown area of the pronotum may be distinct or obscure.

Etymology. This species is named after the type locality of the male holotype, Packsaddle in north-western New South Wales.

Biology. Specimens were collected using pitfall, and Malaise, traps during the periods November-December and March-April. Traps at Plevna Downs were placed in Gidgee (*Acacia*) plant communities.

Distribution (Map 1). *Ancyropilus packsaddlensis* **sp. nov.** is known only from Packsaddle in north-western New South Wales and Plevna Downs in south-western Queensland.

Remarks. Similarities in body form, and general shape of the tegmen, suggest *Ancyropilus packsaddlensis* **sp. nov.** and *A. emmotti* **sp. nov.** are closely related. The decision to describe them as distinct species was based on correlations between consistant differences in the depth of the dorsal sinus of the tegmen and elytral patternation.

Ancyropilus simplex sp. nov.

ZooBank registration: urn:lsid:zoobank.org:act:FA9C15ED-CF77-4BF3-A033-E401928ACE3E
(Figs 33, 72, 108, 146; Map 1)

HOLOTYPE (sex not determined): **Western Australia:** 22.09S 118.07E GPS, 25km NNW of Wittenoom Gorge, WA, 4 Oct. 1995, D.C.F.Rentz & L.Lowe, Stop 92 (ANIC). **PARATYPES** (42): **Western Australia**: same data as holotype (1 ♀, 1, ANIC); 25 km NW Bandya Stn., W. Aust., 2.xi.1989, K.T. Richards // Agriculture (Dept.) Western Australia 49857 (1 ♂, WADA); Carnarvon WA., 25-II-77, M.S. Moulds // Opilo congruus Newm. A. Walford Huggins det. 1983 (1 ♀, QM); 107 miles SSE of Carnarvon, WA, 21 April 1968, I.F.B.Common & M.S.Upton (1 ♀, 4, ANIC); Australia, WA Menzies, 10 km North, 14 January 1989, M.S. Moulds // K 304506 (1, AM); WA, Pilbara region. Juna Downs Station, Great Northern Highway, approx. 8km S of Karijini Dr toff., -22:41:36, 118:42:19, 3-

Jan-2006 to 8-Jan-2006, LTM sites, A. Donnelly & CVA Volunteer PILB038/11M (Malaise trap) // 1750 // K 246911 (1, AM); WA, Pilbara region. Hamersley station, Horseshoe Bore, 300m N of windmill, -22:29:10, 117:41:28; 16-Feb-2005, 20-Feb-2005, LTM sites, M. Bulbert & S. Ginn, PILB044/04M // 1135 // K 246910 (1, AM); WA, Pilbara region. Hamersley station, Horseshoe Bore, 300m N of windmill, -22:29:10, 117:41:28, 3-Jan-2006 to 8-Jan-2006, LTM sites, A, Donnelly & CVA volunteer, PILB044/11M (Malaise trap) // +2 // 1749 // K 246912 (1, WAM E113528, ex AM); WA, Pilbara region. Juna Downs Station, Juna Downs Rd to Packsaddle Bore approx. 5km E of homestead., -22:52:31, 118:31:49, 19-Nov-2004 to 24-Nov-2004, LTM sites, CVA volunteers, PILB039/03M (Malaise trap) // 1140 // K 246905 (1 ♂, AM); WA, Pilbara region. Juna Downs Station, Juna Downs Rd to Packsaddle Bore approx. 20km E of homestead, -22:51:30, 118:40:14, 3-Jan-2006 to 8-Jan-2006, LTM sites, A. Donnelly & CVA volunteer, PILB036/11M (Malaise trap) // 1753 // K 246898 (1, WAM E113529, ex AM); WA, Pilbara region. Nanburra-Wittenoom Rd, approx 13km NE of Railway Rd. x-ing, nr fenceline, -22:26:8, 117:49:56, 18-Nov-2004 to 23-Nov-2004, LTM sites, CVA volunteers, PILB041/03M (Malaise trap) // 1137 // K 246908 (1, AM); same data as previous except: 1138 // K 246907 (1 ♂, WAM E113530, ex AM); same data as previous except: 1139 // K 246906 (1 ♂, WAM E113531, ex AM); WA, Pilbara region. Nanburra-Wittenoom Rd, approx 13km NE of Railway Rd. x-ing, nr fenceline, -22:26:8, 117:49:56, 28-Oct-2005 to 2-Nov-2005, LTM sites, CVA volunteers, PILB041/10M (Malaise trap) // 2030 // K 246904 (1, AM); same data as previous except: 2031 // K 246913 (1, WAM E113532, ex AM); WA, Pilbara region. Nanburra-Wittenoom Rd, approx 13km NE of Railway Rd. x-ing, nr fenceline, -22:26:8, 117:49:56, 13-April-2005 to 18-April-2005, M. Bulbert & G. Wood, CVA volunteers, PILB041/05M (Malaise trap) // 1136 // K 246909 (1, AM); 28.22S 122.37E Deeba Rock Hole 34km NEbyE of Laverton WA 12.xi.1977 T.A.Weir (1, ANIC); Marloo Stn. Wurarga, W.A. 1931-1941 A. Goerling (1 ♂, 3 ♀, 6, ANIC); 7.5 km SE of Banjiwarn HS (27°42′S 121°37′E) W. Aust. 22-28 Feb. 1980. T.F. Houston *et al*. 316-10 // at light at night // Western Australian Museum Dept. of Biological Survey Site. B W Camp (1, WAM E88383); 37 km SW Youanmi. Western Australia. 28.45 S 119.31 E. 13-14 March 1982. T.F. Houston & B. Hanich. 437-8 // at light at night (1, WAM E88384); Kathleen Valley 27°24′S 120°39′E Western Australia 1963 T. Moriarty (1, WAM E88386); WA Charles Darwin Reserve, 2.5 km N White Wells HS 29°33′39″S 116°57′52″E 4-5 March 2008 T.F. Houston 1254-2b // ex gas lantern / pitfall trap 10:00pm to dawn, mixed shrubland with emergent eucalypts and native pine (1, WAM E88387); Ca. 1 km WSW of Koora Retreat, Koorarawalyee, Western Australia. 31°15′54″S 120°00′50″E 26-27 December 2011 T.F. Houston 1390-1 // Ex fluoro-light/pitfall trap operated 7:45 to 4 am (1, WAM E88388); Mogumber, 16.xii.55, Collector R.P. McMillan (1, WAM E88385); Wooramel River, West. Australia 25°47′S 115°58′E 14 April 1979, M. Peterson // at light at night (1, WAM E88380); Warnie River, 49 km E of Paynes Find, Western Australia, 12-13 March 1982, T.F. Houston & B. Hanich, 436-1 // at light at night (2, WAM E88374, E88375); Wannara Stn [Wannarra Station] WA, 13 Feb 2010, Light, SR Patterson (1, WAM E88401).

Diagnosis. Pronotum robust, disc very densely punctate except narrow longitudinal stripe from central impression to pronotal furrow, and small obscure area either side of central impression, lacking punctation; elytron blackish-brown with pale orange fasciate maculation, fascia rounded before suture, distinct humeral and apical maculae absent (common) or small apical macula present (uncommon), punctation lacking nodules, 8th stria beginning anterior to fascia, between 3rd and 8th punctation of 7th stria, all striae almost complete to apex; femora entirely dark brown, only profemora slightly swollen; tarsi with three ventral tarsal pads.

Ancyropilus simplex **sp. nov.** is most similar to *A. noonbahensis* **sp. nov.** though differs from it by the tegmen with base of parameroid lobes weakly chitonised externally and dorsal sinus V-shaped, the femora entirely black, and the apical elytral maculation absent (common) or only faintly represented (uncommon).

Description. *Habitus*: Fig. 146. *Total length*: 7.3–13.9 mm (holotype, 8 mm). *Head*: Cranium black, clypeus and supra-antennal elevations reddish-black, anteclypeus semi-transparent orange, labrum, palpi and antennae orange to reddish-brown; vertex and frons with dense network of irregularly-shaped punctation, above clypeus with weak transverse rugulosity; clypeus variable, rugulose to punctate, anterior margin straight to weakly angulate-concave; eyes separated by 0.65–0.96 eye widths (holotype, 0.75); genae wrinkled; terminal maxillary palpomeres with exterior margins about 1.8 times the length of inside edges; terminal labial palpomeres with exterior margins about 2.5 times the length of inside edges; antennae almost reaching base of pronotum; setae pale, long erect setae on, and bordering, eyes and along clypeus, shorter medially-directed on frons, posteriorly-directed setae above eyes. *Prothorax*: Black to blackish-brown; pronotum 1.13–1.24 times longer than wide (holotype, 1.19), middle about as wide as pronotal arch, sides rounded, lateral impression obscure, subapical depression v-shaped, central discal impression shallow, indistinct; disc very densely punctate except a conspicuous slender impunctate longitudinal

line from central impression to pronotal collar and small obscure area before pronotal arch either side of central impression, pronotal arch and collar less densely punctate; setae pale, dense fine multi-directional setae forming swirld around impunctate areas, thicker longer erect setae most dense laterally. *Pterothorax*: Ventrites black or brownish, metaventrite with seta-associated punctation, setae short pale posteriorly-directed; elytra blackish-brown with a single pale-orange maculation (each elytron with a broad fasciate band rounded at the suture), apices lacking maculation (common) or with a small pale macula (uncommon); length to width ratio 2.73–2.91:1 (holotype, 2.75); punctation circular, large anterior to fascia, smaller posterior of fascia, without internal nodules, all striae terminating near apex, 8th stria beginning anterior to fascia, between 3rd and 8th punctation of 7th stria (beginning closer to base in larger-sized specimens); interstriae about as wide as corresponding punctures (may appear narrower), with rows of fine semi-erect setae (> 1/puncture) and longer erect setae every few punctures, more than one seta often across interstrial width, epipleurae extending into apical curve; hindwing with CuA_{3+4} and CuA_1 cross-veins complete, MP_{3+4} substantialy extended basad of CuA_1 crossvein. *Legs*: Femora entirely dark brown, tibiae and tarsi lighter brown, longitudinal tibial carina often darker than rest of tibia, ventral tarsal pads pale brown; profemora slightly swollen, other femora slenderer. *Abdomen*: Ventrites orange to orange-brown. *Male genitalia*: Tegmenal plate (Fig. 33) broadest at base, narrowing before parameroid lobes, base of parameroid lobes weakly chitonised externally, tapered and digitiform apically, dorsal sinus about one-quarter tegmen length, wide open externally, internal limit V-shaped, opening at mid-point with short membranous (setose?) lobes, ventral sinus of similar length, apodeme about one-quarter tegmen length; median lobe as in Fig. 72; pygidium as in Fig. 108.

Etymology. The specific epithet, *simplex* (Latin, meaning single), refers to the single large orange maculation just posterior of the middle on each elytron. This is the only species of the genus in which most indivuals lack maculation on the elytral apices (a more-or-less distinct mark was observed on a single specimen).

Variation. Each elytron of one specimen collected at Juna Downs Station in the Pilbara region has a more-or-less distinct, small, pale, apical macula.

Biology. Specimens have been collected from October to April, some using a Malaise trap.

Distribution (Map 1). *Ancyropilus simplex* **sp. nov.** is known only from central Western Australia.

Ancyropilus tricolor sp. nov.

ZooBank registration: urn:lsid:zoobank.org:act:4343EC1B-5A36-4041-8764-6A57456C00DD
(Figs 9, 34, 73, 109, 147; Map 1)

HOLOTYPE ♂: **Western Australia**: 22.30S 117.58E GPS, 28km NE of Tom Price, WA, 26 Sep 1995, D.C.F.Rentz & J.Otto, Stop 73 // 95-73 at light (ANIC). **PARATYPES** (28): **Western Australia**: WA, Pilbara region. Hamersley station, Horseshoe Bore, 300m N of windmill,—22:29:10, 117:41:28, 22-Sep-2005 to 27-Sep-2005, CVA Volunteers, PILB044/09P (pit trap) // 2023 // K 246875 (1, AM); WA, Pilbara region. Hamersley station, Horseshoe Bore, 300m N of windmill,—22:29:10, 117:41:28, 18-Nov-2004, 23-Nov-2004, LTM sites, CVA Volunteers, PILB044/03M [Malaise trap] // 1119 // K 246878 (1, AM); same data as previous except: 1117 // K 246866 (1, WAM E113533, ex AM); WA, Pilbara region. Hamersley station, Horseshoe Bore, 300m N of windmill, -22:29:10, 117:41:28, 16-Feb-2005 to 20-Feb-2005, LTM sites, M. Bulbert & S. Ginn, PILB044/04M [] // 1116 // K 246867 (1, AM); same data as previous except: 1115 // K 246868 (1, WAM E113534, ex AM); WA, Pilbara region. Hamersley station, Horseshoe Bore, 300m N of windmill, -22:29:10, 117:41:28, 13-Apr-2005 to 18-Apr-2005, LTM sites, M.Bulbert & G. Wood, PILB044/05M [Malaise trap] // 1112 // K 246871 (1 ♀, AM); same data as previous except: 1113 // K 246870 (1, WAM E113545, ex AM); same data as previous except: 1114 // K 246869 (1 ♂, WAM E 113536, ex AM); WA, Pilbara region. Hamersley station, Horseshoe Bore, 300m N of windmill, -22:29:10, 117:41:28, 30-Sep-2004 to 5-Oct-2004, LTM sites, CVA Volunteers, PILB044/02M [Malaise trap] // 207 // K 246876 (1 ♀, AM); WA, Pilbara region. Hamersley station, Horseshoe Bore, 300m N of windmill, -22:29:10, 117:41:28, 26-May-2004 to 29-May-2004, LTM sites, A. Donnelly & G. Carter, PILB044/01M [Malaise trap] // 2024 // K 246874 (1 ♀, WAM E113537, ex AM); WA, Pilbara region. Juna Downs Station, Juna Downs Rd. to Packsaddle Bore approx. 20km E of homestead, -22:51:30, 118:40:14, 13-April-2005 to 18-April-2005, LTM sites, M. Bulbert & G. Wood, PILB036/05M [Malaise trap] // 1111 // K 246872 (1 ♂, WAM E113538, ex AM); WA, Pilbara region. Juna Downs Station, Juna Downs Rd. to Packsaddle Bore approx. 5km E of homestead, -22:52:31; 118:31:49, 19-Nov-2004 to 24-Nov-2004, LTM sites, CVA Volunteers, PILB039/03M [Malaise trap] // 1118 // K 246879 (1, AM); WA, Pilbara

region. Juna Downs Station, Great Northern Highway, approx. 8km S of Karijini Dr toff., -22:41:36, 118:42:19, 3-Jan-2006 to 8-Jan-2006, LTM sites, A. Donnelly & CVA Volunteer, PILB038/11M [Malaise trap] // 1751 // K 246865 (1, WAM E113539, ex AM); WA, Pilbara region. Nanburra-Wittenoom Rd, approx 10km NE of Railway x-ing, nr railway crossing, -22:26:36, 117:48:23, 13-April-2005 to 18-April-2005, LTM sites, M. Bulbert & G. Wood, PILB042/05M [Malaise trap] // 1110 // K 246873 (1 ♂, AM); WA, 2km South-west of Paraburdoo along Paraburdoo-Nanutarra rd., -23:11:53, 117:39:15, 19-Feb-2005, Adhoc collection, M. Bulbert & S. Ginn, PILB080/LT6 // 1120 // K 246877 (1, AM); 22.25S 115.49E GPS, Timbuck Well, 35.5km ENE of Nanutarra H.S., WA, 7 Oct 1995, D.C.F.Rentz & L.Lowe, Stop 98 (1 ♀, ANIC); Marloo Stn. Wurarga, W.A., 1931-1941, A. Goerling (1, ANIC); Wurarga, WA, A. Goerling (1, ANIC); Australia,WA06/102, Dilgaty Brook, 22km nne. Landor-Carnarvon/Mullewa Rd 25.28591S, 116.21177E, 439m, 3.2.2006, M.Baehr (1, RGCM); Australia, WA06/118, Toolonga Cr. 30km ne. Cane River, 21.95651S, 115.65010E, 89m, 10.2.2006, M.Baehr (1, WAM E113541, ex RGCM); 11 mi. SbyW of Cocklebiddy, WA, 32.45S 126.03E, 22.xi.69, at light, Mallee, Callitris, on white sand, Britton, Taylor & Upton (1, ANIC); 26.03S 127.14E, 66km EbyN of Warburton, WA, 15.xi.1977, T.A.Weir (1 ♂, 1 ♀, 1, ANIC). **South Australia**: 27.18S 133.41E, 41 km WbyN of Welbourn Hill, SA, 21.xi.1977, T.A. Weir (1 ♀, ANIC); S.Aust., Vokes Hill Junc., 30°8′S 135°4′E, at light, Sandy Desert surv, 19 Sept 2001, PJ Lang (1 ♂, SAMA); S.Aust., Gawler Ra., Kolay Dam, 21 33′S 135 36′E, at light, Paney Stn., 7 Dec 1989, J. Forrest (1, SAMA). **Queensland**: Qld: 28.872°Sx144.502°E, Currawinya NP, Woolshed (CW1 M), 1-12 Dec 2008, 136m, Malaise, Mulga A. Townsend J. Burke, 18116 (1 ♂, QM).

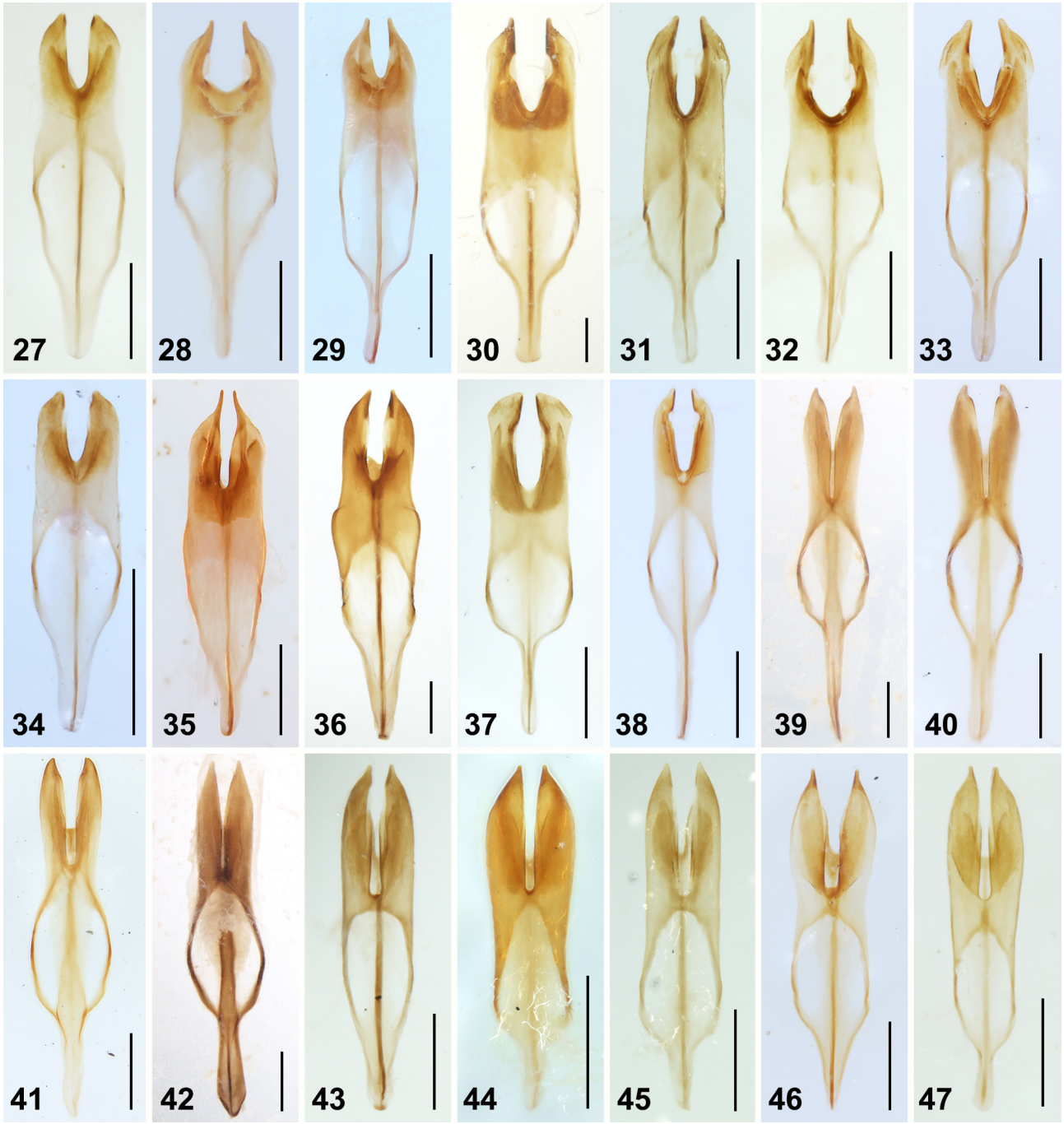
Diagnosis. Pronotum rounded, disc densely punctate, with three small glabrous regions (one baso-medially, one either side of central impression); elytra dark with brown and yellowish maculations (each elytron with a brown basal region, a small yellowish baso-lateral macula beneath humeral angle, a yellow transverse fascia curved before suture and an angular apical macula), punctation without nodules, 8th stria beginning near base (between 2nd and 7th punctation of 7th stria), all striae reaching apical macula, occasionally more than one seta across interstrial width; femora yellow and brown (femora of some specimens with black also), tarsi with three ventral tarsal pads.

Ancyropilus tricolor **sp. nov.** differs from the morphologicaly similar *A. brigalowae* **sp. nov.** by the V-shaped internal margin of the tegminal dorsal sinus and the colouration of the pronotum and elytra base (brown rather than black).

Description. *Habitus*: Fig. 147. *Total length*: 4.4–7 mm (holotype, 6.8 mm). *Head*: Cranium dark brown, clypeus and supra-antennal elevations more reddish, anteclypeus semi-transparent orange, labrum, antennae and palpi orange to orange-brown; eyes separated by about 0.6–0.87 eye widths (holotype, 0.77); vertex heavily rugulose, upper part of frons more punctate than rugulose, lower part of frons (above epistomal suture) less punctate with light transverse rugulosity, slightly raised on some specimens; clypeus not heavily punctate; genae and submentum wrinkled; exterior margins of terminal palpomeres about 1.4 times (maxillae) and 2 times (labium) the length of inside edges; antennae almost reaching base of pronotum; eyes and cranium with well-separated long erect pale setae, frons and vertex with denser shorter medially-directed setae. *Prothorax*: Brown (castaneous); pronotum 1.13–1.18 times longer than wide (holotype, 1.14), sides rounded, middle slightly wider than pronotal arch; subapical depression deeply v-shaped; central impression short, punctate; disc convex, dense with irregularly-shaped punctation, a longitudinal glabrous stripe basally, an ovoid glabrous tumescence either side of central impression; well distributed with fine short setae and sparsely with longer erect setae. *Pterothorax*: Ventrites brown, with fine pale posteriorly- or medially-directed setae; elytra blackish-brown with yellowish and brown markings (each elytron with a yellowish apical angulate macula, a broad yellowish central fascia curved at the suture, a small yellowish baso-lateral macula beneath humeral angle and a brown scalene-triangular basal region—the two longest sides running from the humerus to the suture and along the suture), length to width ratio 2.47–2.74:1 (holotype, 2.56:1); 8th stria beginning anterior of fascia, between 2nd and 7th punctation of 7th stria (first few punctations widely spaced in some specimens), all striae extending to apical macula; punctation circular, without nodules; epipleurae extending into apical maculae; interstriae with short fine setae (at least one per puncture) along sides of striae (proximal to edge of punctations), plus longer thicker erect setae (at least one every two punctures) along midline of striae (more than one seta across strial-width when the two setal types overlap); hindwing with CuA_{3+4} and CuA_1 cross-veins complete, MP_{3+4} basad CuA_1 crossvein small (but not completely absent). *Legs*: Approximately basal one-third to two-fifths of profemora and basal half of meso- and metafemora yellow, remaining parts of femora black-brown centrally and brown apically (or just brown in pale specimens); tibiae and tarsi brown, tibial carinae darker; ventral tarsal pads yellowish; profemora moderately swollen, other femora slender. *Abdomen*: Ventrites light to dark brown (tan). *Male genitalia*: Tegminal plate (Figs

9, 34) with base slightly broader than parameroid lobes, weakly narrowing between middle and parameroid lobes or not, apex externally tapered toward sinus, not acuminate or digitiform, dorsal sinus about one-fifth tegmen length, internal limit more angular than rounded, inner margins interrupted by opening above middle, ventral sinus slightly longer, tegminal arms tapering gradually to meet broad apodeme, length of apodeme about one-fifth to one-quarter tegmen length (difficult to determine); median lobe as in Fig. 73; pygidium as in Fig. 109.

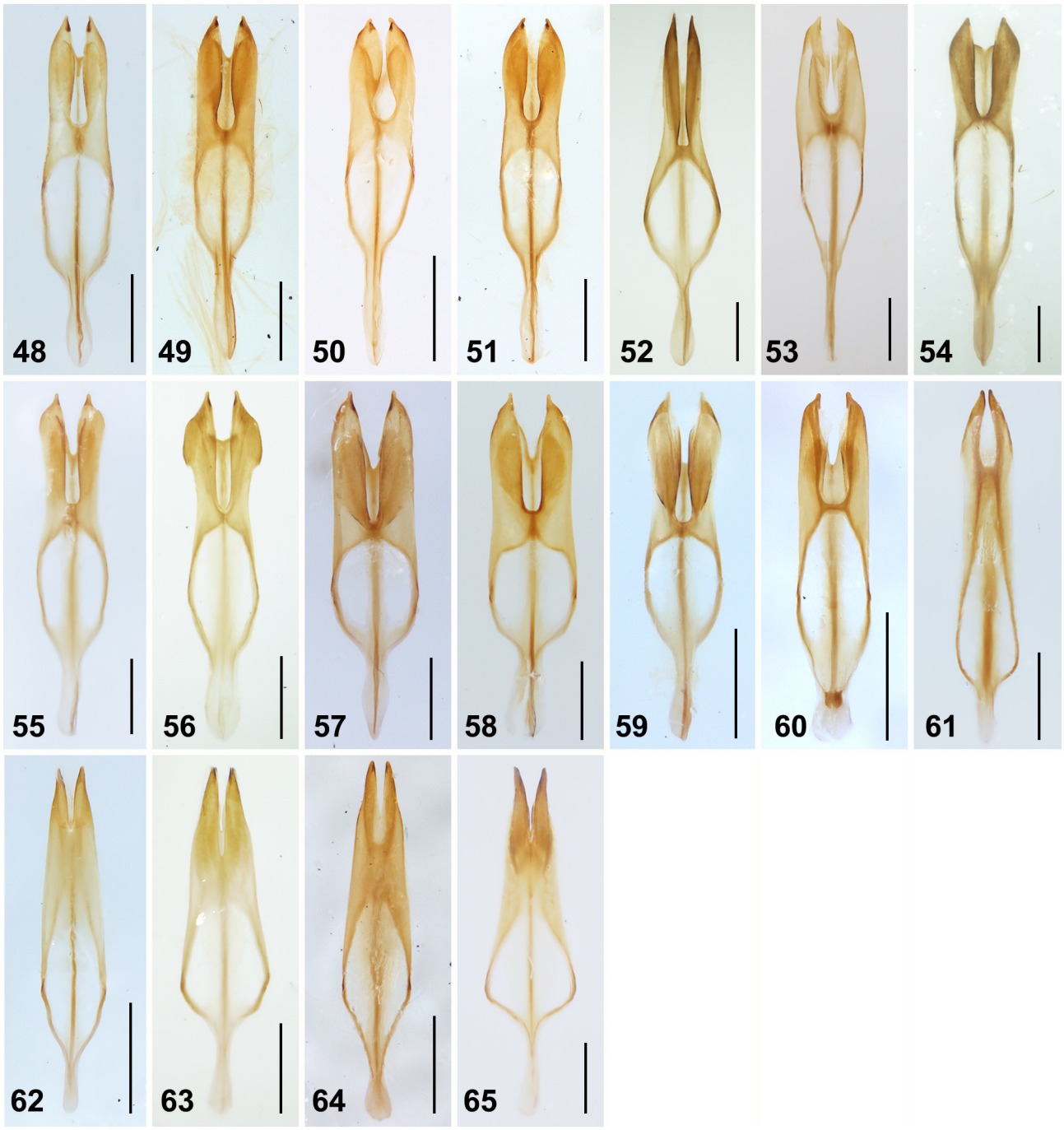
Etymology. The specific epithet *tricolor* refers to the three-tone pigmentation of the elytra (black, brown and yellow).



FIGURES 27–47. Tegmina, dorsal: (27) *Ancyropilus brigalowae*, paratype; (28) *Ancyropilus emmotti*, holotype; (29) *Ancyropilus exossuarius*, paratype; (30) *Ancyropilus monteithi*, holotype; (31) *Ancyropilus noonbahensis*, holotype; (32) *Ancyropilus packsaddlensis*, holotype; (33) *Ancyropilus simplex*, paratype; (34) *Ancyropilus tricolor*, paratype; (35) *Ancyropilus hornensis*, paratype; (36) *Culcipternotus mareebensis*, paratype; (37) *Infectostriatus absentis*, holotype; (38) *Infectostriatus differens*, holotype; (39) *Monilonotum bunyense*, paratype; (40) *Monilonotum doddi*; (41) *Monilonotum pascoei*; (42) *Monilonotum sundholmi*, paratype; (43–47) *Notopilo*, *beswickensis* species group—(43) *Notopilo beswickensis*, holotype; (44) *Notopilo calicis*, paratype; (45) *Notopilo tompricensis*, holotype; (46) *Notopilo xanthoimprocerus*, holotype; (47) *Notopilo xanthoprolatus*, holotype (scale bars: 0.5 mm).

Biology. Specimens of the type series were collected from September to May at light or using Malaise or pit traps.

Distribution (Map 1). *Ancyropilus tricolor* **sp. nov.** is described from specimens collected in Western Australia, South Australia, and southern Queensland.



FIGURES 48–65. Tegmina, dorsal: (48–51) *Notopilo*, *cambageicola* species group—(48) *Notopilo cambageicola*, paratype; (49) *Notopilo interfabulatus*, paratype; (50) *Notopilo lawnhillensis*, paratype; (51) *Notopilo tanybasilaris*, holotype; (52) *Notopilo congruus* (*congruus* species group); (53) *Notopilo reduncus* (*reduncus* species group); (54–56) *Notopilo*, *variipes* species group—(54) *Notopilo brevistriatus*, paratype; (55) *Notopilo gerstmeieri*, holotype; (56) *Notopilo variipes*; (57–60) *Notopilo*, unplaced to species group—(57) *Notopilo confusus*, holotype; (58) *Notopilo elstoni*, holotype; (59) *Notopilo katherinensis*, holotype; (60) *Notopilo obesus*, paratype; (61) *Platynotum bulli*, paratype; (62) *Platynotum culgoense*, holotype; (63) *Platynotum femorale*; (64) *Platynotum foveosetosa*, holotype; (65) *Platynotum gracile*, holotype (scale bars: 0.5 mm).

hornensis species group

Diagnosis. Most elytral striae terminating near apical macula; interstriae with neat singular row of hairs; tegmen with narrowly digitiform parameroid lobes, ventral sinus equal in length to dorsal sinus, middle slightly broader than parameroid lobes.

Ancyropilus hornensis sp. nov.

ZooBank registration: urn:lsid:zoobank.org:act:91850EDB-374C-48AE-BB1E-28B7B0E321E2
(Figs 35, 74, 110, 141; Map 1)

HOLOTYPE ♂: **Northern Territory:** Horn Islet Pellew Group, N.T. 15-21 Feb. 1968 B. Cantrell (QM, type reg. T258549). **PARATYPES** (2)**: Northern Territory:** Horn Islet Pellew Group, N.T. 15-21 Feb. 1968 B. Cantrell (1 ♂, QM); Horn Islet Sir Edward Pellew Group, N.T. 15-21.ii.1968 B. Cantrell (1 ♀, QM).

Diagnosis. Pronotum rotund (sub-globose); elytra dark with orange humeral fasciate and apical maculations (humeral maculae less well-defined), 8th stria beginning near anterior margin of fascia or within fascia, striae reaching apical maculae, interstrial setae not dense as in other *Ancyropilus* species; femora yellow basally, brown apically, tarsi with three ventral tarsal pads.

Description. *Habitus*: Fig. 141. *Total length*: 7.3–9.8 mm (holotype, 8 mm). *Head*: Vertex and frons black to dark brown, clypeus reddish black or brown, anteclypeus semi-transparent orange, labrum, antennae and palpi orange to orange-brown; eyes separated by about 0.54–0.65 eye widths (holotype, 0.54); vertex and upper part of frons punctate-rugulose, lower part of frons (above epistomal suture) transversely rugulose with occasional punctation near eye margins; clypeus relatively heavily punctate; genae and submentum wrinkled; exterior margins of terminal palpomeres about 1.5 times (maxillary) and 2 times (labial) the length of inside edges; antennae not reaching base of pronotum; eyes and cranium with long erect pale setae, frons and vertex with denser shorter medially-directed setae. *Prothorax*: Dark brown, pronotal arch and basal collar generally paler than disc, prosternum dark to pale brown; pronotum robust (sub-globose), about 1.14–1.25 times longer than wide (holotype, 1.14), sides rounded to subtly angulate, middle wider than pronotal arch; subapical depression v-shaped, central impression obsolete; disc moderately punctate though with a smooth reflective general appearance, punctures more dense laterally, a medial glabrous stripe in basal half, base with paired paramedical glabrous tumescences, anterior paramedical tumescent areas partly glabrous; disc with fine short multi-directional setae and sparser long erect setae. *Pterothorax*: Ventrites dark orange-brown, with fine pale posteriorly- or medially-directed setae; elytra dark brown with yellow-orange markings (each elytron with a weakly defined humeral macula running obliquely towards but not reaching the suture, a broad median fascia that crosses the suture and is broadest laterally—anteriorly meeting the humal macula in the female paratype, plus a trigonal apical macula), length to width ratio 2.62–2.72:1 (holotype, 2.72:1); 8th stria beginning near anterior margin of median fascia, or within fascia (after about 7–10 punctures from base of the 7th stria), all ten striae reaching apical macula, or 6th and/or 10th striae terminating before apical macula; punctation circular, without nodules, diameter of apical punctation similar or slightly smaller than diameter of basal punctures, striae separated by approximately one puncture diameter; epipleurae extending into apical maculae; interstrial setae generally arranged single-file along striae (two setae across strial width observed in striae posterior of median fascia); intrafoveal setae shorter than puncture diameter in the two observed males and as long as puncture diameter in the only known female specimen. *Legs*: Approximately basal half of profemora and basal three-fifths of meso- and metafemora yellow, remaining parts of femora brown; tibiae and tarsi brown, tibial carinae darker; ventral tarsal pads yellowish; meso- and metafemora slender, profemora weakly swollen. *Abdomen*: Ventrites brown. *Male genitalia*: Tegmen (Fig. 35), widest near middle, slightly narrowed between middle and parameroid lobes (the apices of which are tapered to a slender, pronounced, slightly inwards-directed digitiform process), dorsal sinus just under one-third tegmen length, ventral sinus about as long as dorsal sinus, apodeme very short, about one-fifthteenth tegmen length; median lobe as in Fig. 74; pygidium as in Fig. 110.

Etymology. This species is named after the type locality of Horn Islet, of the Sir Edward Pellow group of islands located in the south-west corner of the Gulf of Carpentaria, Northern Territory.

Biology. All three adult specimens were collected in mid-February.

