Rhyzobius
(Coleoptera: Coccinellidae)
a revision of the world species
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Dedicated to my Teachers
Rhyzobius Stephens, 1829 (Coleoptera: Coccinellidae),
a revision of the world species

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ABSTRACT

The world species of Rhyzobius Stephens are reviewed and illustrated. The following new synonyms are proposed: Rhyzobius aurantii Blackburn, 1892 (= Rhyzobius vulgaris Weise, 1923), Rhyzobius breviconis Crotch, 1874 (= Rhyzobius corticalis Lea, 1902), Rhyzobius evansi Mulsant, 1850 (= Rhyzobius confinis Lea, 1902), Rhyzobius fagus (Broun, 1880) (= Rhyzobius satelles Blackburn, 1892; = Rhyzobius kengensis Lea, 1908; = Rhyzobius erythrogaster Lea, 1929; = Rhyzobius nigrovatus Bialowski, 1973), Rhyzobius nitidus Blackburn, 1889 (= Rhyzobius plebeius Blackburn 1892), Rhyzobius pulchellus (Montrouzier, 1861) (= Rhyzobius submetallica Crotch 1874; = Rhyzobius debilis Blackburn, 1889; = Rhyzobius lind Blackbum, 1889; = Rhyzobius coeruleus Blackburn, 1892), Rhyzobius waterhousei (Mulsant, 1850) (= Rhyzobius speratus Blackburn, 1889). The lectotypes are designated for: Epilachna pulchella Montrouzier, Rhyzobius alphabeticus Lea, Rhyzobius apicalis Blackburn, Rhyzobius approximatus Blackburn, Rhyzobius aurantii Blackburn, Rhyzobius bilineatus Weise, Rhyzobius breviconis Weise, Rhyzobius breviconis Crotch, Rhyzobius caecus Blackburn, Rhyzobius coeruleus Blackburn, Rhyzobius confinis Lea, Rhyzobius corticalis Lea, Rhyzobius debilis Blackburn, Rhyzobius discipennis Blackburn, Rhyzobius discoidalis Weise, Rhyzobius dorzalis Blackburn, Rhyzobius eminens Blackburn, Rhyzobius fasciculatus Blackburn, Rhyzobius fugar Blackburn, Rhyzobius gosfordensis Blackburn, Rhyzobius insipidus Blackburn, Rhyzobius laeticulus Blackburn, Rhyzobius lind Blackbum, Rhyzobius nigrovatus Lea, Rhyzobius nitidus Blackburn, Rhyzobius nubilus Weise, Rhyzobius plebeius Blackburn, Rhyzobius

**Key words**

Entomology, taxonomy, review, Cucujoidea, Coccinellidae, Coccidulini, *Rhizobius*.
INTRODUCTION

The enigmatic and confusing genus *Rhizobius* was established by Stephens in 1829 to accommodate the European species *Nitidula litura* Fabricius. It was placed close to *Scymnus* Kugell in an informal group called “Pubescentes” (Stephens 1829).

Higher classification of Coccinellidae effectively dates from Mulsant (1846, 1850). In his monograph of Coccinellidae Mulsant (1850) established the classification system for all the coccinellid genera of the world and for the first time recognised many subfamilies and tribes, often used in coccinellid classification to date. Mulsant classified *Rhizobius* in a vaguely defined subfamily Scymninae (Scymnids) and group (branche) Rhizobiaires of the division “Trichosomides” that mostly included smallish and pubescent coccinellids.

Subsequently Crotch (1874), Chapuis (1876), Ganglbauer (1899) and Casey (1899) changed status and composition of many subfamilies and tribes over the decades. During that time, *Rhizobius* was classified in the subfamily Rhizobiides (Crotch 1874), tribe Coccidulini (Ganglbauer 1899) or tribe Rhizobiini (Casey 1899). All these taxa were more or less equivalent to what has been traditionally recognised as subfamily Coccidulinae.

Coccidulinae has historically been the most poorly defined taxon of Coccinellidae, and Mulsant (1850), Crotch (1874) or Casey (1899) struggled to delimit the group ending with a combination of a pubescent body, coarsely faceted eyes and relatively long antennae with loosely articulated club.

Sasaši (1968) provided the first comprehensive definition of coccinellid subfamilies since Mulsant (1850) and divided Coccidulinae into 7 tribes (Lithoplolinii, Monocorynini, Coccidulini, Summiini, Exoplectrini, Noviini and Azyini). This division has been, however, questioned independently by Gordon (1994) and Kovář (1996) with very different approaches and results.

Gordon (1994) while revising the genera and species of Coccidulinae of South America tried to divide this large group into smaller, more manageable units. He clearly adopted a very pragmatic approach and in preliminary analyses and discussions limited himself to the New World taxa only. As a result of his composite cladogram and further discussion, the Coccidulinae were split into 3 subfamilies: Coccidulinae (with tribes Coccidulini and Porini), Azyinae and Exoplectrinae (with tribes Exoplectrini and Oryssomini).

The results of the Gordon’s (1994) investigations have not been adopted in a subsequent classifications, eg. Vandenberg (2002) or Fürsch (2007b), probably due to very different results published two years latter by Kovář (1996). Kovář has not presented a detailed analysis or cladogram of the taxa but he explicitly discussed many taxa and characters in the “evolutionary scenario” mode. Such an approach makes it very difficult to evaluate his results and subsequent classification. However, he based his discussion on much broader, worldwide array of taxa, and the characters he pointed out to delimit some of his groups may be valid synapomorphies. Therefore
his division of Coccidulinae in 6 tribes: Tetrabracchini (=Lithophiliini), Monocorynini, Coccidulini, Cranorphorini, Exoplectrini and Azyini, appeared to be more convincing and better substantiated comparing to the geographically limited research by Gordon (1994).

Pope (1989), Vandenbreg (2002) and Ślipiński (2007) indicated that taxa classified in Coccidulinae-Scyminae appear to be the major, problematic area in coccinellid classification. They argued that coarsely faceted eyes and relatively longer antennae found in Coccidulinae as opposed to short antennae and finely faceted eyes of traditional Scymninae did not hold for many southern taxa. Consequently Ślipiński (2007) proposed to place most of the “hairy coccinellids” (taxa classified previously in Coccidulinae and Scymninae) in the expanded tribe Coccidulini of the subfamily Coccinellinae. Similar, inconclusive separation of traditional Scymninae and Coccidulinae was found in molecular study of Giorgi et al., (2009) based on 18S and 28S markers used to investigate phylogeny of Coccinellidae.

Only few species of Coccidulini, classified in Rhyzobius and Coccidula Kugelann are known from the Northern Hemisphere. Remaining Coccidulini are distributed in the Southern Hemisphere with the bulk of the taxa known from Africa, Madagascar and Indo-Australian Region.

Most of the published data on the Rhyzobius consist of a single or multiple species descriptions, published mostly in the late XIX and the beginning of the XX centuries, when the most of known Australian species (the main component of the genus) were described by Blackburn (1889, 1892, 1895, 1896) and Lea (1902, 1908, 1914, 1929). The individual descriptions were catalogued in the Korschelshky’s (1931) world catalogue of Coccinellidae who listed 23 genera of Coccidulini (together with Rhyzobini) and 77 species of Rhyzobius.

During the past 50 years, Rhyzobius has received little attention. Fürsch (1992, 2007a) revised the African species, Ślipiński (2007) working on Australian Coccidulinae, catalogued the available names and formally moved several Rhyzobius species to Rodatus Mulsant and Wioletta Ślipiński, while Kovář (2007) catalogued the names of Palearctic species.

Ślipiński (2007) pointed out that Australian Rhyzobius was a composite and difficult to define group with available diagnostic characters probably plesiomorphic. The present study offers no solution to this issue, as much broader approach is needed to resolve complex phylogenetic relationships among the Coccidulini.

The aim of this project has been mostly taxonomic, set to clarify the taxonomic and nomenclatorial problems of hitherto described species of Rhyzobius and to describe additional 42 new species, bringing the total number of known Rhyzobius species up to 104.

This revision will form taxonomic base for a further, phylogenetic research based on morphology and molecular markers that will have to include large sample of Rhyzobius and other genera of Coccidulini to establish the generic boundaries of Rhyzobius, and to resolve the relationships between the genera of the tribe.
**MATERIAL AND METHODS**

This study is based on over 4000 adult specimens received from the following institutions:

- ANIC – Australian National Insect Collection, Division of Entomology, CSIRO, Canberra, Australia;
- CMN – Canadian Museum of Nature, Ottawa, Canada;
- CNC – Canadian National Insect Collection, Ottawa, Canada;
- HNHM – Hungarian Natural History Museum, Budapest, Hungary;
- BPBM – Bernice P. Bishop, Museum, Honolulu, USA;
- ISNB – Instytut Royal des Science Naturelles de Belgique, Brussels, Belgium;
- MIZ – Muzeum i Instytut Zoologii PAN, Warszawa, Poland;
- MNHN – Muséum National d’Histoire Naturelle, Paris, France;
- NMB – Museum für Naturkunde, Berlin, Germany;
- NZAC – New Zealand Arthropod Collection, Auckland, New Zealand;
- NRMS – Naturhistoriska Riksmuseet, Stockholm, Sweden;
- OUM – Oxford University Museum of Natural History, Oxford, England;
- QMB – Queensland Museum, Brisbane, Australia;
- QPIM – Queensland Department of Primary Industries, Mareeba, Australia;
- SAM – South Australian Museum, Adelaide, Australia;
- SMNS – Staatliches Museum für Naturkunde, Stuttgart, Germany;
- TMNH – Transvaal Museum of Natural History, Pretoria, South Africa;
- ZSM – Zoologische Staatsammlung München, Germany.

For detailed examination of morphological characters one male and one female of each species represented by several specimens were completely cleared in 10% cold potassium hydroxide, disarticulated and placed in glycerine slides for further study. In case species was represented by few specimens only, at least male and female genitalia were dissected and studied on slides. The structural illustrations were made from slide preparations using a camera lucida attached to an Olympus dissecting microscope SZH 10 or to a Zeiss Aplyal microscope (smaller structures). Measurements of the following were made using a filar micrometer: body length (TL), from apical margin of clypeus to apex of elytra; width (EW), across both elytra (maximum); pronotal length (PL), from the middle of anterior margin to margin of basal foramen; pronotal width (PW), across widest part; elytral length (EL), along suture including scutellum.

In “material examined” of each species, the label data are given “in verbatim”.

Habitus photographs were produced using a digital camera and enhanced using Automontage software, and the SEM photographs were made using HITACHI S-3400N microscope in the laboratory of the MIZ.

Genus *Rhyzobius* Stephens

*Rhyzobius* Agassiz, 1846: 325, 327 (unjustified emendation). 

Diagnostic combination

Body broadly oval to elongate oval and almost parallel-sided; strongly convex to distinctly flattened; usually winged but sometimes brachypterous or wingless. Dorsum pubescent; often with double pubescence consisting of shorter appressed setae and longer stiff bristles. Dorsal surface unicoloured, bicoloured, sometimes with elytra bearing maculate pattern, rarely with metallic sheen.

Head dorsally exposed or withdrawn into prothorax, transverse; eye dorsally usually less than 0.5 times, and never more than 0.75 times as long as head capsule, almost always slightly emarginate, coarsely faceted; interocular distance about half as wide as head across eyes; inner orbits arcuate or convergent posteriorly. Antenna usually 0.8–0.9 times as long as head capsule width, 11-segmented (except for *R. brevicornis* Weise); scape distinctly longer than pedicel, regularly convex along external surface; pedicel usually distinctly narrower than scape, longer than wide; antennomere III elongate and usually distinctly longer than IV; antennomeres VI and VII usually subquadrate; antennal club 3-segmented (except for *R. brevicornis*), asymmetrical on inner surface; penultimate antennomere rarely longer than terminal segment; ventral antennal grooves usually present; antorior clypeal margin often emarginate medially; mandible apically bifid with large molar tooth and distinct prostheca; maxillary cardo transverse, usually reaching outside of mouth cavity; terminal maxillary palpomere at least weakly elongate; mentum transverse, its ventral surface almost always with horseshoe like impression; prementum rarely transverse; ligula usually distinct; labial palps ventral on prementum, apical palpomere almost always as long and about as broad as penultimate one; submentum usually distinct, converging anteriorly; corpormentorum rarely present.

Pronotum transverse; antelateral border sometimes thickened and/or groove; anterior and/or hind margin sometimes with distinct borders; anterior angles usually weakly produced anteriorly; lateral margins distinctly bordered or only slightly upturned; prothoracic hypomeron most often with concavity and/or groove; posterior process usually with complete carinae; prosternal process longitudinal diameters posterior than anterior process with bordering line anteriorly.

Anterior edge of mesonotum semi-lg., mesoventral process triangular and transverse, almost from above, distinctly, only at apex, its inner surface costal lines complete; metanotum usually wide.

Legs with trochanters, femora, tibiae cylindrical; mid and hind legs more robust; pro- and tibial spines (only as double); hind tarsal and tibial spines irregularly basitarsal; tarsal claw usually triangular basal tooth.

Abdomen with ventrally, recurved and coarsely spined dimorphic features, ventrally shaped apical margin.

Parameres usually short, their apices convex, ventral margin lateral sides, usually shorter than inner arm.

Ovipositor with cup present; proctiger (T. rectal gland most often smallish. In gland adjacent to spermatheca.

Distribution

Species of this genus *Scymnus lophantha* (Blaisdell) occur worldwide for South America. The Palaearctic Region is represented by four species, and four endemic species; and five species endemic to New Caledonia have wide distribution.
prostemal process usually narrower than longest coxal diameter, its surface usually with complete carinate; prosternum in front of coxa usually 0.5–1.0 times as long as coxal longitudinal diameter; anterior margin almost always straight and much more posterior than anterior pronotal margin; procoxal cavity usually transverse, often with bordered line anteriorly.

Anterior edge of mesoventrite with complete raised border (except for R. bielawskii sp. nov.); mesoventral process usually broader than coxal diameter; scutellum usually triangular and transverse. Elytra with lateral margins usually very narrow but visible from above, distinctly, confusedly punctate; elytral epipleuron usually incomplete only at apex, its inner margin most often with distinct bordering line; metaventral postcoxal lines complete and most often recurved; metaventricle with discrimen; metepisternum usually with external process interlocking with fovea on elytron.

Legs with trochanters usually roundly or angulate produced on outer margin; tibiae cylindrical; mid and hind tibia usually with single or double spurs; tarsi pseudotriterous; pro- and mid tarsal claws in male usually strongly appendicate (appearing as double); hind tarsal claws in male usually with distinct quadrate or triangular basal tooth; tarsal claws in female similar in all legs, usually with quadrate or triangular basal tooth.

Abdomen with ventrite I longer than II; abdominal postcoxal lines separate medially; recurved and complete; ventrite V in male usually with at least weak sexual dimorphic features; ventrite VI (=tergite VIII) and tergite VIII often with differently shaped apical margin between both sexes.

Parameres usually articulated with phallobase, well developed, simple and separated, their apices covered with simple setae; penis guide sometimes with asymmetrical lateral sides; penis base usually with outer arm distinctly less developed than inner arm.

Ovipositor with coxites elongate, somewhat triangular in shape; styli usually present; proctiger (T10) usually distinct; infundibulum sometimes present; spermatheca most often without clear nodulus and ramus and spermathecal accessory gland adjacent to sperm duct.

Distribution

Species of this genus naturally occur in the Eastern Hemisphere but Rhizobius lophantha (Blaidsell) and R. forestieri (Mulsant) have been introduced to many countries worldwide for biocontrol purposes and are currently established in North and South America. The distribution pattern of Rhizobius species is very interesting. The Palaearctic Region is inhabited only by 3 species, endemic to Europe and northern Africa and no single species is known so far from the Asian part of Palaearctic. From Ethiopian Region 15 endemic species are known. The Oriental Region is inhabited by 4 endemic species, and the remaining 82 species are distributed in the Australian Region with 65 species endemic to Australia, 11 species endemic to New Guinea, 3 species endemic to New Caledonia and one species endemic to New Zealand. Four species have wide distribution due to various human activities: R. lophantha is known from
Australia, Africa, Europe, North America and South America; R. fugus (Broun) (=R. satelles Blackburn) is known from Australia, New Caledonia, New Zealand and Africa; R. pulchellus (Montrouzier) (=submetallica Crotch) occurs in Australia and New Caledonia, and R. forestieri is known from Australia, North America and Europe.

Biology

Little is known about the life histories of most species. In Europe and Australia they are commonly occur in forests and orchards where they are found under bark, on branches, flowers, or in litter, among roots of grass and herbs. Existing records indicate that Rhizobius species are primarily coccid feeders. Exceptions are two European species, R. litura (Fabricius) and R. chrysomeloides (Herbst) which are known to feed on aphids (Bielawski 1955). Pope (1981) presented details of historical roles in biological control of two confused Australian species, R. ventralis (Erichson) and R. forestieri (Mulsant). Gordon (1985) summarized food preferences of R. forestieri and R. lophanthea, both introduced to North America and history of introduction and establishment of R. lophanthea in South America (Gordon 1994). Drea and Gordon (1990) mentioned R. pulchellus, imported from New Caledonia and introduced to New Hebrides (Vanuatu) against coconut scale, and R. lophanthea introduced to Hawaii and South Africa as a predator of citrus scale.

Key to Palaeartec (including introduced) species of Rhizobius

1. Elytra uniformly dark chestnut brown, blackish or deeply black ............... 2

2. Elytra light brown to chestnut brown with black or blackish maculae .... 3

2. Dorsum deeply black ............................................ forestieri (Mulsant)

3. Head brown, pronotum brown often with somewhat transverse, not very well defined blackish spot antero-medially, elytra dark chestnut brown or blackish .................................................. lophanthea (Blaisdell)

3. Body more oval (TL/TW = 1.46–1.55), more convex; dark chestnut brown; each elytron with large, blackish macula; scutellum triangular ........................................ 4

4. Body more elongate (TL/TW = 1.57–1.70), less convex; light brown to yellowish brown with complicated pattern of black maculae of different number, size and degree of fusion; scutellum pentagonal ................................................................. bipartitus (Fuente)

5. Body smaller (2.45–3.10 mm); lateral margins of pronotum nearly straight and weakly convergent anteriorly; abdominal postcoxal lines shallower (Fig. 736); penis guide with additional process (Fig. 1636) .................. litura (Fabricius)

6. Body larger (2.55–3.15 mm); lateral margins of pronotum arcuate; abdominal postcoxal lines deeper (Fig. 171); penis guide without additional process (Fig. 1443) ........................ chrysomeloides (Herbst)
Descriptions of Palaeartic species of *Rhizobius*

*Rhizobius bipartitus* Fuente, 1918: 44. – Plaza 1978: 289, redescription.

**Diagnosis.** This is a very distinctive species of *Rhizobius* characterised by brown or chestnut brown body and each elytron bearing blackish, large macula, the scutellum triangular, and antennae longer as compared to head width.

**Description.** Length 2.60–2.90 mm; TL/EW = 1.46–1.55; PL/PW = 0.52–0.54; EL/EW = 1.08–1.10.

**Body** (Figs 159, 160, 163) elongate oval, moderately convex, wingless; predominantly dark brown to chestnut brown; each elytron with large, infuscate area extending from anterior third to near apex, not reaching lateral or apical margins but touching suture. Dorsum covered with double pubescence consisting of appressed setae and sparse dark stiff bristles; dorsal pubescence not forming pattern on elytra; elytral bristles present along margins only.

**Head** (Figs 165, 166) withdrawn into prothorax but with eyes partially visible externally; ventral antennal grooves absent or indistinct. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; with ocular canthus extending slightly into eye; interocular distance 0.58–0.59 times as wide as head across eyes; interfacial setae absent or indistinct. Antenna (Fig. 171) 1.3 times as long as head capsule width, 11-segmented; scape about 1.9 times as long as pedicel; pedicel distinctly narrower than scape, 2 times as long as wide; antennomere III 4 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII at least 1.5 times longer than broad. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere distinctly elongate, truncate at apex. Anterior clypeal margin straight. Labrum truncate at apex. Maxillary cardo strongly prominent externally; terminal palpomere about 1.8 times as long as wide, weakly expanded apically. Mentum less than 2 times broader than long; anterior margin truncate; ventral surface with horseshoe like impression; prementum transverse; ligula parallel-sided; labial palps separated by a distance at least 1.5 times broader than width of palpiger; apical palpomere about as long as and about as broad as penultimate one; submentum distinct.

**Pronotum** (Figs 162, 164, 166) with anterior angles rounded, weakly produced anteriorly, not swollen with regular border; anterior margin with fine bordering carina or line; lateral margin with entire border; hind margin with entire border line. Prothoracic hypomeron (Fig. 165) smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process (Figs 165, 168) about 0.65 times as broad as longest...
coxal diameter, its surface with carinae joined before apex and continuing anteriorly as a single, weak carina; prosternum in front of coxa about 0.75 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with complete bordering line broadly separated from the cavity externally.

Anterior edge of mesoventrite (Fig. 168) with complete raised border; mesoventral process at median length of coxa about 0.85 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction weakly arcuate anteriorly. Scutellum (Fig. 162) triangular, transverse with surface punctate and setose. Elytra with lateral margins hardly visible from above; surface with single size punctures; elytral epipleuron obsolete in apical half, 1.55 times as wide as corresponding metaepisternum, inner margin with border area narrow throughout and border line fading before base of elytron. Metaventrite with discrimen partially incomplete; metaventral postcoxal lines joined medially forming straight line, laterally complete and straight; metaepisternum without interlocking device; metaepimeron visible ventrally.

Legs with trochanters simple; mid and hind tibia with two spurs (Fig. 167); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with small quadrate basal tooth.

Abdomen with 6 ventrites in both sexes; ventrite I about 1.4 times as long as ventrite II; postcoxal lines separate medially, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female about as long as IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin widely truncate; female ventrite VI (Fig. 1392) with hind margin arcuate, tergite VIII rounded; hind margin of male ventrite VI emarginate, tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half broad and plate-like at apex, and base of epicrurum widened, partially submembranous and provided with lateral, elongate sclerites.

Male genitalia (Figs 1389, 1390, 1391). Paramere articulated with phallobase, well developed, simple and separated, slightly shorter than penis guide, with apices covered with simple setae; penis guide without additional processes and with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm distinctly less developed than inner arm.

Female genitalia (Fig. 1393). Proctiger (T10) distinct, at least partly sclerotized; styli terminal; infundibulum in form of lightly sclerotized piece of bursa; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

Material examined. Types not studied.


Distribution. Spain, France (Eastern Pyrenees).
Rhizobius chrysomeloides (Herbst)
(Figs 169–178, 1443–1448)

Strongylius chrysomeloides Herbst, 1792: 180.
Rhizobius lineatellus Mulsant, 1846: 263.
Rhizobius subdepressus Seidlitz, 1872: 193.

**Diagnosis.** Rhizobius chrysomeloides differs from *R. litura* in having lateral margins of the pronotum rather arcuate, the abdominal postcoxal lines reaching distinctly more than half length of ventrite I and the penis guide simple.

**Description.** Length 2.55–3.15 mm; TL/EW = 1.65–1.70; PL/PW = 0.54–0.55; EL/EW = 1.23–1.30.

**Body** (Figs 169, 170, 178) elongate oval, distinctly flattened, winged or brachypterous (wings with strong tendency to reduction). Pronotum brown; elytra reddish with black fasciate pattern; antenna and legs uniformly brown; ventral surfaces dark brown with meso-; metaventrites and basal abdominal ventrites at least infuscated. Dorsum with double pubescence consisting of appressed setae and sparse dark stiff bristles; dorsal pubescence not forming pattern on elytra; elytral bristles distinct along margins only.

**Head** (Figs 174, 176) withdrawn into prothorax but with eyes partially visible externally, about 0.77 times as long as wide; ventral antennal grooves absent or indistinct; corpotentorium present. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; with ocular canthus extending slightly into eye; interocular distance 0.57–0.60 times as wide as head across eyes; interfacial setae absent or indistinct. Antenna (Fig. 172) about 1.2 times as long as head capsule width, 11-segmented; scape 1.70–1.75 times as long as pedicel; pedicel distinctly narrower than scape, 1.7–1.8 times as long as wide; antennomere III about 3.8 times longer than wide, and about 1.5–2.5 times as long as IV; antennomeres VI and VII at least 1.5 times longer than broad. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere distinctly elongate, apically rounded. Anterior clypeal margin straight. Labrum truncate at apex. Maxillary cardo (Fig. 176) transverse and strongly prominent externally; terminal palpomere 1.65–1.70 times as long as wide, subparallel. Mentum weakly transverse, less than 2 times broader than long; anterior margin weakly arcuate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpgier; apical palpmere about as long and as broad as penultimate; submentum distinct.

**Pronotum** (Figs 173, 174) with anterior angles rounded, weakly produced anteriorly, not swollen with regular border; anterior margin with fine bordering carina or line; lateral margin with entire border; hind margin with entire border line. Prothoracic hypomeron (Fig. 175) smooth, without groove or concavity; notosternal suture
distinct, simple; prosternal process about 0.65 times as broad as longest coxal diameter, its surface with carinae joined before apex and continuing anteriorly as a single carina; sternum in front of coxa about 0.8 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line, much more posterior than anterior pronotal margin; procoxa cavity distinctly transverse, with complete bordering line broadly separated from the cavity externally.

Anterior edge of mesoventrite (Fig. 175) with complete raised border; mesoscuterite process at median length of coxa about 0.7 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction forming a straight line, without internal knob. Scutellum pentagonal, transverse with surface punctate and setose. Elytra with lateral margins very narrow but entirely visible from above; surface with double size punctures, elytral epipleuron obsolete in apical half (Fig. 170), 1.45–1.50 times as wide as corresponding metaepisternum, inner margin with border area narrow throughout and border line fading before base of elytron. Metaventrite with partially incomplete discrinen; metaventral postcoxal lines joined medially forming straight line, complete, straight or somewhat descending laterally; metaepisternum without interlocking device; metaepimeron visible ventrally; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters simple (Figs 171, 175); mid and hind tibia with two spurs (Fig. 177); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with subquadrate basal tooth. Hind tarsal claws in female with subquadrate basal tooth.

Abdomen (Fig. 171) with 6 ventrites in both sexes; ventrite I 1.3 times as long as ventrite II; abdominal postcoxal lines separate medially; deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female about as long as IV, with hind margin arcuate and crenulate; ventrite V in male smooth and simply setose, hind margin widely truncate; female ventrite VI (Fig. 1447) with hind margin arcuate, tergite VIII rounded; hind margin of male ventrite VI weakly emarginate (Fig. 1446), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half complex, somewhat widening towards and at apex, and base of epiciculum widened.

Male genitalia (Figs 1443–1445). Parameres articulated with phallobase, well developed, simple and separated, slightly shorter than penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegminal strut simple; penis base with outer arm obsolete.

Female genitalia (Fig. 1448). Proctiger (T10) distinct, at least partly sclerotized plate; styli very small, terminal; infundibulum in form of lightly sclerotized piece of bursa; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

Material examined. Types not studied.

Other material. Germany, Berlin, 6.XII.1959, leg. R. Bielawski (60: MIZ); Poland, Buraków, pow. Nowy Dwór, 27.XI.1953, leg. R. Bielawski (19: MIZ); Puszcza Kampinoska,

**Distribution.** Europe, North Africa; for detailed distribution of this species see Kovász (2007).

*Rhyzobius litura* (Fabricius)
(Figs 727–739, 1636–1641)

*Niédula litura* Fabricius, 1787: 52.
*Rhyzobius litura*: Mulsant, 1846: 262.
*Anthribus lividus* Olivier, 1791: 161.
*Niédula testaceus* Fabricius, 1794: 446.
*Coccinella aurora* Creutzer, 1796: 5
*Niédula fuscians* Fabricius, 1798: 74.
*Dermestes coadunatus* Marsham, 1802: 76.
*Dermestes hypomeianus* Marsham, 1802: 77.
*Dermestes pallidus* Marsham, 1802: 79.
*Rhyzobius discimacula* Mulsant, 1846: 266.
*Rhyzobius pallidulus* Mulsant, 1850: 1006.
*Rhyzobius nigriventris* Thomson, 1866: 331.
*Rhyzobius litura* var. *maura* O’Mahony, 1927: 208.

**Diagnosis.** *Rhyzobius litura* is most similar to *R. chrysomelooides* but can be separated from it by lateral margins of pronotum almost straight or only slightly convergent anteriorly, the abdominal postcoxal lines posteriorly reaching about half length of ventrite I and the penis guide with additional small process on outer edge.

**Description.** Length 2.45–3.10 mm; TL/EW = 1.57–1.65; PL/PW = 0.52–0.54; EL/EW = 1.12–1.22.

**Body** (Figs 727, 728, 733) elongate oval, moderately convex, wings usually strongly reduced, rarely well developed. Pronotum brown; elytra reddish or yellowish with dark brown or black fasciae pattern; antenna and legs uniformly brown; ventral surfaces dark brown with meso-, metaventrities and basal abdominal ventrites at least infuscated. Dorsum with double pubescence consisting of appressed setae and sparse dark stiff bristles; dorsal pubescence not forming pattern on elytra; elytral bristles distinct along margins only.

**Head** (Figs 729, 732) withdrawn into prothorax but with eyes partially visible externally: about 0.8 times as long as wide; ventral antennal grooves absent or indistinct; corpora pedunculata present. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; with ocellar canthus extending slightly into eye; interocular distance 0.57–0.58 times as wide as head across eyes; interfacetal setae absent or indistinct. Antenna (Fig. 730) 1.2 times as long as head capsule width, 11-segmented; scape 2 times as long as pedicel; pedicel distinctly

**Poland.**
narrower than scape, 1.8 times as long as wide; antennomere III 4 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII at least 1.5 times longer than broad. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere distinctly elongate, truncate at apex. Anterior clypeal margin straight. Labrum truncate at apex. Maxillary cardo (Fig. 729) transverse and strongly prominent externally; terminal palpmere about 1.55 times as long as wide, weakly expanded apically. Mentum weakly transverse, less than 2 times broader than long; anterior margin weakly arcuate; ventral surface with horseshoe-like impression; prementum as long as broad; ligula parallel-sided; labial palps separated by distance slightly more than width of palpgere; apical palpmere about as long and as broad as penultimate one; submentum distinct.

Pronotum (Figs 732, 735) with anterior angles somewhat acute, scarcely produced anteriorly, not swollen with regular border; anterior margin without border; lateral and hind margins with entire border line. Prothoracic hypomeron smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process (Fig. 737) about 0.65 times as broad as longest coxal diameter, its surface with carinae joined before apex and continuing anteriorly as a single, short carina; prosternum in front of coxa 0.53–0.55 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with complete bordering line broadly separated from the cavity externally.

Anterior edge of mesoventrite (Fig. 737) with complete raised border; mesoventral process at median length of coxa about 0.65 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction forming a straight line, without internal knob. Scutellum (Fig. 735) pentagonal, transverse with surface punctate and setose. Elytra with lateral margins very narrow but entirely visible from above; surface with double size punctures (Fig. 738), elytral epipleuron obsolete in apical half, 2.3 times as wide as corresponding metaepisternum, inner margin with border area narrow throughout and border line fading before base of elytron. Metaventrite (Fig. 737) with partially incomplete discernmen; metaventral postcoxal lines joined medially forming straight line, complete and straight laterally; metaepisternum without interlocking device; metaepimeron indistinct; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters simple (Figs 728, 737); mid and hind tibia with two spurs (Figs 731, 734); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with subquadrangular basal tooth. Hind tarsal claws in female with subquadrangular tooth. Abdomen (Figs 736, 739) with 6 ventrites in both sexes; ventrite I 1.5–1.6 times as long as ventrite II; abdominal postcoxal lines separate medially; posteriorly extending to about half length of ventrite I; ventrite V in female about as long as IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin widely truncate; female ventrite VI (Fig. 1641) with hind margin arcu-
ate, tergite VIII rounded; hind margin of male ventricle VI emarginate (Fig. 1639), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX somewhat widening towards and at apex, and base of spiculum widened with a pair of very small sclerites.

**Male genitalia** (Figs 1636–1638). Parameres articulated with phallobase, well developed, simple and separated, slightly longer than penis guide, with apices covered with simple setae; penis guide with additional small process on outer side and with lateral sides symmetrical throughout; teginal struts simple; penis base with outer arm absent.

**Female genitalia** (Fig. 1640). Proctiger (T10) distinct, at least partly sclerotized plate; styli terminal; infundibulum in form of lightly sclerotized piece of bursa; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

**Material examined.** Types not studied.

Other material. **Belgium**, Kierbergen, leg. E. Derenne (2: MIZ); **Italy**, Genova, F. Capra (4: MIZ); Sicilien (2: MIZ); **The Netherlands**, Scheveningen, 14–17 IX. 1949, leg. M. Wegrichtzi (7: MIZ); **Poland**, Wilanów, k. Warszawy, 5–III. 1954, leg. R. Bielawski (1: MIZ); Zaborów, leg. Puszków, 2 IV. 1954, leg. R. Bielawski (1: MIZ); Łęczyca (5: MIZ); **Portugal**, Madeira, Porto Santo, 6–12 VII. 1957, Lindberg (2: MIZ); Monte Terreña da Luta, 9 IV. 1959, Lindberg (2: MIZ); Spain, La Puebla, 13 VI. 1913, Sz. Tenenbaum (8: MIZ); **Morocco**, Reitter (2: MIZ); **Tunisia**, Tunis, VI. 1929, Eichler (2: MIZ).

**Distribution.** Europe, North Africa; for detailed distribution of this species see Kovář (2007).

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**Key to Ethiopian (including introduced) species of Rhysobius**

1. Pronotum and elytra uniformly, deeply black ...(fagus) (Broun)
   - If pronotum and elytra black then elytra with pale maculae 
   2
   - Mid and hind tibia with distinct double spurs (Figs 45, 46, 300, 302) 
   3
   - Mid and hind tibia without distinct spurs (Figs 122, 130) 
   6

2. Ventral antennal grooves long, reaching distinctly beyond posterior margin of eyes (Figs 44, 301); antennomeres VI and VII at least 1.5 times longer than wide (Figs 43, 308); body elongate oval 

3. Ventral antennal grooves short, extending at most to posterior margin of eyes (Figs 245, 1130); antennomeres VI and VII quadrate or at most weakly elongate (Fig. 1134); body elongate almost parallel sided or broadly oval 

4. Elytra brown with black maculate pattern; scutellum pentagonal; inner margin of epipleuron with border area widening towards elytral base 

5. Elytra black with red brown, round oval spots; scutellum triangular; inner margin of epipleuron with border area narrow throughout its length 

6. Micaceous, pubescent, scutellum triangular 

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... \( \textbf{decoratus} \) (Weise)

... \( \textbf{decussatolobatus} \) (Fürsch)
5. Body broadly oval (Fig. 243); prosternal carinae joined just before anterior prosternal margin (Fig. 249); epipleura incomplete at apex (Fig. 252); trochanters with outer margin angulately produced (Fig. 249); ........................................ burmeisteri (Mulsant)

- Body elongate, almost parallel sided (Fig. 1126); prosternal carinae joined before anterior prosternal margin continuing anteriorly as a single carina (Fig. 1129); epipleuron obsolete in apical half (Fig. 1136); trochanters with outer margin simple (Fig. 1129); ........................................ stillatus (Fürsch)

6. Each elytron black with c-shaped, orange or yellow macula; antennomere III slightly longer than IV (Fig. 125); maxillary cardo not reaching outside of mouth cavity (Fig. 125); ........................................ c-pallidum (Weise)

- Elytra if black than without or with round oval maculae; antennomere III at least 1.5 times longer than IV (Fig. 118); maxillary cardo with outer angle reaching at least slightly outside of mouth cavity (Figs 624, 668) ..................

7. Abdominal postcoxal lines deep, posteriorly reaching distinctly more than half length of ventrite I (Fig. 754); prothoracic hypomeron with distinct, somewhat crescent shaped groove perpendicular to notosternal suture (Fig. 746); pronotum with distinct groove near anterior angles (Fig. 751) [pronotum brown often with somewhat transverse, not very well defined blackish spot anteromedially, elytra dark chestnut brown or blackish] ... lophanthei (Bleisell)

- Abdominal postcoxal lines reaching at most half length of ventrite I (Fig. 121); prothoracic hypomeron smooth; pronotum without groove near anterior angles ........................................

8. Elytra deeply black without any contrasting pattern .............. bicolor (Fürsch)

- Elytra more or less distinctly ornamented, if uniform then yellowish brown or light brown ...........

9. Inner margin of elytral epipleuron with distinct border line or carina (Figs 621, 667); ........................................

- Inner margin of elytral epipleuron smooth, without any border line (Figs 678, 1144) ..................

10. Elytra brown with only apical third blackish; with pale spot within this darker area on each elytron (Fig. 1961); tergites of male and female abdominal segment VIII truncate ........ apicesignatus (Fürsch)

- Elytra blackish; each elytron with two pale spots; tergites of male and female abdominal segment VIII rounded ........................................

11. Ventral antennal grooves reaching about posterior margin of eye (Fig. 624); maxillary cardo strongly produced laterally (Fig. 624); female abdomen with 6 ventrites; penis and tegmen as in Figs 1590–1592 .......... javeti (Mulsant)

- Ventral antennal grooves indistinct or absent (Fig. 668); maxillary cardo with outer angle reaching slightly outside of mouth cavity (Fig. 668); female abdomen with 5 ventrites, penis and tegmen as in Figs 1608, 1610, 1611 ............ klapperichii (Fürsch)
12. Body long oval; dorsum uniformly coloured without contrasting markings; prosternum with carina absent or very short ........................................... 13
   - Body broadly oval; dorsum with contrasting markings on elytra; prosternal carinae extending to anterior prosternal margin ......................................... 14
13. Pronotum with lateral margins strongly narrowing from mid length to anterior angles (Fig. 320); prosternum smooth (Fig. 313); elytral epipleura obsolete in apical half (Fig. 321); pronotum narrower than maximum width of elytra (Fig. 309); dorsum covered with uniform pubescence .................................................. densepunctatus (Pope)
   - Pronotum with lateral margins regularly arcuate towards anterior angles (Fig. 1142); pronotum with carina short extending slightly forward beyond prosternal process (Fig. 1142); elytral epipleura incomplete at apex (Fig. 1137); pronotum at least as wide as maximum width of elytra; dorsum covered with double pubescence, consisting of appressed setae and sparse bristles ......................... thoracicus (Fürsch)
14. Elytral bristles cover entire surface of elytra; anterior margin of pronotum with fine bordering carina; prosternal carinae joined anteriorly forming a triangle (Fig. 682); antennomere IV as long as V .................. picipes (Sicard)
   - Elytral bristles present only along lateral margins of elytra; anterior margin of pronotum without bordering carina; prosternal carinae joined roundly just before prosternal margin; antennomere IV shorter than V .................. 15
15. Elytra brown with black lateral margins, apex and suture; [genitalia as in Figs 1690, 1692, 1694] ....................................................... nigromarginatus (Fürsch)
   - Elytra blackish with two pale, round oval maculae on each elytron .......... 16
16. Elytra finely punctate; antenna shorter; ventral antennal grooves on head distinct, long (Fig. 34); maxillary cardo strongly projecting laterally (Fig. 34); male genitalia as in Figs 1354, 1355, 1356 ....................................................... angolensis (Fürsch)
   - Elytra coarsely punctate; antenna longer; ventral antennal grooves on head indistinct (Fig. 993); maxillary cardo with outer angle reaching slightly outside of mouth cavity (Fig. 993); male genitalia as in Figs 1761, 1762 .................. quadriferenestratus (Fürsch)

Descriptions of Ethiopian species of Rhizobius

Rhizobius angolensis Fürsch
(Figs 32–40, 1354–1357)


**Diagnosis.** This species closely resembles *R. quadriferenestratus* in its body size, shape and colouration, but can be distinguished by very finely punctate elytra, the antennae shorter (as compared to head width) and the head with long ventral antennal grooves.
Description. Length 2.60 mm; TL/EW = 1.40; PL/PW = 0.47; EL/EW = 1.0.

Body (Figs 32, 33, 38) broadly oval, moderately convex, winged; yellowish brown with only elytra dark brown; each elytron with two round oval, yellowish brown maculae. Dorsum with double pubescence consisting of appressed setae and sparse dark, stiff bristles; dorsal pubescence not forming pattern on elytra; elytral bristles present along margins only.

Head (Figs 34–36) dorsally exposed; ventral antennal grooves long, straight, reaching distinctly behind eyes. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; with ocular canthus extending slightly into eye; interocular distance about 0.6 times as wide as head across eyes; interfacetal setae distinct. Antenna (Fig. 34) about 0.8 times as long as head capsule width, 11-segmented; pedicel distinctly narrower than scape, 1.7–1.8 times as long as wide; antennomere III 3.05–3.10 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV shorter than V; antennomeres VI and VII at most weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere distinctly elongate, rounded at apex. Anterior clypeal margin straight (Fig. 36). Labrum truncate at apex. Maxilla (Fig. 34) with cardo transverse and strongly prominent externally; terminal palpmere about 1.25 times as long as wide, broadened apically. Mentum strongly transverse, at least 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe-like impression; prementum longer than broad; ligula reduced; labial palps separated by distance about equal to width of palpiger; apical palpmere as long and about as broad as penultimate one; submentum distinct.

Pronotum (Figs 35, 36) with anterior angles obtuse, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and without clear border; hind margin with entire border line. Prothoracic hypomeron smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process (Fig. 37) 0.8 times as broad as longest coxal diameter, having its surface with carinae weakly convergent, joined roundly just before prosternal margin; prothoracic sternum in front of coxa about 0.6 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with complete bordering line, close to cavity.

Anterior edge of mesoventrite with complete raised border (Fig. 37); mesoventral process at median length of coxa 1.2 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction arcuate anteriorly. Scutellum triangular, transverse with surface punctate and setose (Fig. 35). Elytra with lateral margins very narrow but entirely visible from above (Fig. 32); surface with single size punctures, elytral epipleuron (Fig. 33) incomplete apically only, 2.3 times as wide as corresponding metaepisternum, inner margin without border. Metaventrite (Fig. 37) with partially incomplete discrimum; metaventral postcoxal lines joined medially forming straight line, complete and recurved laterally; metaepisternum without interlocking device; metaepimeron indistinct.

Legs (Figs 33, 37). Distal disjunct spur of tarsal claws in male.

Abdomen (Fig. 34). Tenth tergite (Fig. 34) with length of ventrite IX, emarginate; hind VIII truncate apically; sternum IX with hind apical speculum widened.

Male genitalia well developed, sur- vived with simple symmetrical thorax.

Female unknown.

Material examined.


Distribution. Angola.

Rhyzobius apicisignatus

Diagnosis. R. apicisignatus differs from both these species, Rhyzobius (Fig. 1661) and Rhyzobius (Fig. 1662), in the abdomen with 5 setae on each procoxa, and in the 7th sternite of the male having a small seta along the edge of the inferior appendages.

Description. Length 2.10–2.25 mm; TL/EW = 1.10–1.25; EL/EW = 0.75–0.80.

Body (Figs 32, 33, 38) brown, only apex of elytral margins yellowish brown, only apices of elytra brown, with ocular canthus extending slightly into eye; interocular distance about 0.6 times as wide as head across eyes; elytral bristles present along margins only.

Head (Figs 34–36) dorsally exposed; ventral antennal grooves long, straight, reaching distinctly behind eyes. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; with ocular canthus extending slightly into eye; interocular distance about 0.6 times as wide as head across eyes; interfacetal setae distinct. Antenna (Fig. 34) about 0.8 times as long as head capsule width, 11-segmented; pedicel distinctly narrower than scape, 1.7–1.8 times as long as wide; antennomere III 3.05–3.10 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV shorter than V; antennomeres VI and VII at most weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere distinctly elongate, rounded at apex. Anterior clypeal margin straight (Fig. 36). Labrum truncate at apex. Maxilla (Fig. 34) with cardo transverse and strongly prominent externally; terminal palpmere about 1.25 times as long as wide, broadened apically. Mentum strongly transverse, at least 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe-like impression; prementum longer than broad; ligula reduced; labial palps separated by distance about equal to width of palpiger; apical palpmere as long and about as broad as penultimate one; submentum distinct.

Pronotum (Figs 35, 36) with anterior angles obtuse, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and without clear border; hind margin with entire border line. Prothoracic hypomeron smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process (Fig. 37) 0.8 times as broad as longest coxal diameter, having its surface with carinae weakly convergent, joined roundly just before prosternal margin; prothoracic sternum in front of coxa about 0.6 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with complete bordering line, close to cavity.

Anterior edge of mesoventrite with complete raised border (Fig. 37); mesoventral process at median length of coxa 1.2 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction arcuate anteriorly. Scutellum triangular, transverse with surface punctate and setose (Fig. 35). Elytra with lateral margins very narrow but entirely visible from above (Fig. 32); surface with single size punctures, elytral epipleuron (Fig. 33) incomplete apically only, 2.3 times as wide as corresponding metaepisternum, inner margin without border. Metaventrite (Fig. 37) with partially incomplete discrimum; metaventral postcoxal lines joined medially forming straight line, complete and recurved laterally; metaepisternum without interlocking device; metaepimeron indistinct.

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Legs (Figs 33, 37) with trochanters roundly produced; mid and hind tibia without distinct spurs; pro- and mid tarsal claws in male appendiculate (Fig. 40); hind tarsal claws in male with subtriangular basal tooth (Fig. 39).

Abdomen with 6 ventrites in male; ventrite I about 1.15 times as long as ventrite II; abdominal postcoxal line separate medially; posteriorly reaching about half length of ventrite I; ventrite V in male smooth and simply setose, hind margin deeply emarginate; hind margin of male ventrite VI weakly emarginate (Fig. 1357), tergite VIII truncate apically. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half somewhat widening towards and at apex, and base of spiculum widened and submembranous.

Male genitalia (Figs 1354–1356). Parameres articulated with phallobase, well developed, simple and separated, nearly as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut simple.

Female unknown.


Distribution. Angola.

Rhizophobius apicesignatus Fürsch
(Figs 70–81, 1366–1371, 1961)


Diagnosis. R. apicesignatus is most similar to R. klapperichi and R. javeti, but differs from both these species in having light brown body, elytra with characteristic colour pattern (Fig. 1961) and tergite VIII truncate in both sexes. Female differs from R. javeti in having abdomen with 5 ventrites and hind margin of ventrite V arcuate and smooth. From R. klapperichi it also differs in its weakly descending metaventral postcoxal lines.

Description. Length 2.60–3.17 mm; TL/EW = 1.43–1.53; PL/PW = 0.49–0.54; EL/EW = 1.10–1.20.

Body (Figs 70, 71, 73, 1961) elongate oval, moderately convex, winged; light brown, only apex of elytra dark brown with pale macula within this darker area on each elytron. Dorsum with double pubescence consisting of appressed setae and sparse dark stiff bristles; dorsal pubescence not forming pattern on elytra; elytral bristles present along margins only.

Head (Figs 72, 76) withdrawn into prothorax but with eyes partially visible externally, 0.8 times as long as wide; ventral antennal grooves indistinct. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; with ocellar canthus extending slightly into eye; interocular distance 0.57–0.60 times as wide as head across eyes; interfacial setae absent or indistinct. Antenna (Figs 74,
75) 0.87–0.90 times as long as head capsule width, 11-segmented; scape 1.8 times as long as pedicel; pedicel distinctly narrower than scape, 1.55 times as long as wide; antennomere III 3.5 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV shorter than V; antennomeres VI and VII at most weakly elongate, Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere distinctly elongate, apically rounded. Anterior clypeal margin straight. Labrum truncate at apex. Maxilla (Fig. 72) cardo transverse and strongly prominent externally, terminal palpmere 1.4 times as long as wide, weakly expanded apically. Mentum strongly transverse, at least 2 times broader than anterior margin deeply emarginate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpiger; apical palpmere about as long and as broad as penultimate one; submentum distinct.

Pronotum (Figs 75, 76, 80) with anterior angles obtuse, not swollen with regular border; anterior margin with fine bordering carina or line; lateral margin slightly upturned and without clear border at least along part of its length; hind margin with entire border line. Prothoracic hypomeron (Fig. 77) smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process about 0.55 times as broad as longest coxal diameter, its surface with carinulae convergent, joined roundly just before prosternal margin, prosternum in front of coxa 0.53–0.55 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with bordering line distinctly incomplete antero-medially.

Anterior edge of mesoventrite (Fig. 77) with complete raised border; mesoventral process at median length of coxa about 0.8 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction arcuate anteriorly. Scutellum (Fig. 80) triangular, transverse; surface punctate and setose. Elytra (Figs 70, 71, 78) with lateral margins very narrow but entirely visible from above; surface with single size punctures, elytral epipleuron incomplete apically only, 2.1 times as wide as corresponding metaepisternum, inner margin with border area narrow throughout and border line fading before base of elytron. Metaventrite (Fig. 77) with partially incomplete discrinum; metaventral postcoxal lines joined medially forming straight line, complete, weakly descending laterally; metaepisternum without interlocking device; metaepimeron visible ventrally.

Legs with trochanters roundly produced (Figs 77, 81); mid and hind tibia without distinct spurs (Fig. 79); tarsal claws in female with large subtriangular basal tooth.

Abdomen with 5 ventrites in female (Fig. 81), and 6 ventrites in male; ventrite I 1.15 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, posteriorly reaches about half length of ventrite I; ventrite V in female about as long as IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin deeply emarginate; female ventrite VI with hind margin emarginate, central part not reticulate and base of stipe.

Male genitalia well developed, with sinuous symmetrical lobe.

Female clypeate plate; sternum; spermatheca adjacent to spine.

Material examined:

Other material:

Distribution:

Rhyzocephus bicolor (Filsch)

Diagnosis. This species differs from other species of the pronotum and bilobed elytra.

Description:
EL/EW = 1:1.85.

Body elongate, densely pubescent, probed, with strongly pubescent tergite antennomere I 0.55 times as long as antennomere II.

Head (Fig. 77) eyes dorsally foveate, closest at middle, antennal club 3-segmented, antennomere VIII 0.55 times as long as antennomere II.

Antenna (Fig. 72) cardo transverse and strongly prominent externally, terminal palpmere 1.4 times as long as wide, weakly expanded apically. Mentum strongly transverse, at least 2 times broader than anterior margin deeply emarginate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpiger; apical palpmere about as long and as broad as penultimate one; submentum distinct.
hind margin weakly truncate (Fig. 1370), tergite VIII truncate; hind margin of male ventrite VI emarginate (Fig. 1369), tergite VIII truncate apically. Sternite IX with central part membranous; apodeme of male sternum IX somewhat widening at apex, and base of spiculum sclerotized, deeply divided into inverted U.

**Male genitalia** (Figs 1366–1368). Parameres articulated with phallobase, well developed, simple and separated, nearly as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; terminal strut simple; penis base with outer arm absent.

**Female genitalia** (Fig. 1371). Proctiger (T10) distinct, at least partly sclerotized plate; styli terminal; infundibulum absent; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.


**Distribution.** South Africa.

*Rhyzobius bicolor* Fürsch
(Figs 117–122, 1358–1359)


**Diagnosis.** This species differs from all African *Rhyzobius* in having brown head and pronotum and black elytra.

**Description.** Length 3.00–3.17 mm; TL/EW = 1.60–1.61; PL/PW = 0.46–0.47; EL/EW = 1.18–1.19.

**Body** elongate oval, distinctly flattened, winged; bicoloured; head including appendages, pronotum, prothoracic hypomera and legs (except for coxae) light brown; elytra, prosternum, ventral surfaces of meso-, metathorax, coxae and at least abdominal ventrites I and II medially, and postcoxal plates black, rest of abdomen infuscate. Dorsum with moderately long and uniform pubescence; dorsal pubescence not forming pattern on elytra; elytral bristles apparently absent.

**Head** (Fig. 119) dorsally exposed; ventral antennal grooves absent or indistinct. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; with ocular canthus extending slightly into eye; interocular distance 0.55 times as wide as head across eyes; interfacial setae absent or indistinct. Antenna (Fig. 118) 0.8 times as long as head capsule width, 11-segmented; scape 2 times as long as pedicel; pedicel distinctly narrower than scape, 1.2 times as long as
wide; antennomere III 3 times longer than wide, and about 1.5-2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII at most weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere subquadrate, apically rounded. Anterior elytral margin straight. Maxillary cardo (Fig. 119) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere about 1.88 times as long as wide, weakly expanded apically. Mentum strongly transverse, at least 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance at least 1.5 times broader than width of palpiger; apical palpomere about as long and distinctly narrower than penultimate one; submentum distinct.

**Pronotum** with anterior angles weakly rounded and weakly produced anteriorly, not swollen with regular border; anterior margin with fine bordering carina or line; lateral margin slightly upturned and without clear border at least along part of its length; hind margin with entire border line. Prothoracic hypomeron (Fig. 119) smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process 0.85 times as broad as longest coxal diameter, its surface with carinae subparallel, joined roundly just before prosternal margin; prosternum in front of coxa as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line; much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with complete bordering line, close to cavity.

**Anterior edge of mesoventritae** (Fig. 117) with complete raised border; mesoventral process at median length of coxa 1.1 times as broad as corresponding coxal diameter; meso-metaventritial articulation with suture visible; junction arcuate anteriorly. Scutellum triangular, transverse; surface punctate and setose. Elytra with lateral margins very narrow but entirely visible from above; surface with single size punctures, elytral epipleuron (Figs 117, 120, 121) obsolete in apical half, 1.8 times as wide as corresponding metaepisternum, inner margin with border area narrow throughout and border line fading before base of elytron. Metaventritae (Fig. 117) with partially incomplete discrenae, metaventral postcoxal lines joined medially forming straight line, complete and distinctly recurved laterally; metaepimeron visible ventrally.

Legs with trochanters weakly angulately produced (Figs 117, 121); mid and hind tibiae without distinct spurs (Fig. 122); tarsal claws in female with large subtriangular basal tooth.

**Abdomen** with 6 ventrites in female (Fig. 121); ventrite I 1.25 times as long as ventrite II; abdominal postcoxal lines separate mediadly, recurved and complete, posteriorly reaches about half length of ventrite I; ventrite V in female about as long as IV, with hind margin arcuate and smooth; female ventrite VI (Fig. 1358) with hind margin arcuate; female tergite VIII rounded.

**Female genitalia** (Fig. 1359). Proctiger (T10) reduced, small, submembranous; styli strongly reduced and hardly visible; infundibulum absent; sperm duct

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**Rhyhobus bunneisleri** Mulsant, 1851

**Dorsalina color** Thunberg, 1799

**Rhyhobus triniti** Casey, 1899

**Diagnosis.** This is a distinctive species, almost completely black with only two small yellow spots. ULEW = 1.03-1.08.

**Description.** Length 2.95-3.3 mm. Eyes dorsally less than 0.5 times as long as head and closest at middle; with ocular space 0.55 times as wide as head. Antenna 1.1 times as long as head; pedicel long as at least as long as pedicel; pedicel long as wide; antennomere I as long as antennomere IV; antennomere IV more than weakly elongate. Antennae asymmetrical; penultimate terminal antennomere distinctly straight. Labrum truncate at angle reaching slightly outside royalty at wide, broadened apically more than long; anterior margin of prementum about

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simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

Male unknown.


Distribution. South Africa.

Rhizobius burmeisteri Mulsant
(Figs 243–252, 1425–1430)

Rhizobius burmeisteri Mulsant, 1850: 1002.

Diagnosis. This is a distinctive species of African Rhizobius by having the entire dorsum deeply black with only two small, round, yellow or orange spots on each elytron.

Description. Length 2.95–3.60 mm; TL/EW = 1.30–1.35; PL/PW = 0.46–0.48; EL/EW = 1.03–1.08.

Body (Figs 243, 244, 248) broadly oval, moderately convex, winged; predominantly black; each elytron with small, round, yellow or orange spots in mid line on disc; anterior angles of pronotum narrowly pale; antennae, palpi, tibiae and tarsi dark brown or infuscate. Dorsum with moderately long and uniform pubescence; dorsal pubescence not forming pattern on elytra; elytral bristles absent.

Head (Figs 245, 251) withdrawn into prothorax but with eyes partially visible externally; ventral antennal grooves short, straight, along inner margin of eye only. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; with ocular canthus extending slightly into eye; interocular distance 0.55 times as wide as head across eyes; interfacial setae absent or indistinct. Antenna 1.1 times as long as head capsule width, 11-segmented; scape 1.45–1.65 times as long as pedicel; pedicel distinctly narrower than scape, 1.70–1.75 times as long as wide; antennomere III 3 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV shorter than V; antennomeres VI and VII quadrate or at most weakly elongate. Antennal club 3-segmented, with two terminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere distinctly elongate, apically rounded. Anterior clypeal margin straight. Labrum truncate at apex. Maxillary cardo (Fig. 245) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.5 times as long as wide, broadened apically. Mentum weakly transverse, less than 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula parallel-sided; labial palps
separated by distance about equal to width of palpiger; apical palpomere as long and as broad as penultimate one; submentum distinct.

**Pronotum** (Figs 250, 251) with anterior angles obtuse, not swollen with regular border; anterior margin with fine bordering carina or line; lateral margin slightly upturned and without clear border at least along part of its length; hind margin with entire border line. Prothoracic hypomeron smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process (Fig. 249) about 0.67 times as broad as longest coxal diameter, its surface with complete carinae joined anteriorly forming triangle; prosterum in front of coxa 0.85 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line; much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with complete bordering line broadly separated from the cavity externally.

**Anterior edge of mesoventrite** (Fig. 249) with complete raised border; mesoventral process at median length of coxa 0.85 times as broad as corresponding coxal diameter; meso-metaventre articulation with suture visible; junction forming a straight line. Scutellum (Fig. 250) triangular, transverse; surface punctate and setose. Elytra (Fig. 243) with lateral margins very narrow but entirely visible from above; surface with single size punctures, elytral epipleuron (Figs 244, 252) incomplete apically only, 2.5 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventre (Fig. 249) with partially incomplete discriment; metaventral postcoxal lines joined medially in form of v-shaped line, complete and somewhat descending laterally; metaepimeron indistinct.

**Legs** with trochanters weakly angulate produced (Figs 244, 249, 252); mid and hind tibia with two spurs (Figs 246, 247); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with large subtriangular basal tooth; tarsal claws in female with large, subtriangular basal tooth.

**Abdomen** with 5 ventrites in female, and 6 ventrites in male (Fig. 252); ventrite I 1.2 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, posteriorly reaches about half length of ventrite I; ventrite V in female about as long as IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin widely truncate; female ventrite VI (Fig. 1429) with hind margin arcuate, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1428), tergite VIII rounded. Sternite IX with central part in form of narrow, V-shaped sclerite; apodeme of male sternum IX with its apical half very narrow and rod-like towards apex, and base of spiculum simple, narrow, rod-like.

**Male genitalia** (Figs 1425–1427). Parameres articulated with phallobase, well developed, simple and separated, as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegminal strut simple.

**Female genitalia** (Fig. 1430). Proctiger (T10) distinct, at least partly sclerotized plate; styll terminal; infundibulum in form of lightly sclerotized piece of bursted plate.
sa; sperm duct partly sclerotized; spermatheca with sclerotized nodulus and ramus, spermathecal accessory gland distinctly separated from sperm duct.

**Material examined.** Types not examined.


**Distribution.** South Africa.

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**Rhyzobius c-pallidum** Weise

(Figs 123–131, 1452–1453)

**Rhyzobius c-pallidum** Weise, 1909: 125.

**Diagnosis.** The very characteristic c-shaped elytral macula on deeply black elytron separates easily *R. c-pallidum* from all other species of the genus.

**Description.** Length 2.50–2.90 mm; TL/EW = 1.27–1.35; PL/PW = 0.51–0.52; EL/EW = 0.98–1.00.

**Body** (Figs 123, 124) broadly oval, strongly convex, hemispherical, winged. Dorsum black; each elytron with yellowish brown, large, c-shaped macula on disc. Venter dark chestnut brown; antennae, maxillary and labial palpi, tarsi and tibiae light brown. Dorsum with moderately long and uniform pubescence; dorsal pubescence not forming pattern on elytra; elytral bristles apparently absent.

**Head** (Figs 126–128) dorsally exposed; ventral antennal grooves absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; with ocular canthus extending slightly into eye; interocular distance about 0.67 times as wide as head across eyes; interfacetal setae absent or indistinct. An-
tenna (Figs 125, 126) 0.80–0.82 times as long as head capsule width, 11-segmented; scape 1.85–2.00 times as long as pedicel; pedicel about as broad as scape. 1.6 times as long as wide; antennomere III 2.25 times longer than wide, and as long as or slightly longer than IV; antennomere IV shorter than V; antennomeres VI and VII at most weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere distinctly elongate, apically rounded. Anterior clypeal margin straight. Labrum rounded apically. Maxillary cardo (Fig. 125) weakly transverse not reaching outside of mouth cavity; terminal palpomere 1.4 times as long as wide, broadened apically. Mentum strongly transverse, at least 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe like impression; prementum as long as broad; ligula parallel-sided; labial palps separated by distance at least 1.5 times broader than width of palpigerr; apical palpomere as long and as broad as penultimate; submentum distinct.

Pronotum (Figs 127–129) with anterior angles rounded, weakly produced anteriorly, not swollen with regular border; anterior margin without border; lateral margin with entire border; hind margin with entire border line. Prothoracic hypomeron (Fig. 126) smooth, without groove or concavity, notosternal suture in form of crescent shaped concavity near anterior prothoracic margin; prosternal process (Fig. 126) 1.25 times as broad as longest coxal diameter, its surface with carinae subparallel, joined roundly just before prosternal margin; prosternum in front of coxa 0.5 times as long as coxal longitudinal diameter at the same position; anterior margin prominent medially, forming weak chin piece; much more posterior than anterior pronotal margin; procoxal cavity circular or weakly oval, with bordering line distinctly incomplete antero-medially.

Anterior edge of mesoventrite (Fig. 131) with complete raised border; mesoventral process at median length of coxa 1.55 times as broad as corresponding coxal diameter; meso-metapleural articulation with suture visible; mesoventrite forming a straight line. Scutellum triangular, at least as long as broad; surface punctate and setose. Elytra (Fig. 123) with lateral margins very narrow but entirely visible from above; surface with single size punctures, elytral epipleuron (Fig. 131) incomplete apically only, 2.1 times as wide as corresponding metaepisternum, inner margin with border area narrow throughout and border line fading before base of elytron. Metaventrite with partially incomplete discrern; metaventral postcoxal lines distinctly separated at middle, complete and straight laterally; metaepisternum with external process interlocking with fovea on elytron; metaepimeron indistinct.

Legs with trochanters rounded produced (Figs 126, 131); mid and hind tibiae without distinct spurs (Fig. 130); tarsal claws in female with subtriangular basal tooth.

Abdomen with 5 ventrites in female; ventrite I 1.35 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female about as long as IV, with hind margin arcuate and smooth; female ventrite VI (Fig. 1453) with hind margin arcuate, tergite VIII rounded.
Female genitalia (Fig. 1452). Proctiger (T10) distinct, at least partly sclerotized plate; styli terminal; infundibulum absent; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

Male unknown.


Distribution. Madagascar.

*Rhizobius decoratus* Weise
(Figs 41–51, 1460–1465)

*Rhizobius decoratus* Weise, 1905: 53.

Diagnosis. Characteristically ornamented dorsum — chestnut brown with black irregularly shaped macula along mid of pronotum and three black, somewhat triangular maculae along the disc of each elytron (although variably developed) — distinguishes *R. decoratus* from all other African species.

Description. Length 2.85–4.30 mm; TL/EW = 1.56–1.62; PL/PW = 0.47–0.51; EL/EW = 1.11–1.20.

Body (Figs 41, 42) elongate oval, distinctly flattened, winged; predominantly dark brown or chestnut brown with characteristic black maculate pattern on elytra. Dorsum with moderately long and uniform pubescence; dorsal pubescence not forming pattern on elytra; elytral bristles apparently absent.

Head (Figs 44, 49) withdrawn into prothorax but with eyes partially visible externally; ventral antennal grooves long, straight, reaching distinctly behind eyes. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; with ocular canthus extending slightly into eye; interocular distance at least 0.5 times as wide as head across eyes; interfacial setae absent or indistinct. Antenna (Fig. 43) 1.15 times as long as head capsule width, 11-segmented; scape 1.75 times as long as pedicel; pedicel distinctly narrower than scape, 1.6 times as long as wide; antennomere III 3.2 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV shorter than V; antennomeres VI and VII at least 1.5 times longer than broad. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere distinctly elongate, truncate apically.
Anterior clypeal margin straight. Labrum rounded apically. Maxilla (Fig. 44) with cardo transverse with outer angle reaching slightly outside of mouth cavity; terminal palpmere 1.5 times as long as wide, weakly expanded apically. Mentum weakly transverse, less than 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe like impression; prementum as long as broad or longer, ligula parallel-sided or slightly expanded antero-laterally; labial palps separated by distance about equal to width of palpgere; apical palpmere at least as long and as broad as penultimate one; submentum distinct.

**Pronotum** (Figs 41, 50, 51) with anterior angles obtuse, not swollen with regular border; anterior margin with fine bordering carina or line; lateral margin slightly upturned and without clear border; hind margin with entire visible; Prothoracic hypomeron smooth, without groove or concavity; notosternal suture distinct; simple; prosternal process (Fig. 47) about 0.65 times as broad as longest coxal diameter, its surface with carinae joined before apex and continuing anteriorly as short single carina; prosternum in front of coxa 0.8 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight or arcuate line; much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with complete bordering line broadly separate from the cavity externally.

**Anterior edge of mesoventrite** (Fig. 47) with complete raised border: mesoventral process at median length of coxa 0.6 times as broad as corresponding coxal diameter; meso-metaventre articulate abstraction with suture visible; junction forming a straight line. Scutellum (Fig. 50) pentagonal, transverse; surface punctate and setose. Elytra (Fig. 41) with lateral margins very narrow but entirely visible from above; surface with single size punctures, elytral epipleuron (Fig. 48) incomplete apically only, 2.5 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventre (Fig. 47) with partially incomplete discernment; metaventral postcoxal lines joined medially in form of v-shaped line, complete and descending laterally; metaepimeron distinct, visible ventrally.

**Legs** (Figs 47, 48) with trochanters simple; mid and hind tibia with two spurs (Figs 45, 46); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with triangular basal tooth; tarsal claws in female with large subtriangular basal tooth.

**Abdomen** (Fig. 48) with 6 ventrites in both sexes; ventrite I 1.25 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and completely, posteriorly reaches about half length of ventrite I; ventrite V in female about as long as IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin widely truncate; female ventrite VI with hind margin arcuate (Fig. 1464), tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1463), tergite VIII rounded. Sternite IX with central part in form of narrow, V-shaped sclerite; apodeme of male sternum IX with its apical half very narrow and rod-like towards apex, and base of scupiculum simple, narrow, rod-like.

**Male genitalia** (Figs 1460–1462). Parameres articulated with phallobase, well developed, simple and separated, about 1.2 times longer than penis guide.
densely setose along about half of their length, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegminal strut simple; penis base with outer arm obsolete.

**Female genitalia** (Fig. 1465). Proctiger (T10) reduced, small, submembranous; styli terminal; infundibulum in form of lightly sclerotized piece of bursa; sperm duct complex, of different diameter and partially sclerotized; spermatheca with sclerotized nodulus and ramus, spermathecal accessory gland distinctly separated from sperm duct.