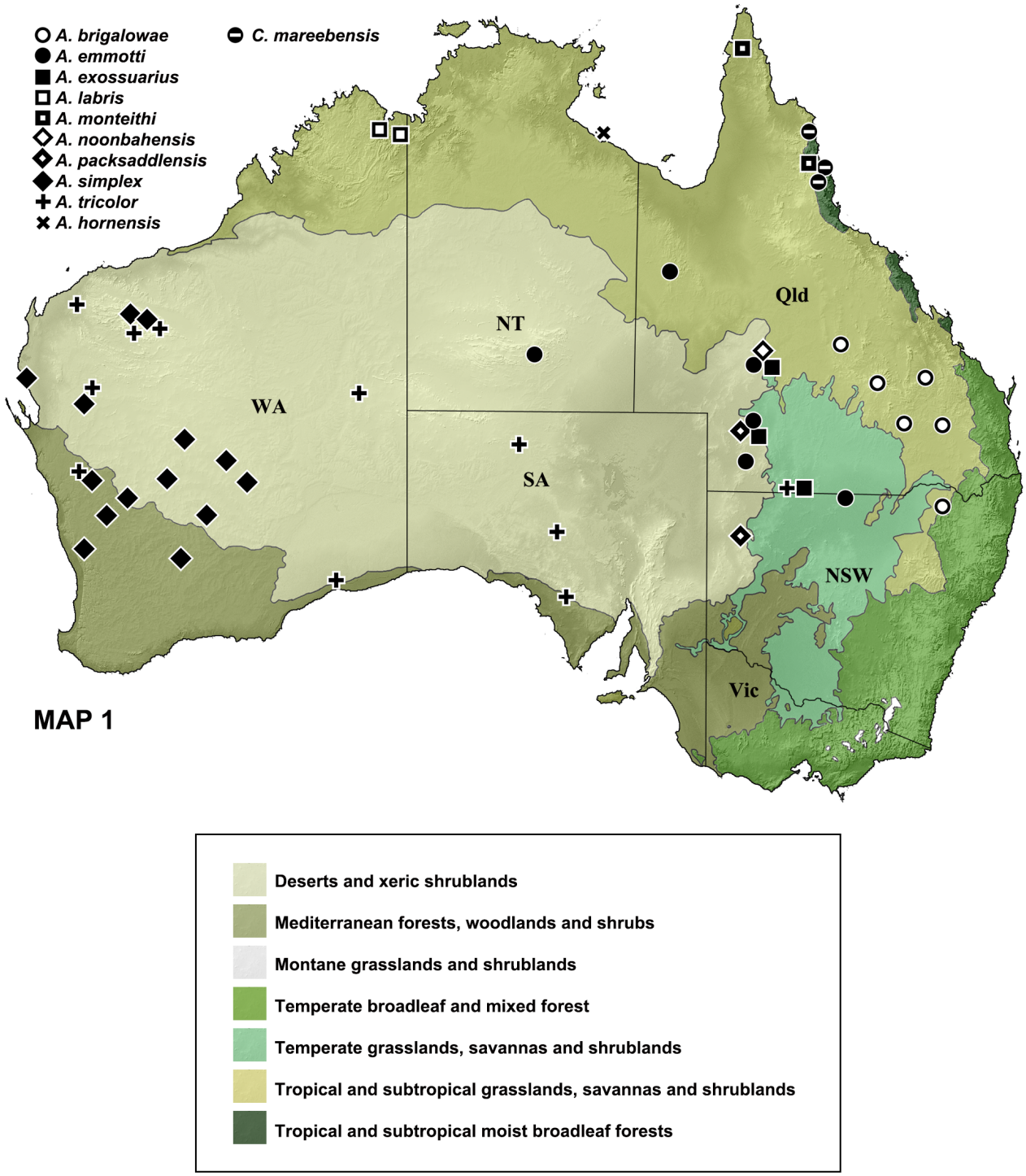
Distribution (Map 1). *Ancyropilus hornensis* **sp. nov.** is so far known only from Horn Islet, a small rocky landmass about 2 km long, near the larger Centre Island.

***Culcipternulus* gen. nov.**
ZooBank registration: urn:lsid:zoobank.org:act:949D3490-731A-46C6-968D-9F11CE8FCCCC

Gender. Masculine.

Type species. *Culcipternulus mareebensis* **sp. nov.**, by present designation.

Diagnosis. Punctures of at least elytral striae 1–3 terminating before apical macula; interstriae with neat singular row of hairs; all basitarsi with a small but distinct ventral tarsal pad (Fig. 18); tegmen with sides gradually narrowing towards distal end of phallobasic apodeme, middle notably broader than parameroid lobes, ventral sinus shorter than dorsal sinus.



MAP 1. Species distribution for *Ancyropilus* and *Culcipternotus*, with colour legend to National Reserve System Terrestrial Ecoregions (topographic layer image credit: NASA 2002).

Description. Eyes coarsely-facetted, strongly emarginate above supra-antennal elevations, separated by 0.9–1.08 eye widths; antennal scape with carina bordering each side of flattened rear face; sensory face of terminal maxillary palpomere approximately 2.5 times longer than inside margin; sensory face of terminal labial palpomere approximately 3 times longer than inside margin; genae wrinkled, submentum partly wrinkled; pronotum 1.16–1.23 times longer than wide, middle broader than anterior pronotal arch, disc with relatively heavy punctures, central discal impression not distinctly sulcate; elytra 2.48–2.55 times longer than wide at humeri, punctures without nodules, eighth stria beginning near base, most elytral striae terminating before apices, interstrial setae arranged in simple rows (not with several setae across strial width), intrafoveal setae present; hindwing with CuA_{3+4} and CuA_1 cross-veins complete; tarsi each with four well-developed ventral pads (pads of basitarsi smaller, though well-formed); tegmen ventral sinus about three-quarters as long as dorsal sinus; median lobe with conspicuous rearward-directed apico-lateral spine.

Etymology. The generic epithet *Culcipternulus* (a combination of Latin 'culcita' meaning cushion or pillow, Greek 'pterna' meaning heel, and the diminutive suffix '-ulus'), refers to the small ventral pads present on all basitarsi, a condition unique among the genera treated in this revision.

Remarks. *Culcipternulus* is represented in collections by only six specimens, potentially constituting two species seperable only by genetalic characters. One of these forms is described below, with formal designation of species-status for the other pending further investigation.

Culcipternulus mareebensis sp. nov.

ZooBank registration: urn:lsid:zoobank.org:act:97EF3741-9818-47CA-8C44-7533069E1777
(Figs 8, 18, 36, 75, 111, 148; Map 1)

HOLOTYPE (sex unknown): **Queensland**: Qld: 16°58′Sx145°26′E Emerald Hill, Mareeba. 6-7 Nov 2004. G.B. Monteith. Open forest. 11680 (QM, type reg. T258550). **PARATYPES** (3): **Queensland**: Water trap Bakerville 9-xii-1969 J.D. Brown (1 ♂, QDPC); 15.29S 145.16E Mt. Cook Nat. Pk. QLD 11-12 Oct. 1980 T. Weir (1, ANIC); Queensland. F.P. Dodd. 1904-27. // Opilo congruus Newm. aberr. script. S. Schenkling det. (1, NHML).

Additional material. Western Australia: 14.37S 125.48E, 8km SW Walsh Pt., 17 May 1983, WA, I.Naumann, J.Cardale (1 ♂, ANIC); Nita Downs Station 19°05′S 121°41′E Western Australia January 1981 A.M. & M.J Douglas // mostly from swimming pool or vicinity of homestead light. Ex alcohol (1, WAM).

Diagnosis. Middle of pronotum rounded, broader than anterior part, disc densely punctate; elytra dark brown with black areas bordering orange fasciate and apical maculae, punctation without nodules, 8th stria beginning near base, most striae terminating before apical maculae; femora mostly brown though yellow at base, all tarsi with 4 ventral tarsal pads.

Description. *Habitus*: Fig. 148. *Total length*: 12.2–15.8 mm (holotype 12.4 mm). *Head*: Cranium reddish-brown, supra-antennal elevations darker, anteclypeus, labrum, palpi and antennae also reddish-brown; eyes separated by 0.9–1.08 eye widths (holotype 0.9); vertex and frons dense with circular to irregular-shaped punctures (surface appearing weakly rugose in parts), frons weakly convex, clypeus smooth with a few circular punctures (seta-associated); genae wrinkled, submentum partly wrinkled (a narrow smooth strip medially); ratio of exterior to interior edges of terminal palpomeres about 2.5:1 (maxillae) and 3:1 (labium); antennae relatively short (compared to other species treated in this revision) not reaching base of pronotum; eyes and most of cranium vested with erect pale setae, frons with shorter medially-directed setae. *Prothorax*: Reddish-brown; pronotum 1.16–1.23 times longer than wide (holotype 1.23), sides rounded, widest at middle; subapical depression v-shaped, terminating in a shallow non-sulcate central depression; disc dense with large irregular-shaped punctures, spaces between punctures rugose in appearance, a smooth transverse tumescence either side of central impression, a smooth longitudinal strip behind central impression; short fine multi-directional setae and long erect setae. *Pterothorax*: Ventrites reddish-brown to dark brown; metaventrite with numerous seta-associated punctures, most setae directed postero-medially; elytra brown and black with orange to yellowish fasciate and apical markings (each elytron with a large orange transverse hatchet-shaped fascia which is broadest laterally, and an orange apical macula which meets the outside margin; the brown areas between base and fascia and fascia and apex infused with black); elytra length to width ratio 2.48–2.55:1 (holotype 2.53); 8th stria beginning near base; punctation without lateral nodules; punctures large at base, reducing in diameter towards apices (to about half diameter or smaller posterior of fascia), most striae

ending before apical maculae; epipleurae virtually obsolete at apical maculae; interstriae with singular rows of fine posteriorly-directed semi-decumbent setae, and less frequent longer erect setae. *Legs*: Femora yellow basally and brown apically (apical two-thirds to three-quarters of profemora and a little more than the apical half of meso- and metafemora brown), tibiae and tarsi brown, all basitarsi with a small but distinct ventral tarsal pad (Fig. 18), tarsal pads yellowish; profemora slightly thicker than other femora. *Abdomen*: Ventrites brown. *Male genitalia*: Tegmen as in Figs 8, 36, tegminal plate with an incurved lateral sclerite at its broadest point, weakly sinuate towards parameroid lobes which neatly taper to a rounded (not digitiform) point distally, dorsal sinus weakly narrowed in middle, about one-quarter tegmen length, ventral sinus about three-quarters as long as dorsal sinus; median lobe as in Fig. 75; pygidium as in Fig. 111.

Etymology. This species is named after its type locality, the northern Queensland town of Mareeba.

Biology. Specimens have been collected in October, November and December.

Distribution (Map 1). Queensland: Atherton Tablelands. Western Australia: Kimberley.

Remarks. Specimens from Western Australia cannot be morphologically differentiated from the Queensland specimens constituting the type series. A male from Walsh Point (Mitchell Plateau, WA) was dissected and the tegmen found to differ slightly in proportion (though not in shape) to that of the male from Bakerville (Irvinebank, Qld). The absence of the blackish colouration above and below the fascia observed on the Walsh Point specimen does not correlate with geography as the elytral colouration of the other Western Australian specimen is more like those from Queensland. In the absence of strong evidence for species-status for the Western Australian specimens we consider them, and the Queensland specimens to be disjunct populations of a single species. The Western Australian specimens are not given paratype status in case strong evidence for species-status is presented at a later date.

Infectostriatus gen. nov.

ZooBank registration: urn:lsid:zoobank.org:act:C11736E5-943C-41E5-8D14-DF24D7BF7B65

Gender. Masculine.

Type species. *Infectostriatus absentis* **sp. nov.**, by present designation.

Diagnosis. Intrafoveal setae short but visible under magnification; basitarsi without a distinct ventral pad; ninth elytral stria absent (Fig. 15); inside lateral rims of elytral punctures with nodules; elytral interstriae with several setae distributed across interval width; elytral striae terminating near apices; apical lobes of median lobe with rearward-directed spine or barb.

Description. Eyes coarsely-facetted, strongly emarginate above supra-antennal elevations, separated by 0.5–0.8 eye widths; antennal scape with carina bordering each side of flattened rear face; sensory face of terminal maxillary palpomere 1.6 times longer than inside margin; sensory face of terminal labial palpomere 2.3–3.0 times longer than inside margin; genae wrinkled; pronotum 1.15–1.3 times longer than wide, broadest near middle, disc lightly to heavily punctate, median sulcus present; elytra 2.44–2.8 times longer than wide at humeri, punctures with nodules, eighth stria with post-basal/pre-apical interruption or beginning between tenth and fifteenth puncture of seventh stria, ninth stria absent, most marginal and discal striae terminating near apices, interstrial setae not in single rows (often several setae across interval width), intrafoveal setae present; hindwing with CuA_{3+4} cross-vein complete, CuA_1 cross-vein complete, RP not incurvate; tarsomeres 2–4 each with a well-developed ventral pad; tegmen ventral sinus as long as, or longer than dorsal sinus; median lobe with apico-lateral spine.

Etymology. The generic epithet *Infectostriatus* (from Latin 'infectus' meaning unfinished, and 'stria' meaning line or furrow) refers to the synapomorphic absence or reduction of the 8th and 9th elytral striae (i.e., intervals).

Remarks. *Infectostriatus* **gen. nov.** contains two species from far north Queensland.

Key to species of *Infectostriatus*

1 Base of elytra between 7th and 10th striae devoid of punctures (Fig. 15) . . . . . ***Infectostriatus absentis* sp. nov.**

- Base of elytra between 7th and 10th striae with short single row of punctures . . . . . ***Infectostriatus differens* sp. nov.**

***Infectostriatus absentis* sp. nov.**
ZooBank registration: urn:lsid:zoobank.org:act:93B88442-023B-4276-9296-3B77A04C5EF4
(Figs 15, 37, 76, 112, 149; Map 2)

HOLOTYPE ♂: **Queensland:** Tolga, N. Qld, 26.iii.1984, J.D. Brown, light trap (QM, type reg. T258556). **PARATYPES** (13): **Queensland**: Coen, N.Q., 5/72 GB // J.G. Brooks Bequest, 1976 (1, ANIC); Cooktown, Queensland // Museum Paris ex Coll R. Oberthur (1, MNHN); Station Ck, 12km N Mt. Molloy, N Qld, 9 Jan. 1970, Walford-Huggins // ex collection A. Walford-Huggins // E. Gowing-Scope collection BMNH(E) 2005-4 (1, NHML); Parada, July '65 // M 296 (1♀, QDPC); Tolga, N. Qld, 20.v.1983, J.D. Brown, light trap (1, QDPC); n. Qld, Tolga, 8 iv 1986, J.D. Brown, Light trap (1, QDPC); Tolga, N. Qld, 1-v-1984, J.D. Brown, light trap (1♂, QDPC); n. Qld, Tolga, 8-15 iii 1985, J.D. Brown, light trap (1♂, QDPC); n. Qld, 7 km NE of Tolga, 5.1.1987, Storey & De Faveri, light trap (1, QDPC); n. Qld, 7 km NE of Tolga, Feb 1987, Storey & De Faveri, light trap (1, QDPC); n. Qld, 7 km NE of Tolga, Mar 1987, Storey & De Faveri, light trap (2♂, QDPC); n. Qld, 7 km NE of Tolga, Apr 1987, Storey & De Faveri, light trap (1, QDPC).

Diagnosis. *Infectostriatus absentis* **sp. nov.** is most easily differentiated from *I. differens* **sp. nov.** by the absence of punctation between the seventh and tenth striae between the base and elytral fascia.

Description. *Habitus*: Fig. 149. *Total length*: 6.7–9.7 mm. *Head*: Vertex, frons, genae and gula black, clypeus and supra-antennal elevation dark reddish-brown, anteclypeus, labrum, antennae and palpi orange-brown or chestnut-brown; frons narrow (eyes separated by 0.5–0.8 eye widths), weakly impressed above narrowest point, frontal sculpturing confused-foveolate, often transversely wrinkled below narrowest point, genae wrinkled; exterior margins of terminal palpomeres about 1.6 times (maxillae) and 3 times (labium) the length of inside edges; antennae reaching near base of pronotum; eyes and most of cranium vested with erect pale setae, frons with shorter medially-directed setae. *Prothorax*: Pronotum dark reddish-brown to reddish-black, darkest laterally, sometimes paler at anterior and posterior margins and ventrally; pronotum 1.24–1.3 times longer than wide, anteriorly slightly narrower than head, sides impressed above conspicuous lateral tubercle, subapical depression deeply v-shaped, disc weakly tuberculate behind prontal arch, sulcate centrally; surface smooth with only occasional small seta-associated punctures, well-vested in short fine multi-directional setae and occasional long erect setae. *Pterothorax*: Ventrites orange-brown, impunctate, moderately vested with short pale and occasional long setae; elytra (Fig. 15) brown with yellowish markings (a large apical macula, a broad 'stepped' central fascia and a variable irregular sub-basal macula—sometimes thin and running obliquely from the suture towards the fascia and joined to it along the suture, or sometimes broadly connected to the fascia and enclosing a small dark spot), length to width ratio 2.6–2.8:1, punctation with lateral bead-like nodules, 8th and 9th striae highly reduced, evident only within dark area between fascia and apical macula, 8th stria beginning between the tenth and fifteenth puncture of the 7th stria, the 9th stria represented by a few punctures only, punctation relatively large until near apex; disc well-vested in very fine short and thicker erect setae, short setae on anterior and lateral perimeter of punctations and within interstriae, longer setae in rows following interstriae, epipleurae extending well into apical curve; hindwing with CuA_{3+4} and CuA_1 cross-veins complete, MP_{3+4} basad of CuA_1 crossvein small (but not completely absent). *Legs*: Femora bicoloured, basally yellow (basal half of profemora, basal three-quarters of meso- and metafemora), apically brown, tibiae and tarsi brown, ventral tarsal pads yellowish; profemora slightly swollen, other femora slender. *Abdomen*: Ventrites orange. *Male genitalia*: Tegmen (Fig. 37) robust, slightly narrowing before parameroid lobes, the latter angularly expanded laterally, bent inwards and blunt (not pointed) apically, dorsal sinus very wide, just over one-quarter tegmen length, slender transparent (sensory?) membrane apparent at broadest point, ventral sinus almost as long, tegminal arms sharply meeting apodeme, apodeme just over quarter tegmen length; median lobe as in Fig. 76; pygidium as in Fig. 112.

Etymology. The specific epithet *absentis* (Latin, meaning absent or missing) refers to the total absence of basal punctures between the seventh and tenth elytral striae.

Biology. Adults have been collected from January to July, many by light trapping.

Distribution (Map 2). Atherton Tableland (Parada, Tolga, Station Creek), Cooktown and Coen in far north Queensland.

***Infectostriatus differens* sp. nov.**
ZooBank registration: urn:lsid:zoobank.org:act:0872ADA2-B565-4E15-A5FA-954E06F63362
(Figs 6, 38, 77, 150; Map 2)

HOLOTYPE ♂: **Queensland:** 13.53S 143.11E GPS, 6km NNE Coen, QLD, 13 Jan. 1994, P.Zborowski & E.D.Edwards, at light (ANIC).

Diagnosis. *Infectostriatus differens* **sp. nov.** is most easily differentiated from *I. absentis* **sp. nov.** by the presence of punctation between the seventh and tenth striae between the base and elytral fascia.

Description. *Habitus*: Fig. 150. *Total length*: 9.2 mm. *Head*: Vertex, frons, genae and gula black, clypeus and supra-antennal elevation black to dark reddish-brown, anteclypeus, labrum, antennae and palpi orange-brown or chestnut-brown; frons narrow (eyes separated by 0.52 eye widths), impressed above narrowest point, frontal sculpturing confused-foveolate, transversely wrinkled below narrowest point; genae wrinkled, wrinkles extending into submentum though not meeting in middle; exterior margins of terminal palpomeres about 1.6 times (maxillae) and 2.3 times (labium) the length of inside edges; antennae almost reaching base of pronotum; eyes and most of cranium vested with erect pale setae, frons with shorter medially-directed setae. *Prothorax*: Pronotum black infused with a deep reddish hue; pronotum 1.15 times longer than wide, sides sub-tuberculate in middle, above each tubercle an oblique sulcus, subapical depression shallow v-shaped, disc with a central longitudinal sulcus; surface moderately well punctated, dorso-lateral punctation sometimes sub-rugulose, subtly tumescent posterior of subapical depression and surrounding central sulcus, well-vested in short fine multi-directional setae and long erect setae. *Pterothorax*: Ventrites black, barely punctate, moderately vested with short pale and occasional long setae; elytra blackish to brown with yellowish or orange markings (each elytron with a large apical macula, a broad 'stepped' central fascia which extends anteriorly between the suture and 5th stria and ends just before base, plus a small humeral macula); length to width ratio 2.44:1; punctation with lateral bead-like nodules, 8th and 9th striae highly reduced, the 8th evident within dark areas between fascia and apical macula and between fascia and base, the 9th stria represented by fewer punctations between fascia and apical macula only, punctation relatively large until near apex, disc well-vested in very fine short and thicker erect setae, interstriae with alternating long erect setae and shorter 'leaning' setae, epipleurae extending well into apical curve; hindwing with CuA_{3+4} and CuA_1 cross-veins complete, MP_{3+4} absent basad of CuA_1 crossvein. *Legs*: Profemora entirely black, meso- and metafemora with basal half orange and apical half black, tibiae and tarsi brown, ventral tarsal pads yellowish; profemora slightly swollen, other femora slender. *Abdomen*: Ventrites orange. *Male genitalia*: Tegmen (Fig. 38) relatively slender, middle weakly sinuate, broadest at 'bend' of tegminal arms, parameroid lobes angled inwards and blunt (not pointed) apically, dorsal sinus very wide, angular, just over one-quarter tegmen length, corner of broadest point with transparent (sensory?) membrane, ventral sinus almost as long, tegminal arms sharply meeting apodeme, apodeme just over quarter tegmen length; median lobe as in Fig. 77.

Etymology. The specific epithet *differens* (Latin, meaning dissimilar) simply refers to the clear differences between this and the superficially very similar type species.

Biology. The holotype was collected in January, at light.

Distribution (Map 2). The holotype was collected near Coen in far north Queensland.

***Monilonotum* gen. nov.**
ZooBank registration: urn:lsid:zoobank.org:act:36F952E9-96BE-41C9-BC6F-294E1E13FA00

Gender. Neuter.

Type species. *Opilo pascoii* Gorham, 1876, by present designation.

Diagnosis. Intrafoveal setae, if present, minute and not clearly visible under magnification (or apparently absent) (Fig. 22); basitarsi without a distinct ventral pad; ninth elytral stria present; inside lateral rims of elytral punctures without nodules; elytral interstriae setae arranged in simple rows; elytral striae terminating abruptly near mid-length; pronotal basal collar typically paler than pronotal disc; carinae of inside face of antennal scape often not well-defined; median lobe without rearward-directed spine or barb, distally digitiform.

Description. Eyes facets intermediately coarse, strongly emarginate above supra-antennal elevations, separated by 0.88–1.62 eye widths; carinae of rear face of antennal scape short or weak (less conspicuous than most other genera treated here); sensory face of terminal maxillary palpomere 1.6 longer than inside margin; sensory face of terminal labial palpomere 1.0–2.5 times longer than inside margin; genae wrinkled, submentum smooth; pronotum 1.5–3.0 times longer than wide, middle slightly broader than pronotal arch, smooth, almost impunctate, median sulcus subtle or apparently absent, basal collar typically paler than disc; elytra 2.52–2.95 times longer than wide at humeri, punctures without nodules, eighth stria beginning immediately behind humeral tumescence, all stria terminating abruptly near elytral mid-length, interstrial setae in single rows, intrafoveal setae apparently absent in majority of punctures (an extremely short seta, difficult to observe even under high magnification, was occasionally found in some specimens); hindwing with CuA_{3+4} and CuA_1 crossveins complete, MP_{3+4} substantialy extended basad of CuA_1 crossvein; tarsi each with three well-developed ventral pads; tegmen ventral sinus half to two-thirds as long as dorsal sinus; median lobe without apico-lateral spine, with distal digitiform process; specular fork Y-shaped.

Etymology. The generic epithet *Monilonotum* (from Latin 'monile' meaning necklace, and Latin 'nota' meaning mark and also suggestive of the pronotum), refers to the paleness of the pronotal collar which, in the majority of species of this genus, is characteristically contrasted against a darker pronotum.

Remarks. Evidence for early divergence of *Monilonotum* from the other genera treated here can be found in the digitiform terminal process of the median lobe of *Monilonotum* which resembles that found in genera of Australian Opilonina such as *Trogodendron* Spinola and *Olesterus* Spinola, the extreme reduction of intrafoveal setae (putatively synapomorphic), the loss of the carina of the antennal scape (also putatively synapomorphic), plus the retention of plesiomorphic fused/non-separated state of the spicular fork (collectively more derived in the remaining genera of this revision).

Key to species of *Monilonotum*

1	Pale transverse elytral fascia, if present, flat, not calositous or bullose (Figs 151–154)	(*pascoei* species group) ... **2**
-	Pale transverse elytral fascia always present as a raised, calositous or bullose formation (Fig. 155)	(*rufiventre* species group) ... **5**
2 (1)	Elytral colouration yellowish to pale brown and dark brown (Fig. 151)	***Monilonotum bunyense* sp. nov.**
-	Elytral colouration black, reddish-brown and white	**3**
3 (2)	Each elytron with a small white fleck between transverse fascia and base; elytral apices without maculation (Fig. 152)	***Monilonotum doddi* (Schenkling) stat. rev., comb. nov.**
-	Elytra between fascia and base without white fleck; elytral apices with whitish macula	**4**
4 (3)	Metacoxae and metaventrite of similar colour; interstices anterior to elytral fascia thin and slightly raised, giving punctation a grid-like appearance within this area	***Monilonotum sundholmi* sp. nov.**
-	Metacoxae whitish or yellowish, metaventrite orange-brown; interstices anterior to elytral fascia smooth, punctation not grid-like in appearance within this area	***Monilonotum pascoei* (Gorham) comb. nov.**
5 (4)	Elytral base red, sternum not red	***Monilonotum eburneocincta* (Gorham) comb. nov.**
-	Elytra entirely black; sternum orange.	***Monilonotum rufiventre* (Gerstmeier) comb. nov.**

* See notes below, under each species heading, for information about potentially superficially similar undescribed species.

pascoei species group

Diagnosis. Beetles ranging from 6.5 to 10.5 mm in length, with the pale transverse elytral fascia pigmented and flat, not formed as a callositous bulla.

Remarks. The *pascoei* species group of *Monilonotum* contains four known species.

Monilonotum bunyense sp. nov.

ZooBank registration: urn:lsid:zoobank.org:act:FFA603F4-F2C1-4ABF-B58D-43E5E0081E96

(Figs 39, 78, 151; Map 2)

HOLOTYPE (sex not determined): **Queensland**. Bunya Mtns 10-12-25 H. Hacker (QM, type reg. T258557). **PARATYPES** (13): **Queensland**. Bunya Mts. Q. 22.12.37 N. Geary 3000' // K 304558 (1, AM); Bunya Mts. Q. 14.12.37 N. Geary 2000' // K 304557 (1, AM); Bunya Mts. Q. 2.1.38 N. Geary 2000' // K 304559 (1, AM); Bunya Mtns. Q. (26.50S 151.33E) 3 km. from summit on Kingaroy Rd., 6.i.70 light trap, in Nothofagus forest Britton, Holloway, Misko (3, ANIC); H. Elston Collection // Brisbane, Q. Oct. 1920 F.E. Wilson // K 304539 // Opilo congruus Newm. Id. By A.M. Lea variety (1, AM); National Pk. Q. H. Hacker Nov. 1920 // Opilo ID by A.M. Lea (1, QM); Nat. Park Q. (1, QM); Mt Tamborine 29.12.50 C.Oke S.Q. // COL-65680 // COL 65681 (2 specimens on same card-mount, NMV); SEQ: 27°27′Sx152°55′E Enoggera Reservoir site3, 16Oct-4Nov 1999 100m C.J. Burwell RF Malaise 50202 (1 ♀, QM). **New South Wales**. Tooloom, N.S.W. Jan 1926 H. Hacker (1 ♂, QM).

Additional material. Queensland. Bundaberg Queensland / A. H. Elston Collection / K 304524 (1, AM).

Diagnosis. Pronotum rounded laterally, disc without obvious punctation; elytra predominantly yellowish with dark brown maculate areas basally, post-basally and pre-apically, punctation without nodules, 8th stria beginning near base, striae terminating just beyond elytral mid-length; femora yellow basally, pale brown apically, tarsi with three ventral tarsal pads.

Description. *Habitus*: Fig. 151. *Total length*: 8–10.5 mm (holotype, 9.9 mm). *Head*: Vertex, frons, clypeus, supra-antennal elevations and genae brown, gular region paler, anteclypeus semi-transparent orange, antennae, labrum and palpi orange-brown; eyes separated by 0.88–1.13 eye widths (holotype, 1.08); vertex and frons mostly smooth with only occasional small seta-associated punctations, frons weakly impressed centrally; genae wrinkled, submentum smooth; exterior margins of terminal palpomeres about 1.5 times (maxillae) and 2 times (labium) the length of inside edges; antennae long, reaching beyond base of pronotum; eyes and most of cranium vested with erect pale setae, frons with slightly shorter medially-directed setae. *Prothorax*: Dark brown laterally and disc either side of median-line, pronotal arch, pronotal collar and disc medially pale brown to yellowish; pronotum 1.14–1.27 times longer than wide (holotype, 1.21), sides evenly curved, middle slightly broader than lateral part of pronotal arch; subapical depression shallow v-shaped, disc without central sulcus, pronotum with weak lateral impression, surface smooth, almost impunctate; moderately distributed with long erect setae and shorter finer multi-directional setae. *Pterothorax*: Ventrites orange-brown to dark brown, vested with short, pale, posteriorly-directed, semi-decumbent setae; elytra predominantly yellowish with dark brown maculate areas basally, post-basally and pre-apically (basal area to between 5–7th puncture from base, post-basal area variable, often triangular, joined to basal area along lateral margin, the pre-apical area beginning immediately where punctures become obsolete); length to width ratio 2.75–2.95:1 (holotype, 2.81); 8th stria beginning near base, all stria terminating abruptly just beyond elytral mid-length, at junction of larger yellow and brown areas, punctation without nodules, interstriae smooth, often narrower than diameter of punctures, epipleurae extending into apical curve, becoming obscure near apex; interstriae with posteriorly-directed, semi-erect setae about as long as distance between centres of adjacent punctures, plus similar setae of slightly longer length, intrafoveal setae extremely fine and short (most easily observable in dark areas of elytra). *Legs*: Femora yellow basally, brown apically (basal one-third of profemora and basal half of meso- and metafemora yellow), tibiae and tarsi brown, ventral tarsal pads yellowish or orange; apical two-thirds of profemora moderately swollen, other femora very slightly swollen apically. *Abdomen*: First ventrite yellowish, other ventrites brown. *Male genitalia*: Tegmen (Fig. 39) broadest at basal opening (tegminal struts), slightly narrowed before apical inward curve of parameroid lobes, apices pointed; dorsal sinus about one-third tegmen length, narrow internally, broadly opening apically; ventral sinus about half dorsal sinus length; apodeme about one-third tegmen length; median lobe as in Fig. 78.

Etymology. This species is named after the type locality, Bunya Mountains in Queensland.

Variation. A non-type specimen from Bundaberg has the dark brown colouration more broadly distributed on the prontal disc and elytral base.

Biology. Specimens were collected in November, December and January, one by light trap, in Nothofagus forest.

Distribution (Map 2). So far known from several localities in southeastern Queensland, plus Tooloom in New South Wales.

***Monilonotum doddi* (Schenkling, 1906) stat. rev., comb. nov.**
(Figs 40, 113, 152; Map 2)
Opilo pascoei var. *doddi* Schenkling, 1906: 261.

Type material examined. LECTOTYPE (here designated): **Queensland**. Townsville, F.J. Dodd // Schenkling det. // TYPUS (SDEI). **PARALECTOTYPES** (here designated): Townsville, F.J. Dodd // Schenkling det. // PARATYPUS (2, SDEI).

Comment on lectotype designation. As Schenkling (1906) made no reference to specimens in his description of '*doddi*', the three specimens, one labelled 'typus', two labelled 'Paratypus', located in SDEI are syntypes (ICZN 1999: Article 73.2) and available for lectotype designation (ICZN 1999: Article 74.1). With no reason to do otherwise, we designate the specimen labelled 'Typus' as the Lectotype and the other two syntypes as Paralectotypes. ***Condition of lectotype*:** The Lectotype, a completely intact specimen mounted on a pin, is in good condition being only lightly dusted with debris.

Other material (6)**: Queensland.** Queensland Townsville // 'Variety' Pascoei v. Doddi Sch. // Ex Musaeo E. Hintz // Opilo pascoei J.J. Menier det (1, MNHN); Kuranda F.P. Dodd // Schenkling det. // DEI Muncheberg Col—01929 (1, SDEI); Kuranda nq. 21/05. // Coll. Hacker // Schenkling det. // DEI Muncheberg Col—01930 (1 ♂, SDEI); Kuranda. NQ 10 jan 1971 walford-Huggins // var. doddi Sch // E. Gowing-Scope collection BMNH(E) 2005-4 (1, NHML); Kuranda NQ 1/54 GB. // F.E. Wilson // species // J.G. Brooks Bequest, 1976 (1, ANIC); Kuranda NQ 12/51 GB. // pascoei Gorh. Var. doddi 11. Schklg. // J.G. Brooks Bequest, 1976 (1, ANIC).

Differential diagnosis. *Monilonotum doddi* is easily separated from the similar-looking species *M. pascoei* and *M. sundholmi* by: a) the presence of a whitish macula at the junction of the brown and black areas anterior to the elytral fascia, b) the absence of maculation at the elytral apices, and c) tegmen with the closed end of the dorsal sinus narrower than that of *M. pascoei*, and the parameroid lobes more splayed than those of *M. sundholmi.*

Description. *Habitus*: Fig. 152. *Total length*: 6.5–9 mm. *Head*: Vertex and frons black, clypeus and supra-antennal elevations black-brown, anteclypeus semi-transparent orange, antennae, labrum and palpi orange; eyes separated by 0.93–1.26 eye widths; vertex and frons very lightly punctate; genae wrinkled, submentum smooth; exterior margins of terminal palpomeres about 1–2 times (maxillae) and 1.5–2.5 times (labium) the length of inside edges (specimens with smaller terminal palpomeres are likely to be females); antennae long, reaching to or slightly beyond base of pronotum; eyes and most of cranium vested with erect pale setae, frons with shorter medially-directed setae. *Prothorax*: Dark brown or black-brown except pronotal collar and pronotal projection whitish or pale yellow; pronotum 1.16-1.32 times longer than wide, sides evenly curved, middle slightly broader than lateral part of pronotal arch; subapical depression v-shaped, central impression of disc smooth, flowing from subapical depression, not sulcate, pronotal base weakly tumescent above pronotal collar, disc uneven, smooth, almost impunctate, punctation consisting of sparse inconspicuous setose impressions; moderately distributed with long erect setae and shorter anteromedially-directed setae. *Pterothorax*: Ventrites orange, vested with short, pale, posteriorly-directed, semi-decumbent setae; elytra three-toned (base colour black-brown; each elytron with an oblique whitish transverse fascia sloping posteriorly away from suture, basal two-fifths to one-third of area anterior to fascia orange-brown, a small whitish macula at interface of brown and black areas usually with an obscure black spot above it, apex without macula); length to width ratio 2.55–2.71:1; 8th stria beginning immediately behind humeral tumescence, all stria terminating abruptly at posterior margin of whitish transverse fascia, punctation without nodules, interstices smooth, often about half as wide as diameter of punctures, epipleurae extending into apical curve; interstices with posteriorly-directed, semi-erect setae about as long as distance between centres of neighbouring punctures, plus erect setae of slightly longer length, intrafoveal setae not observed (potentially present though minute). *Legs*: Almost entirely orange-brown, hind coxae, trochanters and extreme base of metafemora whitish, ventral tarsal pads orange-yellow; all femora swollen in both sexes (meso- and metafemora slightly less so in females). *Abdomen*: First ventrite entirely or partly whitish, other ventrites dark brown. *Male genitalia*: Tegmen as in Fig. 40; apices of parameroid lobes narrowing unevenly to a point, inner margin indented; dorsal sinus about one-third tegmen length, apical half gradually broadening with profile of parameroid lobes, inner half narrow; ventral sinus about half as long as dorsal sinus; apodeme about one-quarter tegmen length; pygidium as in Fig. 113.

Variation. Males have larger terminal palpomeres and more swollen femora than females.

Biology. Adults are known to be active in December, January and May.

Distribution (Map 2). North Queensland (Townsville and Kuranda).

***Monilonotum pascoei* (Gorham, 1876) comb. nov.**
(Figs 22, 41, 79, 114, 153; Map 2)

Opilo pascoii Gorham, 1876: 71.

Type material examined. **LECTOTYPE** (here designated): **New South Wales**: Type (printed on a white circular label with red border) // N.S.W. (handwritten on a green oval-shaped label) // Gorham Type (printed on red card) // Pascoe coll. 93-60 // Opilo pascoei Gorh. (handwritten) (NHML).

Comment on lectotype designation. As Gorham (1876) made no reference to specimens in his description it cannot be assumed that the nominal species group name *Opilo pascoei* was based on a single specimen. The specimen labelled 'type' in the Natural History Museum, London (NHML) must therefore be considered a syntype (ICZN 1999: Article 73.2) and available for lectotype designation (ICZN 1999: Article 74.1).

Other material examined (14 specimens): **Victoria**: A.H. Elston Collection // Beaconsfield, V F. E. Wilson 26.12.19 // K 304538 (1 ♀, AM); Victoria Redhill 13 Jan 1974 // O. pascoei Gorh. // E. Gowing-Scope collection BMNH(E) 2005-4 (1 ♀, NHML); Woori Yallock Vict. 13.1.26 // F. E. Wilson Collection // COL-65672 // COL-65673 (2 ♀ on same card-mount, NMV); 2657 // Nat. Mus. Victoria C. Frech's Coll 5.11.08 // Opilo pascoei Gorh. Victoria // COL-65675 (1 ♀, NMV); Vic // COL-65671 (1 ♀, NMV); Kosciusko Vic 2.26 (1 ♂, ANIC); Macedon, Vic C. Oke // COL-65667 (1 ♂, NMV); Riddell, V. 1.1.27 C.Oke // COL-65668 // COL-65669 (2 ♂ on same card-mount, NMV). **New South Wales**: Mt Murray Rd Macquarie Pass NSW 19.i.86, *Leptospermum* // S.G. Watkins Collection Donated 2001 (1 ♀, ANIC); West Pymble, nr Sydney N.S.W. 22.i.1983 D.J. Scambler // K 304577 (1 ♀, AM); Australia: NSW Mt Keira (west flank) 27 Nov 1994 A. Sundholm; On flowers of *Acmena smithi* (1 ♂, ANIC). **Australia Capital Territory**: Orroral R. ACT 25 July 1982 K.R. Pullen // under bark Eucalyptus // Kim Pullen Collection (1 ♀, ANIC).