**Material examined.** Types: Holotype, male, “Natal/ Belfast, IV.1897/ Rhizobius decoratus m/ Holotypus, male, Rhizobius decoratus Weise (Fürsch 1986)” (NMB); paratype, male “Rhizobiellus natalensis,” sp.n. Ptyple, R.D. Pope, 1956/ Swedisch South Africa Expedition 1950-51, Brinck-Rudebeck/ South Africa, Natal, Royal Natal National Park, Tugela Valley, 4.IV.51, No. 261/ Paratype (1: NHM);


**Distribution.** South Africa.


**Rhizobius decussatolobatus** Fürsch, 1992: 66.

**Diagnosis.** *R. decussatolobatus* resembles *R. javeti* and *R. klapperichi* in body size, shape and colouration. However *R. decussatolobatus* is distinguished from these species by the mid and hind tibia with double spurs, ventral antennal grooves long, reaching beyond hind margin of eye and the prosternal carinae forming a distinct triangle.

**Description.** Length 3.20–3.85 mm; TL/EW = 1.48–1.50; PL/PW = 0.48–0.50; EL/EW = 1.07–1.12.

**Body** (Figs 296–298) elongate oval, moderately convex, winged. Dorsum with head and pronotum blackish brown to black with only anterior angles of pronotum
pale; elytra black with two red spots of moderate size on each elytron; ventral surfaces of head including appendages, prothorax and legs brown; meso-, metathorax, abdomen and elytral epipleura at least infuscate. Dorsum with double pubescence consisting of appressed setae and sparse dark stiff bristles; dorsal pubescence not forming pattern on elytra; elytral bristles present along margins only.

Head (Figs 301, 303) withdrawn into prothorax but with eyes partially visible externally; ventral antennal grooves long, straight, reaching distinctly behind eyes. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arculate, closest at middle; with ocular canthus extending slightly into eye; interocular distance 0.55 times as wide as head across eyes; interfacial setae absent or indistinct. Antenna (Fig. 308) 0.85 times as long as head capsule width, 11-segmented; scape 1.5 times as long as pedicel; pedicel distinctly narrower than scape, 1.6 times as long as wide; antennomere III 3.65 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV shorter than V; antennomeres VI and VII at least 1.5 times longer than broad. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere subquadrature, truncate at apex. Anterior clypeal margin straight. Labrum truncate at apex. Maxillary cardo (Fig. 301) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.45–1.5 times as long as wide, weakly expanded apically. Mentum weakly transverse, less than 2 times broader than long; anterior margin truncate; ventral surface with horseshoe like impression; prementum transverse; ligula parallel-sided; labial palps separated by distance at least 1.5 times broader than width of palipiges; apical palpomere about as long and as broad as penultimate one; submentum distinct.

Pronotum (Figs 299, 303, 306) with anterior angles obtuse, not swollen with regular border; anterior margin with fine bordering carina or line; lateral margin slightly upturned and without clear border at least along part of its length; hind margin with entire border line. Prothoracic hypomeron (Fig. 304) smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process 0.7 times as broad as longest coxal diameter, its surface with complete carinae joined anteriorly forming triangle; prosternum in front of coxa 0.9 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line; much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with complete bordering line broadly separate from the cavity externally.

Anterior edge of mesoventrite (Fig. 304) with complete raised border; mesoventral process at median length of coxa 0.7 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction arculate anteriorly. Scutellum (Fig. 306) triangular, at least as long as broad; surface punctate and setose. Elytra (Figs 296, 306) with lateral margins very narrow but entirely visible from above; surface with single size punctures, elytral epipleura (Figs 297, 305) incomplete apically only, 1.9 times as wide as corresponding metaepisternum, inner margin with border area narrow throughout and border line fading before base of elytron. Metaventrite (Fig. 304) with partially incomplete discern; metaventral postcoxal
lines joined medially in form of v-shaped line, complete and descending laterally; metaepisternum without interlocking device (Fig. 307); metaepimeron visible.

Legs with trochanters simple (Figs 304, 305); mid and hind tibia with two spurs (Figs 300, 302); pro- and tarsal mid claws in male appendiculate; hind tarsal claws in male with large subquadrate basal tooth; tarsal claws in female with narrow, triangular tooth in mid length.

Abdomen (Fig. 305) with 6 ventrites in both sexes; ventrite I 1.25 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, posteriorly reaches about half length of ventrite I; ventrite V in female about as long as IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin deeply emarginate; female ventrite VI (Fig. 1467) with hind margin arcuate, tergite VIII rounded; hind margin of male ventrite VI emarginate, tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX weakly widening at apex, and base of spiculum sclerotized rod, deeply divided into inverted U.

Male genitalia (Figs 1466, 1468, 1469). Parameres articulated with phallobase, well developed, simple and separated, about as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegminal strut simple; penis base with outer arm absent.

Female genitalia (Fig. 1470). Proctiger (T10) reduced, small, submembranous; styli terminal; infundibulum in form of lightly sclerotized piece of bursa; sperm duct partly sclerotized; spermatheca with sclerotized nodulus and ramus, spermathecal accessory gland distinctly separated from sperm duct.

Material examined. Types not studied.


Distribution. South Africa.

**Rhizobius densepunctatus** (Pope) (Figs 309-321, 1766-1767)


**Diagnosis.** *R. densepunctatus* is most similar to *R. thoracicus* by its size, shape and uniformly coloured body. It differs, however, from *R. thoracicus* in having paler dorsal surface of the body (yellowish brown), the pronotum distinctly narrower than the maximum width of the elytra and the antennomeres IV and V equal in length.
Description. Length 2.40–2.73 mm; TL/EW = 1.53–1.65; PL/PW = 0.50–0.53; EL/EW = 1.15–1.19.

Body (Figs 309–311) elongate oval, distinctly flattened, winged. Dorsum light brown; venter dark brown, partly infuscate. Dorsum with moderately long and uniform pubescence; dorsal pubescence not forming pattern on elytra; elytral bristles apparently absent.

Head (Figs 312, 317) dorsally exposed; ventral antennal grooves absent or indistinct. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; with ocellar canthus extending slightly into eye; interocular distance 0.61–0.63 times as wide as head across eyes; interfacetal setae absent. Antenna (Fig. 314) 1.05 times as long as head capsule width. 11-segmented; scape 1.9–2.0 times as long as pedicel; pedicel distinctly narrower than scape, 1.3 times as long as wide; antennomere III 2.95–3.00 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere distinctly elongate, apically rounded. Anterior clypeal margin straight. Labrum rounded apically. Maxillary cardo (Fig. 312) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpmere 1.67–1.70 times as long as wide; parallel-sided. Mentum weakly transverse; less than 2 times broader than long; anterior margin deeply marginate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula slightly expanded anterolaterally; labial palps separated by distance about equal to width of palpgere; apical palpmere as long as and distinctly narrower than penultimate one; submentum distinct.

Pronotum (Figs 317, 318, 320) with anterior angles obtuse, not swollen with regular border; anterior margin with fine bordering carina or line; lateral margin slightly upturned and without clear border at least along part of its length; hind margin with entire border line. Prothoracic hypomeron (Fig. 313) smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process about 0.6 times as broad as longest coxal diameter, its surface smooth, without carinae; prosternum in front of coxa 0.7 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as scarcely arcuate line; much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with complete bordering line broadly separated from the cavity externally.

Anterior edge of mesoventrite (Fig. 313) with complete raised border; mesoventral process at median length of coxa 0.6 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction forming a straight line. Scutellum (Fig. 320) triangular, transverse; surface punctate and setose. Elytra (Fig. 309) with lateral margins very narrow but entirely visible from above; surface with single size punctures, elytral epipleuron (Figs 310, 321) obsolete in apical half, 2 times as wide as corresponding metaepisternum, inner margin without border (Fig. 319). Metaventrite (Figs 313, 319) with partially incomplete discrinen; metaventral postcoxal lines joined medially forming straight line, com-

Male not studied.


Rhynchosaurus densipennis Younga, 1980:

Description. This species resembles a similar species of Rhynchosaurus but differs from that species in having a more distinctly recurved lateral margin of the tergite and a somewhat longer elytral epipleuron.

U.S. E.W. = 1.0–1.19.

Body (Figs 621, 622, 623) reddish brown or brown; background of abdomen and elytral epipleuron.
plete and distinctly recurved laterally; metaepisternum without interlocking device; metaepimeron distinct, visible ventrally.

Legs with trochanters simple (Figs 313, 319); tibiae without distinct spurs (Figs 315, 316); tarsal claws in female with subtriangular basal tooth.

Abdomen with 6 ventrites in female (Fig. 321); ventrite I 1.3–1.4 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, posteriorly reaches about half length of ventrite I; ventrite V in female about as long as IV, with hind margin straight and smooth; female ventrite VI (Fig. 1766) with hind margin arcuate, tergite VIII rounded.

Female genitalia (Fig. 1767). Proctiger (T10) distinct, at least partly sclerotized plate; styli strongly reduced and hardly visible; infundibulum in form of lightly sclerotized piece of bursa; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

Male not studied.


Distribution. South Africa.

Rhizobiellus javeti Mulsant
(Figs 621–630, 1590–1595)

Rhizobiellus javeti Mulsant, 1850: 1006.

Diagnosis. This species resembles most closely R. klapperichi in size, shape and body colouration but differs from that species by having short ventral antennal grooves on the head, the antennomere III less elongate, the prosternum with complete carinae joined roundly just before prosternal margin and the female abdomen with 6 ventrites.

Description. Length 2.53–3.00 mm; TL/EW = 1.45–1.55; PL/PW = 0.48–0.52; EL/EW = 1.10–1.19.

Body (Figs 621, 622, 625) elongate oval, moderately convex, winged. Head including appendages, prothorax, legs and two, rounded spots on each elytron light brown or brown; background of elytra, and ventral surfaces of meso-, metaventrite, abdomen and elytral epipleura blackish or dark brown in some individuals. Dorsum
with double pubescence consisting of appressed setae and sparse dark stiff bristles; dorsal pubescence not forming pattern on elytra; elytral bristles present along margins only.

Head (Figs 624, 626) withdrawn into prothorax but with eyes partially visible externally. 0.88–0.90 times as long as wide; ventral antennal grooves short, straight, along inner margin of eye only. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; with ocelar canthus extending slightly into eye; interocular distance 0.55–0.58 times as wide as head across eyes; interfacetal setae absent or indistinct. Antenna 0.88–0.90 times as long as head capsule width, 11-segmented; scape 1.55 times as long as pedicel; pedicel distinctly narrower than scape, 1.75 times as long as wide; antennomere III 2.9 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV shorter than V; antennomeres VI and VII subquadrate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere distinctly elongate, apically rounded. Anterior clypeal margin straight. Labrum truncate at apex. Maxillary cardo (Fig. 624) transverse and strongly prominent externally; terminal palpomere 1.4 times as long as wide, weakly expanded apically. Mentum strongly transverse, at least 2 times broader than long; anterior margin weakly arcuate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance equal to width of palpiger; apical palpmere as long and as broad as penultimate one; submentum indistinct.

Pronotum (Figs 626–629) with anterior angles obtuse, not swollen with regular border; anterior margin with fine bordering carina or line; lateral margin slightly upturned and without clear border at least along part of its length; hind margin with entire border line. Prothoracic hypomeron smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process (Fig. 623) 0.7 times as broad as longest coxal diameter, its surface with carinae convergent, jointed roundly just before prosternal margin; prosternum in front of coxa 0.7 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line; much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with complete bordering line, close to the cavity.

Anterior edge of mesoventrite (Fig. 623) with complete raised border; mesoventral process at median length of coxa 0.75 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction arcuate anteriorly. Scutellum (Fig. 628) triangular, transverse; surface punctate and setose. Elytra with lateral margins very narrow but entirely visible from above (Figs 621, 625); surface with single size punctures (Fig. 628), elytral epipleuron incomplete apically only (Fig. 622), 2 times as wide as corresponding metaepisternum, inner margin with border area narrow throughout and border line fading before base of elytron (Fig. 623). Metaventrite (Fig. 623) with partially incomplete discrernmen; metaventral postcoxal lines joined medially forming straight line, complete and straight laterally; metaepisternum without interlocking device; metaepimeron indistinct.

Legs with trochanteres rather small (Fig. 630); pro- and mesothorax with large subquadrate abdominal plates, with 6 ventral and 6 dorsal abdominal postcoxae. Male (Fig. 593) with hind margin (Fig. 593) male tergite V with aedeagus of male sternite A sclerotized, deeply divided. Male genitalia (Fig. 607) well developed, simple and rounded with simple setae, perinemulum indistinct. Female genitalia (Fig. 606) weakly developed, simple and rounded with simple setae, perinemulum indistinct; tegmen membranous throughout; tegmen divided into 2 equal halves.

Material examined. Type material.


DISTRIBUTION. South Africa.

Agathopus kleppersi Furse&.
Legs with trochanters rather roundly produced (Fig. 622); tibiae without distinct spurs (Fig. 630); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with large subquadrate basal tooth.

Abdomen with 6 ventrites in both sexes; ventrite I 1.4–1.5 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, posteriorly reaches about half length of ventrite I; ventrite V in female about as long as IV, with hind margin straight and smooth; ventrite V in male smooth and simply setose, hind margin deeply emarginate; female ventrite VI (Fig. 1595) with hind margin rounded; female tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1593); male tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX somewhat widening at apex, and base of scutum sclerotized, deeply divided into inverted U.

Male genitalia (Figs 1590–1592). Parameres articulated with phallosome, well developed, simple and separated, about as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm obsolete.

Female genitalia (Fig. 1594). Proctiger (T10) reduced, small, submembranous; styli strongly reduced and hardly visible; infundibulum absent; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

Material examined. Types not examined.


Distribution. South Africa.

Rhyzobius klapperichi Fürsch
(Figs 666–675, 1608–1613)

Rhyzobius klapperichi Fürsch, 1992: 68.

Diagnosis. *R. klapperichi* is most similar to *R. javeri*, but can be separated from it by having the head lacking ventral antennal grooves, the antennomere III more elongate, the prosternum sometimes without distinct carinae and the female abdomen with 5 ventrites.

Description. Length 2.50–3.50 mm; TL/EW = 1.47–1.55; PL/PW = 0.46–0.50; EL/EW = 1.07–1.10.
Body (Figs 666, 667, 673) elongate oval, moderately convex, winged; predominantly light brown to dark brown with elytra blackish; each elytron decorated with two brown spots on disc (anterior or sometimes both spots extending laterally almost to elytral margin). Some individuals have ventral surfaces of meso- and metathorax and elytral epipleura somewhat infuscate. Dorsum with double pubescence consisting of appressed setae and sparse dark stiff bristles; dorsal pubescence not forming pattern on elytra; elytral bristles present along margins only.

Head (Figs 668, 672) withdrawn into prothorax but with eyes partially visible externally; ventral antennal grooves absent or indistinct. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; with ocular canthus extending slightly into eye; interocular distance 0.59–0.60 times as wide as head across eyes; interfacial setae absent. Antenna (Fig. 669) 0.90–0.95 times as long as head capsule width, 11-segmented; scape 1.35 times as long as pedicel; pedicel distinctly narrower than scape, 1.9 times as long as wide; antennomere III 3.75 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV shorter than V; antennomeres VI and VII weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere distinctly elongate, apically truncate. Anterior clypeal margin straight. Labrum truncate at apex. Maxillary cardo (Fig. 668) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpmere 1.4 times as long as wide, weakly expanded apically. Mentum strongly transverse, at least 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpgler; apical palpmere as long and about as broad as penultimate one; submentum distinct.

Pronotum (Figs 670, 672) with anterior angles obtuse, not swollen with regular border; anterior margin with fine bordering carina or line; lateral margin slightly upturned and without clear border at least along part of its length; hind margin with entire border line. Prothoracic hypomeron (Fig. 671) smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process 0.75 times as broad as longest coxal diameter, its surface with carinae subparallel, joined roundly just before prosternal margin, in some individuals carinae indistinct; prothorax in front of coxa 0.9 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line; much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with complete borderline line broadly separated from the cavity externally.

Anterior edge of mesoventrite (Fig. 671) with complete raised border; mesoventral process at median length of coxa scarcely broader than corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction arcuate anteriorly. Scutellum (Fig. 670) triangular, transverse; surface punctate and setose. Elytra (Figs 666, 667) with lateral margins very narrow but entirely visible from disc, surface with single size only, 2 times as wide as elytra area narrow throughout. Meta (Fig. 671) with partially and medially forming straight margin distinct, visible ventrally. Legs with trochanters rounded (Fig. 674); pro- and mid femur with large subtriangular basal tooth. Abdomen with 5 ventrites V in female about 1.15 times as long as male, recurved and complex. Ventrite V in female about 1.4 times as long as male. Ventrites VI in male smooth (Fig. 16); ventrite VI (Fig. 16) rounded; hind margin of mesonly slightly rounded. Sternum IX with crenate smooth. IX somewhat widening at apical end of U. Male genitalia (Fig. 16) simple, well developed, simple; aedeagus covered with simple scales, without lateral symmetrical transverse stripes.

Female genitalia (Fig. 16) simple; style strongly reduced, distinctly widened in its apical part; spermathecal accessory gland.

Material examined. Type specimens: Cladocerus Parapolyd Rhyd. dent 2547, male (1: ZSM); "S. cl. rhyd. parapolyd. 55: (2: ZSM).


Distribution: South Africa.
above; surface with single size punctures, elytral epipleuron (Fig. 667) incomplete apically only, 2 times as wide as corresponding metaepisternum, inner margin with border area narrow throughout and border line fading before base of elytron. Metaventrite (Fig. 667) with partially incomplete discrinen; metaventral postcoxal lines joined medially forming straight line. complete and weakly recurved laterally; metaepimeron distinct, visible ventrally.

Legs with trochanters roundly produced (Figs 667, 671); tibiae without distinct spurs (Fig. 674); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with large subtriangular basal tooth; tarsal claws in female with subtriangular basal tooth.

Abdomen with 5 ventrites in female, and 6 ventrites in male (Fig. 675); ventrite I 1.45 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, posteriorly reaches about half length of ventrite I; ventrite V in female about as long as IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin deeply emarginate; female ventrite VI (Fig. 1613) with hind margin weakly truncate, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1609), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX somewhat widening at apex, and base of spiculum sclerotized, deeply divided into inverted U.

Male genitalia (Figs 1608, 1610, 1611). Parameres articulated with phallobase, well developed, simple and separated, about as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm obsolete.

Female genitalia (Fig. 1612). Proctiger (T10) reduced, small, submembranous; styli strongly reduced and hardly visible; infundibulum absent; sperm duct slightly widened in its apical part; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.


Distribution. South Africa.
Rhyzobius nigromarginatus Fürsch
(Figs 631–638, 1690–1694)

Rhyzobius nigromarginatus Fürsch, 1992: 70.

Diagnosis. *R. nigromarginatus* resembles *R. pictus* in the body size and shape. It, however, can be separated from it by having anterior margin of the pronotum without bordering line, the prosternal carinae subparallel, joined roundly just before prosternal margin and the antennomere IV shorter than V. Additionally *R. nigromarginatus* has unique colour pattern on the elytra with margins and/ or suture black (although differently developed).

Description. Length 2.17–2.43 mm; TL/EW = 1.29–1.32; PL/PW = 0.38–0.43; EU/EW = 1.00–1.04.

Body (Figs 631–633) broadly oval, moderately convex, winged; brown with elytra along lateral margins from beyond humeri to apices and along suture to scutellum, black. Dorsum with double pubescence consisting of appressed setae and sparse dark stiff bristles; dorsal pubescence not forming pattern on elytra; elytral bristles present along margins only.

Head (Figs 634, 635) withdrawn into prothorax but with eyes partially visible externally; ventral antennal grooves absent or indistinct. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arculate, closest at middle; with oculicar canthus extending slightly into eye; interocular distance 0.58–0.60 times as wide as head across eyes; interfacial setae absent. Antenna (Fig. 637) 0.9 times as long as head capsule width, 11-segmented; scape 1.5 times as long as pedicel; pedicel distinctly narrower than scape, 1.65 times as long as wide; antennomere III 2.5 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV shorter than V; antennomeres VI and VII weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere distinctly elongate, apically rounded. Anterior clypeal margin straight. Labrum emarginate at apex. Maxillary cardo (Fig. 635) transverse and strongly prominent externally; terminal palpmere 1.2 times as long as wide, weakly expanded apically. Mentum strongly transverse, at least 2 times broader than long; posterior margin weakly arculate; ventral surface with horseshoe like impression; prementum transverse; ligula parallel-sided; labial palps separated by distance about equal to width of palpiger; apical palpmere about as long and as broad as penultimate one; submentum distinct.

Pronotum (Figs 634, 636) with anterior angles obtuse, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and without clear border at least along part of its length; hind margin with entire border line. Prothoracic hypomeron (Fig. 635) smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process 0.7 times as broad as longest coxal diameter, its surface with carinae weakly convergent, joined roundly before prosternal margin. Protopedal border line much more posteriorly transverse, with cornua externally.

Thorax and elytra: prosternal and metanepisternum triangular, hind margins very narrow but with single size punctures, elytra 2.5 times as wide as correspondingly metaventral and medially forming strong marginal striae, metasternum without interstriae.

Legs with trochanteri simple and dorsal claws in male apex with regular basal tooth.

Abdomen (Fig. 638) as long as ventrite II, abdominal segments about half length of ventrite II, ventrite I margin arculate and smooth; ventrites deeply emarginate; female ventrite VIII rounded; hind margin of ventrite VIII rounded. Sternite wide and strong.

Male genitalia (Fig. 639) well developed, simple and symmetrical throughout; tegmen wide.

Female genitalia (Fig. 640): hind plate; stylar terminal plate, ovipectometer; spermatheca without adjacent to sperm duct.

ly just before prosternal margin; prosternum in front of coxa 0.75 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line; much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with complete bordering line broadly separated from the cavity externally.

Anterior edge of mesoventrite with complete raised border; mesoventral process at median length of coxa as broad as corresponding coxal diameter; meso-metaventral articulation with suture visible; junction forming a straight line. Scutellum (Fig. 636) triangular, transverse; surface punctate and setose. Elytra with lateral margins very narrow but entirely visible from above (Figs 631, 633); surface with single size punctures, e lyr al epipleuron (Fig. 632) incomplete apically only, 2.4 times as wide as corresponding metapisternum, inner margin without border. Metaventrite with partially incomplete discrimen; metaventral postcoxal lines joined medially forming straight line, complete and distinctly recurved laterally; metavestigialum without interlocking device; metaepimeron distinct, visible ventrally. Legs with trochanters simple (Fig. 632); tibiae without visible spurs; pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with large subtriangular basal tooth.

Abdomen (Fig. 638) with 6 ventrites in both sexes; ventrite I 1.25 times as long as ventrite II; abdominal postcoxal lines separate medially; posteriorly reaches about half length of ventrite I; ventrite V in female about as long as IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin deeply emarginate; female ventrite VI (Fig. 1693) with hind margin arcuate, tergite VIII rounded; hind margin of male ventrite VI weakly emarginate (Fig. 1691), tergite VIII rounded. Sternite IX with central part membranous; base of spiculum widened.

Male genitalia (Figs 1690, 1692). Parameres articulated with phallobase, well developed, simple and separated, about as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental struts simple. Female genitalia (Fig. 1694). Proctiger (T10) distinct, at least partly sclerotized plate; styli terminal; infundibulum absent; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct. Material examined. Types. Holotype, male, "Holotypus Rhyzobius nigromarginatus" Fürsch. 1986/ S. Africa, R.E. Turner, Brit. Mus, 1923-463/ Port St. John, Pondoland, Aug. 15-31.1923/ Holotype" (NHM); paratype, same data as holotype (1 female: NHM); same but B.M. 1924-136 (1 female: NHM).


Distribution. South Africa.
Rhyzobius quadrijrenestratus Fürsch,
(Figs 987–998, 1761–1765)

Rhyzobius quadrijrenestratus Fürsch, 1992: 70.

Diagnosis. This species closely resembles R. angolensis, but can be distinguished from it by more coarsely punctate elytra, longer antennae (as compared to head width) and the head with indistinct ventral antennal grooves.

Description. Length 2.33–2.73 mm; TL/EW = 1.38–1.50; PL/PW = 0.45–0.47; EL/EW = 1.05–1.12.

Body (Figs 987, 997) broadly oval, moderately convex, winged; yellowish brown with only elytra along disc broadly dark brown; with two round oval yellowish brown maculae within this dark area on each elytron. Dorsum with double pubescence consisting of appressed setae and sparse stiff bristles; dorsal pubescence not forming pattern on elytra; elytral bristles present along margins only.

Head (Figs 989, 990, 993) withdrawn into prothorax but with eyes partially visible externally, 0.75 times as long as wide; ventral antennal grooves absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; with ocular canthus extending slightly into eye; interocular distance 0.59–0.62 times as wide as head across eyes; interfacial setae distinct. Antenna (Fig. 988) 0.95 times as long as head capsule width, 11-segmented; scape 1.85 times as long as pedicel; pedicel distinctly narrower than scape, 1.3 times as long as wide; antennomere III 3.1 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV shorter than V; antennomeres VI and VII subquadrate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere distinctly elongate, apically rounded. Anterior clypeal margin straight. Labrum rounded apically. Maxillary cardo (Fig. 993) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpmere 1.3 times as long as wide, weakly expanded apically. Mentum strongly transverse, at least 2 times broader than longer; anterior margin weakly arcuate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula reduced; labial palps separated by distance about equal to width of palpi; apical palpmere as long and about as broad as penultimate one; submentum distinct.

Pronotum (Figs 989, 990) with anterior angles obtuse, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and without clear border at least along part of its length; hind margin with entire border line. Prothoracic hypomeron (Fig. 993) smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process 0.65 times as broad as longest coxal diameter, its surface with carinae converging along basal half then parallel, joined roundly just before prosternal margin; prosternum in front of coxa 0.7 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line; much more posterior than anterior pronotal margin; procoxal cavity


Other material: South Africa.

Distribution: South Africa.
from it the head

0.47;

thick, reddish brown; eyes slightly bulging, yellowish brown; antennae yellow with a dark brown ring at the base; maxillary palp five-segmented; tarsi five-segmented; protibiae with three spurs; mesoventrite distinctly transverse, with complete bordering line broadly separated from the cavity externally.

Anterior edge of mesoventrite (Fig. 996) with complete raised border; mesoventral process at median length of coxa 0.8 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction straight. Scutellum (Fig. 994) triangular, transverse; surface punctate and setose. Elytra with lateral margins very narrow but entirely visible from above; surface with single size punctures (Fig. 994), elytral epipleuron incomplete apically only (Fig. 987), 2.85 times as wide as corresponding metaepisternum, inner margin without border (Fig. 991). Metaventrite with partially incomplete discrimen; metaventral postcoxal lines joined medially forming straight line, complete laterally and recurved; metaepisternum without interlocking device; metaepimeron distinct, visible ventrally.

Legs with trochanters simple (Fig. 996); mid and hind tibia without distinct spur(s) (Figs 992, 995); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with large subquadrate basal tooth; tarsal claws in female with quadrate basal tooth.

Abdomen (Fig. 998) with 6 ventrites in both sexes; ventrite I 1.2 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, posteriorly reaches about half length of ventrite I; ventrite V in female about as long as IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin deeply emarginate; female ventrite VI (Fig. 1763) with hind margin arcuate, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1764), tergite VIII truncate apically. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half complex, somewhat widening towards and at apex, and base of spiculum sclerotized, deeply divided into inverted U.

Male genitalia (Figs 1761, 1762). Parameres articulated with phallobase, well developed, simple and separated, about as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegminal strut simple; penis base with outer arm absent.

Female genitalia (Fig. 1765). Proctiger (T10) distinct, at least partly sclerotized plate; styli strongly reduced and hardly visible; infundibulum in form of lightly sclerotized piece of bursa; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.


Distribution. South Africa.
Rhizobius pictus (Sicard)
(Figs 676–683, 1786–1791)

Pharoscyamus pictus Sicard, 1912: 267.
Scyamus pictus: Smirnoff, 1956: 34.

Diagnosis. This species is similar to R. nigromarginatus by the body size and shape, but can be separated by having anterior margin of the pronotum with bordering line, the prosternal process with carinae forming triangle and the antennomere IV as long as V. Moreover R. pictus has characteristic, complicated colour pattern on the elytra (although variable among specimens).

Description. Length 2.10–2.85 mm; TL/EW = 1.28–1.45; PL/PW = 0.44–0.47; EL/EW = 1.02–1.03.

Body (Figs 677, 678) broadly oval, moderately convex, winged. Predominantly yellowish brown to dark brown; elytra uniformly coloured like the rest of body or with differently developed pattern of dark stripes and bands, in some individuals elytra appearing three colours with background brown decorated with differently developed pale maculae and blackish stripes. Dorsum with double pubescence consisting of appressed setae and sparse stiff bristles; dorsal pubescence not forming pattern on elytra; elytral bristles present on entire dorsum but distinct especially along margins.

Head (Figs 676, 679) withdrawn into prothorax but with eyes partially visible externally, about 0.82 times as long as wide; ventral antennal grooves absent or indistinct. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; with ocular canthus extending slightly into eye; interocular distance 0.6 times as wide as head across eyes; interfacial setae indistinct. Antenna 0.95 times as long as head capsule width, 11-segmented; scape 1.55 times as long as pedicel; pedicel distinctly narrower than scape, 1.45 times as long as wide; antennomere III 2.65 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere distinctly elongate, apically rounded. Anterior clypeal margin straight. Labrum rounded apically. Maxillary cardo (Fig. 676) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpalpere about 1.15 times as long as wide, weakly expanded apically. Mentum weakly transverse, less than 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe like impression; prementum at least as long as broad; ligula slightly expanded antero-laterally; labial palps separated by distance about equal to width of palpaiger; apical palpomere about as long and about as broad as penultimate one; submentum distinct.
Pronotum (Figs 679, 680) with anterior angles obtuse, not swollen with regular border; anterior margin with fine bordering carina or line; lateral margin slightly upturned and without clear border at least along part of its length; hind margin with entire border line. Prothoracic hypomeron (Fig. 682) smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process 0.7 times as broad as longest coxal diameter, its surface with carinae complete, converging and joined anteriorly forming triangle; prosternum in front of coxa 0.65 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as arcuate line; much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with complete bordering line broadly separated from the cavity externally.

Anterior edge of mesoventrite (Fig. 682) with complete raised border; mesoventral process at median length of coxa 0.65 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction forming straight line. Scutellum triangular, transverse; surface punctate and setose. Elytra (Fig. 677) with lateral margins very narrow but entirely visible from above; surface with single size punctures, elytral epipleuron incomplete apically only (Fig. 678), 2.8 times as wide as corresponding metaepisternum, inner margin without border. Metaventrite with partially incomplete discrimen; metaventral postcoxal lines joined medially forming straight line, complete laterally and distinctly recurved; metaepimeron distinct, visible ventrally.

Legs with trochanters simple (Figs 681, 682); tibiae without visible spurs (Fig. 683); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with large subtriangular basal tooth; tarsal claws in female with large, subquadrate basal tooth.

Abdomen (Fig. 681) with 6 ventrites in both sexes; ventrite I 1.45 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, posteriorly reaches about half length of ventrite I; ventrite V in female abdomen as long as IV, with hind margin straight and smooth; ventrite V in male smooth and simply setose, hind margin emarginate; female ventrite VI (Fig. 1791) with hind margin arcuate, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1787), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half narrow and rod-like towards apex, and base of spiculum sclerotized rod, deeply divided into inverted V.

Male genitalia (Figs 1786, 1788, 1789). Parameres articulated with phallobase, well developed, simple and separated, reaching apically to apex of penis guide, with apices covered with simple setae; penis guide with additional processes, with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm absent.

Female genitalia (Fig. 1790). Proctiger (T10) distinct, at least partly sclerotized plate; styli absent; infundibulum absent; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

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Distribution. South Africa.

Rhysohobius stillatus Fürsch
(Figs 1126-1136, 1824-1829)

Rhysohobius stillatus Fürsch, 1992: 73.

Diagnosis. R. stillatus resembles R. densepunctatus, especially in body size and shape. However, it is distinguished from that species by the pronotum with lateral margins nearly parallel-sided, the prosternal process with distinct carinae, the mid and hind tibia with double spurs and the deeper abdominal postcoxal lines. Moreover R. stillatus has usually dark brown elytra decorated with one or two, large pale spots.

Description. Length 1.93-2.75 mm; TL/EW = 1.71-1.74; PL/PW = 0.60-0.63; EL/EW = 1.20-1.25.

Body (Figs 1126, 1127, 1132) elongate and almost parallel-sided, flattened, wingles. Pronotum black; elytra black with one or two, orange or yellowish maculae;
antenna and legs uniformly brown. Dorsum with double pubescence consisting of appressed setae and darker sparse stiff bristles; dorsal pubescence not forming pattern on elytra; elytral bristles distinct especially along margins. 

Head (Figs 1130, 1133) dorsally exposed, 0.75 times as long as wide; ventral antennal grooves indistinct. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arculate, closest at middle; with ocular canthus extending slightly into eye; interocular distance 0.60–0.63 times as wide as head across eyes; interfaccial setae absent. Antenna (Fig. 1134) 0.95 times as long as head capsule width, 11-segmented; scape 2.25 times as long as pedicel; pedicel distinctly narrower than scape, 1.45 times as long as wide; antennomere III 2.85 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII subquadrate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere distinctly elongate, apically truncate. Anterior clypeal margin straight. Labrum rounded apically. Maxillary cardo (Fig. 1130) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpmere 1.7–1.8 times as long as wide, parallel-sided. Mentum strongly transverse, at least 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe-like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance at least 1.5 times broader than width of palpiger; apical palpmere as long and as broad as penultimate one; submentum distinct.

Pronotum (Figs 1133, 1135) with anterior angles obtuse, not swollen with regular border; anterior margin with fine bordering carina or line; lateral margin with entire border; hind margin with entire border line. Prothoracic hypomeron (Figs 1129, 1130) smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process (Fig. 1129) about 0.63 times as broad as longest coxal diameter, its surface with carinae converging apically, joined before apex and continuing anteriorly as single carina; prosternum in front of coxa 0.75 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line; at a similar level or slightly more posterior then anterior pronotal margin; procoxal cavity distinctly transverse, with complete bordering line broadly separated from the cavity externally.

Anterior edge of mesoventrite (Fig. 1129) with complete raised border; mesoventral process at median length of coxa as broad as corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction forming a straight line. Scutellum triangular, transverse; surface punctate and setose. Elytra (Figs 1126, 1132) with lateral margins very narrow but entirely visible from above; surface with double size punctures, elytral epipleuron obsolete in apical half (Fig. 1127), 1.5 times as wide as corresponding metaepisternum, inner margin with border area narrow throughout and border line fading before base of elytron. Metaventrite (Fig. 1129) with partially incomplete discrinen; metaventral postcoxal lines joined medially forming straight line, complete and recurved laterally; metaepisternum without
interlocking device; metaepimeron distinct, visible ventrally; metendosternite stalk distinctly shorter than broad.

Legs with trochanters simple (Figs 1127, 1129, 1136); mid and hind tibia with two spurs (Figs 1128, 1131); claws in male with weak quadrate basal tooth; claws in female simple.

Abdomen (Fig. 1136) with 6 ventrites in both sexes; ventrite I 1.5 times as long as ventrite II; abdominal postcoxal lines separate mediadly, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female about as long as IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin rounded; female ventrite VI (Fig. 1829) with hind margin arcuate, tergite VIII rounded; hind margin of male ventrite VI weakly emarginate (Fig. 1825), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half very narrow and rod-like towards apex, and base of spiniculum sclerotized rod, deeply divided into inverted V.

Male genitalia (Figs 1824, 1826, 1827). Parameres articulated with penis guide, well developed, simple and separated, slightly longer than penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut with broad apex forming U-shaped capsule; penis base with outer arm less developed than inner arm.

Female genitalia (Fig. 1828). Proctiger (T10) distinct, at least partly sclerotized plate; styli reduced and hardly visible; infundibulum absent; spermat duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to spermat duct.


Other material. South Africa, S. Transvaal. Roberts Drift: Vaal R, 27.02S 29.02E, 8.X.1973, E.Y.: 189, from flood debris, leg. Endrödy-Younga (2: TMNH); RSA, (Eastern Cape), 50 km W Graaf-Reinet, E Mt. Torberg, 1200-1600 m, 21-25.XI.2007, leg. W. Schawaller (1: ZSM); Little Karoo Outshoorn, 25 km SE, 33.45S 22.18E, 29.X.1993, E.Y.: 2919, ground up, 11 days, leg. Endrödy-Younga, ground up with faeces bait (1: ZSM); Cape Town, 27.V.1957 (3: ZSM); same but lightfoot, 1913 (1: ZSM); Cape Prov. X.1986 (1: ZSM); Stellenbosch, Y.B. Whithead (1: ZSM); Cape, Cederberg, Jeep track, 1380 m, 32.245 19.10E, 1.IX.1981, E.Y.: 1878, ground up, 63 days, leg. Endrödy-Younga, ground up with faeces bait (1: ZSM); Eksteenfontein, 22 km N, 28.38S 17.15E, Cape, RSA, 17.IX.1982, M.L. Pentrich (4: ZSM); De Doors CP, 18.X.1979, A.J. Urban, with mealybugs on grasses (1: ZSM); O.S.F., Florishad 686, Brandfort SE 2826 Cc., VII.1983 (3: ZSM); S. Cape, Mt. Helderfontein, 1150 m, 33.56S 20.52E, 8.III.1979, E.Y.: 1561, sifted, fynbos, leg. Endrödy-Younga (2: HNHM); 34.04S 20.27E, Cape Prov., Bontebok NP, river bank, 15.II.1993, sievings, leg. M. Uhlig (1: NMB); Western Cape Prov., 33.54S 20.11E, 30 km NW Swellendam, 18-20.XII.2002, leg. M. & B. Uhlig (2: NMB).

Distribution. South Africa.
Rhyzobius thoracicus Fürsch
(Figs 1137–1144, 1449–1451)

Rhyzobius thoracicus Fürsch, 2007a: 22.

**Diagnosis.** This species is similar to *R. densepunctatus*. However, the dark brown dorsal surface of the body, the pronotum at least as wide as maximum width of the elytra and the antennomere IV shorter than V, separate *R. thoracicus* from *R. densepunctatus*.

**Description.** Length 2.53 mm; TL/EW = 1.70; PL/PW = 0.51; EL/EW = 1.20.

**Body** (Fig. 1137) elongate oval, distinctly flattened, winged; uniformly dark brown. Dorsum with double pubescence consisting of appressed setae and sparse dark stiff bristles; dorsal pubescence not forming pattern on elytra; elytral bristles present along margins only.

**Head** (Figs 1140, 1142) dorsally exposed; ventral antennal grooves indistinct. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; with ocular canthus extending slightly into eye; interocular distance about 0.57 times as wide as head across eyes; interfacetal setae absent. Antenna (Fig. 1139) 0.95 times as long as head capsule width, 11-segmented; scape 1.65 times as long as pedicel; pedicel distinctly narrower than scape, 1.6 times as long as wide; antennomere III 3.65 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV shorter than V; antennomeres VI and VII weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere distinctly elongate, apically rounded. Anterior clypeal margin straight. Labrum rounded apically. Maxillary cardo (Fig. 1140) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.65 times as long as wide, weakly expanded apically. Mentum weakly transverse, less than 2 times broader than long; anterior margin truncate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula parallel-sided; labial palps very narrowly separated; apical palpomere as long and about as broad as penultimate one; submentum distinct.

**Pronotum** with anterior angles obtuse, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and without clear border at least along part of its length; hind margin with entire border line. Prothoracic hypomeron (Fig. 1142) smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process 0.5 times as broad as longest coxal diameter, its surface with short separate carinae extending slightly forward beyond prosternal process; prosternum in front of coxa as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line; at a similar level or only slightly more posterior then anterior pronotal margin; procoxal cavity distinctly transverse, with complete bordering line broadly separated from the cavity externally.

**Anterior** edge of mesoventrite (Fig. 1144) with complete raised border; mesoventral process at median length of coxa 0.75 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction forming
straight line. Scutellum triangular, transverse; surface punctate and setose. Elytra with lateral margins very narrow but entirely visible from above; surface with single size punctures, elytral epipleuron incomplete apically only (Fig. 1137), 2.1 times as wide as corresponding metaepisternum, inner margin without border (Fig. 1138). Metaventral postcoxal lines joined medially forming straight line, complete and distinctly recurved; metaepisternum without interlocking device; metaepimeron distinct, visible ventrally.

Legs with trochanters simple (Fig. 1144); mid and hind tibia without visible spurs (Figs 1141, 1143); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with large subtriangular basal tooth.

Abdomen with 6 ventrites in male; ventrite I 1.25 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, posteriorly reaches about half length of ventrite I; ventrite V in male smooth and simply setose, hind margin deeply emarginate; hind margin of male ventrite VI truncate or emarginate (Fig. 1451), tergite VIII rounded. Sternum IX with central part membranous; apodeme of male sternum IX with its apical half widening towards and at apex, and base of spiculum simple, narrow, rod-like.

Male genitalia (Figs 1449, 1450). Parameres articulated with phallobase, well developed, simple and separated, reaching apically to apex of penis guide, with spines covered with long, somewhat hook-like setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm obsolete.

Female unknown.


Distribution. South Africa.

Key to Australian, New Caledonian and New Zealand species of *Rhizobius*

1. Prosternum smooth or with short carinae, extending slightly forward beyond prosternal process ........................................ 2
   - Prosternum with complete carina ........................................ 19
2. Hind margin of pronotum without border line ............................ 3
   - Hind margin of pronotum with border line (Figs 135, 912) .......... 7
3. Mid and hind tibia without spurs; elytra deeply black with four oval, yellow or orange maculae (sometimes fused together) (Figs 1935, 1936) ... quadrimalaculatus sp. nov.
   - Mid and hind tibia with single spur (Figs 1337, 1338); elytra if deeply black and decorated, then covered with elongate, yellow stripes .......................... 4
4. Abdominal postcoxal line deep, posteriorly reaches distinctly more than half length of ventrite I; ventral antennal grooves on head long, distinctly circular bent towards outer margin of eye (Fig. 1330); body larger .......................................................... \textit{xanthurus} (Mulsant)

- Abdominal postcoxal line reaches at most half length of ventrite I; ventral antennal grooves on head if long, then straight; body smaller .................. \textit{xanthurus} (Mulsant)

5. Dorsum black, elytra without contrasting markings; abdominal postcoxal line posteriorly reaches about half length of ventrite I (Fig. 944) .......................................................... \textit{pelion} sp. nov.

- Dorsum yellow or blackish brown, elytra with contrasting markings; abdominal postcoxal line posteriorly reaches distinctly less than half length of ventrite I (Figs 13, 1200) .......................................................... \textit{pelion} sp. nov.

6. Ventral antennal grooves indistinct (Fig. 4); trochanters simple; terminal antennomere distinctly elongate; elytra yellowish brown with blackish maculae of irregular shape ................................................. \textit{alphabeticus} (Lea)

- Ventral antennal grooves long, reaching beyond posterior margin of eyes (Fig. 1189); trochanters angulate produced along outer edge; terminal antennomere subquadrate; elytra blackish brown with yellow or orange, wavy stripes (Fig. 1940) .......................................................... \textit{tasmanicus} sp. nov.

7. Prosternal carinae short, convergent anteriorly and fading just forward beyond procoxal cavities (Figs 92, 136, 908) .......................................................... \textit{tasmanicus} sp. nov.

- Prosternum without carinae .......................................................... \textit{tasmanicus} sp. nov.

8. Abdominal postcoxal line very shallow (Fig. 142); terminal antennomere elongate; elytral epipleura with inner margin unbordered; scutellum longer than wide (Fig. 141); New Caledonia .................................................. \textit{bielawski} sp. nov.

- Abdominal postcoxal line reaching at least half length of ventrite I (Figs 96, 916); terminal antennomere at most as long as wide; elytral epipleura with inner margin bordered; scutellum transverse (Figs 95, 913) .......................................................... \textit{tasmanicus} sp. nov.

9. Terminal maxillary palpomere parallel-sided (Fig. 99); elytra brown with one pale, long stripe on each elytron [Australia] .................................................. \textit{bilineatus} (Weise)

- Terminal maxillary palpomere widened toward apex (Fig. 907); elytra yellowish brown with more or less distinct blackish contrasting markings or entirely infuscate; [New Zealand] .................................................. \textit{nubilus} (Weise)

10. Elytra without contrasting markings .......................................................... \textit{nubilus} (Weise)

- Elytra with contrasting markings .......................................................... \textit{nubilus} (Weise)

11. Body more flattened; pronotum about 0.4 times as long as wide; prosternal process much broader than longest procoxal diameter (Fig. 88); mesoventral process more than 1.5 times broader than mesocoxal diameter (Fig. 88) .......................................................... \textit{approximatus} (Blackburn)

- Body more convex; pronotum about 0.5 times as long as wide; prosternal process at most as broad as longest procoxal diameter (Figs 201, 876); mesoventral process less than 1.5 times broader than mesocoxal diameter (Figs 877, 201) .................
12. Body more elongate; antennomere III more than 4 times longer than wide; female ventrite V about as long as IV with hind margin straight and smooth; male genitalia as in Figs 1701–1703 ........................................ nitidus (Blackburn)
   - Body more oval; antennomere III distinctly less than 4 times longer than wide; female ventrite V longer than IV with hind margin arcuate and crenulate (Fig. 202); male genitalia as in Figs 1400–1402 ........................................ boothi sp. nov.

13. Contrasting markings on elytra pale .................................................. 14
   - Contrasting markings on elytra black .................................................. 16

14. Each elytron with one elongate red stripe (Fig. 1921) .... lineellus sp. nov.
   - Each elytron with three oval yellowish maculae (sometimes poorly developed) ........................................ 15

15. Antennomere III less elongate, antennomere IV as long as V, female abdomen with ventrite VI at least partly visible (Fig. 1227); male ventrite V with hind margin emarginate (Fig. 1228); male and female genitalia as in Figs 1852–1854, 1856 ........................................ umbratus (Blackburn)
   - Antennomere III more elongate, antennomere IV shorter than V, female abdomen with 5 ventrites; male ventrite V with hind margin truncate (Fig. 1313); male and female genitalia as in Figs 1893–1895, 1898 ........................................ waterhousei (Mulsant)

16. Antenna distinctly longer than head width; antennomeres VI and VII at least 1.5 times longer than wide; terminal antennomere longer than wide; trochanters simple; abdominal postcoxal lines very shallow (Fig. 888) ........................................ occidentalis (Blackburn)
   - Antenna distinctly shorter than head width; antennomeres VI and VII subquadrate; terminal antennomere transverse; trochanters angulately produced along outer margin (Fig. 862, 971, 972, 980); abdominal postcoxal lines reaching about half length of ventrite I (Figs 872, 971, 986) ........................................ 17

17. Body more oval; antennomere IV as long as V (Fig. 966); inner margin of elytral epipleuron without border line (Fig. 963); [male and female genitalia as in Figs 1742, 1744–1746] ........................................ pseudopolicher sp. nov.
   - Body more elongate; antennomere IV shorter than V (Figs 860, 978); inner margin of elytral epipleuron with border line (Fig. 977) ........................................ 18

18. Antennomere III more elongate; female abdomen with 5 ventrites; winged, wingle or brachypterous; prosternum in front of coxa nearly as long as longitudinal coxal diameter; male and female genitalia as in Figs 1695–1697, 1700 ........................................ nigrovarius (Lea)
   - Antennomere III less elongate; female abdomen with 6 ventrites; winged; prosternum in front of coxa distinctly shorter than longitudinal coxal diameter; male and female genitalia as in Figs 1755, 1756, 1758, 1759 ........................................ pulcher (Blackburn)

19. Prothoracic hypomeron smooth, without groove or concavity ........................................ 20
   - Prothoracic hypomeron with at least short groove and/or concavity anteriorly (e.g. Figs 706, 1015) ........................................ 36
20. Ventral antennal grooves extending distinctly beyond posterior margin of eyes .................................................. 21
   - Ventral antennal grooves extending at most along inner margin of eyes or indistinct, or apparently absent ................................................................. 30
21. Antennal grooves straight (e.g. Figs 150, 457) ................................................................. 22
   - Antennal grooves distinctly circular bending towards outer margin of eyes (e.g. Figs 287, 360) ................................................................. 26
22. Mid and hind tibia without spurs (Figs 462, 463); wingless or strongly brachypterous ........................................... filicis (Lea)
   - Mid and hind tibia with single spur (e.g. Figs 851, 852); hind wings well developed .................................................. 23
23. Body broadly oval; antennomere III less than 3 times as long as broad and at most 2.5 times longer than IV (Figs 149, 848); prosternal carinae joined roundly just before anterior prosternal margin (Figs 151, 856); New Caledonia ................................................. 24
   - Body elongate oval; antennomere III more than 3 times as long as broad and at least 3 times longer than IV (Figs 106, 771); prosternal carinae joined just before anterior prosternal margin forming triangle (Fig. 774) or carinae joined before anterior margin and continuing anteriorly as single carina (Fig. 114); Australia .................................................. 25
24. Elytra blackish with more or less developed red oval macula along suture; antennomeres VI and VII quadrate (Fig. 848); male ventrite VI Emininate medially at apex (Fig. 1687) ........................................... nigripennis (Fauvel)
   - Elytra black without contrasting markings; antennomeres VI and VII at least 1.5 times longer than broad (Fig. 149); male ventrite VI rounded apically (Fig. 1889) .................................................. wanati sp. nov.
25. Elytra black without maculae; elytra covered with pubescence forming weak wavy pattern; penultimate antennomere shorter than terminal one; maxillary carina more prominent laterally (Fig. 108) ......................... auranii (Blackburn)
   - Elytra blackish brown with large, light brown macula along suture (Fig. 1922); elytra covered with pubescence forming distinct wavy pattern; penultimate antennomere longer than terminal one; maxillary carina with outer edge less prominent laterally (Fig. 769) ................................................................. macromaculatus sp. nov.
26. Elytra black without contrasting markings ................................................................. 27
   - Elytra brown with black contrasting markings ................................................................. 29
27. Body elongate and almost parallel-sided; elytra with blue or purple metallic sheen; prosternum in front of coxa about 1.2 times longer than longitudinal coxal diameter (Fig. 295); female abdominal ventrite VI excised medially at apex (Fig. 1458) ................................................................. cyaneus (Blackburn)
   - Body elongate-oval; elytra without metallic sheen; prosternum in front of coxa at most 0.75 times as long as longitudinal coxal diameter (Fig. 362, 1077); female abdominal ventrite VI rounded or subtruncated at apex 1487, 1740) ................................................................. 28
28. Mid and hind tibia with single spur; prosternal carinae joined roundly just before anterior prosternal margin (Fig. 362); male ventrite V rounded (Fig. 366); male and female genitalia as in Figs 1483–1485, 1488 .................................................. \textit{discalor} (Erichson)

- Tibiae without spurs; prosternal carinae separate throughout (Fig. 1077, 1081); male ventrite V narrowly truncate at apex (Fig. 1077); male and female genitalia as in Figs 1737, 1738, 1741 .................................................. \textit{popei} sp. nov,

29. Elytra with common large, oval macula along suture; hind wings present ....

- Each elytron with elongate maculae or stripes far from suture; hind wings absent .................................................. \textit{ephippiatus} (Weise)

30. Prosternal carinae weakly converging, separate to anterior prosternal margin (Figs 271, 810, 1071); mid tibia with single spur; hind wings present ...... 31

- Prosternal carinae more or less triangular, joined before anterior prosternal margin (Figs 237, 557, 825, 1251); mid tibia with double spurs; hind wings absent ........ 33

31. Elytra blackish with apex brown (Fig. 1925) .................................................. \textit{nataliae} sp. nov.

- Elytra differently coloured .................................................. 32

32. Dorsum uniformly light brown; pubescence forming more distinct wavy pattern on elytra (Fig. 1068) .................................................. \textit{secessus} (Blackburn)

- Dorsum bicoloured – pronotum mostly infuscate with lateral margins pale, elytra mostly yellowish brown with lateral and apical margins blackish (Fig. 1918); dorsal pubescence not forming wavy pattern (Fig. 269) .................................................. \textit{calderi} sp. nov.

33. Antenna 1.15–1.20 times as long as head width; mesoventral process broader than mesocoaxal diameter (Fig. 1251); metaventrite with discrins complete; [male genitalia as in Figs 1870, 1871, 1873] .................................................. \textit{victoriensis} sp. nov.

- Antenna at most as long as head width; mesoventral process at most as broad as mesocoaxal diameter (237, 557, 825); metaventrite with discrins incomple ... 34

34. Pronotum without basal margin (Fig. 240); scutellum transverse; antennomere III less than 3 times longer than wide and at most 2.5 times longer than antennomere IV; prosternal carinae joined roundly just before prosternal margin (Fig. 237); elytra uniformly dark brown (Fig. 1926); [male and female genitalia as in Figs 1419, 1420, 1421, 1424] .................................................. \textit{brunneus} sp. nov.

- Pronotum with basal margin (Figs 558, 828); scutellum at least as long as broad; antennomere III more than 3 times longer than wide and more than 3 times longer than antennomere IV; prosternal carinae joined trianularly before prosternal margin and continuing anteriorly as single carina (Figs 557, 825); elytra light brown or chestnut brown, sometimes with at least weak, darker maculae, or entirely blackish .................................................. 35

35. Antennomeres VI and VII transverse, dorsum blackish (Fig. 1931); male genitalia as in Figs 1678–1680) .................................................. \textit{newtonorum} sp. nov.

- Antennomeres VI and VII chestnut brown, sometimes weakly marked darker near end (565) .................................................. 36

- Pronotum without a groove ................................. 37

- Pronotum with distinct groove ........................................ 38

37. Abdominal postcoxal line at notum 0.57–0.59 times notum ................................. 39

- Abdominal postcoxal line at pronotum 0.49–0.55 times notum ................................. 40

38. Dorsum uniformly light brown; elytra blackish ................................. 41

- Dorsum black with large, stiff bristles at least along suture, and with double row of black, small bristles adjacent to them ................................. 42

39. Elytra blackish with large, stiff bristles in mid length ................................. 43

- Elytra uniformly black, or their base uniformly black in mid length ................................. 44

40. Mid and hind tibia with a concavity not delimited by most 2.7 times longer than notal width in Figs 1774–1775 ................................. 45

- Mid and hind tibia with a concavity delimited by most 3.5 times longer than notal width in Figs 1619, 1621 ................................. 46

41. Ventral antennal groove ........................................ 42

- Ventral antennal groove ........................................ 43

42. Prosternal carinae separate ................................. 44

- Prosternal carinae joined ........................................ 45

43. Prosternal process broader and more oval cavity (Fig. 1168); elytra oval, infuscate area at base ........................................ 46

- Prosternal process not broader and more elongate groove (Fig. 425); elytra ........................................ 47

44. Dorsum light brown
Antennomeres VI and VII at least as long as broad; dorsum light brown or chestnut brown, sometimes with pronotum weakly infuscate and elytra with weakly marked darker maculae (Fig. 1929); male genitalia as in Figs 1563–1565 .......................................................... hongae sp. nov.

36. Pronotum without a groove near anterior angles (e.g. Figs 260, 348) .......... 37
   – Pronotum with distinct groove near anterior angles (e.g. Figs 61, 477) .... 48

37. Abdominal postcoxal lines shallow, not reaching half length of ventrite I; pronotum 0.57–0.59 times as long as broad ............................................................. 38
   – Abdominal postcoxal lines reaching much beyond half length of ventrite I; pronotum 0.49–0.55 times as long as broad ............................................................. 39

38. Dorsum uniformly light brown, covered with uniform pubescence
   ............................................................. caecus (Blackburn)
   – Dorsum black with large, oval, reddish or yellowish macula on elytra along suture, and with double pubescence, consisting of appressed setae and sparse stiff bristles at least along margins ........................................... discoidalis (Weise)

39. Elytra blackish with large, oval, reddish area along suture ...................... 40
   – Elytra uniformly black or brown, rarely with small infuscate area along suture in mid length ............................................................. 41

40. Mid and hind tibia with single spur (Fig. 1016); prothoracic hypomeron with concavity not delimited by external groove (Fig. 1015); antennomere III at most 2.7 times longer than wide; infundibulum absent (Fig. 1778); male genitalia as in Figs 1774–1776 ...................................................... reidi sp. nov.
   – Mid and hind tibia without spurs (Figs 711, 712); prothoracic hypomeron with concavity delimited by external groove (Fig. 706); antennomere III more than 3.5 times longer than wide; infundibulum present (Fig. 1623); male genitalia as in Figs 1619, 1621 ............................................................. leai sp. nov.

41. Ventral antennal grooves long and straight (Fig. 447) ........................................ ventralis (Erichson)
   – Ventral antennal grooves long and circular bent towards outer margin of eyes (e.g. Figs 423, 1101, 1165) ............................................................. 42

42. Prosternal carinae separate throughout (Figs 430, 1168) ......................... 43
   – Prosternal carinae joined roundly just before anterior prosternal margin (e.g. Figs 656, 1105) ............................................................. 44

43. Prosternal process broader, carinae parallel throughout (Fig. 1168); body smaller and more oval; prothoracic hypomeron with distinct groove, not concavity (Fig. 1168); elytra dark brown or blackish brown usually with small, oval, infuscate area along suture in mid length ............................................................. pulchellus (Montrouzier)
   – Prosternal process narrower, carinae convergent anteriorly (Fig. 430); body larger and more elongate; prothoracic hypomeron with distinct concavity, not groove (Fig. 425); elytra uniformly brown or dark chestnut brown ............................................................. evansi (Mulsant)

44. Dorsum light brown (Fig. 1930) ............................................................. josephi sp. nov.
- At least elytra black .................................................. 45

45. Pronotum mostly brown with only medio-basal area black (Fig. 1939); genitalia as in Figs 1812, 1813, 1815, 1816] slipinskii sp. nov.  
- Pronotum mostly black usually with only lateral and anterior margins brownish ........................................ 46

46. Body more oval (Fig. 1919); mesoventral process distinctly broader than mesocoxal diameter (Fig. 391); female ventrite VI truncate at apex (Fig. 1498); genitalia as in Figs 1494–1496, 1499  
- Body more elongate (Figs 1927, 1928); mesoventral process at most as broad as mesocoxal diameter (Figs 502, 529); female ventrite VI rounded apically (Figs 1538, 1556)........ 47

47. Prosternal carinae parallel for most of their length (Fig. 502): male ventrite VI emarginate (Fig. 1543); female ventrite VI regularly rounded (Fig. 1538); penis guide with lateral sides strongly asymmetrical throughout (Fig. 1541); ventral surface of body bicoloured (brown and blackish) ......................... gingera sp. nov.
- Prosternal carinae convergent anteriorly (Fig. 529); male ventrite VI truncate (Fig. 1554); female ventrite VI triangularly produced apically (Fig. 1556); penis guide with lateral sides symmetrical (Fig. 1552); ventral surface of body uniformly reddish brown (sometimes parts of venter weakly infuscate) .......... gordoni sp. nov.

48. Dorsum deeply black with yellow or orange elytral apex .................................................. apicalis (Blackburn)
- Dorsum predominantly brownish or distinctly bicoloured, if black than without any markings ........................................ 49

49. Dorsum deeply black without any contrasting markings .................................................. 50
- Dorsum predominantly brownish or bicoloured .................................................. 54

50. Elytral setae forming distinct white patches among long, dark bristles .................................................. fasciculatus (Blackburn)
- Elytral setae forming at most wavy pattern .................................................. 51

51. Mid and hind tibia with single spur .......................................................................................... 52
- Mid and hind tibia without spur ......................................................................................... 53

52. Body larger and more elongate; prosternal carinae weakly convergent anteriorly and joined rounded before prosternal margin (Fig. 473); male ventrite V weakly truncate at apex (Fig. 476); genitalia as in Figs 1528–1531 .............................................................. forestieri (Mulsant)
- Body smaller and more oval; prosternal carinae somewhat pentagonal in shape (Fig. 333); male ventrite V emarginate at apex (Fig. 336); genitalia as in Figs 1471, 1473–1475 discipennis (Blackburn)

53. Body smaller, more oval; elytra with blue metallic sheen (Fig. 1923); antennomeres VI and VII transverse (Fig. 800); venter dark brown to blackish brown with abdominal ventrites along margins, mouthparts and legs (except for coxae) light brown .................................................. micrus sp. nov.
– Body larger, more elongate; elytra without metallic sheen; antennomeres VI and VII at least as long as broad (Figs 1056, 1063); venter black with abdominal ventrites, mouthparts and tarsi orange ...................... *fagus* (Broun)

54. Pronotum brown, elytra blackish or deeply black without contrasting markings ................................................................. 55

– Background of pronotum and elytra the same (light to dark brown), sometimes with more or less developed contrasting markings on elytra .......... 60

55. Body elongate oval; pronotum usually with blackish, elongate stripe along middle; elytra with unusually long spines (Fig. 565); prosternal carinae joined before prosternal margin and continuing anteriorly as single carina (Fig. 575); mid and hind tibia with single spur ................................. *hirtellus* (Crotch)

– Body broadly oval; pronotum if bicoloured then darker area situated transversely on disc; elytra with much shorter spines; prosternal carinae separate throughout or joined roundly just before prosternal margin; mid and hind tibia without spurs .......................................................... 56

56. Body larger, more elongate; prosternal carinae separate to anterior prosternal margin (Figs 747, 1293) ................................................................. 57

– Body smaller, more oval; prosternal carinae joined roundly or triangularly just before anterior prosternal margin (Figs 402, 1044, 1156) ...................... 58

57. Elytra with fine punctures, antennomere III less elongate, male abdominal ventrite V with admedian setose patches and with hind margin deeply emarginate (Fig. 752); female ventrite V widely rounded at apex (Fig. 753) .......... ................................. *lophanthae* (Blaisdell)

– Elytra with coarse punctures, antennomere III more elongate, male abdominal ventrite V simply setose and with hind margin weakly excised medially; female ventrite V triangularly produced medially at apex (Fig. 1298) ...................... *viridipennis* (Lea)

58. Hind wings absent; genitalia as in Figs 1780–1782, 1785 ................................................................. *rodmanni* sp. nov.

– Hind wings present ............................................................................. 59

59. Elytra without metallic sheen; prosternal process with carina subparallel (Fig. 1156); female genitalia without distinct infundibulum (Fig. 1835) .................................

– Elytra with blue or green metallic sheen; prosternal process with carina pentagonal (Fig. 402); female genitalia with distinct infundibulum (Fig. 1505) ...................... *subhirtellus* (Lea)

– Elytra unicolour or at most with weak oval, paler area along suture; prosternal carinae separate throughout (Figs 378, 1237); mesoventral process nearly as broad as mesocoxal diameter (Fig. 378, 1237) .................................................. 62

– Elytra with pale stripes or only with small, rounded, blackish area along suture; prosternal carinae joined roundly before prosternal margin (Figs 1210,
62. Antennomere III less elongate; prosternum in front of coxa less than 0.5 times as long as longitudinal procoxal diameter; male ventrite V with hind margin rounded; genitalia as in Figs 1489–1491, 1493, \textit{dorsalis} (Blackburn)
  - Antennomere III more elongate; prosternum in front of coxa more than 0.5 times as long as longitudinal procoxal diameter; male ventrite V with hind margin narrowly truncate at apex; genitalia as in Figs 1858–1860, 1863 \textit{unicolor} sp. nov.

63. Each elytron black with reddish brown, elongate stripe, of somewhat irregular shape, along suture (Fig. 1944); mesoventral process about 1.65 times broader than mesocoxal diameter; antennomere III more than 3 times longer than wide; male abdominal ventrite V rounded at apex; genitalia as in Figs 1899–1901, 1903 \textit{weiri} sp. nov.
  - Each elytron reddish brown with only small oval blackish area along suture in mid length (Fig. 1941); mesoventral process about 1.3 times broader than coxal diameter; antennomere III slightly more than 2.5 times longer than wide; male abdominal ventrite V narrowly truncate at apex (Fig. 1213); genitalia as in Figs 1846–1848, 1850 \textit{tribulation} sp. nov.

64. Brachypterous or wingless [body as in Fig. 1938] \textit{similis} sp. nov.
  - Hind wings well developed \textit{65}

65. Dorsum uniformly dark chestnut brown \textit{66}
  - Dorsum yellowish brown or bicoloured \textit{68}

66. Body smaller, more elongate with dorsum weakly infuscate; antennomere III less elongate; tegmen with penis guide and parameres of subequal length (Figs 1558, 1559) \textit{gosfordensis} (Blackburn)
  - Body larger, more oval with dorsum not infuscate; antennomere III more elongate; tegmen with penis guide much shorter than parameres (Figs 1414, 1532) \textit{67}

67. Antennomere III less than 3 times longer than IV and antennomere IV shorter than V (Fig 223), pronotum less elongate, scutellum transverse, male and female abdominal ventrites VI rounded at apex; genitalia as in Figs 1412–1416 \textit{breweri} (Crotch)
  - Antennomere III more than 3 times longer than IV and antennomere IV as long as V (Fig. 486), pronotum more elongate, scutellum longer than wide, male and female abdominal ventrites VI truncate at apex (Figs 1535, 1536); genitalia as in Figs 1532–1534, 1537 \textit{fugax} (Blackburn)

68. Elytra blackish with humeri brown and each elytron along suture with light brown stripe; prosternal process nearly as broad as longest coxal diameter; prosternal carinae joined anteriorly forming triangle (Fig. 690); terminal antennomere as long as broad (Fig. 689); genitalia as in Figs 1614, 1617, 1618 \textit{laeticulus} (Blackburn)
Elytra light to dark brown sometimes with weakly marked, paler stripes at least on humeri; prosternal process narrower than coxal diameter; prosternal carinae separate throughout or roundly joined anteriorly; terminal antennomere elongate ................................................................. 69

69. Body broadly oval (Fig. 1113); elytral pubescence longer forming more distinct wavy pattern; elytra coarsely punctate with oval, median area along sulure almost impunctate, surrounded with very coarse punctures; mesoventral process about 1.3 times as broad as mesoxoxal diameter (Fig. 1119) ..............

................................................................................................................. speculifer (Blackburn)

Body long oval (Figs 591, 891); elytral pubescence shorter, forming less distinct wavy pattern; elytra uniformly punctate; mesoventral process narrower than mesoxoxal diameter ................................................................. 70

70. Body light brown; prosternal carinae separate throughout (Fig. 599); pronotum longer; antennomere III less elongate; genitalia as in Figs 1579, 1580, 1583 ................................................................. insipidus (Blackburn)

Body dark brown; prosternal carinae convergent anteriorly and joined roundly before pronotal margin (Fig. 901); pronotum shorter; antennomere III more elongate; genitalia as in Figs 1707–1709, 1711 .............. noctuabundus (Lea)

Descriptions of Australian, New Caledonian and New Zealand species of Rhizobius

**Rhizobius alphabeticus** Lea

(Figs 1–17, 1342–1347)

*Rhizobius alphabeticus* Lea, 1902: 495.

**Diagnosis.** This species resembles most closely *R. nigrovarius* and *R. occidentalis*, having similar body size, shape and colouration. *R. alphabeticus* is distinguished from both these species by having the head without distinct ventral antennal grooves, the antennomere III less elongate, the pronotum without a border line at the base and by having a single spur on mid and hind tibia. Moreover it differs from *R. nigrovarius* by having well developed hind wings and the terminal antennomere distinctly elongate, while from *R. occidentalis* by having antennomeres VI and VII at most slightly elongate.

**Description.** Length 2.05–2.25 mm; TL/EW = 1.60–1.62; PL/PW = 0.51–0.54; EL/EW = 1.17–1.21.

Body elongate oval, distinctly flattened, winged (Figs 1–3). Dorsum predominantly yellowish brown to dark brown; pronotum along middle at least infuscated; elytra reddish or yellowish with dark brown or black fasciate pattern; venter dark brown with mouthparts, prothoracic hypomera, elytral epipleura and legs (except for
coxae) light brown. Dorsum with double pubescence consisting of appressed setae and sparse darker stiff bristles; dorsal pubescence forming weak wavy pattern on elytra; elytral bristles distinct especially along margins.

Head dorsally exposed (Figs 1, 6, 7), 0.75–0.80 times as long as wide; ventral antennal grooves absent or indistinct; corpotomentum present. Eyes (Figs 6, 7) dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; with ocular canthus extending slightly into eye; interocular distance 0.63–0.65 times as wide as head across eyes; interfacial setae absent or indistinct. Antenna (Fig. 5) as long as head capsule width, 11-segmented; scape 1.45 times as long as pedicel; pedicel about as broad as scape, 1.4–1.5 times as long as wide; antennomere II 2.5 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV shorter than V; antennomeres VI and VII subquadrate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere distinctly elongate, apically rounded. Anterior clypeal margin straight. Labrum rounded apically. Maxilla (Fig. 4) with cardo transverse, with outer angle reaching slightly outside of mouth cavity; terminal palpmere 1.8 times as long as wide, parallel-sided. Mentum (Fig. 8) strongly transverse, at least 2 times broader than long; anterior margin truncate or weakly arcuate; ventral surface with horseshoe like impression; prementum at least as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palipiger; apical palpmere at least as long as penultimate one and about as broad as penultimate; submentum broad, parallel-sided.

Pronotum (Figs 7, 12) anterior angles rounded, weakly produced anteriorly, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and without clear border at least part of its length; hind margin without border. Prothoracic hypomeron (Fig. 5) smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process (Fig. 11) about 0.8 times as broad as longest coxal diameter, its surface smooth, without carinae; prosternum in front of coxa 0.6–0.7 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight or arcuate line; much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with complete bordering line, close to the cavity.

Anterior edge of mesoventrite with complete raised border; mesoventral process (Fig. 11) at median length of coxa about 1.1 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction arcuate or angulate posteriorly, without internal knob. Scutellum (Fig. 7) triangular, transverse; surface punctate and setose. Elytra (Figs 1, 3, 10) with lateral margins hardly visible from above; surface with single size punctures, elytral epipleuron (Fig. 2) obsolete in apical half, 1.55 times as wide as corresponding metaepisternum, inner margin without border. Metaventrite with complete discrimin; metaventral postcoxal lines distinctly separated at middle, complete, straight (Fig. 11); metaepisternum with eys nervally process interlocking with fovea on elytron (Fig. 16); metaepimere distinct, visible ventrally; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters and coxae about 1.5 times as long as wide, coxae with long and complete, outer pubescence, base of outer pubescence. Abdomen with basal and prosternal tergite I (Fig. 13), vesical tergites with narrow acuate and smooth (Fig. 13b), vesical sternite deeply emarginated (Fig. 13c), tergite VII to VIII swelled (Fig. 13d), tergite VIII to X with apodeme of male sternum, ovipositor sheath of spiculum wide.

Male genitalia well developed, simple, with additional conical pieces of basal sclerotization; spermatheca with gland adjacent to spermathecal duct.
Legs with trochanters simple; mid and hind tibia with single spur (Fig. 17); pro- and mid tarsal claws in male appendiculate (Fig. 9); hind tarsal claws in male with large subquadrangular basal tooth; tarsal claws in female with subtriangular basal tooth.

Abdomen with 5 ventrites in female, and 6 ventrites in male (Fig. 13); ventrite I 1.3 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, shallow, posteriorly reaches distinctly less than half length of ventrite I (Fig. 13); ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth (Fig. 14); ventrite V in male smooth and simply setose, hind margin deeply emarginate (Fig. 15); female ventrite VI with hind margin arcuate (Fig. 13), tergite VIII rounded; hind margin of male ventrite VI truncate or emarginate (Fig. 13), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half weakly widening towards apex, and base of spiculum widened.

Male genitalia (Figs 1342–1344). Parameres articulated with phallobase, well developed, simple and separated, with apices covered with simple setae; penis guide with additional small process on outer side; penis guide with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm obsolete.

Female genitalia (Fig. 1347). Proctiger (T10) reduced, small, submembranous; styli strongly reduced and hardly visible; infundibulum in form of lightly sclerotized piece of bursa; sperm duct complex, of different diameter and partially sclerotized; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

Material examined. Types. Lectotype (here designated) Rhyzobius alphabeticus Lea, Tasmania, Type/ alphabeticus Lea, Type, Tas. Brun I.” (SAM); paralectotypes, same data as lectotype (3: SAM).

Note. The lectotype is mounted on the same card with paralectotypes and is indicated by Lea as “TY”. The lectotype of Rhyzobius alphabeticus Lea, 1902 is designated to stabilize the taxonomic status of this species.

Other material. Tasmania: Hobart, C. Darwin, Rhyzobius alphabeticus id. by A.M. Lea (1: NHM); Hobart, Lea (2: NMB); Tahune, Forest Park, 29.I.81, forest, R.D. Pope, B.M. 1981-447 (10: NHM); same but Hartz Mt. (10: NHM); 41.08S 145.04E, Lake Chisholm For. Reserve, 180 m, 23.12-9.1.1993, A. Newton & M. Thayer, Euc. obliqua forest, FMHD #93-28, ex window trap (3: ANIC); Mt. Barrow Rd. 780 m, 15-17.II.1980, Nothofagus etc, A. Newton. Mt. Thayer, beating Leptospermum flowers & foliage or pyrhanth-fogging tree ferns (6: ANIC); same but 890 m, berlesed forest litter (1: ANIC); same but pyrhein fogging Nothofagus cunninghamii bark (2: ANIC); same but beating Acacia dealbata foliage (2: ANIC); Mt. Barrow,1100 m, 2.II.1973, on tea tree flowers, E. & S. Britton (1: ANIC); 41.47S 145.35E, 4 km E Rosebery, 16.1-1.II.1983, I. Naumann/ J. Cardale, malaise/ ethanol (2: ANIC); 41.22S 147.24E, 10 km ENE of Nunamara, 12.1-6.II.1983, I. Naumann & J. Cardale (6: ANIC; 3: MIZ); 42.40S 146.41E, 2.5 km W Mt. Field NP, c. 600 m, 6.II.1992, C. Reid, on Nothofagus cunninghamii (1: ANIC); 41.18S 145.36E, Saxons Road, 17.I.1983, I.D. Naumann and J.C. Cardale coll. (1: ANIC); 43.22S 146.08E, Clayton's, Bathurst Harbour, 7.XII.1990-15.I.1991, E. Nielsen, E. Edwards, malaise #3, closed forest (1: ANIC); Lyell Hwy. at Franklin R., 55 km ES Queenstown, 400m, 19-20.II.1980, A. Newton, M.

**Distribution**: Australia: Tasmania, Victoria, New South Wales.

*Rhizobius apicalis* Blackburn (Figs 52–69, 1360–1365)

*Rhizobius apicalis* Blackburn, 1892b: 256.

**Diagnosis**: This is a very distinctive species characterised by its black dorsalum and orange apices of elytra.

**Description**: Length 2.40–2.57 mm; TL/EW = 1.30–1.40; PL/PW = 0.51–0.54; EL/EW = 1.03–1.10. Body (Figs 52, 53, 54) broadly oval, strongly convex, hemispherical, winged. Predominantly black; anterior angles of pronotum narrowly pale yellow; elytral apices, abdominal ventrites, antennae and mouthparts orange; tibiae and tarsi most of...
ten blackish brown. Dorsum with double pubescence consisting of appressed setae and sparse dark stiff bristles; dorsal pubescence forming whorled pattern on elytra; elytral bristles present on entire dorsum.

Head (Figs 55, 59) withdrawn into prothorax but with eyes partially visible externally, 0.7 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; corpotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; with ocular canthus extending slightly into eye; interocular distance about 0.55 times as wide as head across eyes; interfacetal setae absent or indistinct. Antenna (Fig. 56) 0.82–0.83 times as long as head capsule width, 11-segmented; scape 2 times as long as pedicel; pedicel distinctly narrower than scape, 1.4–1.5 times as long as wide; antennomere III 3.4 times longer than wide, and at least 3 times longer than IV; antennomere IV as long as V; antennomeres VI and VII weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere distinctly elongate, apically rounded. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum truncate at apex. Maxilla (Figs 55, 57) with cardo transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.5–1.6 times as long as wide, parallel-sided. Mentum (Fig. 58) weakly transverse, less than 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe like impression; prementum at least as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpgiger; apical palpomere about as long and as broad as penultimate one; submentum indistinct.

Pronotum (Figs 59–61) anterior angles rounded, at least weakly produced anteriorly, not swollen but with distinct groove near angles; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 56) with broad, concave area extending along anterior half of prothoracic lateral margin; notosternal suture obscure; prosternal process (Fig. 62) 0.6 times as broad as longest coxal diameter, its surface with carinae weakly convergent, joined roundly just before prosternal margin; prosternum in front of coxa 0.5 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line; much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 62) with complete raised border; mesoventral process at median length of coxa 1.05 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction weakly arcuate posteriorly, without internal knob. Scutellum (Figs 60, 63) triangular, transverse; surface punctate and setose. Elytra (Figs 52, 63) with lateral margins very narrow but entirely visible from above; surface with single size punctures, elytral epipleuron incomplete apically only, 1.65 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite (Fig. 62) with complete discrmen; metaventral postcoxal lines distinctly separated at middle, complete and distinctly recurved; metaepisternum with externall process interlocking with fovea on elytron.
(Fig. 67); metaepimeron indistinct; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters angulate produced (Figs 62, 64); mid and hind tibia with single spur (Figs 68, 69); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with large subtriangular basal tooth; tarsal claws in female with sub quadratic basal tooth.

Abdomen (Fig. 64) with 5 ventrites in both sexes; ventrite I 1.2 times as long as ventrite II; abdominal postcoxal lines separate medially; deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth (Fig. 65); ventrite V in male (Fig. 66) smooth and simply setose, hind margin only with median part narrowly truncate to emarginate; female ventrite VI (Fig. 1364) with hind margin weakly truncate, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1363), tergite VIII truncate apically. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half very narrow and rod-like towards apex, and base of spiculum widened and complex.

Male genitalia (Figs 1360–1362). Parameres articulated with phallobase, well developed, simple and separated, about 1.5 times longer than penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegminal strut simple; penis base with outer arm obsolete.

Female genitalia (Fig. 1365). Proctiger (T10) distinct, at least partly sclerotized plate; styli terminal; infundibulum simple, uniform in diameter; spermatheca with only nodulus developed, spermathecal accessory gland adjacent to sperm duct.

Material examined. Types. Lectotype (here designated), female, "Rhizobius apicalis" Blackburn (Type/ T 4498 Austral/ Blackburn coll. 1910-236 (NHM)); paralectotype, female, "Rhizobius apicalis" Blackb./ NSW, Koebel/ Blue Mts./ 2529" (1: BPBM).

Note. The lectotype of Rhizobius apicalis Blackburn, 1892 is designated to stabilize the taxonomic status of this species.


Rhyzobius approximatus Blackburn
(Figs 82–90, 1417–1418)

Rhyzobius approximatus Blackburn, 1889: 208.

**Diagnosis.** This species is most similar to *R. nitidus* and *R. boothi*, but is distinguished from both these species by having the body more oval, the pronotum less elongate, the prosternal process distinctly wider than the longest coxal diameter, procoxal cavities bordered anteriorly, and the female with 5 ventrites.

**Description.** Length 1.70 mm; TL/EW = 1.45; PL/PW = 0.38; EL/EW = 1.15.

Body (Figs 82–84) elongate oval, moderately convex, winged. Predominantly light brown; lateral margins of pronotum, hypomera and elytral epipleura yellowish; prosternum, ventral surfaces of meso-, metathorax and abdomen dark brown. Dorsum with moderately long and uniform pubescence; dorsal pubescence forming weak wavy pattern on elytra.

Head (Figs 85, 86, 87) dorsally exposed; ventral antennal grooves long, straight, reaching distinctly behind eyes. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; with ocular canthus extending slightly into eye; interocular distance 0.6 times as wide as head across eyes; interfacial setae absent or indistinct. Antenna (Fig. 89) 0.75 times as long as head capsule width, 11-segmented; scape 1.25 times as long as pedicel; pedicel distinctly narrower than scape, 1.75 times as long as wide; antennomere IV shorter than V; antennomeres VI and VII quadrate. Antennal club 3-segmented, with penultimate segment asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere distinctly transverse, apically rounded. Anterior clypeal margin straight. Labrum rounded apically. Maxilla (Fig. 85) with cardo transverse with outer angle reaching slightly outside of mouth cavity; terminal palpmere 1.35 times as long as wide, weakly expanded apically. Mentum weakly transverse, less than 2 times broader than long; anterior margin truncate or weakly arcuate; ventral surface with horseshoe like impression; prementum weakly longer than broad; ligula parallel-sided; labial palps separated by distance at least 1.5 times broader than width of pulpi; submentum distinct.

**Pronotum** (Figs 86, 87) anterior angles scarcely acute, weakly produced anteriorly, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and without clear border at least along part of its length; hind margin with border line not reaching lateral margins. Prothoracic hypomeron (Fig. 88) smooth, without groove or concavity; notosternal suture obscure; prosternal process 1.3 times as broad as longest coxal diameter, its surface smooth, without carinae; prosternum in front of coxa 0.85 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line; much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with complete bordering line, close to cavity.

Anterior edge of mesoventrite (Fig. 88) with complete raised border; mesoventral process at median length of coxa 1.65 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction forming...
straight line, with internal knob. Scutellum (Fig. 86) triangular, transverse; surface punctate and setose. Elytra with lateral margins very narrow but entirely visible from above; surface with single size punctures, elytral epipleuron incomplete apically only, 1.7 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line upturned outwardly near base of elytron (Fig. 83). Metaventrite with partially incomplete discrimen; metaventral postcoxal lines distinctly separated at middle, complete and distinctly recurved; metaepimeron indistinct.

Legs with trochanters angulately produced (Figs 83, 88); mid and hind tibia without visible spurs (Fig. 90).

Abdomen with 5 ventrites in female; abdominal postcoxal lines separate medially, recurved and complete, posteriorly reaches about half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; female ventrite VI with hind margin weakly truncate (Fig. 1417), tergite VIII truncate.

Female genitalia (Fig. 1418). Proctiger (T10) distinct, at least partly sclerotized plate; styli terminal; infundibulum absent; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

Male unknown.


Note. The lectotype of Rhyzobius approximatus Blackburn, 1889 is designated to stabilize the taxonomic status of this species.

Distribution. Australia: South Australia.

Rhyzobius aurantii Blackburn
(Figs 101–116, 1372–1376)

Rhyzobius aurantii Blackburn, 1892b: 255.

Diagnosis. This species resembles R. caecus and R. discoidalis in having similar size, elongate oval body, the pronotum with anterior margin straight almost entirely covering head from above, pronotal lateral margins convergent anteriorly, and anterior angles broadly rounded. R. aurantii, however, is easily distinguished from these species by its dorsal surface black with only surrounding margins narrowly brown.

Description. Length 2.43–2.80 mm; TL/EW = 1.45–1.53; PL/PW = 0.60–0.61; EL/EW = 1.11–1.15.

Body (Figs 101–103) elongate oval, distinctly flattened, winged. Dorsal surface black; lateral and apical margins of elytra and lateral and anterior margins of pronotum brown; ventral surface dark chestnut brown; antennae, legs and labial, and maxillary palpi yellowish brown. dorsum with moderately long and uniform pubescence, forming weak wavy pattern on elytra.
Head entirely withdrawn into prothorax (Figs 104, 105), 0.88–0.90 times as long as wide; ventral antennal grooves long, straight, reaching distinctly behind eyes (Fig. 108); corpotentorium absent. Eyes dorsally less than 0.5 times length of head capsule; with ocular canthus extending slightly into eye; interocular distance 0.52–0.55 times as wide as head across eyes; interfacial setae absent or indistinct. Antenna (Fig. 106) 1.1 times as long as head capsule width, 11-segmented; scape 2 times as long as pedicel; pedicel distinctly narrower than scape, 1.30–1.35 times as long as wide; antennomere III 3.1–3.3 times longer than wide, and strongly elongate, at least 3 times longer than IV; antennomere IV as long as V; antennomeres VI and VII subquadrate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere distinctly elongate, apically truncate. Anterior clypeal margin straight. Labrum rounded apically. Maxilla (Figs 108, 110) with cardo transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.45–1.60 times as long as wide, broadened apically. Mentum (Fig. 111) weakly transverse, less than 2 times broader than long; anterior margin truncate or weakly arcuate; ventral surface with horseshoe like impression; prementum transverse; ligula parallel-sided; labial palps separated by distance at least 1.5 times broader than width of palpiger; apical palpomere about as long and as broad as penultimate one; submentum distinct.

 Pronotum (Figs 104, 105, 109) anterior angles rounded or acute, at least weakly produced anteriorly, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and without clear border at least along part of its length; hind margin without border. Prothoracic hypomeron (Fig. 106) smooth, without groove or concavity; notosternal suture obscure; prosternal process (Fig. 114) at least 0.8 times as broad as longest coxal diameter, its surface with carinae joined roundly before apex and continuing anteriorly as single carina; prosternum in front of coxa as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line; much more posterior than anterior pronotal margin; procoxal cavity weakly oval, with bordering line incomplete antero-medially.

 Anterior edge of mesoventrite (Fig. 114) with complete raised border; mesoventral process at median length of coxa 1.25 times as broad as corresponding coxal diameter; meso-metasomal articulation with suture obscure; junction arcuate or angulate posteriorly, without internal knob. Scutellum (Figs 104, 107) triangular, transverse; surface punctate and setose. Elytra (Figs 101, 107) with lateral margins distinctly and entirely explanate; surface with single size punctures, elytral epipleuron (Figs 102, 116) incomplete apically only, 2 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite with complete discrimen; metaventral postcoxal lines distinctly separated at middle, complete and distinctly recurved; metaepisternum with external process interlocking with fovea on elytron (Fig. 115); metaepimeron distinct, visible ventrally; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.
Legs with trochanters angulately produced (Figs 102, 114, 116); mid and hind tibia with single spur; pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with weak quadrato basal tooth; tarsal claws in female weakly swollen at base.

Abdomen (Fig. 116) with 5 ventrites in both sexes; ventrite I 1.55 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, posteriorly reaches about half length of ventrite I; ventrite V in female (Fig. 113) distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male (Fig. 112) smooth and simply setose, hind margin only with median part narrowly emarginate; female ventrite VI (Fig. 1375) with hind margin arcuate, tergite VIII rounded; hind margin of male ventrite VI rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half very narrow and rod-like towards apex, and base of spiculum widened and complex.

Male genitalia (Figs 1372–1374). Parameres articulated with phallobase, well developed, simple and separated, about as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm distinctly less developed than the inner arm.

Female genitalia (Fig. 1376). Proctiger (T10) distinct, at least partly sclerotized plate; styli strongly reduced and hardly visible; infundibulum in form of lightly sclerotized piece of bursa; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

Material examined. Types. Lectotype (here designated), female "Rhizobius aurantii" Blackburn/ type/ T 4369 Bl. M. / Blackburn col1. 1910-236 (NHM); paralectotype, female "Rhizobius aurantii" Bl., cotype. J. 9786, N.S. Wales/ Rhizobius aurantii Blackburn, cotype/ N. S. Wales/ Panamalita/ (1: SAM).

Lectotype (here designated), male "Mt. Tambourine/ Queensland, Mjöberg/ type/ vulgaris/ 267/80" (NRM); paralectotype: male, same data but 268/80 (1: NRM).

Note. The lectotypes of Rhizobius aurantii Blackburn, 1892 and Rhizobius vulgaris Weise, 1923 are designated to fix the taxonomic status of these species.

Rhizobius bielawskii sp. nov.
(Figs 132–144, 1377–1382, 1949)

Diagnosis. This species is similar to R. nigripennis by the body shape and colouration but is easily recognizable by its smaller body, the prosternum with short, incomplete carinae, the tibiae without spurs, the trochanters simple, the scutellum elongate and the abdomen with 6 ventrites in both sexes.

Description. Length 1.58–1.90 mm; TL/EW = 1.50–1.62; PL/PW = 0.54–0.56; EL/EW = 1.10–1.17.

Body (Figs 132, 133, 138, 1949) elongate oval, moderately convex, wings; predominantly brown to dark brown; legs, antennae and mouthparts somewhat paler; elytra, often except for lateral and apical margins, infuscate to almost black; elytra sometimes bear oval, moderately large area of the same colour as pronotum, extending along suture from basal margin to about apical fifth. Dorsum with double pubescence consisting of appressed setae and sparse darker stiff bristles; dorsal pubescence not forming pattern on elytra; elytral bristles present along margins only.

Head (Figs 134, 137) withdrawn into prothorax but with eyes partially visible externally, about 0.77 times as long as wide; ventral antennal grooves short, straight; corporotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; not emarginate; interocular distance 0.65 times as wide as head across eyes; interfacial setae absent or indistinct. Antenna (Fig. 139) 1.05 times as long as head capsule width, 11-segmented; scape 1.5 times as long as pedicel; pedicel distinctly narrower than scape, 1.5 times as long as wide; antennomere III 2.5 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII subquadrate. Antennal club...
3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere elongate. Anterior clypeal margin straight. Labrum rounded apically. Maxillary cardo (Fig. 134) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.5 times as long as wide, weakly expanded apically. Mentum strongly transverse, at least 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe-like impression; prementum at least as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpiger; apical palpomere as long and as broad as penultimate one; submentum distinct.

**Pronotum** (Figs 135, 137, 140, 141) anterior angles obtuse, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and without clear border at least along part of its length; hind margin with border line not reaching lateral margins. Prothoracic hypomeron (Figs 133, 136) smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process (Fig. 136) as broad as longest coxal diameter, its surface with short separate carinae at most extending slightly forward beyond prosternal process; prosternum in front of coxa 0.55 times as long as coxa longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line; much more posterior than anterior pronotal margin; procoxal cavity circular or weakly oval, with complete bordering line broadly separate from the cavity externally.

**Anterior edge of mesoventrite** (Fig. 136) with raised border incomplete medially; mesoventral process at median length of coxa 1.15 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction forming straight line, without internal knob. Scutellum (Fig. 141) triangular, slightly longer than broad; surface punctate and setose. Elytra (Figs 132, 141) with lateral margins very narrow but entirely visible from above; surface with single size punctures, elytral epipleuron (Figs 133, 142) obsolete in apical half, 2.5 times as wide as corresponding metaplesternum, inner margin without border. Metaventrite with partially incomplete discernum; metaventral postcoxal lines distinctly separated at middle, complete and distinctly recurved; metaplesternum without interlocking device; metaplesternum distinct, visible ventrally; metendosternite stalk distinctly shorter than broad; tendons widely separated and placed near apices of arms.

**Legs** with trochanters simple (Fig. 133); and mid hind tibia without visible spurs (Figs 143, 144); pro- and mid tarsal claws in male with subquadrate basal tooth; hind tarsal claws in male swollen at base; tarsal claws in female simple or weakly swollen at base.

**Aedomin** (Fig. 142) with 6 ventrites in both sexes; ventrite I 1.35 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, shallow, posteriorly reaches distinctly less than half length of ventrite I; ventrite V in female about as long as IV, with hind margin straight and smooth; ventrite V in male smooth and simply setose, hind margin widely truncate; female ventrite VI (Fig. 1381) with hind margin arcuate, tergite VIII rounded; hind margin of ventral VI truncate (Fig. 1380), tergite VIII rounded. Sternite IX with central part membranous apodelema of male subgenital plate; subgenital plate broad and parallel-sided. Male genitalia (Fig. 139) lateral and fused with simple setae; penis guide; terminalia throughout; tegmina in female.
nous; apodeme of male sternum IX somewhat widening towards apex, and base of spiculum widened and partially submembranous.

Male genitalia (Figs 1377–1379). Parameres articulated with phallobase, flattened and fused with penis guide along inner margins, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegminal strut simple; penis base with outer arm obsolete.

Female genitalia (Fig. 1382). Proctiger (T10) reduced, small, submembranous; styli strongly reduced and hardly visible; infundibulum sclerotized, tube-like, enclosing the sperm duct; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland distinctly separated from sperm duct.


Paratypes. New Caledonia: same data as holotype, but 18.X.1978, J.C. Watt: beating logging area at night (2 dissected on slide: MIZ); "Mt. Mou, 700 m, 2.11.1978, G. Kuschel" (1: NZAC); "Mt. Do, 1000 m, 31.10.1978, J.C. Watt: beating at night" (1: NZAC); "Mt. Do, 900–1030 m, 22.10.1978, G. Kuschel: on Notophagus codonandra" (1: MIZ); "Mt. Do, 900–1000 m, 31.10.1978, G. Kuschel" (1: NZAC); "Col des Rousselets, 400 m, 26.10.1978, G. Kuschel: sifted litter and rotten wood, 78/254" (1: NZAC); "Plateau de Dogny, 450 m, 10.04.1973/ Cryptocarya/ L. Gressit collector, Bishop Museum" (1: BPBM); "(S), 21.37S 165.49E, 400 m, Col d’Ameieu (1 km W of), 10.02.2004, leg. M. Wanat" (2: ANIC; 1: MIZ); "(S), 22.11S 166.30E, Koghi Mts, humid forest, 500–550 m, 21.01.2004, leg. M. Wanat" (1: ANIC); "(N), 20.33S 164.46E, 1300 m, Mt. Panic, humid forest, night beating near refuge hut, 2.02.2004, leg. M. Wanat" (1: ANIC).

Etymology. This species is dedicated to Dr. Ryszard Bielawski, Polish entomologist, who devoted many years of his life to study coccinellid beetles.

Distribution. New Caledonia.

Rhyzobius bilineatus Weise
(Figs 91–100. 1383–1388)

Rhyzobius bilineatus Weise, 1923: 149.

Diagnosis. R. bilineatus resembles closely R. lineellus, but is distinguished by its more elongate body, longer antennae, the prosternal carinae incomplete extending shortly beyond anterior margin of procoxal cavities, ventral antennal grooves indistinct and the antennomes VI and VII about as long as wide.

Description. Length 1.80–1.83 mm; TL/EW = 1.46–1.47; PL/PW = 0.46–0.47; EL/EW = 1.05–1.08.

Body (Figs 91, 93, 98) elongate oval, distinctly flattened, winged. Dorsum predominantly red brown; lateral margins of pronotum and long, narrow stripe on disc of each elytron (not reaching any margin) golden brown. Ventral surfaces pre-
dominantly dark brown; elytral epipleura, prothoracic hypomera, mouthparts and legs golden brown. Dorsum with moderately long and uniform pubescence; elytral bristles apparently absent.

**Head** (Figs 97, 99) withdrawn into prothorax but with eyes partially visible externally; ventral antennal grooves short, straight, along inner margin of eye only. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; with ocular canthus extending slightly into eye; interocular distance about 0.55–0.57 times as wide as head across eyes; interfacetral setae absent or indistinct. Antenna (Fig. 100) 0.9 times as long as head capsule width, 11-segmented; scape 1.5 times as long as pedicel; pedicel distinctly narrower than scape, 1.3 times as long as wide; antennomere III 2.35 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV shorter than V; antennomeres VI and VII quadrate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere distinctly elongate, apically rounded. Anterior clypeal margin straight. Labrum truncate at apex. Maxillary cardo (Fig. 99) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.45 times as long as wide, parallel-sided. Mentum strongly transverse, at least 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe-like impression; prementum about as long as broad; ligula reduced; labial palps separated by distance about equal to width of palpiger; apical palpomere about as long and as broad as penultimate one; submentum distinct.

**Pronotum** (Figs 95, 97) anterior angles obtuse, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and without clear border at least along part of its length; hind margin with entire border line. Prothoracic hypomera smooth, without groove or concavity; notosternal suture obscure; prosternal process (Fig. 92) 0.8 times as broad as longest coxal diameter, its surface with short separate carinae extending slightly forward beyond prosternal process; prosternum in front of coxa 0.7 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line; much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with complete bordering line broadly separated from the cavity externally.

**Anterior edge of mesoventrite** with complete raised border; mesoventral process at median length of coxa about 0.9 times as broad as corresponding coxal diameter; meso-metaventral articulation with suture visible; junction forming a straight line. Scutellum (Fig. 95) triangular, transverse; surface punctate and setose. Elytra with lateral margins very narrow but entirely visible from above; surface with single size punctures, elytral epipleuron (Fig. 91) obsolete in apical half, 1.9 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventral postcoxal lines joined medially forming straight line, complete and distinctly recurved; metaepisternum with externall process interlocking with fovea on elytron; metaepimeron indistinct.
Legs with trochanters simple (Figs 92, 96); tibiae without visible spurs (Fig. 94). Tarsal claws in female swollen at base.

Abdomen with 5 ventrites in female (Fig. 96) and 6 ventrites in male; ventrite I 1.3 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, posteriorly reaches about half length of ventrite I; ventrite V in female about as long as IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin widely truncate; female ventrite VI (Fig. 1387) with hind margin arcuate, tergite VIII truncate; hind margin of male ventrite VI emarginate (Fig. 1386), tergite VIII truncate apically. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half very narrow and rod-like towards apex, and base of spiculum widened and complex.

Male genitalia (Figs 1383–1385). Parameres articulated with penis guide, well developed, simple and separated, about 0.7 times as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm obsolete.

Female genitalia (Fig. 1388). Proctiger (T10) distinct, at least partly sclerotized plate; styli terminal; infundibulum absent; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

Material examined. Types. Lectotype (here designated), male “Glen Lamington/ Queensland, Mjöberg/ type/ 257, 80” (NRMS); paratype: same (1 female: NRMS); same and Rhizobius bilineatus m (1 female: NRMS).

Note. The lectotype of Rhizobius bilineatus Weise, 1923 is designated to stabilize the taxonomic status of this species.


Rhizobius boothi sp. nov.
(Figs 193–203, 1400–1405, 1917)

Diagnosis. This species closely resembles R. nitidus, but is distinguished from that species in having shorter body, shorter antennomere III, female ventrite V longer than IV with hind margin arcuate and emarginate, and the parameres at least slightly longer than penis guide.

Description. Length 1.50–1.80 mm; TL/EW = 1.38–1.42; PL/PW = 0.49–0.50; EL/EW = 1.07–1.12.

Body (Figs 193–195) broadly oval, moderately convex, winged; more or less uniformly reddish brown. Dorsum with moderately long and uniform pubescence; dorsal pubescence forming wavy pattern on elytra; elytral bristles apparently absent.

Head (Figs 196, 200) withdrawn into prothorax but with eyes partially visible externally, about 0.72 times as long as wide; ventral antennal grooves long, straight, reaching distinctly behind eyes; corpotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; with ocular canthus extending slightly into eye; interocular distance 0.60–0.61 times as wide as
head across eyes; interfaccetal setae absent or indistinct. Antenna (Fig. 197) 0.85–0.90 times as long as head capsule width, 11-segmented; scape 1.35–1.45 times as long as pedicel; pedicel distinctly narrower than scape, 2.3 times as long as wide; antennomere III 3.85 times longer than wide, and strongly elongate, at least 3 times longer than IV; antennomeres VI and VII weakly elongate. Antennal club 3-segmented, with penultimate segment asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere subquadrate, truncate at apex. Anterior clypeal margin straight. Labrum emarginate at apex. Maxillary cardo (Figs 197, 200) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpmere 1.35–1.40 times as long as wide, weakly expanded apically. Mentum weakly transverse, less than 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe-like impression; prementum as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpgere; apical palpmere as long and as broad as penultimate one; submentum distinct.

Pronotum (Figs 196, 198) with anterior angles obtuse, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and without clear border at least along part of its length; hind margin with border line not reaching lateral margins. Thoracoc hypomeron (Fig. 201) smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process as broad as longest coxal diameter, its surface with short separate carinae not extending forward beyond prosternal process; prosternum in front of coxa 0.75 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line; much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 201) with complete raised border; mesoventral process at median length of coxa 1.3 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction forming straight line, with internal knob. Scutellum (Fig. 198) triangular, at least as long as broad; surface punctate and setose. Elytra with lateral margins very narrow but entirely visible from above (Fig. 193); surface with single size punctures (Fig. 198); elytral epipleuron incomplete apically only (Figs 194, 203), 1.8 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite (Fig. 201) with partially incomplete discrinen; metaventral postcoxal lines joined medially forming straight line, complete and distinctly recurved; metaepisternum with external process interlocking withovea on elytron (Fig. 199); metaepimeron indistinct; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters angulately produced (Figs 201, 203); mid and hind tibia without visible spurs; pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with subquadrate basal tooth; tarsal claws in female with weak quadrate basal tooth.
Abdomen (Figs 202, 203) with 6 ventrites in both sexes; ventrite I 1.40–1.45 times as long as ventrite II; abdominal postcoxal lines meeting at middle, recurved and complete, posteriorly reaches about half length of ventrite I; ventrite V in female (Fig. 202) distinctly longer than IV, with hind margin arcuate and crenulate; ventrite V in male (Fig. 203) smooth and simply setose, hind margin emarginate; female ventrite VI (Fig. 1404) with hind margin arcuate, tergite VIII subtruncate at apex; hind margin of male ventrite VI emarginate (Fig. 1403), tergite VIII truncate. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half very narrow and rod-like towards apex, and base of spineum sclerotized rod, divided into inverted V.

Male genitalia (Figs 1400–1402). Parameres articulated with phallobase, well developed, simple and separated, long, slightly longer than penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegminal strut simple; penis base with outer arm distinctly less developed than the inner arm.

Female genitalia (Fig. 1405). Proctiger (T10) distinct, at least partly sclerotized; styli small, terminal; infundibulum sclerotized, tube-like, enclosing the sperm duct; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus. spermathecal accessory gland adjacent to sperm duct.


Etymology. This species is dedicated to Dr. Roger Booth (NHM), British coccinellid specialist.

Distribution. Australia: Western Australia, Northern Territory, South Australia.

*Rhyzobius breweri* Crotch
(Figs 214–228, 1412–1416)

*Rhyzobius breweri* Crotch, 1874: 298.
*Rhyzobius corticalis* Lea, 1902: 496. Syn. nov.

Diagnosis. This species is extremely similar to *R. fugax* except for the following characters: antennomere III less than 3 times longer than IV, antennomere IV shorter than V, the pronotum shorter, the scutellum transverse, the male and female abdominal ventrites VI rounded and the penis rather regularly curved (Fig. 1412).

Description. Length 3.30–4.25 mm; TL/EW = 1.45–1.65; PL/PW = 0.54–0.56; EL/EW = 1.15–1.30.

Body. Figs (214–216) elongate oval, strongly convex, hemispherical, winged. Uniformly chestnut brown to dark chestnut brown; antennae, palpi and tarsi may be yellowish brown. Dorsum with double pubescence consisting of appressed setae and sparse dark stiff bristles; dorsal pubescence forming weak wavy pattern on elytra; elytral bristles present on entire dorsum.

Head. Figs (217, 220) withdrawn into prothorax but with eyes partially visible externally; ventral antennal grooves distinctly circular bent towards outer margin of eye. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; with ocular canthus extending slightly into eye; interocular distance about 0.5 times as wide as head across eyes; interfacial setae absent. Antenna (Fig. 223) 0.75 times as long as head capsule width, 11-segmented; scape 1.7 times as long as pedicel; pedicel distinctly narrower than scape, 1.6 times as long as wide; antennomere III 3.85 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV shorter than V; antennomers VI and VII weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere subquadrate, apically rounded. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum truncate at apex. Macro-

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xillary cardo (Figs 217, 219) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.2 times as long as wide, weakly expanded apically. Mentum (Fig. 221) weakly transverse, less than 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe-like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpiger; apical palpomere about as long and as broad as penultimate one; submentum indistinct.

Pronotum (Figs 218, 220, 224) with anterior angles rounded, scarcely produced anteriorly, not swollen but with distinct groove near angles; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 217) with broad, concave area along anterior half of prothoracic lateral margin; notosternal suture distinct, simple; prosternal process 0.6 times as broad as longest coxal diameter, its surface with cornae weakly convergent, joined roundly just before prosternal margin; prosternum in front of coxa 0.7 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line; much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite with complete raised border; mesoventral process at median length of coxa 1.1 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction arcuate or angulate posteriorly. Scutellum (Fig. 222) triangular, transverse; surface punctate and setose. Elytra (Fig. 214) with lateral margins very narrow but entirely visible from above; surface with double size punctures, elytral epipleuron incomplete apically only (Figs 215, 225), 1.7 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite with complete discrinen; metaventral postcoxal lines distinctly separate at middle, complete and recurved laterally; metaepisternum with external process interlocking with fovea on elytron; metaepimeron distinct, visible ventrally.

Legs with trochanters angulately produced (Figs 215, 225); mid and hind tibia with single spur (Figs 226, 227); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male weakly swollen at base; tarsal claws in female with weak quadrate basal tooth.

Abdomen (Figs 225, 228) with 5 ventrites in both sexes; ventrite I 1.5 times as long as ventrite II; abdominal postcoxal lines separate medially; deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin only with median part narrowly truncate; female ventrite VI with hind margin arcuate, tergite VIII rounded; hind margin of male ventrite VI rounded, tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX somewhat widening towards apex, and base of spiculum widened.

Male genitalia (Figs 1412–1414). Parameres articulated with phallobase, well developed, simple and separated, about 1.8 times longer than penis guide, with apexes covered with simple setae; penis guide without additional processes, with lat-
eral sides symmetrical throughout; tegminal strut simple; penis base with outer arm less developed than the inner arm.

**Female genitalia (Figs 1415, 1416).** Proctiger (T10) distinct, at least partly sclerotized plate; styli terminal; infundibulum absent; sperm duct simple, uniform in diameter; spermatheca with only nodulus or ramus developed; accessory gland not observed.


Lectotype (here designated), male “Rhizobius corticalis Lea, W. Australia, 10486/ corticalis. Lea type, Geraldton” (SAM); paralecotypes, same data as lectotype (2 females: SAM).

**Note.** The lectotype of *Rhizobius corticalis Lea, 1902* is designated here to fix the confused taxonomic status of this species.


**Distribution.** Australia: Western Australia.

**Rhyzobius brunneus** sp. nov.
(Figs 229–242, 1419–1424, 1926)

**Diagnosis.** *R. brunneus* resembles closely *R. hongae* and *R. newtonorum* but is distinguished from these species by having the dorsum uniformly dark brown, the prosternal carinae joined roundly before anterior margin of pronotum, the antennomere III less elongate and by remarkably different male genitalia (Figs 1419–1421).

**Description.** Length 2.20–2.55 mm; TL/EW = 1.47–1.54; PL/PW = 0.55–0.58; EL/EW = 1.05–1.15.

**Body** (Figs 229, 230, 232, 1926) elongate oval, moderately convex, wingles; predominantly dark brown or dark reddish brown; labial and maxillary palpi, antennae, tarsi, elytral epipleura and pronotal hypomera light brown or yellowish brown; in some individuals epipleura and hypomera may be orange brown. Dorsum with pubescence consisting of appressed setae and suberect bristles; dorsal pubescence forming weak wavy pattern on elytra; elytral bristles distinct especially along margins.

**Head** (Figs 231, 236) withdrawn into prothorax but with eyes almost entirely visible externally, about 0.88 times as long as wide; ventral antennal grooves absent or indistinct; corpotentorium present. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; with ocular canthus extending slightly into eye; interocular distance 0.58–0.60 times as wide as head across eyes; interfacetal setae indistinct. Antenna (Fig. 234) 0.95 times as long as
head capsule width, 11-segmented; scape 1.85–2.00 times as long as pedicel; pedicel distinctly narrower than scape, 1.35–1.40 times as long as wide; antennomere III 2.75–2.80 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV shorter than V; antennomeres VI and VII subquadrate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere subquadrurate, truncate at apex. Anterior clypeal margin straight. Labrum truncate at apex. Maxillary cardo (Fig. 231) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.6–1.7 times as long as wide, weakly expanded apically. Mentum weakly transverse, less than 2 times broader than long; anterior margin emarginate; ventral surface with horseshoe like impression; prementum transverse; ligula parallel-sided; labial palps separated by distance at least 1.5 times broader than width of palpi; apical palpomere about as long as and as broad as penultimate one; submentum distinct.

**Pronotum** (Figs 233, 235, 236, 240) with anterior angles obtuse, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and with very narrow border; hind margin without border. Prothoracic hypomeron smooth, without groove or concavity; notosternal suture obscure; prosternal process (Fig. 237) about 0.6 times as broad as longest coxal diameter, its surface with carinae convergent, joined roundly just before prosternal margin; prosternum in front of coxa 0.65 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line, much more posterior than anterior pronotal margin; procoxal cavity transverse, with complete bordering line broadly separated from the cavity externally.

**Anterior edge of mesoventrite** (Fig. 237) with complete raised border; mesoventral process at median length of coxa as broad as corresponding coxal diameter; meso-metaventral articulation with suture visible; junction somewhat arcuate posteriorly, without internal knob. Scutellum (Fig. 240) triangular, transverse; surface punctate and setose. Elytra (Fig. 229) with lateral margins very narrow but entirely visible from above; surface with single size punctures (Fig. 240), elytral epipleuron incomplete apically only (Figs 230, 242), 3.25 times as wide as corresponding metaepisternum, inner margin with border area narrow throughout and border line fading before base of elytron. Metaventrite with partially incomplete discernmen; metaventral postcoxal lines separated at middle, complete and distinctly recurved laterally; metaepisternum with external process interlocking with fovea on elytron; metaepimeron distinct, visible ventrally; metendosternite stalk distinctly shorter than broad; tendons widely separated and placed near apices of arms.

**Legs** with trochanters rounded or weakly angulately produced (Figs 237, 242); mid and hind tibia with two small spurs (Figs 238, 239); pro- and mid tarsal claws in male appendicate; hind tarsal claws in male and tarsal claws in female with distinct subquadrature basal tooth.

**Abdomen** (Figs 241, 242) with 5 ventrites in both sexes; ventrite I 1.20–1.25 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved
and complete, posteriorly reaches about half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin only with median part weakly emarginate; female ventrite VI (Fig. 1423) with hind margin arcuate, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1422), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half very narrow and rod-like towards apex, and base of scutum weakly widened.

**Male genitalia** (Figs 1419–1421). Parameres articulated with phallobase, well developed, simple and separated, about 0.7 times as long as penis guide, with apices covered with long, simple setae; penis guide without additional processes, with lateral sides only with apex weakly asymmetrical; tegminal strut simple; penis base with outer arm obsolete.

**Female genitalia** (Fig. 1424). Proctiger (T10) distinct, at least partly sclerotized plate; styli absent; infundibulum sclerotized, somewhat flattened and twisted; spermatophore simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland very small, adjacent to spermatheca.

**Material examined.** Types. **Holotype**, male, "South Ramshead, 2000 m, Kosciusko NP, New South Wales, III.1981, Ken Green, pitfall traps" (ANIC).

**Paratypes:** New South Wales, same data as holotype (2: ANIC; 2: MIZ, 1 dissected on slide); same but XII.1981 (1: ANIC); same but 1.I.1982 (1 dissected on slide: MIZ); "Kosciusko Nat. Park, South Ramshead, NSW, 2000 m, VI.1986, pitfall traps. K. Green, no.7" (1: ANIC); same but 1850 m, V.1983, no.21 (1: MIZ); same but 1850 m, IV.1982 (1: ANIC); "South Ramshead, 1950 m, Site 5, Kosciusko NP, NSW, II.1982, pitfall, K. Green" (1: ANIC).

**Etymology.** The name of this new species is derived from its predominantly brown body colour.

**Distribution.** Australia: New South Wales.

**Rhyzobius caeus** Blackburn

(Figs 253–268, 1431–1436)

**Rhyzobius caeus** Blackburn, 1892a: 71.

**Diagnosis.** Pronotum with lateral margins convergent anteriorly, the anterior angles widely rounded and anterior margin straight, covering the head almost entirely combined with the elongate oval body, makes this species similar to *R. auranti* and *R. discoidalis*, but *R. caeus* can be easily recognized by its uniformly brown body.

**Description.** Length 2.37–2.65 mm; TL/EW = 1.48–1.52; PL/PW = 0.58–0.59; EL/EW = 1.10–1.17.

**Body** (Figs 253, 254, 261) elongate oval, moderately convex, winged; brown, dark brown or reddish brown with abdominal ventrites lighter; sometimes antennae, mouthparts, tarsi and tibiae are also lighter; pronotum with anterior angles yel-
wish. Dorsum covered with moderately long and uniform pubescence, forming weak wavy pattern on elytra.

Head (Figs 255, 256) withdrawn into prothorax, 0.74–0.77 times as long as wide; ventral antennal grooves long, straight, reaching distinctly behind eyes; corporoterritorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; with ocular canthus extending slightly into eye; interocular distance 0.50–0.52 times as wide as head across eyes; interfacial setae indistinct. Antenna (Figs 259, 263) as long as head capsule width, 11-segmented; scape 1.9 times as long as pedicel; pedicel distinctly narrower than scape. 1.4 times as long as wide; antennomere III 3.75–4.25 times longer than wide, and very long, at least 3 times longer than IV; antennomere IV shorter than V; antennomeres VI and VII weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere longer than broad, rounded apically. Anterior clypeal margin straight. Labrum truncate at apex. Maxillary cardo (Figs 256, 257) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.35–1.45 times as long as wide, weakly expanded apically. Mentum (Fig. 258) weakly transverse, less than 2 times broader than long; anterior margin weakly arcuate; ventral surface with horseshoe-like impression; prementum as long as broad; ligula parallel-sided; labial palps separated by distance equal to width of palpiger; apical palpomere as long and as broad as penultimate one; submentum indistinct.

Pronotum (Figs 255, 260, 264, 268) with anterior angles obtuse, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and without clear border at least along part of its length; hind margin without border. Prothoracic hypomeron (Fig. 263) with at least short, somewhat crescent-shaped groove perpendicular to notosternal suture; notosternal suture distinct, simple; prosternal process (Fig. 262) 0.85 times as broad as longest coxal diameter, its surface with carinae weakly convergent, joined roundly just before prosternal margin; prosternum in front of coxa about 0.65 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line, much more posterior than anterior pronotal margin; procoxal cavity transverse, with bordering line distinctly incomplete antero-medially.

Anterior edge of mesoventrite (Fig. 262) with complete raised border; mesoventral process at median length of coxa about 1.4 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction arcuate posteriorly. Scutellum (Figs 264, 268) triangular, transverse; surface punctate and setose. Elytra (Fig. 253) with lateral margins very narrow but entirely visible from above; surface with single size punctures (Fig. 268), elytral epipleuron obsolete in apical half (Figs 254, 265), 2.1 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite with complete discernmen; metaventral postcoxal lines distinctly separated at middle, complete and distinctly recurved (Fig. 262); me-
taepisternum with externall process interlocking with fovea on elytron (Fig. 266); metaepimeron distinct, visible ventrally; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters roundly or weakly angulately produced (Figs 262, 265); mid and hind tibia with single spur; pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with large subtriangular basal tooth; tarsal claws in female with quadrate basal tooth.

Abdomen with 5 ventrites in female, and 6 ventrites in male (Fig. 265, 267); ventrite I about 1.35 times as long as ventrite II; abdominal postcoxal lines separate medially; shallow, posteriorly reaches distinctly less than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin deeply emarginate; female ventrite VI (Fig. 1435) with hind margin arcuate, tergite VIII rounded; hind margin of male ventrite VI weakly emarginate (Fig. 1434), tergite VIII truncate apically. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half very narrow and rod-like towards apex, and base of scuticulum widened.

Male genitalia (Figs 1431–1433). Parameres articulated with phallobase, somewhat reduced, narrow and about 0.7 times as long as penis guide, with apices covered with setae; penis guide not covered, with additional processes, with lateral sides symmetrical throughout; terminal struts simple; penis base with outer arm distinctly less developed than the inner arm.

Female genitalia (Fig. 1436). Proctiger (T10) reduced, small, submembranous; styli terminal; infundibulum absent; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland very small, adjacent to sperm duct.

Material examined. Types: Lectotype (here designated), male, New South Wales, "Rhipizobius caecus" Blackburn Type/T 4239 Gosford/ Blackburn coll. 1910-236 (NHM); paralectotypes, "Rhipizobius caecus" Blackburn/Australia, Koebele/Toowoomba" (1: BPBM); "Rhipizobius caecus" Blackburn/NSW, Sydney, Koebele/1007" (1: BPBM); "Rhipizobius caecus" Blk., cotype, J. 9782, N.S. Wales/ Rhipizobius caecus Blackburn, cotype/ Gosford/ 4239" (1: SAM).

Note. The lectotype of Rhipizobius caecus Blackburn, 1892 is designated to stabilize the taxonomic status of this species.

Other material. Queensland: N Q, Kuranda, R.C.L. Perkins, B.M. 1942-95 (1: NHM); same collector but Bunarg, 1904 (1: NHM); SEQ. upper Cedar Creek, X:1.80, R.D. Pope, B.M. 1981-447 (2: NHM); 19 km S of Bundaberg, Gorge at Burnett R. 20-24.XVI.1975, H. Fraucal (2: ANIC); same but 20 km S of Bundaberg, 26.X.1976 (1: ANIC); Pine Creek nr Bundaberg, 10.XII.1975, H. Fraucal (1: MIZ); 19 km S of Bundaberg, Gorge at Burnett R., 20-24.XI.1975, H. Fraucal (1: MIZ); Bundaberg, 1904. R.C.L. Perkins coll., B.M. 1942-95 (1: NHM); Bunya Mts, 26.50S 151.33E, 5 km NW of Mt. Mowbray, 3350, 8.I.1970, by beating, Britton, Holloway, Misko (3: ANIC, 1: MIZ); Pine Creek, nr. Bundaberg, 3-7.XI.1975, H. Fraucal (1: ANIC); same but 10.XII.1975 (2: ANIC); same but 2.XII.1975 (2: ANIC), W. slope Bluff Range, via Biggenden, 22-24, VIII.1975, H. Fraucal (1: ANIC); Mt. Glorious, 27.19.54S 152.45.29E, 24-30.XII.1997, T. Hiller, malaise trap (1: ANIC); Mt. Glorious St. For., V-


**Rhyzobius calderi** sp. nov.
(Figs 269–282, 1437–1442, 1918)

**Diagnosis.** Body broadly oval of rather small size combined with its colouration — the pronotum with disc blackish while lateral, and anterior margins pale, and the elytra with disc pale and their lateral and apical margins blackish — separate *R. calderi* from all other *Rhyzobius* species.

**Description.** Length 2.33–2.83 mm; TL/EW = 1.30–1.34; PL/PW = 0.46–0.51; EL/EW = 1.02–1.08.

Body (Figs 269, 270, 274, 1918) broadly oval, moderately convex, winged. Dorsal surface with head, pronotum, except for lateral and anterior margins, or at least except for anterior angles, and lateral, and apical margins of pronotum blackish brown or black; lateral and anterior margins of pronotum or at least its anterior angles pale yellow; elytra except for lateral sides and apex reddish brown; ventral surface predominantly infuscate; abdominal ventrites II–V, mouthparts, antennae, trochanters, tibiae and tarsi yellow. Dorsum covered with moderately long and uniform pubescence, not forming wavy pattern on elytra.

Head (Figs 275, 277) dorsally exposed, 0.70–0.72 times as long as wide; ventral antennal grooves indistinct; corporitomentum absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; with ocellar canthus extending slightly into eye; interocular distance 0.50–0.53 times as wide as head across eyes; interfacial setae present, short. Antenna (Fig. 272) 0.85–0.9 times as long as head capsule width, 11-segmented; scape 2 times as long as pedicel; pedicel distinctly narrower than scape, 1.35–1.40 times as long as wide; antennomere III 3.55–3.65 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII at most weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere distinctly elongate, rounded apically. Anterior clypeal margin with weak, rounded lateral lobes. Labrum truncate at apex. Maxillary cardo (Fig. 275) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.50–1.55 times as long as wide; weakly expanded apically. Mentum strongly transverse, at least 2 times
broader than long; anterior margin deeply emarginate; ventral surface with horse-shoe like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpiger; apical palpomere as long and as broad as penultimate one; submentum distinct.

Pronotum (Figs 277–279) with anterior angles rounded, scarcely produced anteriorly, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and without clear border at least along part of its length; hind margin without border. Prothoracic hypomeron (Fig. 272) smooth, without groove or concavity; notosternal suture obscure; prosternal process (Fig. 271) 0.55 times as broad as longest coxal diameter, its surface with complete, separate carinae; prosternum in front of coxa 0.5 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line, much more posterior than anterior pronotal margin; procoxal cavity transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 271) with complete raised border; mesoventral process at median length of coxa as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction arculate posteriorly, without internal knob. Scutellum (Fig. 278) pentagonal, transverse; surface punctate and setose. Elytra (Fig. 269) with lateral margins very narrow but entirely visible from above; surface with single size punctures (Fig. 278), elytral epipleuron incomplete apically only (Figs 270, 282), 1.7 times as wide as corresponding metaepisternum, inner margin with border area narrow throughout and border line fading before base of elytron. Metaventrite with complete discrimen; metaventral postcoxal lines (Fig. 271) distinctly separated at middle; complete and recurved; metaepisternum with externall process interlocking with fovea on elytron (Fig. 273); metaepimeron distinct, visible ventrally; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters simple; mid and hind tibia with single spur (Figs 276, 280); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male and claws in female with large subquadrate basal tooth.

Abdomen with 5 ventrites in male (Fig. 282) and 6 ventrites in female (Fig. 281); ventrite I 1.25 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, posteriorly reaches about half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin only with median part weakly emarginate; female ventrite VI (Fig. 1441) with hind margin arcuate, tergite VIII narrowly truncate; hind margin of male ventrite VI weakly emarginate (Fig. 1438), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical somewhat widening towards apex, and base of spiculum widened and partially submembranous.

Male genitalia (Figs 1437, 1439, 1440). Parameres articulated with phallosome, base, well developed, simple and separated, about 1.4 times longer than penis guide.
with apices covered with simple setae; penis guide without additional processes; penis guide with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm distinctly less developed than inner arm.

**Female genitalia** (Fig. 1442). Proctiger (T10) distinct, at least partly sclerotized plate; styli reduced and hardly visible; infundibulum absent; sperm duct simple, uniform in diameter; spermatheca with only nodulus developed, spermathecal accessory gland adjacent to sperm duct.

**Material examined.** Types. **Holotype**, male "30.22S 152.43E, New South Wales, The Glade/ Wonga Track, Dorrigo N.P., A. Calder, beating vegetation at night" (ANIC).

**Paratypes: New South Wales**: same data as holotype (4: ANIC; 4: MIZ, 2 totally dissected); "30.22S 152.45E, Dorrigo Nat. Pk., NSW, 13.II.1984, l.D. Naumann coll." (1: ANIC); "Dorrigo Nat. Pk., NSW, XI.1982, M. Lowman, rainforest" (1: MIZ); "Dorrigo, NSW, W. Heron" (2: ANIC).

**Etymology.** Named after Dr. Andrew Calder, retired CSIRO entomologist and a collector of the holotype specimen.

**Distribution.** Australia: New South Wales.

**Rhizobius cyaneus** Blackburn (Figs 283–295, 1454–1459)

**Rhizobius cyaneus** Blackburn 1889: 199.

**Diagnosis.** This species is most similar to *R. xanthurus* by body shape and colouration, but it can be distinguished from that species by smaller size of the body, the prosternal process with long carinae joined roundly just before anterior prosternal margin, the antennomere III less elongate (as compared with antennomere IV) and mid, and hind tibia lacking spurs.

**Description.** Length 2.90–3.00 mm; TL/EW = 1.70–1.80; PL/PW = 0.61–0.66; EL/EW = 1.18–1.19.

**Body** (Figs 283–285) elongate and almost parallel-sided, flattened, winged. Dorsal surface predominantly black and elytra additionally with somewhat bluish or purple sheen; head, lateral and anterior margins of pronotum, flattened lateral and apical margins of elytra and ventral surfaces orange brown. Dorsum with double pubescence consisting of appressed setae and sparse dark stiff hairs; dorsal pubescence forming very weak wavy pattern on elytra; elytral bristles present on entire dorsum.

**Head** (Figs 286, 287) withdrawn into prothorax but with eyes partially visible externally; ventral antennal grooves distinctly circular bent towards outer margin of eye. Eyes dorsally less than 0.5 times length of head capsule; with ocular canthus extending slightly into eye; interocular distance 0.58–0.59 times as wide as head across eyes; interfacial setae indistinct. Antenna (Fig. 288) 1.00–1.05 times as long as head capsule width, 11-segmented; scape 1.85 times as long as pedicel; pedicel distinctly narrower than scape, 1.5 times as long as wide; antennomere III
3.2 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII at most weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere distinctly elongate, rounded apically. Anterior clypeal margin with weak, rounded lateral lobes (Fig. 286). Labrum emarginate at apex. Maxillary cardo (Fig. 287) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.40–1.45 times as long as wide, broadened apically. Mentum weakly transverse, less than 2 times broader than long; anterior margin weakly arcuate; ventral surface with horseshoe like impression; prementum as long as broad; ligula reduced to apparently absent; labial palps separated by distance at least 1.5 times broader than width of palpiger; apical palpomere as long and as broad as penultimate one; submentum indistinct.

Pronotum (Figs 286, 289, 293) with anterior angles obtuse, not swollen with regular border; anterior margin without border; lateral margin with entire, narrow border; hind margin without border. Prothoracic hypomeron (Fig. 295) smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process (Fig. 295) 0.8 times as broad as longest coxal diameter, its surface with carinae subparallel, joined roundly just before prosternal margin; prosternum in front of coxa 1.2 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line, much more posterior than anterior pronotal margin; procoxal cavity transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 295) with complete raised border; mesoventral process at median length of coxa 1.25 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction arcuate or somewhat angulate posteriorly. Scutellum (Fig. 289) pentagonal, transverse; surface punctate and setose. Elytra (Fig. 283) with lateral margins very narrow but entirely visible from above; surface with single size punctures (Fig. 289), eyletal epipleuron incomplete apically only (Figs 284, 290), 1.5 times as wide as corresponding metaepisternum, inner margin with border area narrow throughout and border line fading before base of elytron. Metaventrite with complete discernment; metaventral postcoxal lines distinctly separated at middle, complete, straight laterally; metaepisternum with external process interlocking with fovea on elytron (Fig. 294); metaepimeron indistinct.

Legs with trochanters roundly produced (Figs 290, 295); mid and hind tibia without visible spurs (Figs 291, 292); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male swollen at base; tarsal claws in female with small quadrate basal tooth.

Abdomen (Fig. 290) with 5 ventrites in both sexes; ventrite I 1.1–1.15 times as long as ventrite II; abdominal postcoxal lines separate medially; deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin rounded; female ventrite VI (Fig. 1458) with hind margin shallowly excised medially, tergite VIII rounded; hind margin of male ventrite VI

Rizobius discipennis (Kug, 1914)

Diagnosis. This species, R. discipennis has a long unmodified elytron with the ventral surface raised, prothoracic hypomeron suboval area along sutures.

Description. Length EL/EW = 1.04–1.06.

Body (Figs 288–290) winged. Dorsal surface elytrae smooth and shining, denticence consisting of teeth forming weak wavy lines.

Head (Figs 291–293) as long as wide; vertex rounded; eyes large, setose, corpo-
truncate (Fig. 1455), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX somewhat widening at apex, and base of spiculum widened.

**Male genitalia** (Figs 1454, 1456, 1457). Parameres articulated with phallobase, well developed, simple and separated, about as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm distinctly less developed than inner arm.

**Female genitalia** (Fig. 1459). Proctiger (T10) reduced, small, submembranous; styli absent; infundibulum sclerotized, tube-like, enclosing the sperm duct; sperm duct simple, uniform in diameter; spermatheca with sclerotized short nodulus and ramus, spermathecal accessory gland separated from sperm duct.

**Material examined.** Types. **Victoria:** Holotype, sex not examined "*Rhysobius cyaneus*" Blackburn/ type/ T 1574 V/ Blackburn coll. 1910-236 (NMH).


**Distribution.** Australia: New South Wales, Australian Capital Territory, Victoria.

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**Rhysobius discipennis** Blackburn

(Figs 322–337, 1471–1476)

**Rhysobius discipennis** Blackburn, 1895: 257.

**Diagnosis.** This species resembles *R. jagus* by the body size, shape and dorsal colouration. *R. discipennis* however, is distinguished from that species by having the body smaller, the ventral surface rather uniformly dark brown, the mid and hind tibia with single spur, the prothoracic hypomeron with anterior convexity but not a groove and the elytra usually with oval area along suture in mid length very finely punctate, surrounded by coarse punctures.

**Description.** Length 1.80–2.25 mm; TL/EW = 1.30–1.33; PL/PW = 0.47–0.50; EL/EW = 1.04–1.07.

**Body** (Figs 322, 323, 327) broadly oval, strongly convex, hemispherical, winged. Dorsal surface brownish black to black; ventral surface dark brown; antennae, mouthparts and legs (or at least tarsi) light brown. Dorsum with double pubescence consisting of appressed setae and sparse dark stiff bristles; dorsal pubescence forming weak wavy pattern on elytra; elytral bristles present on entire dorsum.

**Head** (Figs 324, 325) entirely withdrawn into prothorax, 0.80–0.83 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; corpotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; with ocular canthus extending slightly into eye; interocular distance 0.49–0.51 times as wide as
head across eyes; interfacial setae indistinct. Antenna (Fig. 326) 0.78–0.82 times as long as head capsule width, 11-segmented; scape 2 times as long as pedicel; pedicel distinctly narrower than scape, 1.3–1.4 times as long as wide; antennomere III 2.6 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII subquadrilateral. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere subquadrilateral, rounded apically. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum rounded apically. Maxillary cardo transverse (Fig. 324) with outer angle reaching slightly outside of mouth cavity; terminal palpmere 1.6 times as long as wide, parallel-sided (Fig. 329). Mentum weakly transverse, less than 2 times broader than long; anterior margin weakly arcuate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpgere; apical palptomere as long as and as broad as penultimate one; submentum distinct.

Pronotum (Figs 325, 328, 331) with anterior angles rounded, weakly produced anteriorly, not swollen but with distinct groove near angles; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron with broad, concave area along anterior half of prothoracic lateral margin; notosternal suture distinct, simple; prosternal process (Fig. 333) about 0.7 times as broad as longest coxal diameter, its surface with complete carinae joined anteriorly forming triangle; prosternum in front of coxa 0.8 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line; much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 333) with complete raised border; mesoventral process at median length of coxa 1.25 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction arcuate or somewhat angulate posteriorly, without internal knob. Scutellum (Fig. 330) triangular, transverse; surface punctate and setose. Elytra with lateral margins very narrow but entirely visible from above; surface with single size punctures (Fig. 330). Elytral epipleuron incomplete apically only (Fig. 323), 2.2 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line upturned outwards near base of elytron. Metaventrite with complete discrecim; metaventral postcoxal lines distinctly separated at middle, complete and distinctly recurved (Fig. 333); metaepisternum with external process interlocking with fovea on elytron (Fig. 332); metaepimeron indistinct; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters angulate produced (Figs 333, 334); mid and hind tibia with single spur (Fig. 335); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with large subquadrilateral basal tooth; tarsal claws in female with quadrate basal tooth.
Abdomen (Figs 334, 336, 337) with 5 ventrites in both sexes; ventrite I 1.6 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male with postero-median concavity, simply setose, hind margin only with narrow, median part emarginate; female ventrite VI (Fig. 1476) with hind margin triangularity produced, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1472), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half very narrow and rod-like towards apex, and base of spiculum widened and complex.

Male genitalia (Figs 1471, 1473, 1474). Parameres articulated with phallobase, well developed, simple and separated, about 1.5 times as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm obsolete.

Female genitalia (Fig. 1475). Proctiger (T10) distinct, at least partly sclerotized plate; styli terminal; infundibulum small, in form of slightly sclerotized piece of bursa; sperm duct short, simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

Material examined. Types. Lectotype (here designated), male "Rhizobius discipennis Blackburn/ Type T 5933 N Qu Blackburn coll. 1910-236" (NHM); paralectotypes, "Rhizobius discipennis Blackb/ co-type/ N. Qu. 5933/ N. Queensland, Blackb's coll/ Rhizobius discipennis Bl, coype, Queensland, I. 9778/ S. Aust. Museum specimen" (1 male; 3 females; SAM).

Note. Only four specimens, those with entirely black dorsal, from seven of the type series preserved in SAM, belong to R. discipennis. Two specimens from that series, those with lighter maculae on brown and blackish elytra, are designated in this paper as paratypes of R. leai sp. nov. The seventh specimen, that with elytra mostly brown with pubescence forming very distinct wavy pattern, is designated in this paper as paratype of R. tribulation sp. nov. The lectotype of Rhizobius discipennis Blackburn, 1895 is designated to fix the confused taxonomic status of this species.

Other material. Queensland: N Q, Kuranda, R.C.L. Perkins, B.M. 1942-95 (2; NHM); Cairns dist., A.M. Lea, ex coll. S.A. Mus., Rhizobius discipennis Bl., id. by A.M. Lea (1; ANIC); Black Mt. Rd., 5 mi. N of Kuranda. NQ. 16.49S 145.39E, 8.XII.1968, at light, Britton. Brook, Misko (1; ANIC); 17.34S 146.06E, Etty Beach, 28.1.1992, C. Reid, beating vines etc, lowland rainforest (1; ANIC); 16.04S 145.26E, top on pinnae on ridge W Cape Trib, 720 m, 12.XI.1992, C. Reid, beating trees & bushes (1; ANIC); 17.19S 145.29E, Wongabel SF ca. 1 km S Atherton. 12.VI.1992, C. Reid, beating rainforest bushes/vines (1; ANIC). Northern Territory: 12.23S 132.57E, 5 km NNW of Cahills Crossing (East Alligator River); 5.XI.1972, at light, E. Britton (9; ANIC; 3; MIZ); 12.25S 132.58E, 1 km N of Cahills Crossing (East Alligator River), 8.XI.1972, at light, M.S. Upton (1; ANIC); same but 31.X.1972. E. Britton (1; ANIC); 12.23S 132.56E, 7 km NW by N of Cahills Crossing (East Alligator River), 4.XI.1972, at light, E. Britton (2; ANIC); 12.46S 132.39E, 12 km NNW of Mt. Cahill, 25.X.1972, at light, E. Britton (1; ANIC); 12.31S 132.54E, 9 km N by E of Mudginbarry HS, 30.X.1972, at light, E.B. Britton (3; ANIC; 1; MIZ); 12.33S 132.52E, Magela
Creek, 2 km N of Mudginbarry HS, 14.X.1972, M.S. Upton (2: ANIC); 12.21S 130.42E, Casuarina Beach, 10 km NNE of Darwin, 22.X.1972, E. Britton (1: ANIC; 1: MIZ); 12.28S 131.03E, Howard Springs, 24 km S of Darwin, 10.XI.1972, rainforest, at light, E. Britton (1: ANIC).

**Distribution.** Australia: Queensland, Northern Territory.

*Rhizobius discoidalis* Weise
(Figs 338–352, 1477–1482)

*Rhizobius discoidalis* Weise, 1923: 147.