Diagnosis. Pronotum rounded laterally, disc smooth, without conspicuous punctation; elytra predominantly dark brown with the entire basal third to two-fifths orange-brown and a whitish transverse outward sloping fasciae and a whitish triangular apical maculae, punctation without nodules, 8th stria beginning just behind humeral tumescence, striae terminating at posterior margin of transverse fascia; coxae, trochantins and femoral base paler than majority of femora, tarsi with three ventral tarsal pads.

Monilonotum pascoei is easily confused with *M. sundholmi* **sp. nov.** though may be recognised by the colouration of its coxae, trochantins and femoral bases, which are paler than the ventrites and remainder of legs; the elytral intervals (spaces between punctures) of *M. pascoei* are wider and more rounded than those of *M. sundholmi* **sp. nov.** which tend to be narrow and ridge-like.

Description. *Habitus*: Fig. 153. *Total length*: 7.7–9.7 mm. *Head*: Vertex and frons black, clypeus, supra-antennal elevations and genae black-brown, gular region paler, anteclypeus semi-transparent orange, antennae, labrum and palpi orange-brown; eyes separated by 1.2–1.6 eye widths; vertex and frons only lightly punctate; genae wrinkled, submentum smooth; exterior margins of terminal palpomeres about 1.7–2.3 times (maxillae) and 2.8–3 times (labium) the length of inside edges (the larger terminal maxillary palpomeres being those of males); antennae long, reaching to or slightly beyond base of pronotum; eyes and most of cranium vested with erect pale setae, frons with slightly shorter medially-directed setae. *Prothorax*: Dark brown except pronotal collar and pronotal projection whitish or pale yellow; pronotum 1.14–1.27 times longer than wide, sides evenly curved, middle slightly broader than lateral part of pronotal arch; subapical depression v-shaped, central impression of disc smooth, flowing from subapical depression, not sulcate, pronotum with weak lateral impression, surface smooth, almost impunctate, punctation consisting of sparse inconspicuous (shallow and smooth) setose impressions; moderately distributed with long erect setae and shorter finer multi-directional setae. *Pterothorax*: Ventrites orange, vested with short, pale, posteriorly-directed, semi-decumbent setae; elytra (Fig. 22) three-toned (each elytron with basal third to two-fifths orange-brown this area often sloping posteriorly toward suture, posterior three-fiths to two-thirds black-brown, interrupted by a whitish transverse fascia, which slopes slightly away from the suture, and a triangular apical macula); length to width ratio 2.55–2.86:1; 8th stria beginning immediately behind humeral tumescence, all stria terminating abruptly at posterior margin of whitish transverse fascia, punctation without nodules, epipleurae extending into apical curve, becoming obscure near apex; interstriae with posteriorly-directed, semi-erect setae about as long as distance between centres of neighbouring punctures, plus erect setae of slightly longer length, very small intrafoveal setae seldomly observed (apparently absent from most punctures). *Legs*: Almost entirely orange-brown, hind coxae,

trochanters and extreme base of metafemora paler (orange, yellow or whitish); all femora swollen in males (most notably the metafemora), profemora only swollen in females (other femora slender). *Abdomen*: Basal half of first ventrite pale (orange, yellow or whitish), other ventrites black-brown. *Male genitalia*: Tegmen as in Fig. 41; apex of parameroid lobes narrowing unevenly to a point, inner margin indented; dorsal sinus slightly shorter than one-third tegmen length, apical third gradually broadening with profile of parameroid lobes, inner two-thirds reasonably broad (in comparison with *M. doddi* and *M. sundholmi*), sub-parallel; ventral sinus about two-thirds as long as dorsal sinus; apodeme about one-third tegmen length; median lobe as in Fig. 79; pygidium as in Fig. 114.

Variation. In contrast to females, males have noticeably swollen femora, larger terminal maxillary palpomeres and the slightly more bulging eyes.

Biology. Plant associations include *Eucalyptus*, *Leptospermum* and *Syzygium* (Myrtaceae). An ACT specimen, collected in July under eucalypt bark was probably taking refuge over winter there; the collection times of other specimens (November to February) are likely more representative of when adults are active.

Distribution (Map 2). Vic, ACT and NSW: all known localities fall within the Temperate Broadleaf and Mixed Forest terrestrial ecoregions as defined by the National Reserve System (DAWE 2012).

Monilonotum sundholmi sp. nov.

ZooBank registration: urn:lsid:zoobank.org:act:06C295BA-5233-4A1D-8119-95C1EDEF7974
(Figs 42, 80, 115, 154; Map 2)

HOLOTYPE (sex not determined): **New South Wales**: Australia, NSW Mount Kiera 14 November 1989 A. Sundholm Joe Bugeja // K 304508 (AM). **PARATYPES** (2): **New South Wales**: same data as holotype except K 304507 (1 ♂, AM); 10 Mile Rd nr Deepwater NSW 23.xi.89 // S.G. Watkins Collection Donated 2001 // 232 (1 ♂, ANIC).

Differential diagnosis. *Monilonotum sundholmi* **sp. nov.** bears a close superficial resemblance to *M. pascoei* but is easily differentiated from it by the hind coxae and base of metafemora which are no paler than those of the other legs, and by the elytral intervals which are generally more ridge-like.

Description. *Habitus*: Fig. 154. *Total length*: 6.4–8.8 mm (holotype, 8.5 mm). *Head*: Vertex and frons black, clypeus, supra-antennal elevations and gular region black-brown, anteclypeus semi-transparent orange, antennae, labrum and palpi orange-brown; eyes separated by 1.33–1.62 eye widths (holotype, 1.33); frons and upper half of frons with small, shallow, even, punctation, lower part of frons with smooth, rugulose and punctate areas; genae wrinkled, submentum smooth; exterior margins of terminal palpomeres (maxillary and labial) about 2.5 times the length of inside edges; antennae long, reaching to or slightly beyond base of pronotum; eyes and most of cranium vested with erect pale setae, frons with slightly shorter medially-directed setae. *Prothorax*: Black to black-brown except pronotal collar and pronotal projection whitish or pale yellow; pronotum 1.13–1.29 times longer than wide (holotype, 1.29), sides evenly curved, middle slightly broader than lateral part of pronotal arch; subapical depression v-shaped, central impression of disc smooth, flowing from subapical depression, not sulcate, pronotum with weak lateral impression, surface smooth, almost impunctate, punctation consisting of sparse inconspicuous (shallow and smooth) setose impressions; moderately distributed with long erect setae and shorter finer multi-directional setae. *Pterothorax*: Ventrites orange, vested with short, pale, posteriorly-directed, semi-decumbent setae; elytra three-toned (base colour black-brown, each elytron with a whitish transverse fascia slightly sloping posteriorly towards lateral margins, half to two-thirds of area anterior to fascia orange-brown, the posterior margin of brown area being slightly oblique to almost straight, apex with small whitish triangular macula); length to width ratio 2.52–2.65:1 (holotype, 2.52:1); 8th stria beginning immediately behind humeral tumescence, all stria terminating abruptly at posterior margin of whitish transverse fascia, punctation without nodules, epipleurae extending into apical curve, becoming obscure near apex; interstriae lined with short, erect to semi-erect setae about as long as distance between centres of neighbouring punctures, plus erect setae of slightly longer length, intrafoveal setae not observed (potentially present though minute). *Legs*: Entirely orange-brown (including coxae and tarsi), ventral tarsal pads paler. *Abdomen*: First ventrite dark orange-brown, other ventrites black-brown. *Male genitalia*: Tegmen as in Fig. 42; , broadest at basal opening (i.e., at point of flexation of struts), apex of parameroid lobes narrowing evenly to a point, inner margin narrow internally then gradually opening towards apex (not indented as in *M. pascoei* and *M. doddi*); dorsal sinus about one-third tegmen length,

parameroid lobes subparallel, only very slightly broadening apically; ventral sinus just over half as long as dorsal sinus; apodeme slightly shorter than one-third tegmen length; median lobe as in Fig. 80; pygidium as in Fig. 115.

Etymology. We name this species after Mr Allen Sundholm, co-collector of the holotype specimen, in appreciation for his generosity in sending clerid beetles to the first author.

Biology. Adults have been collected in November and December; the specimen from Barron Grounds Nature Reserve was collected in rainforest at escarpment.

Distribution (Map 2). Southern Highlands region of New South Wales.

rufiventre species group

Diagnosis. Smaller beetles to 7 mm, with the pale transverse elytral fascia formed as a callositous bulla.

Remarks. The *rufiventre* species group of *Monilonotum* contains two described, and several undescribed species.

Monilonotum eburneocincta (Gorham) comb. nov.

Opilo eburneocinctus Gorham, 1878: 160.

Status of type material. Syntypes not located.

Remarks. Despite neither type material, nor specimens determined to be *O. eburneocintus*, being found by the first author in Australia or Europe, Gorham (1878) provides clues in his descrition of '*eburneocintus*' as a smaller version of *Opilo pascoei* with a white 'raised' elytral fascia, a red elytral base and a sternum that is not red (as in *O. pascoei*). The first author is aware of numerous, miniature '*pascoei*-like' species with callositous, bullose (i.e., raised) elytral fasciae, though the ventrites of these species range from bright orange to reddish-orange. Despite being confident enough to transfer *Opilo eburneocinctus* to *Monilonotum*, we have decided not to describe any of the smaller species as new while the identity of *Monilonotum eburneocinta* **comb. nov.** remains unknown.

Distribution (Map 2). New South Wales.

Monilonotum rufiventre (Gerstmeier) comb. nov.
(Fig. 155; Map 2)

Olesterus rufiventris Gerstmeier, 1990: 25.

HOLOTYPE (♂): **New South Wales**: Tooloom NSW, 19.1.26 (QM). **PARATYPES** (2): **Queensland**: Brisbane, J.S. Rodston, 17.2.41 (2 ♀, QM); Brisbane, H. Hacker, 25.11.13 (1, QM).

Other material examined (1): **Queensland**: SEQ: 25°27′Sx150°02′E Boggomoss No.8, via Taroom. 12 Nov 1996 Qld.Mus.survey. Day hand collection 039 / QM Reg. No. T31633 / Olesterus rufiventris Gerstmeier 1990 Det. J.S. Bartlett 2011 (1, QM).

Diagnosis. Among its congeners, *M. rufiventre* **comb. nov.** is recognisable by its small size (5.2–6.5 mm), its entirely back elytra, its orange thoracic and abdominal ventrites, and by its puncture-associated pronotal texturing which is conspicuous when compared to the smooth pronota of several small undescribed *Monilonotum* species. Habitus as in Fig. 155.

Remarks. Gerstmeier (1990) provides a detailed description of '*Olesterus rufiventris*'.

Notopilo gen. nov.
ZooBank registration: urn:lsid:zoobank.org:act:CE086160-0DDF-41F7-9052-C2EDC95FF754

Gender. Masculine.

Type species. *Opilo congruus* Newman, 1842, by present designation.

Diagnosis. Antennal scape with a carina bordering each side of the rear face; elytral intrafoveal setae short but visible under magnification; elytral interstrial setae arranged in simple rows; ninth elytral stria present; pronotum rotund, or if appearing flattened then it is widest anteriorly (not in the middle); basitarsi without a distinct ventral pad; tegmen with ventral sinus shorter than dorsal sinus; apical lobes of median lobe without large rearward-directed spine or barb (a minute acumination present only in *N. congruus* **comb. nov.** and species of the *cambageicola* species group).

Description. Eyes coarsely-facetted, strongly emarginate above supra-antennal elevations, separated by 0.53–2.0 eye widths; antennal scape with carina bordering each side of flattened rear face; sensory face of terminal maxillary palpomere approximately 1.0–2.3 times longer than inside margin; sensory face of terminal labial palpomere approximately 1.8–3.0 times longer than inside margin; genae and submentum wrinkled; pronotum 1.06–1.36 times longer than wide, broadest near middle or middle as wide as anterior pronotal arch, disc lightly to moderately punctate, median sulcus conspicuous or inconspicuous; elytra 1.4–3.15 times longer than wide at humeri, punctures with or without nodules, start of eighth stria variable (from base to near middle), at least some discal striae terminating between posterior margin of fascia and apices (most species) or all striae terminating close to fascia (*variipes* species group), interstrial setae in single rows, intrafoveal setae mostly short, less commonly spanning across entire puncture; hindwing with crossvein CuA_{3+4} complete (most species) or absent (*N. variipes* **comb. nov.**, *N. xanthoprolatus* **sp. nov.**), and crossvein CuA_1 complete (most species), incomplete (*N. cambageicola* **sp. nov.** and *N. reduncus* **stat. rev.**, **nom. nov.**) or absent (*variipes* species group), MP_{3+4} absent basad of CuA_1 crossvein; tarsomeres 2–4 each with a well-developed ventral pad; tegminal ventral sinus one-third as long to as long as dorsal sinus (never longer than dorsal sinus); apical lobes of median lobe generally plate-like, lacking conspicuous rearwards-directed apico-lateral spine (a minute lateral acumination present amongst members of the *cambageicola* species group and in *N. congruus* **comb. nov.**).

Etymology. The generic epithet *Notopilo* is an informal combining of *not* (a shortened form of the Greek *notios*, meaning 'southern', in reference to Australia, the 'great southern land') and *opilo* (from the Latin *opilio*, meaning 'shepherd', though used here in reference to the genus *Opilo* Latreille to which three of the included species had been assigned for more than a century). The name *Notopilo* also implies that its constituent species are 'not' congeneric with *Opilo mollis* (Linnaeus), the type species of *Opilo*.

Remarks. The monophyly of *Notopilo* is putatively supported by the complete absence of a remnant of hindwing vein MP_{3+4} basad of crossvein CuA_1 (very short in other genera, but consistently absent only in the species of *Notopilo*). Sixteen of the twenty species assigned to *Notopilo* **gen. nov.** have been further assigned to one of five relatively homogenous species groups for which synapomorphies have been identified. Relationships of the four remaining species (see 'unplaced to species group' below) with each other and with the other *Notopilo* species remain undetermined. The decision not to assign genus status to each of the species groups was made because erecting several monotypic genera for the remaining species was deemed not to be a realistic solution. Consequentially, the relatively taxonomically conservative concept of *Notopilo* put forth here, has resulted in a genus that is less-obviously homogeneous than the other five genera proposed in this revision.

Key to species of *Notopilo*

(genitalia-based species groups not indicated)

1	Elytra with at least some punctures internally nodulate	**2**
-	Elytral punctation lacking internal nodules	**17**
2 (1)	Elytra with the three or four inner-most striae terminating within transverse fascia, outer striae extending slightly beyond fascia, at least some punctures nodulate; males with mat of short decumbent setae at striae 1–3 within, and just posterior of, fascia (Fig. 171)	***Notopilo variipes*** **(Chevrolat) comb. nov.**
-	All elytral striae extending beyond fascia, or elytra not fasciate; males without setal mat	**3**
3 (2)	Eyes separated by at least 1.2 eye widths; pronotal anterior margin as broad as, or broader than, middle	**4**
-	Eyes separated by no greater than one eye width; pronotal anterior margin rarely as broad as middle, typically at least slightly narrower	**9**
4 (3)	Elytra colour predominantly pale (Figs 158, 160, 161)	**5**
-	Elytra colour predominantly dark	**7**
5 (4)	Each elytron with a single pre-apical semi-circular or triangular macula at the suture (Fig. 160).	***Notopilo xanthoimprocerus*** **sp. nov.**
-	Each elytron with a broad pre-apical band and a post-basal spot or fascia.	**6**

6 (5) Each elytron with a post-basal fascia that runs along suture towards scutellum; elytra not particularly elongate (length to width ratio 2.71:1) (Fig. 158) . . . . . ***Notopilo eremosus* sp. nov.**

- Each elytron with a post-basal spot that does not run along suture; elytra notably elongate (length to width ratio range 2.88–3.13:1) (Fig. 161) . . . . . ***Notopilo xanthoprolatus* sp. nov.**

7 (4) Pronotal anterior margin conspicuously broader than middle; elytra elongate (length to width ratio range 2.92–2.95:1) (Fig. 157) . . . . . ***Notopilo calicis* sp. nov.**

- Pronotal anterior margin about as broad as middle or slightly narrower; elytra less elongate (length to width ratio range 2.4–2.6:1) **8**

8 (7) Legs entirely black; elytral pale maculae typically glossy and enamel-like in appearance (Fig. 156). . . . . ***Notopilo beswickensis* sp. nov.**

- Legs bicoloured; elytral pale maculae never glossy and enamel-like in appearance (Fig. 159). . . . . ***Notopilo tompricensis* sp. nov.**

9 (3) Elytral transverse fascia positioned posterior of elytral mid-length, with its anterior margin at the mid-point or nearer to the apices than the base; profemora entirely, or almost entirely, black (Fig. 170) . . . . . ***Notopilo gerstmeieri* sp. nov.**

- If elytral transverse fascia as above, then profemora basally pale **10**

10 (4) Humeral macula present and joined to elytral fascia along lateral margin proximal to epipleuron . . . ***Notopilo elstoni* sp. nov.**

- Humeral macula, if present, not joined to elytra fascia along lateral margin **11**

11 (10) Elytra lacking apical maculation, broad and short (length to width ratio 2:1), notably broader than pronotum (Fig. 175). . . . . ***Notopilo obesus* sp. nov.**

- Elytra more elongate (length to width ratio at least 2.3:1 or greater), apical macula present. **12**

12 (11) Elytral fascia conspicuously rounded at suture (Fig. 174); nodules of elytral punctures small and difficult to view, or apparently absent . . . . . ***Notopilo katherinensis* sp. nov.**

- Not as above, or if elytral fascia rounded at suture then nodules of elytral punctures easily viewable under magnification **13**

13 (12) Length to width ratio of pre-fasciate area of single elytron ranging from 2.2:1 to 2.7:1 (Figs 165, 172) **14**

- Length to width ratio of pre-fasciate area of single elytron ranging from 1.7:1 to 2:1 (e.g., Fig. 164) **15**

14 (13) Elytral stria 10 (sometimes also 9) terminating before apical macula . . . . . ***Notopilo confusus* sp. nov.**

- Elytral striae 9-10 terminating near or within apical macula . . . . . ***Notopilo tanybasilaris* sp. nov.**

15 (13) Elytral humeri maculate (whether distinct or faint, humeral macula never entirely absent), entire base never maculate (Fig. 162); nodules of elytral punctures distinct . . . . . ***Notopilo cambageicola* sp. nov.**

- Elytral humeri lacking maculation (as in Figs 163–165), or entire elytral base maculate; nodules of elytral punctures sometimes indistinct **16**

16 (15) Eighth elytral stria beginning between the 4th and 7th puncture of the 7th stria, elytral humeri not maculate (typical form, Queensland/NT to Pilbara into Gascoyne, WA) or elytral base entirely maculate (WA variety, south of Pilbara/Gascoyne border); length of ventral tegminal sinus about half the length of dorsal sinus (Fig. 50). . . . . ***Notopilo lawnhillensis* sp. nov.**

- Eighth elytral stria beginning between the 1st and 3rd puncture of 7th striae, elytral humeri never maculate; ventral tegminal sinus about one-third the length of dorsal sinus (Fig. 49); north Queensland (from Townsville region to tip of Cape York Peninsula) . . . . . ***Notopilo interfabulatus* sp. nov.**

17 (1) All elytra striae terminating within fascia (Fig. 169) . . . . . ***Notopilo brevistriatus* sp. nov.**

- Elytra striae terminating posterior of fascia **18**

18 (17) Legs bicoloured. . . . . ***Notopilo congruus* comb. nov.**

- Legs black **19**

19 (18) Antennal flagellomeres slender. . . . . ***Notopilo reduncus* stat. rev., nom. nov.**

- Antennal flagellomeres thick-set . . . . . ***Notopilo magnus* sp. nov.**

beswickensis species group

Diagnosis. Anterior pronotal arch as broad or broader than middle and pronotal median sulcus mostly inconspicuous, shallow or apparently absent (synapomorphies within *Notopilo*); hind wing with CuA_{3+4} and CuA_1 cross-veins complete, MP_{3+4} basad of CuA_1 absent; outer profile of tegminal parameroid lobes gradually sloping inwards towards apices; apical lobes of median lobe well-developed, without apico-medial sclerite; eyes widely separated (frons width = 1.26–2.0 eye widths) (symplesiomorphy within *Notopilo*).

Remarks. The *beswickensis* species group of *Notopilo* contains six species: *N. beswickensis* **sp. nov.**; *N. calicis* **sp. nov.**; *N. eremosus* **sp. nov.**; *N. tompricensis* **sp. nov.**; *N. xanthoimprocerus* **sp. nov.**; *N. xanthoprolatus* **sp. nov.**.

***Notopilo beswickensis* sp. nov.**
ZooBank registration: urn:lsid:zoobank.org:act:D37A1778-FA33-40EB-9561-CBB61A918047
(Figs 43, 81, 116, 156; Map 3)

HOLOTYPE ♂: **Northern Territory**: Austral. North.T. Beswick, I 1958, leg. H.Demarz // coll. R. Gerstmeier RGCM Munich (QM, type reg. T258551). **PARATYPES** (21): **Northern Territory**: same data as holotype (4, ZSM; 7, RGCM); Tindal, N.T. 14.31S 132.22E, 1-20 Dec. 1967, light trap, W.J.M. Vestjens (5, ANIC). **Queensland**: Australia: n. Qld, 40 Mile Scrub N.P. via Mt Garnet, 10-i-25-ii-1986, Storey & Heiner // Malaise trap (1 ♂, 1, QDPC); Mareeba, N.Q., Jan 1950, C. Oke // COL-65682 (1, NMV); Mt Garnet Ra., N.Q., 1/58 GB // J.G. Brooks Bequest, 1976 (1, ANIC). **Western Australia**: [unknown locality] W. Aust // F. E. Wilson Collection // Opilo near but not congruus // COL-65677 (1, NMV).

Additional material: **Northern Territory**: Brunette Downs, NT, via Freewina, 12 February 1982, Light, R.Patterson, G893 (1 ♀, ANIC); Tindal, N.T. 14.31S 132.22E, 1-20 Dec. 1967, light trap, W.J.M. Vestjens (1 ♀, ANIC). **Western Australia**: WA: Argyle Diamond Mine, ca. 110 km SSW Kununurra 16°43′S 128°24′E 21 February 1984 A.C. Postle // Argyle Diamond Mines Collection donated 25 June 2001 (1, WAM).

Diagnosis. Pronotum broadly rounded laterally, disc not heavily punctate, central sulcus small and shallow; elytra dark with white to pale yellow fasciate and apical maculations (humeral maculae absent in typical form), fasciae angled toward and meeting at suture, punctation with nodules, 8th stria beginning at or within fascia, punctate to apex; legs entirely black, tarsi with three ventral tarsal pads.

Description. *Habitus*: Fig. 156. *Total length*: 6–8.1 mm. *Head*: Cranium black, supra-antennal elevation and parts of clypeus often dark reddish-black, anteclypeus and labrum orange, palpi dark brown with paler terminal margins, antennae brown; frons broad (eyes separated by 1.65–1.8 eye widths), moderately punctate, rugulose above narrowest point, smoother below, slightly bulging above epistomal suture, clypeus with several punctures, anterior margin strongly concave, genae wrinkled; exterior margins of terminal palpomeres about 1.5–2 times (maxillae) and about 2.5 times (labium) the length of inside edges; antennae reaching base of pronotum; eyes and most of cranium vested with erect pale setae, frons with shorter medially-directed setae. *Prothorax*: Entirely black; pronotum 1.2–1.3 times longer than wide, moderately rotund in shape, anteriorly as broad as middle and about as wide or slightly narrower than head, sides round (not tuberculate), subapical depression deeply v-shaped, central sulcus weakly impressed; disc moderately to strongly punctate though smooth (glossy) in appearance, moderately distributed with short fine setae oriented in all directions and occasional long erect setae. *Pterothorax*: Ventrites dark brown, impunctate, moderately vested with short pale and occasional long setae; elytra blackish-brown with pale yellow to ivory-like markings (a large apical macula and a thick transverse fascia crossing the sutures and having the anterior and sometimes the posterior margins tapering inwards); elytra widest in apical half, length to width ratio 2.4–2.5:1; punctation with lateral nodules, nodules not visible within fascia, punctation large, deep and crowded in basal half, only slightly less so posterior of fascia, striae distinct until apical macula, punctation present but more confused within apical macula, 8th stria beginning at or within fascia; interstriae with moderately long erect setae every 1 or 2 punctures and less frequently with longer erect setae, inner anterior rim of punctations with a minute semi-reclinate seta; epipleurae extending well into apical curve; hindwing with CuA_{3+4} cross-vein complete (CuA_1 cross-vein not examined), MP_{3+4} absent basad of CuA_1 crossvein. *Legs*: Entirely black to blackish-brown in most species (one female form Tindal with predominantly pale femora), tarsi dark brown, ventral tarsal pads paler; profemora barely swollen, other femora slender. *Abdomen*: Ventrites dark brown. *Male genitalia*: Tegmen (Fig. 43) robust, sides sub-parallel, rounding off to parameroid lobes (apically tapered to a weakly digitiform process), dorsal sinus just over one-third tegmen length, weakly narrowing internally, ventral two-thirds as long, tegminal arms gradually meeting apodeme at broad base; median lobe as in Fig. 81; pygidium as in Fig. 116.

Variation. The size and shape (degree of taper towards suture) of the elytral fascia is variable within specimens of the type series. Two non-type specimens, one from Brunette Downs, Northern Territory (ANIC), another from Argyle Diamond Mine, Western Australia (WAM), differ from those of the type-series in having a large humeral maculation on each elytron.

Etymology. The specific epithet *beswickensis* refers to Beswick in the Northern Territory where most of the type-series was collected.

Biology. Adults have been collected in December and January.

Distribution (Map 3). Specimens are known from northern parts of Queensland and the Northern Territory plus one unknown location in Western Australia.

***Notopilo calicis* sp. nov.**
ZooBank registration: urn:lsid:zoobank.org:act:25D3465F-A18A-4668-B521-2B0F1772E237
(Figs 44, 82, 117, 157; Map 3)

HOLOTYPE (sex unknown): **Western Australia**: WA: Weelhamby Lake, west MO11-SAP. wet pitfalls, 29°11′24″S 116°27′08″E (GPS) 15 Sept 1998–18 Oct 1999 P. Van Heurck, CALM Survey (WAM E88393). **PARATYPE** (1): **Western Australia**: same data as holotype (1 ♂, WAM E88394).

Diagnosis. Anterior part of pronotum notably wider than middle, disc densely punctate; elytra dark with orange humeral, fasciate and apical maculations, punctation with nodules, 8th stria beginning near humeral macula, at least striae 2–9 reaching apical maculae; femora yellow basally, brown apically, tarsi with three ventral tarsal pads.

Description. *Habitus*: Fig. 157. *Total length*: 8.1–8.2 mm (holotype 8.2 mm). *Head*: Cranium black, clypeus and supra-antennal elevation with subtle dark brown hue, anteclypeus, labrum, palpi and antennae orange to orange-brown; eyes separated by 1.83–1.91 eye widths (holotype 1.91); vertex and frons with dense network of irregular-shaped punctures, frons weakly impressed at narrowest part, clypeus mostly smooth with a few punctures near hypostomal suture; genae wrinkled, submentum smooth; ratio of exterior to interior edges of terminal palpomeres about 1.5:1 (maxillae) and 2:1 (labium); antennae reaching near base of pronotum; eyes and most of cranium vested with erect pale setae, frons with shorter medially-directed setae. *Prothorax*: predominantly black, pronotal arch and basal margin of pronotal collar with subtle dark reddish-brown hue; pronotum 1.06–1.12 times longer than wide (holotype 1.06), sides rounded, anterior part wider than middle; subapical depression v-shaped, terminating in a shallow non-sulcate central depression; disc extremely dense with small seta-associated punctations, a slender smooth longitudinal strip behind central impression; short fine multi-directional setae and long erect setae. *Pterothorax*: Ventrites black to deep reddish-black; metaventrite punctate with setae directed posteriorly to postero-medially; elytra dark brown (to blackish-brown) with orange markings (each elytron with a roundish apical macula barely meeting the outside margin, a transverse fascia which is widest laterally, narrowed toward suture and rounded before the suture, plus a squarish to angulate humeral macula); length to width ratio 2.92–2.95:1 (holotype 2.92); 8th stria beginning near humeral macula, most striae ending near apex, striae 1 and 10 weakening before other striae, punctation with small lateral nodules (easily visible on fascia at 30X magnification), punctation posterior of fascia slightly smaller than basal punctures (resulting in appearing more widely spaced), epipleurae extending into apical maculae; interstriae with infrequent erect setae and more frequent finer posteriorly-directed semi-decumbent setae, intrafoveal setae spanning entire puncture diameter. *Legs*: Femora yellow basally and brown apically (apical third of profemora, apical third to a quarter of meso- and metafemora), tibiae and tarsi brown, ventral tarsal pads yellowish; profemora only slightly thicker than other femora. *Abdomen*: Ventrites brown. *Male genitalia*: Tegmen (Fig. 44) gradually widening towards very broad parameroid lobes, dorsal sinus narrow, about one-third tegminal length, parallel internally, apical half gradually opening out, ventral sinus about three-quarters as long as dorsal sinus, apodeme about one-fifth tegmen length; median lobe as in Fig. 82; pygidium as in Fig. 117.

Etymology. The specific epithet *calicis* (Latin ‘calix’ meaning cup or goblet) refers to the pronotum which, being broadest at its anterior margin appears goblet-shaped when viewed from above.

Biology. Whether the collection of the type series from pitfall traps indicates a ground-dwelling biology is unknown.

Distribution (Map 3). Western Australia: Mid West (Weelhamby Lake).

***Notopilo eremosus* sp. nov.**
ZooBank registration: urn:lsid:zoobank.org:act:2C0B213F-833D-4CE4-90DA-7E48D5B62225
(Fig. 158; Map 3)

HOLOTYPE (sex not determined): **Western Australia:** Charlie’s Knob, Gibson Desert, Western Australia, 26 March 1976 R.E. Johnstone // Mulga–Eucalyptus–Triodia. Collected at night (WAM E88368).

Diagnosis. Pronotum goblet-shaped, widest anteriorly, central impression apparently absent, base with conspicuous pair of paramedical tubercles; elytra pale (basal third orange, posterior two-thirds yellow) with brownish markings (a broad transverse, pre-apical fascia suddenly expanded at the suture, plus a more slender post-basal, transverse fascia extending thinly along the suture to the scutellum), punctation with nodules, 8th striae beginning

just posterior of the post-basal transverse fascia; striae 1–8 terminating within preapical fascia, 9–10 terminating between both fasciae; femora bicoloured; tarsi with three ventral tarsal pads.

The pair of tubercles at the pronotal base and the fasciate form of the post-basal maculation will separate *N. eremosus* **sp. nov.** from *N. xanthoprolatus* **sp. nov.** which it somewhat resembles.

Description. *Habitus*: Fig. 158. *Total length*: 7 mm. *Head*: Cranium dark brown except gula orange, labrum, palpi and antennae orange-brown, anteclypeus semi-transparent orange; vertex and frons with shallow punctures and wrinkles, frons almost smooth in parts, genae wrinkled, submentum partly wrinkled; eyes separated by 1.36 eye widths; exterior margins of terminal palpomeres about 1.1 times (maxillae) and 2.0 times (labium) the length of inside edges; antennae notably long, reaching near base of pronotum; eyes and most of cranium vested with erect pale setae, frons with extremely fine shorter, medially-directed setae. *Prothorax*: Entirely orange-brown; pronotum 1.26 times longer than wide, goblet-shaped, anteriorly slightly broader than middle and about as wide or slightly narrower than head, sides weakly tuberculate, subapical depression poorly defined though v-shaped, central impression extremely shallow (apparently absent), base of disc with conspicuous pair of paramedial tubercles; disc with shallow punctuation and wrinkles (though smooth in appearance), moderately distributed with short fine multi-directional setae and long erect setae. *Pterothorax*: Ventrites yellow-brown to orange, moderately vested with short, pale, posteriorly-directed setae of two lengths; elytra pale (basal third orange, posterior two-thirds yellow) with brownish markings (a broad transverse, pre-apical fascia suddenly expanded at the suture, plus a more slender post-basal, transverse fascia extending thinly along the suture to the scutellum); length to width ratio 2.71:1; punctation with lateral nodules, nodules least visible in pale region beween transverse fasciae, punctation (particular in pale areas) appearing larger than actual puncture diameter due to visibility of subcutaneous structures, striae 1–8 terminating within preapical fascia, 9–10 terminating between both fasciae, 8th striae beginning just posterior of the post-basal transverse fascia; interstriae with very fine, short, erect setae and slightly thicker, erect, setae about twice as long as the latter; epipleurae extending well into apical curve. *Legs*: Basal two-thirds of femora yellow, apical third of femora plus tibiae and tarsi brown, ventral tarsal pads yellowish; profemora bhardly more swollen than other femora. *Abdomen*: Ventrites orange. *Male genitalia*: Not studied.

Etymology. The specific epithet *eremosus* (from Greek 'eremos' meaning solitary or lonely, and also in reference to the term 'eremia' meaning desert) refers both to the fact that only one specimen is known and to the eremial region where the unique holotype was collected.

Biology. The only known specimen was collected late March at light in an area predominantly vegetated by mulga (*Acacia aneura*) and *Eucalyptus* trees or shrubs and *Triodia* grass.

Distribution (Map 3). Known only from Charlie's Knob (-25.051343, 124.975467), off the Gary Highway, Gibson Desert, Western Australia.

***Notopilo tompricensis* sp. nov.**

ZooBank registration: urn:lsid:zoobank.org:act:4FE547C9-47A3-4CF1-8FB7-1F540DA1E55A

(Figs 45, 83, 118, 159; Map 3)

HOLOTYPE ♂: **Western Australia**: Pilbara region, Nanburra-Wittenoom Rd, 25km NE of Railway Rd. x-ing, N side of hill, -22:21:21 117:54:16, 16-Feb-2005,20-Feb-2005, LTM sites, M. Bulbert & S. Ginn, PILB040/04M, [] // 1122 // K 246886 (WAM E113540, ex AM). **PARATYPES** (3): **Western Australia**: WA, Pilbara region, Nanburra-Wittenoom Rd, 25km NE of Railway Rd. x-ing, N side of hill, -22:21:21 117:54:16, 13-April-2005,18-April-2005, LTM sites, M. Bulbert & G. Wood, PILB040/05M, [Malaise trap] // 1123 // K 246885 (1 ♂, AM); same as previous except, 1121 // K 246887 (1 ♂, AM); WA, Hammersley Environment house, 359 Vitex st Tom Price, -22:41:50 117:47:55, 15-Feb-2005, Adhoc collection, M. Bulbert & S. Ginn; PLIB078/8/LT4, [] // 1124 // K 246884 (1 ♀, AM).

Diagnosis. Pronotum weakly angulate laterally, disc moderately punctate to rugulose, with glabrous regions (at base and along mid-line to central impression, plus one either side of central impression); elytra dark with orange fasciate, apical and humeral maculations, the transverse fascia meeting at the suture, punctation with nodules, 8th stria begins between anterior margin of transverse fascia and posterior margin of humeral maculation, at least striae 4–9 reaching apical macula, interstrial setae in singular rows; femora yellow and brown, tarsi with three ventral tarsal pads.

Description. *Habitus*: Fig. 159. *Total length*: 6–6.9 mm (holotype 6 mm). *Head*: Vertex, frons, genae and submentum black or brown, clypeus and supra-antennal elevations reddish-brown, anteclypeus semi-transparent orange or brownish, antennae, labrum and palpi orange to orange-brown; eyes separated by 1.26–1.5 eye widths (holotype 1.33); vertex and frons punctate to rugulose, punctation sparser before clypeus, surface between eyes variable (bearing an impression or not); genae and submentum wrinkled; exterior margins of terminal maxillary palpomeres between 1.4 times (females) and 2 times (males) the length of inside edges, exterior margins of terminal labial palpomeres about 1.8 times (females) and 2.5 times (males) the length of inside edges; antennae reaching near base of pronotum; eyes and most of cranium vested with erect pale setae, frons with shorter finer medially-directed setae. *Prothorax*: Brown or black; pronotum 1.17–1.22 times longer than wide (holotype 1.22), sides more angulate than rounded, lateral bulge about as wide as pronotal arch; subapical depression deeply v-shaped, terminating at shallow central impression; disc punctate to rugulose though retaining glossy appearance, tumescent areas at base and either side of central impression, plus discal mid-line, glabrous; moderately distributed with long erect setae and shorter finer multi-directional setae. *Pterothorax*: Ventrites orange (female) or light to dark brown (males), vested with many short pale, and occasional long, setae; elytra dark brown with yellowish markings (each elytron with a large apical macula, a transverse fascia which meets at the suture and a large humeral macula); length to width ratio 2.41–2.59:1 (holotype 2.59); 8th stria begins between anterior margin of transverse fascia and posterior margin of humeral maculation, most striae terminating at apical macula (striae 1–3 and 10 sometimes not reaching apical macula), punctation with conspicuous lateral nodules (most visible in dark areas of elytra), punctation posterior of fascia only slightly smaller than those anterior to fascia, epipleurae diminished near apical macula, interstriae with single rows of short semi-erect setae (about 1 per puncture) and longer slightly thicker erect setae (about 1 per every 3 punctures); hindwing with CuA_{3+4} and CuA_1 cross-veins complete, MP_{3+4} absent basad of CuA_1 crossvein. *Legs*: Femoral bases yellow, apical half of profemora and apical one-third of other femora brown, tibiae and tarsi brown, ventral tarsal pads yellowish; profemora very slightly swollen, other femora slender. *Abdomen*: Ventrites orange-brown. *Male genitalia*: Tegmen (Fig. 45) almost parallel, tegminal arms widening slightly before curving abruptly to meet apodeme, parameroid lobes simple, angular, not apically acuminate ot digitiform, dorsal sinus long, just over one-third tegmen length, gradually widening towards apex, internal structures extending into open sinus, ventral sinus about two-thirds length of dorsal sinus, apodeme short, about one-sixth tegmen length; median lobe as in Fig. 83; pygidium as in Fig. 118.