**Diagnosis.** This species is similar to *R. aurantii* and *R. caecus* by having the pronotum with lateral margins convergent anteriorly, anterior angles widely rounded and anterior margin straight, covering the head almost entirely, and by the body of similar size and shape. However, the large, oval, reddish or yellowish macula along suture of the black elytra in *R. discoidalis* separates this species from *R. aurantii* and *R. caecus*.

**Description.** Length 2.17–2.73 mm; TL/EW = 1.45–1.55; PL/PW = 0.57–0.59; EL/EW = 1.11–1.15.

**Body** (Figs 338, 339, 341) elongate oval, moderately convex, winged; predominantly dark brown to almost black; anterior angles of pronotum pale yellow; elytra with long-oval pale, sutural spot, common for both elytra, anteriorly reaching scutellum (sometimes including scutellum), posteriorly reaching apical fifth of elytra; antennae, mouthparts (at least labial and maxillary palpi), tarsi and sometimes tibiae yellowish. Dorsum with double pubescence consisting of appressed setae and sparse stiff bristles; dorsal pubescence forming wavy pattern on elytra; elytral bristles distinct especially along margins.

**Head** (Figs 340, 342) entirely withdrawn into prothorax, 0.75 times as long as wide; ventral antennal grooves long, straight, reaching distinctly behind eyes; corporoterritorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; with ocular canthus extending slightly into eye; interocular distance 0.50–0.52 times as wide as head across eyes; interfacetal setae indistinct. Antenna as long as head capsule width, 11-segmented; scape 1.8–1.9 times as long as pedicel; pedicel distinctly narrower than scape, 1.5 times as long as wide; antennomere III 3.55–3.75 times longer than wide, and at least 3 times longer than IV; antennomere IV shorter than V; antennomeres VI and VII subquadrate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere subquadrate, apically rounded. Anterior clypeal margin straight. Labrum emarginate at apex. Maxillary cardo (Figs 340, 344) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpmere 1.4 times as long as wide, weakly expanded apically. Mentum weakly transverse, less than 2 times broader than long; anterior margin scarcely arcuate; ventral surface with horseshoe like impression; prementum transverse; ligula parallel to side of palpir; apical segment indistinct.

**Pronotum** (Figs 340) with regular border, anteriorly and without clear border. Pronotum hypomeron well indented to notosternal suture at 1.75 times as broad as long, joined roundly just before base of elytra; long as coxal longitudinal suture; much more deeply transverse, with apex acute posteriorly, with setose and setose tips. Elytra visible from above; surface incomplete apically only to the apex, outer margin slightly rounded, becoming bluntly pointed outwardly. Mesoventral postcoxal line recurved (Fig. 340); median groove on elytron (Fig. 350); median groove on pronotum (Fig. 340). Legs as broad; tendons separate.

**Legs** with trochanters as long as the 2nd basal joint of tarsus in male with large subquadrate basal tooth.

**Abdomen** with 5 ventrites longer than wide (Fig. 340) 1.25–1.30 times as long as wide; posteriorly reaching female distinctly longer than male (Fig. 352) smooth and shiny. Male ventrite VI (Fig. 1481) and female ventrite VI (Fig. 1480) with central part membranous to somewhat widening at apex. Male genitalia well developed, simple and modified, covered with simple set.
transverse; ligula parallel-sided; labial palps separated by distance about equal to width of palpiger; apical palpmere about as long and as broad as penultimate one; submentum indistinct.

**Pronotum** (Figs 342, 343, 345, 348) with anterior angles obtuse, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and without clear border at least along part of its length; hind margin without border. Prothoracic hypomeron with at least short, somewhat crescent shaped groove perpendicular to notosternal suture; notosternal suture obscure; prosternal process (Fig. 346) 0.75 times as broad as longest coxal diameter, its surface with carinae convergent, joined roundly just before prosternal margin; prosternum in front of coxa 0.6 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line; much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with bordering line distinctly incomplete antero-medially.

**Anterior edge of mesoventrite** (Fig. 346) with complete raised border; mesoventral process at median length of coxa 1.25 times as broad as corresponding coxal diameter; meso metaventrite articulation with suture obscure; junction arcuate posteriorly, without internal knob. Scutellum triangular, transverse; surface punctate and setose. Elytra (Fig. 338) with lateral margins very narrow but entirely visible from above; surface (Fig. 343) with single size punctures, elytral epipleuron incomplete apically only (Figs 339, 351), 1.9 times as wide as corresponding metapleural sternum, inner margin with border area widening towards elytral base and border line upturned outwardly near base of elytron. Metaventrite with complete discrimin; metaventral postcoxal lines distinctly separated at middle, complete and distinctly recurved (Fig. 346); metepisternum with externally process interlocking with fovea on elytron (Fig. 350); metaepimeron indistinct; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on lamina.

**Legs** with trochanters angulatedly produced (Figs 346, 351); mid and hind tibia with single spur (Figs 347, 349); pro- and mid tarsal claws appendiculate; hind tarsal claws in male with large subquadrate basal tooth; tarsal claws in female with subquadrate basal tooth.

**Abdomen** with 5 ventrites in female (Fig. 351), and 6 ventrites in male; ventrite I 1.25–1.30 times as long as ventrite II; abdominal postcoxal lines separate medially; shallow, posteriorly reaches distinctly less than half length of ventre I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male (Fig. 352) smooth and simply setose, hind margin deeply emarginate; female ventrite VI (Fig. 1481) with hind margin arcuate, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1480), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half complex, somewhat widening at apex, and base of spiculum widened.

**Male genitalia** (Figs 1477–1479). Parameres articulated with phallobase, well developed, simple and separated, slightly shorter than penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral
sides asymmetrical apically only; tegmnal strut simple; penis base with outer arm distinctly less developed than inner arm.

Female genitalia (Fig. 1482). Proctiger (T10) distinct, at least partly sclerotized plate; styli small, terminal; infundibulum in form of lightly sclerotized piece of bursa; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

**Material examined.** Types. Lectotype (here designated), male "Evelyn/ Queensland, Mjöberg, male 263, 80" (NRMS); paratypetomes, same data as lectotype (1 male; 3 females: NRMS); same and *Rhizobius discoidalis* m (1 female: NRMS).

Note: The lectotype of *Rhizobius discoidalis* Weise, 1923 is designated to stabilize the taxonomic status of this species.


**Distribution.** Australia: Queensland, New South Wales.

*Rhyzobius discolor* (Erichson)  
(Figs 353-367, 1483-1488)

*Scynnum discolor* Erichson, 1842: 240.  
*Rhyzobius discolor* Mulsant 1850:1004.

**Diagnosis.** *R. discolor*, together with *R. evansi*, *R. gordoni*, *R. gingera* and *R. dryandra* form a group of externally almost identical species. The genitalia and the apices of abdominal ventrites V and VI of both sexes should be consulted for sound identification. Among these species, the best characters distinguishing *R. discolor* are: the pronotal hypomeron almost smooth with at most weak concavity anteriorly, the antennomere III at most 2.5 times longer than IV, the abdominal postcoxal lines reaching slightly beyond half length of ventrite I, the ventrite V rounded at apex, the parameres 2 times longer than penis guide and the female genitalia with distinct infundibulum.

**Description.** Length 2.90-4.70 mm; TL/EW = 1.48-1.65; PL/PW = 0.53-0.57; EL/EW = 1.12-1.25.

**Body** (Figs 353, 354, 356) elongate oval, moderately convex, winged. Dorsum brownish black or black; head, lateral and anterior margins of pronotum (or at least anterior angles) and sometimes elytral lateral margins along apical half brown; ventral surface dark brown, sometimes weakly infuscate; mouthparts, antennae and legs (at least tarsi) may be paler than the ventral surface. Dorsum with double pubescence consisting of appressed setae and sparse stiff bristles; dorsal pubescence forming very weak wavy pattern on elytra; elytral bristles present on entire dorsum.

**Head** (Figs 355, 357) withdrawn into prothorax but with eyes partially visible externally, 0.8 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; corpotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; with ocellar canthus extending slightly into eye; interocular distance 0.50-0.52 times as wide as head across eyes; interfascet setae distinct. Antenna (Fig. 360) 0.9-1.0 times as long as head capsule width, 11-segmented; scape 1.9-2.0 times as long as pedicel; pedicel distinctly narrower than scape, 1.30-1.35 times as long as wide; antennomere III 3.3-3.5 times longer than wide, and about 1.5-2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere distinctly elongate, apically rounded. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum truncate at apex. Maxillary cardo (Figs 355, 361) trans-
verse with outer angle reaching slightly outside of mouth cavity; terminal palpmere 1.30–1.35 times as long as wide, very weakly expanded apically. Mentum (Fig. 361) weakly transverse, less than 2 times broader than long; anterior margin scarcely arcuate; ventral surface with horseshoe like impression; prementum transverse; ligula parallel-sided; labial palps separated by distance about equal to width of palpiger; apical palpmere as long and as broad as penultimate one; submentum distinct.

Pronotum (Figs 357, 358, 363) with anterior angles rounded, weakly produced anteriorly, not swollen with regular border; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 362) smooth, without groove or concavity; notosternal suture obscure; prosternal process about 0.7 times as broad as longest coxal diameter, its surface with carinae weakly convergent, joined roundly just before prosternal margin; prosternum in front of coxa 0.75 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line; much more posterior than anterior protosomal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 362) with complete raised border; mesoventral process at median length of coxa 1.2 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction arcuate posteriorly, without internal knob. Scutellum triangular, transverse; surface punctate and setose. Elytra (Fig. 353) with lateral margins very narrow but entirely visible from above; surface (Fig. 363) with single size punctures, elytral epipleuron incomplete apically only (Figs 354, 366), 2.25 times as wide as corresponding metapostternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite with complete discrinc; metaventral postcoxal lines distinctly separated at middle, complete and recurved (Fig. 362); metapostternum with external process interlocking with fovea on elytron (Fig. 359); metapostternum distinct, visible ventrally; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters angulately produced (Figs 362, 366); mid and hind tibia with single spur (Figs 364, 365); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with subquadrate basal tooth; tarsal claws in female with weak quadrate basal tooth.

Abdomen (Figs 366, 367) with 5 ventrites in both sexes; ventrite I 1.44 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin rounded; female ventrite VI (Fig. 1487) with hind margin rounded, tergite VIII rounded; hind margin of male ventrite VI weakly emarginate (Fig. 1486), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX somewhat widening at apex, and base of spiculum widened and with a pair of small round sclerites.

Male genitalia (Figs 1483–1485). Parameres articulated with phallobase, well developed, simple and separated, nearly twice as long as penis guide, desely
setose along about half of their length, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; terminal strut simple; penis base with outer arm distinctly less developed than inner arm.

Female genitalia (Fig. 1488). Proctiger (T10) reduced, small, submembraneous; styli very small, terminal; infundibulum sclerotized, tube-like, enclosing the spermathecal duct; sperm duct simple, uniform in diameter; spermatheca with only nodulus developed, spermathecal accessory gland adjacent to spermathecal duct.


Note. Despite of presence of Pope's labels "lectotype" and "paralectotypes", the designation of the lectotype and paralectotypes was never published, therefore they are formally designated here, to stabilize the taxonomic status of this species.

Other material. Tasmania. Roaring Bay via Devon. 9.I.1983, B. Bormennissa, B.M. 1987-232 (22: NHM); Hobart, M. Nelson. 14.I.1983, under gum-bark, B. Bormennissa, B.M. 1987-233 (5: NHM); Hobart, J.J. Walker (2: NHM); Hobart, M.C. Darwin (1: ANIC); Cranston, 5.II.1983, leg. Bormennissa (1: ANIC); 42.54S 147.30E, Lauderdale, 3.VIII.1972, M.L., Taylor, E. viminalis under bark; Eriococcus sp., predator of Eriococcus & mealybugs (2: ANIC); Tas, ex coll. S.A. Mus, Rhizobius discolor, id. by A.M. Lea (1: ANIC); Liffey, July. 84, S. Fearn (1: ANIC); 42.07S 146.13E, Derwent R. 740 m, Lake St. Clair, 29.VI.1980, Lawrence & Weir (1: ANIC); Tasmania (3: ISNB); Victoria: 12 km N Bonang, 30.XII.1988, C. Reid, ex wet sclerophyll forest (2: ANIC); 36.42S 146.50E, Mt. Buffalo N.P., 800 m above Eurobin Point 805, 23.I.-12.II.1987, A. Newton & M. Thayer, wet scler. Forest, FMHD 87-200 flight interc. (window) trap (1: ANIC); Australian Capital Territory: Billy Billy Rocks, 25.XI.1984, C. Reid, on Euc./ Ac. Bushes, beside road (1: ANIC); 35.19S 148.51E, Wombat Ck., 6 km NE of Piccadilly Circus, 750 m, IV.1985, Weir, Lawrence, Johnson, flight intercept window/ trough trap (1: ANIC); same but II.1984 (1: ANIC); Deakin, 15.III.1966, E. Britton (1: ANIC); 35.22S 148.50E, Blundells Ck., 3 km E of Piccadilly Circus, 850 m, V.1984, Weir, Lawrence, Johnson, flight intercept window/ through trap (1: ANIC); Red Hill, Deakin, 10.XII.1990, E. Britton, at flight (1: ANIC); Mitchell, 27.VII.1993, S. Neser, in debris on Acacia baileyana (1: ANIC); 35.16S 149.06E, nr. light trap, Black Mt., 15.VII and 20 IX 1993, W. Dressler, under bark and open forest litter (2: ANIC); 35.16S 149.09E, Black Mt., 600 m, VIII.1986 and 1987, Weir, Lawrence, Dressler, flight intercept window/ through trap (2: ANIC); Black Mt. light trap, 10.I, 12.III and 31.III.68, M.S. Upton (3: ANIC); Piccadilly Circus, Brindabella Rge, 24.X.1982, J.T. Doyen coll. (1: ANIC); Black Mt. Reserve, 28.VII.1971, S. Misko (2: ANIC; 1: MIZ); 35.24S 149.05E, Monash Hill, 19.VIII.1990, W. Dressler, under Euc. Barc (1: ANIC; 1: MIZ); New South Wales: 35.30S 150.18E, Kiloa SF, 15 km NE Batemans Bay, IV.1987, M.G. Robinson, ex sticky trap (1: ANIC); same but I.1987, flight intercept trap (1: ANIC); Nelligen (Tidal flat), 1.II.1973, D.H. Colless (1: ANIC); 36.12S 148.43E, Dainiers Gap, 6.III.1974, P. Morrow, 1585 metres, Euc. pauciflora, stelligula and perriniana forest (1: ANIC); same but 20.II. (1: ANIC; 1: MIZ);

**Distribution.** Australia: Tasmania, Victoria, Australian Capital Territory, New South Wales.

_Rhizobius dorsalis_ Blackburn (Figs 368–381, 1489–1493)

_Rhizobius dorsalis_ Blackburn, 1892a: 70.

**Diagnosis.** _R. dorsalis_ resembles _R. speculifer_ and _R. secessus_, in having moderately sized short oval body in combination with dorsum more or less uniformly brown and the pubescence on elytra very dense forming very distinct wavy pattern. _R. dorsalis_, however can be separated from both these species by having more or less well developed paler area along elytral suture in mid length, less elongate antennomere III as compared to IV and by the absence of tibial spurs. Additionally it is distinguished from _R. speculifer_ by having the elytra finely and uniformly punctate while from _R. secessus_ by having the pronotum with grooves near anterior angles, the prothoracic hypomeron with distinct concavity anteriorly and ventral antennal grooves long distinctly circular bent towards outer margin of eye.

**Description.** Length 2.30–2.55 mm; TL/EW = 1.35–1.50; PL/PW = 0.51–0.53; EL/EW = 1.04–1.06.

Body (Figs 368, 369, 371) broadly oval, moderately convex, winged; predominantly dark brown to dark chestnut brown; elytra weakly infuscate, except for somewhat oval, more or less extended area along suture; epipleura, hypomera, abdominal ventrites and legs orange brown; antennae and palpi yellowish brown. Dorsum with double pubescence consisting of appressed setae and sparse stiff bristles; dorsal pubescence forming wavy pattern on elytra; elytral bristles present on entire dorsum.

Head (Figs 370, 374) dorsally exposed; ventral antennal grooves distinctly circular bent towards outer margin of eye. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; with ocular canthus extending slightly into eye; interocular distance 0.49–0.52 times as wide as head across eyes; interfacial setae distinct. Antenna (Fig. 373) 0.75–0.80 times as long as head capsule width, 11-segmented; scape 1.7 times as long as pedicel; pedicel distinctly narrower than scape, 1.35 times as long as wide; antennomere III 2.45 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII subquadrate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere subquadrate, apically rounded. Anterior clypeal margin distinctly emarginate with median area membranous.
Labrum truncate at apex. Maxillary cardo (Fig. 374) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.25 times as long as wide, weakly expanded apically. Mentum weakly transverse, less than 2 times broader than long; anterior margin weakly arcuate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpiger; apical palpomere as long and about as broad as penultimate one; submentum indistinct.

Prototum (Figs 370, 372, 376, 377) with anterior angles rounded, weakly produced anteriorly, not swollen but with distinct groove near angles; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Figs 374, 378) with broad, concave area along anterior half of prothoracic lateral margin; notosternal suture obscure; prosternal process (Fig. 378) about 0.55 times as broad as longest coxal diameter, its surface with complete, weakly convergent, separate carinae; prosternum in front of coxa 0.45 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line; much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 378) with complete raised border; mesoventral process at median length of coxa 1.1 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction arcuate posteriorly. Scutellum (Fig. 376) triangular, transverse; surface punctate and setose. Episterna (Fig. 368) with lateral margins very narrow but entirely visible from above; epipleura (Fig. 376) with single size punctures, elytral epipleuron incomplete apically only (Figs 369, 379), 2.1 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite with complete discrmen; metaventral postcoxal lines distinctly separated at middle, complete and distinctly recurved (Fig. 378); metaepisternum with external process interlocking with fovea on elytron (Fig. 375); metaepisternum indistinct.

Legs with trochanters angulately produced; mid and hind tibia without visible spurs (Figs 380, 381); pro- and mid tarsal claws in male appendiculate; tarsal claws in female with subquadrate basal tooth.

Abdomen (Fig. 379) with 5 ventrites in both sexes; ventrite I 1.35–1.40 times as long as ventrite II; abdominal postcoxal lines separate mediadly; deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin rounded; female ventrite VI with hind margin arcuate; tergite VIII rounded; hind margin of male ventrite VI weakly emarginate (Fig. 1492), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX somewhat widening at apex, and base of stipulum widened.

Male genitalia (Figs 1489–1491). Parameres articulated with phallobase, well developed, simple and separated, about 1.6 times as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with
lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm obsolete.

**Female genitalia** (Fig. 1493). Proctiger (T10) distinct, at least partly scleritized plate; styli reduced, terminal; infundibulum absent; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

**Material examined.** Types. Lectotype (here designated), male "Rhizobius dorsalis Blackburni, type/4196, Gosford, T/ Blackbur coll. 1910-236" (NHM); paratypes "Rhizobius dorsalis Bl., N.S. Wales, cotyoe, 9779/ Rhizobius dorsalis Blackb., cotyoe/4196/ Gosford" (SAM).

**Note.** The lectotype of *Rhizobius dorsalis* Blackburn, 1892 is designated to stabilize the taxonomic status of this species.

**Other material.** New South Wales, Kiloa SF, 15 km NE, Batemans Bay, 3.X.1987, C. Reid, beating bushes (1: ANIC); Weddeburn, 18.10.1959, N. Nikitin, B.M. 1960-203, by sweeping (1: NMH).

**Distribution.** Australia: New South Wales.

*Rhizobius dryandra* sp. nov.

(Figs 382–393, 1494–1499, 1919)

**Diagnosis.** *R. dryandra, R. discolor, R. gingera, R. evansi* and *R. gordonii* belong to a group of externally almost identical and very difficult to separate species. The genitalia and the apices of abdominal ventrites V and VI of both sexes should be consulted for sound identification. Within this group, the best distinguishing characters for *R. dryandra* are: the abdominal ventrites V and VI in female truncate at apex, the spermatheca without nodulus or ramus and the tegmen with penis guide about as long as 2/3 of parameres.

**Description.** Length 3.50–3.60 mm; TL/EW = 1.36–1.45; PL/PW = 0.52–0.53; EL/EW = 1.05–1.15.

**Body** (Figs 382, 383, 392, 1919) broadly oval, moderately convex, winged; predominantly blackish brown or dark chestnut brown; prothoracic hypomera, elytral epipleura, antennae, mouthparts and legs except coxae light brown. Dorsum with double pubescence consisting of appressed setae and sparse dark stiff bristles; dorsal pubescence forming weak wavy pattern on elytra; elytral bristles distinct especially along margins.

**Head** (Figs 384, 385) withdrawn into prothorax but with eyes partially visible externally, 0.8 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; corprotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; with ocular canthus extending slightly into eye; interocular distance 0.43–0.45 times as wide as head across eyes; interfacetal setae distinct. Antenna (Fig. 390) 0.8 times as long as head capsule width, 11-segmented; scape 1.9–2.1 times as long as pedicel; pedicel distinctly narrower than scape, 1.25–1.35 times as long as wide; antennomere III 3.2 times longer than wide, and at least 3 times longer than IV; anten-
nomere IV as long as V; antennomeres VI and VII weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere distinctly elongate, apically rounded. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum truncate at apex. Maxillary cardo (Fig. 384) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.3 times as long as wide, parallel-sided. Mentum weakly transverse, less than 2 times broader than long; anterior margin almost truncate; ventral surface with horseshoe-like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance at least 1.5 times broader than width of palpiger; apical palpomere about as long and as broad as penultimate one; submentum indistinct.

Pronotum (Figs 385, 386, 389, 393) with anterior angles rounded, very weakly produced anteriorly, not swollen with regular border; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 391) with broad, concave area along anterior half of prothoracic lateral margin; notosternal suture obscure; prosternal process (Fig. 391) about 0.6 times as broad as longest coxal diameter, its surface with carinae convergent, joined roundly just before prosternal margin; prosternum in front of coxa 0.7 times as long as coxal bregmatic diameter at the same position; anterior margin continuing as weakly acute line; much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 391) with complete raised border; mesoventral process at median length of coxa 1.2 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction arcuate or somewhat angulate posteriorly, without internal knob. Scutellum (Fig. 389) triangular, at least as long as broad; surface punctate and setose. Elytra (Fig. 382) with lateral margins very narrow but entirely visible from above; surface with double size punctures, elytral epipleuron incomplete apically only (Fig. 383); 2 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line upturned outwardly near base of elytron. Metaventrite with complete discernum; metaventral postcoxal lines distinctly at middle, complete and recurved; metaepisternum with external process interlocking with fovea on elytron (Fig. 388); metaepimeron indistinct; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanter angulately produced (Fig. 391); mid and hind tibia with single spur (Fig. 387); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with large subquadrate basal tooth; tarsal claws in female swollen at base.

Abdomen with 5 ventrites in both sexes; ventrite I 1.25 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin only with median part narrowly truncate; female ventrite VI (Fig. 1498) with hind margin narrowly truncate, tergite VIII rounded;
hind margin of male ventrite VI emarginate (Fig. 1497); male tegrite VIII rounded. Sternite IX with central part membranous; apodeme of male sternite IX somewhat widened at apex, and base of spiculum widened and with a pair of small selerites.

Male genitalia (Figs 1494–1496). Parameres articulated with phallobase, well developed, simple and separated, about 1.5 times as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm distinctly less developed than inner arm.

Female genitalia (Fig. 1499). Proctiger (T10) reduced, small, submembranous; styli terminal; infundibulum absent; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.


Etymology. Named after Dryandra Forest in Western Australia, where most specimens of the type series were collected.

Distribution. Australia: Western Australia.

Rhyzobius eminens Blackburn
(Figs 394–408, 1500–1505)

Rhyzobius eminens Blackburn, 1895: 257.

Diagnosis. This species resembles R. micrus by body size, shape and metallic sheen on the elytra and to R. subhirtellus and R. rodmani by the body size, shape and colouration. R. eminens, however, is easily distinguished from R. micrus by having dorsum bicoloured – head and pronotum brown and elytra black, and from R. subhirtellus and R. rodmani it can be separated by having green or blue, metallic sheen on the elytra and the prosternal carinae pentagonal in shape. Additionally R. eminens is easily separated from R. rodmani by having well developed hind wings.

Description. Length 2.20–2.87 mm; TL/EW = 1.30–1.35; PL/PW = 0.51–0.54; EL/EW = 1.00–1.07.

Body (Figs 394, 395, 400) broadly oval, strongly convex, hemispherical, winged; predominantly yellowish brown or dark brown; elytra black with green or blue, metallic sheen; meso- and metaventre blackish. Dorsum with double pubescence consisting of appressed setae and moderately dense, dark stiff bristles; dorsal pubescence forming weak wavy pattern on elytra; elytral bristles present on entire dorsum.

Head (Figs 397, 406) entirely withdrawn into prothorax, 0.7 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; corpotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner ocelli lacking; ocellipetal margin with 2–3 weak teeth; eyes; integument of head capsule tinted brown; antennae with 11 segments; antennal segments 2–87% longer than 3 anterior, segments 3–8 each 1.5 times as long as broad; segment 9 elongate; anterior and posterior tentorial arms extending to about as far as middle of segment 6.

Pronotum produced laterally, mesoventral carinae extending to or just before posterior margin of elytra.

Elytra strongly convex, hemispherical, covered with a very fine punctuation; surface finely covered with a reticulate pattern.

Legs without visible bristles; hind tarsi female with
inner orbits convergent, closer near vertex than anteriorly; with ocular canthus extending slightly into eye; interocular distance 0.52–0.54 times as wide as head across eyes; interfacetal setae absent. Antenna (Fig. 396) 0.80–0.82 times as long as head capsule width, 11-segmented; scape 1.5 times as long as pedicel; pedicel distinctly narrower than scape, 1.20–1.22 times as long as wide; antennomere III 2.5–2.8 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII very short, transverse. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere subquadrate, apically rounded. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum rounded apically. Maxillary cardo transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.4–1.5 times as long as wide, weakly expanded apically. Mentum weakly transverse, less than 2 times broader than long; anterior margin truncate; ventral surface with horseshoe-like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palipiger; apical palpomere about as long and as broad as penultimate one; submentum distinct.

Pronotum (Figs 398, 399, 401, 406) with anterior angles rounded, scarcely produced anteriorly, not swollen but with distinct groove near angles; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 396) with broad, concave area along anterior half of prothoracic lateral margin; notosternal suture distinct, simple; prosternal process (Fig. 396) 0.75 times as broad as longest coxal diameter, its surface with carinae somewhat pentagonal, joined roundly just before prosternal margin; prosternum in front of coxa C times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line; much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 402) with complete raised border; mesoventral process at median length of coxa 1.15 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction arcuate posteriorly, without internal knob. Scutellum (Fig. 401) triangular, transverse; surface punctate and setose. Elytra (Fig. 394) with lateral margins very narrow but entirely visible from above; surface (Fig. 401) with single size punctures, elytral epipleuron incomplete apically only (Figs 395, 408), 2 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite with complete discrimum; metaventral postcoxal lines distinctly separated at middle; complete and distinctly recurved (Fig. 402); metaepisternum with external process interlocking with fovea on elytron (Fig. 405); metaepimeron indistinct; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters angulate produced (Figs 402, 408); mid and hind tibiae without visible spurs (Figs 403, 404); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with weak subquadratically basal tooth; tarsal claws in female with subquadrate basal tooth.
Abdomen (Figs 407, 408) with 5 ventrites in both sexes; ventrite I 1.33 times as long as ventrite II; abdominal postcoxal lines separate medially; deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male with median setose patches, hind margin only with median part narrowly truncate to weakly emarginate; female ventrite VI (Fig. 1504) with hind margin rounded, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1502), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half complex, somewhat widening towards and at apex, and base of spiculum widened and with a pair of small round sclerites.

**Male genitalia** (Figs 1500, 1501, 1503). Parameres articulated with phallobase, well developed, simple and separated, about 1.3 times as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm distinctly less developed than inner arm.

**Female genitalia** (Fig. 1505). Proctiger (T10) distinct, at least partly sclerotized plate; styli terminal; infundibulum sclerotized, tube-like, enclosing the sperm duct; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

**Material examined.** Types. Lectotype (here designated), male "Rhzobius eminus" Blackburn/ type/ 5934 T, N. Qu/ Blackburn coll. 1910-236/ “(NHM).

Note. The lectotype of Rhzobius eminus Blackburn, 1895 is designated to stabilize the taxonomic status of this species.


**Distribution.** Australia: Queensland, New South Wales.

**Rhzobius ephippiatus** Weise

(Figs 409-419, 1506-1511)


**Diagnosis.** Rhzobius ephippiatus is different from all other Australian congeners by its colouration – the body brown with large, black, oval macula along elytral suture.

**Description.** Length: EL/EW = 1.05-1.10.

**Body (Figs 409-411).** Brown; elytra with large apical third of elytra. Distal and sparse stiff bristles on elytral bristles present.

**Head (Figs 415, 416).** Externally: ventral anterior of eye. Eyes dorsally light brown; convergent, closer near into eye; interocular distance distinct. Antenna (Figs 417, 418): scape 1.35 times as long as 1.5 times as long as 1.5-2.5 times as long as 3.5-4.5 times as long as weakly elongate.

Antennal metatrichia: penultimate segment; terminal internomere subequal to emarginate with medial do transverse, terminal palpmere 1.3 to 1.4 strongly transverse, at emarginate; ventral surface as broad; ligula reduced; palpiger; apical palps distinct.

**Pronotum (Figs 412, 413).** Anterior margin with entire smooth, without groove (Fig. 419) 0.65 times as weakly convergent, not of coxa 0.55 times as anterior margin continues pronotal margin; process incomplete antero-mesal.

**Anterior edge mesoventral process.** Coxal diameter; mesoventral edge posteriorly. Scutellum not setose. Elytra (Fig. 410) above; surface (Fig. 411)
**Description.** Length 2.15–2.35 mm; TL/EW = 1.38–1.42; PL/PW = 0.51–0.52; EL/EW = 1.05–1.10.

**Body** (Figs 409–411) broadly oval, moderately convex, winged; light brown or brown; elytra with large, black, oval spot extending along suture from base to about apical third of elytra. Dorsum with double pubescence consisting of appressed setae and sparse stiff bristles; dorsal pubescence not forming distinct pattern on elytra; elytral bristles present on entire dorsum.

**Head** (Figs 415, 418) withdrawn into prothorax but with eyes partially visible externally; ventral antennal grooves distinctly circular bent towards outer margin of eye. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; with ocular canthus extending slightly into eye; interocular distance 0.5 times as wide as head across eyes; interfacial setae distinct. Antenna (Fig. 412) about 0.9 times as long as head capsule width, 11-segmented; scape 1.35 times as long as pedicel; pedicel distinctly narrower than scape, 1.5 times as long as wide; antennomere III 3.1 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere subquadrate, apicallytruncate. Anterior clypeal margin distinctly crenulate with median area membranous. Labrum truncate at apex. Maxillary carina moderately transverse (Fig. 415) with outer angle reaching slightly outside of mouth cavity; labial palpmere 1.35–1.40 times as long as wide, rather parallel-sided. Mentum strongly transverse, at least 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula reduced; labial palps separated by distance about equal to width of palpiger; apical palpmere as long and as broad as penultimate one; submentum distinct.

**Pronotum** (Figs 413, 418) with anterior angles rounded, very weakly produced anteriorly, not swollen with regular border; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron smooth, without groove or concavity; notosternal suture obscure; prosternal process (Fig. 419) 0.65 times as broad as longest coxal diameter, its surface with carinae weakly convergent, joined roundly just before prosternal margin; prosternum in front of coxa 0.55 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line; much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with bordering line distinctly incomplete antero-medially.

**Anterior edge of mesoventrite** (Fig. 419) with complete raised border; mesoventral process at median length of coxa 1.25 times as broad as corresponding coxal diameter; meso-metaventritle articulation with suture obscure; junction arcuate posteriorly. Scutellum (Figs 416, 418) triangular, transverse; surface punctate and setose. Elytrum (Fig. 409) with lateral margins very narrow but entirely visible from above; surface (Fig. 416) with single size punctures, elytral epipleuron incomplete.
apically only, 1.6 times as wide as corresponding metaeplisticum, inner margin with border area narrow throughout and border line fading before base of elytron. Meta-ventrite with complete discumen; metaventral postcoxal lines distinctly separated at middle, complete and distinctly recurved (Fig. 419); metaeplisticum with external process interlocking with fovea on elytron; metaepimeron indistinct.

Legs with trochanters angulately produced (Figs 417, 419); mid tibia with single spur (Fig. 414); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male and claws in female with large subquadrate basal tooth.

Abdomen (Fig. 417) with 5 ventrites in both sexes; ventrite I 1.35–1.45 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, posteriorly reaches about half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin rounded; female ventrite VI (Fig. 1510) with hind margin arcuate, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1590), tergite VIII rounded. Sternum IX with central part membranous; apodeme of male sternum IX with its apical half very narrow and rod-like towards apex, and base of spiculum weakly widened and with a pair of small round sclerites.

Male genitalia (Figs 1506–1508). Parameres articulated with phallobase, well developed, simple and separated, about 1.4 times as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm distinctly less developed than inner arm.

Female genitalia (Fig. 1511). Proctiger (T10) distinct, at least partly scleritized plate; styli small, terminal; infundibulum absent; sperm duct simple, uniform in diameter; spermatheca with only nodulus developed, spermathecal accessory gland adjacent to sperm duct.

Material examined. Types. Holotype, male “Glen Lamington/Queensland, Mö Berg typ/ephippia tus m/266, 80” (NRM).


**Rhyzobius evansii** Mulsant
(Figs 420–435, 1512–1516)

*Rhyzobius evansii* Mulsant, 1850: 1006.

**Diagnosis.** *R. evansii* is externally very similar to *R. discolor*, *R. gordoni*, *R. gingera* and *R. dryandra* and the genitalia and the apices of abdominal ventrites V and VI of both sexes should be consulted for sound identification. As compared to the species above, *R. evansii* can be distinguished in having comparatively wider pronotum than *R. discolor* and the white pronotal guide and the white wing tip.

Length. SLEW = 108–12.

Body (Figs 420, 421) with double pubescence forming V-shaped patch over entire dorsum.

Head (Figs 422, 423) 0.74–0.77 times as long as outer margin of head capsule posterolaterally; with ocelli as wide as 0.45 times as wide as 0.45–0.80–0.85 times as long as pedicel; antenna longer than IV; antennal club short; antennomere elongate, apical 2 with median area (Fig. 424) transverse with one palponome 1.28–1.27 strongly transverse, arcuate; ventral suture as broad; ligula papillose; width of palpiger, 2.1 submentum distinct.

Pronotum (Fig. 425) anteriorly, not swollen but as broad as pronotum; and without any special elevation; anterior margin of pronotum parallel to the body and without visible median sulcus or lateral carina.

**Description.** Length 108–12 mm. SLEW = 1.08–1.12.

Body (Figs 420, 421) with double pubescence forming V-shaped patch over entire dorsum.

Head (Figs 422, 423) 0.74–0.77 times as long as outer margin of head capsule posterolaterally; with ocelli as wide as 0.45 times as wide as 0.45–0.80–0.85 times as long as pedicel; antenna longer than IV; antennal club short; antennomere elongate, apical 2 with median area (Fig. 424) transverse with one palponome 1.28–1.27 strongly transverse, arcuate; ventral suture as broad; ligula papillose; width of palpiger, 2.1 submentum distinct.
can be distinguished in having prosternal carinae complete and separate, the prosternal process comparatively widest (as compared with coxal diameter), the parameres about as long as penis guide and the whole tegmen comparatively short and slender.

**Description.** Length 3.00–4.25 mm; TL/EW = 1.37–1.42; PL/PW = 0.53–0.55; EL/EW = 1.08–1.12.

**Body** (Figs 420, 421, 423) elongate oval, moderately convex, winged. Predominant body colour dark chestnut brown; dorsum most often at least infuscate or almost black; elytral lateral and apical margins, and pronotal lateral and anterior margins may be paler; tarsi, mouthparts and antennae usually pale brown. Dorsum with double pubescence consisting of appresed setae and sparse stiff bristles; dorsal pubescence forming very weak wavy pattern on elytra; elytral bristles present on entire dorsum.

**Head** (Figs 422, 428) withdrawn into prothorax, but with eyes partially visible; 0.74–0.77 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; corpotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer in vertex than anterior; with ocellar canthus extending slightly into eye; interocular distance 0.43–0.45 times as wide as head across eyes; interfacetal setae distinct. Antenna (Fig. 425) 0.80–0.85 times as long as head capsule width, 11-segmented; scape 2.2–2.5 times as long as pedicel; pedicel distinctly narrower than scape, 1.2–1.3 times as long as wide; antennomere III 3–3.2 times longer than wide, and at least 3 times longer than IV; antennomere IV as long as V; antennomeres VI and VII subquadrate; Antennal club 3-segmented, with two subterminal segments asymmetrical; ultimate antennomere distinctly shorter than terminal segment; terminal antennomere elongate, apically rounded. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum truncate at apex. Maxillary cardo (Fig. 424) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpmere 1.28–1.35 times as long as wide, weakly expanded apically. Mentum strongly transverse, at least 2 times broader than long; anterior margin scarcely arcuate; ventral surface with horseshoe like impression; prementum nearly as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpiger; apical palpmere about as long and as broad as penultimate one; submentum distinct.

**Pronotum** (Figs 426–429) with anterior angles rounded, weakly produced anteriorly, not swollen with regular border; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron with broad, concave area along anterior half of prothoracic lateral margin; notosternal suture distinct, simple; prosternal process (Fig. 430) about 0.8 times as broad as longest coxal diameter, its surface with complete, weakly convergent, separate carinae; prosternum in front of coxa 0.8 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.
Anterior edge of mesoventrite (Fig. 430) with complete raised border; mesoventral process at median length of coxa 1.15 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction arcuate or somewhat angulate posteriorly, without internal knob. Scutellum (Fig. 427) triangular, transverse; surface punctate and setose. Elytra (Fig. 420) with lateral margins very narrow but entirely visible from above; surface with double size punctures, elytral epipleuron incomplete apically only (Figs 421, 435), 2 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite with complete discernen; metaventral postcoxal lines separated at middle, complete and distinctly recurved (Fig. 430); metaepisternum with external process interlocking with fovea on elytron (Fig. 431); metaepimeron indistinct; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters angulantly produced; mid and hind tibia with single spur (Fig. 432); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male and tarsal claws in female with weak quadruple basal tooth.

Abdomen (Figs 433–435) with 5 ventrites in both sexes; ventrite I 1.3 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin only with median part narrowly truncate to emarginate; female ventrite VI (Fig. 1515) with hind margin arcuate, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1514), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternite IX somewhat widening near and at apex, and base of scapulum widened and with a pair of small round sclerites.

Male genitalia (Figs 1512, 1513). Parameres articulated with phallobase, well developed, simple and separated, about as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegminal strut simple; penis base with outer arm distinctly less developed than inner arm.

Female genitalia (Fig. 1516). Proctiger (T10) distinct, at least partly sclerotized plate; style terminal; infundibulum absent; sperm duct simple, uniform in diameter; spermatheca with only nodulus developed, spermathecal accessory gland adjacent to sperm duct.


Lectotype of R. confinis (here designated), sex not studied "Rhizobius confinis Lea, Type, Garden I, WA, 10485/ confinis Lea, Type, Garden I/ S. Aust. Museum spec." (SAM); paralectotypes, same data as lectotype (2: SAM).

Notes: I have designated "TT", it is mountedtype, a male. The length of the aetabolic status of the type is unknown.

As noted by Booth, the specimen.

Other material.


15.10E, 14.1X.1969, by beating, E.B. Birt & M.S. Upton (1: ANIC)

29.X.4.XI.1984, J. Lawrence (1 disected).

S of Fraser Range H (1 disected).

Distribution. Australia.

Scymnus jagus Brunetti
Rhizobius asellus Brunetti
Rhizobius acacii Brunetti
Rhizobius erinacius Brunetti
Rhizobius nigrovittatus

Diagnosis. R. jagus differs from other angles, the antenna.

Description. L/E = 1.00–1.05.

Body (Figs 1).

Winged: black with brown. Dorsum with...
Notes. I have chosen as the lectotype of *R. confinis* the specimen indicated by Lea as "TY". It is mounted on the same card together with paralectotypes. The dissected paralectotype is a male. The lectotype of *Rhizobius confinis* Lea, 1902 is designated to fix the confused taxonomic status of this species.

As noted by Booth & Pope, 1989, the lectotype of *R. evansii* Mulsant, is a teneral, pale specimen.


**Distribution.** Australia: Western Australia, South Australia, Victoria.

*Rhizobius fagus* (Broun) comb. nov.

(Figs 1054–1065, 1792–1797)

*Scymnus fagus* Broun, 1880: 648.

*Rhizobius satelles* Blackburn, 1892b: 255. **Syn. nov.**

*Rhizobius kingensis* Lea, 1908: 206. **Syn. nov.**

*Rhizobius erythrogaster* Lea, 1929: 241. **Syn. nov.**

*Rhizobius nigrovarius* Bielawski, 1973: 391. **Syn. nov.**

**Diagnosis.** *R. fagus* resembles *R. ventralis* and *R. foreviti* by the body shape and colouration but differs from both these species by having the pronotum with distinct groove near anterior angles, the antennomere III less elongate and mid and hind tibia without apical spurs.

**Description.** Length 2.20–3.00 mm; TL/EW = 1.32–1.36; PL/PW = 0.50–0.52; EL/EW = 1.00–1.05.

**Body** (Figs 1054, 1055, 1057) broadly oval, strongly convex, hemispherical, winged; black with abdominal ventrites, antennae, mouthparts and tarsi yellowish-brown. Dorsum with double pubescence consisting of appressed setae and sparse dark
stiff bristles; dorsal pubescence forming weak wavy pattern on elytra; elytral bristles present on entire dorsum.

Head (Figs 1056, 1064) withdrawn into prothorax but with eyes partially visible externally, 0.78–0.80 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocular canthus extending slightly into eye; interocular distance 0.55 times as wide as head across eyes; interfacial indistinct. Antenna (Fig. 1063) 0.65–0.67 times as long as head capsule width, 11-segmented; scape 1.4–1.6 times as long as pedicel; pedicel distinctly narrower than scape, 1.20–1.35 times as long as wide; antennomere III 2.35–2.50 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII at most weakly elongate. Antennal club 3-segmented, with two subterminal segments symmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere distinctly elongate, rounded apically. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum truncate at apex. Maxillary cardo (Fig. 1056) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.25 times as long as wide, weakly expanded apically. Mentum strongly transverse, at least 2 times broader than long; anterior margin arcuate; ventral surface with horseshoe-like impression; prementum transverse; ligula parallel-sided; labial palps separated by distance at least 1.5 times broader than width of palpgro; apical palpomere about as long and as broad as penultimate one; submentum indistinct.

 Pronotum (Figs 1059, 1060, 1064, 1065) with anterior angles rounded, weakly produced anteriorly, not swollen but with distinct groove near angles; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 1063) with somewhat crescent shaped groove perpendicular to notosternal suture; notosternal suture distinct, simple; prosternal process (Fig. 1058) 0.7 times as broad as longest coxal diameter, its surface with complete carinae joined roundly just before prosternal margin; prosternum in front of coxa 0.5 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as arcuate line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 1058) with complete raised border; mesoventral process at median length of coxa 1.2 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction arcuate or weakly angulate posteriorly, without internal knob. Scutellum (Fig. 1059) triangular, transverse; surface punctate and setose. Elytra (Fig. 1054) with lateral margins very narrow but entirely visible from above; surface (Fig. 1065) with single size punctures, elytral epipleuron incomplete apically only (Figs 1055, 1056), 2 times as wide as corresponding metaventrite, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite with complete discrimen; metaventral postcoxal lines (Fig. 1058) distinctly separated at middle, complete and recurved laterally; metaventral with external process in

liking with fovea on elytral, metanotosternal stalk for width of stalk and placed.

Legs with trochanters articulated; femur without visible spurs; profemur claws in male with larger, quadrate basal tooth.

Abdomen (Fig. 1061) ventrite II, abdominal posterior deep, posteriorly reaches distance; female distinctly longer than male with postero-median concave with median part narrowly truncate, shallowly emarginate, tergite V (Fig. 1795), tergite VI quadrate of male sternum IX, base of scuticle widened at.

Male genitalia (Fig. 1064) well developed, simple and apices covered with simple plumular sides symmetrical throughout distinctly less developed than.

Female genitalia (Fig. 1064) style elongated; style strongly rounded, duct simple, uniform in diam.


Holotype, male "Rhizobius sp. nov.

Holotype, female "Rhizobius sp. nov.

Holotype, same card with the holotype; Norfolk I. A.M. Lea (3. SAM). Leaf Cypsel. Australia 1920.
terlocking with fovea on elytron (Fig. 1062); metaepimeron distinct, visible ventrally; metendosternite stalk nearly as long as broad; tendons separated by much less than width of stalk and placed close to middle.

Legs with trochanters angulately produced (Figs 1058, 1061); mid and hind tibia without visible spurs; pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with large quadrate basal tooth; tarsal claws in female with small quadrate basal tooth.

Abdomen (Fig. 1061) with 5 ventrites in both sexes; ventrite I 1.6 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete; deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male with postero-median concavity covered with admedian setae, hind margin only with median part narrowly truncate; female ventrite VI (Fig. 1796) with hind margin shallowly emarginate, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1795), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half weakly widening towards apex, and base of sicula widened and with a pair of small sclerites.

Male genitalia (Figs 1792–1794). Parameres articulated with phallobase, well-developed, simple and separated, about 1.4 times longer than penis guide, with process covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm distinctly less developed than inner arm.

Female genitalia (Fig. 1797). Proctiger (T10) distinct, at least partly sclerotized plate; styli strongly reduced and hardly visible; infundibulum absent; spermathecal simple, uniform in diameter; spermatheca with only nodulus developed, spermathecal accessory gland adjacent to sperm duct.


Lectotype (here designated), female "Rhizobius satelles Blackburn/ type/ 4349, Qld. Qld. 1910-236" (NHM); paralectotype, female "Brisbane/ Rhizobius satelles Blackb., co-type/ Rhizobius satelles Bl., Queensland, co-type, 9788/ S. Aust. Museum specimen (SAM).

Holotype, male "Rhizobius kingensis Lea, King Island, Type 10879/ kingensis Lea Type, King I. SA Museum specimen (SAM). Note: Holotype of R. kingensis lacks head and prothorax.

Holotype, female "Rhizobius erythrogaster Lea, Type, Norfolk I., J. 11661/ erythrogaster Lea, Type, Norfolk I. (SAM); paratypes, same data as holotype (3: SAM – mounted on the same card with the holotype); "Rhizobius erythrogaster Lea, Type, Norfolk I., 19883/ Coty/ Norfolk I., A.M. Lea (3: SAM); "Rhizobius erythrogaster Lea, Co-type/ Norfolk Is. M.L. Lea/ Coty/ Australia 1920-332" (2, female and male: NHM); "Rhizobius erythrogaster Lea, R.D. Pope, 1986/ co-type/ Norfolk I., A.M. Lea/ Paratype/ on permanent loan from Macleay Museum, University of Sydney" (2: ANIC); "Rhizobius erythrogaster Lea, co-type/ co-type/ Norfolk I., A.M. Lea/ Paratype/ ex coll. S.A. Mus." (2: ANIC).

Note: The lectotypes of Scymnus fagus Broun, 1880 and Rhyzobius satelles Blackburn, 1892 are designated to fix the taxonomic status of these species.

Other material. Australia, Queensland: Cairns, VII-VIII 1904, R.C.L. Perkins 1942-95 (1: NHM); same but NOQ, Kuranda (1: NHM); New South Wales: Sydney, R.C.L. Perkins 1942-95 (2: NHM); NSW, Chinaman’s Beach, Sydney, 27.XI.1980 (6: NHM); Australian Capital Territory: 35.22S 148.50E, Blundells Creek, 3 km E of Picadilly Circus, 880 m, III.1984; Weir, Lawrence, Johnson, flight intercept window trough trap (1: ANIC); Norfolk Island: 25° 38.27'S, 152° 44.06'E, 25.VI.1939, J.G. McComish, beaten from orange trees and cordyline, Bassett, Hook, Brit. Mus. 1940-154 (6: NHM); 29.02S 167.57E, Highlands Guesthouse, 1000 m, 23.IX.1984, T.A. Weir (1: ANIC); 29.03S 167.55E, Rocky Point Reserve, 14.XI-2.XII.1984, J.D. Naumann, Malaise trap/ ethanol (1: NHM); 29.01S 167.57E, Glen Track, New South Wales, 1984, T.A. Weir, Rhyzobius erythrogastrus Lea, det. T.A. Weir, ANIC Coleoptera vouchering program, 85-0218 (1: ANIC); Philip Island: 29.07S 167.57E, Upper Long Valley, 26.III.1984, E.D. Edwards (1: ANIC); New Caledonia: Noumea, 0-100 m, 02.1980, N.H.L. Krauss, coll. Bishop Museum, Acc. #1980.128 (11: BPBM); same but 3.03.1980 (1: BPBM); Hills behind Noumea, 15.08.1940, F.X. Williams, collector, beaten ex dwarf Casuarina (3: BPBM); same but 26.07.1940 (1: BPPM); same but Noumea, 24.07.1940 (2: BPBM); same but 13.08.1940 (1: BPBM); In Mts. above Ouaco, 20.X.1958, C.R. Joyce collector (2: BPBM); NC, Koebele (1: BPBM); La Crouen, 16.03.1981, J. Sedlacek, collector, Bishop (1: BPBM); Pondimie, 26.11.1958, C.R. Joyce, collector (1: BPBM); Mt. Mou, 1100 m, 09.12.1972, J.L. Gressit, coll. Bishop Museum (1: BPBM); Mokoue to Dodo, 150-500 m, 20, 22.03.1968, T.C. Maa, collector, Bishop (1: BPBM); New Zealand: Broun, Fry coll, 1905-100 (2: NHM); Auckland, Sharp coll, 1905-313 (4: NHM); H. Swale, 1913-117 (1: NHM); 77-47 (2: NHM); Sharp Coll. 1905-313 (6: NHM); same and Auckland (3: NHM); Bishop coll, B.M. 1922-482, St. Hellsers 3-4-15 (1: NHM); Tonga Is., Toloa College; Coconut leaves, coll. 17.IV.1989, 19.VI.1989, Coconut scale insect (5: NHM).

Distribution. Australia: New South Wales, Australian Capital Territory, Queensland, King Island, Norfolk Is, Philip Is.; New Caledonia; New Zealand; Tonga Is.; Africa.

Rhyzobius fasciculatus Blackburn
(Figs. 436–445, 1517–1522)

Rhyzobius fasciculatus Blackburn, 1892b: 256.

Diagnosis. This species is very distinctive by having black elytra with at least weak, violet, metallic sheen, covered with white hairs forming distinct patches among long, dark bristles.

Description. Length 2.20–2.30 mm; TL/EW = 1.30–1.42; PL/PW = 0.53–0.55; EL/EW = 1.00–1.10.
Body (Figs 436, 438) broadly oval, strongly convex, hemispherical, winged; predominantly black; anterior angles of pronotum, usually narrowly pale; mouthparts, antennae, tarsi, tibiae and abdominal ventrites, most often except for basal one, yellowish brown. Dorsum with double pubescence consisting of appressed setae and moderately dense dark stiff bristles; dorsal pubescence forming whorled pattern on elytra; elytral bristles present on entire dorsum.

Head (Figs 437, 439) withdrawn into prothorax but with eyes partially visible externally, 0.85 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; corpetentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; with ocellar canthus extending slightly into eye; interocellar distance 0.50–0.52 times as wide as head across eyes; interfacetal setae indistinct. Antenna (Fig. 440) 0.9 times as long as head capsule width, 11–segmented; scape 1.2–1.3 times as long as pedicel; pedicel distinctly narrower than scape, 1.4–1.5 times as long as wide; antennomere III 2.70–2.75 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere subquadrate, apically rounded. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum truncate at apex. Maxillary cardo (Fig. 439) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.45–1.55 times as wide, scarcely expanded apically. Mentum weakly transverse, less than 2 times broader than long; anterior margin deeply emarginate; ventral surface with crosshatch like impression; prementum about as long as broad; ligula parallel-sided; palpal palps separated by distance about equal to width of palps; apical palpomere as long and as broad as penultimate one; submentum distinct.

Pronotum (Figs 437, 443) with anterior angles rounded, weakly produced anteriorly, not swollen but with distinct groove near angles; anterior margin without border; lateral margins with entire border; hind margin without border. Prothoracic hypomeron (Figs 439, 440) with short, somewhat crescent shaped groove perpendicular to notosternal suture; notosternal suture obscure; prosternal process (Fig. 445) 0.75 times as broad as longest coxal diameter, its surface with complete carinae joined anteriorly forming triangle; prosternum in front of coxa 0.6 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line; much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 445) with complete raised border; mesoventral process at median length of coxa 1.3 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction arcuate posteriorly, without internal knob. Scutellum triangular, transverse; surface punctate and setose. Elytra (Fig. 436) with lateral margins very narrow but entirely visible from above; surface with single size punctures, elytral epipleuron incomplete apically only (Fig. 444), 2.4 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of ely-
tron. Metaventrite with complete discrinen; metaventral postcoxal lines separated at middle, complete and recurved (Fig. 445); metepisternum with eversial process interlocking with fovea on elytron (Fig. 442); metepimeron indistinct; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters roundly or somewhat angularly produced (Figs 444, 445); mid and hind tibia with single, small spur; pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with weak subquadrate basal tooth; tarsal claws in female with quadrate basal tooth.

Abdomen (Fig. 444) with 5 ventrites in both sexes; ventrite I 1.25–1.40 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than ventrite IV; ventrite V in male smooth and simply setose, hind margin only with median part narrowly truncate to scarcely emarginate; female ventrite VI (Fig. 1521) with hind margin arcuate, tergite VIII rounded; hind margin of male ventrite VI weakly emarginate (Fig. 1520), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX widened at apex and base.

Male genitalia (Figs 1517–1519). Parameres articulated with phallobase, well developed, simple and separated, about 1.4 times longer than penis guide, with apices covered with simple setae; penis guide with additional very small process on outer side near apex; penis guide with lateral sides symmetrical throughout; tegminal strut simple; penis base with outer arm distinctly less developed than inner arm.

Female genitalia (Fig. 1522). Proctiger (T10) reduced, small, submembranous; each coxite with terminal spine, styli apparently absent; infundibulum sclerotized, tube-like, enclosing the sperm duct; sperm duct simple, uniform in diameter; spermathcal without clear nodulus and ramus, spermathcal accessory gland adjacent to sperm duct.

Material examined. Types. Lectotype (here designated), female, Queensland, "Rhizobius fasciculatus" Blackburn/Type/ T 4496 Queens./ Blackburn coll. 1910-236" (NHM); paratype, female "Rhizobius fasciculatus" Blackburn, Toowoomba, Eugenia/ Australia/ Koebele" (1: BPBM).

Note. The lectotype of Rhizobius fasciculatus Blackburn, 1892 is designated to stabilize the taxonomic status of this species.


Rhyzobius filicis Lea
(Figs 452–465, 1523–1527)

Rhyzobius filicis Lea, 1929: 242

Diagnosis. This species is distinctive by its colouration (see below) combined with strong reduction of the hind wings.

Description. Length 2.30–2.60 mm; TL/EW = 1.44–1.50; PL/PW = 0.53–0.54; EL/EW = 1.03–1.10.

Body (Figs 452, 453, 458) elongate oval, moderately convex, brachypterous. Dorsum blackish with dark chestnut, oval macula on each elytron along suture, extending from basal margin to beyond mid length, far from lateral margin but very close to suture. Venter dark chestnut brown to blackish; elytral epipleura, mouthparts, antennae and legs usually lighter. Dorsum with moderately long and uniform pubescence; dorsal pubescence forming wavy pattern on elytra; elytral bristles apparently absent.

Head (Figs 455, 457) withdrawn into prothorax but with eyes partially visible externally; ventral antennal grooves long, straight, reaching distinctly behind eyes. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; ocular canthus extending slightly into eye; interocular distance 0.09–0.62 times as wide as head across eyes; interfacetal setae distinct. Antenna (Figs 456) 0.85 times as long as head capsule width, 11-segmented; scape 1.6 times longer than pedicel; pedicel distinctly narrower than scape, 1.3 times as long as wide; antennomere III 2.3 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII subquadrate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere distinctly elongate, apically rounded. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum emarginate at apex. Maxillary cardo (Fig. 457) transverse and strongly prominent externally; terminal palpomere about 1.55 times as long as wide, parallel-sided. Mentum strongly transverse, at least 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpiger; apical palpomere as long and as broad as penultimate one; submentum distinct.

Pronotum (Figs 454, 455, 459, 464) with anterior angles rounded, scarcely produced anteriorly, not swollen with regular border; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process (Fig. 460) 0.75 times as broad as longest coxal diameter, its surface with carinae joined before apex and continuing anteriorly as single carina; pro sternum in front of coxa 0.6 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as a straight line; much more posterior
than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

**Anterior edge of mesoventrite** (Fig. 460) with complete raised border; mesoventral process at median length of coxa 1.3 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction arcuate posteriorly. Scutellum (Fig. 459) triangular, transverse; surface punctate and setose. Elytra (Fig. 452) with lateral margins very narrow but entirely visible from above; surface with single size punctures, elytral epipleuron incomplete apically only (Figs 453, 461), 2.5 times as wide as corresponding metaepisternum, inner margin with border area narrow throughout and border line fading before base of elytron. Meta-ventrite with complete discrmen; metaventral postcoxal lines (Fig. 460) distinctly separated at middle, complete and recurved; metaepisternum with external process interlocking with fovea on elytron (Fig. 465); metaepimeron indistinct.

**Legs** with trochanters simple; mid and hind tibia without visible spurs (Figs 462, 463). Tarsal claws in female with subquadrat basil tooth.

**Abdomen** (Fig. 461) with 5 ventrites in both sexes; ventrite I 1.5 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, posteriorly reaches about half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin rounded; female ventrite VI with hind margin arcuate, tergite VIII rounded; hind margin of male ventrite VI scarcely emarginate (Fig. 1526), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half very narrow and rod-like towards apex, and base of spiculum widened.

**Male genitalia** (Figs 1523–1525). Parameres articulated with phallobase, well developed, simple and separated, about 1.3 times as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; teginal strut simple; penis base with outer arm distinctly less developed than inner arm.

**Female genitalia** (Fig. 1527). Proctiger (T10) reduced, small, submembranous; styli strongly reduced and hardly visible; infundibulum in form of lightly sclerotized piece of bursa; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus; spermathecal accessory gland adjacent to sperm duct.


**Other material.** Lord Howe Is.: Mt. Gower summit, 9.IX.1979, G.B. Monteith, Pyrethrum knockdown, moss forest (1: ANIC).

**Distribution.** Australia: Lord Howe Island.
Rhyzobius forestieri (Mulsant)  
(Figs 466–480, 1528–1531)

Platynomus forestieri Mulsant, 1853: 286.
Scymnodes forestieri: Korscheltsky, 1931: 85.

**Diagnosis.** This species closely resembles *R. ventralis* but *R. forestieri* has the pronotum more elongate (as compared to elytral length) than *R. ventralis*, antennomere IV less elongate, antennomere V shorter than V, the prosternal carinae joined roundly just before anterior margin of prosternum and the abdominal ventrite V in female with posterior margin more arcuate, and in male more widely truncate than in *R. ventralis*.

**Description.** Length 3.05–3.35 mm; TL/EW = 1.30–1.31; PL/PW = 0.52–0.54; EL/EW = 1.04–1.07.

Body (Figs 466, 467, 469) broadly oval, strongly convex, hemispherical, winged; predominantly black; abdominal ventrites orange; antennae, mouthparts and tarsi brownish. Dorsum with double pubescence consisting of appressed setae and sparse stiff bristles; dorsal pubescence forming wavy pattern on elytra; elytral apexes distinct especially along margins.

Head (Figs 468, 477) withdrawn into prothorax but with eyes partially visible dorsally, 0.71–0.75 times as long as wide; ventral antennal grooves distinctly curved towards outer margin of eye; corpotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocellar canthus extending slightly into eye; interocular distance 0.48–0.53 times as wide as head across eyes; interfacial setae distinct. Antenna (Fig. 471) 0.8 times as long as head capsule width, 11-segmented; scape 2 times as long as pedicel; pedicel distinctly narrower than scape, 1.30–1.35 times as long as wide; antennomere III 2.9 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV shorter than V; antennomeres VI and VII subquadrate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere distinctly elongate, apically rounded. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum truncate at apex. Maxillary cardo (Fig. 468) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.2–1.3 times as long as wide, weakly expanded apically. Mentum strongly transverse, at least 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpgier; apical palpomere as long and as broad as penultimate one; submentum distinct.

Pronotum (Figs 470, 475, 477) with anterior angles rounded, weakly produced anteriorly, not swollen but with distinct groove near angles; anterior mar-
gin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 472) with at least short, somewhat crescent shaped groove perpendicular to notosternal suture; notosternal suture distinct, simple; prosternal process (Fig. 473) about 0.55 times as broad as longest coxal diameter, its surface with carinae convergent, joined roughly just before prosternal margin; prosternum in front of coxa 0.6 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as a straight line; much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 473) with complete raised border; mesoventral process at median length of coxa as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction arcuate or somewhat angulate posteriorly, without internal knob. Scutellum (Fig. 475) triangular, transverse; surface punctate and setose. Elytra (Fig. 466) with lateral margins very narrow but entirely visible from above; surface with single size punctures, elytral epipleuron incomplete apically only (Figs 467, 476), 1.8 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite with complete discrimen; metaventral postcoxal lines (Fig. 473) distinctly separated at middle, complete and recurved; metaepisternum with external process interlocking with fovea on elytron (Fig. 478); metaepimeron distinct, visible ventrally; metendosternite stalk nearly as long as broad; tendons separated by much less than width of stalk and placed close to middle.

Legs with trochanters angulate produced (Figs 473, 476); mid and hind tibia with single spur (Fig. 474); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male and tarsal claws in female with large subquadrate basal tooth.

Abdomen (Figs 476, 479, 480) with 5 ventrites in both sexes; ventrite I 1 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin only with median part subtruncated; female ventrite VI subtruncate, tergite VIII round; hind margin of male ventrite VI truncate to scarcely emarginate, tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half complex, widening towards and at apex, and base of spiculum widened and with a pair of small, oval sclerites.

Male genitalia (Figs 1528–1530). Parameres articulated with phallobase, well developed, simple and separated, as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm distinctly less developed than inner arm.

Female genitalia (Fig. 1531). Proctiger (T10) reduced, small, submembranous; styli strongly reduced and hardly visible; infundibulum sclerotized, tube-like.
enclosing the sperm duct; sperm duct simple, uniform in diameter, spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

**Material examined.** Types. „Lectotype/ Platyomus forestieri/ 1140 Platyomus forestieri n. g., n. sp. Mulsant Woodlark/ Lectotype P. forestieri Muls. R.D. Pope det. 1980” (MNHN).

Designated by Pope, 1981.

Lectotype. male “Scymnus circularis type D.S./Picton, Helms, 1884, N 3d/ Picton, New Zealand. Helms/ Sharp Coll., 1905-313” (NHM); paralectotypes, same data as lectotypes (6: NHM).

Designated by Pope, 1981.

**Other material.** **New Zealand:** 81-59 (3: NHM); **USA. California:** Marin Co., Muir Woods, 4IV.1909 (1: NHM); California, S. Paula, C.F. Baker, 1911-209 (2: NHM); **Hawaiian Is:** Hawaii, Pohakuola 6000 ft, XII.1956, E.S. Brown, on Dodonaea viscosa (3: NHM); Maui, Haleakala, 5000 ft, R.C.L. Perkins 1942-95 (1: NHM); **Australia. Queensland:** Tambourine Mts., 11-18.IV.35 (1: NHM); NQ, Kuranda, R.C.L. Perkins, B.M. 1942-95 (1: NHM); Little Crystal Ck. Bridge, rd. to Paluma, 28.VI.1992, C. Reid, beating rainforest bushes (1: ANIC); Toowoomba, 23.XI.1976, J. Macquern (1: ANIC); Foote Memorial Sanctuary, Buderim, 1.IX.1980, W. Allen (1: ANIC; 1: MIZ); **New South Wales:** Sydney, G. Darwin, 87-42 (1: FFHM); same but D.P. Sands, 1.IX.1970, E1738, Rhizobius forestieri (Mulsant), det. R.D. Pope, 1981 (3: ANIC); Canley Vale, 3.VII.1961, M.L. Nikitin, B.M. 1961-724; under bark Eucalyptus tereticornis (2: NHM); Cambratta, Georges R. Valley, 5-30.I.63, M. Nikitin, 1.IX.1963-283; on flowers of Bursaria spinosa (2: NHM); 35.21S 148.49E, Blundell Hill Rd., 22.I.1989, C. Reid, Pomadera aspera (1: MIZ); Kosciusko Nat. Pk., Sawpit Creek, 12.I.1982, J. Balderson, in ovisac of coccids, on Davesia sp. (1: ANIC); Walcha-Wauchope Rd., 11.27S 152.44E, 18.XII.1968, on ti-tree flowers, Britton & Misko (1: ANIC); 35.24S 149.39E, Whiskers, 7 km WNW of Hoskinstown, 1.I.1993, M.S. Upton (1: ANIC); same but 35.1 (1: ANIC; 1: MIZ); Yarrowyck Mtn., Bundarra Road, 23.IX.1962, C.W. Frazier (7: ANIC); **Australian Capital Territory:** 35.16S 149.06E, Black Mtn, Canberra, 25.X.1990, J.F. Lawrence, sweeping (1: MIZ); same but X.1989, C. Reid, bushes nr CSIRO (1: ANIC); 35.35S 148.59E, Honeysuckle Ck. Tracking Station, 20.VIII.1989, C. Reid, under bark Euc., (1: MIZ); Black Mtn, 21.X.1969, J.M. Simmons, Rhizobius forestieri (Mulsant), det. R.D. Pope, 1980 (1: ANIC); same but 1.XII.1982, J.F. Lawrence, Eriococcids on Eucalyptus (1: ANIC); 35.22S 148.50E, Blundells Ck. 3 km E of Picadilly Circus, 850 m, XII.1984, Weir, lawrence, Johnson, flight intercept window/ trough trap (1: ANIC); Tidbinbilla River, Tidbinbilla NP, 12.XI.1987, C. Reid, Euc. radiata (1: ANIC; 2: MIZ); **Tasmania:** Mt. Nelson, 28 & 30.I.81, R.D. Pope, Eucalyptus and Acacia sp., B.M. 1981-447 (2: NHM); Newton, Hobart, 28.I.81 (3: NHM); Newstead, Laun. 4.XI.1979 (1: MIZ); same but 28.IX.1980, and S. Fearn (1: ANIC); **Victoria:** Vooi Yallock, 13.I.81, R.D. Pope, B.M. 1981-447 (1: NHM); 37.02S 148.33E, Amboyne Crossing, Deddick River, 25.XII.1988, C. Reid coll (1: ANIC; 1: MIZ); **Western Australia:** Fremantle, J.J. Walker (1: NHM); Perth, 15.XI.1979, R.M. Bohart (1: ANIC).

**Distribution.** Australia: Queensland, New South Wales, Australian Capital Territory, Tasmania, Western Australia; world (introduced).
Rhizobius fugax Blackburn
(Figs 481–493, 1532–1537)

Rhizobius fugax Blackburn, 1892a: 70.

**Diagnosis.** This species is externally almost identical to *Rhizobius brevior*, but can be distinguished from that species by the following characters: antennomere III more than 3 times longer than IV, antennomere IV as long as V, the pronotum more elongate, the scutellum slightly longer than wide, the male and female abdominal ventrite VI truncate apically and the penis angulately curved in apical third (Fig. 1534).

**Description.** Length 3.70–4.30 mm; TL/EW = 1.40–1.50; PL/PW = 0.55–0.57; EL/EW = 1.08–1.15.

**Body** (Figs 481, 482, 484) broadly oval, moderately convex, winged; uniformly chestnut brown to dark chestnut brown; antennae, palpi and tarsi sometimes yellowish brown. Dorsum with double pubescence consisting of appressed setae and sparse stiff bristles; dorsal pubescence forming very weak wavy pattern on elytra; elytral bristles distinct especially along margins.

**Head** (Figs 483, 486) withdrawn into prothorax but with eyes partially visible externally, 0.7 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; corpotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocellar canthus extending slightly into eye; interocular distance 0.46–0.48 times as wide as head across eyes; interfacial setae distinct. Antenna 0.80–0.82 times as long as head capsule width, 11-segmented; scape 2 times as long as pedicel; pedicel distinctly narrower than scape, 1.33–1.40 times as long as wide; antennomere III 3.65–3.80 times longer than wide, and at least 3 times longer than IV; antennomere IV as long as V; antennomeres VI and VII weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere distinctly elongate, apically rounded. Anteriorclypeal margin distinctly emarginate with median area membranous. Labrum truncate at apex. Maxillary cardo (Fig. 486) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpmere 1.40–1.47 times as long as wide, weakly expanded apically. Mentum weakly transverse, less than 2 times broader than long; anterior margin scarcely arcuate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance at least 1.5 times broader than width of palpgere; apical palpmere about as long and as broad as penultimate one; submentum indistinct.

**Pronotum** (Figs 483, 487, 488) with anterior angles rounded, weakly produced anteriorly, not swollen but with distinct groove near angles; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 486) with broad, concave area along anterior half of prothoracic lateral margin; notosternal suture distinct, simple; prosternal process (Fig. 489) about 0.65 times as broad as longest coxal diameter, its surface with carinae convergent.
joined roundly just before prosternal margin; prosternum in front of coxa 0.6 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line; much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

**Anterior edge of mesoventrite** (Fig. 489) with complete raised border; mesoventral process at median length of coxa as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction arcuate posteriorly, without internal knob. Scutellum triangular, at least as long as broad; surface punctate and setose. Elytra (Fig. 481) with lateral margins very narrow but entirely visible from above; surface (Fig. 490) with double size punctures, elytral epipleuron incomplete apically only (Figs 482, 493), 2.15 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite with complete discrimen; metaventral postcoxal lines (Fig. 489) distinctly separated at middle, complete and recurved; metaepisternum with external process interlocking with fovea on elytron (Fig. 485); metaepimeron indistinct; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters angulate produced (Figs 489, 493); mid and hind tibia with single spur (Fig. 491); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male simple; tarsal claws in female with weak quadrate basal tooth.

**Abdomen** (Figs 492, 493) with 5 ventrites in both sexes; ventrite I 1.35 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin only with median part somewhat narrowly truncate; female ventrite VI (Fig. 1536) with hind margin weakly truncate, tergite VIII rounded; hind margin of male ventrite VI truncate (Fig. 1535), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half broad and plate-like at apex, and base of scipulum widened and with a pair of small round sclerites.

**Male genitalia** (Figs 1532–1534). Parameres articulated with phallobase, well developed, simple and separated, about 1.5 times as long as penis guide, densely setose along 2/3 of its length, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm distinctly less developed than inner arm.

**Female genitalia** (Fig. 1537). Proctiger (T10) distinct, at least partly sclerotized plate; styli small, terminal; infundibulum absent; sperm duct simple, uniform in diameter; spermatheca with only nodulus developed, spermathecal accessory gland adjacent to sperm duct.

**Material examined.** Types. Lectotype (here designated), male, New South Wales, "Rhizobius fugax Blackburn type/ T 4240, NSW/ Blackburn coll. 1910-236 (NHM).

**Note.** The lectotype of *Rhizobius fugax* Blackburn, 1892 is designated to stabilize the taxonomic status of this species.
**Other material.** New South Wales, Australia, Koebele, Whitton (2: BPBM); Lee's Spring, Brindabella Rd, 11.VII.30. G. Hill (1: ANIC); Mongarlowe R. 21.VI.1971; S. Misko (1: ANIC); Queensland, Brisbane, Koebele (2: BPBM; 1 dissected: MIZ); Australia, Koebele (2: BPBM).

**Distribution.** Australia: New South Wales, Queensland.

*Rhyzobius gingera* sp. nov.  
(Figs 494–507, 1538–1543, 1927)

**Diagnosis.** *R. gingera*, *R. discolor*, *R. gordonii*, *R. evansii* and *R. dryandra* form a group of externally almost identical species. The genitalia and the apices of abdominal ventrites V and VI of both sexes should be consulted for identification. Among these species, the best distinguishing characters for *R. gingera* are: the prosternal carinae long, parallel sided, joined roundly just before the prosternal process, and the tegmen with parameres and penis guide long and stout, and the penis guide asymmetrical throughout its length.

**Description.** Length 3.75–4.50 mm; TL/EW = 1.45–1.50; PL/PW = 0.52–0.55; EL/EW = 1.08–1.17.

**Body** (Figs 494, 495, 497, 1927) elongate oval, moderately convex, winged. Dorsum predominantly brownish black or black; head, anterior and lateral area of pronotum and sometimes lateral and/or apical margins of elytra brown. Ventral surface of head, prothorax and abdomen (at least ventrites II–V) red brown; meso-, metaventrite and elytral epipleura blackish; palpi, antennae and tarsi usually yellowish. Dorsum with moderately long appressed pubescence and very sparse erect bristles along elytral margins; dorsal pubescence forming very weak wavy pattern on elytra.

**Head** (Figs 496, 499) withdrawn into prothorax but with eyes partially visible externally, 0.81–0.83 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; corporotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocellar canthus extending slightly into eye; interocular distance 0.47–0.50 times as wide as head across eyes; interfacetal setae distinct. Antenna (Fig. 503) 0.9 times as long as head capsule width, 11-segmented; scape 2 times as long as pedicel; pedicel distinctly narrower than scape. 1.35–1.40 times as long as wide; antennomere III 2.85–3.50 times longer than wide, and at least 3 times longer than IV; antennomere IV as long as V; antennomeres VI and VII subquadrate; Antenna club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere distinctly elongate, apically rounded. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum truncate at apex. Maxillary cardo (Fig. 496) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.35–1.40 times as long as wide, weakly expanded apically. Mentum strongly transverse, at least 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe like impression; prementum slightly longer than broad; ligula parallel-sided; labial palps separated by distance at least 1.5 times broader than width of palpiger, apical distic.

**Pronotum** (Fig. 494): anteriorly, not swooping; anterior margin very narrow; as long as wide; hind margin not concave area along each side. Distinct, simple; pronotal diameter, its distal margin; pronotal diameter at the same level as the posterior than anterior margin visible border.

**Anterior elytral mesoventral process** diameter, meso-metaventral margin, without intervals sense. Elytra (Fig. 497): above, surface (Fig. 495) apically only (Fig. 496) inner margin withing base of secondary lateral lines (Fig. 498); tectipimeron incomplete, metasternum incomplete, separated by slight gap.

**Legs** with trochanters and coxae connate, with single spur on base of the coxae. Tarsal claws in mid-shaft (Fig. 499); forecoxa pentadactyl.

**Abdomen** (Fig. 500): as long as ventrites I and II; proventriculus; ventrite V in female, ventrite V in male; ovipositor, weakly recurved; hind margin acetate. Stermites with its apical half weakly widened.

**Male genitalia** well developed; apices covered...
of palpiger; apical palpmere as long and as broad as penultimate one; submentum distinct.

**Pronotum** (Figs 498–500) with anterior angles rounded, weakly produced anteriorly, not swollen with regular border; anterior margin without border; lateral margin very narrow, slightly upturned and without clear border at least along part of its length; hind margin without border. Prothoracic hypomeron with broad, weakly concave area along anterior half of prothoracic lateral margin; notosternal suture distinct, simple; prosternal process (Fig. 502) about 0.55 times as broad as longest coxal diameter, its surface with carinae subparallel, joined roundly just before prosternal margin; prosternum in front of coxa 0.5 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

**Anterior edge of mesoventrite** (Fig. 502) with complete raised border; mesoventral process at median length of coxa about as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction arcuate posteriorly, without internal knob. Scutellum triangular, transverse; surface punctate and setose. Elytra (Fig. 494) with lateral margins very narrow but entirely visible from above; surface (Fig. 505) with double size punctures, elytrial epipleuron incomplete apically only (Figs 495, 507), 2.5 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite with complete discrimen; metaventral postcoxal lines (Fig. 502) distinctly separated at middle, complete and recurved; metaepisternum with external process interlocking with fovea on elytron (Fig. 501); metaepimeron indistinct; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminac.

**Legs** with trochanters angulately produced (Figs 502, 507); mid and hind tibia with single spur (Fig. 504); pro- and mid tarsal claws in male appendulate; hind tarsal claws in male with subquadrate basal tooth; tarsal claws in female with weak quadrate basal tooth.

**Abdomen** (Figs 506, 507) with 5 ventrites in both sexes; ventrite I 1.25 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin only with median part narrowly, weakly emarginate (Fig. 507); female ventrite VI and tergite VIII (Fig. 1538) rounded; hind margin of male ventrite VI emarginate (Fig. 1543); male tergite VIII arcuate. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half somewhat widening towards and at apex, and base of spiculum weakly widened.

**Male genitalia** (Figs 1540–1542). Parameres articulated with phallobase, well developed, simple and separated, about 0.8 times as long as penis guide, with apices covered with simple setae; penis guide without additional processes and with
lateral sides asymmetrical throughout; tegmental strut simple; penis base with outer
arm distinctly less developed than inner arm.

Female genitalia (Fig. 1539). Proctiger (T10) reduced, small, submembranous; styli terminal; infundibulum absent; sperm duct simple, uniform in diameter; spermatheca with only nodulus developed, spermathecal accessory gland adjacent to sperm duct.


Paratypes: Australian Capital Territory, same data as holotype (3: ANIC; 4: MIZ, 2 dissected on slide); "35.34S 148.46E, Mt. Gingera, 1700 m, 16.X.1979, Lawrence & Weir/ under Eucalyptus bark" (2: ANIC; 1: MIZ); New South Wales, Clyde Mt., 780 m, 18 air km, SE of Braidwood, 4.II.1981 (MV), J. Powell coll." (2: ANIC; 2: MIZ); "35.33S 149.57E, Clyde Mtn, 24 km SE Braidwood, 8.XII.1988, C. Reid, flowering Callicoma serratifolia" (1: ANIC).

**Etymology.** Named after Mount Gingera, the locality where the holotype was collected.

**Distribution.** Australia; Australian Capital Territory, New South Wales.

**Rhyzobius gordoni** sp. nov.
(Figs 522–535, 1550–1556, 1928)

**Diagnosis.** *R. gordoni, R. discolor, R. gingera, R. evansi* and *R. dryandra* form a group of externally almost identical species. The genitalia and the apices of abdominal ventrites V and VI of both sexes should be consulted for identification. Among these species, the best distinguishing characters for *R. gordoni* are: the abdominal ventrite VI in male truncate at apex while in female triangularly produced and almost pointed medially at apex, the tegmen with parameres and penis guide long and stout, and the parameres touching each other from basal piece through about half of their length.

**Description.** Length 3.60–4.55 mm; TL/EW = 1.40–1.45; PL/PW = 0.53–0.54; EL/EW = 1.10–1.11.

Body (Figs 522, 523, 525, 1928) elongate oval, moderately convex, winged. Dorsum chestnut brown to blackish; head, pronotum anteriorly and laterally, and apical and lateral margins of elytra usually paler. Ventral surface including all appendages reddish brown. In some individuals parts of venter weakly infuscate. Dorsum with double pubescence consisting of appressed setae and sparse, slightly darker stiff bristles; dorsal pubescence forming very weak wavy pattern on elytra; elytral bristles distinct especially along margins.

Head (Figs 524, 530) entirely withdrawn into prothorax, about 0.8 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; corporotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocular canthus extending slightly into eye; interocular distance 0.45 times as wide as head across eyes; interfacetal setae absent. Antenna (Fig. 526) 0.85 times as long as head capsule
width, 11-segmented; scape 2 times as long as pedicel; pedicel distinctly narrower than scape, 1.35 times as long as wide; antennomere III 2.7–2.9 times longer than wide, and at least 3 times longer than IV; antennomere IV as long as V; antennomeres VI and VII sub quadratic. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere elongate, apically rounded. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum truncate at apex. Maxillary cardo (Fig. 524) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.3 times as long as wide, broadened apically. Mentum transverse, nearly 2 times broader than long; anterior margin scarcely arcuate; ventral surface with horseshoe-like impression; prementum transverse; ligula parallel-sided; labial palps separated by distance at least 1.5 times broader than width of palpiger; apical palpomere as long and as broad as penultimate one; submentum distinct.

Pronotum (Figs 528, 530, 531) with anterior angles rounded, scarcely produced anteriorly, not swollen with regular border; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Figs 526, 529) with broad, concave area along anterior half of prothoracic lateral margin; notosternal suture distinct, simple; prosternal process (Fig. 529) about 0.6 times as broad as longest coxal diameter, its surface with carinae weakly convergent, joined roundly just before prosternal margin; prosternum in front of coxa 0.65 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 529) with complete raised border; mesoventral process at median length of coxa about as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction arcuate posteriorly, without internal knob. Scutellum (Figs 528, 531) triangular, at least as long as broad; surface punctate and setose. Elytra (Fig. 522) with lateral margins very narrow but entirely visible from above; surface with double size punctures, elytral epipleuron incomplete apically only (Figs 523, 535), 2 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line upturned outwardly near base of elytron. Metaventrite with complete discrines; metaventral postcoxal lines distinctly separated at middle, complete and recurved; metaepisternum with externall process interlocking with fovea on elytron (Fig. 527); metaepimeron indistinct; metendosternite stalk nearly as long as broad; tendons separated by much less than width of stalk and placed close to middle.

Legs with trochanters angulately produced (Figs 529, 535); mid and hind tibia with single spur (Figs 532, 533); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male and tarsal claws in female with weak quadrate basal tooth.

Abdomen (Figs 534, 535) with 5 ventrites in both sexes; ventrite I 1.5 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite
V in male smooth and simply setose, hind margin only with median part narrowly truncate; female ventrite VI (Fig. 1556) with hind margin arcuate; female tergite VIII rounded; hind margin of male ventrite VI truncate (Fig. 1554); male tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half widening towards and at apex, and base of spiculum widened and with a pair of small sclerites.

**Male genitalia** (Figs 1550–1553). Parameres articulated with phallobase, well developed, simple and separated but touching each other along basal half of their length, about 1.1 times as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegminal strut simple; penis base with outer arm distinctly less developed than inner arm.

**Female genitalia** (Fig. 1555). Proctiger (T10) distinct, at least partly sclerotized plate; styli small, terminal; infundibulum absent; spermathecal duct simple, uniform in diameter; spermatheca with only nodulus or ramosus developed, spermathecal accessory gland adjacent to spermathecal duct.


Etymology. The name of this new species is dedicated to Dr. Robert Gordon (formerly USDA, Washington DC), an American coccinellid specialist.

Distribution. Australia: Australian Capital Territory, New South Wales, Queensland.

**Rhizobius gosfordensis** Blackburn (Figs 536–550, 1557–1562)

*Rhizobius gosfordensis* Blackburn, 1895: 257.

**Diagnosis.** This species is most similar to *R. fuga* and *R. breviri, but differs by having smaller and more elongate body with dorsum somewhat infuscate, the antennomere III distinctly shorter, the tegmen with penis guide and parameres of equal length and the penis very long, slender, and with outer edge pointed near apex (Fig. 1557). Additionally *R. gosfordensis* differs from *R. fuga* by the antennomere III less elongate as compared to IV and the female ventrite VI rounded apically, while from *R. breviri* it differs by having antennomere IV as long as V, the pronotum more elongate and the male abdominal ventrite VI truncate at apex.

**Description.** Length 3.00–3.75 mm; TL/EW = 1.45–1.52; PL/PW = 0.52–0.56; EL/EW = 1.13–1.22.

Body (Figs 536–538) elongate oval, moderately convex, winged. Dorsum dark chestnut brown; ventral surface usually paler then dorsum – dark brown or dark orange brown; antennae, mouthparts (at least palpi) and tarsi usually light brown. Dorsum with double pubescence consisting of appressed setae and sparse darker stiff bristles; dorsal pubescence forming wavy pattern on elytra; elytral bristles present on entire dorsum but more distinct along lateral margins.

Head (Figs 539, 545) withdrawn into prothorax but with eyes partially visible externally, 0.75–0.77 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; corpotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near ver-
tex than anteriorly; ocular canthus extending slightly into eye; interocular distance 0.46–0.48 times as wide as head across eyes; interfascet setae distinct. Antenna (Fig. 541) 0.80–0.85 times as long as head capsule width, 11-segmented; scape 2.0–2.2 times as long as pedicel; pedicel distinctly narrower than scape, 1.45–1.55 times as long as wide; antennomere III 2.25–2.40 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere elongate, apically rounded. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum truncate at apex. Maxillary cardo (Fig. 539) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.6 times as long as wide, weakly expanded apically. Mentum weakly transverse, less than 2 times broader than long; anterior margin weakly arcuate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpiger; apical palpomere about as long and as broad as penultimate one; submentum indistinct.

Pronotum (Figs 540, 542, 544, 545) with anterior angles rounded, scarcely produced anteriorly, not swollen but with distinct groove near angles; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 543) with broad, concave area along anterior half of prothoracic lateral margin; notosternal suture distinct, simple; prosternal process (Fig. 543) about 0.6 times as broad as longest coxal diameter, its surface with carinæ subparallel, joined rounded just before prosternal margin; prosternum in front of coxa 0.7 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 543) with complete raised border; mesoventral process at median length of coxa as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction arcuate posteriorly, without internal knob. Scutellum triangular, at least as long as broad; surface punctate and setose. Elytra (Fig. 536) with lateral margins very narrow but distinctly visible from above; surface (Fig. 544) with double size punctures, lyratal epipleuron incomplete apically only (Figs 537, 550), 1.45 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite (Fig. 543) with complete discernin; metaventral postcoxal lines distinctly separated at middle, complete and recurred; metaepisternum with external process interlocking with fovea on elytron (Fig. 546); metaepimeron indistinct; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters angulately produced (Figs 543, 550); mid and hind tibia with single spur (Figs 547, 548); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with subquadrate basal tooth; tarsal claws in female with weak quadrate basal tooth.

Abdomen (Figs 545, 550) and legs: deep, posteriorly truncate; V in male smooth and truncate; V in female distinctly longer than in male; VIII in female distinctly longer than in male; VIII rounded; hind margin single VIII rounded. Sternites IX with its apicale spine and apicale spine indistinct.

Male genitalia well developed, simple, with simple setae; symmetrical throughout; less developed than in female genitalia; styli terminal; in spermatheca with only short duct.

Material examined.

*Rhizobus gesfordensis* new species

Noite. The lectotype of the taxonomic status of is.

Other material.


Distribution. Australia.

Diagnosis. *R. longa* new species. Additionally, before anterior margin, antennomere III is 3-segmented, anterior antennomere same as long as IV. VII at least as long as an.
Abdomen (Figs 549, 550) with 5 ventrites in both sexes; ventrite I 1.3 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin only with median part narrowly truncate; female ventrite VI (Fig. 1561) with hind margin arcuate; female tergite VIII rounded; hind margin of male ventrite VI weakly emarginate (Fig. 1560); male tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half somewhat widening towards and at apex, and base of spinealum widened and with somewhat u-shaped sclerite.

Male genitalia (Figs 1557–1559). Parameres articulated with phallobase, well developed, simple and separated, about as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegrnial strut simple; penis base with outer arm distinctly less developed than inner arm.

Female genitalia (Fig. 1562). Proctiger (T10) reduced, small, submembranous; styli terminal; infundibulum absent; sperm duct simple, uniform in diameter, spermatheca with only nodulus developed, spermathecal accessory gland adjacent to sperm duct.

Material examined. Types. Lectotype (here designated), female, New South Wales, "Rhzobius gosfordensis" Blackburn, type specimen 5932 NSW/ Blackburn coll. 1910-236 (NHM).

Note. The lectotype of Rhzobius gosfordensis Blackburn, 1895 is designated to stabilize the taxonomic status of this species.


Rhizobius hongae sp. nov. (Figs 551–564, 1563–1568, 1929)

Diagnosis. R. hongae differs from R. bruneus and R. newtonorum by very different male genitalia. Additionally it differs from R. bruneus in having the prosternal carinae joined before anterior margin of pronotum and continuing as a single, short carina, and by more elongate antennomere III, while from R. newtonorum if differs by having antennomeres VI and VII at least as long as broad.
Description. Length 2.35–2.60 mm; TL/EW = 1.45–1.47; PL/PW = 0.57–0.59; EL/EW = 0.95–1.05.

Body (Figs 551, 552, 554, 1929) elongate oval, moderately convex, wingles; light brown to dark chestnut brown; pronotal disc more or less infuscate or blackish; elytra without markings or their lateral margins with elongate, infuscate band (differently developed), somewhat extended inwardly in mid length and elytral suture along apical fourth black. Ventral surfaces (except for hypomera and epipleura) dark brown to blackish brown; palpi, tarsi and antennae yellowish brown. Dorsum covered with more or less uniform, suberect pubescence forming weak wavy pattern on elytra.

Head (Figs 553, 559) withdrawn into prothorax but with eyes partially visible externally; about 0.85–0.87 times as long as wide; ventral antennal grooves indistinct; corpectoteniura present. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; ocular canthus extending slightly into eye; interocular distance 0.58–0.60 times as wide as head across eyes; interfacial setae absent. Antenna (Fig. 556) 1.05–1.10 times as long as head capsule width, 11-segmented; scape 1.85–2.00 times as long as pedicel; pedicel distinctly narrower than scape, 1.43–1.50 times as long as wide; antennomeres III 3.40–3.45 times longer than wide, and at least 3 times longer than IV; antennomere IV shorter than 5; antennomeres VI and VII weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere subquadrate, apically truncate. Anterior clypeal margin straight. Labrum truncate at apex. Maxillary cardo (Fig. 553) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.75–1.80 times as long as wide, nearly parallel-sided. Mentum transverse, less than 2 times broader than long; anterior margin truncate; ventral surface with horseshoe like impression; prementum transverse; ligula parallel-sided; labial palps separated by distance at least 1.5 times broader than width of palpiger, palpiger apical margin as long and as broad as penultimate one; submentum distinct.

Pronotum (Figs 555, 558–560) with anterior angles obtuse, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and without clear border at least along part of its length; hind margin with border line not reaching lateral margins. Prothoracic hypomeron (Fig. 557) smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process 0.7 times as broad as longest coxal diameter, its surface with carinas converging, joined before apex and continuing anteriorly as single carina; prosternum in front of coxa 0.75 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line, much more posterior than anterior pronotal margin; prococxal cavity distinctly transverse, with bordering line distinctly incomplete antero-medially.

Anterior edge of mesoventrite (Fig. 557) with complete raised border; mesoventral process at median length of coxa 0.9 times as broad as corresponding coxal diameter; meso-metaventre articulation with suture visible; junction somewhat arcuate posteriorly, without internal knob. Scutellum (Fig. 558) triangular, at least as long as broad; surstomal margins very narrow but end in setae; elytral epipleura as wide as corresponding sides; elytral lateral suture broadening towards elytral base and ending in a point (Fig. 557) with partially incised. Elytral mesoventrite separated at middle, complete interlocking with vovea on elytra; metendosternite stalked and placed near apices of elytra.

Legs with trochanters reduced; mid and hind tibiae with two rows of subquadrate basal teeth; tarsal claws reduced.

Abdomen (Fig. 564) as long as ventrite II; abdomen complete, posteriorly reaching distinctly longer than IV, without smooth and simply setose, merely emarginate; female aedeagus with tergite VIII rounded; hind coxal tergite VIII rounded. Sternite IX with its apical spiculum strongly widened.

Male genitalia (Fig. 565) reduced, narrow and about with simple setae; penis gubernaculum metrical throughout; tegmina outer arm absent.

Female genitalia (Fig. 566) slightly elated; plate; styli absent; in sperm duct simple, uniform, spermathecal accessus.

Material examined. Type K. Konstanza NP, NSW, II, 1982.

Paratypes. New South Wales: Ken Green, pitfall (1: ANIC on slide: MIZ); "South Range" (1: ANIC); B. Green, Holes, NSW, XII, 1992; Chinese NSW, 2, 24011, 1, X.

Etymology. The name of the University, Guangzhou, China.

Distribution. Australia: New South Wales; Type locality: Konstanza NP, NSW.
least as long as broad; surface punctate and setose. Elytra (Fig. 551) with lateral margins very narrow but entirely visible from above; surface (Fig. 558) with single size punctures, elytral epipleuron incomplete apically only (Figs 552, 564), 3.3 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite (Fig. 557) with partially incomplete discrimen; metaventral postcoxal lines distinctly separated at middle, complete and recurved; metaepisternum with external process interlocking with fovea on elytron (Fig. 563); metaepimeron distinct, visible ventrally; metendosternite stalk distinctly shorter than broad; tendons widely separated and placed near apices of arms.

Legs with trochanters roundly or somewhat angulately produced (Figs 557, 564); mid and hind tibia with two spurs (Figs 561, 562); tarsal claws in male with large subquadrate basal tooth; tarsal claws in female with small quadrate basal tooth.

Abdomen (Fig. 564) with 5 ventrites in both sexes; ventrite I 1.3–1.4 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, posteriorly reaches about half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin only with median part narrowly truncate to scarcely emarginate; female ventrite VI (Fig. 1567) with hind margin arcuate; female tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1566); male tergite VIII emarginate. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half very narrow and rod-like towards apex, and base of spiniculum strongly widened.

Male genitalia (Figs 1563–1565). Parameres articulated with phallobase, reduced, narrow and about 2.2 times shorter than penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut broad and flattened throughout; penis base with outer arm absent.

Female genitalia (Fig. 1568). Proctiger (T10) distinct, at least partly sclerotized plate; stylet absent; infundibulum sclerotized, somewhat flattened and twisted; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

Material examined. Types. Holotype. New South Wales, ‘South Ramshead, 1850 m, Kosciusko NP, NSW, II.1982, Ken Green, pitfalls, Site 1’ (ANIC).

Paratypes. New South Wales. ‘South Ramshead, 1850 m, Kosciusko NP, NSW, III.1981, Ken Green, pitfalls’ (1: ANIC); same but V/VI.1982 (1: ANIC) same but I.1982 (2 dissected on slide: MIZ); ‘South Ramshead, 2000 m, Kosciusko Nat. Park, NSW, XII.1981, pitfall traps, K. Green’ (1: ANIC); same but 1850 m, V.1983, no.21 (1: MIZ); ‘Kosciusko NP, Smiggin Holes, NSW, XII.1986, pitfall, K. Green, no. 25’ (1: ANIC); ‘Thredbo Riv. Kosciusko NP, Site 2, 24HD 1, XI.1982, M.E. McKaige’ (1: MIZ).

Etymology. The name of this new species is dedicated to Dr. Hong Pang (Zhongshan University, Guangzhou, China) a coccinellid specialist.

Rhizobius hirtellus Crotch
(Figs 565–578, 1569–1574)

Rhizobius hirtellus Crotch, 1874: 298.

Diagnosis. This is a distinctive species of Rhizobius by its colouration – pronotum brown usually with blackish, long stripe along middle and elytra blackish, combined with unusually long bristles on the elytra. Although the dorsal colouration of this species is somewhat similar to R. lophanthei, R. viridipennis and R. slipinska, the elytral bristles in these species are distinctly shorter.

Description. Length 2.33–3.15 mm; TL/EW = 1.40–1.45; PL/PW = 0.53–0.55; EL/EW = 1.05–1.15.

Body (Figs 565, 566, 568) elongate oval, moderately convex, winged. Head with all appendages, prothorax, legs and apical abdominal ventrites light brown to dark brown; elytra, ventral surface of meso- and metathorax, and basal abdominal ventrites dark chestnut brown, to almost black; pronotum usually bears blackish, long stripe along middle, extending from basal margin but rarely reaching anterior pronotal margin. Dorsum with double pubescence consisting of appressed setae and sparse dark stiff bristles; dorsal pubescence forming very weak wavy pattern on elytra; elytral bristles very long, present on entire dorsum.

Head (Figs 570, 571) withdrawn into prothorax but with eyes partially visible externally, about 0.77 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; corpotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocular canthus extending slightly into eye; interocular distance 0.50–0.55 times as wide as head across eyes; interfacial setae distinct. Antenna (Fig. 573) 0.9 times as long as head capsule width, 11-segmented; scape 2 times as long as pedicel; pedicel distinctly narrower than scape, 1.40–1.45 times as long as wide; antennomere III 3.1–3.4 times longer than wide, and at least 3 times longer than IV; antennomere IV as long as V; antennomeres VI and VII weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere elongate, apically rounded. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum rounded apically. Maxillary cardo (Fig. 570) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.8–2.1 times as long as wide, weakly expanded apically. Mentum strongly transverse, at least 2 times broader than long; anterior margin deeply emarginate; ventral surface with horsehoe like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance at least 1.5 times broader than width of palpiger; apical palpomere about as long and as broad as penultimate one; submentum indistinct.

Pronotum (Figs 567, 571, 572) with anterior angles rounded, weakly produced anteriorly, not swollen but with distinct groove near angles; anterior margin without border; lateral hypomeron (1.7) as long as lateral margin, 0.85 times as broad before apex and 0.85 times as long as margin continuing into procoxal cavity.

Anterior mesoventral projection complete and transverse; sternoventral processes narrow but extended, elytral suture as corresponding to elytral base area; pterostigma complete and clear, with fovea or reticulate indent in stalk and pterostigma.

Legs with femora almost uniform in length; femur with single spines in male with two in female.

Abdomen long as ventral process, deep, pointed. V in female dorsal part truncate; V in male slightly truncate; hindmargin rounded. Sixth sternite narrow, with its apices pointed and partly visible.

Male genitalia well developed, apices covered by lateral sternal sides and distinctly less so.

Female genitalia normal; styli toothed, slender in diameter; hypogastric glands adjacent.
border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 569) with broad, concave area along anterior half of prothoracic lateral margin; notosternal suture distinct, simple; prothoracic process (Fig. 575) 0.6 times as broad as longest coxal diameter, its surface with carinae converging, joined before apex and continuing anteriorly as single carina; prosternum in front of coxa 0.85 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 575) with complete raised border; mesoventral process at median length of coxa as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction arcuate or somewhat angulate posteriorly, without internal knob. Scutellum (Fig. 567) triangular, transverse; surface punctate and setose. Elytra (Fig. 565) with lateral margins very narrow but entirely visible from above; surface (Fig. 572) with double size punctures, elytral epipleuron incomplete apically only (Figs 566, 577), 1.4 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite (Fig. 575) with complete discrimen; metaventral postcoxal lines distinctly separated at middle, complete and straight laterally; metaepisternum with external process interlocking with fovea on elytron (Fig. 574); metaepimeron distinct, visible ventrally; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters angulate produced (Figs 575, 577); mid and hind tibia with single spur; pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with weak quadrate basal tooth; tarsal claws in female simple or swollen.

Abdomen (Figs 576–578) with 5 ventrites in both sexes; ventrite I 1.5 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin only with median part narrowly truncate; female ventrite VI (Fig. 1573) with hind margin arcuate; female tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1572); male tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half weakly widening towards apex, and base of speculum widened and partly submembranous.

Male genitalia (Figs 1569–1571). Parameres articulated with phallobase, well developed, simple and separated, about 1.7 times longer than penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental struts simple; penis base with outer arm distinctly less developed than inner arm.

Female genitalia (Fig. 1574). Proctiger (T10) reduced, small, submembranous; styli terminal; infundibulum absent; sperm duct very short, simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.
Material examined. Types. Holotype "Rhizobius ruficollis" Blackburn/Type/ Blackburn coll. 1910-236" (NHM).


Diagnosis of the body: Antennomere II-LIII of the antenna wavy in shape.

Description. EL/EW = 3.25/1.20

Body distinctly narrow, elytra narrowly convex. Antennomere II-LIII of the antenna wavy in shape.

Head externally dull with a distinctly weak, subparallel surface. Antennomeres II-LIII distinctly wavy in shape.

Elytra more than 1.5 times longer than wide, widest at middle, and 0.54 times longer than pronotum. Pronotum 0.85 times longer than pedicel; pronotum distinctly wider than elytra and distinctly weakly rounded at apex.
Rhzobius insipidus Blackburn (Figs 591–605, 1579–1583)

Rhzobius insipidus Blackburn, 1889: 201.

**Diagnosis.** This species can be separated from *R. noctuabundus* by having dorsal surface of the body uniformly light brown, the prothorium with complete and separate carinae and the antennomere III less elongate.

**Description.** Length 2.60–2.70 mm; TL/EW = 1.51–1.54; PL/PW = 0.57–0.59; EL/EW = 1.17–1.20.

Body (Figs 591–593) elongate oval, moderately convex, winged; predominantly light brown; ventral surfaces of meso-, metathorax, abdominal ventrite I, and ventrites II–IV along middle dark brown. Dorsum with double pubescence consisting of appressed setae and sparse darker stiff bristles; dorsal pubescence forming weak wavy pattern on elytra; elytral bristles present distinct along margins.

Head (Figs 594, 600) withdrawn into prothorax but with eyes partially visible externally, about 0.8 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; corpotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocellus canthus extending slightly into eye; interocular distance 0.53–0.54 times as wide as head across eyes; interfacial setae distinct. Antenna (Fig. 598) 0.85 times as long as head capsule width, 11-segmented; scape 1.5 times as long as pedicel; pedicel distinctly narrower than scape, 1.55–1.65 times as long as wide; antennomere III 3 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII subquadrate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere distinctly elongate, weakly rounded apically. Anterior clypeal margin with weak, rounded lateral lobes.
Labrum rounded apically. Maxillary cardo (Fig. 594) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.9–2.0 times as long as wide, parallel-sided. Mentum strongly transverse, at least 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe-like impression; prementum nearly as long as broad; ligula parallel-sided; labial palps separated by distance 2.0 times broader than width of palpiger; apical palpomere as long and as broad as penultimate one; submentum indistinct.

Pronotum (Figs 595, 600–602) with anterior angles rounded, scarcely produced anteriorly, not swollen but with distinct groove near angles; anterior margin without border; lateral margins with entire border; hind margin without border. Prothoracic hypomeron (Fig. 598) with broad, concave area along anterior half of prothoracic lateral margin; notosternal suture distinct, simple; prosternal process (Fig. 599) 0.6 times as broad as longest coxal diameter, its surface with complete, separate carinae; procorium in front of coxa 0.6 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with bordering line distinctly incomplete antero-medially.

Anterior edge of mesoscutum (Fig. 599) with complete raised border; mesoscutal process at median length of coxa 0.85 times as broad as corresponding coxal diameter, meso-metasternum articulation with suture visible; junction arcuate posteriorly, without internal knob. Scutellum (Fig. 601) triangular, transverse; surface punctate and setose. Elytra (Fig. 591) with lateral margins very narrow but entirely visible from above; surface (Fig. 601) with double size punc- tures, elytral epipleuron incomplete apically only (Fig. 592), 1.5 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of eyletron. Metaventrite with complete discrules; metaventral postcoxal lines (Figs 599, 603) distinctly separated at middle, complete, weakly descending; metaepisternum with external process interlocking with fovea on elytron (Fig. 603); metaepisternum distinct, visible ventrally; metendosternite stalk distinctly shorter than broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters angulately produced (Figs 592, 599); mid and hind tibiae with single spur (Figs 596, 597); pro- and mid tarsal claws in male appendicate; hind tarsal claws in male swollen at base; tarsal claws in female with weak quadrangular tooth.

Abdomen with 5 ventrites in both sexes; ventricle I 1.45–1.5 times as long as ventricle II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventricle I; ventricle V in female (Fig. 604) distinctly longer than IV, with hind margin arcuate and smooth; ventricle V in male (Fig. 605) smooth and simply setose, hind margin only with median part narrowly truncate; female ventricle VI (Fig. 1582) with hind margin arcuate; female tergite VIII rounded; hind margin of male ventricle VI weakly emarginate (Fig. 1581); male tergite VIII rounded. Sternum IX with central part membranous; apodeme of mesothoracic endosternite apically slightly spicularized.

Male genitalia well developed. Aedeagus elongate, apex bifurcated, lateral arm of each arm of style typical.

Femoral setation and structure typical of species of the genus "Rhizobius". 

Material examined from Australia: New South Wales, 

Ouwen (1): DOU 9547 (8: SAA 9575). Distribution: 

The following species are known from Australia: 

Dorsalis form, male without elytra.

Dorsalis form, male with elytra.

Borror, 1957.
apodeme of male sternum IX with its apical half simple and narrow, and base of spiculum widened.

**Male genitalia** (Figs 1579, 1580). Parameres articulated with phallobase, well developed, simple and separated, about 1.6 times as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm obsolete.

**Female genitalia** (Fig. 1583). Proctiger (T10) distinct, at least partly sclerotized plate; styli strongly reduced and hardly visible; infundibulum absent; sperm duct very short, simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

**Material examined.** Types. Lectotype (here designated), male, **South Australia**. "Rhzobius insipidus" Blackburn/T 1972/ Blackburn coll. 1910-236 (NHM); paralectotypes, "Rhzobius insipidus" Bl., S. Australia, type, 9789/ Rhizobius insipidus Blackb, cotype S. Australia, Blackburn/ 1972/ (3: SAM).

**Note.** The lectotype of *Rhzobius insipidus* Blackburn, 1889 is designated to stabilize the taxonomic status of this species.

**Other material.** **South Australia**, 73-7 (3: NHM); Ceduna, 20.XI.1988, H & A Howden (1: CMN); Coastal sand dunes, 1 ml S of Bungala Ck., Normanville, S.VI.67, H. Cooper (3: SAM; 1, totally dissected: MIZ); S. Australia, 73-7 (3: NHM).

**Distribution.** Australia: South Australia.

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*Rhzobius josephi* sp. nov.

(Figs 652-665, 1602-1607, 1930)

**Diagnosis.** This species resembles most closely *R. speculifer*, but can be distinguished from it in having more elongate body, the anterior angles of the pronotum with regular border without a groove, the prosternal carinae joined directly just before prosternal margin and the male ventrite V narrowly truncate to scarcely emarginate at apex.

**Description.** Length 3.15–3.80 mm; TL/EW = 1.45–1.58; PL/PW = 0.51–0.52; EL/EW = 1.07–1.13.

**Body** (Figs 652, 653, 655, 1930) elongate oval, moderately convex, winged. Dorsal surface dark brown or dark chestnut brown; ventral surface dark brown, sometimes with meso-, metaventrite and abdominal ventrite I weakly infuscate; antennae, tarsi and labial, and maxillary palpi sometimes pale. Dorsum with some pubescence consisting of appressed setae and sparse darker stiff bristles; dorsal pubescence forming wavy pattern on elytra; elytral bristles present on entire dorsum but distinct especially along margins.

**Head** (Figs 654, 657, 663) withdrawn into prothorax but with eyes mostly visible externally, about 0.8 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; corpotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocular canthus extending slightly into eye; interocular distance...
0.49–0.51 times as wide as head across eyes; interfacetal setae distinct. Antenna (Fig. 659) 0.8 times as long as head capsule width, 11-segmented; scape 1.75–1.80 times as long as pedicel; pedicel distinctly narrower than scape, 1.35–1.40 times as long as wide; antennomere III 3.15–3.25 times longer than wide and at least 3 times longer than IV; antennomere IV shorter than V; antennomeres VI and VII subquadrate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere distinctly elongate, apically rounded. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum emarginate at apex. Maxillary cardo (Fig. 654) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.45–1.50 times as long as wide, weakly expanded apically. Mentum transverse, less than 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpi; apical palpmere as long and as broad as penultimate one; submentum distinct.

**Pronotum** (Figs 657, 662, 663) with anterior angles rounded, scarcely produced anteriorly, not swollen with regular border; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 659) with broad, concave area along anterior half of prothoracic lateral margin; notosternal suture distinct, simple; prosternal process (Fig. 656) 0.5 times as broad as longest coxal diameter, its surface with carinae subparallel, joined roundly just before prosternal margin; prosternum in front of coxa about 0.55 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as a straight line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

**Anterior edge of mesoventre** (Fig. 656) with complete raised border; mesoventral process at median length of coxa as broad as corresponding coxal diameter; meso-metaventre articulation with suture visible; junction angulate posteriorly, without internal knob. Scutellum (Fig. 657) triangular, transverse; surface punctate and setose. Elytra (Fig. 652) with lateral margins very narrow but entirely visible from above; surface (Fig. 662) with single size punctures, elytral epipleuron incomplete apically only (Figs 653, 665), 2 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventre with complete discernment; metaventral postcoxal lines (Fig. 656) distinctly separated at middle, complete and recurved laterally; metaepisternum with external process interlocking with fovea on elytron (Fig. 661); metaepimeron indistinct; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

**Legs** with trochanters angulate produced (Figs 656, 665); mid and hind tibia with single spur (Figs 658, 660); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male and claws in female with distinct quadratus basal tooth.

**Abdomen** (Figs 664, 665) with 5 ventrites in both sexes; ventrite I 1.40–1.45 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved
and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin only with median part narrowly truncate to scarcely emarginate; female ventrite VI (Fig. 1607) with hind margin arcuate; female tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1605); male tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half somewhat widening towards apex, and base of scuticulum widened.

Male genitalia (Figs 1602–1604). Parameres articulated with phallobase, well developed, simple and separated, nearly as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides only with asymmetrical apex; teginal struts simple; penis base with outer arm distinctly less developed than inner arm.

Female genitalia (1606). Proctiger (T10) reduced, small, submembranous; styli small, terminal; infundibulum absent; sperm duct simple, uniform in diameter; spermatheca with only nodulus developed, spermathecal accessary gland adjacent to sperm duct.


Paratypes. Tasmania, same data as holotype (1: ANIC; 1 dissected on slide: MIZ); "Collinsvale, Fairy Glen, 300 m, 11.II.1984, malaise, M. Williams" (2: ANIC; 1: MIZ); "SW TAS, Lower Gordon R., 42.38S 145.53E, 42.37S 145.56E, Howard Hill/ H.E.C. Survey, 14 L. 1100, 1.1978, beating" (2: ANIC; 1: MIZ); "42.34S 147.50E, 4 km W Orford TAS, 27.I.1983, J.C. Cardale coll., at light" (1: ANIC); "42.13S 146.01E, Franklin R., TAS, 2.II.1983, I. Naumann & J. Cardale" (1 dissected on slide: MIZ).

Etymology. This species is dedicated to Dr. Joseph V. McHugh (The University of Georgia, Athens, USA) an American coleopterist.

Distribution. Australia: Tasmania.

Rhyzobius laeticulus Blackburn
(Figs 684–696, 1614–1618)

Rhyzobius laeticulus Blackburn. 1889: 200.

Diagnosis. This species is distinctive by its colouration (see below) combined with long pronotum covering the head almost entirely from above, and a strongly transverse scutellum (over 2.2 times broader than long).

Description. Length 2.40–2.80 mm; TL/EW = 1.40–1.48; PL/PW = 0.58–0.59; EL/EW = 1.05–1.12.

Body (Figs 684–686) broadly oval, moderately convex, winged; predominantly dark brown; pronotal disc weakly infuscate, most of elytra blackish; only humeri brown and each elytron along suture with narrow, light brown stripe (but suture is
dark), extending from scutellum to near apex. Ventral surfaces of meso- and metathorax and abdominal ventrites (at least along middle) blackish brown. Dorsum with pubescence consisting of appressed setae and very sparse darker stiff bristles along margins; dorsal pubescence forming very weak wavy pattern on elytra.

**Head** (Figs 687, 694) entirely withdrawn into prothorax; ventral antennal grooves distinctly circular bent towards outer margin of eye. Eyes dorsally less than 0.5 times length of head capsule; ocellar canthus extending slightly into eye; interocular distance 0.55 times as wide as head across eyes; interfacetal setae indistinct. Antenna (Fig. 689) 0.8 times as long as head capsule width, 11-segmented; scape 2 times as long as pedicel; pedicel distinctly narrower than scape, 1.35 times as long as wide; antennomere III 3.75 times longer than wide, and at least 3 times longer than IV; antennomere IV as long as V; antennomeres VI and VII quadrate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere subquadrate, apically truncate. Anterior clypeal margin with weak, rounded lateral lobes. Labrum emarginate at apex. Maxillary cardo (Fig. 689) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere (Fig. 688) 1.6 times as long as wide, parallel-sided. Mentum strongly transverse, at least 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe-like impression; prementum nearly as long as broad; ligula parallel-sided; labial palps separated by distance at least 1.5 times broader than width of palpiger; apical palpomere as long and as broad as penultimate one; submentum indistinct.

**Pronotum** (Figs 692–695) with anterior angles rounded, weakly produced anteriorly, not swollen but with distinct groove near angles; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 689) with broad, concave area along anterior half of prothoracic lateral margin; notosternal suture obscure; prosternal process (Fig. 690) 0.9 times as broad as longest coxal diameter, its surface with complete carinae joined anteriorly forming triangle; prosternum in front of coxa 0.6 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

**Anterior edge of mesonotum** (Fig. 690) with complete raised border; mesonotal process at median length of coxa 1.4 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction arcuate posteriorly. Scutellum triangular, transverse; surface punctate and setose. Elytra with lateral margins very narrow but entirely visible from above; surface (Fig. 695) with double size punctures, elytral epipleuron incomplete apically only (Figs 686, 696), 2 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite with complete discrimen; metaventral postcoxal lines (Fig. 690) distinctly separated at middle, complete and straight laterally; metaepisternum with external process interlocking with fovea on elytron; metaepimeron distinct, visible ventrally.

**Legs** with tibiae and tarsi short, with single spurs on last tarsus, claws in females, long as ventrite V in female, elytral base of ventrite V in male longer (Fig. 1616) with membranous wing-like expansions.

**Male** genitalia well developed; clasper apices covered, lateral sides symmetrical, arm obsolete.

**Female** genitalia: plate; styli form in diameter of accessory gland.

**Material examined**
- Blackburn/ Type locality
- Blackburn/ S. A.

**Note.** The above is not a formal treatment of the taxonomic status.

**Other material examined**
- ANIC: 1: MIZ

**Diagnosis.** Elytral epipleuron incomplete apically only (Figs 686, 696), 2 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaepisternum with complete discrimen; metaventral postcoxal lines (Fig. 690) distinctly separated at middle, complete and straight laterally; metaepisternum with external process interlocking with fovea on elytron; metaepimeron distinct, visible ventrally.

**Distribution.**
- EL/EW = 1.0

**Body** (Fig. 1616) not winged; predorsal carinae complete on elytra with parallel setae.
Legs with trochanters angulately produced (Figs 690, 696); mid and hind tibia with single spur (Fig. 691); tarsal claws in male simple or swollen at base; tarsal claws in female with weak subquadrate basal tooth.

Abdomen (Fig. 696) with 5 ventrites in both sexes; ventrite I 1.6–1.7 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin rounded; female ventrite VI (Fig. 1616) with hind margin arcuate; female tergite VIII rounded; hind margin of male ventrite VI rounded (1615); male tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half very narrow and rod-like towards apex, and base of siculum simple, narrow.

Male genitalia (Figs 1614, 1617). Parameres articulated with phallobase, well developed, simple and separated, about 1.3 times as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm obsolete.

Female genitalia (Fig. 1618). Proctiger (T10) distinct, at least partly sclerotized plate; styli terminal; infundibulum absent; sperm duct very short, simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

Material examined. Types. Lectotype (here designated), male, "Rhyzobius laeticulus" Blackburn/Type/ T 1626 A/ Blackburn coll. 1910-236 (NMW); parallectotype, "Rhyzobius laeticulus" Blot., type, J. 7970, S. Australia/ Rhyzobius laeticulus" Blackburn, type/ Adelaide, Blackburn/ S. Aust. Museum specimen (1: SAM).

Note. The lectotype of Rhyzobius laeticulus Blackburn, 1889 is designated to stabilize the taxonomic status of this species.


Distribution. Australia: South Australia, New South Wales.

Rhyzobius lei sp. nov.
(Figs 697–712, 1619–1623, 1920)

Diagnosis. Most similar to R. reidi, but can be separated by having the tibiae without spurs, the antennomere III more elongate and the prothoracic hypomeron with concavity, and with additional groove.

Description. Length 2.00–2.25 mm; TL/EW = 1.23–1.30; PL/PW = 0.46–0.48; EL/EW = 1.00–1.04.

Body (Figs 697, 698, 700, 1920) broadly oval, strongly convex, hemispherical, winged; predominantly brown to chestnut brown; lateral margins of pronotum paler; elytra with pale, curved stripes in mid length. Surrounding darker area common for both elytra (Fig. 1920); mouthparts, tibiae and tarsi, apical abdominal ventrites and anten-
nae yellowish brown. Dorsum with double pubescence consisting of appressed setae and sparse darker stiff bristles; dorsal pubescence rather not forming wavy pattern on elytra; elytral bristles present on entire dorsum but more distinct along margins.

Head (Figs 699, 705) entirely withdrawn into prothorax, 0.75–0.80 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; corpoprotorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anterior; ocular canthus extending slightly into eye; interocular distance 0.48–0.52 times as wide as head across eyes; intercetate setae absent. Antenna (Fig. 701) 0.8 times as long as head capsule width, 11-segmented; scape 2 times as long as pedicel; pedicel distinctly narrower than scape, 1.35–1.50 times as long as wide; antennomere III 3.6 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII subquadrate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere about as long as broad, rounded apically. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum rounded apically. Maxillary cardo (Fig. 702) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.33–1.35 times as long as wide, widely expanded apically. Mentum transverse, less than 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpgere; apical palpomere as long and as broad as penultimate one; submentum distinct.

Pronotum (Figs 703–705, 708) with anterior angles rounded, not produced anteriorly, not swollen, with regular border; anterior margin without border; lateral margin slightly upturned and without clear border at least along part of its length; hind margin without border. Prothoracic hypomeron (Fig. 706) with broad, concave area delimited outwardly by crescent shaped groove; notosternal suture distinct, simple; prosternal process about 0.6 times as broad as longest coxal diameter, its surface with complete, converging anteriorly, separate carinae; prosternum in front of coxa 0.55 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as arcuate line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 706) with complete raised border; mesonotal process at median length of coxa nearly 1.5 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction arcuate posteriorly, without internal knob. Scutellum (Fig. 708) pentagonal, transverse; surface punctate and setose. Elytra (Fig. 697) with lateral margins very narrow but entirely visible from above; surface (Fig. 708) with single size punctures, elytral epipleuron incomplete apically only (Figs 698, 709), 2 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and with complete raised border at middle, converging with foveae nearly as long as wide, placed on lamina.

Legs without visible tibiae; hind tarsi short.

Abdomen as long as pronotum; complete, deeply transverse in front; ventrites 5 in front; ventrites 1–4 narrowly separated, ventrite 5 rounded; male tergite VI rounded; apodeme of male tergite VI adnate to apex, and basally rounded.

Male genitalia well developed, densely setose; penis guide with terminal struts and arm.

Female posteriorly elongated plate; styli elongated; spermathecal ductus; sperm ductus; bursa copulatrix.


Note. Two species in the type series differing in elytra.

Etymology. Th. discipellus after Coleopterist and coleopterist, and collector.

Distribution.
clytral base and border line upturned outwardly near base of elytron. Metaventrite with complete discrinen; metaventral postcoxal lines (Fig. 706) distinctly separated at middle, complete and recurved; metaepisternum with external process interlocking with fovea on elytron (Fig. 707); metaepimeron indistinct; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters angulate 2 produced (Figs 706, 709); mid and hind tibia without visible spurs (Figs 711, 712); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male and claws in female with subquadrate basal tooth.

Abdomen (Figs 709, 710) with 5 ventrites in both sexes; ventrite I 1.35 times as long as ventrite II; abdominal postcoxal lines separate mediately, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin with median part narrowly truncate; female ventrite VI (Fig. 1622) with hind margin arcuate, female tergite VIII rounded; hind margin of male ventrite VI scarcely emarginate (Fig. 1620), male tergite VIII subtruncate apically. Sternite IX with central part membranous; epodeme of male sternum IX with its apical half very narrow and rod-like towards apex, and base of epiculum widened.

Male genitalia (Figs 1619, 1621). Parameres articulated with phallosome, well developed, simple and separated, about 1.2 times longer than penis guide, densely setose along half their length, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical, tegmental strut simple; penis base with outer arm distinctly less developed than inner arm.

Female genitalia (Fig. 1623). Proctiger (T10) distinct, at least partly sclerotized plate; styli terminal; infundibulum sclerotized, tube-like, enclosing the sperm duct; sperm duct short, simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.


Note. Two specimens, those with lighter maculae on brown and blackish elytra, from seven of the type series of R. discipennis preserved in SAM, belong to this new species.

Etymology. This species is dedicated to a memory of Dr. A.M. Lea, a famous Australian entomologist, and the author of several species of Rhyzobius.

Rhzobius lineellus sp. nov.
(832–844, 1630–1635, 1921)

Diagnosis. This species resembles *R. bilineatus*, but it is distinguished by its more oval body, shorter antennae, the sternum lacking carinae, the head with long ventral antennal grooves and the antenomeres VI and VII transverse.

Description. Length 1.8–2.0 mm; TL/EW = 1.43–1.50; PL/PW = 0.49–0.50; EL/EW = 1.03–1.15.

Body (Figs 832, 833, 835, 1921) elongate oval, moderately convex, winged; predominantly blackish brown; elytral epipleura and prothoracic hypomera light brown; each elytron with more or less distinct, elongate red stripe along disc, extending almost from base to apex; sometimes area between stripe and suture also slightly paler than the rest of elytron. Dorsum with moderately long and uniform pubescence, forming weak wavy pattern on elytra.

Head (Figs 834, 840) dorsally exposed, 0.75 times as long as wide; ventral antennal grooves long, straight, reaching distinctly behind eyes; corporotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; ocular canthus extending slightly into eye; interocular distance 0.59–0.61 times as wide as head across eyes; interfacial setae indistinct. Antenna (Fig. 837) 0.65 times as long as head capsule width, 11-segmented; scape 1.55–1.60 times as long as pedicel; pedicel distinctly narrower than scape, 1.6 times as long as wide; antennomere III 3.3 times longer than wide, and at least 3 times longer than IV; antennomere IV as long as V; antennomeres VI and VII very short, transverse. Antennal club 3-segmented, with penultimate segment asymmetrical; penultimate antenomere distinctly longer than terminal segment; terminal antennomere transverse, apically subtruncated. Anterior elyptal margin straight. Labrum rounded apically. Maxillary cardo (Fig. 834) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.45 times as long as wide, weakly expanded apically. Mentum transverse, less than 2 times broader than long; anterior margin truncate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance at least 1.5 times broader than width of palpiger; apical palpomere as long and as broad as penultimate one; submentum distinct.

Pronotum (Figs 836, 839–841) with anterior angles acute, weakly produced anteriorly, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and without clear border at least along part of its length; hind margin with border line not reaching lateral margins. Prothoracic hypomeron (Fig. 838) smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process nearly as broad as longest coxal diameter, its surface smooth, without carinae; sternum in front of coxa 0.9 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with complete bordering line, close to cavity.
Anterior edge of mesoventrite (Fig. 838) with complete raised border; mesoventral process at median length of coxa 1.35 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction forming a straight line, without internal knob. Scutellum (Fig. 841) triangular, transverse, surface punctate and setose. Elytra (Fig. 832) with lateral margins very narrow but entirely visible from above; surface (Fig. 841) with single size punctures, elytral epipleuron incomplete apically only (Figs 833, 844), 2.5 times as wide as corresponding metaepimera, margin with margin border area widening towards elytra base and border line fading before base of elytron. Metaepimera with partially incomplete discern; metaventral postcoxal lines joined medially forming straight line, complete and distinctly recurved laterally; metaepisternum with external process interlocking with fovea on elytron; metaepimera indistinct; metendosternite stalk distinctly shorter than broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters angulately produced (Figs 838, 844); mid and hind tibia without visible spurs (Fig. 843); hind tarsal claws in male swollen at base; tarsal claws in female with weak quadrate basal tooth.

Abdomen (Figs 842, 844) with 5 ventrites in female, and 6 ventrites in male; ventrite I 1.4 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, posteriorly reaches about half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin deeply emarginate; female ventrite VI (Fig. 1635) with hind margin narrowly truncate, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1633), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half somewhat widening towards and at apex, and base of scutellar sclerotized, divided into inverted V.

Male genitalia (Figs 1630–1632). Parameres articulated with phallobase, well developed, simple and separated, nearly as long as penis guide, with apices covered with simple setae; penis guide with additional processes, with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm obsolete.

Female genitalia (Fig. 1634). Proctiger (T10) reduced, small, submembranous; styli terminal; infundibulum sclerotized, tube-like, enclosing the sperm duct; sperm duct simple; uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

Material examined. Types. Holotype, South Australia, “SA, Mt. Lofty Rgs., H.S. Currow” (SAM).


Etymology. The specific epithet lineellus refers to the long pale stripe on the disc of each elytron.

Distribution. Australia: South Australia, Tasmania, Australian Capital Territory.
Rhyzobius lophanthae (Blaisdell)  
(Figs 740–754, 1642–1647)

Scymnus lophanthae Blaisdell, 1892: 51.  
Rhyzobius lophanthae: Horn 1895: 112.  
Rhyzobius toowoombae Blackburn, 1892b: 254. Synonymised by Horn 1895: 112.  
Lindorus lophanthae: Casey 1899: 162.  

Diagnosis. This species is most similar to R. viridipennis, but is distinguished by the elytra finely punctate, the antennomere III less elongate, the abdominal ventricle V in male with admedian setose patches and with hind margin deeply emarginate medially, and the female ventricle V regularly rounded at apex.

Description. Length 2.25–2.75 mm; TL/EW = 1.35–1.38; PL/PW = 0.51–0.52; EL/EW = 1.05–1.12.

Body (Figs 740, 741, 743) broadly oval, moderately convex, winged; brown with elytra and somewhat transverse, not very well defined spot on antero-median part of pronotum dark chestnut brown or blackish. Dorsum with double pubescence consisting of appressed setae and sparse darker stiff bristles; dorsal pubescence forming weak wavy pattern on elytra; elytral bristles present on entire dorsum.

Head (Figs 742, 750) withdrawn into prothorax but with eyes partially visible externally, 0.7 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; carotenotormium absent. Eyes dorsally 0.50–0.75 times as long as head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocular canthus extending slightly into eye; interocular distance 0.50–0.52 times as wide as head across eyes; interfacial setae indistinct. Antenna (Fig. 745) 0.60–0.63 times as long as head capsule width, 11-segmented; scape 1.65–1.80 times as long as pedicel; pedicel distinctly narrower than scape, 1.25–1.28 times as long as wide; antennomere III 2.75–2.85 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII quadrate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere distinctly elongate, rounded apically. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum truncate at apex. Maxillary cardo (Fig. 742) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.22–1.25 times as long as wide, weakly expanded apically. Mentum strongly transverse, at least 2 times broader than long; anterior margin weakly arcuate; ventral surface with horseshoe like impression; prementum transverse; ligula parallel-sided; labial palps separated by distance at least 1.5 times broader than width of palpiger; apical palpomere as long and as broad as penultimate one; submentum distinct.

Pronotum anteriorly, not reaching the lateral border; lateral hypomeron (Fig. 747) divided by narrow median line. Pronotum length as weakly convex as posteriorly, but distinctly rounded medially. Anterior margin of pronotum as weakly curved as weakly curved meso- and metasternum; anterior margin (Fig. 747) only weakly curved medially. Anterior margin of metasternal cavity distinctly arched.

Abdomen as long as ventrites V, VI, and VII; ventrite VIII smooth, ventrite IX emarginate; ventrite X, tergite VIII, and apodeme of V, VI, and VII. Tergites IX and X apodeme of V, VI, and VII; base of apodeme of V, VI, and VII.

Male genitalia well developed, apices covering median and lateral sides of abdomen; median and lateral sides of abdomen.
Pronotum (Figs 744, 750, 751) with anterior angles rounded, scarcely produced anteriorly, not swollen but with distinct groove near angles; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 746) with at least short, somewhat crescent shaped groove perpendicular to notosternal suture; notosternal suture distinct, simple; prosternal process (Fig. 747) 0.55 times as broad as longest coxal diameter, its surface with complete, weakly convergent, separate carinae; prothorax in front of coxa about 0.65 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 747) with complete raised border; mesoventral process at median length of coxa about as broad as corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction angulate posteriorly, without internal knob. Scutellum triangular, transverse; surface punctate and setose. Elytra (Fig. 740) with lateral margins very narrow but entirely visible from above; surface (Fig. 749) with single size punctures, elytral apopleuron incomplete apically only (Figs 741, 754). 2 times as wide as corresponding metaepisternum, inner margin with border area narrow throughout and border line fading before base of elytron. Metaventrite with complete discerned; meta- and postcoxal lines (Fig. 747) distinctly separated at middle, complete and recurved; metaepisternum with external process interlocking with fovea on elytron (Fig. 748); metaepimero distinct, visible ventrally; metendosternite stalk nearly as long as broad; tendons separated by much less than width of stalk and placed close to middle.

Legs with trochanters angulately produced (Fig. 754); mid and hind tibia without visible spurs; pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male and claws in female simple or swollen.

Abdomen (Figs 752–754) with 5 ventrites in both sexes; ventrite I 1.6 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male with admedian setose patches, hind margin deeply emarginate; female ventrite VI (Fig. 1646) with hind margin weakly emarginate, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1645), tergite VIII widely truncate apically. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half widening towards and at apex, and base of spiculum widened, partially submembranous with small sclerotized, lateral sclerites.

Male genitalia (Figs 1642–1644). Parameres articulated with phallobase, well developed, simple and separated, about 1.2 times longer than penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm less developed than inner arm.
Female genitalia (Fig. 1647). Proctiger (T10) distinct, at least partly sclerotized plate; styli absent; infundibulum absent; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

**Material examined.** Types. Holotype, female of "Rhizobius toowoomba, Blackburn/Type/ 4346 type/Toowoomba/Blackburn coll. 1910-236" (NHM).

Holotype, female of "Nothoryzobius ruthculitis, Bréthes/ type/ Argentina, Isla Los Cisnes, Parana Delta, V-XI.1920, H.E. Box/ Rhizobius lophantha (Blaisdel), det. R. Gordon, 85" (NHM).


**Distribution.** Australia: Western Australia, Northern Territory, South Australia, Victoria, Australian Capital Territory, New South Wales, Queensland; world (introduced).

*Rhyzobius macroaculatus* sp. nov.
(Figs 767–780, 1654–1659, 1922)

**Diagnosis.** This species resembles *R. victoriensis* in the body size and colouration, but is distinguished by having the hind wings well developed, the elytral bristles present on entire dorsum, the ventral antennal grooves on head long and straight, and hind margin of the prothorax without border line.

**Description.** Length 1.95–2.40 mm; TL/EW = 1.36–1.47; PL/PW = 0.53–0.56; EL/EW = 1.07–1.10.

**Body** (Figs 767, 768, 770) elongate oval, moderately convex, winged; bicoloured (Fig. 1922). Dorsum with double pubescence consisting of appressed setae and sparse dark stiff bristles along margins; dorsal pubescence forming wavy pattern on elytra.

**Head** (Figs 769, 775) dorsally exposed, 0.85 times as long as wide; ventral antennal grooves long, straight, reaching distinctly behind eyes; corporotentorium present. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; ocular canthus extending slightly into eye; interocular distance 0.61–0.63 times as wide as head across eyes; interfacial setae absent. Antenna (Fig. 771) 1.15 times as long as head capsule width, 11-segmented; scape 1.5–1.6 times as long as pedicel; pedicel distinctly narrower than scape, 1.60–1.65 times as long as wide; antennomere III 3.55–3.70 times longer than wide, and at least 3 times longer than IV; antennomere IV shorter than V; antennomeres VI and VII weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly longer than terminal segment; terminal antennomere distinctly elongate, apically truncate. Anterior clypeal margin straight. Labrum emarginate at apex. Maxillary cardo (Fig. 769) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.70–1.75 times as long as wide, broadened apically. Mentum transverse, less than 2 times broader than long; anterior margin scarcely arcuate; ventral surface with horseshoe like impression; prementum transverse; ligula parallel-sided; labial palps separated by distance at least 1.5 times as penultimate segments.

**Prothorax** with regular transverse and without shoulder. Prosternum obscure; pronotum not longer than one and one half times its surface width, front of coxal cavities slightly excavated; anterior pronotal rim broadly rounded.

**Mesothorax** with mesoventral sutural diagonal line extending anteriorly and posteriorly. Surface punctate. Scutellum entirely visible. Metapleuron including metepisternum, metacoxal, and border lines of mesothorax visible. Metapleuron with complete and complete+ interrupted incisions. Metepisternum and metacoxal lines complete and complete+ interrupted incisions. Metacoxal lines complete and complete+ interrupted incisions. Metacoxal lines complete and complete+ interrupted incisions. Metacoxal lines complete and complete+ interrupted incisions.

**Legs** with single spur and claws in most cases.

**Abdomen** as long as ventral or slightly longer than dorsal. Male abdomen without tergite VI, only metapleural ridge present. Male ventral tergite II and III with central pair of holes.

**Male** well developed, covered with microscopically distributed punctures. Femora, tibiae, and tarsi bistratose;
least 1.5 times broader than width of palpiger; apical palpomere as long and as broad as penultimate one; submentum distinct.

**Pronotum** (Figs 772, 773, 775, 776) with anterior angles obtuse, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and without clear border at least along part of its length; hind margin without border. Prothoracic hypomeron smooth, without groove or concavity; notosternal suture obscure; prosternal process (Fig. 774) 0.85 times as broad as longest coxal diameter, its surface with complete carinae joined anteriorly forming triangle; prosternum in front of coxa about 0.6 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as arcuate line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with complete bordering line broadly separate from the cavity externally.

**Anterior edge of mesonotum** (Fig. 774) with complete raised border; mesonotal process at median length of coxa 1.15 times as broad as corresponding coxal diameter; meso-metanotal articulation with suture visible; junction arcuate posteriorly, without internal knob. Scutellum (Fig. 773) triangular, transverse; surface punctate and setose. Elytra (Fig. 767) with lateral margins very narrow but entirely visible from above; surface (Fig. 773) with single size punctures, elytral epineuron incomplete apically only (Figs 768, 780), 2.6 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite with partially incomplete discrmen; metaventral postcoxal lines (Fig. 774) distinctly separated at middle, complete and distinctly recurved; metaepisternum with external process interlocking with fovea on elytron (Fig. 779); metaepimeron indistinct; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

**Legs** with trochanters roundly produced (Fig. 774, 780); mid and hind tibia with single spur (Fig. 777); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male weakly swollen at base.