Etymology. The specific epithet, *tompricensis*, refers to the town of Tom Price in the Pilbara region of Western Australia where the type specimens were either collected at, or near.

Variation. The single female specimen differs from the males in having the sides of the pronotum less angulate and the ventral abdominal and pterothoracic sternites more brightly coloured. The frons of the holotype and the female specimen bears an impression which is not evident on the two male Paratypes.

Biology. Specimens were collected in February and April using a Malaise trap.

Distribution (Map 3). Western Australia: Pilbara (Tom Price, and surrounding area).

Remarks. The external margins of terminal labial palpomeres of some specimens are acuminate. Such acuminations cannot be considered diagnostic as they appear to be an artifact of a bent palpomere.

***Notopilo xanthoimprocerus* sp. nov.**

ZooBank registration: urn:lsid:zoobank.org:act:332D1CD8-12CF-4547-8786-966A9BB0F98A

(Figs 46, 84, 119, 160; Map 3)

HOLOTYPE ♂: **South Australia**: S. Aust. 0.2km W Anvil Hole Native Well, Witjira NP, 26°21′27″S 135°42′27″E, pitfalls, 19-25 Nov 1995, Stony Desert Survey AL03 (SAMA, database No. 25-021893). **PARATYPES** (3): **South Australia**: same data as holotype (1 ♀, SAMA); S. Aust. Andamooka, 4.7km SSE Stonwall Dam, 30°44′18″S 137°18′40″E, pitfalls, 11-5 Nov 1996, Stony Des. Surv. AN002 (2 ♂, SAMA, database Nos. 25-021894, 25-021895).

Diagnosis. Pronotum weakly rounded laterally, disc lightly punctate, appearing smooth; elytron yellowish with a brown semi-circular or triangular macula against the suture before the apical slope, punctation with lateral nodules, 8th stria beginning between 3rd and 6th puncture of 7th stria, most striae terminating near apical quarter, outer striae slightly before, interstriae with short semi-erect, and long erect, setae in single rows, intrafoveal setae long; legs entirely yellow, tarsi with three ventral tarsal pads.

Description. *Habitus*: Fig. 160. *Total length*: 6.3–7.8 mm (holotye, 6.75 mm). *Head*: Cranium yellowish or brown, if brown then may be paler ventrally and with frons paler anteriorly; clypeus orange, labrum and palpi yellow, antennae yellowish or yellow-brown; vertex and frons smooth, with only seta-associated punctation, frons broad, eyes separated by 1.3–1.55 eye widths (holotype, 1.3), a pair of shallow impressions between eyes (difficult to observe; most clearly visible on specimen with darker cranium), clypeus mostly smooth, anterior margin moderately concave; genae wrinkled; terminal maxillary palpomeres with exterior margins from 1.5 (females) to 2 (males) times the length of inside edges; terminal labial palpomeres with exterior margins from 2.3 (females) to 2.8 (males) times the length of inside edges; antennae long, reaching beyond base of pronotum, segments elongate, slender; setae pale, eyes with erect setae, cranium with long and short, erect or medially-directed, setae. *Prothorax*: Entirely yellow; pronotum 1.14–1.23 times longer than wide (holotype, 1.14), sides slightly rounded, middle about as wide as pronotal arch, subapical depression poorly defined, v-shaped; central impression shallow, open; disc appearing smooth, seta-associated punctation inconspicuous; yellowish fine multi-directional setae and thicker long erect setae. *Pterothorax*: Ventrites yellow, with short yellowish posteriorly-directed and erect setae; elytra yellow, each elytron with a brown semi-circular or triangular macula against the suture before the apical slope; length to width ratio 2.34–2.48:1 (holotype, 2.48:1); punctation with small lateral nodules (high magnification required), punctation appearing larger than actual size due to visibility of subcutaneous component, most striae terminating near apical quarter, outer striae slightly before, 8th stria beginning between 3rd and 6th puncture of 7th stria; interstriae with fine semi-erect, posteriorly-directed, setae (about every puncture) and longer, thicker, erect setae (every 2–3 punctures), intrafoveal setae spanning entire puncture diameter; epipleurae extending well into apical curve; hindwing with CuA_{3+4} and CuA_1 cross-veins complete, MP_{3+4} absent basad of CuA_1 crossvein. *Legs*: Femora and tibiae yellow, tibial carinae dark for short distance at base, tarsi yellow or brown, ventral tarsal pads yellowish; profemora only slightly more swollen than other femora. *Abdomen*: Ventrites yellow or pale orange. *Male genitalia*: Tegmen (Fig. 46) sinuate between tegminal arms and parameroid lobes, the apices of the latter acuminate-digitiform, dorsal sinus about one-third tegmen length, apically very open, ventral sinus about 70% as long; median lobe as in Fig. 84; pygidium as in Fig. 119.

Etymology. The specific epithet, *xanthoimprocerus* (from Greek 'xanthos' meaning yellow, and Latin 'improcerus' meaning short or undersized), refers to this species being the shorter of the two, primarily yellowish, flightless species.

Variation. The colour of the head varies from pale yellowish to brown.

Biology. Adults have been collected in pitfall traps during November.

Distribution (Map 3). *Notopilo xanthoimprocerus* **sp. nov.** is known from arid regions of South Australia.

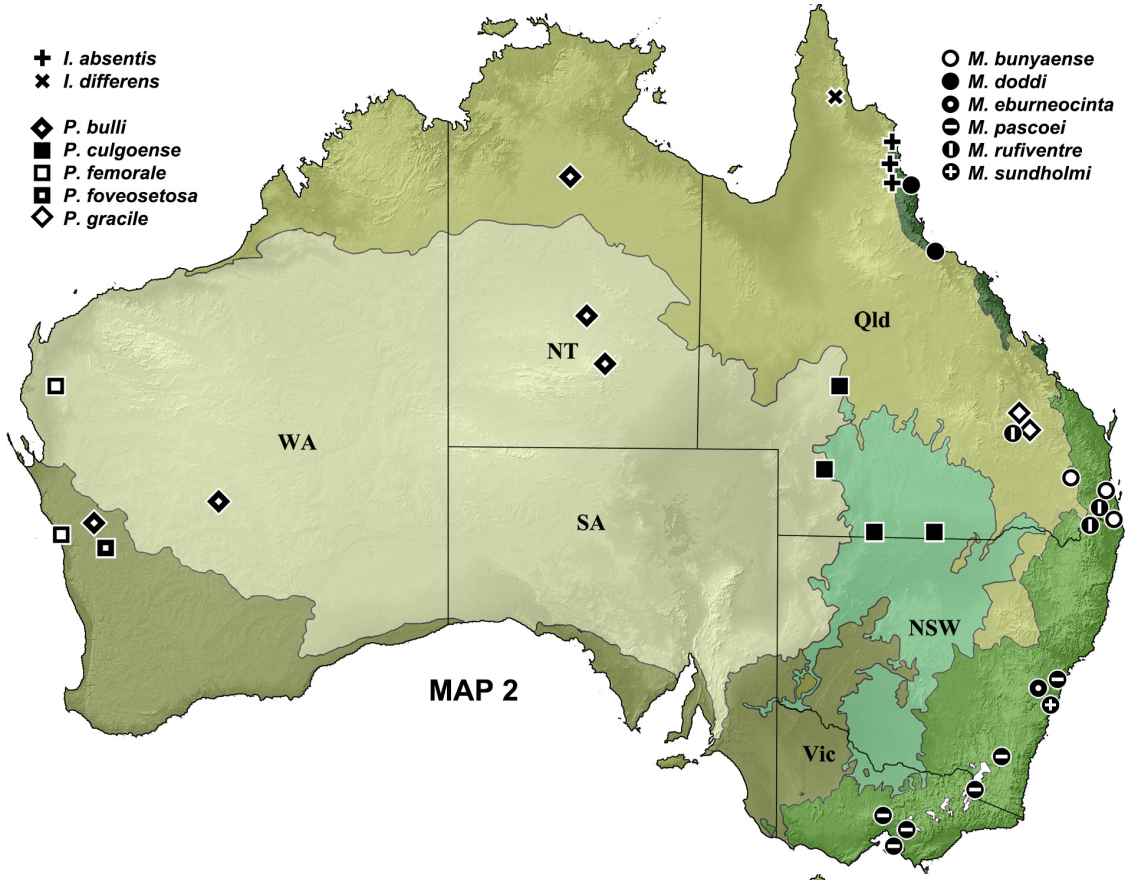
Remarks. One dissected male, from Algebuckina Water Hole, South Australia (non-type specimen, SAMA), differs from the three males of the type series in having a more expansive brown triangular elytral maculation and slightly differently proportioned tegminal components. Examination of further specimens is required before the taxonomic status of this 'form' can be determined.

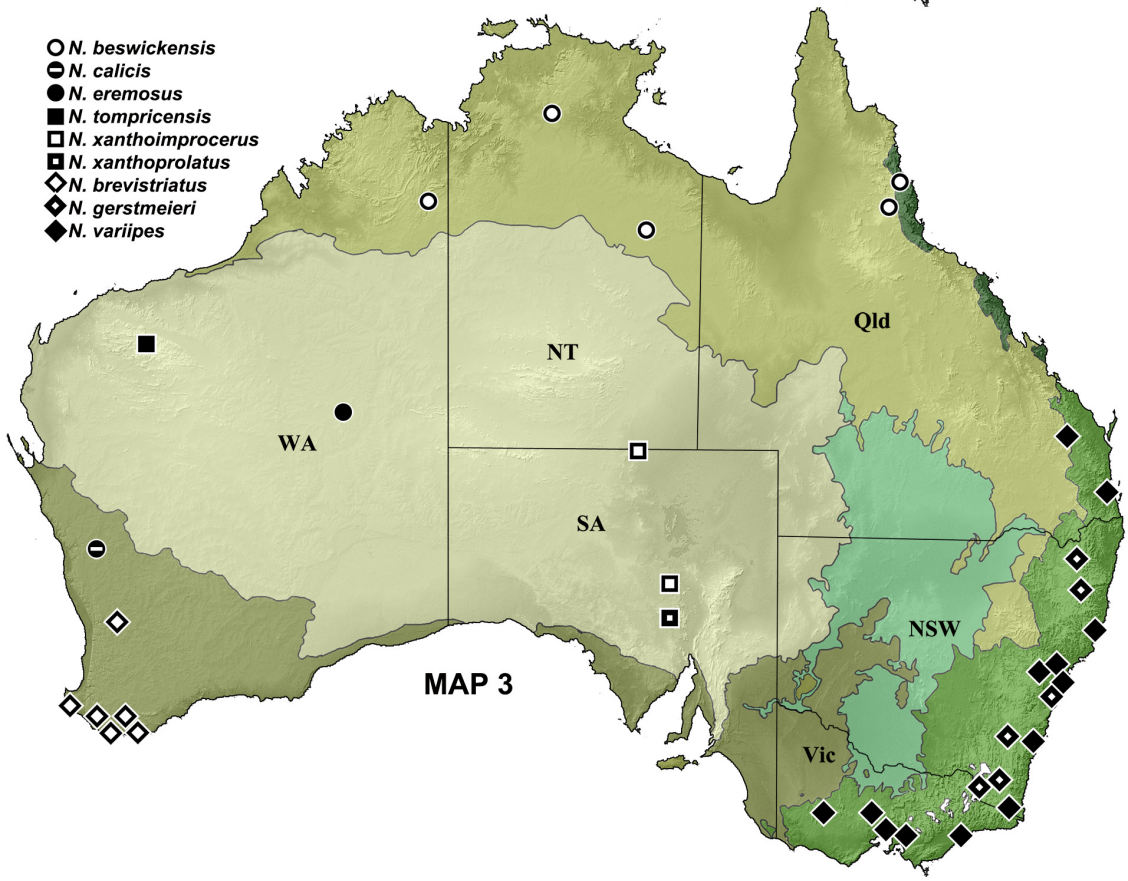
Notopilo xanthoprolatus sp. nov.

ZooBank registration: urn:lsid:zoobank.org:act:0BFB3C1A-6540-4EC1-8AB2-BC42CB7C6640
(Figs 47, 85, 120, 161; Map 3)

HOLOTYPE ♂: **South Australia:** 30.34S 137.42E, SA, 115km N Port Augusta, WLE Rangelands Surv., Pernatty Station, 21-26 Nov. 1994, pitfalls // Pernatty, 21-26 Nov 94, Site 1-5, taxa Coleopt CP6401 // ANIC Voucher 96054 (ANIC). **PARATYPE** (1): **South Australia:** 30.34S 137.42E, SA, 115km N Port Augusta, WLE Rangelands Surv., Pernatty Station, 21-26 Nov. 1994, pitfalls // Pernatty pits, 21-26 Nov 94, Site 6.2, CP.64 Coleopt, Sorter KJ (1, ANIC).

Diagnosis. Pronotum goblet-shaped, widest anteriorly, disc well-punctated though retaining a smooth appearance, central sulcus absent; elytra yellow with a broad dark pre-apical fascia and smaller dark patches between it and the base, punctation with nodules, 8th stria beginning near base, striae terminating within apex; legs yellow with longitudinal carinae and tarsi brownish, tarsi with three ventral tarsal pads.





MAPS 2&3. Species distribution. (Map 2) *Infectostriatus, Monilonotum* and *Platynotum*; (Map 3) *Notopilo* (beswickensis and *variipes* species groups) (topographic layer image credit: NASA 2002).

Description. *Habitus*: Fig. 161. *Total length*: 7.1–7.7 mm (holotype, 7.1 mm). *Head*: Cranium dark brown dorsally and laterally, orange ventrally, anteclypeus, labrum, palpi and antennae orange or orange-brown; vertex and frons densely punctate to semi-rugulose, frons broad, eyes separated by 1.75–2 eye widths (holotype, 1.75), a shallow inconspicuous impression at narrowest point, surface becoming less punctate below, clypeus mostly smooth, anterior margin strongly concave, genae wrinkled; exterior margins of terminal palpomeres about 1.2 times (maxillae) and 1.8 times (labium) the length of inside edges; antennae notably long, reaching beyond base of pronotum, all segments, including club, elongated; eyes and most of cranium vested with erect pale setae, above eyes with a cluster of shorter posteriorly-directed setae, frons with shorter medially-directed setae. *Prothorax*: Entirely orange-brown; pronotum 1.08–1.12 times longer than wide (holotype, 1.12), goblet-shaped, anteriorly slightly broader than middle and about as wide or slightly narrower than head, sides rounded, subapical depression poorly defined though v-shaped, central sulcus absent; disc well-distributed with small shallow punctation though smooth (glossy) in appearance, moderately distributed with short fine multi-directional setae and occasional long erect setae. *Pterothorax*: Ventrites yellow, moderately vested with short pale and occasional long setae; elytra yellow with brownish markings (a broad pre-apical fascia crossing the suture and a small round spot between the base and fascia); length to width ratio 2.88–3.13:1 (holotype, 3.13:1); punctation with lateral nodules, nodules less visible around elytral mid-length, punctation appearing larger than actual size due to visibility of subcutaneous striate structures, striation strong until near apex, 8th and 9th striae beginning at base; interstriae with very fine erect setae (approximately one per punctation) and less frequently with longer erect setae, intrafoveal setae long; epipleurae extending well into apical curve; hindwing with CuA_{3+4} cross-vein absent, CuA_1 cross-vein complete, MP_{3+4} absent basad of CuA_1 crossvein. *Legs*: Femora and tibiae yellow, tibial carinae dark, tarsi brown, ventral tarsal pads yellowish; profemora barely swollen, other femora slender. *Abdomen*: Ventrites yellow to orange. *Male genitalia*: Tegmen (Fig. 47) slightly widening towards parameroid lobes which taper apically to slender digitiform processes, dorsal sinus just over one-third tegmen length, weakly narrowing internally, ventral sinus two-thirds as long, tegminal arms tapering gradually then sharply meeting apodeme near basal one-tenth; median lobe as in Fig. 85; pygidium as in Fig. 120.

Etymology. The specific epithet *xanthoprolatus* (from Greek 'xanthos' meaning yellow, and Latin 'prolatus' meaning elongated), refers to this species being the more elongated of the two, primarily yellowish, flightless species.

Biology. Adults have been collected in November using pitfall traps.

Distribution (Map 3). The two known specimens are from one locality 115 km north of Port Augusta in South Australia.

cambageicola species group

Diagnosis. Hind wing with CuA_{3+4} and CuA_1 cross-veins complete, MP_{3+4} basad of CuA_1 absent; outer profile of tegminal parameroid lobes gradually sloping inwards towards apices; apical lobes of median lobe well-developed, with apico-medial sclerite and small apico-lateral acumination (synapomorphic within *Notopilo*).

Remarks. The *cambageicola* species group of *Notopilo* contains four species: *N. cambageicola* **sp. nov.**; *N. interfabulatus* **sp. nov.**; *N. lawnhillensis* **sp. nov.**; *N. tanybasilaris* **sp. nov.**.

Notopilo cambageicola sp. nov.

ZooBank registration: urn:lsid:zoobank.org:act:85BE70A2-6A76-4F0E-9915-FC3142277B75
(Figs 48, 86, 121, 162; Map 4)

HOLOTYPE (sex not determined): **Queensland**: Qld:28.94°Sx146.918°E Culgoa Floodplain NP 7km NNW Toulby Gate. (CG4AM) 18 Nov–17 Dec 2009 160m. Malaise Gidgee. C. Lambkin, A. Coward, N. Starick, C. Kelly 19257 (QM, type reg. T258552). **PARATYPES** (22): **Queensland:** Qld: 28.719°Sx144.491°E Currawinya NP, HQ, 12.8km N (CW8 M) 141m. Malaise 18 Feb-4 Mar 2009. D. McKellar, A.Townsend, open clay pan 18147 (1 ♀, 1, QM); Qld: 28.872°Sx144.502°E Currawinya NP, Woolshed (CW1 M) 1-12 Dec 2008. 136m. Malaise. Mulga A. Townsend J. Burke 18116 (1, QM); Qld: Currawinya NP (CW1). Woolshed 136m. Mulga 28.872°Sx144.502°E

15Dec2007-21Jan2008. Lambkin, Townsend, Starick. Malaise 16247 (1 ♂, 2, QM); Qld: Currawinya NP, 4kmNW HQ (CW3). 28.813°Sx144.462°E Mulga 15Dec2007-8Feb2008. Lambkin,Townsend, Starick. Malaise 16249 (1 ♂, 2, QM); Qld:26.541°Sx142.516°E Plevna Downs, 2.3km SSW Arima (PD2 M) Malaise. 13 Jan-3 Apr 2008. 132m. R.Mackenzie. Gidgee 17284 (3, QM); Qld:26.728°Sx142.651°E Plevna Downs, Tompilly Hill Base (PD6 M) 187m 24Apr-24Jul 2008. G Turner, R Mackenzie. Malaise. Gidgee. 17320. (1, QM); Qld:26.786°Sx142.648°E 12.7km SSE Plevna Downs HS (PD8 M) 145m. 15 Mar-4 Apr 2009. R. Mackenzie. Malaise on Sandy creek bank. 17348 (1, QM); Qld:26°43.8′Sx142°39.0′E Plevna Downs, Tompilly Hill Base. 13Dec2007-13Jan2008. C. Lambkin, N. Starick & R. Mackenzie. 15999. Malaise trap, gidgee, gibbers. (2, QM); Qld:29.054°Sx147.023°E Culgoa NP, 4.5km WNW Cawwell HS, Claypan. (CGN3M) Malaise Gidgee. 21 Dec 2009-30 Jan 2010. B. Scheibaan. 19310 (1 ♂, 5, QM).

Additional material: **New South Wales:** NSW:29.054°Sx147.023°E Culgoa NP, 4.5km WNW Cawwell HS, Claypan (CGN3M) Malaise. Gidgee 21Dec 2009-30Jan 2010.B.Schiebaan 19310 (1 ♀, QM); NSW:29.047°Sx146.996°E Culgoa NP, 8km WNW Cawwell HS, Diemunga Lagoon(CGN2M) Coolibah 30Jan-18May2010.Malaise C.Lambkin, R.Ohlsen B.Schiebaan. 19322 (1 ♂, QM).

Diagnosis. Pronotum rounded; disc punctate though smooth in general appearance; central impression conspicuous; tumescent areas either side of central impression indistinct; elytra dark with orange maculae (each elytron with a small, faint, humeral macula, a large central fasciate macula which converges towards the suture and an apical macula which meets the external and sutural margins); punctation with conspicuous lateral nodules; 8th stria beginning near base, between 1st and 3rd punctation of 7th stria or, less commonly, 8th stria longer than 7th; most striae reaching apical macula; striae with a single seta across interstrial width; femora yellow and brown; tarsi with three ventral tarsal pads.

Description. *Habitus*: Fig. 162. *Total length*: 5.9–10 mm (holotype, 8.4 mm). *Head*: Vertex and frons black, clypeus and supra-antennal elevations reddish-brown, anteclypeus semi-transparent orange, labrum, antennae and palpi orange to orange-brown, venter dark brown, gula paler; eyes separated by about 0.75–0.97 eye widths (holotype, 0.9); vertex and upper part of frons strongly punctate-rugulose laterally, sculpturing weaker medially, lower part of frons (above epistomal suture) with weak lateral punctures, slightly raised in middle; clypeus without strong punctation; genae and submentum wrinkled; exterior margins of terminal palpomeres about 1.75 times (maxillae) and 2.1 times (labium) the length of inside edges; antennae not reaching base of pronotum; eyes and cranium with long and short pale erect setae, frons and vertex with occassional long erect setae and dense short medially-directed setae. *Prothorax*: Disc dark brown, pronotal collar and arch paler, prosternum and basal collar orange-brown; pronotum about 1.2–1.33 times longer than wide (holotype, 1.3), sides rounded, middle as wide as pronotal arch; subapical depression deeply v-shaped; central impression deep, open; disc smooth in general appearance, weakly punctate dorsally, moderately punctate dorsolaterally and laterally, sculpturing around punctation irregularly wrinkled; preapical tumescence weak; lateral impression inconspicuous; disc with short multi-directional setae and erect setae. *Pterothorax*: Ventrites brown, with fine mostly posteriorly-directed setae; elytra dark brown with orange markings (each elytron with a small faint humeral macula, a large central fasciate maculation which is curved at, or converging towards, the suture, plus an apical maculation which meets the external and sutural margins), length to width ratio 2.43–2.6:1 (holotype, 2.43:1); 8th stria beginning near base, between 1st and 3rd punctation of 7th stria or, less commonly, 8th stria longer than 7th, most striae reaching apical macula (striae may be disrupted before apical macula); punctation circular with conspicuous lateral nodules; epipleurae extending into apical maculae; interstriae with short erect to semi-erect setae (at least one per puncture), plus occassional longer erect setae, striae with a single seta across interstrial width, intrafoveal setae short; hindwing with CuA_{3+4} cross-vein complete, CuA_1 cross-vein present or absent, MP_{3+4} absent basad of CuA_1 crossvein. *Legs*: Approximately basal half of pro- and mesofemora and basal two-thirds of metafemora yellow, remaining parts of femora brown; tibiae and tarsi brown, tibial carinae darker; ventral tarsal pads yellowish; profemora slightly more swollen than other femora. *Abdomen*: Ventrites yellowish to orange-brown. *Male genitalia*: Tegmen (Fig. 48), parameroid lobes slightly narrower than middle, tapering to a point, dorsal sinus about one-third tegmen length, inner margins narrower than internal limit, opening between one and two times the width of internal limit, ventral sinus about one-third as long as dorsal sinus, length of apodeme about one-quarter tegmen length; median lobe as in Fig. 86; pygidium as in Fig. 121.

Etymology. The specific epithet *cambageicola* refers to the gidgee (*Acacia cambagei*) habitat in which much of the type series was collected (with the suffix '-cola' meaning dweller or inhabitant).

Biology. Most specimens were caught using Malaise traps set up between November and May. Some traps were set up in gidgee (*Acacia cambagei*) and mulga (*Acacia aneura* and related species) habitat.

Distribution (Map 4). *Notopilo cambageicola* **sp. nov.** is known from Culgoa Floodplains and Currawinya National Parks along the Queensland and New South Wales border, plus Plevna Downs Station in western Queensland.

***Notopilo interfabulatus* sp. nov.**

ZooBank registration: urn:lsid:zoobank.org:act:A990BE5C-AD78-453B-9C11-A67E2D7B9359

(Figs 49, 87, 122, 163; Map 4)

HOLOTYPE ♂: **Queensland**: 15.45S 144.15E GPS 2km NNW "Jowalbinna", QLD 17 Jan. 1994 P. Zborowski E.D. Ewards, at light (ANIC). **PARATYPES** (9): **Queensland**: 17.01S 145.35E QLD Davies Creek Nat. Pk. 5–12 Mar. 1998 A.A. Calder (1 ♂, ANIC); n. Qld Tolga 3 ii 1986 J.D. Brown light trap (1 ♂, QDPC—ex QPIM); 17.39S 145.27E QLD Millstream Falls Nat. Pk. 28 Feb.1998 A.A. Calder / at light open forest (1 ♂, ANIC); 17.39S 145.27E QLD Millstream Falls Nat. Pk. 7 Mar. 1998 A.A. Calder / at light open forest (1 ♀, ANIC); n. Qld Mt. Mulligan, plateau 15-19.iv.1985 K.H. Halfpapp 700m at light (1 ♀, QDPC—ex QPIM); 15.45S 144.15E GPS 2km NNW "Jowalbinna", QLD 17 Jan. 1994 P. Zborowski E.D. Ewards, at light (1, ANIC); n. Qld Tolga 20-xii-1985 J.D. Brown light trap (1, QDPC—ex QPIM); n. Qld Tolga 14.xi.86 J.D. Brown light trap (1, QDPC—ex QPIM); n. Qld 7 km NE of Tolga 7-21.xi.1988 Storey & De faveri light trap (1, QDPC—ex QPIM).

Additional material (all males with tegmina and external morphology indistinguishable from those of the type series): **Queensland**: Iron Range, Cape York Pen., N.Qld 26 May-2 June, 1971 B. K. Cantrell (1 ♂, QM); 11.45S 142.35E QLD Heathlands 20-22 Jun. 1992 T.A. Weir at light (1 ♂, ANIC); Qld: 20°07.0′Sx146°37.8′E Rochford Scrub. Site 3. 280m. 11Dec2006-11Feb2007. S.Wright, Malaise 14592 vinescrub, lancewood / bendee (1 ♂, QM); Telegraph line Crossing, Jardine R., Cape York, N.Qld. 15-17.vi.1969 G. Monteith (1 ♂, QM).

Diagnosis. Pronotum rotund, evenly rounded laterally, disc not heavily punctate; elytra dark with orange fasciate and apical maculations (humeral maculae absent), punctation with nodules, 8th stria beginning between 1st and 3rd puncture of 7th stria; femora bicoloured; ventral tegminal sinus about one-third the length of dorsal sinus, dorsal sinus margins weakly curving towards eachother (remaining well-separated, not almost touching). Extremely similar to *N. lawnhillensis* **sp. nov.** though clearly differentiated by length of ventral tegminal sinus, separation of dorsal sinus margins, and the position of the basal-most puncture of the 8th elytral stria.

Description. *Habitus*: Fig. 163. *Total length*: males 7.6–10.7 mm (holotype 7.7 mm); females 8–11.6 mm. *Head*: cranium black, clypeus and supra-antennal elevation with a reddish hue, anteclypeus, labrum, palpi and antennae orange to orange-brown; eyes separated by 0.58–0.7 eye widths (holotype 0.65); vertex with fine punctures, frons punctate-rugulose, clypeus mostly smooth medially, punctate laterally; genae and submentum heavily wrinkled; ratio of exterior to interior edges of terminal palpomeres approximately 1.8–2.2:1 (maxillae) and 2.5–3:1 (labium); antennae almost reaching base of pronotum; eyes and most of cranium vested with erect pale setae, frons with shorter medially-directed setae. *Prothorax*: Blackish to dark-brown, pronotal arch and collar sometimes paler anteriorly; pronotum 1.21–1.29 times longer than wide (holotype 1.25), sides rounded to subtly angulate, middle slightly wider than anterior part; subapical depression v-shaped, central impression conspicuous though not groove-like, disc smooth in overall appearance, punctures shallow, sparse; short fine multi-directional setae and long erect setae. *Pterothorax*: Ventrites dark-brown, with short posteriorly-directed, and occasional long, setae; elytra black to brown with orange markings (each elytron with a large apical macula meeting external and sutural margins, and a transverse fascia crossing straight at the sutures near elytral mid-length); length to width ratio 2.33–2.64:1 (holotype 2.45); 8th stria beginning after first, second or third puncture of 7th stria (most commonly after the third), most striae reaching apical macula (striae 1, 9 and 10 sometimes not reaching macula), punctation with small lateral nodules (punctures with one lateral nodule present on inner rim and, variably, one lateral nodule present or absent on outer rim—best viewed at 50x or higher magnification), punctation posterior of fascia notably smaller than basal punctation, intrafoveal setae short; hindwing with CuA_{3+4} and CuA_1 cross-veins complete, MP_{3+4} absent basad of CuA_1 crossvein. *Legs*: Femora yellow basally and black-brown apically (apical third of profemora and apical quarter of mesofemora and metafemora black-brown), tibiae and tarsi brown, tarsal pads yellowish; profemora slightly thicker than other femora. *Abdomen*: Ventrites orange. *Male genitalia*: Tegmen (Fig. 49) slender, subparallel

or very weakly sinuate near middle, parameroid lobes evenly curved towards pointed or vaguely digitiform apices, dorsal sinus about one-third tegmen length, inner margins weakly curving towards eachother though remaining well-separated, ventral sinus one-third as long, apodeme about one-third tegmen length; median lobe as in Fig. 87; pygidium as in Fig. 122.

Etymology. The specific epithet *interfabulatus* (from Latin 'inter' meaning amongst or amid, and 'fabulae' stories or myths) refers to this species inhabiting a region well-known for its large body of UNESCO-listed prehistoric rock paintings of figurative and abstract depictions of humans, animals and mythical figures called Quinkans.

Biology. Specimens comprising the type series were collected from December to June, at light or by use of a Malaise trap. Millstream Falls specimens were taken from open forest.

Distribution (Map 4). The type series of *Notopilo interfabulatus* **sp. nov.** was selected from specimens collected close to the type location of Jowalbinna near Laura far north Queensland. Male non-type specimens collected outside this region, morphologically indistinguishable from the holotype, suggest this species ranges along eastern Queensland at least from Rochford Scrub, south of Townsville, to the tip of Cape York Peninsula. The related species, *N. lawnhillensis* **sp. nov.** is more widely distributed across northern Australia.

Notopilo lawnhillensis sp. nov.

ZooBank registration: urn:lsid:zoobank.org:act:059145BA-2808-4BA9-9F00-F66244CB1487
(Figs 3, 50, 123, 164; Map 4)

HOLOTYPE (unknown sex): **Queensland**. 18.36S 138.08E QLD Musselbrook Camp 8-21 May 1995 I.D. Nauman Malaise trap (ANIC). **PARATYPES** (8): **Queensland**. 18.36S 138.08E QLD Musselbrook Camp 8-21 May 1995 I.D. Nauman Malaise trap (2, ANIC); 18.35S 138.03E QLD Murrays Spring 8km WbyN Musselbrook Camp 9-20 May 1995 I.D. Nauman Malaise trap (1 ♂, 1 ♀, 2 unknown sex, ANIC); 18.33S 138.11E QLD Holts Ck. 8km N of Musselbrook Camp 10-20 May 1995 I.D. Nauman Malaise trap (2, ANIC).

Other material examined. Queensland. 2km along Ridgepole Waterhole Rd, 10 km ESE Musselbrook Resource Centre Lawn Hill Nat. pk, Qld 18°38′13″S 138°12′29″E 9 May 1995 220m G. Daniels M.A. Schneider (1 ♀, QM).

Diagnosis. Pronotum rounded laterally, discal punctation not particularly dense; elytra dark with orange maculae (each elytron with a large fasciate macula extending more-or-less straight towards the suture and an apical macula which meets the external and sutural margins; base lacking maculation or with a band spanning it entirely), punctation nodulate, most nodules small, 8th stria beginning between 4th and 7th puncture of the 7th stria; striae mostly a single seta across interstrial width (rarely two); femora yellow and brown, tarsi with three ventral tarsal pads.

Notopilo lawnhillensis **sp. nov.** is most similar in appearance to *N. interfabulatus* **sp. nov.**, though these species are easily separated by the length of the 8th elytral stria (beginning between the 4th and 7th puncture of the 7th stria in the former species, and between the 1st and 3rd pucture of 7th striae in the latter), by the length of the ventral tegminal sinus (about half the length of dorsal sinus in the former species, about one-third the length of dorsal sinus in the latter) and by the inner margins of the dorsal tegminal sinus which almost touch in *N. lawnhillensis* **sp. nov.**, while those of *N. interfabulatus* **sp. nov.** are well-separated.

Description. *Habitus*: Fig. 164. *Total length*: 6.5–10.9 mm (holotype, 7.7 mm). *Head*: Vertex and frons black, clypeus and supra-antennal elevations reddish-black, anti-clypeus semi-transparent orange-brown, labrum, antennae and palpi orange to orange-brown; eyes separated by about 0.6–0.83 eye widths (holotype, 0.76); lower vertex and upper frons punctate-rugulose, lower frons transverly rugulose (sometimes subtle) to almost smooth directly above epistomal suture; clypeus laterally and supra-antennal elevations punctate, clypeus mostly smooth medially; genae and submentum wrinkled; exterior margins of terminal palpomeres about 1.8 times (maxillae) and 2 times (labium) the length of inside edges; antennae not quite reaching base of pronotum; eyes and cranium with long erect pale setae, frons and vertex with medially-directed setae. *Prothorax*: Dark reddish-black or black-brown; pronotum about 1.2–1.34 times longer than wide (holotype, 1.34), sides rounded, middle only slightly broader than pronotal arch; subapical depression deeply v-shaped; central impression shallow but conspicuous; disc moderately distributed with shallow punctation, punctures generally separated by at least a puncture diameter, surface between punctures smooth, pronotal base and a weak ovoid glabrous tumescence each side of central impression impunctate; lateral impression not particularly noticeable; disc with fine short multi-directional setae and more sparsely with longer thicker erect

setae. *Pterothorax*: Ventrites reddish black, with very fine posteriorly-directed setae; elytra black to reddish-black with orange markings (each elytron with a large fasciate macula extending more-or-less straight towards the suture and an apical macula which meets the external and sutural margins; base lacking maculation), length to width ratio 2.29–2.45:1 (holotype, 2.45:1); 8th stria beginning between 4th and 7th puncture of the 7th stria, 10th striae most often without punctures before apical macula or punctures less frequent; punctation large, deep in basal half, greatly decreased in size in apical half, punctures with small lateral nodules (most easily viewed in dark area posterior to fascia—nodules of basal punctures difficult to see in some specimens); epipleurae extending into apical maculae; interstriae with short erect to semi-erect setae, plus longer thicker erect setae, striae mostly with a single seta across interstrial width, intrafoveal setae short; hindwing with CuA_{3+4} and CuA_1 cross-veins complete, MP_{3+4} absent basad of CuA_1 crossvein. *Legs*: Basal two-thirds of profemora, basal three-quarters of meso- and metafemora yellow, remaining parts of femora blackish; tibiae and tarsi brown, tibial carinae and base of tarsomeres darker; tarsal pads yellowish; meso- and metafemora slender, profemora slightly more swollen. *Abdomen*: Ventrites orange. *Male genitalia*: Tegmen (Fig. 3, 50) with base about as wide as parameroid lobes, sinuate between, parameroid lobes apically tapered to a short digitiform process, dorsal sinus slightly longer than one-third tegmen length, narrowing at apical third before drop-shaped inner section, internal limit curved, ventral sinus about half as long as dorsal sinus, length of apodeme about one-third tegmen length; pygidium as in Fig. 123.

Variation. Specimens from localities at the southwestern-most limit of the range of Western Australian *lawnhillensis*-like specimens have the elytral humeri and base orange. Despite the different elytral colouration, these specimens cannot be separated from typical *N. lawnhillensis* **sp. nov.** based on external morphology and male genitalia. See 'remarks' below for comments on the status of non-type specimens.

Etymology. *Notopilo lawnhillensis* **sp. nov.** is named after Lawn Hill National Park (now Boodjamulla National Park), the traditional land of the Waanyi people. The type series was collected from Musselbrook Camp, and surrounding areas, within the park. The first author's original intention was to name the species after Boodjamulla National Park though was advised against doing so without seeking permission from traditional landowners. Unfortunately, this consideration was made too close to manuscript submission and, out of respect, the substitute name 'lawnhillensis' was chosen.

Biology. All type series specimens were collected in May, some by means of a Malaise trap.

Distribution (Map 4). The type series was collected from three localities within Boodjamulla National Park, northwestern Queensland.