**Abd omen** (Figs 778, 780) with 5 ventrites in both sexes; ventrite I 1.5 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, posteriorly reaches about half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin only with median part narrowly, weakly truncate; female ventrite VI (Fig. 1658) with hind margin arcuate, tergite VIII rounded; hind margin of male ventrite VI weakly emarginate (Fig. 1657), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX widened at apex and at base.

**Male genitalia** (Figs 1654–1656). Parameres articulated with phallobase, well developed, simple and separated, about as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut smooth; penis base with outer arm obsolete.

**Female genitalia** (Fig. 1659). Proctiger (T10) reduced, small, submembranous; styli terminal; infundibulum in form of lightly sclerotized piece of bursa;
sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

**Material examined.** Types. *Holotype, Queensland.* "NE. Q. 16.24S 145.13E, 3.5 km NNE, Mt Spurgeon, 16.X.1991, 1330 m, Monteith & Janetzki, Pyrethrum, trees & rocks" (QMB).

Paratypes: *Queensland*, same data as holotype (5: QMB; 2: MIZ; 1: ANIC); "NE Queensland, 4 km W of Cape Tribulation (Site 6), 2.X.1982, 500 m, Monteith, Yeates & Thompson, Pyrethrum knockdown, RF" (1: QMB); same but Site 8, 28.IX.1982, 720 m (1: MIZ); same but Site 9, 29.IX.1982, 760 m (2: QMB); "16.22S 145.13E, 7 km N Mt Spurgeon (Camp 2), 17-19.X.1991, 1250 m, Monteith & Janetzki, Pyrethrum, trees & logs" (1: QMB; 1: MIZ); "Mossman Bluff Summit, 10 km W Mossman, N Queensland, 18.XII.1988, 1300 m, Monteith & Thompson, Pyrethrum, trees & rocks" (1: QMB); same but 21.XII.1989, Pyrethrum, trees & logs" (1: QMB); "NEQ, 17.33S 145.33E, Mt. Fischer, 1/2 km NW, 8.II.1999, 1280 m, R/F, G.B. Monteith, Pyrethrum, trees & logs, 2178" (1: QMB); 17.32S 145.33E, Mt. Fischer (Kjellberg Rd.), 18.V.1995, 1100 m, G.B. Monteith, Pyrethrum, tree bases" (1: QMB); "Mt. Fischer, 1050-1100 m, 7 km SW Milaa Milaa, NQ, 27-29.IV.1982, Monteith, Yeates & Cook, Pyrethrum knockdown" (1: QMB); same but 5.V.1983, 1200 m, Monteith, Yeates" (1: QMB); "16.24S 145.13E, Steward Crk., 4 km NNE, Mt Spurgeon (Camp 1), 1250-1300 m, 15.X.1991, Pyrethrum, Monteith & Janetzki" (1: QMB); "Upper Boulder Creek, 11 km N Tully, N QLD, 5.XII.1989, 1000 m, Monteith, Thompson, Janetzki, Pyrethrum, logs & trees" (1: MIZ); "17.36S 145.42E, Maalan Rd., 2 km S of Palmerston Hwy, 750 m, 18.V.1995, G. Monteith, Pyrethrum, tree bases" (1: QMB); "Crater Np, 950 m, Atherton Tbl, NE Queensland, 28.XII.1990, G. Monteith, Pyrethrum, logs" (1: QMB); "Hugh Nelson Ra, 2.5 km S of Crater NP, N Queensland, 5.XII.1988, 1100 m, Monteith, Thompson, Pyrethrum, logs & trees" (1: QMB); "SEQ, 28.15S 153.12E, Mt. Hobiuee summit, 2.XII.1995, 1150 m, G.B. Monteith, Pyrethrum, trees" (1: QMB).

**Etymology.** The name of this new species refers to the large, pale macula, common for both elytra.

**Distribution.** Australia: Queensland.

__Rhyzobius micrus__ sp. nov.  
(Figs 794–805, 1666–1671, 1923)

**Diagnosis.** *R. micrus* is similar to *R. eminens* by body size, shape and metallic sheen on the elytra, but can be separated from that species by having entire black dorsum.

**Description.** Length 1.83–1.87 mm; TL/EL = 1.21–1.26; PL/PW = 0.49–0.51; EL/EW = 0.91–0.95.

Body (Figs 794, 795, 797, 1923) broadly oval, strongly convex, hemispherical, winged. Dorsal surface brownish black to black with metallic, blue sheen on elytra; ventral surface dark brown to blackish brown; antennae, mouthparts, legs (except for coxae) and abdominal ventrites along lateral, and apical margins light brown. Dorsum with double pubescence consisting of appressed setae and sparse, long dark stiff bristles; dorsal pubescence not forming pattern on elytra; elytral bristles present on entire dorsum.
Head (Figs 796, 802) withdrawn into prothorax but with eyes partially visible externally; ventral antennal grooves distinctly circular bent towards outer margin of eye. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocular canthus extending slightly into eye; interocular distance 0.56–0.57 times as wide as head across eyes; interfacial setae indistinct. Antenna (Fig. 800) 0.85 times as long as head capsule width, 11-segmented; scape 1.8 times as long as pedicel; pedicel about as broad as scape, 1.25 times as long as wide; antennomere III 2.5 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII very short, transverse. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere subquadrate, apically rounded. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum truncate at apex. Maxillary cardo (Fig. 796) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpmere 1.5 times as long as wide, parallel-sided. Mentum transverse, less than 2 times broader than long; anterior margin weakly arcuate; ventral surface with horseshoe-like impression; prementum transverse; ligula parallel-sided; labial palp separated by distance at least 1.5 times broader than width of palpgier; apical palpomere as long and as broad as penultimate one; submentum indistinct.

Pronotum (Figs 798, 802) with anterior angles rounded, weakly produced anteriorly, not swollen but with distinct groove near angles; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic episternum (Figs 799, 800) with broad, concave area along anterior half of prothoracic lateral margin; notosternal suture obscure; prosternal process 0.6 times as broad as longest coxal diameter, its surface with carinae convergent, joined roundly just before prosternal margin (Fig. 799); prosternum in front of coxa 0.6 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as arcuate line, much more posterior than anterior pronotal margin; prococoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesonotum (Fig. 799) with complete raised border; mesonotal process at median length of coxa 1.15 times as broad as corresponding coxal diameter; meso-metanotum articulation with suture obscure; junction weakly angulate posteriorly. Scutellum (Fig. 798) triangular, transverse; surface punctate and setose. Elytra (Fig. 794) with lateral margins very narrow but entirely visible from above; surface with single size punctures, elytral epipleuron incomplete apically only (Figs 795, 803). 2.3 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaepisternite with complete discrimen; metaventral postcoxal line (Fig. 799) distinctly separated at middle, complete and recurved; metaepisternum with external process interlocking with fovea on elytron (Fig. 801); metaepimeron indistinct.

Legs with trochanters angulately produced (Figs 799, 803); mid and hind tibia without visible spurs (Figs 804, 805); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male and claws in female with subquadrate basal tooth.
Abdomen (Fig. 803) with 5 ventrites in both sexes; ventrite I 1.7 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male with admedian setose patches, hind margin only with median part narrowly truncate; female ventrite VI (Fig. 1670) with hind margin arcuate, tergite VIII rounded; hind margin of male ventrite VI narrowly truncate (Fig. 1668), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male stermum IX with its apical half somewhat widening towards apex, and base of spiculum widened and with a pair of small sclerites.

Male genitalia (Figs 1666, 1667, 1669). Parameres articulated with phallobase, well developed, simple and separated, about 1.4 times as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm distinctly less developed than inner arm.

Female genitalia (Fig. 1671). Proctiger (T10) distinct, at least partly sclerotized plate; styli small, terminal; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.


Etymology. The name of this species refers to its small body.


Rhyzobius nataliae sp. nov.
(Figs 806–818, 1672–1677, 1925)

Diagnosis. This is a very distinctive species, easily distinguished from other Australian species of Rhyzobius by its yellowish brown pronotum and black elytra with apex of the same colour like the pronotum.

Description. Length 2.13–2.50 mm; TL/EW = 1.40–1.45; PL/PW = 0.49–0.51; EL/EW = 1.05–1.20.

Body (Figs 806, 807, 809, 1925) broadly oval, moderately convex, winged; predominantly yellowish brown; elytra (except for apex) black; meso-, metaventrite and elytral epipleura weakly infuscate. Dorsum with double pubescence consisting of appressed setae and sparse darker stiff stipes; dorsal pubescence forming very weak wavy pattern on elytra; elytral bristles present on entire dorsum but more distinct along margins.
Head (Figs 808, 812) dorsally exposed, 0.76–0.77 times as long as wide; ventral antennal grooves indistinct; corpora pedunculata absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; ocular calyx extending slightly into eye; interocular distance 0.55–0.56 times as wide as head across eyes; interfascial setae distinct. Antenna (Fig. 813) 0.95 times as long as head capsule width, 11-segmented; scape 1.6 times as long as pedicel; pedicel distinctly narrower than scape, 1.35–1.50 times as long as wide; antennomere III 3.0–3.1 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV shorter than V; antennomeres VI and VII subquadrate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere subquadrate, apically subtruncated. Anterior clypeal margin with weak, rounded lateral lobes. Labrum truncate at apex. Maxillary cardo (Fig. 808) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.4 times as long as wide, broadened apically. Mentum strongly transverse, at least 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe like impression: prementum about as long as broad; ligula parallel-sided; labial palps separated by distance equal to width of palpiger; apical palpomere as long and as broad as penultimate one; submentum distinct.

Pronotum (Figs 811, 812) with anterior angles obtuse, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and without clear border at least along part of its length; hind margin without border. Prothoracic hypomeron (Fig. 814) smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process (Fig. 810) 0.6 times as broad as longest coxal diameter, its surface with complete, weakly convergent, separate carinae; prosternum in front of coxa 0.45 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as arcuate line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with complete bordering line, close to cavity.

Anterior edge of mesoventrite (Fig. 810) with complete raised border; mesoventral process at median length of coxa about as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction arcuate or somewhat angulate posteriorly, without internal knob. Scutellum (Fig. 811) triangular, transverse; surface punctate and setose. Elytra (Fig. 806) with lateral margins very narrow but entirely visible from above; surface with single size punctures, elytral epipleuron incomplete apically only (Figs 807, 818). 1.5 times as wide as corresponding metaepisternum, inner margin with border area narrow throughout and border line fading before base of elytron. Metaventrite with complete discrimer; metaventral postcoxal lines (Fig. 810) distinctly separated at middle, complete and recurved; metaepisternum with external process interlocking with fovea on elytron (Fig. 817); metaepimeron distinct, visible ventrally; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.
Legs with trochanters roundedly produced (Figs 810, 818); mid and hind tibia with single spur (Figs 815, 816); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with large subtriangular basal tooth; tarsal claws in female with quadrate basal tooth.

Abdomen (Fig. 818) with 5 ventrites in both sexes; ventrite I 1.45–1.50 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, posteriorly reaches about half length of ventrite I; ventrinite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrinite V in male smooth and simply setose, hind margin rounded; female ventrinite VI (Fig. 1676) with hind margin arcuate, tergite VIII arcuate; hind margin of male ventrinite VI emarginate (Fig. 1674), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half very narrow and rod-like towards apex, and base of spiculum widened, partially submembranous and with a pair of small sclerites.

Male genitalia (Figs 1672, 1673, 1675). Parameres articulated with phallobase, well developed, and separated, about 1.4 times as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegminal struts simple; penis base with outer arm obsolete.

Female genitalia (Fig. 1677). Proctiger (T10) reduced, small, submembranous; styli strongly reduced and hardly visible; infundibulum in form of slightly sclerotized piece of bursa; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.


Etymology. This species is dedicated to Dr. Natalia Vandenberg (USDA, Washington, DC) a coccinellid specialist.


Rhyzobius newtonorum sp. nov.
(Figs 819–831, 1678–1683, 1931)

Diagnosis. This species is distinguished from R. brunneus and R. hongae in having almost black dorsum and remarkably different male genitalia. Additionally it differs from R.
Brumicus in having the prosternal carinae joined before anterior margin of prothorax and continuing as a single carina and by antennomere III more elongate. It also differs from R. hongae by having antennomeres VI and VII very short, transverse.

**Description.** Length 2.33–2.50 mm; TL/EW = 1.43–1.47; PL/PW = 0.56–0.57; EL/EW = 1.04–1.06.

Body (Figs 819, 820, 822, 1931) elongate oval, moderately convex, wingle. Dorsal surface blackish; only lateral, flattened margins of elytra and margins of pronotum dark brown. Ventral surfaces blackish brown with antennae, palpi, legs (at least tarsi and tibiae), prothoracic hypomera and elytral epipleura somewhat paler. Dorsum covered with more or less uniform, suberect pubescence forming weak wavy pattern on elytra; very sparse elytral bristles visible along margins.

Head (Figs 821, 827) withdrawn into prothorax but with eyes partially visible externally. 0.9 times as long as wide; ventral antennal grooves indistinct; corporoterritorial present. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; ocular canthus extending slightly into eye; interocular distance 0.60–0.61 times as wide as head across eyes; interfacetal setae indistinct. Antenna (Fig. 824) at least as long as head capsule width, 11–segmented; scape 1.9–2.0 times as long as pedicle; pedicel distinctly narrower than scape, 1.35–1.45 times as long as wide; antennomere III 3–3.1 times longer than wide, and at least 3 times longer than IV; antennomere IV shorter than V; antennomeres VI and VII very short, transverse. Antennal club 3–segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere subquadrate, apically truncate. Anterior clypeal margin straight. Labrum marginate at apex. Maxillary cardo (Fig. 821) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.6–1.7 times as long as wide, weakly expanded apically. Mentum transverse, less than 2 times broader than long; anterior margin weakly arcuate; ventral surface with horseshoe-like impression; prementum transverse; ligula parallel-sided; labial palps separated by distance at least 1.5 times broader than width of palpiger; apical palpomere as long and as broad as penultimate one; submentum distinct.

Pronotum (Figs 823, 826, 828) with anterior angles obtuse, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and without clear border at least along part of its length; hind margin with border line almost reaching lateral margins. Prothoracic hypomeron smooth, without groove or concavity; notosternal suture obscure; prosternal process (Fig. 825) 0.85 times as broad as longest coxal diameter, its surface with carinae joined before apex and continuing anteriorly as single carina; prosternum in front of coxa 0.65 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with complete bordering line broadly separate from the cavity externally.

Anterior edge of mesoventrite (Fig. 825) with complete raised border; mesoventral process at median length of coxa as broad as corresponding coxal dia-
meter; meso-metaventrite articulation with suture obscure; junction weakly arcuate posteriorly, without internal knob. Scutellum (Fig. 828) triangular, at least as long as broad; surface punctate and setose. Elytra (Fig. 819) with lateral margins very narrow but entirely visible from above; surface with small size punctures, elytral epipleuron incomplete apically only (Figs 820, 831), 3.15 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite with partially incomplete discrinen; metaventral postcoxal lines (Fig. 825) distinctly separated at middle, complete and recurved; metaepisternum with external process interlocking with fovea on elytron; metaepimeron distinct, visible ventrally; metendosternite stalk distinctly shorter than broad; tendons widely separated and placed near apices of arms.

Legs with trochanter angulatedly produced (Figs 825, 831); mid and hind tibia with two spurs (Figs 829, 830); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male and in female with distinct quadrate tooth.

Abdomen (Fig. 831) with 5 ventrites in both sexes; ventrite I 1.45–1.50 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, posteriorly reaches about half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin only with median part narrowly truncate; female ventrite VI (Fig. 1682) with hind margin arcuate, tergite VIII rounded; hind margin of male ventrite VI weakly emarginate (Fig. 1681), tergite VIII rounded. Sternite IX with central part glandular; apodeme of male sternum IX with its apical half very narrow and rod-like towards apex, and base of spiculum weakly widened.

Male genitalia (Figs 1678–1680). Parameres articulated with phallobase, well developed, simple and separated, about 1.3 times as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegminal strut broad and flattened throughout; penis base with outer arm absent.

Female genitalia (Fig. 1683). Proctiger (T10) distinct, at least partly sclerotized plate; styli absent; infundibulum sclerotized, somewhat flattened and twisted; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.


Paratypes: New South Wales, same data as holotype (2: ANIC; 2: MIZ, one dissected on slide).

Etymology. The name of this new species is dedicated to Drs. M.K. Thayer and A. Newton (Field Museum, Chicago, Ill.), collectors of the type series of this species.

**Rhyzobius nigripennis** Fauvel
(Figs 845–857, 1684–1689, 1950)

*Rhyzobius nigripennis* Fauvel, 1903: 322.

**Diagnosis.** This species resembles *R. wanati*, but can be separated from it by having the elytra regularly elongate oval (not cordiform), blackish with smaller or larger (sometimes poorly developed) red, oval macula along suture, the antennomeres VI and VII quadrate, the male ventrite V narrowly truncate and VI emarginate medially at apex.

**Description.** Length 2.15–2.85 mm; TL/EW = 1.40–1.47; PL/PW = 0.49–0.50; EL/EW = 1.12–1.15.

**Body** (Figs 845, 846, 850, 1950) broadly oval, moderately convex, winged. Dorsal surface of head, pronotum and most often oval macula of different size along elytra suture, extending from basal margin sometimes to apical fifth, dark brown to chestnut brown; rest of elytra blackish or deeply black. In some individuals most of pronotum and whole elytra blackish or black. Ventral surfaces of head, prothorax, elytral epipleura and at least two apical ventrites of abdominal orange brown; ventral surfaces of meso- and metathorax, and at least two basal abdominal ventrites infuscate; mouthparts (at least palpi), antennae and legs light brown. Dorsum with double pubescence consisting of appressed setae and sparse, long darker stiff bristles; dorsal pubescence forming very weak wavy pattern on elytra; elytral bristles present on entire dorsum.

**Head** (Figs 847, 853) withdrawn into prothorax but with eyes partially visible externally, 0.8 times as long as wide; ventral antennal grooves long, straight, reaching distinctly behind eyes; corporotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocular canthus extending slightly into eye; interocular distance 0.50–0.52 times as wide as head across eyes; interfacial setae distinct. Antenna (Fig. 848) as long as head capsule width, 11-segmented; scape 2 times as long as pedicel; pedicel distinctly narrower than scape, 1.5 times as long as wide; antennomere III 2.65 times longer than wide, and about 1.5–2.5 times as long as IV; antennomeres IV as long as V; antennomeres VI and VII quadrate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere longer than wide, apically rounded. Anterior elytral margin distinctly emarginate with median area membranous. Labrum truncate at apex. Maxillary cardo (Fig. 847) transverse and strongly prominent externally; terminal palpomere 1.5 times as long as wide; broadened apically. Mentum strongly transverse, at least 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpgere; apical palpomere about as long and as broad as penultimate one; submentum distinct.

**Pronotum** (Figs 849, 853–855) with anterior angles rounded, not produced anteriorly, not swollen with regular border; anterior margin without border; lateral mar-
gin with entire border; hind margin without border. Prothoracic hypomeron smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process (Fig. 856) 0.55 times as broad as longest coxal diameter, its surface with carinae scarcely convergent, joined roundly just before prosternal margin; pro sternum in front of coxa 0.4 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 856) with complete raised border; mesoventral process at median length of coxa 1.25 times as broad as corresponding coxal diameter; meso-metaventral articulation with suture obscure; junction arcuate posteriorly, without internal knob. Scutellum (Fig. 854) triangular, transverse; surface punctate and setose. Elytra (Fig. 845) with lateral margins very narrow but entirely visible from above; surface with single size punctures, elytral epipleuron incomplete apically only (Figs 846, 857), 2 times as wide as corresponding metaepisternum, inner margin without border. Metaventrite with complete discrimen; metaventral poscoxal lines (Fig. 856) distinctly separated at middle, complete and recurved; metaepisternum with external process interlocking with fovea on elytron; metaepimeron indistinct; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters angulately produced (Figs 856, 857); mid and hind tibia with single spur (Figs 851, 852); pro- and mid tarsal claws in male Appendiculate; hind tarsal claws in male with large subtriangular basal tooth; tarsal claws in female with weak quadrates basal tooth.

Abdomen (Fig. 857) with 5 ventrites in both sexes; ventrite I 1.45–1.50 times as long as ventrite II; abdominal poscoxal lines separate medially, recurved and complete, posteriorly reaches about half length of ventrite IV; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin only with median part narrowly truncate; female ventrite VI (Fig. 1688) with hind margin arcuate, tergite VIII rounded; hind margin of male ventrite VI weakly emarginate (Fig. 1687), tergite VIII rounded. Sternum IX with central part membranous; apodeme of male sternum IX with its apical half very narrow and rod-like towards apex, and base of spiculum weakly widened.

Male genitalia (Figs 1684–1686). Parameres articulated with phallobase, well developed, simple and separated, as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm distinctly less developed than inner arm.

Female genitalia (Fig. 1689). Proctiger (T10) distinct, at least partly sclerotized plate; styli terminal; infundibulum sclerotized, tube-like, enclosing the sperm duct; sperm duct simple, uniform in diameter; spermatheca with only nodulus developed, spermathecal accessory gland distinctly separated from sperm duct.


Diagnosis. R. nigrovarius is easily distinguished by the body size, shape; strongly reduced or almost absent pro sternal gland; 11 ventrite III more elongate.

Description. Length 6.1 mm. EL:EW = 1.09–1.12.

Body (Figs 850, 851). Brachypterous. Head yellowish; elytra red, unicolorous; dorsum with moderately wavy pattern on elytra. Head (Figs 852, 853). Elytra triangularly shaped, widest just before apex. Eyes dorsal region, ventral region less developed, eyes close to each other. Antennae (Figs 854, 855). Antennal segments II–VI uniformly Fauvel, Rhizobius nigrovarius, 1 male, 1 female, 1974.

Other material: ex coll. Fauvel, Rhizobius nigrovarius, 1 male, 1 female, 1974.

Distribution. New Zealand.

Other material. New Caledonia: (N), 21.11S 165.17E, Aoupinie, 780-820 m, road to summit, 8.02.2004, leg. M. Wanat (2: ANIC); (N), 21.11S 165.16E, Aoupinie, 950-1000 m, meteo st. -- summit, 8.02.2004, leg. M. Wanat (1, totally dissected: MIZ); (N), 21.09S 165.19E, Aoupinie, 420-530 m, road to sawmill, 7.02.2004, leg. M. Wanat (1: ANIC); Kavatch, near Hienghene, 150 m, 28.10.1978, G. Kuschel, sifted litter and rotten wood, 78/260 (1: NZAC); Mt. Rembail, 800 m, 17.10.1978, J.C. Watt (1: NZAC); Col de Mouriande, 11.10.1978, G. Kuschel (1: NZAC); Mt. Do, 900-1000 m, 31.10.1978, G. Kuschel, on Araucaria bidwillii (1: NZAC); (S), 22.11S 166.30E, Koghi Mts., base 300 m, roadside vegetation, 13.02.2004, leg. M. Wanat (1: ANIC); same but humid forest, at lucern (1: ANIC); (S), 22.14S 166.52E, 270 m, Chute de la Madeleine maquis, 13.II.2004, leg. M. Wanat (1: MIZ); (N), 20.47S 164.53E, 450 m, Thaven near Tiendaite forest, 5.02.2004, leg. M. Wanat (1: ANIC); Mt. Koghis, 500 m, 7.X.1978, G. Kuschel (1 totally dissected: MIZ); Table Union, 150-1000 m, 16.X.1978, J.C. Watt (1: MIZ); Canala, 1.VII.1914, P.D. Montague (1: NHM); Houadou, 30.X.1914, P.D. Montague, 1918-87 (1: NHM).

Distribution. New Caledonia.

Rhizobius nigrovarius Lea

(Figs 858--872, 1695--1700)

Rhizobius nigrovarius Lea, 1908: 204.

Diagnosis. R. nigrovarius resembles most closely R. alphabeticus and R. occidentalis, by the body size, shape and colouration, but R. nigrovarius differs from these species by strongly reduced or absent wings, the antennae distinctly shorter than head width, the antennomere III more elongate and the terminal antennomere transverse.

Description. Length 1.65--1.68 mm; TL/EW = 1.46--1.50; PL/PW = 0.51--0.52; EL/EW = 1.09--1.13.

Body (Figs 858, 859, 861) elongate oval, moderately convex, wingless or strongly brachypterous. Head and pronotum along middle dark brown; pronotal margins yellowish; elytra reddish or yellowish with dark brown or blackish fasciae pattern; ventral surfaces dark brown with hypomera epipleura, legs and antennae yellowish. Dorsum with moderately long and uniform pubescence; dorsal pubescence forming wavy pattern on elytra.

Head (Figs 860, 864) withdrawn into prothorax but with eyes partially visible externally; ventral antennal grooves long, straight, reaching distinctly behind eyes. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; ocular canthus extending slightly into eye; interocular distance 0.6
times as wide as head across eyes; interfacetal setae indistinct. Antenna (Fig. 867) 0.85 times as long as head capsule width, 11-segmented; scape 1.8 times as long as pedicel; pedicel distinctly narrower than scape. 1.45–1.50 times as long as wide; antennomere III 3.5 times longer than scape, and at least 3 times longer than IV; antennomere IV shorter than V; antennomeres VI and VII quadrate. Antennal club 3-segmented, with penultimate segment asymmetrical; penultimate antennomere distinctly longer than terminal segment; terminal antennomere transverse, apically truncate. Anterior clypeal margin straight. Labrum rounded apically. Maxillary cardo (Fig. 860) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpmere 1.6 times as long as wide, parallel-sided. Mentum strongly transverse, at least 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe-like impression; prementum transverse; ligula parallel-sided; labial palp separated by distance at least 1.5 times broader than width of palpgere; apical palpmere about as long and as broad as penultimate one; submentum distinct.

Pronotum (Figs 863, 864, 866, 868) with anterior angles scarcely produced, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and without clear border at least along part of its length; hind margin with entire border line. Prothoracic hypomeron smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process (Fig. 862) as broad as longest coxal diameter, its surface smooth, without carinae; prosternum in front of coxa at least 0.9 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with complete bordering line, close to the cavity.

Anterior edge of mesoventrite (Fig. 862) with complete raised border; mesoventral process at median length of coxa 1.35 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction forming a straight line. Scutellum (Fig. 863) triangular, transverse; surface punctate and setose. Elytra (Fig. 858) with lateral margins very narrow but entirely visible from above; surface with single size punctures, elytral epipleuron obsolete in apical half (Figs 859, 872), 1.7 times as wide as corresponding metaepisternum, inner margin with border area narrow throughout and border line fading before base of elytron. Metaventrite with partially incomplete discrinen; metaventral postcoxal lines (Fig. 862) joined medially forming straight line, laterally complete and recurved; metaepisternum with externall process interlocking with fovea on elytron (Fig. 870); metaepimeron distinct, visible ventrally; metendosternite stalk distinctly shorter than broad.

Legs with trochanters angulatedly produced (Figs 862, 872); mid and hind tibia without visible spurs (Figs 865, 869); protarsal claws in male appendiculate; hind tarsal claw in male with subquadrate basal tooth.

Abdomen (Figs 871, 872) with 5 ventrites in female, and 6 ventrites in male; ventrite I 1.45–1.50 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, posteriorly reaches about half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin widely truncate; female ventrite VI (Fig. 1699) of male ventrite VI end of IX with central part more very narrow and rod- submembraneous.

Male genitalia well developed, simply setose, arising about a guide with an additional terminal stylus (?); pedicle

Female genitalia: style apparently without thecal accessory gland.

Material examined: type, 10470, Yas. King: paratypes, same data and type, which is indicated “Rhizobius nigrovarius” lean from MacLeay M. Cototype, Tasmania/Tas.

Note. The lecotypy, taxonomic status of this species.

Distribution. Australia.

Rhizobius nitidus Blackw.
Rhizobius plebeius Blackw.

Diagnosis. R. nitidus has more elongate body, than as IV with hind margin.

Description. Length EL/EW = 1.12–1.17.

Body (Fig. 873) tennae, tarsi and legs rather long and uniform.

Head (Fig. 873) externally, 0.75 times length of head; canthus extending s...
ventrite VI (Fig. 1699) with hind margin rounded, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1698), tergite VIII subtruncate apically. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half very narrow and rod-like towards apex, and base of spiculum widened and partially submembranous.

Male genitalia (Figs 1695–1697). Parameres articulated with phallobase, well developed, simple and separated, about 0.8 times as long as penis guide, densely setose along about half of its length, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; terminal strut simple; penis base with outer arm absent.

Female genitalia (Fig. 1700). Proctiger (T10) reduced, small, submembranous; styli apparently absent; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

Material examined. Types. Lectotype (here designated), "Rhizobius nigrovarius Lea, type, 10470, Tas. King L nigrovarius Lea, type, King L/S.A Museum specimen (SAM); paralectotypes, same data as lectotype (3: SAM – mounted on the same card with the lectotype, which is indicated by Lea as TY); same data as lectotype but no. J.11639 (2: SAM); "Rhizobius nigrovarius Lea, cotype, King Island/ King L, Tas., Lea/ Paratype/ on permanent loan from MacLean Museum, University of Sydney (2: ANIC); "Rhizobius nigrovarius Lea cotype, Tasmania/ Tasmania/ Paratype” (2: ANIC).

Note. The lectotype of Rhizobius nigrovarius Lea, 1908 is designated to stabilize the taxonomic status of this species.

Distribution. Australia: Tasmania (King Island).

*Rhizobius nitidus* Blackburn (Figs 873–880, 1701–1706)

*Rhizobius nitidus* Blackburn, 1889: 206.

*Rhizobius plebeius* Blackburn, 1892b: 257. Syn. nov.

Diagnosis. *R. nitidus* closely resembles *R. boothi*, but can be separated from it in having more elongate body, the antennomere III more elongate, the female ventrite V about as long as IV with hind margin straight and smooth, and the parameres shorter than penis guide.

Description. Length 1.75–2.07 mm; TL/EW = 1.51–1.52; PL/PW = 0.52–0.53; EL/EW = 1.12–1.17.

Body (Fig. 873) elongate oval, moderately convex, winged; reddish brown; antennae, tarsi and labial, and maxillary palpi sometimes paler. Dorsum with moderately long and uniform pubescence, forming weak wavy pattern on elytra. Head (Fig. 875) withdrawn into prothorax but with eyes partially visible externally, 0.75 times as long as wide; ventral antennal grooves long, straight, reaching distinctly behind eyes; corpotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; ocular canthus extending slightly into eye; interocular distance nearly 0.6 times as wide
as head across eyes; interfacetal setae absent. Antenna (Fig. 874) 0.85 times as long as head capsule width, 11-segmented; scape 1.35 times as long as pedicel; pedicel distinctly narrower than scape, 1.75 times as long as wide; antennomere III 4.15 times longer than wide, and at least 3 times longer than IV; antennomeres VI and VII at most weakly elongate. Antennal club 3-segmented, with penultimate segment asymmetrical; penultimate antennomere distinctly longer than terminal segment; terminal antennomere transverse, apically truncate. Anterior clypeal margin straight. Labrum rounded apically. Maxillary cardo (Fig. 875) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.50–1.65 times as long as wide, weakly expanded apically. Mentum transverse, less than 2 times broader than long; anterior margin weakly arcuate; ventral surface with horseshoe-like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpgier; apical palpomere about as long and as broad as penultimate one; submentum distinct.

Pronotum with anterior angles scarcely produced anteriorly, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and without clear border at least along part of its length; hind margin with border line not reaching lateral margins. Prothoracic hypomeron (Fig. 876) smooth, without groove or concavity; notosternal suture obscure; prosternal process (Fig. 876) 0.9 times as broad as longest coxal diameter, its surface with short separate carinae at most extending slightly forward beyond prosternal process; prosternum in front of coxa 0.75 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 877) with complete raised border; mesoventral process at median length of coxa 1.25 times as broad as corresponding coxal diameter; meso-metaventrital articulation with suture visible; junction forming straight line, without internal knob. Scutellum pentagonal, at least as long as broad; surface punctate and setose. Elytra with lateral margin distinctly but entirely visible from above; surface with single size punctures, elytral epipleuron incomplete apically only (Fig. 873), 1.8 times as wide as corresponding metaposternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite with partially incomplete discernment; metaventral postcoxal lines (Fig. 877) joined medically forming straight line, laterally complete and recurved; metaposternum with external process interlocking with fovea on elytron; metapleuromeron indistinct; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters angulately produced (Figs 877, 880); mid and hind tibia without visible spurs (Figs 878, 879); protarsal claws in male appendiculate; hind tarsal claws in male with subquadrate basal tooth; tarsal claws in female simple or swollen.

Abdomen (Fig. 875) as long as ventrites medially; complete, posterior about as long as ventrite VII, smooth and simple. Ventrite VII (Fig. 1705) with median central seta; median marginal setae short and pinhead-like inverted.

Male genitalia well developed, style setae 2–3 cteni at base of style. Genital plate with central structure simple.

Female genitalia unknown; styli strong, enclosing the spermatheca.

Material examined: Blackburn type. Thelocosa nitidus Blk., Cotyla lignana, Lincoln Blackburn.

Lectotypy (hereby designated): coll. 1910-236 (NHM), bele (1: BPBM).

Note. The lectotype is from Blackburn, 1892 area.


Distribution. Australia.
Abdomen (Fig. 880) with 6 ventrites in both sexes; ventrite I 1.4–1.5 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, posteriorly reaches about half length of ventrite I; ventrite V in female about as long as IV, with hind margin straight and smooth; ventrite V in male smooth and simply setose, hind margin deeply emarginate; female ventrite VI (Fig. 1705) with hind margin arcuate, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1704), tergite VIII truncate apically. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half narrow and rod-like towards apex, and base of epicircle sclerotized rod, divided into inverted V.

Male genitalia (Figs 1701–1703). Parameres articulated with phallobase, well developed, simple and separated, about 0.8 times as long as penis guide, densely setose along almost half of its length, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; terminal strut simple; penis base with outer arm obsolete.

Female genitalia (Fig. 1706). Proctiger (T10) reduced, small, submembranous; styli strongly reduced and hardly visible; infundibulum sclerotized, tube-like, occluding the sperm duct; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and rami, spermathecal accessory gland adjacent to sperm duct.

Material examined. Types. Lectotype (here designated), male “Rhizobius nitidus Blackburn/ type/T 764/ Blackburn coll. 1910-236 (NHM); paralectotype, female “Rhizobius nitidus Blackburn, Cotype, J. 9794, 764, S. Australia/ Rhizobius nitidus Blackb. co-type/ Port Lincoln Blackburn/ S A. Museum specimen (SAM).

Lectotype (here designated), male “Rhizobius plebeius Blackburn/ type/T Blackburn coll. 1910-236 (NHM); paralectotype, male “Rhizobius plebeius Blackburn/ Australia, Koebele (1: BPBM).

Note. The lectotypes of Rhizobius nitidus Blackburn, 1889 and Rhizobius plebeius Blackburn, 1892 are designated to fix the taxonomic status of these species.

Other material. Queensland: 24.24S 149.23E, Repulse Ck., 23 km, NE Bauhinia Downs, 22-23.IV.1981, A. Calder (1: ANIC); 17.7 km N of Mt. Molloy, Station Ck. 420.7 m, 21.XII.1970, J.G. Brooks (1: ANIC), New South Wales: Sydney, 28.II.1965, exs. Dr. J. Balogh (1: NHNM, 1: MIZ); 39.40S 151.16E, 1902.XI.2000, Sydney: Ingleside, Katandra, Buskland Sanctuary, 159 m, leg A. Podulassy (1: NHNM); Australian Capital Territory, Deakin, 19.II.1973, E.B. Britton (1: ANIC); Black Mtn. Reserve, 23.X.70, on flowers, S. Missko (3: ANIC, 2: MIZ, 1 completely dissected); same but 3.XIII.1 (1: ANIC); 35.16S 149.06E, Black Mt., 29.VII.1899, C. Reid, beating bushes (1: ANIC, 1: MIZ), Victoria, Warrandyte, 17.II.25, G.F. Hill (3: ANIC); same but 19.II.1 (1: ANIC, 1 completely dissected: MIZ); Port Campbell, 24.VI.1966, G.W. Anderson (1: ANIC); South Australia, F.W. Ferguson, Rhizobius, id. By A.M. Lea (1: ANIC); 32.44S 134.94E, Pookera, 22-23.X.1977, J.F. Lawrence (1: ANIC); Kaiser-Stuhl Cons. Pk., 10 km S Tamunda, 14.V.1986, C. Reid, open Euc./Acacia (1: ANIC).

Distribution. Australia: New South Wales, Australian Capital Territory, Victoria, South Australia.
Rhizobius noctuabundus Lea
(Figs 891–903, 1707–1712)

Rhizobius noctuabundus Lea, 1914: 454.

Diagnosis. R. noctuabundus resembles most closely R. similis, especially by the body shape and colouration but R. noctuabundus is more elongate, has well developed hind wings, the prosternal process narrower and with carinae joined roundly just before prosternal margin, and the male abdominal ventricle V narrowly truncate at apex. R. noctuabundus is also similar to R. insipidus by the body size and shape, but can be separated from it by having the body dark reddish brown and the elytra with weak fasciate pattern, the prosternal carinae roundly joined just before prosternal anterior margin and the antennomere III more elongate.

Description. Length 2.25–2.90 mm; TL/EW = 1.50–1.52; PL/PW = 0.55–0.60; EL/EW = 1.14–1.17.

Body (Figs 891, 892, 895) elongate oval, moderately convex, winged; dark reddish brown; elytra darker, usually except for humeri and apical part along suture, which are the same colour as rest of body. Dorsum with pubescence consisting of appressed setae and sparse darker stiff bristles along margins; dorsal pubescence forming weak wavy pattern on elytra.

Head (Figs 893, 898) withdrawn into prothorax but with eyes partially visible externally, 0.72–0.77 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; corpotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; oculoan facial distance extending slightly into eye; interocular distance 0.51–0.53 times as wide as head across eyes; interfacial setae indistinct. Antenna (Fig. 899) 0.85 times as long as head capsule width, 11-segmented; scape 1.75–1.80 times as long as pedicel; pedicel distinctly narrower than scape, 1.7–1.8 times as long as wide; antennomere III 3.6–3.8 times longer than wide and at least 3 times longer than IV; antennomere IV as long as V; antennomeres VI and VII at most weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere distinctly elongate, apically rounded. Anterior clypeal margin with weak, rounded lateral lobes. Labrum truncate at apex. Maxillary cardo (Fig. 893) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 2.0–2.2 times as long as wide, subparallel-sided. Mentum strongly transverse, at least 2 times broader than long; anterior margin arcuate; ventral surface with horseshoe like impression; prementum transverse; ligula parallel-sided; labial palps separated by distance at least 1.5 times broader than width of palpiger; apical palpmere about as long and as broad as penultimate one; submentum indistinct.

Pronotum (Figs 894, 898) with anterior angles rounded, scarcely produced anteriorly, not swollen but with distinct groove near angles; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 899) with broad, concave area along anterior half of prothoracic lateral margin at least 0.6 times longer than wide, joined as long as wide, continuing angulating and narrowing medially.

Antennal process diameter equal to diameter of coxal cavity from above, not extending beyond inner coxal margins, intercoxal lines oblique, extending laterally from coxal lines (Fig. 895), base of elytron (Figs 896–898) broad; tendons narrow.

Legs with a single spur (Fig. 897) on each hind tarsus, claws in male without incision.

Abdomen long as ventral surface, deep, plicate, parallel-sided; V in female and male longer than wide, segment VI in male smaller than wide, segment V in male smaller than wide; segments VI and VII in male slightly rounded; hind coxae weakly rounded; hind coxae of male sternites III and VII widened.

Male genitalia well developed, covered with small apical symmetrical teeth.

Female genitalicia: styli terminalis elongate, scent gland and ramus short.

Material examined. J. 3439: noctuabundus as holotype (s)
lateral margin; notosternal suture distinct, simple; prosternal process (Fig. 901) at least 0.6 times as broad as longest coxal diameter, its surface with carinae convergent, joined roundly just before prosternal margin; prosternum in front of coxa 0.55 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as arcuate line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with bordering line distinctly incomplete anteromedially.

Anterior edge of mesoventrite with complete raised border; mesoventral process at median length of coxa 0.95 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction somewhat angular posteriorly, without internal knob. Scutellum triangular (Fig. 896), transverse; surface punctate and setose. Elytra (Fig. 891) with lateral margins hardly visible from above; surface (Fig. 896) with single size punctures, elyral epipleuron obsolete in apical half (Figs 892, 903), 1.1 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fusing before base of elytron. Metaventrite with discriment complete; metaventral postcoxal lines (Fig. 901) distinctly separated at middle, complete and weakly descending laterally, metaepisternum with external process interlocking with fovea on elytron (Fig. 897); metaepimeron indistinct; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae, legs with trochanters angulely produced (Fig. 903); mid and hind tibia with single spur (Fig. 900); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male and claws in female simple or weakly swollen.

Abdomen (Figs 902, 903) with 5 ventrites in both sexes; ventrite I 1.8 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete; deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin only with median part narrowly truncate; female ventrite VI (Fig. 1712) with hind margin subtruncate, tergite VIII rounded; hind margin of male ventrite VI weakly emarginate (Fig. 1710), tergite VIII weakly rounded to subtruncate. Sternite IX with central part membranous; apodeme of male sternum IX with its apex broad, plate-like, and base of spiculum weakly widened.

Male genitalia (Figs 1707–1709). Parameres articulated with phallobase, well developed, simple and separated, about as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout, terminal strut simple; penis base with outer arm obsolete.

Female genitalia (Fig. 1711). Proctiger (T10) reduced, small, submembranous; styli terminal; infundibulum absent; spermatheca small, without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

Material examined. Types. Holotype, "Rhizobius noctuabundus Lea, type. S. Australia. 6. 3439/ noctuabundus Lea type. Hamilton Bore, Oodnadatta (SAM); paratypes, same data as holotype (5: SAM — mounted on the same card with holotype, which is indicated by Lea
as TY); “Rhizobius noctuabundus” Lea, cotype, 17772/ Cunnamulla, Q. H. Hardecastle/ cotype (4: SAM); “Rhizobius noctuabundus” Lea, Co-type/ South Australia, Blackburn/ Cotype/ S. Australia 1915-380/ Far.” (3: NHM); “Rhizobius noctuabundus” Lea, cotype, S. Australia/ Murray R., S.A., S.H. Cope/ on permanent loan from MacLeay museum, University of Sydney/ Paratype” (S: ANIC).


at light, Britton, Miss.
G.W. Anderson (3: ANIC); Hattah Lakes, 34.50S 142.34E, 7.3 km S of Oceania NP, III.1953, riverine scrub (1: ANIC); Kinchega N.P., 141.42E 39.42S Goolsby, ANIC [10 copies No. ANIC], 33.1914.224.32 (1: ANIC); J.C. Cardale (1: ANIC); R.S. Hogan (1: ANIC); W of Coonarrobah, J.G. Brooks, Bequest (1: ANIC); At light, J.A.L. Watson, 151.51E, 20.XI.1968, of Charleville, 21.X.1968, Baumhitas Downs, 22.X.1968; Bachilha, 4.X.1994, F.R. Ward, 26.X.1966, light trap (1: ANIC) 26 km W by S of Bond, New South Wales, Q.

Distribution. Australia. New South Wales, Q.

Rhizobius nubilus W.

Diagnosis. The body is typical of R. nigrovianus and R. obtusus, having the mid and hind tibiae converging and flaring forward before descending, and the antennae hooking forward.

Description. Length 6.5-7.0 mm, coloration greenish-brown. Head: pronotal disc and elytra tinted with red, forming a wavy pattern.

Distribution. Australia: Western Australia, Northern Territory, South Australia, Victoria, New South Wales, Queensland.

Rhizobius nubilus Weise
(Figs 904-916, 1409-1411)

Rhizobius nubilus Weise. 1908: 229.

Diagnosis. The body size, shape and colouration make this species most similar to R. nigrovarius and R. occidentalis. R. nubilus, however, differs from both these species by having the mid and hind tibia with single spur, the prosternal carina short, convergent anteriorly and fanning forward beyond procoxal cavities, the metaventral postcoxal lines complete and descending, and the abdominal postcoxal lines reaching beyond half length of ventrite I.

Description. Length 2.15 mm; TL/EW = 1.72; PL/PW = 0.53; EL/EW = 1.25.

Body (Figs 904, 905) elongate oval, moderately convex, winged; predominantly yellowish brown; ventral surfaces of meso-, metaventre and abdomen blackish; pronotal disc and elytra may be infuscate. Dorsum with double pubescence consisting of appressed setae and sparse dark stiff bristles along margins; dorsal pubescence forming wavy pattern on elytra.

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Head (Figs 907, 910) dorsally exposed; ventral antennal grooves indistinct. Eyes dorsally less than 0.5 times length of head capsule, with inner orbit arcuate, closest at middle; ocular canthus extending slightly into eye; interocular distance 0.55 times as wide as head across eyes; interfacetal setae absent. Antenna (Fig. 906) about as long as head capsule width, 11-segmented; scape 1.80–1.85 times as long as pedicel; pedicel distinctly narrower than scape, 1.45 times as long as wide; antennomere III 2.75 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV shorter than V; antennomeres VI and VII weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere shorter than terminal segment; terminal antennomere subquadratc, apically rounded. Anterior clypeal margin straight. Labrum rounded at apex. Maxillary cardo (Fig. 907) weakly transverse with outer angle not reaching outside of mouth cavity; terminal palpmere 1.3 times as long as wide, weakly expanded apically. Mentum transverse, less than 2 times broader than long; anterior margin truncate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpi; apical palpmere about as long and as broad as penultimate one; submentum distinct.

Pronotum (Figs 910, 912, 913) with anterior angles obtuse, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and without clear border; hind margin with border line not reaching lateral margins. Prothoracic hypomeron smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process (Fig. 908) 0.85–0.90 times as broad as long; coxal diameter, its surface with short, convergent anteriorly, separate carinae, extending slightly forward procoxal cavities; prosternum in front of coxa nearly 0.6 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line, much more posterior than anterior pronotal margin; procoxal cavity transverse, with complete bordering line, close to the cavity.

Anterior edge of mesoventrite (Fig. 908) with complete raised border; mesoventral process at median length of coxa about as broad as corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction weakly arcuate posteriorly. Scutellum (Fig. 913) triangular, transverse; surface punctate and setose. Elytra (Fig. 904) with lateral margins very narrow hardly visible from above along apical half; surface (Fig. 913) with single size punctures, elytral epipleuron incomplete apically, 1.85 times as wide as corresponding metaepisternum, inner margin with border area very narrow and border line fading before base of elytron. Metaventrite with complete discrimen; metaventral postcoxal lines (Fig. 908) joined medially forming straight line, laterally complete and descending; metaepisternum with external process interlocking with fovea on elytron (Fig. 909); metaepimeron indistinct.

Legs with trochanters simple (Figs 908, 916); mid and hind tibia with single spur (Figs 911, 915); tarsal claws in male with large subquadratc basal tooth (Fig. 914).

Abdomen (Fig. 916) with 6 ventrites in male; ventrite I 1.10–1.15 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, poststernal row smooth and simple.

Dorsum of elytron VI (Fig. 1410) central part more than 1.5 times length of spiculum width.

Male abdomen: reduced; narrow, simple stipes; peltigerous throughout.

 Females not known.

Material examined: 1 males from Auckland. Syntype.
grooves indistinct. Antennae (Fig. 906) distal 1.85 times as long as wide; antennal suture 1.5-1.5 times as long as IV; antennal segments I and II elongate. Antennal segment I subpenultimate antennomere quadrate, apically rounded. Maxillary cardo broad, surrounded by mouth cavity; labium quadrate, apically rounded. Mentum and ventral surface of mesothorax quadrate, ventral surface smooth, broadly separated; ligula paraboloid, teeth of palpiger; apical margin of mentum distinct.

Female not studied.

Material examined. Types. Lectotype (here designated), male "Rhzobius nubilus m/Auckland/ Syntypus Rhzobius nubilus Weise, 1908, labeled by MNHUB 2008/ (NHB). Paralctotype, "Rhzobius nubilus m/ Type/ Auckland NZ/ Andrews Bequest. B.M. 1922-2211 (1: NHM)."

Note. The lectotype of Rhzobius nubilus Weise, 1908 is designated to stabilize the taxonomic status of this species.

Distribution: New Zealand.

Rhzobius occidentalis Blackburn (Figs 881-890, 1713-1718)

Rhzobius occidentalis Blackburn, 1889: 207.

Diagnosis. The body size, shape and colouration make this species most similar to R. nigrovarius and R. alphabeticus. R. occidentalis, however, differs from both these species by having the antennae distinctly longer than head width, the antennomeres VI and VII at least 1.5 times longer than wide and the pronotum with border line along base not reaching lateral margins. Additionally it differs from R. alphabeticus by having long ventral antennal grooves on the head and from R. nigrovarius by having elongate terminal antennomere.

Description. Length 1.90-2.05 mm; TL/EW = 1.45-1.53; PL/PW = 0.52-0.54; EL/EW = 1.10-1.17.

Body elongate oval, moderately convex, winged; predominantly yellow; pronotal disc and ventral surfaces infuscate; each elytron often with brownish subscutal band and three spots near suture; anterior one rounded touching anterior margin of elytra and sutural stripe; middle one, smallest, round, may be connected with sutural stripe; preapical one (at about fifth of apical length), somewhat "v" shaped, reaches suture - both preapical maculae may look like one, common "v" shaped macula; disc of each elytron may additionally bear a few, poorly marked, dark spots (infuscations). Dorsum with double pubescence consisting of appressed setae and sparse darker stiff bristles along margins; dorsal pubescence forming wavy pattern on elytra.

Head (Figs 881-883) withdrawn into prothorax but with eyes partially visible externally, about 0.8 times as long as wide; ventral antennal grooves long, straight,
reaching distinctly behind eyes; corpotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; ocular canthus extending slightly into eye; interocular distance at least 0.6 times as wide as head across eyes; interfacetal setae absent. Antenna 1.2 times as long as head capsule width, 11-segmented; scape 1.8–2.0 times as long as pedicel; pedicel distinctly narrower than scape, 1.35 times as long as wide; antennomere III 3 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII at least 1.5 times longer than broad. Antennal club 3-segmented, with penultimate segment asymmetrical; penultimate antennomere as long as terminal segment; terminal antennomere distinctly elongate, truncate at apex. Anterior clypeal margin straight. Labrum truncate at apex. Maxillary cardo (Fig. 883) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpmere 1.7 times as long as wide, weakly expanded apically. Mentum strongly transverse, at least 2 times broader than long; anterior margin emarginate: ventral surface with horseshoe-like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpiger: apical palpmere about as long and as broad as penultimate one; submentum distinct.

**Pronotum** (Figs 881, 884) with anterior angles obtuse, not swollen with regular border; anterior margin without border; lateral margin slightly turned and without clear border at least along part of its length; hind margin with border line not reaching lateral margins. Prothoracic hypomeron (Fig. 883) smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process 0.85 times as broad as longest coxal diameter, its surface smooth, without carinae; prosternum in front of coxa at least 0.65 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with complete bordering line, close to the cavity.

**Anterior edge of mesoventrite** (Fig. 886) with complete raised border; mesoventral process at median length of coxa 1.15 times as broad as corresponding coxal diameter; meso- metaventrite articulation with suture visible; junction forming a straight line, with internal knob. Scutellum triangular, transverse; surface punctate and setose. Elytra (Figs 885, 887) with lateral margins very narrow but entirely visible from above; surface with single size punctures, elytral epipleuron obsolete in apical half, 2 times as wide as corresponding metaepisternum, inner margin with border area narrow throughout and border line fading before base of elytron. Metaventrite with partially incomplete discrimen; metasternal postcoxal lines (Fig. 886) joined medially forming straight line, laterally complete and recurved; metaepisternum with external process interlocking with fovea on elytron; metaepimeron distinct, visible ventrally; metendosternite stalk distinctly shorter than broad; tendons separated by slightly less than width of stalk and placed on laminae.

**Legs** with trochanters simple; mid and hind tibia without visible spurs (Figs 889, 890); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with large triangular basal tooth; tarsal claws in female with large quadrate basal tooth.

**Abdomen** 1.45 times as broad, curved and tapering of ventrite I to smooth and emarginate; VIII to subtruncate, IX rounded, X spiculate; XI distinctly transverse, XII spiculate.

**Male genitalia** slender, apex covered with symmetrical, yellow, nonglossate, spatulate lobe, distinctly separated.

**Material examined** 3 males, 3 females, from 17.XI.1969, by Briton (1, A.116.49E, 10.XI.1969, by Briton (1, A.116.57E, 16.V. 85735 (1).

**Distribution** endemic to New Zealand.

**Diagnosis.** elytra with well-defined pale yellow streaks.

**Description.** EL/EW = 1.15.

**Body** (Fig. 884) brown; brown; brown; brown; brown; brown.

**Abdominal segments** smooth, with well-defined pale yellow streaks; forming chain; and glabrous.
Abdomen (Fig. 888) with 6 ventrites in male and 5 in female; ventrite I.1.40–1.45 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, shallow, posteriorly reaches distinctly less than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin deeply emarginate; female ventrite VI (Fig. 1718) with hind margin arcuate, tergite VIII subtruncate; hind margin of male ventrite VI deeply emarginate (Fig. 1716), tergite VIII truncate apically. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half very narrow and rod-like towards apex, and base of spiculum simple, narrow, rod-like.

Male genitalia (Figs 1713–1715). Parameres articulated with phallobase, slender, simple and separated, about 0.85 times as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm obsolete.

Female genitalia (Fig. 1717). Proctiger (T10) reduced, small, submembranous; styli terminal, infundibulum absent; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland distinctly separated from sperm duct.

Material examined. Types. Holotype, sex not studied "Rhizobius occidentalis Blackburn" type/T 1885, P Blackburn coll. 1910-236 (NHM).

Other material. Western Australia: K. G's Sound, C. Darwin, 87-42; Rhizobius occidentalis Bl. id. by A.M. Lea (1: NHM); Lake Clifton, 22.II.1981, R.D. Pope, Paperbark & Lakea sp., R.D. Pope, B.M. 1981-447 (1: NHM); Walpole-Nornalup National park, 35 00 S 16.49 E, 10.XI.1969, by beating, E.B. Britton (1: ANIC); Serpentine Dam, 32 22 S 116 00 E, 17XI.1969, by beating, E.B. Britton (1: ANIC); same but Serpentine Falls (1: ANIC); 1 completely dissected: MIZ); Augusta, 34 19 S 115 10 E, 14 km WNW Foul Bay, 13.XI.1969, E.B. Britton (1: ANIC); Hamb. S-W. Australia, 1905, Stat. 110, Mongers Lake, 9, 13. u. 16 V. 85735 (1: NMB).

Distribution: Australia: Western Australia.

Rhizobius pelion sp. nov.
(Figs 931–944, 1725–1730, 1924)

Diagnosis. The body predominantly blackish, elongate and almost parallel sided, and elytra with weak violet shine are unique for R. pelion.

Description. Length 2.15–2.50 mm; TL/EW = 1.57–1.70; PL/PW = 0.52–0.64; EL/EW = 1.15–1.28.

Body (Figs 931, 932, 934, 1924) elongate and almost parallel-sided, flattened, winged; brownish black; antennae, mouthparts, trochanters, "knees", tarsi and sides of abdominal ventrites III–V yellowish brown or reddish brown. Dorsum covered with appressed setae and extremely sparse bristles along margins; elytral pubescence forming characteristic pattern (Fig. 1924) because of patches of almost impunctate (and glabrous) areas on elytra.
Head (Figs 933, 936) dorsally exposed. 0.75–0.80 times as long as wide; ventral antennal grooves long, straight, reaching distinctly behind eyes; corpotentorium present. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; ocular canthus extending slightly into eye; interocular distance 0.56–0.58 times as wide as head across eyes; interfacial setae indistinct. Antenna (Figs 935, 938) 1.15 times as long as head capsule width, 11-segmented; scape 1.55–1.65 times as long as pedicel; pedicel distinctly narrower than scape, 1.6–1.7 times as long as wide; antennomere III 2.70–2.85 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII subquadrate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere distinctly elongate, apically rounded. Anterior clypeal margin with weak, rounded lateral lobes. Labrum truncate at apex. Maxillary cardo (Fig. 933) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.43–1.45 times as long as wide, weakly expanded apically. M mentum transverse, less than 2 times broader than long; anterior margin weakly arcuate; ventral surface with horseshoe-like impression: prementum nearly as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpiger; apical palpomere as long and as broad as penultimate one; submental distinct.

Pronotum (Figs 936, 939, 942) with anterior angles rounded, scarcely produced anteriorly, not swollen with regular border; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron smooth, without groove or concavity: notosternal suture distinct, simple; prosternal process (Fig. 937) 0.6 times as broad as longest coxal diameter, its surface smooth, without carinae; prothorax in front of coxa 0.75 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with complete bordering line, close to the cavity.

Anterior edge of mesoventrite (Fig. 937) with complete raised border; mesoventral process at median length of coxa at least 0.8 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction weakly angulate posteriorly, without internal knob. Scutellum (Fig. 942) triangular, transverse; surface punctate and setose. Elytra (Fig. 931) with lateral margins very narrow but entirely visible from above; surface (Fig. 942) with single size punctures, elytral epipleuron obsolete in apical half (Figs 932, 944), 1.2 times as wide as corresponding metaepimeron, inner margin with border widening towards elytral base and border line fading before base of elytron. Metaventrite with complete discimene; metaventral postcoxal lines (Fig. 937) distinctly separated at middle, complete and recurred; metaepimeron with external process interlocking with lovea on elytron (Fig. 940); metaepimeron distinct, visible ventrally; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.
Legs with trochanters simple (Figs 937, 944); mid and hind tibia with single spur (Fig. 943); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with subquadrature basal tooth; tarsal claws in female with small quadrature basal tooth.

Abdomen (Figs 941, 944) with 5 ventrites in both sexes; ventrite I 1.5 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, posteriorly reaches about half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin rounded; female ventrite VI (Fig. 1729) with hind margin rounded, tergite VIII rounded; hind margin of male ventrite VI weakly emarginate (Fig. 1728), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half widening towards and at apex, and base of spiculum weakly widened and partially submembranous.

Male genitalia (Figs 1725–1727). Parameres articulated with phallobase, well developed, simple and separated, about 1.2 times as long as penis guide, with apices covered with simple setae; penis guide with additional processes, with lateral sides symmetrical throughout; tegminal strut simple; penis base with outer arm obsolete.

Female genitalia (Fig. 1730). Proctiger (T10) distinct, at least partly sclerotized plate; styli strongly reduced and hardly visible; infundibulum absent; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

Material examined. Types. Holotype, male "41.505S 146.03E, TAS, Pelion Hut, 3 km S Mt. Oakleigh, 860 m, 26.XI-9.XI.1991, Smith, Thomas, closed forest maile #4/ ANIC database no. 25 030539" (ANIC).

Paratypes. Tasmania: same data as holotype (8: ANIC; 4: MIZ); same and F.I.T. ANIC 1195, closed forest/ANIC database no. 25 030540 (1: ANIC); same but 6.VI-22.VIII.1991, M. Comfort/ANIC database no. 25 030541 (1: ANIC); same but 22.VIII-26.IX.1991 (3: ANIC); same but IV-V.1992, P. Greenslade, M. Comfort/ pyrethrin knockdown, log and tree roots, Nethofagus (3: ANIC); same but 7.III-9.IV.1991, E. Edwards, J. Berry, maile #5/ANIC database no 25 030536 (1: ANIC); same but 6.XI.1990, W.E.B.S., maile #1 (1: ANIC); same but 9.XI-21.XI.1991, I. Naumann, G. Clarke, F.I.T. #1/ F.I.T., ANIC 1199, closed forest (1: ANIC); same but III.1991, I. Naumann, crepuscular sweeping/ANIC database no 25 030544 (1: ANIC); "42.53S 147.14E, TAS, Mt. Wellington, 900 m, 5.II.1992, C. Reid, waterfall below peak, beating bushes" (1: ANIC; 1: MIZ); "41.21S 147.40E, TAS, Ben Ridge Rd., 5.2 km, E Telopea Rd., 870 m, 16.1-11.11.1993, 913, A. Newton, M. Thayer/ Noth. cunn. Rainf., FMHD #93-40, ex window trap" (2: ANIC); "41.35S 145.56E, TAS, Cradle Mtn., Camp Ground, 880 m, 15.XI.1989, pyrethrin knockdown tree 1, Site 170 and 171, H. Mitchell" (2: ANIC; 2: MIZ); same but tube 174 (1: ANIC); same but tube 313, R. Coy (1: ANIC); "42.105S 146.07E, 4 km, SSE of Mt. Rufus 800 m, TAS, 26.28.I.1980, Lawrence & Weir (1: ANIC; 1: MIZ); "42.43S 146.29E, 2 km ENE of Tim Shea, 600 m, TAS, 1.II.1980, Lawrence & Weir (1: ANIC); "Mt. Barrow, 1.100 m, 2.II.1975, on tea tree flowers, E. & S. Britton (2: ANIC; 2: MIZ); "42.39S 146.34E, Mt. Field NP Twilight Tarn, 1000

Etymology. The name of this species is formed from Pelion Hut, the locality where the holotype was collected.

Distribution. Australia: Tasmania.

Rhyzobius popei sp. nov. (Figs 1076–1084, 1737–1741, 1932)

Diagnosis. The body size combined with colouration of the dorsum makes this species similar to R. ventralis, but the ventral antennal grooves on the head long and circular bent towards outer margin of eye, the prothoracic hypomeron smooth and the mid and hind tibia without spurs separate easily R. popei from R. ventralis.

Description. Length 2.85–3.95 mm; TL/EW = 1.41–1.47; PL/PW = 0.51–0.53; EL/EW = 1.05–1.10. Body (Figs 1076–1078, 1932) elongate oval, moderately convex, winged; black with tarsi, antennae, mouthparts (sometimes only terminal palpomeres or even only their apices), sides of abdominal ventrites I–III and ventrites IV–V yellowish brown; teneral individuals have dorsum dark brown and ventral surface yellow with head including its appendages, tibial, femoral and epimera infuscate. Dorsum with double pubescence consisting of appressed setae and sparse darker stiff bristles distinct along margins; dorsal pubescence forming weak wavy pattern on elytra.
Head (Figs 1081, 1082) dorsally exposed, 0.76–0.80 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; corporotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocular canthus extending slightly into eye; interocular distance 0.53–0.54 times as wide as head across eyes; interfacial setae distinct. Antenna (Fig. 1080) 0.65–0.70 times as long as head capsule width, 11-segmented; scape 1.9–2.0 times as long as pedicel; pedicel distinctly narrower than scape, 1.3–1.4 times as long as wide; antennomere III 2.85–2.90 times longer than wide, and about 1.5–2.5 times as long as IV; antennomeres IV as long as V; antennomeres VI and VII at most weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere distinctly elongate, apically rounded. Anterior clypeal margin with weak, rounded lateral lobes. Labrum truncate at apex. Maxillary cardo (Fig. 1081) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.2–1.3 times as long as wide, parallel-sided. Mentum strongly transverse, at least 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe-like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance at least 1.5 times broader than width of palpiger; apical palpomere as long and as broad as penultimate one; submentum indistinct.

Pronotum (Figs 1082, 1083) with anterior angles rounded, weakly produced anteriorly, not swollen with regular border; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process (Fig. 1077) 0.45 times as broad as longest coxal diameter, its surface with subparallel, complete, separate carinae; prosternum in front of coxa 0.6 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite with complete raised border; meso-ventral process at median length of coxa 0.9 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; arcuate posteriorly, without internal knob. Scutellum triangular, at least as long as broad; surface punctate and setose. Elytra (Fig. 1076) with lateral margins very narrow but entirely visible from above; surface with single size punctures, elytral epipleuron incomplete apically only (Fig. 1077), 2.75 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite with partially incomplete discernmen; metaventral postcoxal lines distinctly separated at middle, complete and recurved; metaepisternum with external process interlocking with fovea on elytron; metaepimeron indistinct; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.
Legs with trochanters angulately produced (Fig. 1077); mid and hind tibia without visible spurs (Fig. 1079); pro- and mid tarsal claws in male appendicate; hind tarsal claws in male with subquadrate basal tooth; tarsal claws in female swollen at base.

Abdomen (Figs 1077, 1084) with 5 ventrites in both sexes; ventrite I 1.30–1.35 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin only with median part narrowly truncate; female ventrite VI (Fig. 1740) with hind margin rounded to scarcely truncate at apex, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1739), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX widened at apex and at base.

Male genitalia (Figs 1737, 1738). Parameres articulated with phallobase, well developed, simple and separated, about 1.3 times as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm distinctly less developed than inner arm.

Female genitalia (Fig. 1741). Proctiger (T10) reduced, small, submembranous; styli absent; infundibulum absent; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

Material examined. Types. Holotype, male. Australian Capital Territory "35.22S 148.50E, ACT, Blundells Ck, 3 km E of Piccadilly Circus, 850 m, II.1984, Weir, Lawrence, Johnson/flight intercept window-trough trap" (ANIC).

Paratypes: same data as holotype (14: ANIC; 8: MIZ, 2 dissected on slide).

Etymology. The name of this species is dedicated to Robert D. Pope (formerly NHM) who devoted many years of his life to study ladybird beetles.

Distribution. Australia: Australian Capital Territory.

*Rhyzobius pseudopulcher* sp. nov.
(Figs 958–972, 1742–1747, 1933)

Diagnosis. This species closely resembles *R. pulcher*, but is distinguished from it by having the body more oval, antennomere IV as long as V, five abdominal ventrites in both sexes, the male ventrite V with only median part narrowly truncate, the aedeagus much shorter, and coxites with reduced styli.

Description. Length 1.60–1.85 mm; TL/EW = 1.44–1.47; PL/PW = 0.45–0.48; EL/EW = 1.10–1.13.

Body (Figs 958, 959, 961, 1933) broadly oval, moderately convex, winged. Elytra reddish or yellowish with dark brown or black fasciae pattern (Fig. 1933); ventral surface dark brown with hypomera, epipleura and legs yellowish brown; antenna yellow, forming wide fan.

Head (Fig. 1076) externally, not incrassate, reaching distal length of head; antennal shaft extending across eyes as head does not distinctly longer than segments segments; antenna not straight. Labrum angle reached as long as width; pronotal disc straight and distance about 0.5 length of penultimate antennal segment.

Pronotum weakly produced, without bore in middle part of prothoracic friend, and distinct, simple, smooth, subquadrate in diameter, its length about 1.5 times as long as pronotal disc width; posterior margin, produced to the cavity.

Anterior mesoventral coxal lines coxal lines extending straight from surface punctured, generally entirely visible, incomplete anterior to cusp distal of mesosternum, discus men, mesally complete, fovea on elytra.
antenna yellowish brown. Dorsum with moderately long and uniform pubescence, forming wavy pattern on elytra.

Head (Figs 960, 962) withdrawn into prothorax but with eyes partially visible externally, 0.7 times as long as wide; ventral antennal grooves long, straight, reaching distinctly behind eyes; corpotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; ocular canthus extending slightly into eye; interocular distance 0.59–0.60 times as wide as head across eyes; interfacial setae absent. Antenna (Fig. 966) 0.75–0.80 times as long as head capsule width, 11-segmented; scape 1.4 times as long as pedicel; pedicel distinctly narrower than scape, 1.6 times as long as wide; antennomere III 3.1 times longer than wide, and at least 3 times longer than IV; antennomere IV as long as V; antennomeres VI and VII quadrate. Antennal club 3-segmented, with penultimate segment asymmetrical; penultimate antennomere distinctly longer than terminal segment; terminal antennomere transverse, truncate at apex. Anterior clypeal margin straight. Labrum truncate at apex. Maxillary cardo (Fig. 960) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpmere 1.35–1.50 times as long as wide, subparallel-sided. Mentum transverse, less than 2 times broader than long; anterior margin emarginate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpiger; apical palpmere as long and as broad as penultimate one; submentum distinct.