Remarks. The type series of *Notopilo lawnhillensis* **sp. nov.** from Boodjamulla National Park, northwestern Queensland, was selected from a pool of over 150 specimens with extremely similar external morphology and tegminal structure, collected across Queensland, Northern Territory and Western Australia. Specimens recognised in this paper as *Notopilo interfabulatus* **sp. nov.** and *Notopilo tanybasilaris* **sp. nov.** were originally part of this larger pool of specimens prior to the recognition of reliable diagnostic characters (i.e., tegminal ventral sinus short, eighth elytral stria beginning near elytral base). Subtle, often geographically correlated, variation in the dorsal tegminal sinus was observed within the tegmina of 17 *lawnhillensis*-like males dissected during the study, and though this variation appears to form a continuum, or a morphological cline, we have not attempted to determine whether it is a manifestation of of intra-specific genetic variation, or indicative of inter-specific genetic divergence. The decision to limit designation of the type series to the nine specimens from Boodjamulla National Park was made to simplify matters if subsequent investigations (possibly involving molecular techniques) were to recognise further species from the pool of *lawnhillensis*-like specimens. Until further study provides greater resolution, we suggest that specimens diagnosable as *Notopilo lawnhillensis* **sp. nov.**, from non-type localities, be referred to as '*Notopilo* c.f. *lawnhillensis*'.

Notopilo tanybasilaris sp. nov.

ZooBank registration: urn:lsid:zoobank.org:act:2B94F695-58FC-4F7E-9AE0-609E1CFC8806
(Figs 51, 88, 124, 165; Map 4)

HOLOTYPE ♂: **Queensland:** QLD: 24°49′Sx149°45′E Brigalow Res.Stn. site 2. 12Oct2001 scrub/briga. Burwell. Monteith. 170m pry.trunks, logs.10209 (QM, type reg. T258553). **PARATYPES** (4): **Queensland:** same data as holotype (1, QM); QLD: 24°49′Sx149°45′E Brigalow Res.Stn. site 2. 13Oct2001 Pyrethrum Monteith.Burwell. 170m brigalow trunks 10222 (1, QM); QLD: 24°32′Sx150°36′E Mt Scoria. 200m. 23Mar2001. vine scrub GB

Monteith. Pyrethrum-trunks&logs. 10055 (1 ♂, QM); CQ: 22°16′Sx147°16′E Mazeppa NP, S end. 240m 18 Dec 2000. 9885 GB Monteith. Brigalow Pyrethrum-trunks&logs (1, QM).

Diagnosis. Pronotal sides curvate, disc extremely smooth with isolated punctures; central impression short; tumescent areas either side of central impression indistinct; elytra dark with orange maculae (each elytron with a transverse band posterior to middle plus an apical macula meeting external and sutural margins); punctures with conspicuous lateral nodules; 8th stria beginning near base; outer striae reaching apical macula; femora yellow and black or black-brown; tarsi with three ventral tarsal pads.

Notopilo tanybasilaris **sp. nov.** is superficially similar to *Notopilo cambageicola* **sp. nov.**, *N. lawnhillensis* **sp. nov.** and *N. confusus* **sp. nov.** It differs from *N. cambageicola* **sp. nov.** by the absence of humeral maculae, from *N. lawnhillensis* **sp. nov.** by its more elongate elytra and shorter ventral sinus of the tegmen and from *N. confusus* **sp. nov.** by its more rotund pronotum and the outer striae of its elytra reaching the apical maculae.

Description. *Habitus*: Fig. 165. *Total length*: 6.7–9.1 mm (holotype, 9.1 mm). *Head*: Vertex and frons black, clypeus and supra-antennal elevations reddish-black, anteclypeus semi-transparent orange, labrum, antennae and palpi orange to orange-brown; eyes separated by about 0.6–0.7 eye widths (holotype, 0.65); vertex smooth or punctate behind eyes, frons with punctures connected by wrinkles, clypeus with isolated punctures; genae and submentum wrinkled; exterior margins of terminal palpomeres about 1.3 times (maxillae) and 2 times (labium) the length of inside edges; antennae reaching close to base of pronotum; eyes and cranium with long and short pale erect setae, frons with shorter medially-directed setae. *Prothorax*: Rotund in appearance, black; pronotum about 1.21–1.26 times longer than wide (holotype, 1.21), sides curvate, middle wider than pronotal arch; subapical depression deeply v-shaped; central impression short, not sharply defined; disc mostly nitid with small, shallow, isolated punctures; preapical tumescence weak; lateral impression inconspicuous; disc with short multi-directional, and long erect, setae. *Pterothorax*: Ventrites black or brown, with fine mostly posteriorly-directed setae; elytra black or dark brown with orange markings (each elytron with a broad transverse fascia just behind the elytral mid-length—its anterior and posterior margins either parallel or diverging towards suture—plus an apical macula meeting the external and sutural margins), length to width ratio 2.65–2.88:1 (holotype, 2.79:1); 8th stria beginning near base, between 1st and 3rd puncture of 7th stria; punctation circular, with conspicuous lateral nodules (nodules can make some punctures appear slightly elongate rather than circular), large in basal half then reduced to about half that diameter posterior of fascia; interstriae with single rows of long and short erect or semi-erect setae, intrafoveal setae shorter than half puncture diameter in basal punctures, occasionally longer than diameter of smaller apical punctures; epipleurae extending into apical maculae; hindwing with CuA_{3+4} and CuA_1 cross-veins complete, MP_{3+4} absent basad of CuA_1 crossvein. *Legs*: Approximately basal three-fifths of profemora and two-fifths of meso- and metafemora yellow, remaining apical parts of femora black to black-brown; tibiae and tarsi brown, tibial carinae darker; ventral tarsal pads yellowish; profemora slightly more swollen than other femora. *Abdomen*: Ventrites orange. *Male genitalia*: Tegmen (Fig. 51) only slightly narrowed between middle and robust parameroid lobes, apices tapered to short inwardly-directed digitiform processes, dorsal sinus about one-third tegmen length, inner margins abruptly expanded before inner limit, ventral sinus about one-third as long as dorsal sinus, apodeme about one-third tegmen length; median lobe as in Fig. 88; pygidium as in Fig. 124.

Etymology. The specific epithet *tanybasilaris* (from Greek ‘tanyo’ meaning stretched out, and Neo-Latin ‘basilaris’ at the base) refers to the elongate shape of the immaculate region of the elytra between the base and anterior margin of the transverse fascia.

Biology. This species has been collected in October, December and March by spraying brigalow trunks and logs with pyrethrum.

Distribution (Map 4). *Notopilo tanybasilaris* **sp. nov.** is known only from three localities within the brigalow belt of central Queensland.

congruus species group

Diagnosis. Elytral punctures lacking internal nodules, striae gradually terminating between fascia and apical maculae; tegmen unique in form, tegminal arms arcing widely laterally (synapomorphic within *Notopilo*), parameroid lobes narrow, needle-like, dorsal sinus long and narrow; apical lobes of median lobe with small lateral acumination.

Remarks. The *congruus* species group of *Notopilo* presently contains only *Notopilo congruus* **comb. nov.**

***Notopilo congruus* (Newman) comb. nov.**
(Figs 7, 11, 13, 52, 89, 125, 166, 181; Map 5)

Opilo congruus Newman, 1842: 365.

Type material. **LECTOTYPE** (here designated) ♂: **Victoria**: Type [circular label with red border] // *Opilus congruus* Newman Entomol 365 / 55.91 Pt. Philip [pale blue paper label, folded] // Opilus congruus Type Newm. Port Philip [white card label] // Opilus congruus Newman Entomol 365 [pale blue paper label, folded] (NHML) (Fig. 181).

Comment on lectotype designation: As Newman (1842) made no reference to specimens in his description, it cannot be assumed that the nominal species group na*me, Opilo congruus,* was based on a single specimen (ICZN 1999: Recommendation 73F). The NHML 'type' must therefore be considered a syntype (ICZN 1999: Article 73.2) and available for lectotype designation (ICZN 1999: Article 74.1). We designate the aforementioned NHML specimen (Fig. 166) as the lectotype of *Opilo congruus* Newman for the purpose of fixing it as the sole name-bearing type of that nominal taxon. ***Condition of lectotype*:** Clean, left fifth pro-tarsomere and claw missing, numerous pronotal and elytral setae rubbed off.

Comment on nomenclature: Several species have been erroneously erected under the genus *Opilus* Latreille (1806) rather than *Opilo* Latreille (1802) which has priority over the later, invalid, spelling. Following Article 11.9.3.2 of The Code (ICZN 1999), which states that "a species group name is deemed to have been published in combination with the correct original spelling of the generic name, even if it was actually published in combination with an emendation or incorrect spelling of the generic name", the genus component of the original species group name spelling of *Opilus congruus* (see Newman 1842: 365) is deemed an incorrect subsequent spelling of the genus-group name *Opilo* Latreille. The combination *Opilo congruus* Newman, 1842, is thefore recognised as the correct available name spelling.

Other material examined. (87 specimens): **Victoria:** Ballarat 10/5/91 Froggatt // Opilo congruus Newm., Coll. & det. W.W. Froggatt // Opilo congruus Newm. Ballarat, V. (1, ANIC); Bedick Riv., Jan 1938, V., F.E. Wilson // O. congruus (1, NMV); Blackburn, V., T.G. Mills (1, NMV); 37.47S 148.44E VIC Cape Conran Coastal Park 24km SEW Orbost 12 Jan.-13 Feb. 2005 C.Lambkin, N. Starick / Malaise trap ANIC bulk sample 2623 heath under forest (1, ANIC); Australia: Chinaman I., Vict. 10.v.58, B.P. Moore // Opilo congruus Newm., Det. B.P. Moore (1, ANIC); Eltham, V., 22.11.18, F.E. Wilson // 428 // F. E. Wilson Collection // COL-65649 (1, NMV); Emerald, V., 4.7.20, C. Oke // COL-65650 (1, NMV); COL-65651 [on same pin as previous] (1, NMV); Frankston, 29.9.18/43 // C. E. Cole // congruus // COL-65657 (1, NMV); Frankston, V., 5.36, Goudie (1, NMV); Frankston, Victoria 5/36 // J.G. Brooks Bequest, 1976 (1, ANIC); Kilmore East, 2.4.20 (6, NMV); Kinglake West, V., 29.8.1954, A.N. (1, NMV); Australia, VIC, 20km s. Mansfield, 16.12.1990, leg. M. Baehr (1, RGCM); Melbourne, Deane (1, QM); F.T. Gully V. (1, QM); A.H. Elston Collection // Ararat V., H.W. Davey // K 304530 // 74 Opilo congruus Newm. (1, AM); Melbourne // Pascoe Coll. 93-60. (1 ♂, NHML); Moe, Vict. 14-4-1948, C.G.L.Gooding // C.G.L. Gooding Collection donated to A.N.I.C. 1979 (1, ANIC); Meyer, Nunawading, Vic, 13-8-58, Forest Hill (1, ANIC); Ringwood, V., R. Blackwood // K 304532 // Opilo congruus Newm. Id by A.H. Elston (1, AM); Tyres River, Vict. Oct 1969, T.Brown // C.G.L. Gooding Collection donated to ANIC 1979 (1, ANIC); Warburton District, Victoria (1, NMV); Warrandyte V., 2-3-97, LJ Cookson—9692 // Opilo congruus (Newman, 1842) det. JS Bartlett 2007 (1 ♀, JSBC); Victoria Australie // Museum Paris Coll. M. Pic (1 ♀, MNHN); Museum Paris Australie Victoria H. Rolle 1905 // Victoria // Opilo congruus Newm. Schenkling det. (1, MNHN); Victoria Austral // Ex Musaeo E. Hintz // Museum Paris 1952 Coll R. Oberthur (1, MNHN); Victoria Australie // Museum Paris Coll. M. Pic (3, MNHN); Victoria, Barton // Museum Paris Coll Gorham 1914 (1, MNHN); Victoria n. Holl. // Coll. E.W. Janson (2, MNHN). **New South Wales:** Armidale, N.S.W., 4-viii-1988, M.Coombs (1, QM); Australia, NSW, Aspley Gorge NP, 1-2.12.1990, leg. M. Baehr (2, RGCM); Bega, N.S.W., Nov 1947, E. Smith (1, NMV); Blue Mtns., N. S. Wales, G. E. Bryant, Jan 1909 // G. Bryant Coll. 1919-147. (1, NHML); Blue Mountains, 1—05 H J C // congruus // COL-65642 (1, NMV); COL-65643 [on same pin as previous] (1, NMV); Bombala, N.S.W., 1929, Rev. A.J. Barrett // K 304554 // K60416 (1, AM); R.H. Mulder Collection // The Bonnet, 19-7-1959, N.S.W.—R.H.M. // K 304491 (1, AM); Australia, QLD [NSW], New England Ra. so Glen Innes, 10.12.1990, leg. Wachtel (1 ♂, 4, RGCM); Hornsby, C. Gibbons // K 304520 (1, AM); 35.30S 150.18E, Kioloa SF, 15km NE Batemans Bay, NSW, Dec.86, M.G. Robinson, flight interc. Trap (1, ANIC); Lane Cove, N.S.W., 28 Dec. 1948, N.W.Rodd. // K 304566 (1, AM); Michelago, N.S.W., viii.1938

// Brit Mus. 1947-431. (1, NHML); Mt Tomah Blue Mtns NSW 26.4.82 N.W.Rodd // K 304495 (1, AM); National Pk., N. S. Wales, G. E. Bryant, 7.xii.08 // G. Bryant Coll. 1919-147. // Opilo congruus Newm. Compd. with Type (1, NHML); N S Wales, Strathfield (1, ZMHB); Sydney: coll. Luddermann // Schenkling det. // DEI Muncheberg Col—01941 (1 ♂, SDEI); K. K. Spence Collection // Sydney, 20 1 31, N. S. Wales, Dr. K. K. Spence // K 304555 (1, AM); nr. Sydney // Opilo congruus Newm // Pascoe Coll. 93-60. (1, NHML); Sydney // Museum Paris Coll. Castelnau Coll. Sedillot 1935 (1, MNHN); 28.53S 152.34E, 3km E of Tabulam, N.S.W., 23 Nov 1983, M.S.Harvey & D.C.F.Rentz (1, ANIC); N. S. Wales // Museum Paris 1952 Coll R. Oberthur (2, MNHN); N. S. Wales // Museum Paris Coll R. Oberthur (1, MNHN). **Australian Capital Territory:** Black Mt. Reserve, ACT, 28.vii.1971, S.Misko (1, ANIC); Blundell's, F.C.T., G.A. Currie (1, ANIC); Australia, ACT, 10km w Cotter River, 9.12.1990, leg. M. Baehr (1, RGCM); Australia: ACT, Murrumbidgee R. near Canberra, 30-XI 1969 // Coll. H. Evans R.W. Matthews (1, ANIC). **Queensland:** Australia, QLD, Brisbane 1.1991 leg.Wachtel (1, RGCM); Broadwater, 20-7-25 (1, QDPC); Stanthorpe, Date 8-11-26 // Opilo congruus Newm. Id. by A.M. Lea (1, QDPC); Stanthorpe Dt., Q. Coll. H. Jarvis 11-19 (1 ♂, 1, QDPC); Tolga, N. Qld 22.x.85 J.D. Brown Light trap (1, QDPC); Tolga, N. Qld 31.x-6.xi.85 J.D. Brown Light trap (1, QDPC); Tolga, N. Qld 13-20.xi.1985 J.D. Brown Light trap (1, QDPC); Australia: n. Qld Tolga 14.xi.86 J.D. Brown light trap (1, QDPC); Australia: n. Qld Tolga 10-1 1986 J.D. Brown light trap (1, QDPC); Australia: n. Qld Tolga 3 xi 1985 J.D. Brown light trap (1, QDPC); Australia: n. Qld Tolga 16 xii 1985 J.D. Brown light trap (2, QDPC); Australia: n. Qld 7 km NE of Tolga 2-ii-1987 Storey & De faveri light trap (1, QDPC); Australia: n. Qld 7 km NE of Tolga 7-21.xi.1988 Storey & De faveri light trap (2, QDPC); Australia: n. Qld 7 km NE of Tolga Feb 1987 Storey & De faveri light trap (1, QDPC).

Diagnosis. Pronotum evenly rounded laterally, disc not heavily punctate; elytra dark with orange fasciate and apical maculations (humeral maculae absent), fasciae meeting at suture, punctation lacking nodules (Fig. 13), 8th stria beginning before fascia, striae 1–3 and 8–10 not reaching apical maculae; femoral bases yellow, apical half (or less) dark, tarsi with three ventral tarsal pads. *Notopilo congruus* **comb. nov.** can be separated from *N. reduncus* **stat. rev.**, **nom. n.** by its bicoloured legs and from *N. confusus* **sp. nov.** by its elytral punctation lacking internal nodules.

Redescription. *Habitus*: Fig. 166. *Total length*: 7–13.1 mm (lectotype 10.02 mm). *Head*: Vertex, frons (including supra-antennal elevation), genae and submentum dark brown (gula often slightly paler), clypeus and antennae chestnut-brown (clypeus partly black along epistomal suture), anteclypeus transparent yellow/orange, labrum and palpi orange; eyes separated by 0.65–0.85 eye widths (lectotype 0.75); frons subtly raised and semi-glabrous medially (variable), dense with shallow punctation laterally, punctations more widely separated nearer to vertex; genae and submentum wrinkled; ratio of exterior to interior edges of terminal palpomeres about 1.7:1 (maxillae) and 2.3:1 (labium); antennae reaching near base of pronotum; eyes and most of cranium vested with erect pale setae, frons with shorter medially-directed setae. *Prothorax*: Brown (slightly paler than frons), pronotal collar and arch paler; pronotum 1.15–1.26 times longer than wide (lectotype 1.2), sides round, widest just posterior of middle; subapical depression deeply v-shaped, disc with deep central sulcus (sulcus smooth, more open than linear), and baso-lateral semi-sulcate undulations, surface smooth in appearance, punctations small and occasional dorsally, slightly larger and denser laterally; moderately distributed with short fine multi-directional setae and long erect setae. *Pterothorax*: Ventrites brown, barely punctate, sparsely vested with short pale and occasional long setae; elytra brown (similar shade to pronotal disc) with orange markings (each elytron with a large apical macula and a narrow weakly curved transverse fascia at the mid-length which touches the suture); length to width ratio 2.67–2.96:1 (lectotype 2.82); mostly 10-striate, 8th stria beginning between first and fifth punctation of 7th stria, striae 1–3 and 8–10 end between fascia and apical maculae, punctation lacking nodules, large and complete anterior to fascia, smaller with posterior edge indistinct posterior to fascia, epipleurae extending well into apical curve, interstriae with very fine short semi-reclinate setae (>1 per puncture) and longer thicker erect setae (<1 per puncture), intrafoveal setae present (many setae rubbed from lectotype); hindwing with CuA_{3+4} and CuA_1 cross-veins complete, MP_{3+4} absent basad of CuA_1 crossvein. *Legs*: Femora yellow basally, light brown apically (apical half of profemora and one-third of meso- and metafemora), tibiae and tarsi light brown, ventral tarsal pads yellowish; profemora very slightly swollen, other femora slender. *Abdomen*: Ventrites orange. *Male genitalia*: Tegmen (Fig. 7, 52) very broad at 'bend' of tegminal arms with parameroid lobes long, narrow and tapering to a point, dorsal sinus just over one-third tegmen length, gradually narrowing then expanded near extremity, internal limit flat (not rounded), ventral sinus a little less than half as long as dorsal sinus, tegminal arms gradually meeting apodeme, apodeme just over quarter tegmen length; median lobe as in Fig. 89; pygidium as in Fig. 125.

Variation. Many specimens blacker than brown; the frons can be lightly (as in the lectotype) or more heavily punctated and with, or without (as in the lectotype), a shallow central impression; the degree in curvature of the tegminal parameroid lobes differs slightly between specimens (though the overall form and proportions of components of the tegmen are consistent).

Biology. Collecting records for *N. congruus* span the entire year for Victoria and it has been collected in summer and winter in New South Wales and Queensland. Collecting methods include malaise and light trapping.

Distribution (Map 5). Temperate broadleaf and mixed forest ecoregions of Victoria, New South Wales and southeast Queensland; tropical moist broadleaf forests of far north Queensland; Mediterranean environs of coastal South Australia. Absent from Western Australia and the Northern Territory.

Remarks. Despite the abovementioned differences of the tegminal parameroid lobes and frontal sculpturing, the general form of the male tegmen, also elytral and pronotal form and sculpturing, are consistent in specimens from far north Queensland to southern Victoria. We therefore consider the specimens examined to constitute a single species.

reduncus species group

Diagnosis. Large beetles up to about 17 mm; legs unicoloured, dark; elytral punctures lacking internal nodules, striae gradually terminating between fascia and apical maculae (differentiated from the *congruus* species group externally by the dark legs, and internally by tegminal form—see below).

Remarks. The tegmen of *N. reduncus* **stat. rev.**, **nom. nov.** is unique in form due to complex dorsal and ventral sinus margins, the dorsal layers of which form an acute rear-ward projection. The incurvate RP vein of the hind wing of *N. reduncus* is also unique among species treated in this revision (synapomorphic within *Notopilo*). The non-nodulate elytral punctures, large body size and general habitus of *N. magnus* **sp. nov.** suggests close relatedness to *N. reduncus*, however, examination of the hind wing and dissection of the terminalia, required for confirmation, have not been undertaken to avoid damage to the unique holotype. *Notopilo magnus* is therefore listed here only tentatively.

Notopilo magnus sp. nov.

ZooBank registration: urn:lsid:zoobank.org:act:F9E93449-371C-4E30-8F0B-42BD9D2DF232
(Fig. 167; Map 5)

HOLOTYPE ♀: **Western Australia**: Moora W.Australia L.J.Newman // Agriculture (Dept) Western Australia 49870 (WADA).

Diagnosis. Antennae short, flagellomeres thick-set; dark with orange to yellowish fasciate and apical maculations (humeral maculae absent), fasciae meeting at suture, 8th stria beginning near base, all striae terminating before apical maculae; femora entirely dark.

Notopilo magnus **sp. nov.** is easily separated from *N. reduncus* **stat. rev.**, **nom. nov.** by its antennae which are comparatively shorter and with thicker flagellomeres, and by the black area between the elytral fascia and apical maculae being no larger than the fascia.

Description. *Habitus*: Fig. 167. *Total length*: 17.6 mm. *Head*: Vertex and frons black, clypeus, supra-antennal elevations and submentum reddish-black, gula orange, anteclypeus semi-transparent orange, labrum and antennae dark brown, palpi orange-brown; eyes separated by about 0.8 of an eye width (holotype); frons sculptured, base punctate and semi-rugulose, eyes bordered with denser punctation, deeply sulcate above narrowest point, bulging and partly smooth at and below narrowest point, laterally impressed either side at epipleural suture, clypeus uneven, laterally with small seta-associated punctures near supra-antennal elevations; genae and submentum wrinkled; exterior margins of terminal palpomeres about 1 times (maxillae) and 2.5 times (labium) the length of inside edges; antennae relatively short, not reaching base of pronotum, flagellomeres moderately thickened; eyes and most of cranium vested with erect pale setae, frons with slightly shorter setae, central sulcus with some medially-directed setae. *Prothorax*: Blackish-brown, venter, pronotal collar and arch (marginally) more reddish; pronotum 1.2 times longer than wide, sides broadly rounded, widest at middle; subapical depression v-shaped, disc centrally sulcate

(sulcus smooth, more open than linear, lateral sulci absent, surface smooth in appearance though with noticeable seta-associated punctures; well-distributed with long erect setae and fewer shorter finer setae. *Pterothorax*: Ventrites reddish-brown, vested with pale, short, posteriorly-directed, setae; elytra blackish with orange markings (each elytron with a large apical macula and a broad fascia which broadens marginally and at the suture), length to width ratio 2.6:1; 8th stria beginning at base, striae 1–3 and 9–10 terminating within or at the posterior margin of fascia, striae 4–8 incrementally terminating between fascia and apical macula (4 the shortest, 7 or 8 the longest), punctation large up to anterior fascia margin, then punctures of inner and outer striae getting smaller, circular, without nodules, interstriae smooth, epipleurae extending into apical curve, interstriae with very fine short semi-reclinate setae (>1 per puncture) and longer thicker erect setae (<1 per puncture). *Legs*: Entirely dark brown, ventral tarsal pads orange; profemora only slightly thicker than other femora. *Abdomen*: Ventrites orange.

Etymology. The specific epithet *magnus* (Latin, meaning large) refers to the large size of this species. It is only equaled in size by larger specimens of *N. reduncus* **stat. rev.**, **nom. nov.**

Distribution (Map 5). The unique Holotype was collected in Moora, Western Australia.

Notopilo reduncus stat. rev., nom. nov.

ZooBank registration: urn:lsid:zoobank.org:act:FFE2E861-9C7D-4518-9827-072D1E54C8F4
(Figs 19, 25, 53, 90, 168, 182; Map 5)

Opilo congruus var. *abdominalis* Schenkling 1901: 106 (unavailable, occupied by *Opilo abdominalis* Fairmaire, 1891, an available name in synonymy with *Thanasimodes gigas* (Laporte, 1836)).

Type material examined. LECTOTYPE (here designated): **Victoria**: Mansfld. (Vict.) Australia EX COLL. F. SCHNEIDER // Coll. S. Schenkling // Schenkling det. // COTYPUS (1, SDEI). **PARALECTOTYPE** (here designated): **Australia** (state not known): Australie CH. FRENCH // Determin S. Schenkling // Coll. R.I.Sc.N.B. // Holotype // Opilo congruus var. nov. abdominalis Schklg (IRSNB) (Fig. 182).

Comment on lectotype designation. Despite specimen labelling, Schenkling (1901) neglected to fix the holotype as no reference to specimens accompanied his brief description of *abdominalis*; the two located 'types' are therefore syntypes (ICZN 1999: Article 73.2) and available for lectotype designation (ICZN 1999: Article 74.1). We have chosen to follow recommendation 74D (ICZN 1999), rather than following the status implied by specimen labels, because: a) the act of designating the SDEI specimen as the lectotype provides this taxon with a more specific type locality; and b) most of Schenkling's type material is held at SDEI. ***Condition of lectotype*:** The specimen is very dirty but complete, though with the left elytron split behind the fascia. ***Condition of paralectotype*:** The entire mesothoracic leg, the right mesotarsus and left metatarsus are missing; the specimen is, otherwise, clean and in good condition.

Other material examined (117 specimens): **Queensland**: 66 km West of Mount Isa, along `lady Loretta Project Road, 20°16′43″S 139°08′49″E, 2.x.1999, J&A Skevington (1, QM); Museum Paris, Kuranda, E Le Moult 1923 // Kuranda // Queensland (1 #m, MNHN); Mutchilba, N.Q., A. D. Selby // F. E. Wilson Collection // COL-65637 (1, NMV); Cloncurry, Q, R. Le. Rossignol // F. E. Wilson Collection // COL-65636 (1, NMV); 26km N.Mazeppa Nat. Pk. S.Qld., 24 Apr 1993, G.Monteith (1, QM); C.QLD: 22°02′Sx148°03′E, Moranbah, 6km S., 5646, 25 Jun-20 Dec 1997, G.Monteith & E.Kruck, Flt Intercept, Box flat (1, QM); Duaringa, Queensland // K 304525 (1, AM); K. K. Spence Collection // Clermont, Queensland, XI 28, Dr. K. K. Spence // K 304542 (1, AM); *ditto except* X 29 // K 304544 (1, AM); *ditto except* X 29 // K 304545 (1, AM); *ditto except* X 29 // K 304546 (1, AM); *ditto except* 13 x 29 // K 304551 (1, AM); *ditto except* 5 x 29 // K 304547 (1, AM); *ditto except* 6 x 29 // K 304549 (1, AM); Clermont, 6.10.29, Queensland, Dr. K. K. Spence // K 304548 // K63569 (1, AM); Capella, 5-10-35 // S.R.E. Brock Collection Donated to ANIC 1987 (1, ANIC); Rockh.? // Opilus n.sp? near congruus // Museum Paris Coll. Gorham 1914 (1, MNHN); Australia, NSW, 10km se Mt. Larcom, 20.11.1990, leg. M. Baehr (1 ♂, 2, RGCM); QLD, Dawson River/Kreuzung Capricorn Hwy, 14.11.1991 leg R. Gerstmeier (2, RGCM); CEQ: Mt Moffat Nat. Park, 27Nov.-2Dec1997, J.Skevington, C.Lambkin, S.G.Evans, Malaise 7, eucalypt grassland (7, QM); Opilus congruus Newm. Gayndah // K34045 (1, AM); Qld: 26.434°Sx150.514°E, Barakula SF, site 1, 249m, 10-23 Nov 2009, Malaise, Monteith & Turco, 18668 (1, QM); Qld: 26.415°Sx150.682°E, Barakula SF, site 3, 402m, 1-15 Dec 2009, Malaise, Monteith & Turco, 19180 (1, QM); Qld: 26.357°Sx150.682°E, Barakula SF, site 4, 368m, 10-23 Nov 2009, Malaise, Monteith & Turco, 18673 (1 ♂, 1 ♀, JSBC); Qld: 26.323°Sx150.74°E, Barakula SF, site 7, 378m, 23Jan-10Feb

2009, Malaise, Monteith & Turco, 19525 (1, JSBC); Qld: 26.242°Sx150.824°E, Barakula SF, site 11, 450m, 1-8 Jan 2010, G.B. Monteith & F. Turco, Malaise, 19239 (1♂, 5, JSBC); Caboolture, Q., Pollengar // Opilo congruus Newm Id by A.H. Elston v. with dark legs // F. E. Wilson Collection // COL-65638 (1, AM); Ex timber Inala, Brisbane, 16.II.61, A.R. Brimblecombe (1, QDPC); Holland Park, Q. 23.xi.2001, JS Bartlett (1, JSBC); Australia Qld Brisbane Res. Browns Plains 12.97 (1, RGCM); Toowoomba Queensland // Museum Paris ex Coll R. Oberthur (1, MNHN); P. Huybers [date rubbed off] Brookstead (1, QM); QLD: 28°32′Sx151°06′E, Bracker Forestry Station, 6-9 Mar 2006, A Ewart, at light, 14145 (1, QM); Qld, Western Darling Downs, Tara, Humbug Creek, 9.xii.2008, B. Howton, came to light (1, JSBC); Dunmore via Dalby, Qld, 4.iii.198,0 M.De baar, S. Fett // Ex Malaise Trap, Accn. No. 1818-32 // QFIC specimen incorporated into QDPC May 2010 (1, QDPC); Dunmore via Dalby, Qld, 17.ix.1980, F.R. Wylie, M. De Baar, Acc. 1819-32 // QFIC specimen incorporated into QDPC May 2010 (1, QDPC); L. Broadwater, via Dalby, Qld, 19-22.xi.1985, Malaise Trap (1 ♂, 1 ♀, 9, QDPC); Stanthorpe, 8-11-26 (1, QDPC). **New South Wales**: NSW, 2km s Tenterfield, 28.11.1990, leg M. Baehr (1, RGCM); NSW: County Line Road, Salt Caves campsite, 23.x.2001, -30°44′44.7″ 149°17′27.9″, 320m, A. Sundholm, MV light // Opilo abdominalis Schenkling, 1901 Det. JS Bartlett Nov. 2011 (1, JSBC); NSW: 10km S Coonabarabran, 13-17-I-80 // HE & MA Evans & A.Hook Coll. (1 ♀, QM); Narara, N.S.W, 29.11.1946, C.Oke // COL-65640 (1, NMV); Opilus congruus, Sydney K15139 // K 304561 (1, AM); By light // Australia, Cabramatta, Georges R. Valley, 3.II.1959 // N. Nikitin B.M. 1960-203 // Opilo congruus Newman det. G. Ekis 1985 (1, NHML); Sydney: coll. Luddermann // Schenkling det. // DEI Muncheberg Col—01951 (1, SDEI); N S Wales // K34072 // K 304514 (1, AM). **Australian Capital Territory**: Black Mtn., ACT, 9 Dec. 1967, K. Pullen // Kim Pullen Collection (1, ANIC); *ditto except* 6 Dec. 1967 (1, ANIC); Aranda, A.C.T., xi.74, B.P. Moore (1, ANIC). **Victoria**: Lake Hattah, Victoria, J.E. Dixon (2, NMV); Mallee District, Victoria—French 1902 // Schenkling det. // DEI Muncheberg Col—01950 (1, SDEI); Australia: Victoria, Fitzroy River, B.M. 1923-116. (1, NHML). **South Australia**: Adelaide // Museum Paris Coll. Castelnau Coll. Sedillot 1935 (1, MNHN). **Western Australia**: Giles, W.A., B.Gilmour, 1960 (1, ANIC); Mareh // Bunbury, W. Australia, L.J. Newman // Agriculture (Dept) Western Australia 49865 (1, WADA); 4 PL, via Dwellingup, W.A. // 18-25 ii 1981, A. Postle (1, QDPC); 24 ml. E Pinjarra, W.A., 19 jan. 1971, mv lamp, G.A.Holloway & H.Hughes // K 304494 (1, AM); Jarrahdale W. Aust, Ex. Euc. Barteri, 3.i.1973 // Agriculture (Dept) Western Australia 49853 (1, WADA); Garden Is., WA, 3/51, AB. // congruus Newm // J.G. Brooks Bequest, 1976 (1, ANIC); Beverley, WA // K 304517 // K39147 // Opilo congruus Newm. Id. By A.M. Lea (1, AM); WA, Beverley // K 304518 // K39147 (1, AM); Austral., Swan R. // Opilo congruus Newm. v. abdominalis Sckl., S. Schenkling det. (1, NHML); 38010 // De Boulay // Nov Holl Occid // Fry Coll. 1900 100. (1, NHML); SW Australien, Perth-Umg. Ken-wick, II.1960, leg. H.Demarz (1, RGCM); Kenwick, W.Austr., X.1959, leg. H.Demarz (1, RGCM); West Australien, Perth District, leg.H.Demarz, II.57 (1, RGCM); Darlington, W. Australia, J. Clark // Agriculture (Dept) Western Australia 49851 (1, WADA); Crawley, 15.12.53 // Ex Coll. G. Bornemissza, University of Westn. Australia (1, ANIC); WA, Walyunga Nat. Pk, 31°44′02″S 116°03′39″E, 19-29.xii.1999, Malaise, J&A Skevington, C. Lambkin, P. Bouchard (1 ♂, 1 ♀, 3, JSBC); WA : Walyunga National Park, Malaise Trap, 31°44′02″S 116°03′39″E, 19-29.xii.1999, J&A Skevington, C. Lambkin, P. Bouchard (1, JSBC); WA: Walyunga N.P., 31°34″09′Sx116°03″55′E, 19-29-XII-99, P.Bouchard, C.Lambkin, J.&A. Skevington, Malaise trap (1, QM); WA: Walyunga National Park, Malaise Trap, 31°44″02′Sx116°03″39′E, 19-xii-1999, J.&A. Skevington, C.Lambkin, P.Bouchard (1, QM); WA: Neerbup Lake N.P., 31°38″Sx115°43″E, 08-18-XII-99, P.Bouchard, C.Lambkin, J.&A. Skevington, Malaise trap (1, QM); WA: Yanchep N.P., 31°34″34′Sx115°41″33′E, 08-18-XII-99, P.Bouchard, C.Lambkin, J.&A. Skevington, Malaise trap (1, QM); Onslow WA—French 1907 // Schenkling det. // DEI Muncheberg Col—01949 (1, SDEI); [no data] Agriculture (Dept) Western Australia 49867 (1, WADA); WA Welshpool (Perth) 31°59′08″S 115°55′59″E 82 December 2007 B.P. Hanich // on floor in WAM Collection facility (1, WAM); WA: Victoria Park (Perth suburb) 31°58′S 118°54′E 29 January 1962 B.G. Muir // on box tree (1, WAM); WA: Glen Forrest (Perth) 31°55′S 116°06′E 1972 S.M. Wade (1, WAM); Darlington (Perth) W. Australia April 1963 G.H. Lowe (1, WAM); 41-4 T9 Perth (1, WAM). **Northern Territory**: NT: 19°43′Sx135°50′E, Barkly Roadhouse, 20Apr2004, 11645, G.Monteith, MV light, Acacia & euc. Shrubland (1, QM); Kings Canyon Resort, N.T., 29.09.2003, R.M. Bull (1 ♀, 1, JSBC).

Diagnosis. Antennal flagellomeres slender; elytra dark with orange to yellowish fasciate and apical maculations (humeral maculae absent), fasciae meeting at suture, 8th stria beginning before fascia, all striae terminating before apical maculae; femora entirely dark.

Notopilo reduncus **stat. rev.**, **nom. nov.** is superficially similar to *N. congruus* (Newman) **comb. nov.** though is easily recognised by its entirely black legs.

Redescription. *Habitus*: Fig. 168. *Total length*: 8–16.5 mm (lectotype 12.5mm). *Head*: Cranium black, clypeus and supra-antennal elevations with a deep reddish hue, anteclypeus, labrum, antennae and palpi dark brown to orange-brown; eyes separated by 0.6–0.8 eye widths (lectotype 0.61); frons impressed and densely punctate at narrowest point, surface immediately above impression even, medially smooth, punctate laterally, nearer to vertex more densely punctated, surface below narrowest point unevenly punctated, smoother laterally and below; genae and submentum wrinkled; ratio of exterior to interior edges of terminal palpomeres about 1.5:1 (maxillae) and 2.5:1 (labium); antennae reaching near base of pronotum; eyes and most of cranium vested with erect pale setae, frons with shorter medially-directed setae. *Prothorax*: Black, pronotal collar and arch with deep reddish hue; pronotum 1.17–1.3 times longer than wide (lectotype 1.3), sides round, widest just anterior of middle; subapical depression deeply v-shaped, disc with deep central sulcus (sulcus smooth, more open than linear), a shallow sulcus on each side, and five weakly glabrous tubercles (one on each side just posterior to pronotal collar, one medially at base and one each either side and slightly posterior of that), surface smooth in appearance though with small seta-associated punctations; moderately distributed with short fine multi-directional setae and long erect setae. *Pterothorax*: Ventrites brown, barely punctate, sparsely vested with short pale and occasional long setae; elytra (Fig. 25) blackish-brown (similar shade to pronotal disc) with orange markings (each elytron with a large apical macula and a narrow, often weakly curved, transverse fascia reaching the suture and lateral margins—its anterior margin at elytral mid-length); length to width ratio 2.4–2.8:1 (lectotype 2.74); 8th stria beginning between first and eighth punctation of 7th stria, inner and outer striae terminating within fascia, other striae terminating between fascia and apical maculae, punctation lacking nodules, very large and complete anterior to fascia, smaller with posterior edge indistinct or 'open' posterior of fascia, epipleurae extending well into apical curve, interstriae with very fine short semi-reclinate setae and less frequent longer thicker erect setae; hindwing with CuA_{3+4} cross-vein complete, CuA_1 cross-veins incomplete, MP_{3+4} absent basad of CuA_1 crossvein, RP vein incurvate. *Legs*: Femora, tibiae and tarsi dark brown to blackish-brown, ventral tarsal pads (Fig. 19) yellowish; profemora very slightly swollen, other femora slender. *Abdomen*: Ventrites dark brown to orange-brown, posterior margins paler. *Male genitalia*: Tegmen (Fig. 53) evenly convex (boat-shaped), parameroid lobes slightly pointed apically, dorsal sinus about one-quarter tegmen length, ventral sinus as long or slightly longer, sinuses internally with a complex of sclerites (unique among tegmina studied in this revision), meeting of tegminal arms and apodeme gradual, apodeme notably narrow, about one-quarter tegmen length; median lobe as in Fig. 90.

Etymology. The specific epithet *reduncus* (from Latin 'red-' meaning back, and 'uncus' meaning hook), coined to mean curved backwards, refers to the RP vein of the hindwing, which is characteristically incurvate.

Biology. Collected from September to April by means of flight intercept and Malaise traps or caught at light. Habitat types: Eucalypt grassland; *Acacia* and eucalypt shrubland.

Distribution (Map 5). This widespread species has been collected in all mainland states and in all ecoregion types with the exception of alpine environs.

Remarks. Tegminal differences alone (compare Figures 52 and 53) support elevation of *Opilo abdominalis,* described by Schenkling (1901) as a variety of *Opilo congruus*, to full species status. As the available name *Opilo abdominalis* Fairmaire, 1891 has priority, and as this revision places Schenkling's species in the new genus *Notopilo*, we propose the replacement name *Notopilo reducnus* **rev. stat.**, **nom. nov.** for *Opilo abdominalis* Schenkling, 1901.

variipes species group

Diagnosis. Hind wing with CuA_1 cross-vein absent (synapomorphy within *Notopilo*); CuA_{3+4} cross vein present or absent; tegmen with pre-apical broadening of parameroid lobes.

Remarks. The *variipes* species group of *Notopilo* contains three species: *N. brevistriatus* **sp. nov.**; *N. gerstmeieri* **sp. nov.**; *N. variipes* (Chevrolat) **comb. nov.**.

***Notopilo brevistriatus* sp. nov.**
ZooBank registration: urn:lsid:zoobank.org:act:764B7F7D-3EF7-4FB2-AB9F-FC3120248F28
(Figs 54, 91, 126, 169; Map 3)

HOLOTYPE ♂: **Western Australia**: WA: Diamond Tree State Forest (near Manjimup) 34°19′12″S 116°07′15″E 22 February 1995 M.J. Payne // under karri bark (WAM E88406). **PARATYPES** (18): **Western Australia**: Karridale, W.Austr., ll.1959 leg.H.Demarz (2, RGCM); K. G. Sound // K 304534 (1 ♀, AM); the "Gloucester Tree", 4km SE Pemberton, WA, 3 jan 1986, C. Reid, under Eucalyptus bark (1, ANIC); Australia, WA06/181, 10km s.York, 31.97310S, 116.80792E, 190m, 7.3.2006, M.Baehr (1 ♂, WAM E113542, ex RGCM); Australia, WA06/194, 10km wsw. Walpole, 34.99679S, 116.65066E, 66m, 11.3.2006, M.Baehr (1, RGCM); SWA // H. J. Carter Coll. P. 20.4.22 // COL-65654 (1, on card with COL-65655, NMV); same data as previous except COL-65655 (1 on card with COL-65654, NMV); S WA, HIC, 12.13 //Agriculture (Dept) Western Australia 49866 (1, WADA); WA: Quinninup 34°26′S 116°15′E 29 December 1994 M.J. Payne // karri–marri–jarrah forest/ under karri bark (1, WAM E88405); WA: Quinninup 34°26′S 116°15′E 22 December 1995 M.J. Payne // under karri bark (1, WAM E88409); WA: Quinninup 34°26′S 116°15′E 12 December 1995 M.J. Payne (1, WAM E88408); WA: Quinninup 34°26′S 116°15′E 28 November 1995 M.J. Payne // under karri bark regen (1, WAM E88407); Denmark 34.57 S 117.21 E Western Australia 30 jan. 1988 R.P. McMillan (1, WAM E88350); Denmark 34°57′S 117°21E Western Australia December 1998 M.L. & S. Jones (1, WAM E88352); WA: Denmark 34°57′S 117°21′E, 10 January 1997 R.P. McMillan, at MV light at night (1, WAM E88351).

Diagnosis. Pronotum rounded laterally, disc smooth with minimal punctation; elytra dark with orange fasciate and apical maculations, humeral maculae absent, punctation without obvious nodules, 8th stria complete, striae terminating within fascia; femora yellow basally, brown apically, tarsi with three ventral tarsal pads.

Notopilo brevistriatus **sp. nov.** is easily separated from the superficially similar *N. variipes* **comb. nov.** by the lack of obvious nodules within elytral punctation, the absence of elytral punctation posterior to fascia, the wider separation of the eyes and by its Western Australian distribution.

Description. *Habitus*: Fig. 169. *Total length*: 12–16.62 mm (holotype 14.9 mm). *Head*: Vertex, frons, genae and submentum blackish, clypeus and supra-antennal elevations reddish-black, anteclypeus transparent yellow/ orange, antennae, labrum and palpi orange; eyes separated by 0.85–1.1 eye widths (holotype 0.85); vertex and frons mostly smooth with only occasional small seta-associated punctations, frons slightly raised above clypeus; genae and submentum wrinkled; exterior margins of terminal palpomeres about 2–2.2 times (maxillae) and 2.3–3 times (labium) the length of inside edges; antennae quite long, reaching beyond base of pronotum; eyes and most of cranium vested with erect pale setae, frons with slightly shorter medially-directed setae. *Prothorax*: Blackish-brown, venter, pronotal collar and arch sometimes paler; pronotum 1.2–1.3 times longer than wide (holotype 1.24), sides round, widest at middle; subapical depression deeply v-shaped, disc centrally sulcate (sulcus smooth, more open than linear) and with obscure lateral sulci, surface smooth, almost impunctate; moderately distributed with long erect setae and shorter finer multi-directional setae. *Pterothorax*: Ventrites reddish-brown, vested with short pale and occasional longer setae; elytra dark reddish-brown with orange markings (each elytron with a large apical macula and a transverse fascia), length to width ratio 2.95–3.12:1 (holotype 3.06); 8th stria beginning near base, all striae terminating at or within fascia, punctation large, circular, apparently without nodules (vestigial nodules visible in some specimens as darker pigmented spots on lateral inside edges of punctures), interstices smooth, epipleurae extending into apical curve, interstriae with very fine short semi-reclinate setae (>1 per puncture) and longer thicker erect setae (<1 per puncture), intrafoveal setae very short; hindwing with CuA_{3+4} cross-vein complete, CuA_1 cross-vein absent. *Legs*: Mostly yellow, tip of femora, base of tibiae and tarsi brown, ventral tarsal pads paler; femora slender (profemora thicker but not particularly swollen). *Abdomen*: Ventrites orange. *Male genitalia*: Tegmen (Fig. 54) broadest apically, slightly narrowed between parameroid lobes and tegminal arms, dorsal sinus broad and opening apically, just less than one-third tegmen length, ventral very short, about two-thirds as long, apodeme about one-quarter tegmen length; median lobe as in (Fig. 91); pygidium as in Fig. 126.

Etymology. The specific epithet *brevistriatus* (from Latin 'brevis' meaning short, and Latin 'stria' meaning line) refers to the shortened elytral puncture rows of this species which are not extended beyond the posterior margin of the transverse fascia.

Variation. The dark area posterior of the elytral fascia is almost as dark as the pronotum in some specimens and about as light as the area anterior to the elytral fascia in other specimens.

Biology. The specimens from Wilson Inlet were collected at light while the "Gloucester Tree" specimen was found under bark of *Eucalyptus*. Specimens have been collected during the period December to March.

Distribution (Map 3). *Notopilo brevistriatus* **sp. nov.** is known only from southwest Western Australia.

***Notopilo gerstmeieri* sp. nov.**

ZooBank registration: urn:lsid:zoobank.org:act:0B0DFD7E-52B7-463F-9E2D-1A2D1CC8D10E

(Figs 4, 55, 92, 127, 170; Map 3)

HOLOTYPE ♂: **New South Wales**: NSW 30km S of Glen Innes 28 Dec. 1982 J.Doyen coll. (ANIC). **PARATYPES** (15): **New South Wales**: Australia, NSW, 27km s Glen Innes 28.11.1990 leg. R. Gerstmeier (4, RGCM; 1 ♂, 1, JSBC); Australia, NSW, 15km n Armidale 28.11.1990 leg. R. Gerstmeier (1 ♀, 1, RGCM); Australia, NSW, Mt Kosciusko NP, Sawpit Ck. 1400m 11.-12.12.1990 leg. M. Baehr (2, RGCM); Australia, NSW, 30km w Cooma 11.12.1990 Leg. M. Baehr (1 ♀, RGCM); Jindabyne 1/06 H.C. // Australie // Museum Paris E. Le Moult 1916 // Opilo congruus Newm. (2 specimens on one card, MNHN); Australie Sidney 12-II-1902 // Museum Paris coll R. Oberthur (1, MNHN); Tarago Rd Bungendore NSW 5.ii.1978 E.B. Britton (1, ANIC).

Diagnosis. Pronotum broadly rounded laterally, disc extremely smooth, almost impunctate dorsally, punctation conspicuous only laterally, central impression shallow; elytra dark with orange fasciate and apical maculations (humeral maculations absent), fascia meeting at the suture (anterior and posterior margins parallel or angled towards lateral margins), punctation with conspicuous lateral nodules, 8th stria beginning between base and half way towards fascia, at least striae 4–9 reaching apical maculae; profemora entirely, or almost entirely, brown, other femora yellow basally, brown apically, tarsi with three ventral tarsal pads.

Description. *Habitus*: Fig. 170. *Total length*: 8.1–12.6 mm (holotype 8.1 mm). *Head*: Cranium black to dark brown, genae and submentum dark brown, gula orange, clypeus and supra-antennal elevation more reddish, anteclypeus orange, labrum and palpi orange-brown, antennae darker brown; eyes separated by 0.76–0.97 eye widths (holotype 0.73); vertex and frons moderately punctate, frons less punctate above clypeus, surface at narrowest point uneven, clypeus with few punctations; genae and submentum wrinkled; ratio of exterior to interior edges of terminal palpomeres about 1.7:1 (maxillae) and 2:1 (labium); antennae reaching near base of pronotum; eyes and most of cranium vested with erect pale setae, frons with shorter finer medially-directed setae. *Prothorax*: Black to blackish-brown, pronotal arch may be infused with dark red anteriorly; pronotum 1.13–1.25 times longer than wide (holotype 1.23), sides rounded, middle wider than pronotal arch; subapical depression v-shaped, indistinct near middle, meeting shallow central impression; disc extremely smooth, conspicuously punctate laterally only; sparse short erect setae, even fewer long erect setae. *Pterothorax*: Ventrites blackish-brown, with numerous pale, posteriorly- to posteromedially-directed setae; elytra blackish to dark brown with orange markings (each elytron with a transverse fascia behind the middle which meets at the suture and narrows slightly towards the lateral margin, and large apical macula); length to width ratio 2.74–2.92:1 (holotype 2.78); 8th stria beginning between base and half way towards fascia (between 2nd and 6th punctations of 7th stria), at least striae 4–9 reaching apical macula (striae 1 and 10 not reaching apical macula, striae 2 and 3 variable), punctation with conspicuous lateral nodules, punctations posterior of fascia about half the size of those anterior to fascia, epipleurae extending into apical maculae, interstriae with very fine short semi-erect setae and less frequent longer thicker erect setae, not with several setae across interstical width; hindwing with CuA_{3+4} cross-vein complete, CuA_1 cross-vein absent. *Legs*: Profemora entirely, or almost entirely, brown, basal one-third to two-fifths of meso- and metafemora yellow, apical two-thirds to three-fifths brown; tibiae and tarsi brown, ventral tarsal pads yellowish; meso- and metafemora slender, profemora slightly swollen. *Abdomen*: Ventrites orange to orange-brown. *Male genitalia*: Tegmen (Figs 4, 55) broadest near middle, narrowing before expanding again before the apically acuminate parameroid lobes, dorsal sinus about one-third tegmen length, sides internally parallel, diverging before opening, ventral sinus about half as deep, apodeme about one-quarter tegmen length; median lobe as in Fig. 92; pygidium as in Fig. 127.

Variation. In dorsal view, the elytral fascia may appear straight (narrowing just before the lateral margins) or angled (narrowing towards the lateral margins from near the suture).

Etymology. We dedicate this species to the Prof. Dr Roland Gerstmeier of Munich, Germany, prolific clerid beetle specialist plus friend and colleague of the first author.

Biology. Specimens were collected during the period November to February.

Distribution (Map 3). *Notopilo gerstmeieri* **sp. nov.** has been collected from regions along, or east of, the Great Dividing Range in New South Wales, from Mt Kosciuszko to Glen Innes.

Notopilo variipes (Chevrolat) comb. nov.

(Figs 12, 56, 93, 128, 171, 183; Map 3)

Opilo variipes Chevrolat, 1874: 285.

Type material. **LECTOTYPE** ♂ (here designated): **New South Wales**: Sidney [illegible] // variipes Chv Type Sydney // TYPE // Museum Paris Coll. Chevrolat Coll. Sedillot 1935 (MNHN) (Fig. 183).

Comment on lectotype designation. As Chevrolat (1874) made no reference to specimens in his description it cannot be assumed that the nominal species group name *Opilo variipes* was based on a single specimen (ICZN 1999: Recommendation 73F). The MNHN specimen labelled 'type' must therefore be considered a syntype (ICZN 1999: Article 73.2) and available for lectotype designation (ICZN 1999: Article 74.1). ***Condition of lectotype*:** A3–11 of right antenna missing, frass and debris attached to many longer setae, right side of metaventrite torn at exit point of pin, present pin not original; otherwise in good condition.

Other material examined (63 specimens): **Victoria.** 37.59S 147.43E, Rotomah Is., 20km SE by S Bairnsdale, VIC, 20-23 Feb. 1987, D.C.F. Rentz & J. Balderson (1 ♀, ANIC); CE Cole, Melbourne, 9.3.18 // 11 // congruus // COL-65659 (1 ♂, NMV); Barton, Victoria, J.E.Dixon (1 ♀, NMV); Trentham, Victoria, E.T. Smith (1 ♂, NMV); Launching Place, Vic., C. Oke // COL-65652 (1 ♂, NMV); Na Na Goon, 21.1.[?], E. Smith (1 ♂, NMV); Victoia, Grampians // Schenkling det. // DEI Muncheberg Col—01931 (1 ♂, SDEI); Victoria 1880 // Museum Paris (Coll. C. H. Schill) H. Donckier 1909 (1 ♂, MNHN); Victoria Australie // Ex Musaeo E. Hintz // Museum Paris ex Coll R. Oberthur (1 ♂, MNHN); Australie Victoria // 10 // Opilo variipes Chev. // Museum Paris Coll. M. Pic (1 ♂, MNHN); Victoria Australie // Museum Paris Coll. M. Pic (1 ♂, MNHN); Australie Victoria // variipes Chev. // Ex Musæo E. Hintz // Museum Paris 1952 Coll R. Oberthur (1 ♀, MNHN); Victoria // Museum Paris Coll. Castelnau Coll. Sedillot 1935 (1 ♂, MNHN). **New South Wales.** R.H. Mulder Collection // Lilyvale 17-11-1973 N.S.W.—R.H.M. // K 304493 (1 ♂, AM); Culoul Range 6.1.1979 // K 304496 (1 ♂, AM); K. K. Spence Collection // French's Forest KKS xii 33 // K 304556 (1 ♂, AM); Australia: Federal Hwy N.S.W., ii.63, B.P. Moore (1 ♀, ANIC); 37.13S 149.43E NSW East Boyd NP 54km SE Bombala, 6 Dec. 2004-12 Jan. 2005 C. Lambkin, N. Starick // Anteaters Rd. Malaise Trap ANIC bulk sample 2614 (1 ♀, ANIC); 105km SW of Nowra NSW, on Nerriga-Nowra Rd., 19.i.71, woodlands, S. Misko & K. Pullen (2 ♂, ANIC); 35.30S 150.18E Kioloa SF, 15km NE Batemans Bay, NSW Jan.87 M.G. Robinson flight interc. Trap (1 ♀, ANIC); Stockard Home, Combined St., Wingham NSW 23.xii.90 S. Watkins // S.G. Watkins Collection Donated 2001 // 233 (1 ♀, ANIC); 34.24S 150.50E Mt Keira scout camp, NSW c.320m 4-5 Mar. 1981 Lawrence & Calder (1 ♀, ANIC); Narrara N.S.W, Oct 1936, F.E. Wilson // F. E. Wilson Collection // COL-65641 (1 ♂, NMV); Narara N.S.W, 27-11-46 AB (3 ♂, NMV); Australia, NSW, 5km nw Wollombi (sw Cessnock) 4.12.1991 leg. R. Gerstmeier (10 ♂, 3 ♀, RGCM); Australia, NSW, 15km sw Cessnock, 4.12.1990 leg. R. Gerstmeier (4 ♂, 3 ♀, RGCM); Australia, NSW, 12km sw Bulga 7.12.1990 leg. M. Baehr (1 ♀, RGCM). **Queensland.** SEQ: 27°27′Sx152°55′E Enoggera Reservoir site3, 4Nov 1999 Rainforest Monteith. Burwell. pyreth. On hoop pines. 7921 (1 ♀, QM); SEQ: 25°27′Sx151°23′E Gurgeena Plat. Rainforest 10 Oct-19 Dec 1998 G.Monteith & C.Gough intercept. 360m 7513 (1 ♀, QM); Queensland // Coll. E.W. Janson (1 ♀, MNHN). **Unknown locality.** 2926 // Notoxus congruus, New.—BM // Museum Paris Coll. Gorham 1914 (1 ♂, MNHN); Darling Riv. // Museum Paris Coll. Castelnau Coll. Sedillot 1935 (1 ♂, MNHN); Museum Paris Coll. Castelnau Coll. Sedillot 1935 (1 ♂, MNHN); Australie CH. French // Determin S. Schenkling // Oplio variipes Chevr. (1 ♂, IRSNB); Bayswater (1 ♂, NMV); [illegible—W Yalok?] 14-1-06 // 2652 (1 ♂, NMV); [no data] (1 ♂, NMV).

Diagnosis. Pronotum rounded laterally, disc without obvious punctation; elytra dark with orange fasciate and apical maculations, humeral maculae absent, punctation with nodules (Fig. 12), 8th stria absent anterior to fascia (beginning within it), striae terminating within, or just after, fascia, males with setal mat covering striae 1–4 within fascia; femora yellow basally, pale brown apically (much paler than elytra), tarsi with three ventral tarsal pads. Similar to *N. brevistriatus* **sp. nov.**, though easily differentiated from it by having internally nodulate punctation and the outer striae extending beyond elytral fascia.

Description. *Habitus*: Fig. 171. *Total length*: 10.5–16.7 mm (lectotype 11.2 mm). *Head*: Vertex, frons, genae

and submentum blackish, clypeus and supra-antennal elevations reddish-brown, anteclypeus transparent yellow/orange, antennae, labrum and palpi orange-brown; eyes separated by 0.53–0.75 eye widths (lectotype 0.66); vertex and frons mostly smooth with only occasional small seta-associated punctations, surface even, not sulcate; genae and submentum wrinkled; exterior margins of terminal palpomeres about 2.3 times (maxillae) and 2.7 times (labium) the length of inside edges; antennae reaching base of pronotum; eyes and most of cranium vested with erect pale setae, frons with slightly shorter medially-directed setae. *Prothorax*: Blackish-brown, venter, pronotal collar and arch paler more reddish or brownish; pronotum 1.26–1.35 times longer than wide (lectotype 1.32), sides round, widest at middle; subapical depression deeply v-shaped, disc with deep central sulcus (sulcus smooth, more open than linear) and obscure lateral sulci, surface smooth, almost impunctate; moderately distributed with long erect setae and shorter finer multi-directional setae. *Pterothorax*: Ventrites brown to reddish-brown, vested with short pale and occasional long setae; elytra dark reddish-brown with orange markings (each elytron with a large apical macula and a transverse fascia which is broadest at the suture); length to width ratio 2.79–3.15:1 (lectotype 2.91); mostly 9-striate (8th stria begins within transverse fascia), all stria terminating well before apex (1–3 or 4 within fascia or near, 4 or 5–10 just posterior of fascia), punctation with nodules (most visible within fascia at striae 4–10), very large and complete anterior to fascia, smaller with posterior edge indistinct posterior to fascia, interstriae smooth, epipleurae extending into apical curve, interstriae with very fine short semi-reclinate setae (often >1 per puncture) and longer thicker erect setae (<1 per puncture), intrafoveal setae short (many setae rubbed from lectotype), males with a dense mat of short pale posteriorly directed decumbent setae covering striae 1–4 from just posterior of to just anterior to fascia; hindwing with CuA_{3+4} and CuA_1 cross-veins absent. *Legs*: Profemora pale brown, basal half of meso- and metafemora yellow, apical half pale brown, tibiae and tarsi pale brown, ventral tarsal pads paler; profemora very slightly swollen, other femora slender. *Abdomen*: Ventrites orange. *Male genitalia*: Tegmen (Fig. 56) moderately slender, middle sinuate, parameroid lobes conspicuously expanded laterally, the latter apically sub-digitiform, dorsal sinus long, about one-third tegmen length, slightly narrowed at its half-length, terminally curved, ventral sinus shallow, about three-eighths the length of dorsal sinus, tegminal arms gradually meeting apodeme, apodeme a little less than quarter tegmen length; median lobe as in Fig. 93; pygidium as in Fig. 128.

Variation. Colour of some specimens closer to black than brown; brown area of meso- and metafemora sometimes less than half of femoral length (possibly females only).

Biology. In southeast Queensland *Notopilo variipes* has been collected in a flight intercept trap in rainforest at Gurgeena Plateau and by pyrethrum spraying Hoop Pines at Enoggera Reservoir; in New South Wales it was collected using flight intercept traps at Kioloa State Forest. Collection data indicates that adults are active from October to March.

Distribution (Map 3). Throughout Victoria and New South Wales into south-east Queensland.

Unplaced to species group

Remarks. The following four species cannot be assigned to any of the five *Notopilo* species groups defined above, and we have not identified synapomorphies on which to base further species groups to which they may be assigned. All four species have CuA_{3+4} and CuA_1 cross-veins complete.

Notopilo confusus sp. nov.

ZooBank registration: urn:lsid:zoobank.org:act:0D9DD6A0-B7F2-462A-8FC4-592AE092857D
(Figs 21, 57, 129, 172, 185; Map 4)

HOLOTYPE ♂: **South Australia**: Adelaide, SA Feb-June 1986, S.Rondonuwu (ANIC). **PARATYPES** (16): **South Australia**: Adelaide, SA Feb-June 1986, S.Rondonuwu (11, ANIC); Mt Lofty Rgs. S. H. Curnow // Ex. Coll. S.A. Mus (1, ANIC); A.H. Elston Collection // Adelaide S. Australia A.H. Elston // K 304527 // 74 Opilo congruus Newm. Id by A.M. Lea (1, AM); Adelaide // Museum Paris Coll. Castelnau Coll. Sedillot 1935 (1, MNHN); Gawler S. Australia. // Pascoe Coll. 93-60. (1 ♂, NHML); 29959 // Nov Holl S Austr // Fry Coll. 1900 100. (1, NHML).

Additional material. Western Australia: De Boulay // Nov.Holl. Occid. // Fry Coll. 1905-100 (2, NHML*); W. Australia Champion Bay Duboulay // Museum Paris ex Coll. R.Oberthur (1 ♂, 1, MNHN); A.H. Elston Collection

// Beverley, WA // K 304535 // 74 Opilo congruus Newm. (1, AM); Yanchep W. Aust., Ex TuART [?] 20.xi.1970, S.J. Curry // Agriculture (Dept) Western Australia 49861 (WADA); R.P. McMillan, Spencers Brook. Sept. 1948 (1, WAM E88346); WA Carlisle (Perth) 31°58′37″S 115°55′24″E 8 February 2000 B.P. Hanich // on outside flywire door at night (1, WAM E88389).

***** Note: two NHML specimens (see Fig. 185) were discovered to be part of the original syntype series of *Opilo femoralis* Westwood (see 'comment on lectotype designation' under *Platynotum femorale* **stat. rev.**, **comb. nov.** below).

Diagnosis. Pronotum evenly rounded laterally, disc not heavily punctate; elytra dark with orange fasciate and apical maculations (humeral maculae faint or absent), punctation with nodules, 8th stria beginning before fascia, at least striae 3–8 reaching apical maculae (intrastrial-punctures may become widely spaced apart towards apex); femora yellow basally, brown apically, tarsi with three ventral tarsal pads.

Description. *Habitus*: Fig. 172. *Total length*: 7.1–9.6 mm (holotype 7.1 mm). *Head* (Fig. 21): Cranium black, clypeus and supra-antennal elevation with a reddish or orange hue, anteclypeus, labrum, palpi and antennae orange to orange-brown; eyes separated by 0.56–0.78 eye widths (holotype 0.75); vertex slightly to moderately punctate, frons well-punctated and slightly impressed above narrowest point, punctate-rugulose below, clypeus mostly smooth with a few punctations near hypostomal suture; genae and submentum wrinkled; ratio of exterior to interior edges of terminal palpomeres about 1.8–2.2:1 (maxillae) and 2.5–3:1 (labium); antennae reaching near base of pronotum; eyes and most of cranium vested with erect pale setae, frons with shorter medially-directed setae. *Prothorax*: Blackish to reddish-brown, pronotal arch and collar sometimes paler; pronotum 1.16–1.36 times longer than wide (holotype 1.19), sides rounded to slightly tuberculate, middle about as wide as anterior part; subapical depression v-shaped, disc with deep central sulcus (sulcus smooth, more open than linear) and a poorly-defined shallow sulcus on each side, surface with small seta-associated punctations, smooth in overall appearance; short fine multi-directional setae and long erect setae. *Pterothorax*: Ventrites orange-brown, with short posteriorly-directed, and occasional long, setae; elytra brown with orange markings (each elytron with a large apical macula and a transverse fascia crossing elytral mid-length which is narrowed or curved at the suture, small humeral maculae uncommon); length to width ratio 2.77–3.04:1 (holotype 2.88); 8th stria beginning between first and sixth puncture of 7th stria, at least striae 3–8 ending at or near apical macula, punctation with small lateral nodules (most prominent anterior of fascia), punctation posterior of fascia smaller than basal punctation and may be more widely spaced, epipleurae extending into apical maculae, interstriae with erect and angled setae of slightly differing lengths (the shorter semi-decumbent setae seen in other species has become more similar to the erect setae in this species), intrafoveal setae short; hindwing with CuA_{3+4} and CuA_1 cross-veins complete (CuA_1 very thin), MP_{3+4} absent basad of CuA_1 cross-vein. *Legs*: Femora yellow basally and brown apically (apical half of profemora, apical two-fifths of mesofemora and apical third of metafemora), tibiae and tarsi brown, ventral tarsal pads yellowish; profemora only slightly thicker than other femora. *Abdomen*: Ventrites orange. *Male genitalia*: Tegmen (Fig. 57) relatively broad, subparallel or wekly narrowing towards parameroid lobes, the latter tapering to a digitiform process, dorsal sinus about two-fifths tegmen length, narrow internally, wide open externally, ventral sinus one-third as long, apodeme about one-quarter tegmen length; pygidium as in Fig. 129.

Etymology. The specific epithet *confusus* (Latin, meaning confounded, confused or having been brought into disorder) refers to the confusion of Westwood erroneously considering this species conspecific with *Opilo femoralis* Westwood.

Biology. *Notopilo confusus* **sp. nov.** has been collected from February to June (SA) and in November (WA).

Distribution (Map 4). Specimens are known from several localities between Geraldton in Western Australia and the type locality, Adelaide in South Australia.

Notopilo elstoni sp. nov.

ZooBank registration: urn:lsid:zoobank.org:act:486B7112-8072-4C35-9B50-123DADEFF11A
(Figs 58, 94, 130, 173; Map 4)

HOLOTYPE ♂: **South Australia**: New Kalamurina St. Warburton R. S. Aust 10 mar. 1972. E. Matthews (SAMA). **PARATYPES** (4): **South Australia**: L. Callabonna A. Zietz // A. H. Elston Collection // K 304526 // 741 Opilo congruus Newm. var (1, AM); 27.33S 135.27E Oodnadatta S.Aust. 29Nov89 I.Bunic (1, ANIC); Australia, SA.

Near Oodla Wirra 427m, 32°51′S 139°06′E, 15.xi.2000 // leg. A. Podlussany, I. Rozner, George Hangay. G&K Hangay Collection (1, ANIC); Australia, SA, Wobna Mound Springs, 3.-4.1.2004, M. Baehr (1, RGCM).

Other material examined. 27.21S 136.36E, attracted to light, Mierantana W.H., S.Aust. 23 Oct 89, I. Bunic (1 ♀, ANIC).

Diagnosis. Pronotum rounded, disc moderately punctated though retaining a smooth reflective appearance, central impression extremely short and shallow, tumescent areas either side of central impression indistinct; elytra dark with orange maculae (each elytron with a humeral macula extending obliquely towards the suture but ending at the second stria, a large central fasciate macula which is curved at the suture and which is thinly joined to the humeral macula along the lateral margin, plus an apical macula which meets the external margins entirely and the sutural margin at the apex only), punctation with small nodules, 8th stria beginning near base (between 2nd and 4th punctation of 7th stria), some or all of striae 3–6 reaching apical macula, mostly a single seta across interstrial width (rarely two); femora yellow and brown, tarsi with three ventral tarsal pads.

Description. *Habitus*: Fig. 173. *Total length*: 6.9–9.5 mm (holotype, 9.1 mm). *Head*: Vertex black, frons entirely black or reddish-brown from middle of eyes to clypeus, clypeus and supra-antennal elevations reddish-brown, anteclypeus semi-transparent orange, labrum, antennae and palpi orange to orange-brown; eyes separated by about 0.73–0.85 eye widths (holotype, 0.85); vertex with numerous shallow punctations (heavier behind eyes), upper part of frons more punctate- rugulose, lower part of frons (above epistomal suture) with light transverse to weakly-curved rugulosity and occasional punctation; clypeus with numerous punctations; genae and submentum wrinkled; exterior margins of terminal palpomeres about 1.5 times (maxillae) and 2 times (labium) the length of inside edges (based on paratypes as the palpi of the holotype are damaged); antennae not reaching base of pronotum; eyes and cranium with long erect pale setae, frons and vertex with denser shorter medially-directed setae. *Prothorax*: Black to reddish-black, prosternum and basal collar orange-brown; pronotum 1.14–1.22 times longer than wide (holotype, 1.15), sides rounded, middle wider than pronotal arch; subapical depression deeply v-shaped, indistinct near middle; central impression indistinct, extremely shallow, short; disc convex, well-distributed with circular punctation (though retaining a smooth, reflective appearance), punctation heaviest laterally, subrugulose, punctation least dense medially, a glabrous stripe basally, a weak ovoid partly glabrous tumescence either side of central impression; lateral impression conspicuous, obscurly-shaped; with fine short multi-directional setae and sparsely with longer erect setae. *Pterothorax*: Ventrites orange, with fine pale posteriorly- or medially-directed setae; elytra dark brown with orange markings (each elytron with a humeral maculation extending obliquely towards the suture but ending at the second stria, a large central fasciate maculation which is curved at the suture and which is thinly joined to the humeral maculation along the lateral margin, plus an apical maculation which meets the external margins entirely and the sutural margin at the apex only), length to width ratio 2.5–2.6:1 (holotype, 2.5:1); 8th stria beginning anterior of fascia, between 2nd and 4th punctation of 7th stria, some or all of striae 3–6 reaching apical macula (at least 4 and 5); punctation circular, with small nodules (most easily viewed in dark area posterior of humeral maculae); epipleurae extending into apical maculae; interstriae with short fine setae (at least one per puncture), plus longer thicker erect setae (at least one every two punctures), striae mostly with a single seta across interstrial width (rarely two), intrafoveal setae short; hindwing with CuA_{3+4} cross-vein complete (CuA_1 cross-vein not observed), MP_{3+4} absent basad of CuA_1 cross-vein. *Legs*: Basal two-thirds of profemora and basal three-quarters of meso- and metafemora yellow, remaining parts of femora dark brown; tibiae and tarsi brown, tibial carinae darker; ventral tarsal pads yellowish; profemora slightly more swollen than other femora. *Abdomen*: Ventrites orange. *Male genitalia*: Tegmen (Fig. 58) broad, middle very weakly sinuate, apices of parameroid lobes digitiform, dorsal sinus wide, about one-third tegmen length, ventral sinus about half as long as dorsal sinus, apodeme just under one-quarter tegmen length; median lobe as in Fig. 94; pygidium as in Fig. 130.

Variation. The apical elytral maculae of the paratype from Wobna Mound Springs do not extend to the extreme apex. A female specimen from Mierantana Water Hole, South Australia, conforms to the above description in most respects but differs only in being larger (11.1 mm long) and in having differently patterned elytra (the humeral macula spans the entire base and is connected to the central, fasciate, macula along the suture). In the absence of a male (for comparison of genitalia) we can only consider this to represent within-species variation. We are not designating it as a paratype of *N. elstoni* **sp. nov.** in case future discovery of a male with similar elytral markings proves otherwise.

Etymology. We name this species after Albert Harold Elston (1890–1957), clerk and amateur entomologist from Adelaide, South Australia, within whose collection the Lake Callabonna paratype was originally contained. In

ten papers published from 1919 to 1930, Elston proposed exactly 100 species group names for Australian beetles, mainly in the families Elateridae (51 names) and Cleridae (42 names). In terms of number of Australian clerids described, Elston was second only to Frenchman, Maurice Pic, who described 46 species, though in contrast to Pic, whose descriptions were often four or five lines in length, Elston's descriptions were substantial and informative.

Biology. Adult specimens have been collected in November, January and March.

Distribution (Map 4). *Notopilo elstoni* **sp. nov.** is known from the northern, arid region of South Australia.

***Notopilo katherinensis* sp. nov.**

ZooBank registration: urn:lsid:zoobank.org:act:98BFA4B9-7E6E-4678-A1F6-0405A5568093

(Figs 59, 95, 131, 174; Map 4)

HOLOTYPE ♂: **Northern Territory:** Australia07, NT35, Scotts Ck. 65km sw Katherine, Victoria Hwy., 14.55.45S, 131.52.66E 126m, 11.11.2007. M.Baehr (QM, type reg. T258554; ex RGCM). **PARATYPES** (3): **Northern Territory:** Australia07, NT33, King R. 30km sw Katherine, Victoria Hwy., 14.42.43S, 132.04.44E 104m, 11.11.2007. M.Baehr (1 ♂, 1, RGCM); Australia07, NT16, 10km ese Katherine, Stuart Hwy. 14.29.12S, 132.24.04E 100m, 5.11.2007, M.Baehr (1, RGCM); Tindal, N.T. 14.31S 132.22E 1-20 Dec. 1967 light trap W.J.M. Vestjens (1 ♀, ANIC).

Diagnosis. Pronotal sides slightly angulate; disc extremely smooth; central impression conspicuous; tumescent areas either side of central impression indistinct; elytra dark with orange maculae (each elytron with a large central globular fasciate macula which is at least slightly curved at the suture plus an apical macula, which meets the external and sutural margins); some punctures with very small lateral nodules (easily misinterpreted as lacking nodules); 8th stria beginning just anterior of the fascia; striae 1–8 or 1–9 reaching apical macula; striae with a single seta across interstrial width; femora yellow and brown; tarsi with three ventral tarsal pads.