Pronotum (Figs 962, 964, 965, 967) with anterior angles rounded, very weakly produced anteriorly, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and without clear border at least along part of its length; hind margin with border line not reaching lateral margins. Prothoracic hypomeron smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process (Fig. 972) 0.75 times as broad as longest coxal diameter, its surface smooth, without carinae; pronotum in front of coxa 0.65 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with complete bordering line, close to the cavity.

Anterior edge of mesoventrite (Fig. 972) with complete raised border; mesoventral process at median length of coxa 1.4 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction forming a straight line, with internal knob. Scutellum (Fig. 964) triangular, transverse; surface punctate and setose. Elytra (Fig. 958) with lateral margins very narrow but entirely visible from above; surface with single size punctures, elytral epipleuron incomplete apically only (Figs 959, 971), 1.65 times as wide as corresponding metapisternum, inner margin without border. Metaventrite with partially incomplete discrimes; metaventral postcoxal lines joined medially forming straight line, laterally complete and straight; metapisternum with external process interlocking with fovea on elytron (Fig. 963); metaepimeron distinct, visible ventrally; metendostere-
nite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters angulately produced (Figs 971, 972); mid and hind tibia with visible spurs (Figs 968, 969); protarsal claws in male appendiculate; mid tarsal claws in male with large triangular basal tooth; hind tarsal claws in male and claves in female with small quadrate basal tooth.

Abdomen (Figs 970, 971) with 5 ventrites in both sexes; ventrite I 1.3 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, posteriorly reaches about half length of ventrite I; ventrite V in female longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin only with median part narrowly truncate to scarcely emarginate; female ventrite VI (Fig. 1747) with hind margin rounded, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1743), tergite VIII subtruncate apically. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half very narrow and rod-like towards apex, and base of scipulium widened and partially submembranous.

Male genitalia (Figs 1742, 1744, 1745). Parameres articulated with phallobase, well developed, simple and separated, about as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmnal strut simple; penis base with outer arm absent.

Female genitalia (Fig. 1746). Proctiger (T10) reduced, small, submembranous; styli strongly reduced and hardly visible; infundibulum absent; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.


Paratypes: New South Wales: same data as holotype (3: ANIC; 2: MIZ); "26 km E Yarraman, 16.XI.1986, NSW, C. Reid, philodinous Acacia" (2: ANIC; 1: MIZ); "1 km W Barregarby. 27.IX.1986, C. Reid, on Ac. melanoxylon flwr.:
(2: ANIC; 1: MIZ); "35 30S 150 18E, Kiloo SF, 15 km NE Batemen's Bay, NSW, IV.1987, M.G. Robinson, ex sticky trap" (1: ANIC; 1: MIZ); "3 km SW of Bilpin, 2.XII.1984, NSW, C. Reid, on Acacia pararumattensis, a road verge (2: MIZ); "34.44S 150.32E, Kangaroo Valley, NSW, N. slope, 22.1.1971, S. Misko, G. Pullen" (1: ANIC); "2 km NW Durras North NSW, 16 km NE Bateman's Bay, Kiloo S.F., 3.III.1986, C. Reid; beating bushes, mainly Acacia mabella" (1: ANIC); "Nowra, NSW, 34.53S 150.36E, 119 km S of, on Nerriga-Nowra rd., 191.1971, woodlands, S. Misko & K. Pullen" (1: ANIC); "35.08S 150.02E, Corang River, NSW, on road to Nerriga, 20.1.1971, S. Misko & K. Pullen" (1: ANIC); "Pigeon House Mt, NSW, XL.1992, C. Reid, beating flwr., above carpark" (1: ANIC); "Mebbin St. For., NSW, 18 km W of Uki, 23-24.XI.1982, J. Doyen" (1: ANIC); "5 km N Harrington, NSW, 14.IX.1983, G. Williams, Acacia-Banksia assoc." (1: ANIC); "NSW, Belanglo State Forest, 34.31S 150.13E, 18.VIII.1990/ on non-flowering shrub, Tom Gush collection 2358" (1: ANIC); "Platypus Flat, Wild Cattle Cr., SF, NSW, 16.XI.1982, J. Doyen" (1: ANIC); Australian Capital Ter-

Epilachna punctidorsalis

Exopleurae? p. 657

Epilachna punctidorsalis

Rhizobius punctidorsalis

Rhizobius punctidorsalis

Rhizobius punctidorsalis

Diagnosis: Body dark brown to black, body darker, than sides; head rather large; single spur, the second segment minute and the following very small.

Description: EL/EW = 1.0

Body (Fig. 1742) almost cylindrical, dark brown to black, slightly shiny, covered with smooth, short, indistinct setae, with a distinct pattern on elytra.
Ritzhobius pulchellus (Montrouzier)  
(Figs 1159–1173, 1748–1754)

Epilachna pulchella Montrouzier, 1861: 306.  
Epilachna pulchella: Crotch, 1874: 90.

Ritzhobius pulchellus: Fauvel, 1903: 321 (part).  
Ritzhobius submetallica Crotch 1874: 298.  
Ritzhobius debilis Blackburn, 1889: 201.  
Ritzhobius coerules Blackburn, 1892b: 256. Incorrectly printed name.

Ritzhobius coerulescens: Blackburn, 1893: 140.  

**Diagnosis.** This species is most similar to *R. unicolor*, but differs from it by having the body darker, the pronotum with regular lateral border, the mid and hind tibia provided with single spur, the male ventricle V smooth and simply setose, the female ventricle VI arcuate apically and the female genitalia with distinct infundibulum.

**Description.** Length 2.00–3.10 mm; TL/EW = 1.38–1.40; PL/PW = 0.49–0.51; EL/EW = 1.05–1.07.

**Body** (Figs 1159, 1160, 1162) broadly oval, moderately convex, winged; brown, dark brown to blackish brown; dorsal surface often somewhat infuscate; elytra usually with small, weakly defined, common for both elytra, blackish spot placed in mid length; mouthparts, antennae and tarsi often paler than rest of body. Dorsum with double pubescence consisting of appressed setae and sparse darker stiff bristles distinct especially along margins; dorsal pubescence forming very weak wavy pattern on elytra.

Etymology. The name of this new species refers to its extreme overall similarity to *R. pulcher*.

**Distribution.** Australia: New South Wales, Australian Capital Territory, Queensland, Victoria.
Head (Figs 1161, 1164) withdrawn into prothorax but with eyes partially visible externally, 0.74–0.77 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; corpoteritnorum absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocular canthus extending slightly into eye; interocular distance 0.51–0.53 times as wide as head across eyes; interfacial setae indistinct. Antenna (Fig. 1165) 0.70–0.75 times as long as head capsule width, 11-segmented; scape 1.6–1.8 times as long as pedicel; pedicel distinctly narrower than scape, 1.3–1.4 times as long as wide; antennomere III 2.8–3.0 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII at most weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter; terminal antennomere distinctly elongate, apically rounded. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum truncate at apex. Maxillary cardo (Fig. 1161) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.50–1.55 times as long as wide, weakly expanded apically. Mentum strongly transverse, at least 2 times broader than long; anterior margin arcuate; ventral surface with horse-shoe like impression; prementum about as long as broad; ligula parallel-sided, labial palps separated by distance at least 1.5 times broader than width of palpig; apical palpomere as long and as broad as penultimate one; submentum distinct.

Pronotum (Figs 1163, 1164, 1167) with anterior angles rounded, weakly produced anteriorly, not swollen with regular border; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 1168) with at least short, somewhat crescent shaped groove perpendicular to notosternal suture; notosternal suture distinct, simple; prosternal process (Fig. 1168) 0.65 times as broad as longest coxal diameter, its surface with complete, subparallel, separate carinae; prosternum in front of coxa about 0.5 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 1168) with complete raised border; mesoventral process at median length of coxa as broad as corresponding coxal diameter; meso-metaventitine articulation with suture obscure; junction arcuate or somewhat angulate posteriorly, without internal knob. Scutellum triangular, transverse; surface punctate and setose. Elytra (Fig. 1159) with lateral margins very narrow but entirely visible from above; surface (Fig. 1169) with single size punctures, elytral epipleuron obsolesc in apical half (Figs 1160, 1171). 1.8 times as wide as corresponding metapleisternum, inner margin with border area widening towards elytra base and border line fading before base of elytron. Metaventrite with complete discrinen; metaventral postcoxal lines distinctly separated at middle, complete and recurred; metapleisternum with external process interlocking with fovea on elytron (Fig. 1166); metapleisternum indistinct; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs as long as body, with similar segments. Hind tarsus 7-segmented.

Abdomen elongate, as long as body, segmented.
Legs with trochanters angulusantly produced (Figs 1168, 1171); mid and hind tibia with single spur (Figs 1172, 1173); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male and claws in female with quadrate basal tooth.

Abdomen (Figs 1170, 1171) with 5 ventrites in both sexes; ventrite I 1.3 times as long as ventrite II: abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin only with median part narrowly truncate; female ventrite VI (Fig. 1753) with hind margin rounded, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1752), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half very narrow and rod-like towards apex, and base of spiculum weakly widened and with a pair of small sclerites.

Male genitalia (Figs 1748–1751). Parameres articulated with phallobase, well developed, simple and separated, as long as penis guide or slightly shorter, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm distinctly less developed than inner arm.

Female genitalia (Fig. 1754). Proctiger (T10) reduced, small, submembranous; styli small, terminal; infundibulum sclerotized, tube-like, enclosing the sperm duct with additional lateral arms; sperm duct simple, uniform in diameter; spermatheca with only nodulus developed, spermathecal accessory gland separated from sperm duct.


Holotype, male “Rhizob. submetallica, type. Crotch/ Holotype, Rhizobius submetallica Crotch 1874/ type/ Swan R.” (UMZC).


Lectotype (here designated), male “Rhizobius lindi Bbl., S. Australia, copy, J. 9780/ Rhizobius lindi Black, Port Lincoln, Blackburn/ 770” (SAM); paralectotypes, “Rhizobius lindi Black, Port Lincoln, Blackburn/ 770” (2: SAM); female “Rhizobius lindi Black, type/ T 770/ Blackburn coll. 1910-236” (1: NHM).

Lectotype (here designated), male “Rhyzobius coerules Blackburn/ type/ T 4499 Austral/ Blackburn coll. 1910-236” (NHM).

Note. The lectotypes of Epilachna pulchella Montrouzier, 1861, Rhizobius debilis Blackburn, 1889, Rhizobius lindi Black, 1889 and Rhizobius coerules Blackburn, 1893 are designated to fix the taxonomic status of these species.

Distribution. Australia: Queensland, New South Wales, Australian Capital Territory, Victoria, South Australia, Western Australia, Northern Territory, Tasmania; New Caledonia.

Rhyzobius pulcher Blackburn
(Figs 973–986. 1755–1760)

Rhyzobius pulcher Blackburn 1892a: 71.

Diagnosis. R. pulcher closely resembles R. pseudopulcher, but can be separated from it by having more elongate body, antennomere IV shorter than V, six abdominal ventrites in both sexes, the male ventrite V widely truncate, the aedeagus much longer, and coxites without styli.

Description. Length 1.40–1.90 mm; TL/EW = 1.45–1.60; PL/PW = 0.51–0.52; EL/EW = 1.18–1.23.

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Body (Figs 973, 974, 976) elongate oval, moderately convex, winged; predominantly yellow or light brown; ventral surface of head, except for mouthparts, prosternum, meso-, metaventrites, abdominal ventrites, coxae, trochanters and femora dark brown. Elytra with blackish brown, narrow sutural stripe, which extends laterally before mid length, forming diamond shaped macula, common for both elytra, and at apical fifth forming similarly shaped, although smaller and weakly defined macula; additionally each elytron bears long, somewhat curved inwardly stripe, running medially, not reaching any margin, and two or at least one very small, often poorly defined, round spot at base. Dorsum with moderately long and uniform pubescence, forming weak wavy pattern on elytra; elytral bristles apparently absent.

Head (Figs 975, 982) withdrawn into prothorax but with eyes partially visible externally, 0.7–0.8 times as long as wide; ventral antennal grooves long, straight, reaching distinctly behind eyes; corpotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; ocular canthbus extending slightly into eye; interocular distance 0.62–0.64 times as wide as head across eyes; interfacial setae indistinct. Antenna (Fig. 978) 0.75 times as long as head capsule width, 11-segmented; scape 1.25–1.35 times as long as pedicel; pedicel distinctly narrower than scape, 1.60–1.65 times as long as wide; antennomere III 2.95–3.10 times longer than wide, and at least 3 times longer than IV; antennomere IV shorter than V; antennomeres VI and VII quadrate. Antennal club 3-segmented, with penultimate segment asymmetrical; penultimate antennomere distinctly longer than terminal segment; terminal antennomere transverse, truncate at apex. Anterior clypeal margin straight. Labrum emarginate at apex. Maxillary cardo (Fig. 982) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.55 times as long as wide, subparallel-sided. Mentum transverse, less than 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpiger; apical palpomere as long and as broad as penultimate one; submentum distinct.

Pronotum (Figs 975, 979) with anterior angles obtuse, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and without clear border at least along part of its length; hind margin with border line not reaching lateral margins. Prothoracic hypomeron (Fig. 983) smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process (Fig. 980) nearly as broad as longest coxal diameter, its surface smooth, without carinæ; prosternum in front of coxa 0.75 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with complete bordering line, close to the cavity.

Anterior edge of mesoventrite (Fig. 980) with complete raised border; mesoventral process at median length of coxa 1.3 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction forming a straight line, with internal knob. Scutellum triangular, transverse; surface punctate and setose. Elytra (Fig. 973) with lateral margins very narrow but entirely visible from above ending in half (Fig. 974) with border of elytron curved; meso- metaventrite broad and curved; meta- metaventrite broad and curved.

Legs without visible in male with male leg bristles.

Abdomen as vermicular as posteriorly as IV, without visible in female with simply (Fig. 1760) with VI emarginate; braunon, appearing towards apex.

Male Parameres as long as 2.2 times as long as additional; penultimate simple; penis.

Female Plate as long as 2.2 times as long as additional; plate simple; plate.

Material:
Blackburn/ "Rhizobius pulcher" Blackburn 9708/ S.A. / pulcher is the
Note: This taxonomic note.
Other:
C. Reid (1997) K.J. Houston, Nat. 6-7 rajong. Height.
T. Gush. co
from above; surface with single size punctures, elytral epipleuron obsolete in apical half (Fig. 974), 1.5 times as wide as corresponding metaepisternum, inner margin with border widening towards elytral base and borderline fading before base of elytron (Fig. 977). Metaventrite with partially incomplete discrmen; metaventral postcoxal lines (Fig. 980) joined medially forming straight line, complete and recurved; metaepisternum with external process interlocking with fovea on elytron; metaepimeron distinct, visible ventrally; metendosternite stalk distinctly shorter than broad; tendons widely separated and placed near apices of arms.

Legs with trochanters anguistically produced (Fig. 980); mid and hind tibia without visible spurs (Fig. 981); protarsal claws in male appendiculate; mid tarsal claws in male with large triangular basal tooth; hind tarsal claws in male and claves in female with quadrate basal tooth.

**Abdomen** with 6 ventrites in both sexes; ventrite I 1.30–1.35 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, posteriorly reaches about half length of ventrite I; ventrite V in female about as long as IV, with hind margin arcuate and smooth (Fig. 985); ventrite V in male smooth and simply setose, hind margin widely truncate (Fig. 984); female ventrite VI (Fig. 1760) with hind margin arcuate, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1757), tergite VIII rounded. Sternite IX with central part membranous, apodeme of male sternum IX with its apical half very narrow and rod-like towards apex, and base of scipulum widened and partially submembranous.

**Male genitalia** (Figs 1755, 1756, 1758). Aedeagus very long and slender. Parameres articulated with phallobase, well developed, simple and separated, nearly as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental struts simple; penis base with both arms of almost equal length.

**Female genitalia** (Fig. 1759). Proctiger (T10) distinct, at least partly sclerotized plate; styli absent; infundibulum absent; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

**Material examined.** Types. Lectotype (here designated), female "Rhizobius pulcher" Blackburn/ type/ T-4213, Mulgoa/ Blackburn coll. 1910-236 (NHM); paratypes: female "Rhizobius pulcher" Blackburn/ Toowoomba/ Australia, Koebele" (1: BPBM); "Rhizobius pulcher" Black., cytotype/ Australia, Black's coll/ 4213/ Rhizobius pulcher Blk., cytotype, J. 9798/ S.A. Mus. specimen (1: SAM – mounted on the same card with *R. waterhousei*?; *R. pulcher* is the left specimen).

Note. The lectotype of *Rhizobius pulcher* Blackburn, 1892 is designated to stabilize the taxonomic status of this species.

**Other material.** Queensland: 15 km W Samford, nr. Mt. Glorious, 18-21 XI. 1986, C. Reid (1: ANIC); same but 4 km E Mt. Mowbullan (1: ANIC); Mt. Glorious, 24. X. 1978, K.J. Houston, edge rainforest (1: ANIC); 26.52S 151.34E, nr. Westcott Plain, Bunya Mts Nat. Pk. 6-7.X. 1984, I. Naumann, J. Cardale, ex ethanol (1: ANIC); New South Wales: Kurrajong Heights, 33.31S 150.37E, 23. XII. 1990, Tom Gush. flowering Accacia parraimattensis, T. Gush coll. 2655 (2: ANIC; 1: MIZ); 35.35S 149.55E, Monga, 10. III. 1978, Lawrence &
Weir, by beating (1: ANIC); 5 km S Monga. 14.III.1987, C. Reid, on *Eucryphi a moorei* (1: ANIC); Cabbage Tree Ck., c. 22 km NW Bateman’s Bay, 3.II.1986, C. Reid, on *Acacia trachycalyx* (2: ANIC, 1: MIZ); Cabbage Tree Ck., 5.1.1966, B. Musik (2: ANIC, 1: MIZ); Cabbage Tree Ck., Canberra-Coast road, 21.II.1969, Casuarina, Britton, Misko, Simmons (2: ANIC); 32.075 151.29E, Allyn Riv. For. Park, rubbish tip, Top Rd., 5.IV.1993, C. Reid, on *Acacia* (2: ANIC); 26 km E Yarraman, 16.XI.1986, C. Reid, phyllodinous *Acacia* (1: ANIC); Kilco SF 10 km SW Kilco, 13.V.1987. S. Rosario (1: ANIC); 35.21S 149.44E, 13 km N NW of Braidwood, 6.XI.1981, M.S. Upton coll. (1: ANIC, 1: MIZ); Tooloom, Beary SF, 17.XI.1986, C. Reid, ex. *Ac. irrorata* (1: ANIC); Sydney, 28.II.1965, exp., Dr. J. Bologh (1: HNHM); Blue Mountains, Jenolan Caves, 8.I.1999, leg. A. Podlussany (1: HNHM); *Victoria*: Mallacotta, 29.XI.1988, H. & A. Howden (1: CMN).

**Distribution:** Australia: Queensland, New South Wales, Victoria.

*Rhyzobius quadriramaculatus* sp. nov.
(Figs 999–1011, 1768–1773, 1935, 1936)

**Diagnosis.** This species is characterised by its black, small, elongate body, decorated with usually separated four yellow or orange spots on each elytron (Figs 1935, 1936).

**Description.** Length 1.63–1.83 mm; TL/EW = 1.63–1.65; PL/PW = 0.53–0.57; EL/EW = 1.21–1.28.

**Body** (Figs 999, 1000, 1002, 1935, 1936) elongate and almost parallel-sided, moderately convex, winged; blackish brown or black; each elytron with four roundish, light brown spots of moderate size, placed on disc, not reaching any margins or suture; in some individuals two or three or sometimes all these spots are fused forming one large band; sometimes another one, rather poorly defined, somewhat "v" shaped macula, covers apex of each elytron. Dorsum with rather short and uniform pubescence, not forming pattern on elytra; elytral bristles apparently absent.

**Head** (Figs 1001, 1004) dorsally exposed, 0.75–0.80 times as long as wide; ventral antennal grooves long, straight, reaching distinctly behind eyes. Eyes dorsally less than 0.5 times length of head capsule, with inner arcsuate, closest at middle; ocular canthus extending slightly into eye; interocular distance 0.65–0.66 times as wide as head across eyes; interfacial setae indistinct. Antenna (Fig. 1007) as long as head capsule width, 11-segmented; scape 1.62–1.65 times as long as pedicel; pedicel distinctly narrower than scape; 1.6–1.7 times as long as wide; antennomere III 3.00–3.15 times longer than width and about 1.5–1.7 times as long as IV; antennomere IV as long as V; antennomeres VI and VII at most weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere subquadrate, apically rounded. Anterior clypeal margin straight. Labrum truncate at apex. Maxillary cardo (Fig. 1001) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.45–1.55 times as long as wide, parallel-sided. Mentum transverse, less than 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula parallel longer; apical spine.

**Pronotum** with regular punctures and without fine veins. Prothoracic sternum entire, its surface bearing a long apically pointed as distinctly as bearing a long parallel...
ligula parallel-sided; labial palps separated by distance about equal to width of palpi-ger; apical palpomere as long and as broad as penultimate one; submentum distinct.

**Pronotum** (Figs 1004, 1006, 1010) with anterior angles obtuse, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and without clear border at least along part of its length; hind margin without border. Prothoracic hypomeron smooth, without groove or concavity; notosternal suture obscure; prosternal process (Fig. 1003) 0.75 times as broad as longest coxal diameter, its surface smooth, without carinae; prosternum in front of coxa about 0.75 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with complete bordering line, close to the cavity.

**Anterior edge of mesoventrite** (Fig. 1003) with complete raised border; mesoventral process at median length of coxa 1.2 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction forming a straight line, without internal knob. Scutellum triangular, transverse; surface punctate and setose. Elytra (Fig. 999) with lateral margins very narrow but entirely visible from above; surface (Fig. 1010) with single size punctures, elytral epipleuron incomplete apically only (Figs 1000, 1011), 1.1 times as wide as corresponding metaepisternum; inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite with partially incomplete discernmen; metaventral postcoxal lines (Fig. 1003) joined medially forming straight line, incomplete laterally; metaepisternum with external process interlocking with fovea on elytron (Fig. 1008); metaepimeron indistinct; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

**Legs** with trochanters simple (Figs 1003, 1011); mid and hind tibia without visible spurs (Figs 1005, 1009); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male and claws in female with subquadrate basal tooth.

**Abdomen** (Fig. 1011) with 5 ventrites in both sexes; ventrite I 1.40–1.45 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, posteriorly reaches about half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin rounded; female ventrite VI (Fig. 1772) with hind margin arcuate, tergite VIII rounded; hind margin of male ventricle VI emarginate (Fig. 1770), tergite VIII truncate at apex. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half weakly widening towards apex, and base of spiculum sclerotized, divided into inverted V.

**Male genitalia** (Figs 1768, 1769, 1771). Parameres articulated with phallobase, well developed, simple and separated, nearly as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm obsolete.

**Female genitalia** (Fig. 1773). Proctiger (T10) reduced, small, submembranous; stylis strongly reduced and hardly visible; infundibulum absent; sperm duct
simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to spermatheca.

**Material examined.** Types Holotype, male, "Tasmania, 41.50S 146.03E, Pelion Hut, 3 km S Mt. Oakleigh, 5-10.XI.1990, I.D. Naumann, (ANIC).

Paratypes: Tasmania: same data as holotype and rainforest" (3: ANIC; 2: MIZ); "41.50S 146.03E, TAS, Pelion Hut, 3 km S Mt. Oakleigh, 860 m, 26.IX.-9.XI.1991, Smith/Thomas closed forest, malaise #4" (4: ANIC; 2: MIZ); same but 13.II.-7.III.1991, I. Naumann, M. Horak, malaise #5, closed forest" (1: ANIC); same but 9-21.XI.1991, I. Naumann, G. Clarke, F.I.T. #1/ F.I.T ANIC 1199, closed forest (1: ANIC); same but 28-30.XI.1990. T. Weir, on grass and low vegetation/ ANIC database no. 25 030567 (2: ANIC); "42.41S 146.37E, Mt. Field NP, Lake Fenton, by dam 1000 m, 6.II.1992, C. Reid, Nothofagus gunni" (1: ANIC; 1: MIZ); "41.51S 146.03E, 4 km S Mt. Oakleigh, 880 m, 30.XI.1990-8.I.1991, E. Nielsen, E. Edwards, malaise #3, closed forest/ANIC database no. 25 030571 (1: ANIC); same but 7.XI.1990, W.E.B.S. closed forest, 880 m, malaise #3/ ANIC database no. 25 030572 (1: MIZ); same but 22.VIII-26.IX.1991, M. Comfort, 880 m, F.I.T. #2/ F.I.T., ANIC 1194; closed forest/ANIC database no. 25 030572.1 (1: ANIC); "41.52S 146.03E, 2 km NE by N Mt. Ossa, 13.II.-7.III.1991, I. Naumann, M. Horak, F.I.T. #3, 1000 m/ F.I.T., ANIC 1158, closed forest/ ANIC database no. 25 030569 (1: ANIC); same but 30.XI.1990-8.I.1991, E. Nielsen, T. Edrawdas, ANIC 1146, closed forest, litter #2/ ANIC database no. 25 030570 (1: ANIC).

**Etymology.** The species name refers to four pale maculae on each elytron.

**Distribution.** Australia: Tasmania.

**Rhyzobius reidi** sp. nov.

(Figs 1012–1025, 1774–1779, 1934)

**Diagnosis.** *R. reidi* can be separated from *R. leai* in having the mid and hind tibia with single spur, the antennomere III shorter and the prothoracic hypomeron with concavity but without additional groove. *R. reidi* also resembles *R. discoidalis* in dorsal colouration but differs from it in having less elongate body, the pronotal lateral margins clearly bordered, and deep abdominal postcoxal lines.

**Description.** Length 1.97–2.35 mm; TL/EW = 1.35–1.38; PL/PW = 0.49–0.51; EL/EW = 1.00–1.10.

Body (Figs 1012, 1013, 1017, 1934) broadly oval, strongly convex, hemispherical, winged. Dorsal surface blackish brown or black; elytra with common, large, oval, reddish brown macula extending from scutellum and fading just before apex; suture sometimes narrowly darker and along mid length may bear additional long-oval, dark macula, surrounded by coarse punctures. Ventral surface dark brown; antennae, palpi and legs (at least tarsi and tibiae) yellowish brown. Dorsum with double pubescence consisting of appressed setae and sparse stiff bristles; dorsal pubescence forming weak wavy pattern on elytra; elytral bristles present on entire dorsum but more distinct along margins.
Head (Figs 1014, 1025) entirely withdrawn into prothorax, 0.80–0.83 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; corporotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocular canthus extending slightly into eye; interocular distance 0.48–0.50 times as wide as head across eyes; interfacial setae absent. Antenna (Fig. 1015) 0.9 times as long as head capsule width, 11-segmented; scape almost 2 times as long as pedicel; pedicel distinctly narrower than scape, 1.45–1.50 times as long as wide; antennomere III 2.5–2.7 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII subquadrate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere distinctly elongate, rounded apically. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum rounded apically. Maxillary cardo (Fig. 1014) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpmere 1.35–1.55 times as long as wide, weakly expanded apically. Mentum transverse, less than 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpiger; apical palpmere as long and as broad as penultimate one; submentum broad converging anteriorly.

Pronotum (Figs 1018, 1019, 1022, 1025) with anterior angles rounded, weakly produced anteriorly, not swollen with regular border; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron with broad, concave area along anterior half of prothoracic lateral margin; notosternal suture distinct, simple; prosternal process (Fig. 1021) 0.65 times as broad as longest coxal diameter, its surface with carinae weakly convergent anteriorly, joined roundly just before prosternal margin; prosternum in front of coxa about 0.55 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as arcuate line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 1021) with complete raised border; mesoventral process at median length of coxa at least 1.5 times as broad as corresponding coxal diameter; meso-metaventral articulation with suture obscure; junction arcuate or somewhat angulate posteriorly, without internal knob. Scutellum (Fig. 1018) triangular, transverse; surface punctate and setose. Elytra (Fig. 1012) with lateral margins very narrow but entirely visible from above; surface with double size punctures, elytral epipleuron incomplete apically only (Figs 1013, 1023), 2.4 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line upturned outwardly near base of elytron. Metaventre with complete discrimen; metaventral postcoxal lines (Fig. 1021) distinctly separated at middle, complete and recurved; metaepisternum with external process interlocking with fovea on elytron; metaepimeron indistinct; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.
Legs with trochanters angulately produced (Figs 1021, 1024); mid and hind tibia with single spur (Fig. 1016); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male and claws in female with large subquadrate basal tooth.

Abdomen (Figs 1020, 1023, 1024) with 5 ventrites in both sexes; ventrite I 1.5 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin only with median part deeply emarginate; female ventrite VI (Fig. 1779) with hind margin arcuare, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1777), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX widened at apex and at base.

Male genitalia (Figs 1774–1776). Parameres articulated with phallobase, well developed, simple and separated, about as long as penis guide, densely setose along at least half of their length, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical; tegmental strut simple; penis base with outer arm less developed than inner arm.

Female genitalia (Fig. 1778). Proctiger (T10) distinct, at least partly sclerotized plate; styli terminal; infundibulum absent; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.


Paratypes: same data as holotype (1: ANIC, 1: MIZ); "Mt. Lewis, Queensland, 17 km W of Julatten, 914 m, 12.I.1982, J.T. Doyen" (2: ANIC, 1: MIZ); "16.32S 145.16E, 7 km before end Mt. Lewis Rd., 1050 m, 13.XI.1992, C. Reid, beating bushes & trees" (1: ANIC, 1: MIZ); "Mt. Lewis Rd., N.Q., 3000', 30.X.1966, E. Britton" (2: ANIC); "17.17S 145.37E, Lake Eacham NP, 10.IX.1992, C. Reid, on Ficus oblique etc. rainforest" (1: ANIC, 1: MIZ); "16.04S 145.26E, on ridge W Cape Tribulation, 600 m, 10.XI.1992, C. Reid, beating trees & shrubs" (1: ANIC); "16.04S 145.26E, end of ridge W Cape Trib, 760 m, C. Reid, 12.XI.1992, beating bushes & trees" (1: ANIC); "Mt. Lewis, 20 km SW Mossman, 1000 m, 26.VI.-1.VIII.1982, S. & J. Peck, SBP52/ flight intercept trap rainforest" (1: ANIC).

Etymology. This species is dedicated to Dr. Chris Reid (Australian Museum, Sydney), who collected most of the type series.


**Rhyzobius rodmani** sp. nov.
(Figs 1039–1053, 1780–1785, 1937)

Diagnosis. This species resembles most closely R. eminens and R. subhirterellus, but can be distinguished by absence of the hind wings, and the prostermal carinæ somewhat triangular. Moreover, the lack of metallic sheen on the elytra separates it from **R. eminens**.
**Description.** Length 1.73–1.87 mm; TL/EW = 1.28–1.38; PL/PW = 0.50–0.57; EL/EW = 0.88–1.00.

**Body** (Figs 1039, 1040, 1042, 1937) broadly oval, strongly convex, hemispherical, winglees. Dorsal surface of head, pronotum and legs (except for tarsi) light brown; elytra blackish. Ventral surfaces dark brown; mouthparts, antennae and tarsi usually paler – yellow or yellowish brown. Dorsum with double pubescence consisting of appressed setae and sparse dark stiff bristles; dorsal pubescence forming weak wavy pattern on elytra; elytral bristles present on entire dorsum.

**Head** (Figs 1041, 1045) withdrawn into prothorax but with eyes partially visible externally, 0.85 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; carpotheriotrium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocular canthus extending slightly into eye; interocular distance 0.55–0.56 times as wide as head across eyes; interfacial setae distinct. Antenna (Fig. 1043) 0.80–0.85 times as long as head capsule width, 11-segmented; scape 2 times as long as pedicel; pedicel distinctly narrower than scape, 1.45–1.55 times as long as wide; antennomere III 2.25 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII very short, transverse. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere subquadrate, rounded apically. Anterior clypeal margin distinctly emarginate with median area membraneous. Labrum truncate at apex. Maxillary cardo (Fig. 1051) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpmere 1.40–1.55 times as long as wide, subparallel-sided. Mentum transverse, less than 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe like impression; prementum as long as broad; ligula parallel-sided; labial palps separated by distance at least 1.5 times broader than width of palpiger; apical palpmere as long and as broad as penultimate one; submentum indistinct.

**Pronotum** (Figs 1045–1047) with anterior angles rounded, scarcely produced anteriorly, not swollen but with distinct groove near angles; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 1043) with broad, concave area along anterior half of prothoracic lateral margin; notosternal suture obscure; prosternal process (Fig. 1044) at least 0.6 times as broad as longest coxal diameter, its surface with carinae convergent, joined roundly just before prosternal margin; prosternum in front of coxa about 0.6 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as arcuate line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite with complete raised border; mesoventral process at median length of coxa as broad as corresponding coxal diameter; meso-metaventrearticulation with suture obscure; junction arcuate or somewhat angulate posteriorly. Scutellum (Fig. 1047) pentagonal, transverse; surface punctate and setose. Elytra (Fig. 1039) with lateral margins very narrow but entirely visible.
from above; surface (Fig. 1047) with double size punctures. elytral epipleuron incomplete apically only (Figs 1040, 1053), 2.5 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventral with partially incomplete discrimen; metaventral postcoxal lines (Fig. 1044) distinctly separated at middle, complete and recurred; metaepisternum with external process interlocking with fovea on elytron (Fig. 1048); metaeponerion indistinct; metendosternum stalk distinctly shorter than broad; tendons widely separated and placed near apices of arms.

Legs with trochanters angulately produced (Figs 1044, 1053); mid and hind tibia without visible spurs (Figs 1049, 1050); pro- and mid tarsal claws in male appendicate; hind tarsal claws in male and claws in female with subquadrate basal tooth.

Abdomen (Figs 1052, 1053) with 5 ventrites in both sexes; ventrite I 1.9 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male with admedian setose patches, hind margin only with median part narrowly truncate to scarcely emarginate; female ventrite VI (Fig. 1784) with hind margin rounded, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1783), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half widening towards and at apex, and base of epandum widened and with a pair of small sclerites.

Male genitalia (Figs 1780–1782). Parameres articulated with phallobase, well developed, simple and separated, about 1.35 times as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegminal strut simple; penis base with outer arm distinctly less developed than inner arm.

Female genitalia (Fig. 1785). Proctiger (T10) at least partly sclerotized plate; styli terminal; infundibulum sclerotized, tube-like, enclosing the sperm duct; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and radius; spermatheca accessory gland adjacent to sperm duct.

Material examined. Types. Holotype, male, "28.29S 152.23E, Beaury SF, New South Wales, c ± 700 m, 15-17.II.1983, T. Weir & A. Calder/ Beresate ANIC 778, closed forest" (ANIC).

Etymology. This species is dedicated to Dr. Jim Rodman of the National Science Foundation who has been instrumental in creation of the PEET program, and whose efforts have helped to increase the amount of funding for systematics by the the NSF.

Distribution. Australia: New South Wales, Queensland.

Rhyzobius secessus Blackburn
(Figs 1066–1075, 1798–1801)

Rhyzobius secessus Blackburn, 1896: 108.

Diagnosis. The short oval and moderately sized body with dorsum more or less uniformly brown and the elytra with very dense pubescence forming very distinct wavy pattern make this species most similar to R. dorsalis and R. speculifer. R. secessus is distinguished form both these species by having the pronotum with lateral margins regular without any grooves, the ventral antennal grooves short extending at most along inner margin of eye and the prothoracic hypomeron smooth. Moreover it differs from R. dorsalis by having hind and hind tibia with single spur, while from R. speculifer it differs by having the elytra finely and uniformly punctate.

Description. Length 3.10–3.15 mm; TL/EW = 1.40–1.42; PL/PW = 0.50–0.52; EL/EW = 1.10–1.12.

Body broadly oval, moderately convex, winged; predominantly light brown; lateral margins of pronotum and lateral, flattened margins of elytra weakly lighter; metaventrite and abdominal ventrites (both at least along middle) infuscate to blackish. Dorsum with double pubescence consisting of appressed setae and sparse darker stiff bristles; dorsal pubescence forming distinct wavy pattern on elytra; elytral bristles distinct along margins.

Head (Figs 1066, 1070) dorsally exposed; ventral antennal grooves short, straight, along inner margin of eye only. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocular canthus extending slightly into eye; interocular distance 0.54–0.56 times as wide as head across eyes; interfacetalt setae distinct. Antenna (Fig. 1073) 0.85 times as long as head capsule width, 11-segmented; scape 1.9 times as long as pedicel, pedicel distinctly narrower than scape, 1.2 times as long as wide; antennomere III 2.65 times longer than wide, and at least 3 times longer than IV; antennomere IV shorter than V; antennomeres VI and VII quadrated. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere subquadrate, apically rounded. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum emarginate at apex. Maxillary cardo (Fig. 1070) transverse with outer angle reaching slightly outside of mouth cavity, terminal palpmere 1.65 times as long as wide, weakly expanded apically. Mentum strongly transverse, at least 2 times broader than long, anterior margin arcuate; ventral surface with horseshoe like impression; prementum as long as broad; ligula parallel-sided; labial palps separated by distance
about equal to width of palpgier: apical palpomere as long and as broad as penultimate one; submentum distinct.

**Pronotum** (Fig. 1066) with anterior angles rounded, weakly produced anteriorly, not swollen with regular border; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 1071) smooth, without groove or concavity; notosternal suture obscure; prosternal process (Fig. 1071) 0.65 times as broad as longest coxal diameter, its surface with complete, separate carinae; prosternum in front of coxa 0.55 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

**Anterior edge of mesoventrite** (Fig. 1072) with complete raised border; mesoventral process at median length of coxa as broad as corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction arcuate posteriorly. Scutellum (Fig. 1075) triangular, transverse; surface punctate and setose.

**Elytra** (Figs 1067, 1068) with lateral margins very narrow but entirely visible from above; surface (Fig. 1075) with single size punctures, elytral epipleuron incomplete apically only (Fig. 1069), 1.8 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite with complete discernment; metaventral postcoxal lines (Fig. 1072) distinctly separated at middle, complete and recurved; metaepisternum with external process interlocking with fovea on elytron; metaepimeron indistinct.

**Legs** with trochanters angulately produced (Figs 1069, 1071, 1072); mid and hind tibia with single spur (Fig. 1074).

**Abdomen** with 5 ventrites in male; ventrite I 1.10–1.15 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in male smooth and simply setose, hind margin rounded; hind margin of male ventrite VI weakly emarginate (Fig. 1799), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half complex, somewhat widening towards apex, and base of spiculum widened.

**Male genitalia** (Figs 1798, 1800, 1801). Parameres articulated with phallobase, well developed, simple and separated, about 1.8 times longer penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegminal strut simple; penis base with outer arm distinctly less developed than inner arm.

**Female unknown.**

**Material examined.** Types. Lectotype (here designated), male “Rhizobius secessus Blkb., cotype, J 9776, Victoria/ Rhizobius secessus Blackbl./ Dividing Rge., V. Blackbl’s coll.” (SAM); parallectype, male, “Rhizobius secessus Blackbl. cotype/ Dividing Rge., V. Blackbl’s coll.” (SAM).

**Note.** The lectotype of *Rhizobius secessus* Blackburn, 1896 is designated to stabilize the taxonomic status of this species.

**Distribution.** Australia: Victoria.

**Distribution.** Australia: Victoria.
Rhyzobius similis sp. nov.
(Figs 1085–1098, 1806–1811, 1938)

Diagnosis. *R. similis* resembles *R. noctuabundus*, but can be distinguished from it by having less elongate body, the prosternal process broader and with carinae complete and separate, the male abdominal ventrite V rounded at apex and by a lack of hind wings.

Description. Length 2.20–2.50 mm; TL/EW = 1.45–1.48; PL/PW = 0.57–0.58; EL/EW = 1.00–1.10.

Body (Figs 1085, 1086, 1091, 1938) broadly oval, moderately convex, wings. Head, prothorax, background of elytra and elytral epipleura orange brown; each elytron with elongate dark brown macula of irregular shape, extending from base to near apex, not reaching lateral margins, apex or suture (except for area near scutellum). Ventral surfaces of meso-, metathorax and abdominal ventrites I–IV at least along middle, dark brown; sides of ventrites III–IV and ventrite V orange brown; mouthparts, antennae, legs (except for coxae) yellowish brown. Dorsal with double pubescence consisting of appressed setae and sparse dark stiff bristles along margins; dorsal pubescence forming wavy pattern on elytra.

Head (Figs 1087, 1094) dorsally exposed, 0.80–0.83 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; corpotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocular canthus extending slightly into eye; interocular distance 0.56–0.57 times as wide as head across eyes; interfacetal setae distinct. Antenna (Fig. 1090) about 0.75 times as long as head capsule width, 11–segmented; scape 1.60–1.65 times as long as pedicel; pedicel distinctly narrower than scape, 2 times as long as wide; antennomere III 3.2 times longer than wide, and at least 3 times longer than IV; antennomere IV as long as V; antennomeres VI and VII subquadrate. Antennal club 3–segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere elongate, truncate at apex. Anterior eyepleal margin with weak, rounded lateral lobes. Labrum emarginate at apex. Maxillary cardo (Fig. 1087) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.5 times as long as wide, subparallel–sided. Mentum strongly transverse, at least 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula parallel–sided; labial palp separated by distance equal to width of palpgere; apical palpomere as long and as broad as penultimate one; submentum distinct.

Pronotum (Figs 1092–1094) with anterior angles rounded, scarcely produced anteriorly, not swollen but with distinct groove near angles; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 1089) with broad, concave area along anterior half of prothoracic lateral margin; notosternal suture obscure; prosternal process (Fig. 1088) 0.8 times as broad as longest coxal diameter, its surface with complete, separate carinae; prosternum in front of coxa 0.65 times as long as coxal longitudinal diameter at the
same position; anterior margin continuing as weakly arcuate line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

**Anterior edge of mesoventrite (Fig. 1088)** with complete raised border; mesoventral process at median length of coxa 1.25 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction arcuate posteriorly, without internal knob. **Scutellum** triangular, transverse; surface punctate and setose. Elytra (Fig. 1085) with lateral margins very narrow but entirely visible from above; surface (Fig. 1096) with large size punctures, elytral epipleuron incomplete apically only (Fig. 1086, 1098), 2 times as wide as corresponding metaepisternum, inner margin with border area narrow throughout and border line fading before base of elytron. Metaventrite with complete suture; metaventral postcoxal lines (Fig. 1088) distinctly separated at middle, laterally complete and weakly descending; metaepisternum with external process interlocking with fovea on elytron; metaepimeron indistinct; metendosternite stalk distinctly shorter than broad; tendons widely separated and placed near apices of arms.

**Legs** with trochanters round or somewhat angulately produced (Figs 1088, 1098); mid and hind tibia with single spur (Fig. 1095); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with small quadrated basal tooth; tarsal claws in female simple or swollen.

**Abdomen** (Figs 1097, 1098) with 5 ventrites in both sexes; ventrite I 1.6 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin rounded; female ventrite VI (Fig. 1810) with hind margin weakly narrowly truncate, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1809), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half narrow and rod-like towards apex, and base of spiculum widened.

**Male genitalia** (Figs 1806–1808). Parameres articulated with phallobase, well developed, simple and separated, about 1.7 times longer than penis guide, densely setose along about half of their length, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegminal strut simple; penis base with outer arm obsolete.

**Female genitalia** (Fig. 1811). Proctiger (T10) reduced, small, submembranous; styli terminal; infundibulum absent; sperm duct simple, uniform in diameter, spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

**Material examined.** Types: **Holotype**, male, "SA, Monash, 3.I.1970, I.C. Taplin/ANIC Berlese No. 185, Mallee" (ANIC);

**Paratypes: South Australia.** same data as holotype (1: ANIC; 1 dissected on slide: MIZ); 27 km W Manangatang, 12.I.1979, R.W. Taylor/ANIC Berlese No. 183, Mallee" (2: ANIC; 1:..."

Etymology. Latin adjective similis means similar, and refers to superficial similarity of this new species to R. noctuabundus.

Distribution. Australia: Western Australia, South Australia, Victoria, New South Wales.

Rhyzobius sipinskii sp. nov.
(Figs 1099–1112, 1812–1817, 1939)

Diagnosis. This species can be distinguished from R. hirtellus in having more oval and more flattened body, the pronotum with black, rather transverse, medio-basal macula and the elytral bristles shorter.

Description. Length 3.00–3.60 mm; TL/EW = 1.38–1.41; PL/PW = 0.48–0.54; EL/EW = 1.07–1.10.

Body (Figs 1099, 1100, 1104, 1939) broadly oval, moderately convex, winged, predominantly light brown; base of pronotum medially black; elytra except for lateral, flattened margins along apical half, black; meso- and metaventrites sometimes weakly infuscate. Dorsum with double pubescence consisting of appressed setae and sparse darker stiff bristles; dorsal pubescence weak forming wavy pattern on elytra; elytral bristles distinct especially along margins.

Head (Figs 1101, 1107) withdrawn into prothorax but with eyes partially visible externally, about 0.75 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; corpotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocellar canthus extending slightly into eye; interocular distance 0.47–0.49 times as wide as head across eyes; interfaccetal setae distinct. Antenna (Fig. 1109) 0.85 times as long as head capsule width, 11-segmented; scape 2 times as long as pedicel; pedicel distinctly narrower than scape, 1.45 times as long as wide; antennomere III 3.1 times longer than wide, and at least 3 times longer than IV; antennomere IV as long as V; antennomeres VI and VII quadrate. Antennal club
3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere subquadrate, rounded apically. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum truncate at apex. Maxillary cardo (Fig. 1101) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.20–1.35 times as long as wide, weakly expanded apically. Mentum transverse, less than 2 times broader than long; anterior margin subtruncate; ventral surface with horseshoe like impression; prementum transverse; ligula parallel-sided; labial palps separated by distance about equal to width of palpiger; apical palpomere about as long and as broad as penultimate one; submentum indistinct.

**Pronotum** (Figs 1102, 1107, 1110) with anterior angles rounded, weakly produced anteriorly, not swollen with regular border; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 1109) with broad, concave area along anterior half of prothoracic lateral margin; notosternal suture distinct, simple; prosternal process (Fig. 1105) 0.55 times as broad as longest coxal diameter, its surface with carinae scarcely convergent, joined roundly just before prosternal margin; prosternum in front of coxa 0.65 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transversal, without visible bordering line.

**Anterior edge of mesoventrite** (Fig. 1105) with complete raised border; mesoventral process at median length of coxa 1.15 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; aruncate posteriorly, without internal knob. Scutellum (Fig. 1102) triangular, transverse; surface punctate and setose. Elytra (Fig. 1099) with lateral margins very narrow but entirely visible from above; surface (Fig. 1111) with double size punctures, elytral epipleuron incomplete apically only (Figs 1100, 1112), 2.4 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line upturned outwardly near base of elytron. Metaventrite with complete discernmen; metaventral postcoxal lines (Fig. 1105) distinctly separated at middle, complete and recurved; metaepisternum with externall process interlocking with fovea on elytron (Fig. 1103); metaepimeron indistinct; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

**Legs** with trochanters angulately produced (Figs 1105, 1112); mid and hind tibia with single spur (Figs 1106, 1108); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male and claws in female with small quadrate basal tooth.

**Abdomen** (Fig. 1112) with 5 ventrites in both sexes; ventrite I 1.35–1.40 times as long as ventrite II; abdominal postcoxal lines separate mediadly, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin rounded to narrowly, weakly truncate at apex; female ventrite VI (Fig. 1817) with hind margin arcuate, tergite VIII rounded; hind VIII rounded. Sternite IX with its apical half with with and with a pair of small.

**Male genitalia**: base, well developed, with apices coronae with lateral stridulae, outer arm divided into 3.

**Female**...nous; styli to two times spermatheca, with seta adjacent to sperm pores.

**Material examined**.

Wales, 9.VIII.1984, C. S. B.

**Paratypes**: New South Wales of *Esula axaroides* and *Esula sarmint* Harrington Tops SF, NSW; C. S. B.

**Etyymology.** The name *Esula* (ANIC).

**Distribution.** Australia.

**Rhizobius speculifer B.**

**Diagnosis.** This species has body size, shape, color, and these species by having almost impunctate, subequal by presence of single characters, and *R. rogersius* of almost impunctate, subequal by presence of single characters, and *R. rogersius*.

**Description.** Length EL/EW = 1.08–1.16.
tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1814), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half widening towards and at apex, and base of spiculum widened and with a pair of small sclerites.

**Male genitalia** (Figs 1812, 1813, 1815). Parameres articulated with phallobase, well developed, simple and separated, about 1.3 times longer than penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm distinctly less developed than inner arm.

**Female genitalia** (Fig. 1816). Proctiger (T10) reduced, small, submembranous; styli terminal; infundibulum absent; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

**Material examined.** Types. **Holotype**, male, "20 km ENE Nimmitabel, New South Wales, 9.VIII.1988, C. Reid, grass tufts, moss Leptospermum swamp" (ANIC).


**Etymology.** The name of this new species is dedicated to my friend Adam Ślipiński (ANIC).

**Distribution.** Australia: New South Wales.

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**Rhyzobius speculifer** Blackburn (Figs 1113–1125, 1818–1823)

**Rhyzobius speculifer** Blackburn, 1892b: 254.

**Diagnosis.** This species is most similar to *R. dorsalis*, *R. secessus* and *R. josephi*, in the body size, shape, colouration and pubescence. *R. speculifer*, however, can be separated from these species by having the elytra coarsely punctate with oval area along suture in mid length almost impunctate, surrounded with coarse puncture. From *R. dorsalis* it is distinguished by presence of single spur on mid and hind tibia and uniformly coloured elytra, and from *R. secessus* and *R. josephi* it is separated by having the pronotum with grooves near anterior angles. Additionally *R. speculifer* differs from *R. secessus* by the prothoracic hypomeron with distinct anterior concavity and long ventral antennal grooves circularly bent towards outer margin of eye. It also differs from *R. josephi* by having more oval body, the prosternal carinae complete and separated, and the male ventrite V rounded at apex.

**Description.** Length 2.50–3.00 mm; TL/EW = 1.38–1.40; PL/PW = 0.52–0.54; EL/EW = 1.08–1.11.
Body (Figs 1113, 1114, 1116) broadly oval, strongly convex, hemispherical, winged; predominantly dark brown brown, often with mouthparts, antennae and at least tarsi light brown. Dorsum with double pubescence consisting of appressed setae and sparse darker stiff bristles; dorsal pubescence forming wavy pattern on elytra; elytral bristles present on entire dorsum, but distinct especially along margins.

Head (Figs 1115, 1121) dorsally exposed, 0.75–0.77 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; corpotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocular canthus extending slightly into eye; interocular distance 0.50–0.53 times as wide as head across eyes; interfacetal setae distinct. Antenna (Fig. 1117) 0.85–0.90 times as long as head capsule width, 11-segmented; scape 2.0–2.1 times as long as pedicel; pedicel distinctly narrower than scape, 1.40–1.45 times longer than wide; antennomere III 3.20–3.45 times longer than wide, and at least 3 times longer than IV; antennomere IV as long as V; antennomeres VI and VII quadruple. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere distinctly elongate, rounded apically. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum rounded apically. Maxillary cardo (Fig. 1115) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.55–1.60 times as long as wide, weakly expanded apically. Mentum strongly transverse, at least 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpiger; apical palpomere as long and as broad as penultimate one; submentum indistinct.

Pronotum (Figs 1120–1122) with anterior angles rounded, not produced anteriorly, not swollen but with distinct groove near angles; anterior margin without border; lateral margin entire with border; hind margin without border. Prothoracic hypomeron (Fig. 1117) with broad, concave area along anterior half of prothoracic lateral margin; notosternal suture obscure; prosternal process (Fig. 1119) 0.75 times as broad as longest coxal diameter, its surface with complete, separate carinae; prosternum in front of coxa 0.5 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 1119) with complete raised border; mesoventral process at median length of coxa 1.3 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction arcuate or somewhat angulate posteriorly, without internal knob. Scutellum (Fig. 1123) pentagonal, transverse; surface punctate and setose. Elytra (Fig. 1113) with lateral margins very narrow but entirely visible from above; surface (Fig. 1123) with double size punctures, elytral epipleuron complete apically only (Figs 1114, 1125). 1.8 times as wide as corresponding metepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Meta-
ventrite with complete discrimen; metaventral postcoxal lines distinctly separated at middle, complete and recurved; metaepisternum with externall process interlocking with fovea on elytron (Fig. 1118); metaepimeron distinct, visible ventrally; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters angulously produced (Figs 1119, 1125); mid and hind tibia with single spur; pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male and claws in female with large subquadrate basal tooth.

Abdomen (Fig. 1125) with 5 ventrites in both sexes; ventrite I 1.1 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin rounded; female ventrite VI (Fig. 1822) with hind margin arcuate, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1820), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half broad and plate-like at apex, and base of scipulum widened.

Male genitalia (Figs 1818, 1819, 1821). Parameres articulated with phallus, well developed, simple and separated, about 1.4 times longer than penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm distinctly less developed than inner arm.

Female genitalia (Fig. 1823). Proctiger (T10) reduced, small, submembranous; styli terminal, infundibulum sclerotized, tube-like, enclosing the sperm duct; sperm duct simple, uniform in diameter; spermatheca strongly elongate, without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

Material examined. Types. Lectotype (here designated), sex not studied "Rhizobius speculifer Blackburn/Type/4338 Tooowoomba/Blackburn coll. 1910-236" (NHM); paralectotypes: "Rhizobius speculifer Bl., cotype, J. 9785, N.S. Wales/ Rhizobius speculifer Blackb., cotype/ N.S. Wales/ Blue Mts." (1: SAM); "Rhizobius speculifer Blackb./ Sydney, NSW, Koebel" (2: BPBM).

Note. The lectotype of Rhizobius speculifer Blackburn, 1892 is designated to stabilize the taxonomic status of this species.

Other material. Queensland: SE Q, Tambourine Mts 2-9.IV.1935. R.E. Turner, B.M. 1935-240 (1: NHM); same but 19.25, 26.V.1935 (1: NHM); Bunya Mts., 60 km NE Dally, 900 m, 17.VI.-19.VIII.1982, S. & J. Peck, SBP38, flight intercept trap, Araucaria forest (1: ANIC); Toowoomba, Eugenia/ Australia, Koebel (1: BPBM); New South Wales: Illawara, G.E. Bryant, 30.IX.08, G. Bryant coll. 1919-147 (1: NHM); Tuglo Res., 151.16E 32.14S, 30.XI.-1.XII.80, R.D. Pope, B.M. 1981-447 (11: NHM); 4 km W Bulli, 30.III.1990, C. Reid, on rainfor. shrub (1: ANIC); Mt. Kembla, X.1989, C. Reid, beating rainfor. bushes (1: ANIC); Kiloa S.F., rainforest, 4-5.III.1986, J. & N. Lawrence, beresate ANIC 1057, leaf and log litter (1: ANIC); 35.30S 150.18E, Kiloa SF, 15 km NE Batemans Bay, IV.1987, M.G. Robinson, ex sticky trap (1: ANIC); Clyde Mtn, 24 km SE of Braidwood, 31.VIII.1990, C. Reid, rainforest gully (1: ANIC; 1: MIZ); 30.10S 152.41E, Red Cedar FR, Wild Cattle Ck, SF,
Rhyzobius subhirtellus Lea, 1926
(Figs 1145–1158, 1830–1835)

**Rhyzobius subhirtellus** Lea, 1926: 286.

**Diagnosis.** This species resembles *R. eminus* and *R. rodmani*, especially by the body size, shape and colouration. *R. subhirtellus*, however, differs from both these species by having prosternal carinae subparallel. Moreover, lack of metallic sheen on the elytra separates it from *R. eminus*, and the well developed hind wings will separate it from *R. rodmani*.

**Description.** Length 1.90–2.40 mm; TL/EW = 1.30–1.37; PL/PW = 0.50–0.53; EL/EW = 1.00–1.08.

**Body** (Figs 1145, 1146, 1148) broadly oval, strongly convex, hemispherical, winged; predominantly dark brown; elytra dark chestnut brown; antennae, mouthparts and legs yellowish brown. Dorsum with double pubescence consisting of appressed setae and sparse dark stiff bristles; dorsal pubescence forming weak wavy pattern on elytra; elytral bristles present on entire dorsum.

**Head** (Figs 1149, 1153) withdrawn into prothorax but with eyes partially visible externally, 0.7 times as long as ventral; ventral antennal grooves distinctly circular bent towards outer margin of eye; corpotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner oblong lenses, closer near vertex than anteriorly; ocular canthus extending slightly into eye; interocular distance 0.54–0.55 times as wide as head across eyes; interfacial setae indistinct. Antenna (Fig. 1147) 0.65–0.70 times as long as head capsule width, 11-segmented; scape 1.8 times as long as pedicel; pedicel nearly 0.50 times length of antennal club; club 3.25 times longer than antennal scape.

**Antennae** as long as V or VI as long as V, or antennal club with two subterminal segments, the second segment shorter than terminal segment.

**Anterior clypeal region** truncate externally, slightly not reaching ocular canthus, the outer margins weakly expanded. **Prosternum** triangular in shape as well as width of palp; **submentum** as long as width of palp.

**Pronotum** produced anteriorly, the posterior margin sinuous without border. **Prothoracic hypomeron** with a deep groove perpendicular to the body axis, the groove being a process (Fig. 1156). **Carinae** subparallel, distance of coxa 0.6 times as wide as width of coxa, inner margin continuing into the inner marginal margin; **procoxae** as in *Rhyzobius rodmani*.

**Anterior edge of clypeus distinct, mesoventral portion of clypeus not notched; mesoventral portion clypeus smooth, without carinae or other groove.**

**Hind tibia** without visible subquadrate basal area.

**Abdomen** (Fig. 1151) as long as width of elytra, complete, the last abdominal segment being indistinguishable from the last abdominal segment, with middle sternites depressed and the sterna of VII exposed. **Subgenital plate** as in *Rhyzobius rodmani*.
as pedicel; pedicel about as broad as scape, 1.25 times as long as wide; antennomere III 2.85 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII quadrate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere subquadrate, rounded apically. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum truncate at apex. Maxillary cardo (Fig. 1153) quadrate to weakly transverse not reaching outside of mouth cavity; terminal palpomere 1.5 times as long as wide, weakly expanded apically. Mentum transverse, less than 2 times broader than long; anterior margin weakly arcuate; ventral surface with horseshoe like impression; prementum transverse; ligula reduced; labial palps separated by distance about equal to width of palpiger; apical palpomere about as long and as broad as penultimate one; submentum distinct.

Pronotum (Figs 1149, 1151, 1154) with anterior angles rounded, weakly produced anteriorly, not swollen but with distinct groove near angles; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 1147) with at least short, somewhat crescent shaped groove perpendicular to notosternal suture; notosternal suture obscure; prosternal process (Fig. 1156) 0.55 times as broad as longest coxal diameter, its surface with carinae subparallel, joined roundly just before prosternal margin; prosternum in front of coxa 0.6 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 1156) with complete raised border; mesoventral process at median length of coxa 1.1 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction arcuate or somewhat angulate posteriorly, without internal knob. Scutellum (Fig. 1151) triangular, transverse; surface punctate and setose. Elytra (Fig. 1145) with lateral margins very narrow but entirely visible from above; surface with single size punctures, elytral epipleuron incomplete apically only (Figs 1146, 1158), 1.7 times as wide as corresponding metapoststernum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite with complete discrmen; metaventral postcoxal lines (Fig. 1156) distinctly separated at middle, complete and recurved; metaepisternum with externall process interlocking with fovea on elytron (Fig. 1150); metaepimeron indistinct; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters angulateiy produced (Figs 1156, 1158); mid and hind tibia without visible spurs (Figs 1152, 1155); hind tarsal claws in male with small subquadrate basal tooth; tarsal claws in female simple or swollen.

Abdomen (Figs 1157, 1158) with 5 ventrites in both sexes; ventrite I 1.4–1.5 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep; posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth;
ventrite V in male with postero-median concavity covered with admedian setae, hind margin only with median part narrowly truncate to emarginate; female ventrite VI (Fig. 1834) with hind margin rounded, tergite VIII rounded; hind margin of male ventrite VI truncate (Fig. 1833), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX widening at apex, and base of speculum widened, partially submembranous and shallowly excised medially.

Male genitalia (Figs 1830–1832). Parameres articulated with phallobase, well developed, simple and separated, about 1.2 times longer than penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegminal strut simple; penis base with outer arm distinctly less developed than inner arm.

Female genitalia (Fig. 1835). Proctiger (T10) reduced, small, submembranous; styli strongly reduced and hardly visible; infundibulum in form of lightly scleritized piece of bursa; sperm duct short, simple, uniform in diameter; spermatheca without clear nodulus and ramus; spermathecal accessory gland adjacent to sperm duct.

Material examined. Types. Lectotype (here designated), male "Rhizobius subhirtellus" Lea, W. Australia, Type 20414/ co-type/ Swan R., Lea/ Garden I., W.A. Lea/ S. Aust. Museum specimen" (SAM); paratypes, female: same data as lectotype (1: SAM); "Rhizobius subhirtellus" Lea, type/ W. Australiaia subhirtellus Lea type, K.G.'s Sound/ Type, HT/ K.G.'s Sound, C. Darwin, 87-42" (2: NHM – one of them indicated by Lea's handwriting as TY – designation of the holotype was, however, never published).

Note. The lectotype of Rhizobius subhirtellus Lea, 1926 is designated to stabilize the taxonomic status of this species.

Other material. Western Australia: Serpentine Falls, 32.22S 116.00E, 17.XI.69 by beating, E.B. Britton (2: ANIC; 1: MIZ); Augusta, 34.19S 115.10E, 14 km, WNW- Foul Bay, 13.XI.69, E.B. Britton (1: ANIC); 6 mi, NNE of Denmark (34.57S 117.21E, 8.VI.69, E.B. Britton (1: ANIC); Rest Point, Walpole, 9.X.1970 D.H. Colless (2: ANIC; 1: MIZ); Valley of Giants Walpole, S.F. WA, 2.1.1986, C. Reid, gen. beating at picnic site (1: ANIC); 34.28S 115.58E, Warren N.P., 24.X-2.XI.84, J. & N. Lawrence, beating shrubs (2: ANIC); 33.48S 115.17E, Creek 8 km., N of Osmington, 15.XI.69, E. Britton (1: ANIC); 32.49S 116.05E 13 km., S by E Dwellingup, 3.X.1981, I.D. Naumann, J.C. Cardale (1: ANIC); 33.18S 123.23E Pine Hill, 18 km, NW by N of Mt. Ragged, 1.XI.1977, J. F. Lawrence, on Melaleuca flowers (1: ANIC); Carnac Island, 22.VI.1975, I. Abbott (2: ANIC; 1: MIZ).

Distribution. Australia: Western Australia.

**Rhizobius tasmanicus** sp. nov. (Figs 1187–1200, 1840–1845, 1940)

Diagnosis. This is a very distinctive species than can be separated from other species of Rhizobius by its colour pattern on the elytra – yellowish, longitudinal wavy stripes with various degrees of fusion and extensions, usually not reaching suture or lateral margins of elytra (Fig. 1940).
Description. Length 1.75–2.10 mm; TL/EW = 1.55–1.62; PL/PW = 0.52–0.55; EL/EW = 1.08–1.17.

Body (Figs. 1187, 1188, 1191, 11940) elongate oval, distinctly flattened, winged. Dorsal surface with head, pronotal disc and background of elytra blackish brown or almost black; lateral and anterior margins of pronotum yellowish brown; each elytron with complicated yellow pattern – three longitudinal wavy stripes with various degrees of fusion and extensions, usually not reaching suture or lateral margins of elytra; apex additionally pale. Ventral surface dark brown; pronotal hypomeron, elytral epipleura, antennae, mouthparts and legs (except for coxae and trochanters) yellowish brown. Dorsum covered with uniform pubescence forming distinct wavy patterns on elytra.

Head (Figs. 1189, 1192) withdrawn into prothorax but with eyes partially visible externally, 0.85–0.90 times as long as wide; ventral antennal grooves long, straight, reaching distinctly behind eyes; corpoterritorium present. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; ocular canthus extending slightly into eye, interspace nearly 0.6 times as wide as head across eyes; interfacetal setae distinct. Antenna (Fig. 1190) 0.95–1.00 times as long as head capsule width, 11-segmented; scape 1.6 times as long as pedicel; pedicel about as broad as scape, 1.35 times as long as wide; antennomere III 2.25 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV shorter than V; antennomeres VI and VII subquadrate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere subquadrate, truncate at apex. Anterior clypeal margin straight. Labrum emarginate at apex. Maxillary cardo (Fig. 1189) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.9 times as long as wide, weakly expanded apically. Mentum transverse, less than 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe-like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpiger; apical palpomere as long and as broad as penultimate; submentum distinct.

Pronotum (Figs. 1192, 1194, 1198) with anterior angles rounded, weakly produced anteriorly, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and without clear border at least along part of its length; hind margin without border. Prothoracic hypomeron smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process (Fig. 1197) 0.73–0.75 times as broad as longest coxal diameter, its surface smooth, without carinae; prosternum in front of coxa 0.7 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with complete bordering line broadly separate from the cavity externally.

Anterior edge of mesoventrite (Fig. 1197) with complete raised border; mesoventral process at median length of coxa 1.1 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction arcuate
or somewhat angular posteriorly, without internal knob. Scutellum (Fig. 1198) triangular, transverse; surface punctate and setose. Elytra (Fig. 1187) with lateral margins very narrow but entirely visible from above; surface (Fig. 1198) with single size punctures, elytral pimpleuron incomplete apically (Figs 1188, 1200), 2 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite with partially incomplete discrimen; metaepisternal postcoxal lines (Fig. 1197) distinctly separated at middle, complete and recurved; metaepisternum with external process interlocking with fovea on elytron (Fig. 1193); metaepimeron distinct, visible ventrally; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters roundly or somewhat angularly produced (Figs 1197, 1200); mid and hind tibia with single spur (Figs 1195, 1196); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male and claws in female swollen at base.

Abdomen (Figs 1199, 1200) with 5 ventrites in both sexes; ventrite I 1.2 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, shallow, posteriorly reaches distinctly less than half length of ventrite I; ventrite V in male distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin rounded; female ventrite VI (Fig. 1844) with hind margin rounded, tergite VIII rounded; hind margin of male ventrite VI weakly emarginate (Fig. 1842), tergite VIII rounded. Sternite IX with central part membranous; epandrium of male sternum IX widened at apex, and base of spiculum widened and partially submembranous.

Male genitalia (Figs 1840, 1841, 1843). Parameres articulated with phallosome, well-developed, simple and separated, about 1.2 times longer than penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm distinctly less developed than inner arm.

Female genitalia (Fig. 1845). Proctiger (T10) reduced, small, submembranous; styli small, terminal; infundibulum absent; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

Material examined. Types. Holotype, male, "42.42S 147.52E, TAS, Big Sassy Creek, 12.V.1989, tube 137, pyrithrin knockdown, Atherospernum. J. Diggle, rainforest" (ANIC).