Description. *Habitus*: Fig. 174. *Total length*: 6–7.2 mm (holotype, 6.2 mm). *Head*: Vertex and frons black, clypeus and supra-antennal elevations reddish-brown, anteclypeus semi-transparent orange, labrum, antennae and palpi orange to orange-brown, venter dark reddish brown, gula paler; eyes separated by about 0.53–0.63 eye widths (holotype, 0.55); vertex and lower part of frons mostly smooth, vertex with only a few small punctures, lower part of frons with subtle transverse wrinkles, upper part of frons with some larger punctures; clypeus without strong punctation; genae and submentum wrinkled; exterior margins of terminal palpomeres about 1.5 times (maxillae) and 2.2 times (labium) the length of inside edges; antennae reaching base of pronotum; eyes and cranium with long and short pale erect setae, frons and vertex with occassional long erect setae and shorter medially-directed setae. *Prothorax*: Disc black infused with reddish brown; pronotum about 1.17–1.19 times longer than wide (holotype, 1.17), sides slightly angulate, middle wider than pronotal arch; subapical depression deeply v-shaped; central impression conspicuous; disc extremely smooth in general appearance, punctation sparse, shallow; preapical tumescence indistinct; lateral impression inconspicuous; disc with short multi-directional, and erect, setae. *Pterothorax*: Ventrites black-brown, with fine mostly posteriorly-directed setae; elytra black-brown with orange markings (each elytron with a large central globular fasciate macula which is at least slightly curved at the suture plus an apical macula, which meets the external and sutural margins), length to width ratio 2.52–2.64:1 (holotype, 2.55:1); 8th stria beginning just anterior of the fascia, striae 1–8 or 1–9 reaching apical macula; punctation circular, some punctures with minute lateral nodules (easily misinterpreted as lacking nodules; best observed in punctures near base and half way between fascia and apex); epipleurae extending into apical maculae; interstriae with single rows of moderately long to very long, posteriorly-directed, setae, intrafoveal setae short; hindwing with CuA_{3+4} cross-vein complete (CuA_1 cross-vein not observed), MP_{3+4} absent basad of CuA_1 cross-vein. *Legs*: Approximately basal three-fifths of profemora, two-thirds of mesofemora and three-quarters of metafemora yellow, remaining apical parts of femora brown; tibiae and tarsi brown, tibial carinae darker; ventral tarsal pads yellowish; profemora slightly more swollen than other femora. *Abdomen*: Ventrites orange. *Male genitalia*: Tegmen (Fig. 59) narrowing between middle and the robust parameroid lobes, apex tapered to a short digitiform process, dorsal sinus just over one-third tegmen length, inner margins sub-parallel in middle, opening about twice as broad as innermost width, ventral sinus about half as long as dorsal sinus, apodeme about one-quarter tegmen length; median lobe as in Fig. 95; pygidium as in Fig. 131.

Etymology. This species is named after the Katherine region of the Northern Territory.

Biology. Adults were collected in November and December.

Distribution (Map 4). *Notopilo katherinensis* **sp. nov.** is known from only three collecting localities between 10 and 65 km from Katherine, and from Tindal (near Katherine), in the Northern Territory.

***Notopilo obesus* sp. nov.**

ZooBank registration: urn:lsid:zoobank.org:act:FF303390-F098-4E0C-9296-60CED2C88888

(Figs 5, 16, 60, 96, 132, 175; Map 4)

HOLOTYPE: **Queensland**: Coopers Plains, 768 Boundary Road, grounds of CSR Ltd.; 30.ix.-3.x.2014; S. Collingwood; panel trap (alpha-pinene & ethanol lure) in *Pinus* sp. (QM, type reg. T258555). **PARATYPES** (3): **Queensland**: Camp Hill, carpark of White's Hill Shopping Village, Samuel Street, 1.xii.2003, J.S. Bartlett, under lights at night (1 ♀, JSBC); -23.83738, 151.26048, Port of Gladstone, Barney Point, Gate LPG1075; 24.i.-7.ii.2017; J. Logan, Panel Trap, α-pinene+EtOH lure (1 ♂, QDPC). **New South Wales**: 11 March 2019; Blaxland Ridge, Blaxland Ridge Rd. at light; 3328′13.0″S, 15048′01.4″E; Vr.R. Bejšák-Colloredo-Mansfeld lgt. (1, VRBC).

Diagnosis. Pronotum round laterally, disc punctate-rugulose, either side of central impression strongly tumescent; elytra notably broader than pronotum, each elytron dark with a large slightly angulate transverse fascia which meets at the suture and an obscure basal macula; punctation with small nodules; 8th stria beginning near base; striae 3-7 terminating at apical slope (other striae shorter); femora entirely brown; tarsi with three ventral tarsal pads.

Description. *Habitus*: Fig. 175. *Total length*: 7.9 mm. *Head*: Cranium black, clypeus and supra-antennal elevations with reddish hue, anteclypeus, labrum and palpi orange-brown, antennae brown; eyes separated by about 0.92 eye widths; upper part of frons punctate-rugulose, lower part with weak transverse wrinkles; genae and submentum wrinkled; exterior margins of terminal palpomeres about 1.5 times (maxillae) and 2.5 times (labium) the length of inside edges; antennae almost reaching base of pronotum; eyes and most of cranium vested with long erect setae, frons and vertex with shorter medially-directed setae. *Prothorax*: Black, reddish-black in parts; pronotum about 1.11 times longer than wide, sides rounded, widest in middle; subapical depression deeply v-shaped; central impression deeply excavated, weakly sulcate; either side of central impression strongly tumescent; disc unevenly punctate-rugulose, pronotal arch smoother, spaces between individual punctures sub-nitid; numerous fine short multi-directional setae plus fewer long erect setae. *Pterothorax*: Sternites reddish-brown, with fine pale posteriorly-directed setae; elytra (Fig. 16) about 1.4 times wider than pronotum, blackish brown with orange markings (each elytron with a large, slightly angulate, transverse fascia which meets at the suture plus an obscure brown triangular maculation its outer-most margin extending from the humerus to inner corner of fascia; apices lacking maculae); length to width ratio 2:1; 8th stria beginning near base; striae 3–7 reaching apical slope, other striae shorter; punctures with small lateral nodules (most clearly visible in basal punctures), relatively well-spaced; basal intervals at least one puncture width, wider towards apex (punctures gradually smaller towards apex); epipleurae terminating within apical curve; intervals with many short fine, and less frequent longer, setae (much of the discal setae rubbed off holotype), intrafoveal setae short; hindwing with CuA_{3+4} and CuA_1 cross-veins complete, MP_{3+4} absent basad of CuA_1 cross-vein. *Legs*: Femora, tibiae and tarsi brown, ventral tarsal pads brownish yellow; profemora slightly more swollen than other femora; front and middle legs stout, hind legs more elongate. *Abdomen*: Orange-brown. *Male genitalia*: Tegmen (Fig. 60) subparallel, heavily sclerotised structural H-shaped 'frame' more apparent than in congeners, parameroid lobes with relatively thick terminal sub-digitiform processes, dorsal sinus deep and wide, about one-third tegmen length, internally with preapical membrane (potentially sensory in function), ventral sinus almost two-thirds as long as dorsal sinus, apodeme very short, spatulate, about one-tenth tegmen length; median lobe as in Fig. 96; pygidium as in Fig. 132.

Etymology. The specific epithet, *obesus* (Latin, meaning fat) refers to the barrel-shaped form of this species which makes it instantly recognisable amongst its congeners.

Biology. Specimens were captured in a static panel trap containing an alpha-pinene+ethanol lure, or collected at light.

Distribution (Map 4). The four known specimens were collected in Queensland (Gladstone and Brisbane) and New South Wales (Blaxlands Ridge).

***Platynotum* gen. nov.**

ZooBank registration: urn:lsid:zoobank.org:act:F6B21AB1-D55F-402F-BB70-EBC2EAE45082

Gender. Neuter.

Type species. *Opilo femoralis* Westwood, 1849, by present designation.

Diagnosis. Intrafoveal setae long or short, always visible under magnification; ninth elytral stria present; inside lateral *rims of elytral* punctures with (*P. bulli* **sp. nov.**) or without (other sp**ecies)** nodules; elytral interstriae setae arranged in simple rows; most elytral striae reaching apical macula; pronotal disc moderately to conspicuously compressed, flat in appearance; basitarsi without a distinct ventral pad; antennal scape with carina bordering each side of flattened rear face (notably short in *P. bulli*); median lobe lacking rearward-directed spine, apically membranous (*P. bulli*), or spatulate (other species).

Description. Eyes coarsely-facetted, strongly emarginate above supra-antennal elevations, separated by 0.62–2.13 eye widths; antennal scape with short (*P. bulli*) or long (other species) carina bordering each side of flattened rear face; sensory face of terminal maxillary palpomere 1.6 longer than inside margin; sensory face of terminal labial palpomere 1.5–2.2 times longer than inside margin; genae wrinkled, submentum wrinkled or smooth; pronotum 1.1–1.27 times longer than wide, middle similar in width to pronotal arch (may be slightly broader or narrower), disc strongly to weakly compressed, smooth to moderately punctate, median sulcus present; elytra 2.5–3.17 times longer than wide at humeri, punctures with (*P. bulli*) or without (other species) nodules, eighth stria beginning between base and eighth puncture of 7th stria (sometimes at base), most stria reaching apical macula, interstrial setae in single rows, intrafoveal setae present; hind wing with CuA_{3+4} and CuA_1 cross-veins broken (*P. gracile*) or absent (*P. bulli, P. culgoense* and *P. femorale*); tarsi each with three well-developed ventral pads; tegmen ventral sinus from two-thirds as long, to as long as dorsal sinus; median lobe without apico-lateral spine, apically membranous/non-lobate (*P. bulli*) or lobate/spatulate (other species); spicular fork with sides separating at base (*P. bulli*) or just beyond base with arms diverging (i.e., bent) from near middle to apical third (other species).

Etymology. The generic epithet *Platynotum* (Greek 'platys' meaning level or flat, and 'notum' in reference to the pronotum) refers to the flatness of the pronotal disc of the constituent species.

Remarks. Despite differences between *P. bulli* (i.e., median lobe apically membranous, elytral punctures nodulate) and the remaining species (i.e., median lobe apically spatulate, elytral punctures without nodules), their congenericity is based on: a) knowledge of other closely related species with opposing states of elytral punctures (e.g., *Notopilo variipes* with nodules, *N. brevistriatus* without); b) apparent (putative) homology in tegminal structure between *N. bulli* (with a distinct, heavily sclerotised H-shaped internal frame) and *N. fovesetosa* (an apparent vestige of such a frame, not observed in the other *Platynotum* species); and c) common flattening of the pronotal disc (putatively synapomorphic for the genus).

Key to species of *Platynotum*

1	Pronotal disc conspicuously flattened, with a distinct longitudinal medial groove; submentum smooth	**2**
-	Pronotal disc moderately to weakly flattened, with an indistinct medial groove or impression; submentum transversely wrinkled	**3**
2 (1)	Elytra with maculate humeri (Fig. 176), punctures with internal nodules	***Platynotum bulli* sp. nov.**
-	Elytral humeri not maculate Fig. 177), punctures without internal nodules	***Platynotum culgoense* sp. nov.**
3 (1)	Elytral markings indistinct, not clearly marked (see Fig. 179); intrafoveal setae longer than puncture diameter (Fig. 24)	***Platynotum foveosetosa* sp. nov.**
-	Elytral markings distinct, at least median fascia distinctly marked; intrafoveal setae shorter	**4**
4 (3)	Elytral fascia positioned posterior to elytral mid-length (see Fig. 180)	***Platynotum gracile* sp. nov.**
-	At least part of elytral fascia positioned over elytral mid-length (see Fig. 178)	***Platynotum femorale* (Westwood) stat. rev., comb. nov.**

***Platynotum bulli* sp. nov.**
ZooBank registration: urn:lsid:zoobank.org:act:1891666B-32FD-4515-82AE-7DFDC6E533C8
(Figs 17, 61, 97, 133, 176; Map 2)

HOLOTYPE: **Western Australia**: Marloo Stn., Wurarga, W.A. 1931-1941. A. Goerling (ANIC). **PARATYPES** (3): **Northern Territory**: Stuart H'way, N.T., 296km S of Tennant Creek, 29 Nov. 1972, D.H.Colless (1, ANIC); A. Douglas leg., 26.ix.1964, 25 mi. S. Barrow Cr., N. Territory (1, WAM E88357); Zircon Patch, Harts Range, N.T., 5.10.03., R.M. Bull (1 ♀, JSBC). **Western Australia**: Australia, WA06/158, 16km n. Leinster, 27.84103S, 120.58300E, 504m, 1.3.2006, M. Baehr (1 ♂, WAM E113543, ex RGCM).

Diagnosis. Pronotum tuberculate laterally, disc flattened, impressed in middle, not heavily punctate (most densely punctate laterally); elytra dark with poorly-defined orange humeral, fasciate and apical maculations (apical maculae extremely faint on one specimen), the transverse fascia meeting at the suture, punctation with small lateral nodules (more easily observed at middle fascia), 8th stria beginning near base, all striae terminating near apex, interstrial setae mostly in single rows (occasionally more than one seta across interstrial width); femora yellow and brown, tarsi with three ventral tarsal pads.

Description. *Habitus*: Fig. 176. *Total length*: 11–13 mm. *Head*: Cranium dorsally black, cranium ventrally, clypeus and supra-antennal elevations reddish-black, anteclypeus semi-transparent pale orange, labrum, palpi and antennae darker orange or brownish; vertex moderately punctate, frons smooth medially, punctate laterally; anterior clypeal margin concave; eyes separated by 0.91–1.12 eye widths; genae wrinkled; submentum smooth; terminal maxillary palpomeres with exterior margins about 1.6 (females and males) times the length of inside edges; terminal labial palpomeres with exterior margins about 2.2 (females and males) times the length of inside edges; antennae not reaching base of pronotum; long and short, erect or medially-directed, orange setae, those of vertex and frons fine. *Prothorax*: Reddish-black; pronotum 1.18–1.26 times longer than wide, anterior part as wide as middle, sides conspicuously constricted between, subapical depression well-defined, v-shaped; disc dorso-ventrally compressed (appearing pressed in) (Fig. 17), central discal impression a linear sulcus; disc appearing smooth, though punctate and/or semi-rugulose in parts; yellowish fine multi-directional setae and thicker long erect setae. *Pterothorax*: Ventrites orange or brown, with orange posteriorly-directed setae; elytra dark brown, each elytron with ill-defined orange-brown maculate areas (a large basal macula, a fasciate band near middle and some specimens with an apical spot); length to width ratio 2.63–2.78:1; punctation with small lateral nodules (most easily observed at middle fascia), all striae terminating near apex, 8th stria complete at base; interstriae about as wide as corresponding punctures, with very fine semi-erect setae (sometimes >1 per punctation) and less frequent longer erect setae, setae mostly in singular rows, occassionaly more than one seta across interstrial width; epipleurae extending into apical curve. *Legs*: Femora except extremities yellow, tibiae, tarsi and femoral extremities brown, ventral tarsal pads yellowish; femora swollen, profemora more than other femora. *Abdomen*: Ventrites orange. *Male genitalia*: Tegmen (Fig. 61) reasonably slender, slightly constricted in middle, parameroid lobes arcing laterally before almost meeting apically, tegminal arms apparently formed as an extension of a more heavily sclerotised H-shaped internal 'frame', dorsal sinus about one-fifth of tegmen length, broad internally, narrowed apically, ventral sinus about as long as dorsal sinus, tegminal arms tapering sharply to meet apodeme near basal one-seventh; median lobe (Fig. 97) with membranous apex; pygidium as in Fig. 133.

Etymology. This species is named after Richard Bull in appreciation for the small, but interesting collection of clerids (the paratype from Zircon Patch among them) that he gifted to the first author.

Biology. Adults have been collected in October, November and March.

Distribution (Map 2). This species is known from four arid zone localities, two each in the Northern Territory and Western Australia.

***Platynotum culgoense* sp. nov.**
ZooBank registration: urn:lsid:zoobank.org:act:04250E2A-E14F-41F0-800B-82A7F3673012
(Figs 62, 98, 134, 177; Map 2)

HOLOTYPE ♂: **Queensland**: Qld:28.939°Sx147.004°E Culgoa Floodplain NP 10km NE Toulby Gate (CG3) 16Sep-1Oct2008. Simpson Coward. 140m. Malaise. Brigalow 16325 (QM, type reg. T258558). **PARATYPES**

(3): **Queensland**: Qld: Currawinya NP, 4kmNW HQ (CW3). 28.813°Sx144.462°E Mulga 15Dec2007-8Feb2008. Lambkin, Townsend, Starick. Malaise 16249 (1 ♀, QM); Qld: Plevna Downs. 12.7km SSE HS (PD8). Malaise 26.786°Sx142.648°E 16Sept-2Oct2008. Starick, Lambkin, Mackenzie. 145m Eucalyptus 16285 (1 ♀, QM); Qld: 3.7km S HS Noonbah Station (NB4 M). 186m 24.141°Sx143.19°E 19Jan-7Feb2009. Malaise A.Emmott. Dense Gidgyea scrub. 17254 (1 ♀, QM).

Diagnosis. Pronotum tuberculate laterally, disc flattened, impressed in middle, not heavily punctate (most densely punctate laterally); elytra dark with yellowish fasciate and apical maculations (humeral maculae absent), the transverse fascia curved before (not meeting at) the suture, punctation without nodules, 8th stria beginning near base, all striae reaching apical macula, interstrial setae in single rows; femora yellow and brown, tarsi with three ventral tarsal pads.

Platynotum culgoense **sp. nov.** differs from *P. femorale* **comb. nov.** and *P. gracile* **sp. nov.** by its flatter pronotal disc, complete 8th elytral striae, the pre-sutural rounding-off of the elytral fascia and by its smaller size.

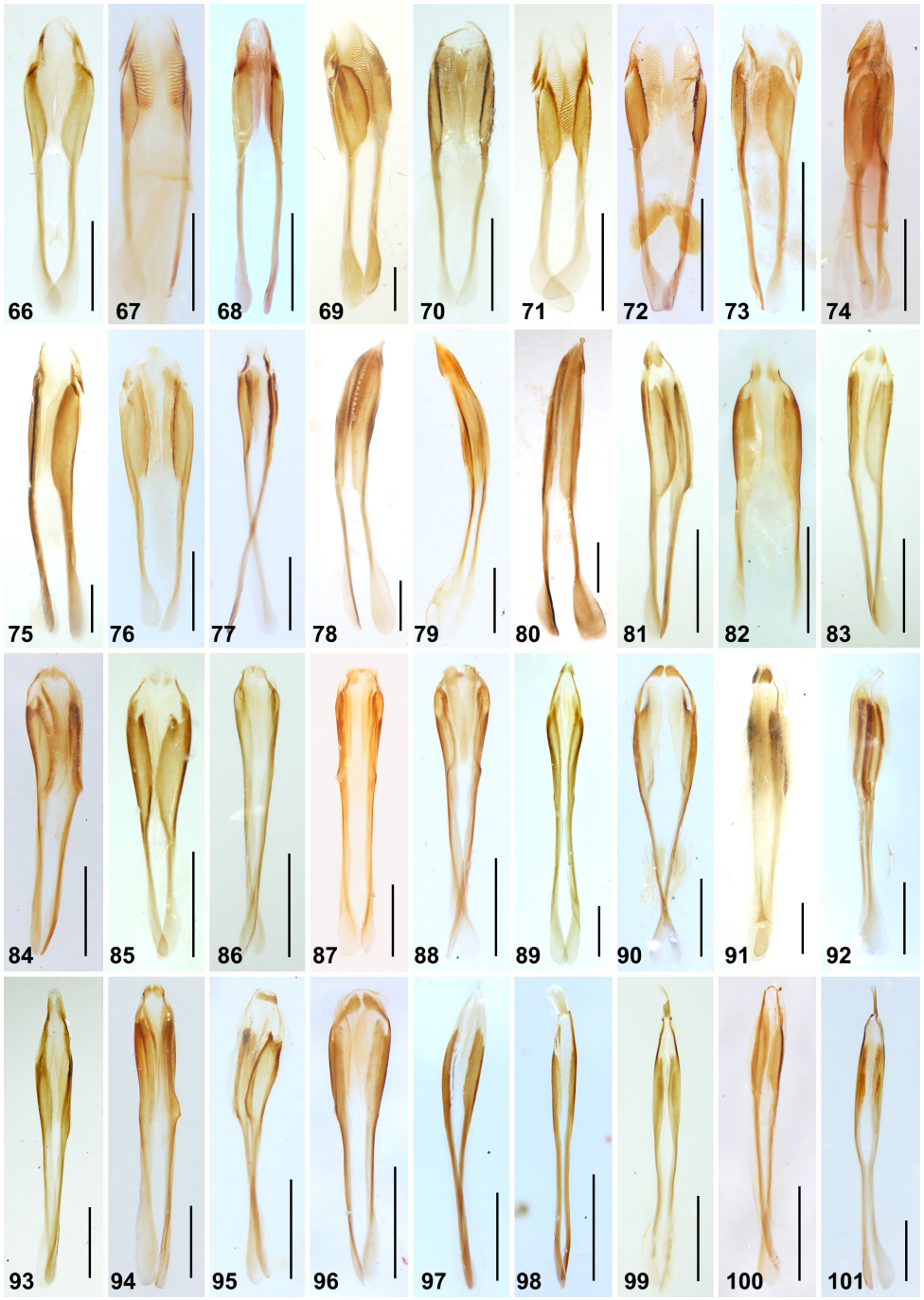
Description. *Habitus*: Fig. 177. *Total length*: 6.6–7.1 mm (holotype 7 mm). *Head*: Cranium blackish to dark brown, submentum and gula region paler, clypeus and supra-antennal elevations infused with reddish-black, anteclypeus semi-transparent orange, antennae, labrum and palpi orange-brown; eyes separated by 1.14–1.26 eye widths (holotype 1.2); vertex with numerous well-spaced punctations laterally, partly impunctate medially, frons punctate mostly around eye margins with few medial punctations (largely smooth medially), impunctate area in upper part of frons slightly elevated; genae wrinkled; submentum smooth; exterior margins of terminal palpomeres about 1.5 times (maxillae) and 3 times (labium) the length of inside edges; antennae almost reaching base of pronotum; vertex and lower part of frons with fine pale erect or medially-directed setae. *Prothorax*: Light to dark brown, pronotum 1.2–1.27 times longer than wide (holotype 1.26), sides with weak lateral tubercle behind middle; pronotal arch extremely short laterally, almost as wide as pronotum at tubercles; disc notably compressed and broadly impressed in middle; subapical depression broadly v-shaped and adjoining linear central impression, lateral impression obscure, positioned anterior of lateral tubercle; disc lightly punctate around central impression, heavily punctate-rugulose laterally, elevated areas less punctate or impunctate; disc with numerous short fine multi-directional setae and occassional long erect setae. *Pterothorax*: Ventrites brown to orange-brown, vested with short pale and occasional long setae; elytra dark or light brown with orange to yellowish markings (each elytron with an apical macula and a broad transverse fascia which is rounded-off before, and not meeting at, the suture); length to width ratio 2.75–2.93:1 (holotype 2.75); 8th stria beginning near base, only slightly shorter than 7th stria, all stria reaching apical macula, punctation lacking internal nodules, relatively uniform in size along full elytral length, punctation of outer striae often smaller than those of inner striae, epipleurae extending to apical maculae; interstriae with very fine short erect setae (often 1 per puncture) and longer thicker erect setae (about 1 per every 3 or 4 punctures), intrafoveal setae about half a puncture diameter in length. *Legs*: Coxae brownish, approximately basal half of profemora and about basal three-fifth to two-thirds of meso- and metafemora yellow, femora broan apically, demarcation of yellow and brown parts of profemora unclear on some specimens, tibiae and tarsi pale brown, ventral tarsal pads yellowish; profemora notably swollen, other femora moderately swollen; tibial spurs solid, particularly protibial spur. *Abdomen*: Ventrites orange or brownish. *Male genitalia*: Tegmen (Fig. 62) relatively slender, needle-like, widest at bend of tegminal arms, evenly tapering to parameroid lobes, the latter narrow acuminate and slightly bent laterally, dorsal sinus short, about one-sixth tegmen length, narrow internally, opening externally, ventral sinus similar in length, tegminal arms gradually meeting short (about one-eighth tegmen length) apodeme; median lobe as in (Fig. 98) with apical process; pygidium as in Fig. 134.

Etymology. This species is named after the collecting locality of the male holotype, Culgoa Floodplains National Park, which is situated at the Queensland and New South Wales border at longitude 147° east.

Biology. Specimens were collected from September to February by setting up Malaise traps in *Eucalyptus* and *Acacia* plant communities.

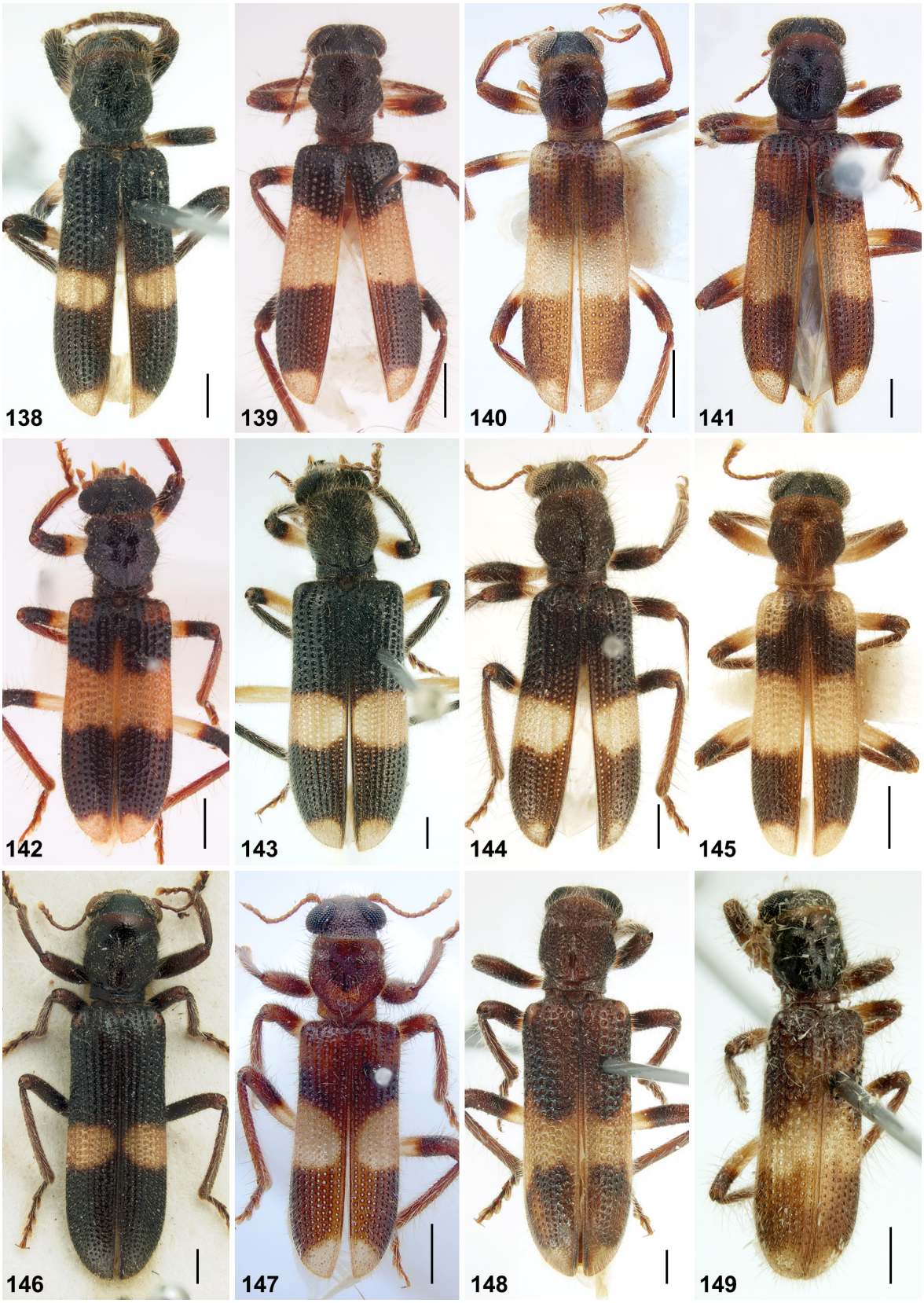
Distribution (Map 2). Southern and central Western Queensland.

Remarks. The species group name *Notopilo culgoaensis*, published in the 2009-2010 Bush Blitz survey report for north-western New South Wales and southern Queensland (ABRS 2014a, b) with no accompanying description and without reference to a name-bearing type, is deemed unavailable (ICZN 1999, Article 16.4).

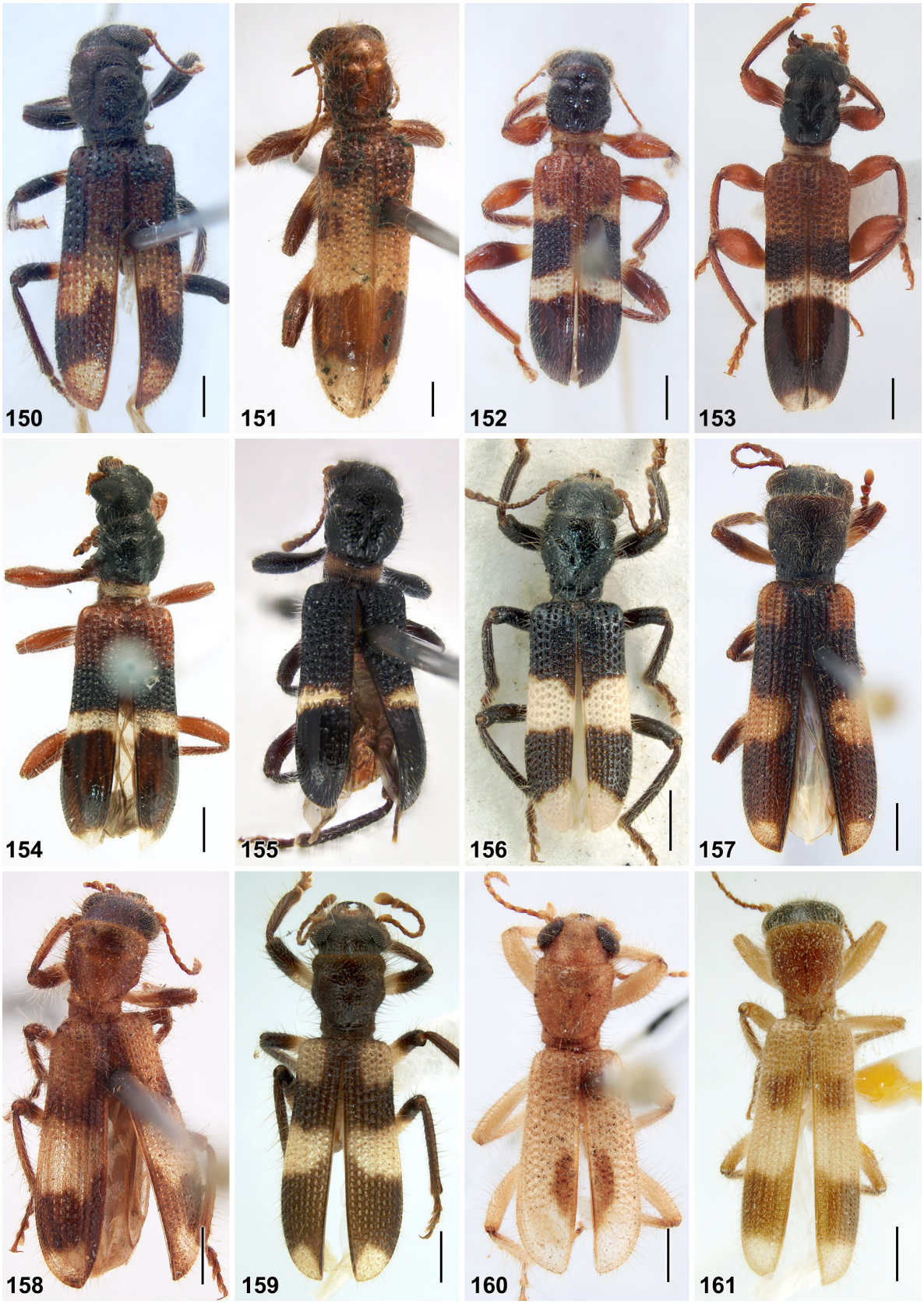


FIGURES 66–101. Median lobes: (66) *Ancyropilus brigalowae*, paratype; (67) *Ancyropilus emmotti*, holotype; (68) *Ancyropilus exossuarius*, paratype; (69) *Ancyropilus monteithi*, holotype; (70) *Ancyropilus noonbahensis*, holotype; (71) *Ancyropilus packsaddlensis*, holotype; (72) *Ancyropilus simplex*, paratype; (73) *Ancyropilus tricolor*, holotype; (74) *Ancyropilus hornensis*, paratype; (75) *Culcipternotus mareebensis*, paratype; (76) *Infectostriatus absentis*, holotype; (77) *Infectostriatus differens*, holotype; (78) *Monilonotum bunyense*, paratype; (79) *Monilonotum pascoei;* (80) *Monilonotum sundholmi*, paratype; (81–85) *Notopilo*, *beswickensis* species group—(81) *Notopilo beswickensis*, holotype; (82) *Notopilo calicis*, paratype; (83) *Notopilo tompricensis*, holotype; (84) *Notopilo xanthoimprocerus*, paratype; (85) *Notopilo xanthoprolatus*, holotype; (86–88) *Notopilo*, *cambageicola* species group—(86) *Notopilo cambageicola*, paratype; (87) *Notopilo interfabulatus*, paratype; (88) *Notopilo tanybasilaris*, paratype; (89) *Notopilo congruus* (*congruus* species group); (90) *Notopilo reduncus* (*reduncus* species group); (91–93) *Notopilo*, *variipes* species group—(91) *Notopilo brevistriatus*, paratype; (92) *Notopilo gerstmeieri*, holotype; (93) *Notopilo variipes*; (94–96) *Notopilo*, unplaced to species group—(94) *Notopilo elstoni*, holotype; (95) *Notopilo katherinensis*, holotype; (96) *Notopilo obesus*, paratype; (97) *Platynotum bulli*, paratype; (98) *Platynotum culgoense*, holotype; (99) *Platynotum femorale;* (100) *Platynotum foveosetosa*, holotype; (101) *Platynotum gracile*, holotype (scale bars: 0.5 mm).

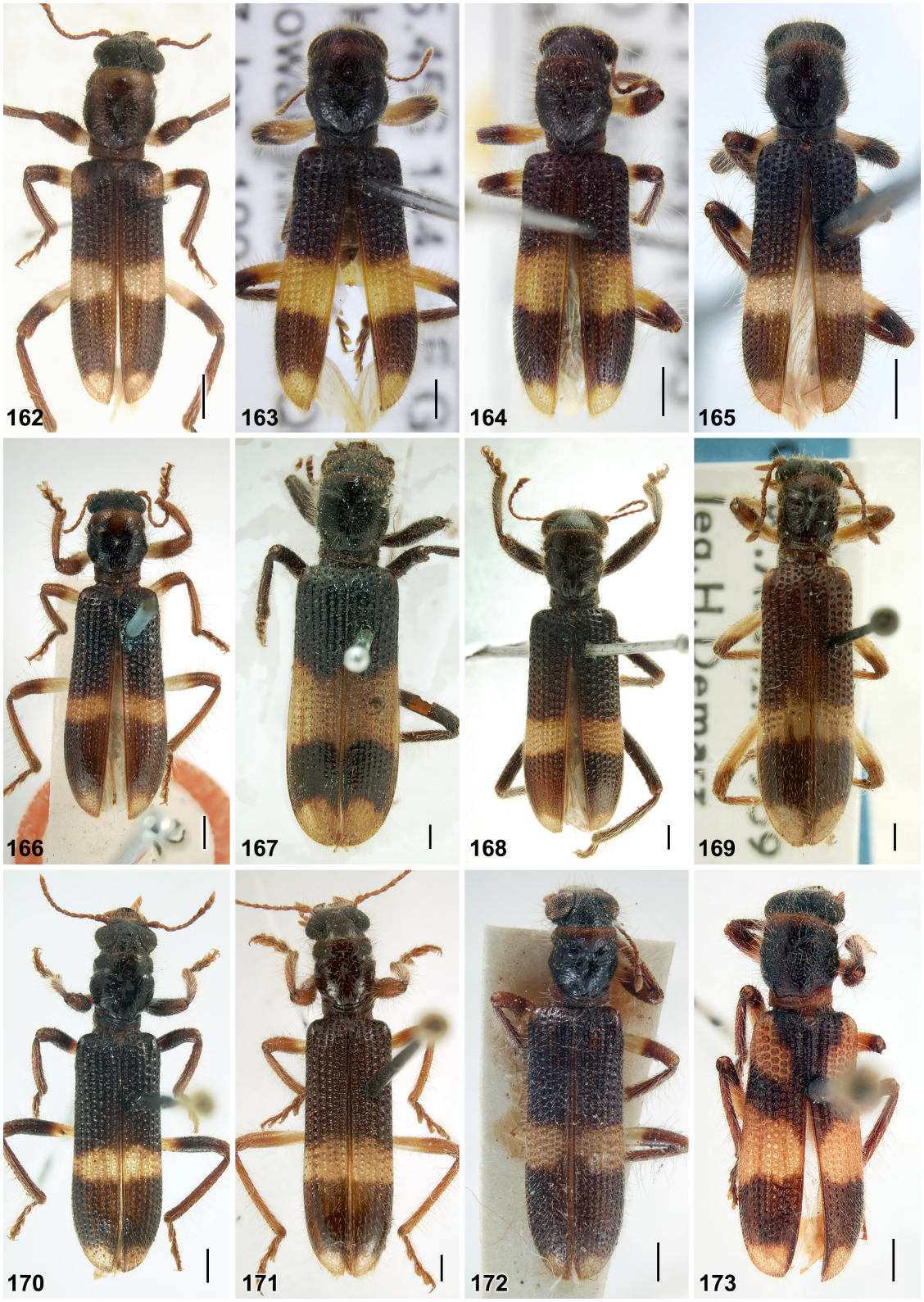
FIGURES 102–137. Male pygidiae: (102) *Ancyropilus brigalowae*, paratype; (103) *Ancyropilus emmotti*, holotype; (104) *Ancyropilus exossuarius*, paratype; (105) *Ancyropilus monteithi*, holotype; (106) *Ancyropilus noonbahensis*, holotype; (107) *Ancyropilus packsaddlensis*, holotype; (108) *Ancyropilus simplex*, paratype; (109) *Ancyropilus tricolor*, paratype; (110) *Ancyropilus hornensis*, paratype; (111) *Culcipternotus mareebensis*, paratype; (112) *Infectostriatus absentis*, holotype; (113) *Monilonotum doddi*; (114) *Monilonotum pascoei;* (115) *Monilonotum sundholmi*, paratype; (116–120) *Notopilo*, *beswickensis* species group—(116) *Notopilo beswickensis*, holotype; (117) *Notopilo calicis*, paratype; (118) *Notopilo tompricensis*, holotype; (119) *Notopilo xanthoimprocerus*, paratype; (120) *Notopilo xanthoprolatus*, holotype; (121–124) *Notopilo*, *cambageicola* species group—(121) *Notopilo cambageicola*, paratype; (122) *Notopilo interfabulatus*, paratype; (123) *Notopilo lawnhillensis*, paratype; (124) *Notopilo tanybasilaris*, holotype; (125) *Notopilo congruus* (*congruus* species group); (126–128) *Notopilo*, *variipes* species group—(126) *Notopilo brevistriatus*, paratype; (127) *Notopilo gerstmeieri*, holotype; (128) *Notopilo variipes*; (129–132) *Notopilo*, unplaced to species group—(129) *Notopilo confusus*, holotype; (130) *Notopilo elstoni*, holotype; (131) *Notopilo katherinensis*, holotype; (132) *Notopilo obesus*, paratype; (133) *Platynotum bulli*, paratype; (134) *Platynotum culgoense*, holotype; (135) *Platynotum femorale;* (136) *Platynotum foveosetosa*, holotype; (137) *Platynotum gracile*, holotype (scale bars: 0.5 mm).



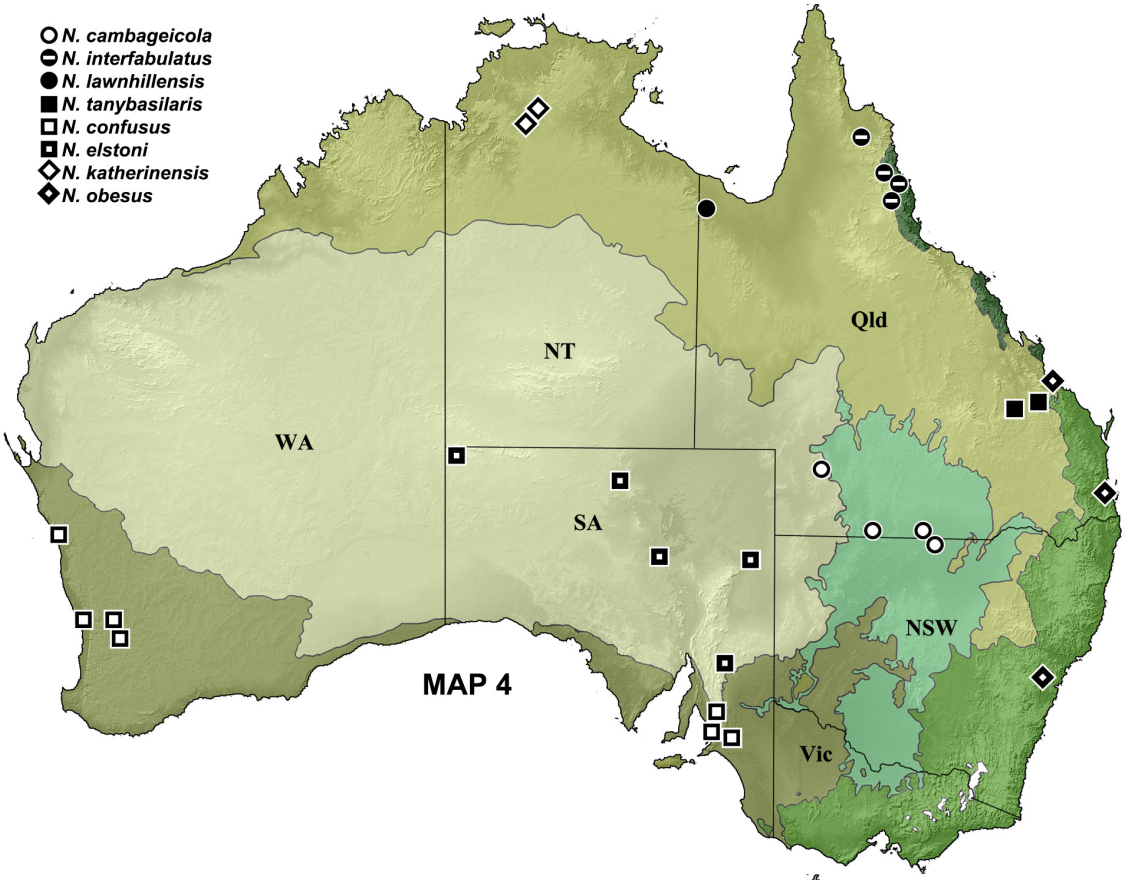
FIGURES 138–149. Habitus: (138) *Ancyropilus brigalowae*, paratype; (139) *Ancyropilus emmotti*, holotype; (140) *Ancyropilus exossuarius*, paratype; (141) *Ancyropilus hornensis*, paratype; (142) *Ancyropilus labris*, holotype; (143) *Ancyropilus monteithi*, paratype; (144) *Ancyropilus noonbahensis*, holotype; (145) *Ancyropilus packsaddlensis*, holotype; (146) *Ancyropilus simplex*, paratype; (147) *Ancyropilus tricolor*, paratype; (148) *Culcipternotus mareebensis*, holotype; (149) *Infectostriatus absentis*, holotype (scale bars: 1.0 mm).

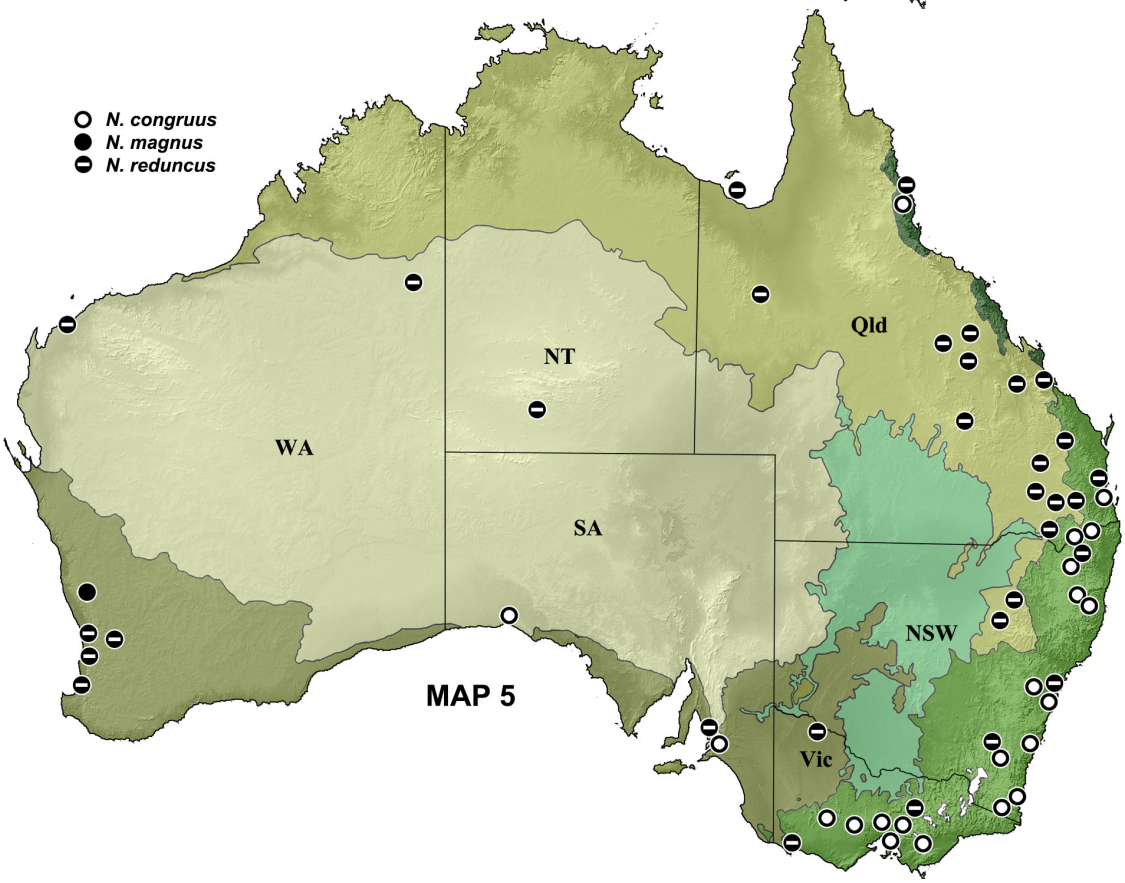


FIGURES 150–161. Habitus: (150) *Infectostriatus differens*, holotype; (151) *Monilonotum bunyense*, paratype; (152) *Monilonotum doddi*; (153) *Monilonotum pascoei;* (154) *Monilonotum sundholmi*, paratype; (155) *Monilonotum rufiventre*; (156–161) *Notopilo*, *beswickensis* species group—(156) *Notopilo beswickensis*, holotype; (157) *Notopilo calicis*, holotype; (158) *Notopilo eremosus*, holotype; (159) *Notopilo tompricensis*, holotype; (160) *Notopilo xanthoimprocerus*, holotype; (161) *Notopilo xanthoprolatus*, holotype (scale bars: 1.0 mm).

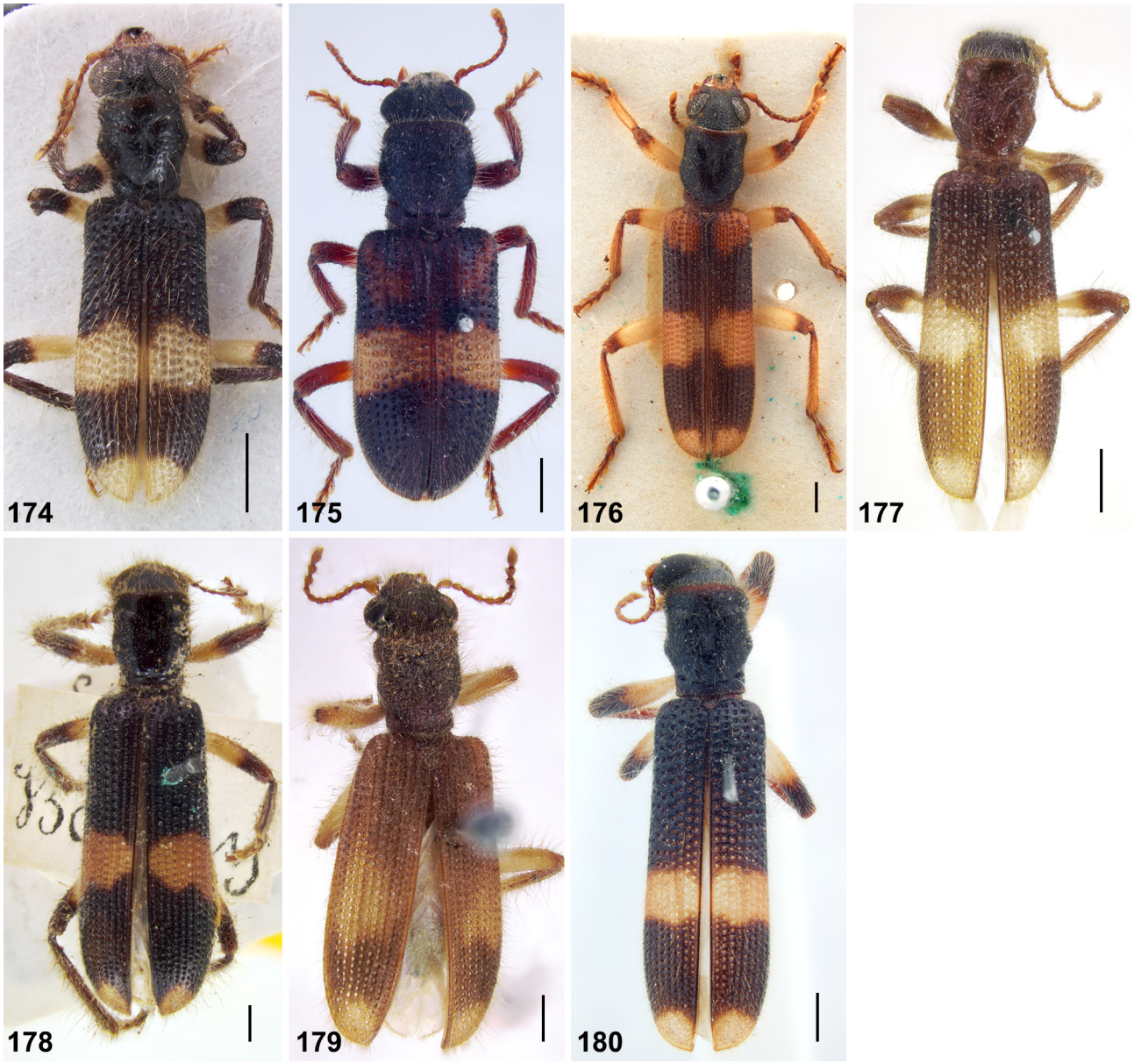


FIGURES 162–173. Habitus: (162–165) *Notopilo*, *cambageicola* species group—(162) *Notopilo cambageicola*, paratype; (163) *Notopilo interfabulatus*, holotype; (164) *Notopilo lawnhillensis*, holotype; (165) *Notopilo tanybasilaris*, paratype; (166) *Notopilo congruus* (*congruus* species group), lectotype (of *Opilo congruus*); (167–168) *Notopilo*, *reduncus* species group—(167) *Notopilo magnus*, holotype; (168) *Notopilo reduncus*, paralectotype (of *Opilo abdominalis* Schenkling); (169–171) *Notopilo*, *variipes* species group—(169) *Notopilo brevistriatus*, paratype; (170) *Notopilo gerstmeieri*, paratype; (171) *Notopilo variipes*; (172–173) *Notopilo*, unplaced to species group—(172) *Notopilo confusus*, specimen from Western Australia; (173) *Notopilo elstoni*, holotype (scale bars: 1.0 mm).





MAPS 4&5. Species distribution. (Map 4) *Notopilo* (*cambageicola* species group and unplaced species); (Map 5) *Notopilo* (*congruus* and *reduncus* species groups) (topographic layer image credit: NASA 2002).



FIGURES 174–180. Habitus: (174–175) *Notopilo*, unplaced to species group (continued)—(174) *Notopilo katherinensis*, holotype; (175) *Notopilo obesus*, paratype; (176) *Platynotum bulli*, holotype; (177) *Platynotum culgoense*, paratype; (178) *Platynotum femorale*, lectotype (of *Opilo femoralis*); (179) *Platynotum foveosetosa*, holotype; (180) *Platynotum gracile*, holotype (scale bars: 1.0 mm).

Platynotum femorale (Westwood) stat. rev., comb. nov.

(Figs 26, 63, 99, 135, 178, 184, 185; Map 2)

Opilo femoralis Westwood, 1849: 55 (as *Notoxus congruus* var. *Opilus femoralis*).

Type material. LECTOTYPE (here designated): **Western Australia**: De Boulay // Nov.Holl. Occid. // Fry Coll. 1905-100 // Opilus femoratus Westw Australia (NHML).

Comment on lectotype designation: Three beetles, one large (12.9 mm) and two small (about 7.5 mm), all labelled 'De Boulay, Nov. Holl Occid., Fry Coll. 1905-100' (Figs 184, 185), were found at the Natural History Museum, London (NHML) within the '*Opilo*' drawer, positioned side by side immediately above the unidentified Australian '*Opilo*' material. Westwood (1849: 55) writes in his description "Female twice as large as male; antennae short, and legs duller in colour"—all these differences are present between the larger and smaller of the three specimens found.

Although none of the three specimens bear the typical red-bordered circular NHML Type label, the larger one carries a folded label on which is written 'Opilus femoratus Westw. Australia' (Fig. 184). The 'Fry Coll. 1905-100' labels on the three abovementioned specimens indicate that they were part of the collection of the English entomologist Alexander Fry whose collection was the 100th accession received by the then British Museum in 1905. The absence of Type labels on these specimens suggests that they were simply not recognised as Types when they were incorporated into the museum's collection in 1905.

As the specimens in question match Westwood's original description and conform to size and other differences detailed within the description, and as there is a simple explanation for the absence of Type labels, we believe these specimens to represent Westwood's original syntype series. The larger specimen is designated the lectotype of *Opilo femoralis* Westwood as it bears the 'Opilus femoratus Westw. Australia' label. The other two specimens are not designated as paralectotypes as they represent a different species altogether (described above as *Notopilo confusus* **sp. nov.**).

Comment on nomenclature: *'Opilo femoralis'* was originally published under the genus *Opilus* Latreille (1806) rather than *Opilo* Latreille (1802) which has priority over the former, invalid spelling. Following Article 11.9.3.2 of The Code (ICZN 1999), which states that "a species group name is deemed to have been published in combination with the correct original spelling of the generic name, even if it was actually published in combination with an emendation or incorrect spelling of the generic name", the genus component of the original species group name spelling of *Opilus femoralis* (see Westwood, 1849: 55) is deemed an incorrect subsequent spelling of the genus-group name *Opilo* Latreille. The combination *Opilo femoralis* Westwood, 1849, is therefore recognised as the correct available name spelling.

Other material examined (11): **Western Australia**: 11km N of Geraldton, WA, 23.xii.72, at u.v. light, N. McFarland (1, ANIC); 11km N of Geraldton, WA, 8.xii.72, at u.v. light, N. McFarland (1 ♂, ANIC); 11km N of Geraldton, WA, 14.i.73, at u.v. light, N. McFarland (1, ANIC); 9km NNE of Geraldton, WA, 16.i.73, at u.v. light, N. McFarland (1, ANIC); Drummond Cove, Geraldton, W. Aust., Ex light trap, 2.xii.72, N. McFarland // Agriculture (Dept) Western Australia 49860 (1, WADA); Drummond Cove, W. Aust., 25.i.1973, ex light., N.McFarland // Agriculture (Dept) Western Australia 49858 (1, WADA); Drummond Cove, West Aust., 30.xii.1972, ex light trap, N.McFarland // Agriculture (Dept) Western Australia 49859 (1, WADA); DC—uv., 7Jan.73 // Agriculture (Dept) Western Australia 49863 (1, WADA); Agriculture (Dept) Western Australia 49869 [no data] (1 ♀, WADA); Agriculture (Dept) Western Australia 49868 [no data] (1, WADA); WA: 1.5 km SW of Middalya HS (23°54′S 114°46′E) 22 August 1990 A.J. Oliver // at light (uv) at night (1, WAM).

Diagnosis. Pronotum rounded to sub-tuberculate laterally, disc not heavily punctate; elytra dark with orange fasciate and apical maculations (humeral maculae absent), fasciae tapering towards, though meeting at, suture, punctation lacking nodules, 8th stria beginning before fascia, most striae reaching apical maculae; femora yellow basally, brown apically, tarsi with three ventral tarsal pads.

Description. *Habitus*: Fig. 178. *Total length*: 9.3–13.1 mm (lectotype 12.9 mm). *Head*: Cranium black, venter, clypeus and supra-antennal elevation with a deep reddish hue, anteclypeus, labrum and palpi orange-brown, antennae partly orange-brown and dark brown; eyes separated by 0.9–1.16 eye widths (lectotype 0.93); vertex, frons and upper part of clypeus densely punctate-rugulose, lower part of clypeus smoother; genae wrinkled, submentum with smooth and wrinkled areas; ratio of exterior to interior edges of terminal palpomeres about 1.8:1 (maxillae) and 2.4:1 (labium); antennae almost reaching base of pronotum; eyes and most of cranium vested with erect pale setae, frons with shorter medially-directed setae. *Prothorax*: Blackish to reddish-brown; pronotum 1.1–1.2 times longer than wide (lectotype 1.25), sides weakly rounded, middle slightly wider or about as wide as anterior part; subapical depression v-shaped, disc weakly flattened (most obvious viewed laterally), with deep central sulcus (sulcus smooth, more open than linear) and a poorly-defined shallow sulcus on each side near middle, large punctation laterally, dorsum mostly smooth; short fine multi-directional setae and long erect setae. *Pterothorax*: Ventrites blackish to reddish-brown, with short posteriorly-directed, and occasional long, setae; elytra blackish-brown with orange markings (each elytron with a large apical macula and a transverse fascia which narrows near the suture—its anterior margin just anterior to elytral mid-length); length to width ratio 2.7–2.95:1 (lectotype 2.69); mostly 10-striate, 8th stria beginning between first and eighth punctation of 7th stria, most striae ending at apical macula (except 1st and 10th striae) (Fig. 26), punctation lacking nodules, punctations posterior of fascia slightly smaller than those anterior to fascia, epipleurae extending into apical maculae, interstriae with very fine short semi-erect setae and less frequent longer thicker erect setae. *Legs*: Femora variably yellow basally

and dark brown apically (commonly less than half brown, rarely greater than half), tibiae and tarsi dark brown, ventral tarsal pads yellowish; profemora only slightly thicker than other femora. *Abdomen*: Ventrites orange. *Male genitalia*: Tegmen (Fig. 63) needle-like, notably broad at bend of tegminal arms, evenly tapering to parameroid lobes, the latter evenly narrowing to a dull point, dorsal sinus slender, about one-quarter tegmen length, ventral sinus two-thirds as long, apodeme about one-quarter tegmen length; median lobe (Fig. 99) with apical thread-like process; pygidium as in Fig. 135.

Biology. *Platynotum femorale* **stat. rev.**, **comb. nov.** has been collected in December and January using light traps.

Distribution (Map 2). Western Australia: Mid West (Drummond Cove near Geraldton plus Middalya Homestead on the Minilya River).

FIGURES 181–185. (181) labels of the syntype specimen designated as the lectotype of *Opilo congruus* Newman (NHML); (182) labels of the syntype (holotype label invalid) specimen designated as the paralectotype of *Opilo abdominalis* Schenkling (IRSNB); (183) labels of the syntype specimen designated as the lectotype of *Opilo variipes* Chevrolat (MNHN); (184) labels of the syntype specimens designated as the lectotype of *Opilo femoralis* Westwood; (185) Westwood's original *Opilo femoralis* syntype series (NHML) (a) *O. femoralis* lectotype, (b) smaller, non-conspecific, specimens representing a new species, *Notopilo confusus* **sp. nov.**.

Remarks. As all ten non-type specimens of *P. femorale* were collected near Geraldton it is possible that the lectotype was not collected from the far south of Western Australia as indicated by the type locality of King George's Sound, i.e., Albany. Additionally, non-syntype specimens of *Notopilo confusus* **sp. nov.** collected by De Boulay in Champion Bay, i.e. Geraldton (ex Oberthur collection, MNHN), suggest the possibility that the published '*femoralis*' type locality, King George's Sound, was erroneous.

***Platynotum foveosetosa* sp. nov.**

ZooBank registration: urn:lsid:zoobank.org:act:E1C4C71E-EEB0-458C-B70A-51E4F8D7721E

(Figs 24, 64, 100, 136, 179; Map 2)

HOLOTYPE (♂): **Western Australia**: WA: Weelhamby Lake, west MO11-2 lake floor. wet pitfalls, 29°11′01″S 116°27′32.2″E (GPS) 6 Oct 2002–9 Jan 2003 CALM Wheatbelt Biodiversity Survey (WAM E88396). **PARATYPE** (1): **Western Australia**: WA: Weelhamby Lake, west MO11-2 lake floor. wet pitfalls, 29°11′01.7″S 116°27′32.2″E (GPS) 9 Jan 2003–18 March 2003 CALM Wheatbelt Biodiversity Survey (1 ♀, WAM E88392).

Diagnosis. Pronotum round laterally, disc punctate; elytra light brown with poorly defined orange to yellowish markings, punctation lacking nodules, 8th stria beginning near base, punctures of similar diameter along elytral length, striate to apex (some striae terminating at apical macula), single seta of anterior puncture rim up to twice puncture diameter in length; legs yellow (except tibiae sometimes brownish and tarsi brown); tarsi with three ventral tarsal pads.

Description. *Habitus*: Fig. 179. *Total length*: 7.7–10.2 mm (holotype, 7.7 mm). *Head*: Cranium dark brown (almost black), clypeus and supra-antennal elevations slightly paler, anteclypeus semi-transparent orange, antennae, labrum and palpi orange to orange-brown; eyes separated by 2–2.13 eye widths (holotype, 2.13); vertex and frons with dense network of irregular-shaped punctation, only anterior margin of clypeus impunctate, epistomal suture reasonably indistinct; genae and submentum wrinkled; exterior margins of terminal palpomeres about 1.5 times (maxillae) and 2.5 times (labium) the length of inside edges; antennae almost reaching base of pronotum; head including eyes well-vested with long pale erect setae, frons also with numerous medially-directed setae. *Prothorax*: Dark brown to reddish-brown, venter light brown; pronotum 1.1–1.2 times longer than wide (holotype, 1.1), sides rounded, pronotal arch very slightly broader than middle; subapical depression v-shaped though not well-marked, a short sulcate central impression at apex of v-shape; lateral sulci apparently absent, disc reasonably heavily punctate, surface glabrous between individual punctures, base bi-tumescent (tumescence punctate), area either side of central impression flat (not tumescent); disc reasonably dense with long erect setae plus shorter multi-directional or anteriorly-directed setae. *Pterothorax*: Ventrites light brown, vested with numerous short and occasional long setae; elytra light brown with paler (orange to yellowish) indistinct markings (each elytron with a poorly-defined transverse fascia near middle and a poorly-defined apical macula which may or may not be joined together, the colouration/patternation of the humeral area is even more vaguely-defined); length to width ratio 2.5–2.6:1 (holotype, 2.5:1); 8th stria beginning near base (after first or second puncture of 7th stria), some striae terminating or merging into others near start of apical macula, punctures lacking internal nodules, punctures of similar diameter along most of elytral length, epipleurae extending almost to apices, extreme apices weakly turned outward; interstriae smooth, at base about as wide as puncture diameter, interstriae with long erect setae and shorter setae with a slight posterior lean, (generally with several shorter setae for every long seta), intrafoveal setae very long, about twice the diameter of a puncture (Fig. 24). *Legs*: Coxae, femora and yellow, tibiae yellow or infused with brown, longitudinal tibial carina brown, tarsi brown, ventral tarsal pads yellowish; all femora of comparable thickness. *Abdomen*: Ventrites yellowish-brown. *Male genitalia*: Tegmen (Fig. 64) needle-like, broad at bend of tegminal arms, evenly tapering to parameroid lobes, the latter narrow acuminate and conspicuously bent laterally, dorsal sinus short, about three-quarters tegmen length, ventral sinus shorter than dorsal sinus, tegminal arms gradually taperd toward apodeme and joined near spatulate base; median lobe (Fig. 100) simple with an apical process; pygidium as in Fig. 136.

Etymology. The specific epithet *foveosetosa* (from Latin 'fovea' meaning hole and, Latin 'seta' meaning bristle), refers to the single rearwards projecting setae of the anterior rim of elytral punctures, which are notably longer than those of any other species treated in this revision.

Biology. Collection in pitfall traps implies ground-dwelling behaviour.

Distribution (Map 2). *Platynotum foveosetosa* **sp. nov.** is known only from Weelhamby Lake, near Koolanooka, Western Australia.

***Platynotum gracile* sp. nov.**
ZooBank registration: urn:lsid:zoobank.org:act:9E4BF236-0C53-4633-ADD0-9FFB86900A4A
(Figs 65, 101, 137, 180; Map 2)

HOLOTYPE ♂: **Queensland**: 6km N Taroom, Qld, 25°36′S 149°46′E, 1 Oct 1991, 200m, G. Daniels, mv lamp (QM, type reg. T258559). **PARATYPE** (1): QLD: 24°49′Sx149°45′E Brigalow Res.Stn. site 2. 13Oct2001 Pyrethrum Monteith. Burwell. 170m brigalow trunks 10222 (1 ♀, QM).

Diagnosis. Pronotum sub-tuberculate laterally, disc smooth, punctation mostly seta-associated; elytra dark with orange fasciate and apical maculations fasciae positioned posterior of elytral mid-length (humeral maculae absent), fasciae meeting at the suture, punctation lacking nodules, 8th stria beginning half way between base and fascia, striae 1–9 complete to apical maculae, stria 10 ending just before apical macula; femora yellow basally, brown apically (< half of profemora, about one-third of other femora brown); tarsi with three ventral tarsal pads.

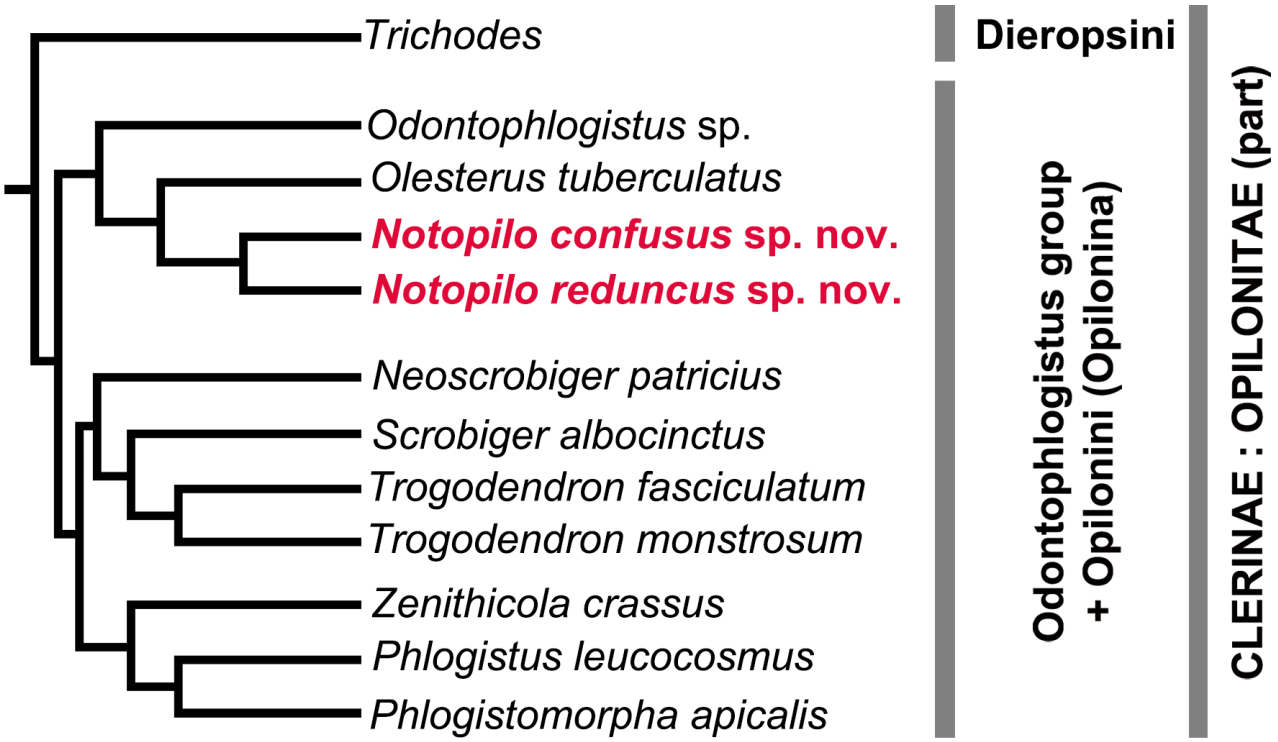


FIGURE 186. Simplified phylogeny estimate, modified from Gunter *et al.* (2013), showing position of *Notopilo* Bartlett & Lambkin **gen. nov.** within the higher classification framework of Bartlett (2021).

Description. *Habitus*: Fig. 180. *Total length*: 10.4 mm. *Head*: Cranium black, clypeus and supra-antennal elevations infused with reddish-black, anteclypeus semi-transparent orange, antennae, labrum and palpi orange to orange-brown; eyes separated by 0.62 eye widths; vertex with small punctures and fine transverse wrinkles basally and heavier punctation towards frons, frons with scattered punctation, heaviest laterally, least dense above clypeus, surface without conspicuous sulcate or elevated areas; genae and submentum wrinkled; exterior margins of terminal palpomeres about 1.8 times (maxillae) and 2.8 times (labium) the length of inside edges; antennae almost reaching base of pronotum; entire frons with fine pale medially-directed setae. *Prothorax*: Black, venter infused with deep reddish hue; pronotum 1.3 times longer than wide, sides sub-tuberculate, middle about as wide as pronotal arch; subapical depression deeply v-shaped, tapered towards a short deep central sulcus, lateral sulci obscure, disc smooth, punctation mostly seta-associated; numerous short fine multi-directional setae and occassional very long erect setae. *Pterothorax*: Black infused with reddish hue, vested with numerous short and occasional long setae; elytra blackish-brown with orange markings (each elytron with an apical macula and a transverse fascia just posterior of the elytral mid-length); length to width ratio 3.17:1; 8th stria beginning half way between base and fascia, striae 1–9 reaching apical macula, tenth stria ending just before apical macula, punctation lacking internal nodules, basal punctation almost twice the diameter of those posterior of fascia, epipleurae extending to apical maculae, interstriae smooth, less than width of basal punctation, about as wide as corresponding punctations posterior of fascia, interstriae with

fine short semi-erect setae (often > 1 per puncture) and longer erect setae (often 1 per every 2 punctures). *Legs*: Coxae brownish, slightly more than basal half of profemora and about basal two-thirds of meso- and metafemora yellow, slightly less than apical half of profemora and about apical one-third of meso- and metafemora dark brown, tibiae and tarsi pale brown, ventral tarsal pads yellowish; profemora very slightly swollen, other femora slender. *Abdomen*: Ventrites orange. *Male genitalia*: Tegmen (Fig. 65) slender, widest at bend of tegminal arms, evenly tapering towards parameroid lobes, the latter more heavily sclerotised and apparently associated with an internal frame-like structure, dorsal sinus short, about one-fifth tegmen length, narrow, ventral sinus about as long or slightly shorter, apodeme about one-quarter tegmen length, broadly spatulate at base; median lobe (Fig. 101) with apical thread-like process; pygidium as in Fig. 137.

Etymology. The specific epithet *gracile* (Latin, meaning slender) refers to the long slender body shape of this species.

Biology. One specimen was collected at light (m.v. lamp), the other by pyrethrum knockdown on brigalow trunks; both in October.

Distribution (Map 2). *Platynotum gracile* **sp. nov.** is known only from two localities, one just north of, the other just south of, Isla Gorge National Park, south-central Queensland.

Acknowledgements

Firstly, we thank the Bush Blitz program partners and the program managers from the Australian Biological Resources Study (ABRS) within the Parks Australia Division, Department of Agriculture, Water and the Environment for funding this descriptive work through a BushBlitz Tactical Taxonomy Grant (TTC 210-04) obtained by CLL, for JSB. CLL also thanks Bush Blitz for funding her Bush Blitz field work in Culgoa Floodplains NP Qld and Culgoa NP NSW (ABRS BB 2009/23887). CLL thanks the QM for supporting our participation in the Bush Blitz program; the numerous QM volunteers who have willingly worked on sorting the massive amount of material collected from the Bush Blitz program: Rhys Smith, Noel Starick, Jackie Chan, and John Purdie; the National Park staff who have encouraged our work, often accompanied us in the field, taken numerous samples under difficult circumstances ranging from intense dust storms to record breaking floods, and provided accommodation, great company and good advice: Andy Coward, Megan Simpson, Cheryn Kelly, and Stephen Peck (Culgoa Floodplains NP Qld); and Rick Ohlsen and Bart Schiebaan (Culgoa NP NSW); the Mackenzie family of Plevna Downs Station and the Emmott family of Noonbah Station for the enthusiasm and interest they show in all forms of natural history, the welcome and hospitality they have given to us and all staff from the Queensland Museum, and the encouragement they provide to community members on development of a knowledge base of biodiversity of arid areas. For providing collection permits to collect and take samples from National Reserves, CLL thanks Queensland Parks and Wildlife Service, DES, QLD and the Entomological Society of Queensland (ESQ) holders of numerous Scientific Permits and Brendon Neilly National Parks and Wildlife Service NSW (Scientific Research Licence S10016). We thank the following curators for facilitating access to, and/or loans from, collections in their care: Max Barclay and Beulah Garner (NHM, London); Antoine Mantilleri (MNHN, Paris); Pol Limbourg (IRSNB, Brussels); Stephan Blank (SDEI, Muncheberg); Manfred Uhlig (ZMHB, Berlin); Roland Gerstmeier (RGCM, also assisted with specimens from ZSM, Munich); Cate Lemann and Adam Slipinski (ANIC, Canberra); Catriona McPhee (NMV, Melbourne), Dave Britton (former Collection Manager at AM, Sydney), Andas Szito (WADA, Perth), Nikolai Tatarnic and Brian Hanich (WAM, Perth), Susan Wright and Karin Koch (QM, Brisbane) and Jan Forrest (former Collection Manager at SAMA, Adelaide). JSB also thanks Roland Gerstmeier for generosity in hosting his two visits to Munich, and for his continued support, collaboration and friendship.

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