Paratypes: Tasmania: same data as holotype (3: ANIC; 2: MIZ); same but tube 138, H. Mitchell (6: ANIC; 2: MIZ); same but tube 145, P. Greenslade (3: ANIC; 1: MIZ); same by tube 146, D. Rouseveld (1: ANIC); same but tube 144, Greenslade, Rouseveld (1: ANIC); "Savage R., Pipeline Rd., 20.IV.1989, tube 74, pyrithrin knockdown, Nothofagus. J. Diggle" (4: ANIC; 2: MIZ); same but 19.IV.1989, tube 75 (2: ANIC); "41.11S 148.00E, Mt. Mitchell, 740 m, 28.XI.1989, pyrithrin knockdown, tree 1, tube 176, R. Coy coll." (2: ANIC; 1: MIZ); same but tree 2, tube 182 (1: ANIC); "41.35S 145.56E, Cradle Mtn. Camp Ground, 880 m, 17.XI.1989, pyrithrin knockdown, outer Nothofagus, tube 327, R. Coy" (3: ANIC; 1: MIZ); same but 16.90 m, 23.X.I.1989, tree 2, tube 296 (1: ANIC); "145.56E, N. Mount, 880 m, 10.IV.1989, tree 2, tube 296, Nothofagus. J. Diggle" (1: ANIC; 1: MIZ); "15-17.III.1980, Nothofagus. J. Diggle" (1: ANIC; 1: MIZ); "145.56E, N. Mount, 880 m, 10.IV.1989, tree 2, tube 296, Nothofagus. J. Diggle" (1: ANIC; 1: MIZ).

Etymology. This species is dedicated to the late Dr. A. Newton Coy (1: ANIC), in recognition of his many years of contribution to the study of Australian Orthoptera, particularly in the N. Straits, Indonesia.

Distribution. Australia, Tasmania.

Diagnosis. This species is characterised by the dark brown with small, ocellar, winged; dorsum mid length; ventral.
ANIC; 1: MIZ); same but site 2, tube 172 and 173 (1: ANIC); same but site 2, tube 235 (2: ANIC); same but site 16, 1, edge tree 2, tube 173 (1: ANIC); “41.21S 147.50E, Mt. Victoria, 900 m, 23.XI.1989, tree 1, pyrethrin knockdown, tube 297, R. Coy” (2: ANIC); same but site 2, tube 296 (1: ANIC); same but tube 300, H. Mitchell (1: ANIC); same but 24 and 25, XI, tree 2 and 3, tube 3002 and 305, H. Mitchell (2: ANIC); “Mt. Barrow Rd. 890 m, 15-17.III.1980, Nothofagus, etc., A. Newton, M. Thayer/ pyrethrin fogging, Nothofagus cunninghamii bark (2: ANIC; 1: MIZ); “42.39S 146.34E, 0.5 km NW Lake Webster, Mt. Field NP, 920 m, 7.II.1992, C. Reid, on Leptospermum” (2: ANIC); “42.10S 146.07E, 4 km SSE of Mt. Rufus, 800 m, 26-28.I.1980, Lawrence & Weir/ Pyrethrum spray, moss & lichens” (1: ANIC; 1: MIZ); “Gordon R. Rd. nr. Little Florentine R., 440 m, 3.II.1980, Nothofagus etc., A. Newton, M. Thayer/ pyrethrin fogging, Nothofagus cunninghamii bark (1: ANIC); “41.18S 145.36E, Saxons Road, 17.I.1983, L.D. Naumann and J.C. Cardale coll.” (1: ANIC); “42.35S 147.28E, Thumbs Parallel Gullies, 1.IX.1989, pyrethrin knockdown, sassafras outer 3, tube 246, D. Roussell” (1: ANIC); same but sassafras closed, tube 284, R. Coy (1: ANIC); “42.41S 146.43E, Mt. Field NP, 160-240, 4.II.1980, Lawrence & Weir/ J.F. Lawrence, lot 80-18, unidentified Capnodiaceae” (1: ANIC); “42.38S 146.26E, 7 km WNW of Mt. Field West, 460 m, 1.II.1980, Lawrence & Weir/ moss covered trunks and logs” (2: ANIC); same but Bereslate ANIC 668, leaf litter & moss (1: ANIC); “42.49S 146.22E, 7 km NE of E of Mt. Wedge, 550 m, 3.II.1980, Lawrence & Weir” (1: ANIC); “41.50S 145.37E, Mt. Murchison, 18.IV.1989, tube 79, pyrethrin knockdown, Nothofagus, J. Diggle” (1: ANIC); “41.36S 145.41E, Murchison Hwy. State Res. Murchison Hwy; Que R. Mine Rd. 680 m, 970, 11-27.I.1993, A. Newton, M. Thayer/ Nothofagus cunn. rainf., FMHD #93-22, window trap” (1: ANIC); “41.47S 145.35E, 4 km E Rosebery, 16.1-1.I.1983, I. Naumann, J. Cardale, malaise, ethanol” (1: ANIC); “41.21S 147.40E, Ben Ridge Rd. 5.2 km, E Telopea Rd. 870 m, 16.1-1.II.1993, 913, A. Newton, M. Thayer/ Nothofagus cunn. rainf., FMHD #93-40, window trap” (1: ANIC); “Hartz Mts. NP, Hartz Rd. 740 m, 8-10.I.1980, Eucalyptus-Nothofagus, A. Newton, M. Thayer/ pyrethrin-fogging, Nothofagus cunninghamii bark” (1: ANIC).

Etymology. This new species is named after the Australian State of its distribution.

Distribution. Australia: Tasmania.

Rhyzobius tribulation sp. nov.
(Figs 1201–1213, 1846–1851, 1941)

Diagnosis. This species can be distinguished from R. dorsalis in having prosternal carinae separate, the mesoventral process about as broad as coxal diameter and elytra chestnut brown with small, oval, dark area along suture in mid length (Fig. 1941).

Description. Length 2.05–2.30 mm; TL/EW = 1.25–1.33; PL/PW = 0.50–0.52; EL/EW = 1.00–1.08.

Body (Figs 1201, 1202, 1206, 1941) broadly oval, strongly convex, hemispherical, winged; dorsum chestnut brown with oval, dark macula on elytra along suture in mid length; venter dark brown with epipleura, mouthparts legs and antennae yellow-

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ish brown. Dorsum with double pubescence consisting of appressed setae and sparse
dark stiff bristles; dorsal pubescence forming wavy pattern on elytra; elytral bristles
sparse, present on entire dorsum but more distinct along margins.

Head (Figs 1203, 1208) withdrawn into prothorax but with eyes partially visible
externally; 0.8 times as long as wide; ventral antennal grooves distinctly circular bent
towards outer margin of eye; corporoterritorium absent. Eyes dorsally less than 0.5
times length of head capsule, with inner orbits convergent, closer near vertex than
anteriorly; ocular canthus extending slightly into eye; interocular distance 0.50–0.52
times as wide as head across eyes; interfacial setae indistinct. Antenna (Fig. 1205)
0.90–0.95 times as long as head capsule width, 11-segmented; scape 2 times as long
as pedicel; pedicel distinctly narrower than scape, 1.40–1.45 times as long as wide;
antennomere III 2.6 times longer than wide, and about 1.5–2.5 times as long as IV;
antennomere IV as long as V; antennomeres VI and VII very short, transverse. An-
tennal club 3-segmented, with two subterminal segments asymmetrical; penultimate
antennomere about as long as terminal segment; terminal antennomere subquadrate,
rounded at apex. Anterior elytral margin distinctly emarginate with median area
membranous. Labrum truncate at apex. Maxillary cardo transverse with outer angle
reaching slightly outside of mouth cavity; terminal palpmere 1.5 times as long as wide,
weakly expanded apically. Mentum transverse, less than 2 times broader than long;
anterior margin deeply emarginate; ventral surface with horseshoe-like impression;
prementum as long as broad; ligula parallel-sided; labial palps separated by
distance about equal to width of palpiger; apical palpmere about as long and as
broad as penultimate one; submentum distinct.

Pronotum (Figs 1204, 1207–1209) with anterior angles rounded, weakly pro-
duced anteriorly, not swollen but with distinct groove near angles; anterior margin
without border; lateral margin with entire border, hind margin without border. Pro-
thetic hypomeron with broad, concave area along anterior half of prothoracic lat-
eral margin; notosternal suture distinct, simple; prosternal process (Fig. 1210) 0.65
times as broad as longest coxal diameter, its surface with carinae convergent, joined
roundly just before prosternal margin; prosternum in front of coxa 0.75 times as
long as coxal longitudinal diameter at the same position; anterior margin continuing
as arcuate line, much more posterior than anterior pronotal margin; procoxal cavity
distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 1210) with complete raised border;
mesoventral process at median length of coxa 1.3 times as broad as corresponding
coxal diameter; meso-metaventricle articulation with suture obscure; junction arcuate
or somewhat angulate posteriorly, without internal knob. Scutellum (Fig. 1207)
triangular, transverse; surface punctate and setose. Elytra (Fig. 1201) with lateral
margins very narrow but entirely visible from above; surface (Fig. 1207) coarsely
punctate with only darker area on elytra almost impunctate but surrounded with very
coarse punctures (Fig. 1201); elytral epipleuron incomplete apically only (Figs 1202,
1211). 1.4 times as wide as corresponding metaepisternum, inner margin with border
area widening towards elytral base and border line upturned outwardly near base
of elytron. Metaventrite (Fig. 1210) distinctly separated from metaventrite by
external process in posterior part slightly broader and less than width of side of meso-
ventrite. Legs with tibiae not visible; tarsi not visible; visible spur present in male and
clearly visible in female.

Abdomen: tergites as long as broad and complete. Mesoventer V in meso-
ventrite V in mesoventrite VI in mesoventrite VI in mesoventrite VII
in mesoventrite VIII rounded, bluntly truncate (Fig. 1217); apicodeme of male
well developed, slightly produced posteriorly, with very setose along near
terminal strut simple, not connected to inner arm.

Female genitalia: well developed, with highly differentiated plate; styli ter-
neral; spermathecae long, distinct, adjacent to sperm ducts.


Note. Among several specimens, the following differences were observed:

Elytology. The holotype was collected

Distribution. Australia.
of elytron. Metaventrite with complete discrimen; metaventral postcoxal lines (Fig. 1210) distinctly separated at middle, complete and recurved; metaepisternum with external process interlocking with fovea on elytron (Fig. 1212); metaepimeron indistinct; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters angulately produced (Fig. 1210); mid and hind tibia without visible spurs; pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male and claws in female with subquadrate basal tooth.

Abdomen (Figs 1211, 1213) with 5 ventrites in both sexes; ventrite I 1.25 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin only with median part narrowly truncate; female ventrite VI (Fig. 1851) with hind margin arcuate, tergite VIII rounded; hind margin of male ventrite VI truncate and weakly concave medially (Fig. 1849), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX weakly widened at apex and at base.

Male genitalia (Figs 1846–1848). Parameres articulated with phallobase, well developed, simple and separated, almost 2 times longer than penis guide, densely setose along nearly half of their length, with apices covered with simple setae; penis guide denticulate on outer side, with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm distinctly less developed than the inner arm.

Female genitalia (Fig. 1850). Proctiger (T10) distinct, at least partly sclerotized plate; styli terminal; infundibulum absent; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.


Note. Among seven specimens of the type series of R. discipennis preserved in SAM, one female specimen, the one, with elytra mostly brown and the pubescence forming very distinct wavy pattern, belongs to this new species.

Etymology. The name of this species refers to Cape Tribulation, the locality where the holotype was collected.

Rhizobius umbratus Blackburn, 1889: 208.

**Diagnosis.** *R. umbratus* is externally almost identical to *R. waterhousei*, and can be distinguished in having antennomere III less elongate, antennomere IV as long as V, the female abdomen with ventricle VI at least partly visible and the male ventricle V with hind margin distinctly emarginate. The male genitalia of both species are, however, distinctly different and should be consulted to confirm the identification.

**Description.** Length 1.40–1.90 mm; TL/EW = 1.30–1.47; PL/PW = 0.47–0.49; EL/EW = 1.09–1.15.

**Body** (Figs 1214, 1215, 1217) broadly oval, moderately convex, winged; dorsal surface light to dark brown with more or less distinct three pale maculce on each elytron, anterior one usually somewhat transverse, not touching any suture or margin, mid and posterior ones oval, close to suture; venter dark brown with hypomera, epipleura, legs, mouthparts and antennae light brown. Dorsum with rather short and uniform pubescence, forming weak wavy pattern on elytra.

**Head** (Figs 1223, 1226) dorsally exposed, 0.7 times as long as wide; ventral antennal grooves long, straight, reaching distinctly behind eyes; corpotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; ocular canthus extending slightly into eye; interocular distance 0.59–0.61 times as wide as head across eyes; interfacial setae indistinct. Antenna (Fig. 1216) 0.80–0.81 times as long as head capsule width, 11-segmented; scape 1.4 times as long as pedicel; pedicel distinctly narrower than scape, 1.4–1.5 times as long as wide; antennomere II 3.2 times longer than wide, and at least 3 times longer than IV; antennomere IV as long as V; antennomeres VI and VII subquadrate. Antennal club 3-segmented, with penultimate segment asymmetrical; penultimate antennomere distinctly longer than terminal segment; terminal antennomere subquadrate, subtruncate at apex. Anterior clypeal margin straight. Labrum truncate at apex. Maxillary cardo (Fig. 1223) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.35–1.40 times as long as wide, subparallel-sided. Mentum transverse, less than 2 times broader than long; anterior margin arcuate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance at least 1.5 times broader than width of palpiger; apical palpomere as long and as broad as penultimate one; submentum distinct.

**Pronotum** (Figs 1218, 1219, 1224, 1226) with anterior angles rounded, weakly produced anteriorly, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and without clear border at least along part of its length; hind margin with border line not reaching lateral margins. Prothoracic hypomeron (Fig. 1216) smooth, without groove or concavity; notosternal suture obscure; prosternal process (Fig. 1220) at least as broad as longest coxal diameter, its surface smooth as coxal longitudinal line, medially distinctly transverse.

**Anterior mesoventral process** coxal diameter straight line, and setose. Body surface (Fig. 1220) only, 2 times area widening. Metaventrite with (Fig. 1220) distinctly convex, with external margin indistinct; metepisternum slightly less than half.

**Legs** with triangular spurs (Figs 1221, 1226), claws in male and female.

**Abdomen** (Figs 1223, 1226) as long as ventrite complete, posteriorly longer than IV, with simply setose, hind margin scars of VI emarginate (Figs 1226). Apodemes towards apex, anlagen.

**Male genitalia:** well developed, spicules at apex, apices covered with lateral sides symmetrical, distinctly less developed.

**Female genitalia:** styli strong, enclosing the spermatheca without sperm duct.

**Material examined.** Blackburn/ type/ Bl., **Rhizobius** Bl., cotype, Blackburn/ 772/ S.
its surface smooth, without carinae; prosternum in front of coxa 0.9 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with complete bordering line, close to the cavity.

**Anterior edge of mesoventrite** (Fig. 1220) with complete raised border; mesoventral process at median length of coxa 1.8 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction forming straight line, with internal knob. Scutellum triangular, transverse; surface punctate and setose. Elytra with lateral margins very narrow but entirely visible from above; surface (Fig. 1224) with single size punctures, elytral epipleuron incomplete apically only, 2 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite with partially incomplete discrinen; metaventral postcoxal lines (Fig. 1220) distinctly separated at middle, laterally complete and straight; metaepisternum with external process interlocking with fovea on elytron (Fig. 1225); metaepimeron indistinct; metendosternite stalk distinctly shorter than broad; tendons separated by slightly less than width of stalk and placed on laminae.

**Legs** with trochanters angulately produced; mid and hind tibia without visible spurs (Figs 1221, 1222); pro- and mid tarsal claws in male appendicate; hind tarsal claws in male and claws in female simple or swollen at base.

**Abdomen** (Figs 1227, 1228) with 6 ventrites in both sexes; ventrite I 1.45 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, posteriorly reaches about half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin straight and smooth; ventrite V in male smooth and simply setose, hind margin weakly emarginate; female ventrite VI (Fig. 1857) with hind margin scarcely emarginated, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1855), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half very narrow and rod-like towards apex, and base of spiculum slerotized rod, deeply divided into inverted V.

**Male genitalia** (Figs 1852–1854). Parameres articulated with phallobase, well developed, simple and separated, about 0.9 times as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; terminal strut simple; penis base with outer arm distinctly less developed than inner arm.

**Female genitalia** (Fig. 1856). Proctiger (T10) reduced, small, submembraneous; styli strongly reduced and hardly visible; infundibulum sclerotized, tube-like, enclosing the sperm duct; sperm duct very short, simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

**Material examined.** Types. Lectotype (here designated), male "Rhizobius umbratus" Blackburn/ type/ T 772/ Blackburn coll. 1910-236 (NHM); paralectotypes: "Rhizobius umbratus" Bl., cotype, 1. 9797, S. Australia/ Rhizobius umbratus" Blackb, cotypes/ Port Lincoln, Blackburn/ 772/ S. Aust. Museum specimen" (2: SAM).

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Note. The lectotype of Rhizobius umbratus Blackburn, 1889 is designated to stabilize the taxonomic status of this species.

Other material. Western Australia, 5 km SE Northampton, 20-23.VIII.1987, C. Reid, ex Acacia sp. (3: ANIC; 2: MIZ, completely dissected); Dryandra For., Cuballing, 19.III.81, R.D. Pope, BM 1981-447, Jarrah and Wandoo (2: NHM); South Australia, 1 km S Gladstone, 18.XII.1985, C. Reid, on Euc. socialis (3: ANIC; 1: MIZ, completely dissected); same but 4 km N Melrose, on tree/Bushes (1: ANIC); Yumali, 8.VIII.1968, Collors & Liepa (1: ANIC); Mt. Crawford State Forest, 6.VIII.1968, Collors & Liepa (1: ANIC); Adelaide (4: SAM); 34.21S 139.29E Brookfield Con. Pk., 30.III-3.IV.1992, Campsite, A. Calder, W. Dressler, pyrethrin knockdown mallee (1: ANIC); Victoria, Lake Hattah, 9-15.III.69, light trap, G.W. Anderson (2: ANIC); Australian Capital Territory, 35.16S 149.06E, Black Mt., 16.III.1987, C. Reid, Euc. macrocoryncha (1: ANIC); same but Euc. rossii (1: ANIC); same but Acacia baileyana (1: ANIC); 35.16S 149.06E, Black Mt., 600 m, V. VII. IX. and XI 1986, Weir, Lawrence, Dressler, light intercept window/through trap (6: ANIC; 3: MIZ); Black Mt., light trap, 2.II.1968, M.S. Upton (1: ANIC); Black Mt., Reserve, 23.X.1970, on flowers, S. Misko (2: ANIC); 35.24S 149.05E, Monash Hill, 19.VIII.1990, W. Dressler, under Euc. bark (1: ANIC); Mt. Ainslie, 26.IX.1982, J.F. Lawrence, living Eucalyptus (2: ANIC); New South Wales, Thredbo Riv., Kosciusko Nat. Pk., Site 31, Surber 3, 30.XI.1983, M.E. McKeage (1: ANIC).

Distribution. Australia: Western Australia, South Australia, Victoria, Australian Capital Territory, New South Wales.

Rhyzofoius unicolor sp. nov.
(Figs 1229–1241, 1858–1863, 1942)

Diagnosis. This species is distinguished from R. pulchellus in having light brown body, the pronotum with short grooves near anterior angles, the mid and hind tibia without spur, the male ventrite V with admedian setose patches, the female ventrite VI truncate to scarcely emarginate at apex and the female genitalia without infundibulum.

Description. Length 2.17–2.33 mm; TL/EW = 1.25–1.30; PL/FW = 0.48–0.49; EL/EW = 0.93–1.04.

Body (Figs 1229, 1230, 1234, 1942) broadly oval, moderately convex, winged; uniformly light brown or yellowish brown. Dorsal pubescence consisting of appressed setae and sparse darker stiff bristles distinct along margins; dorsal pubescence forming very weak wavy pattern on elytra.

Head (Figs 1231, 1235) withdrawn into prothorax but with eyes partially visible externally; ventral antennal grooves distinctly circular bent towards outer margin of eye. Eyes with inner orbits convergent, closer near vertex than anteriorly; occular canthus extending slightly into eye; interocular distance 0.53–0.55 times as wide as head across eyes; interfacial setae indistinct. Antenna (Fig. 1232) 0.75 times as long as head capsule width, 11-segmented; scape 1.6 times as long as pedicel; pedicel about as broad as scape, 1.35–1.40 times as long as wide; antennomere III 3.05 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII weakly elongate. Antennal club 3-segmented,
with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere distinctly elongate, rounded at apex. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum emarginate at apex. Maxillary cardo (Fig. 1231) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.2 times as long as wide, weakly expanded apically. Mentum strongly transverse, at least 2 times broader than long; anterior margin arcuate; ventral surface with horseshoe-like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance at least 1.5 times broader than width of palpiger; apical palpomere as long and as broad as penultimate one; submentum indistinct.

**Pronotum** (Figs 1235, 1238, 1239) with anterior angles rounded, weakly produced anteriorly, not swollen but with distinct groove near angles; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron with at least short, somewhat crescent shaped groove perpendicular to notosternal suture; notosternal suture obscure; prosternal process (Fig. 1237) 0.6 times as broad as longest coxal diameter, its surface with convergent, complete, separate carinae; sternum in front of coxa at least 0.6 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line, much more posterior than anterior pronotal margin; procoxa cavity distinctly transverse, without visible bordering line.

**Anterior edge of mesoventrite** (Fig. 1237) with complete raised border; mesoventral process at median length of coxa 1.1 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction arcuate posteriorly. Scutellum triangular, transverse; surface punctate and setose. Elytra (Fig. 1229) with lateral margins very narrow but entirely visible from above; surface with single size punctures, elytral epipleuron incomplete apically only (Figs 1230, 1240), 2 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite with complete discriminem; metaventral postcoxal lines distinctly separated at middle, complete and recurved; metaepisternum with external process interlocking with fovea on elytron (Fig. 1233); metaepimeron indistinct.

**Legs** with trochanters angulately produced (Figs 1237, 1240); mid and hind tibia without visible spurs (Figs 1236, 1241); protarsal claws in male appendicate; tarsal claws in female with weak, subquadrate basal tooth.

**Abdomen** (Fig. 1240) with 5 ventrites in both sexes; ventrite I 1.4–1.5 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male with admedian setose patches, hind margin only with median part narrowly, weakly emarginate; female ventrite VI (Fig. 1862) with hind margin weakly truncate or shallowly excised, tergite VIII rounded; hind margin of male ventrite VI weakly emarginate (Fig. 1861); tergite VIII truncate apically. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half weakly widening...
towards apex, and base of spiculum widened, partially submembranous and with a pair of small oval sclerites.

**Male genitalia** (Figs 1858–1860). Parameres articulated with phallobase, well developed, simple and separated, about 1.3 times longer than penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegminial strut simple; penis base with outer arm distinctly less developed than inner arm.

**Female genitalia** (Fig. 1863). Proctiger (T10) distinct, at least partly sclerotized plate; styli absent; infundibulum absent; sperm duct simple, uniform in diameter. Spermatheca not studied.

**Material examined.** Types: Holotype, male, Western Australia, "WA, 15.38S 125.15E, Calm Site 28/3, 4 km W of King Cascade, WA, 12-16.VI.1988, T.A. Weir at light, closed forest" (1: ANIC).

**Paratypes:** "WA, 15.00S 125.21E., Marun Calm Site, 8/4 Prince Frederick Harbour, 6-11.VI.1988, I.D. Naumann/ at light, closed forest and margin" (1: ANIC, 2: MIZ).

**Etymology.** The name of this new species refers to its uniformly coloured body.

**Distribution.** Australia: Western Australia.

*Rhyzobius ventralis* (Erichson)

(Figs 446–451, 1864–1869)

*Scymnus ventralis* Erichson, 1842: 239.

*Rhyzobius ventralis* Mulsant 1850: 1005.


**Diagnosis.** This species can be separated from *R. forestieri* in having less elongate pronotum (as compared to elytral length), the antennomere III more elongate, antennomere IV as long as V, the prosternal carinae complete and separated and the abdominal ventrite V in female widely rounded apically, and in male less distinctly truncate than in *R. forestieri*. *R. ventralis* resembles also *R. popei* in the body size combined with colouration, but differs from it by having the ventral antennal grooves on the head long but straight, the prothoracic hypomeron with groove anteriorly and the mid and hind tibia with single spurs.

**Description.** Length 4.25–5.35 mm; TL/EW = 1.36–1.42; PL/PW = 0.50–0.53; EL/EW = 1.06–1.13. B0dy broadly oval, moderately convex, winged; predominantly black; pronotum with anterior angles narrowly pale yellow; abdominal ventrites orange; antennae, mouthparts and tarsi brownish. Dorsum with double pubescence consisting of short appressed setae and sparse darker stiff bristles present along margins; dorsal pubescence forming weak wavy pattern on elytra.

**Head** (Fig. 447) withdrawn into prothorax but with eyes partially visible externally, 0.65–0.70 times as long as wide; ventral antennal grooves long, straight, reaching distinctly behind eyes; corpuspelytomorium absent. Eyes dorsally less than 0.5

*times length of head anteriorly; width of head 0.51–0.53 times length of head (Fig. 449) above scape 1.7 times as long as width, and as long as width of head anteriorly.

Antennomeres penultimate and ultimate distally emarginate; cardo (Fig. 447) of cavity; tegminial strut strongly arcuate; ventral margin of coxa 0.8 times length of coxa. Anterior margin continuous along hind coxae. Anterior border; mesoventre widest at middle; meso- and meta-tergum with single setal row. Scutellum with single setal row. Wing venation as wide as connective towards elytral base.

**Description.** Length 4.25–5.35 mm; TL/EW = 1.36–1.42; PL/PW = 0.50–0.53; EL/EW = 1.06–1.13. B0dy broadly oval, moderately convex, winged; predominantly black; pronotum with anterior angles narrowly pale yellow; abdominal ventrites orange; antennae, mouthparts and tarsi brownish. Dorsum with double pubescence consisting of short appressed setae and sparse darker stiff bristles present along margins; dorsal pubescence forming weak wavy pattern on elytra.

**Head** (Fig. 447) withdrawn into prothorax but with eyes partially visible externally, 0.65–0.70 times as long as wide; ventral antennal grooves long, straight, reaching distinctly behind eyes; corpuspelytomorium absent. Eyes dorsally less than 0.5
times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; with ocular canthus extending slightly into eye; interocular distance 0.51–0.63 times as wide as head across eyes; interfacetal setae indistinct. Antenna (Fig. 449) about 0.70–0.75 times as long as head capsule width, 11-segmented; scape 1.7 times as long as pedicel; pedicel distinctly narrower than scape, 1.4 times as long as wide; antennomere III 3.15 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V, antennomeres VI and VII quadrate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere distinctly elongate, apically rounded. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum truncate at apex. Maxillary cardo (Fig. 447) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.25–1.45 times as long as wide, parallel-sided. Mentum strongly transverse, at least 2 times broader than long; anterior margin weakly arcuate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpiger; apical palpmere about as long and as broad as penultimate one; submentum distinct.

Pronotum with anterior angles rounded, weakly produced anteriorly, not swollen with regular border; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 448) with at least short, somewhat crescent shaped groove perpendicular to notosternal suture; notosternal suture distinct, simple; prosternal process nearly 0.6 times as broad as longest coxal diameter, its surface with complete, separate carinae; prothorax in front of coxa 0.8 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line; much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 448) with complete raised border; mesoventral process at median length of coxa as broad as corresponding coxal diameter; meso-metaventral articulation with suture visible; junction arcuate posteriorly. Scutellum triangular, transverse; surface punctate and setose. Elytra with lateral margins very narrow but entirely visible from above; surface with single size punctures, elytral epipleuron incomplete apically only (Fig. 450), 2.15 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite with complete discrinen; metaventral postcoxal lines (Fig. 448) distinctly separated at middle; complete and recurved; metaepisternum with external process interlocking with fovea on elytron (Fig. 446); metaepimeron distinct, visible ventrally; metendosternite stalk nearly as long as broad; tendons separated by much less than width of stalk and placed close to middle.

Legs with trochanters roundedly produced (Figs 448, 450); mid and hind tibia with single spur; pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male and claws in female with subquadrate basal tooth.
Abdomen (Figs 450, 451) with 5 ventrites in both sexes; ventrite I 1.1 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female about as long as IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin rounded; female ventrite VI (Fig. 1869) with hind margin arcuate; female tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1867); male tergite VIII rounded. Sternum IX with central part membranous; apodeme of male sternum IX with its apical half very narrow and rod-like towards apex, and base of scutum widened and partially membranous.

Male genitalia (Figs 1864–1866). Parameres articulated with phallobase, well developed, simple and separate about 1.4 times as long as president, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm distinctly less developed than inner arm.

Female genitalia (Fig. 1868). Proctiger (T10) distinct, at least partly scleritized plate; styli absent; infundibulum absent; sperm duct complex, of different diameter, broader near bursa and narrowing towards spermatheca; spermatheca without clear nodulus and ramus; spermathecal accessory gland absent; spermatheca duct to sperm duct.


Other material. Tasmania: Scymnus ventralis Er, restrictorum Sharp, V.D.L (5: NHM); Hobart, (3: NHM); Hobart, J.J. Walker (12: NHM); Lauderdale, 11.V.1972, K.L. Taylor, predator of Eriococcus, mealybugs (3: ANIC); same and E. viminalis under bark (1: ANIC); same and 3.VIII.1972 (2: ANIC: 2: MIZ); Lifey Valley, 5.X.80, S. Fearn, under bark on Eucalyptus (1: ANIC); same but 6.IX.1981 (3: ANIC); St. Patricks College, Laun, 22.X.79, found on blade of grass, warm, still day (1: ANIC); 41.50S 146.03E, Pelion Hut 3km Sm Mt. Oakleigh 860 m, 13.II-7.III.1991, I. Naumann, M. Horak, malaise #1 closed forest, ANIC database No. 25 030061 (1: ANIC); same but 15.V.1990, W.E.B.S., ANIC database No. 25 030062 (1: ANIC); Tas., coll. Chappuis (3: ISNB); Tas., Dr. A. Breyer, coll. Camille Van Voixem (1: ISNB); Tas, C. Allport (1: ISNB); South Australia: Belair Park, nr Adelaide, I.III.1969, W.R.B. Hynd Coll. BMNH(E), 19-129 (3: NHM); Victoria: Fitzroy River, B.M 1928-116 (2: NHM); Cranbourne, E.T. Smith (1: ANIC); Warrandyte, 17.II.26, G.F. Hill (1: ANIC); Bundoola, L.T.U. Campus, 16.XI.80, G. Farrell, broad ex Melanococcus albizziae, 29.XII.1980, Acacca longifolia (1: ANIC); Melbourne, G.H. Hill, 17.I.27 (2: ANIC); Austr. Victoria (5: NMB); Melbourne, coll Schaufluss (1: NMB); Australian Capital Territory: Canberra, Mt. Ainslie, 7-21.VII.1974, under loose bark, living Eucalyptus, dry conditions, B. Levey coll. B.M. 1978-386 (2: NHM); same but 10-27.VII. 1974 (6: NHM); same but 7.XII. 1980 (6: NHM); CSIRO, Canberra, 15-18.XII.1980, Acacia sp., R.D. Pope, B.M. 1981-447 (25: NHM); same but 10-27.VII. 1974 (2: ANIC); same but 7.XII. 1980 (148.49.E Piccadilly), same but 6.II.1988 (2: ANIC); Circus 12-40 trap (1: ANIC); Eucalyptus sp., M. Dressler, Berlese of Eucalyptus. Black Mt. (40: ANIC); same but 17.IX.1981 (2: ANIC); Commonwealth Lagoon, 16.III.1981, C. Reid at light (2: ANIC); same but 17.IX.1981 (2: ANIC); Thombill, 16.III.1981, G. Flowers, ex-Berlese trap (1: NHM); C. Reid at light (2: ANIC). 16.III.1981, C. Reid at light (2: NHM); from coccids on Eucalyptus (2: ANIC); 35.249.2.XI.1990 (5: ANIC); same but 17.IX.1981 (5: ANIC); 5 km NE of Acacia (1: ANIC); same but 6.II.1988 (3: ANIC); Campbell Creek, 2.XI.1980, B.K. Ck.T.S., old quarry (1: ANIC); ANU, ACT, 30.I.1997, 10-15 km SE of Berri, 1500.10E, 17.II.1974 (2: ANIC); 8km SE by E of Nepean, 70 km NW Batemans Bay, Batemans Bay, N.S.W., 954517-461, 1974, 150 km S Murrawarang N.S.W., 366-567, in & under Eucalyptus, 15 km E of Batemans Bay, V.R., 16.XII.1974, 954517-461, 150 km S by E of Murrawarang N.S.W., 1973-74, 14.XII.1974 (1: ANIC); same but 14.XII.1974 (1: ANIC); same but 14.XII.1974 (1: ANIC).
Rhyzobius victoriensis sp. nov.
(Figs 1242–1256, 1870–1875, 1943)

Diagnosis. This species closely resembles R. brunneus, R. newtonorum and R. hongae in having similar body size and shape combined with lack of wings and the presence of double tibial spurs. R. victoriensis is distinguished from these species by having the antenna longer than head width, the mesoventral process broader than mesocoxal diameter, the metaventrite with complete disclined and remarkably different male genitalia.

Description. Length 2.43–2.73 mm; TL/EW = 1.40–1.45; PL/PW = 0.56–0.59; EL/EW = 1.00–1.11.

Body (Figs 1242, 1243, 1245, 1943) broadly oval, strongly convex, hemispherical, wingless. Dorsal surface predominantly dark brown to chestnut brown, as well as antennae, mouthparts and legs (or at least tarsi); head, most of pronotum except for lateral and anterior margins, and two or three maculae on each elytron blackish; anterior spot small, round oval, placed close to scutellum, reaching basal margin of elytron; medio-lateral long oval macula touching lateral margin, sometimes extending to base of elytra but never reaching elytral apex; third, preapical spot touching suture and forming a half of common for both elytra round oval spot – this spot is sometimes poorly developed or even absent. Ventral surface dark chestnut brown to blackish brown. Dorsum with double pubescence consisting of appressed setae and sparse dark finer bristles along margins; dorsal pubescence forming weak wavy pattern on elytra.

Head (Figs 1244, 1247, 1248) withdrawn into prothorax but with eyes partially visible externally, 0.9 times as long as wide; ventral antennal grooves absent or indistinct; carpoterotonin present. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocular canthus extending slightly into eye; interocular distance 0.54–0.56 times as wide as head across eyes; interfacial setae absent. Antenna (Fig. 1246) 1.15–1.20 times as long as head capsule width, 11-segmented; scape 2 times as long as pedicel; pedicel distinctly narrower than scape, 1.43–1.50 times as long as wide; antennomere III 3.1 times longer than wide, and at least 3 times longer than IV; antennomere IV as long as V; antennomeres VI and VII subquadrate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; clypeal margin straight, reverse with one tooth; 1.70–1.75 times as wide, at least 1.2 times longer than elytron, at least 1.5 times longer than width of palpiger side, distinct. Prosternum swollen and upturned; posterior border of groove present; antennae in the same position as in the male, continuing as a short continuing a short elytral cavity from the cavity of the prothorax.

Anterior margin of pronotum with lateral or metacoxal cavity. Anterior margin of pronotum with lateral edge of prosternum, with single spine (Fig. 1242), 2.5 times area widened. Metaventrite distinctly separated and the process into the metendosternite placed near the posterior.

Legs with two spurs (hind tarsal claws).

Abdomen (Figs 1249–1255) distinctly protruding. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; clypeal margin straight, reverse with one tooth; 1.70–1.75 times as wide, at least 1.2 times longer than elytron, at least 1.5 times longer than width of palpiger side, distinct. Prosternum swollen and upturned; posterior border of groove present; antennae in the same position as in the male, continuing as a short continuing a short elytral cavity from the cavity of the prothorax.
as terminal segment; terminal antennomere subquadrate, truncate at apex. Anterior clypeal margin straight. Labrum rounded apically. Maxillary cardo (Fig. 1244) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.70–1.75 times as long as wide, weakly expanded apically. Mentum strongly transverse, at least 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe-like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance at least 1.5 times broader than width of palpiger; apical palpomere as long and as broad as penultimate one; submentum distinct.

Pronotum (Figs 1247, 1248, 1252, 1254) with anterior angles obtuse, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and without clear border at least along part of its length; hind margin with border line not reaching lateral margins. Prothoracic hypomeron smooth, without groove or concavity; notosternal suture obscure; prosternal process (Fig. 1251) 0.8 times as broad as longest coxal diameter, its surface with carinae joined before apex and continuing anteriorly as a single, short carina; proternum in front of coxa 0.65 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with complete bordering line broadly separate from the cavity externally.

Anterior edge of mesoventrite (Fig. 1251) with complete raised border; mesoventral process at median length of coxa 1.15 times as broad as corresponding coxal diameter; meso-metasomal articulation with suture visible; junction somewhat angulate posteriorly, without internal knob. Scutellum (Fig. 1254) triangular, at least as long as broad; surface punctate and setose. Elytra (Fig. 1242) with lateral margins very narrow but entirely visible from above; surface (Fig. 1254) with single size punctures, epipleuron incomplete apically only (Figs 1243, 1256), 2.5 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventral with complete discritem; metaventral postcoxal lines (Fig. 1251) distinctly separated at middle, complete and curved; metaepisternum with external process interlocking with fovea on elytron (Fig. 1253); metaepimeron indistinct; metendosternite stalk distinctly shorter than broad; tendons widely separated and placed near apices of arms.

Legs with trochanters angulately produced (Fig. 1251); mid and hind tibia with two spurs (Figs 1249, 1250); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male and claws in female with subtriangular basal tooth.

Abdomen (Figs 1255, 1256) with 5 ventrites in both sexes; ventrite I 1.60–1.65 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, shallow, posteriorly reaches distinctly less than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose; hind margin widely truncate; female ventrite VI (Fig. 1875) with hind margin arcuate, tergite VIII rounded; hind
margin of male ventrite VI emarginate (Fig. 1872), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half widening towards and at apex, and base of spiculum widened.

Male genitalia (Figs 1870, 1871, 1873). Parameres articulated with phallobase, well developed, simple and separated, nearly as long as penis guide, densely setose along about half of their length, with apices covered with simple setae; penis guide without additional processes, with lateral sides asymmetrical only near apex; tegmental struts simple; penis base with outer arm obsolete.

Female genitalia (Fig. 1874). Proctiger (T10) distinct, at least partly sclerotized plate; styli terminal; infundibulum sclerotized, somewhat flattened and twisted; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland very long, adjacent to sperm duct.


Paratypes: Victoria, same data as holotype (4: ANIC; 3: MIZ, 2 dissected on slide); "37.17S 148.53E, Goomirrk Rocks Reserve, Errinundra Plateau, VIC, 29-31.II.1983, K.R. Pullen" (1: ANIC; 1: MIZ); "Mt. Donna Buang summit 1250 m, 17.I.1980, Eucalyptus woodland, A. Newton, M. Thayer/ bivased from leaf litter" (1: ANIC); "37.43S 145.42E, Cement Ck. 5 km N of Warburton, V. 17.I.1978, Lawrence & Weir/ bivased from log & leaf litter" (1: ANIC); "37.34S 145.53E, VIC, Cumberland Scenic Res. (nr. Cambarville), Cora Lynn Falls Track, 17-27.II.1993, 880 m, A. Newton, M. Thayer/ Euc. regnans forest w Noth. cunn. 935, FMHD 893-111, ex window trap" (1: ANIC; 1: MIZ); "37.50S 146.16E, VIC, Baw Baw Alpinie Res., 1 km WNW Alpine Vill., 1420 m, 817, 29.I.-10.II.1987, A. Newton, M. Thayer/ Euc. panniflora woodl., FMHD #87-241, flight intercept trap" (1: ANIC).

Etymology. This new species is named after the Australian State of Victoria where it was collected.

Distribution. Australia: Victoria.

Rhyzobius virgatus Lea (Figs 1271–1284, 1882–1886)

Rhyzobius virgatus Lea, 1902: 495.

Diagnosis. Very distinctive species, diagnosed by a loss of wings and a characteristic colouration.

Description. Length 2.30–2.67 mm; TL/EW = 1.48–1.55; PL/PW = 0.54–0.57; EL/EW = 1.06–1.08.

Body (Figs 1271, 1272, 1274) broadly oval, moderately convex, wingless; predominantly yellowish brown, dark brown or chestnut brown; each elytron with black, longitudinal, median band, extending from anterior margin to near apex, not reaching suture, but expending laterally at base, in mid length and at apex; a second, elongate, narrow, with apical extension sometimes parallel or sometimes appressed, setae wavy patterned.

Head (Fig. 1272) as long as its width; antennae segmented; distinctly short but as long as its apex. Anterior mandible reaching slightly beyond the base, subparallel; anterior margin of clypeus about as long as its width.

Pronotum reduced anteriorly, anterior margin not reaching the lateral margin, not reaching the post-meron (Fig. 1273); pronotum simple; prosternum has a carina on its surface; prosternum extending to the posterior of pronotum.

Anterior border of mesonotum incompletely oblique, extending coxal diverting, merging a straight edge, not punctate and not visible from the prosternum.

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elargate, narrow black stripe extends from beyond humerus and connects posteriorly with apical extension of median band; legs, mouthparts (at least palpi) and antennae sometimes paler than ventral surface. Dorsum with double pubescence consisting of appressed setae and sparse, long dark stiff bristles; dorsal pubescence forming weak wavy pattern on elytra; elytral bristles present on entire dorsum.

**Head** (Figs 1273, 1277) withdrawn into prothorax but with eyes partially visible externally. 0.82–0.86 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; corpotentoriium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocular canthus extending slightly into eye; interocular distance 0.55–0.57 times as wide as head across eyes; interfacial setae indistinct. Antenna (Fig. 1275) 0.95 times as long as head capsule width, 11-segmented; scape 2 times as long as pedicel; pedicel distinctly narrower than scape, 1.55–1.65 times as long as wide; antennomere III 3 times longer than wide, and at least 3 times longer than IV; antennomere IV as long as V; antennomeres VI and VII quadrate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere elongate, truncate at apex. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum rounded apically. Maxillary cardo (Fig. 1273) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.7 times as long as wide, subparallel-sided. Mentum transverse, less than 2 times broader than long; anterior margin weakly arcuate; ventral surface with horseshoe-like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance at least 1.5 times broader than width of palpgig; apical palpmere as long and as broad as penultimate one; submentum distinct.

**Pronotum** (Figs 1276, 1277, 1283) with anterior angles rounded, weakly produced anteriorly, not swollen with regular border; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 1282) smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process (Fig. 1279) 0.7 times as broad as longest coxal diameter, its surface with carinae joined before apex and continuing anteriorly as single, short carina; prosternum in front of coxa 0.7 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with bordering line distinctly incomplete antero-medially.

**Anterior edge of mesoscutum** (Fig. 1279) with complete raised border; mesoventral process at median length of coxa 0.9 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction forming a straight line, without internal knob. Scutellum triangular, transverse; surface punctate and setose. Elytra (Fig. 1271) with lateral margins very narrow but entirely visible from above; surface (Fig. 1283) with double size punctures, elytral epipleuron incomplete apically only (Figs 1272, 1284), 2.3 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and
border line fading before base of elytron. Metaventrite with partially incomplete discrinum; metaventral postcoxal lines (Fig. 1279) distinctly separated at middle, laterally complete and straight; metaepisternum with external process interlocking with forvea on elytron (Fig. 1278); metaepimeron distinct, visible ventrally; metandosternite stalk distinctly shorter than broad; tendons widely separated and placed near apices of arms.

Legs with trochanters angulately produced (Figs 1279, 1284); mid and hind tibia with single spur (Fig. 1281); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male and claw in female with quadrate basal tooth.

Abdomen (Figs 1280, 1284) with 5 ventrites in both sexes; ventrite I 1.2–1.3 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin rounded to truncate; female ventrite VI (Fig. 1885) with hind margin shallowly emarginated, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1884), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half broadened and plate-like at apex, and base of scipum simple and narrow.

Male genitalia (Figs 1882, 1883). Parameres articulated with phallobase, well developed, simple and separated, about 1.2 times longer than penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegrnal strut simple; penis base with outer arm distinctly less developed than inner arm.

Female genitalia (Fig. 1886). Proctiger (T10) distinct, at least partly sclerotized plate; styli reduced and hardly visible; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to spermatheca.


Other material. **Australian Capital Territory:** 35.195 148.51E Wombat Ck., 6 km NE of Picadilly Circus, 750 m, III.1985, Weir, Lawrence, Johnson, flight intercept window/trough trap (8: ANIC; 2: MIZ); 35.225 148.50E Blundells Ck., 3 km., E of Picadilly Circus, 850 m, I and III 1985, Weir, Lawrence, Johnson, flight intercept window/trough trap (10: ANIC; 4: MIZ); same but 7.IX.1986, J.P. Lawrence (2: ANIC); 1 km SE Mt. Ginini, outlet Ginini Bog, 1520 m, 24.XII.1983, L. Hill coll. (2: ANIC; 1: MIZ); Mt. Gingera, 18.VII.67, leaf mould, soil, Britton & Misko, ANIC Beresite. No. 50 (1: ANIC); **New South Wales:** Kosciusko Nat. Park, Smiggins Bog, 1600 m, 1983–1986, pitfall traps, Ken Green, No. 63 (1: ANIC); same but Ramshead, 1850 m, (1: ANIC; 1: MIZ); South Ramshead, 2000 m, II.1982, Ken Green, pitfalls, ANIC, Coleoptera Voucher No. 83–0120 (1: ANIC); 36.325 148.11E, Kosciusko NP, Leather Barrel Creek, Picnic area (0.8 km SW) 1080 m, 7–21.II.1993, 920, A. Newton & M. Thayer, open Eucalyptus forest, w/ shrubby understory, FMHD #93-68, ex window trap (1: ANIC); 33.585 150.04E Kanangra-Boyd NP, Morong Ck, 1200 m, 3.X.1982.
L. Hill, Berlesate ANIC 854, rush, sedge, moss, Poa (1: ANIC); Thredbo Riv., Kosciusko NP., Site –,24HD XL 1.1.1982, M.E. McIaige (2: ANIC); 35.58S 150.09E Congo, 8 km SE byE of Moruya, 2-16.1.82, M.S. Upton, window trap (1: ANIC); Victoria: 36.56S 147.19E, Bogong N.P., 1650 m, Strawberry Saddle 804, 22.I-13.II.1987, A. Newton & M. Thayer, Euc. pauciflora woodland, FMHD 87-197 flight interc. (window) trap (1: ANIC); South Australia: 34.505S 138.46E Houghton, V.1989, C. Reid, Acacia pycnantha & under Euc. bark (1: ANIC); Tasmania: Minnion River – tributary of Mersey River, at Bryan's Bridge, 43 km SSE of Devonport, E. & S. Britton, 12.II.73 (1: ANIC).

**Distribution.** Australia: Tasmania, Victoria, South Australia, Australian Capital Territory.

**Rhyzobius viridipennis** Lea
(Figs 1285–1299, 1802–1805)

**Rhyzobius viridipennis** Lea, 1929. 242.

**Diagnosis.** This species resembles *R. lophanthae*, but *R. viridipennis* has the elytra more coarsely punctate, the antennomere III more elongate, the abdominal ventrite V in male simply setose with hind margin only weakly excised medially and the female ventrite V triangularly produced posteriorly at apex.

**Description.** Length 2.40–2.60 mm; TL/EW = 1.35–1.40; PL/PW = 0.49–0.50; EL/EW = 1.10–1.12.

Body (Figs 1285–1287) broadly oval, moderately convex, winged. Head and prothorax chestnut brown; pronotal disc somewhat infuscate; elytra brownish black or black; ventral surface of meso- and metathorax, and median part of abdominal ventrites infuscate; mouthparts, antennae, legs (at least tarsi and tibiae), lateral margins of abdominal ventrites and apex of terminal ventrite yellowish brown to red brown. Dorsum with double pubescence consisting of appressed setae and sparse darker stiff bristles; dorsal pubescence forming weak wavy pattern on elytra; elytral bristles present on entire dorsum but distinct mainly along margins.

Head (Figs 1288, 1290) withdrawn into prothorax but with eyes partially visible externally; ventral antennal grooves distinctly circular bent towards outer margin of eye. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocular canthus extending slightly into eye; interocular distance 0.55 times as wide as head across eyes; interfascetal setae indistinct. Antenna (Fig. 1296) 0.75 times as long as head capsule width, 11-segmented; scape 1.5 times as long as pedicel; pedicel distinctly narrower than scape, 1.35 times as long as wide; antennomere III 3.5 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII subquadrate to weakly transverse. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere elongate, rounded at apex. Anterior clypeal mar-
gin distinctly emarginate with median area membranous. Labrum truncate at apex. Maxillary cardo (Fig. 1288) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.3 times as long as wide, weakly expanded apically. Mentum transverse, less than 2 times broader than long; anterior margin weakly arcuate; ventral surface with horseshoe-like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpgier; apical palpomere as long and as broad as penultimate one; submentum indistinct.

Pronotum (Figs 1289–1291, 1294) with anterior angles rounded, weakly produced anteriorly, not swollen but with distinct groove near angles; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron with broad, concave area along anterior half of prothoracic lateral margin; notosternal suture distinct, simple; prosternal process (Fig. 1293) 0.6 times as broad as longest coxal diameter, its surface with complete, weakly converging separate carinae; prosternum in front of coxa 0.5 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 1293) with complete raised border; mesoventral process at median length of coxa 1.15 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction weakly angulate posteriorly. Scutellum (Fig. 1294) triangular, transverse; surface punctate and setose. Elytra (Fig. 1285) with lateral margins very narrow but entirely visible from above; surface (Fig. 1294) with single size punctures, elytral epipleuron incomplete apically only (Figs 1286, 1299), 1.8 times as wide as corresponding metaepisternum, inner margin with border area narrow throughout and border line fading before base of elytron. Metaventrite with complete discrinen; metaventral postcoxal lines (Fig. 1293) distinctly separated at middle, complete and recurved; metaepisternum with external process interlocking with fovea on elytron (Fig. 1292); metaepimeron indistinct.

Legs with trochanters angulately produced (Figs 1293, 1299); tibiae without visible spurs (Figs 1295, 1297); tarsal claws in female with small quadrato basal tooth.

Abdomen (Figs 1298, 1299) with 5 ventrites in both sexes; ventrite I 1.3 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin only with median part shallowly emarginate; female ventrite VI with hind margin shallowly excised, tergite VIII rounded; hind margin of male ventrite VI emarginate, tergite VIII rounded.

Male genitalia (Figs 1802, 1803). Parameres articulated with phallobase, well developed, simple and separated, slightly longer than penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical, distinctly less developed.

Female genitalia membranous; styli absent; spermathecae and ramus, spermatheca.

Material examined: 11664 viridipennis, same card with 6084; same date, 19884, co-type, em. mt. Ledge.

Other data: Distribution.

Diagnosis. This species elytra corrugate and distinctly longer than pronotum.

Description. Length EL/EW = 1.03–1.05.

Body (Figs 1426) predominantly blackish, tibio-femoral connature and trochanters appressed setae and wavy pattern on elytron.

Head (Figs 1427) externally, 0.70–0.75, reaching distinctly more than anteriorly; width about 0.53 times as long as length.

Antenna (Fig. 1499) externally, 1.5 times as long as penultimate wide; antennomere I 1.5 times longer than broad. Antennomere II to IV; antennomere I distinctly longer than broad. Antennomere II to IV; antennomere I distinctly longer than broad. Antennomere II to IV; antennomere I distinctly longer than broad. Antennomere II to IV; antennomere I distinctly longer than broad. Antennomere II to IV; antennomere I distinctly longer than broad. Antennomere II to IV; antennomere I distinctly longer than broad. Antennomere II to IV; antennomere I distinctly longer than broad. Antennomere II to IV; antennomere I distinctly longer than broad. Antennomere II to IV; antennomere I distinctly longer than broad. Antennomere II to IV; antennomere I distinctly longer than broad. Antennomere II to IV; antennomere I distinctly longer than broad.
sides symmetrical throughout; tegmental strut simple; penis base with outer arm distinctly less developed than inner arm.

Female genitalia (Figs 1804, 1805). Proctiger (T10) reduced, small, submembranous; styli apparently absent, only terminal spines present; infundibulum absent; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

Material examined. Types. Holotype, "Rhizobius viridipennis" Lea, Lord Howe I., Type 11664/2 viridipennis" Lea Type, Lord Howe I/ SA Museum specimen (SAM - mounted on a same card with three paratypes; holotype is indicated with Lea's handwriting as TY); paratypes: same data as holotype (3: SAM); "Rhizobius viridipennis" Lea, Lord Howe I., Type 19884/3 co-type/ Lord Howe I., A.M. Lea/ S.A. Museum specimen (3: SAM); same and treefern, mt. Ledgbird (2, male and female: SAM).


Distribution. Australia: Lord Howe Island.

Rhyzobius wani sp. nov.
(Figs 145–158, 1887–1892, 1948)

Diagnosis. This species resembles most closely R. nigripennis, but differs by having the elytra cordiform and black without any contrasting markings, the antennomeres VI and VII distinctly longer than broad and the male ventrites V, and VI rounded apically.

Description. Length 2.66–2.77 mm; TL/EW = 1.36–1.42; PL/PW = 0.48–0.49; EL/EW = 1.03–1.05.

Body (Figs 144–147, 1948) broadly oval, moderately convex, winged; predominantly blackish or deeply black; mouthparts, antennae, at least tarsi, tibiae and tibio-femoral connections, and abdominal ventrites IV–V or III–V light brown; femora and trochanters often infuscate. Dorsum with double pubescence consisting of appressed setae and sparse darker, long stiff bristles; dorsal pubescence forming weak wavy pattern on elytra; elytral bristles present on entire dorsum.

Head (Figs 148, 150) withdrawn into prothorax but with eyes partially visible externally, 0.70–0.75 times as long as wide; ventral antennal grooves long, straight, reaching distinctly behind eyes; corporotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; with ocular canthus extending slightly into eye; interocular distance about 0.53 times as wide as head across eyes; interfacetal setae absent or indistinct. Antenna (Fig. 149) 1.1 times as long as head capsule length, 11-segmented; scape 1.6 times as long as pedicel; pedicel distinctly narrower than scape, 1.65 times as long as wide; antennomere III 3 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as VI; antennomeres VI and VII at least 1.5 times longer than broad. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere distinctly elongate, apically rounded. Anterior elytral margin distinctly
emarginate with median area membranous. Labrum rounded apically. Maxillary cardo (Fig. 150) transverse and strongly prominent externally; terminal palpomere 1.6 times as long as wide, broadened apically. Mentum strongly transverse, at least 2 times broader than long; anterior margin deeply emarginate; ventral surface without horseshoe impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpiger; apical palpomere as long as and about as broad as penultimate one; submentum distinct.

Protonotum (Figs 152–154) 0.49–0.50 times as long as broad; anterior angles rounded, at least weakly produced anteriorly, not swollen with regular border; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron smooth, without groove or concavity; notosternal suture distinct, simple; pro sternal process (Fig. 151) 0.6 times as broad as longest coxal diameter, its surface with carinae weakly convergent anteriorly, joined rounded just before prosternal margin; pro sternum in front of coxa 0.5 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line; only slightly more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with bordering line anteriorly distinctly incomplete anteriorly medi ally.

Anterior edge of mesoventrite (Fig. 151) with complete raised border; mesoventral process at median length of coxa 1.25 times as broad as corresponding coxal diameter; meso-metaventral articulation with suture obscure; junction somewhat angulate posteriorly, without internal knob. Scutellum (Fig. 153) triangular, transverse; surface punctate and setose. Elytra (Figs 145, 153) with lateral margins very narrow but visible from above; surface with single size punctures, elytral epipleuron (Figs 146, 158) obsolete at apex, 2.2 times as wide as corresponding metepisternum, inner margin with border line present only in apical half of epipleuron, absent in basal half (Fig. 155). Metaventrite with complete discriment; metaventral postcoxal lines distinctly separated at middle, complete and distinctly recurved (Fig. 151); metaepisternum with external process interlocking with fovea on elytron; metaepimeron indistinct; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters weakly angulately produced (Figs 151, 158); mid and hind tibia with single spur (Figs 156, 157); protarsal claws in male appendicate; mid and hind tarsal claws in male, and claws in female with subquadrate basal tooth.

Abdomen (Fig. 158) with 5 ventrites in both sexes; ventrite I 1.55 times as long as ventrite II; abdominal postcoxal lines separate medi ally, recurved and complete, posteriorly reaches about half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin rounded; female ventrite VI (Fig. 1891) with hind margin arcuate; female tergite VIII rounded; hind margin of male ventrite VI rounded (Fig. 1889); male tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half very narrow and rod-like towards apex, and base of spiculum widened and partially submembranous.
Male genitalia (Figs 1887, 1888, 1890). Parameres articulated with phallobase, well developed, simple and separated, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegminal strut simple; penis base with outer arm obsolete.

Female genitalia (Fig. 1892). Proctiger (T10) reduced, small, submembranous; styli terminal; infundibulum sclerotized, tube-like, enclosing the sperm duct; sperm duct simple, uniform in diameter; spermatheca with only nodulus developed, spermathecal accessory gland distinctly separated from sperm duct.

Material examined. Type s. Holotype, "New Caledonia, (N), 20.33S, 164.46E, 1300 m, Mt. Panie, humid forest, night beating near refuge hut, 2.02.2004, leg. M. Wanat" (ANIC).

Paratypes: same data as holotype (1: ANIC; 1: MIZ, dissected on slide); (N), 21.09S 165.19E, Aoupinie, 420-530 m, road to sawmill, 7.02.2004, leg. M. Wanat (1: ANIC; 1: MIZ, dissected on slide).

Etymology. This species is dedicated to Dr. Marek Wanat (University of Wroclaw), Polish entomologist and the collector of the type series of this new species.

Distribution. New Caledonia.

Rhyzobius waterhousei (Mulsant) (Figs 1300–1313, 1893–1898)

Scyunnus waterhousei Mulsant, 1850: 994.


Rhyzobius speratus Blackburn, 1889: 207. Syn. nov.

Diagnosis. This species may be separated from R. umbratus by having the antennomere III more elongate, antennomere IV shorter than V, the female abdomen with five ventrites and the male ventrite V with hind margin truncate. The male genitalia of both species are, however distinctly different and should be consulted to insure proper identification.

Description. Length 1.60–2.00 mm; TL/EW = 1.45–1.46; PL/PW = 0.45–0.48; EL/EW = 1.11–1.15.

Body (Figs 1300, 1301, 1303) broadly oval, moderately convex, winged; dorsal surface light to dark brown with more or less developed three pale, usually oval maculae on each elytron, anterior one not touching any suture or margin, mid and posterior ones close to suture; venter dark brown with hypomera, epipleura, legs, mouthparts and antennae light brown. Dorsum with rather short and uniform pubescence, forming weak wavy pattern on elytra.

Head (Figs 1302, 1305) dorsally exposed, 0.75 times as long as wide; ventral antennal grooves long, straight, reaching distinctly behind eyes; corpotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arculate, closest at middle; ocular canthus extending slightly into eye; interocular distance 0.59–0.62 times as wide as head across eyes; interfacetal setae indistinct. Antenna (Fig. 1304) 0.76–0.78 times as long as head capsule width, 11-segmented; scape 1.4
times as long as pedicel; pedicel distinctly narrower than scape, 1.7-1.8 times as long as wide; antennomere III 4.00-4.25 times longer than wide, and at least 3 times longer than IV; antennomere IV shorter than V; antennomeres VI and VII subquadrate; antennal club 3-segmented, with penultimate segment asymmetrical; penultimate antennomere distinctly longer than terminal segment; terminal antennomere subquadrate, subtruncate at apex. Anterior clypeal margin straight. Labrum truncate at apex. Maxillary cardo (Fig. 1302) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpmere 1.3-1.4 times as long as wide, weakly expanded apically. Mentum transverse, less than 2 times broader than long; anterior margin weakly arcuate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance at least 1.5 times broader than width of palpiger; apical palpmere about as long as and broad as penultimate one; submentum distinct.

 Pronotum (Figs 1305, 1306, 1308) with anterior angles rounded, weakly produced anteriorly, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and without clear border at least along part of its length; hind margin with border line not reaching lateral margins. Prothoracic hypomeron smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process (Fig. 1307) 1.2 times as broad as longest coxal diameter, its surface smooth, without carinae; prosternum in front of coxa 0.75 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, with complete bordering line, close to the cavity.

 Anterior edge of mesoventrite with complete raised border; mesoventral process (Fig. 1307) at median length of coxa 1.65 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction forming a straight line, with internal knob. Scutellum (Fig. 1308) triangular, at least as long as broad; surface punctate and setose. Elytra (Fig. 1300) with lateral margins very narrow but entirely visible from above; surface (Fig. 1308) with single size punctures, elytral epipleuron incomplete apically only (Figs 1301, 1313), 2.4 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite with partially incomplete discrimen; metaventral postcoxal lines (Fig. 1307) joined medially forming straight line, laterally complete and recurved; metaepisternum with external process interlocking with fovea on elytron (Fig. 1311); metaepimeron indistinct; metendosternite stalk distinctly shorter than broad; tendons separated by slightly less than width of stalk and placed on laminae.

 Legs with fore and mid trochanters roundly and hind trochanters anglately produced (Figs 1307, 1313); mid and hind tibia without visible spurs (Figs 1309, 1310); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male and claws in female with weak quadrate basal tooth.

 Abdomen (Figs 1312, 1313) with 5 ventrites in female, and 6 ventrites in male; ventrite I 1.65 times as long as ventrite II; abdominal postcoxal lines separate medi-
dially, recurved and complete, posteriorly reaches about half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin truncate; female ventrite VI (Fig. 1897) with hind margin rounded, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1896), tergite VIII truncate apically. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half very narrow and rod-like towards apex, and base of scipulum sclerotized rod, deeply divided into inverted V.

**Male genitalia** (Figs 1893–1895). Parameres articulated with phallobase, reduced, narrow, nearly 0.5 times as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut simple; penis base with both arms of almost equal length.

**Female genitalia** (Fig. 1898). Protiger (T10) distinct, at least partly sclerotized plate; styli terminal, infundibulum sclerotized, tube-like, enclosing the sperm duct; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.


Note. The lectotype of Rhizobius sp. Blackburn, 1889 is designated to fix the confused taxonomic status of this species.

**Other material.** **Tasmania.** 43.22S 146.08E, Claytons, Bathurst Harbour, 15.I.20.II.1991, A. Calder, W. Dressler, malaise(#3, closed forest (2: ANIC); 41.22S 147.24E, 10 km, ENE of Nunamara, 12.I.-6.II.1983, I. Naumann & J. Cardale (2: ANIC; 1: MIZ); same but 41.21S 147.22E, Barrow Ck., 8 km NE of Nunamara (1: ANIC); 41.50S 146.03E, Pelion Hut, 3 km S Mt. Oakley, 860 m, II.1990, W.E.B.S. malaise(#1, closed for. (1: ANIC); same but 7.III-9.IV.1991, E. Edwards & J. Berry (1: ANIC); 41.15S 148.10E, 10 km, NW by N St. Helens, 14.I.1983, I.D. Naumann & J.C. Cardale (1: ANIC); 42.41S 146.37E, Mt. Field N.P. nr Lake Fenton, 1000 m, 31.I.1980, Lawrence & Weir, Grifolia campyla (1: ANIC); Hobart, Lea (5: NMB); Hobart, Lea (2: ISNB); **South Australia.** 31.20S 138.37E, Trezona Camp, Brachina Creek, 10.XI.1987, I. Naumann, J. Cardale (2: ANIC; Upper Sturt Adela-ide, 17.XII.1985, C. Reid, on Euc. rubida, Ac. pycantha & Ac. myrtifolia (2: ANIC); 31.56S 133.24E, 32 km, NW by W Ceduna, 14.X.1981, I.D. Naumann, J.C. Cardale (1: ANIC); 31.39S 132.64E, 19 km, NW Undurroo, 14.X.1981, ex ethanol, I.D. Naumann, I.C. Cardale (1: ANIC); Mt. Lofty, Adelaide, 16.XII.1985, C. Reid, ex E. oblatae & Ac. dealbata (1: ANIC); 34.19S 139.30E, Brookfield Con. Pk., 31.III-29.IV.1992, E.S. Nielsen, F.T. #1, ANIC 1232 mallee with Triodia #1 (1: ANIC); Brookfield Cons. Pk., 11 km E Blanchetown, 14.V.1989, C. Reid, on flowers Euc. gracilis (1: ANIC); 7 km S Quorn, 22.XI.1988, H. & A. Howden, on Eucalyptus (1: CMN); **Victoria.** Hattah Lakes, Nat. Park, 24.X.67, Britton &
Misko (1: ANIC); Northern Territory, 8 km E-NE of Victoria River Downs, 10.VI.1973, L.P. Kesley (1: ANIC); New South Wales, Ulladulla (Narrawale), 27-28.I.1999, leg. A. Podlussány (1: HNHM); 36.12S 148.43E, Dainers Gap, 28.XII.1973, 9.1., 22.I. and 21.II.1974, P. Morrow, ex Eucalyptus pearlifera, 1585 m, Euc. pauciflora, stellulata and perriniana forest (4: ANIC; 2: MIZ); 35.30S 150.18E, Kiloa SF, 15 km NE Batemans Bay, IV.1987, M.G. Robinson, ex sticky trap (2: ANIC; 1: MIZ); 21 km, E Nimmitabel, 25.X.1987, C. Reid, forest of Euc. fraxinoides & Ac. obliquiflora (3: ANIC); 12 km SW Oberon, 3.XII.1984, C. Reid, on Ac dealbata (2: ANIC); 3 km, E Narrandera Reserve, Milthorpes Reserve, 24.IV.1993, C. Reid, flowering Eucalyptus (1: ANIC); 11 km, SSE Narrandra, 2.X.1990, C. Reid coll., Acacia pendula (1: ANIC); 10 km SW Braidwood by Shoalhaven R., 4.V.1986, C. Reid (1: ANIC); 22 km SE Braidwood, 3.II.1986, C. Reid, on Euc. gregsoniana (2: ANIC); 20 km SE Braidwood, 3.X.1987, C. Reid, ex Eucalyptus pauciflora (1: ANIC); Pine Rocks, 6 km SSW Orange, 4.IV.1993, C. Reid, on Eucalyptus (1: ANIC); 31.54S 151.35E, Cobark Forest, Barrington Tops, S.F., 15.XI.1981, T. Weir, by sweeping (1: ANIC); Australian Capital Territory, 35.22S 148.50E, Blundells Ck., 3 km E of Picadilly Circus, 850 m, I, IV, V, VI, IX, X, 1984 and II, 1985. Weir, Lawrence, Johnson, flight intercept window/ trough trap (11: ANIC; 4: MIZ); Gudgenby R., 3 km, W Booths Hills, 7.IX.1986, 1000 m, C. Reid (2: ANIC); Picadilly Circus, powerline clearing, 10.II.1984, C. Reid, on Euc. pauciflora (3: ANIC); 35.22S 148.48E, Picadilly Circus, 1240 m, IX.1984, J. Lawrence, T. Weir, M-L. Johnson, coll., flight intercept window/ trough trap (4: ANIC); 4 mi E of Picadilly Circus, 11.X.1967, Britton and Misko (2: ANIC); Billy Billy Rocks, 25.XI.1984, C. Reid, on Euc/Ac. bushes, beside road (2: ANIC); Honeyseuckie Ck., old quarry, 2.III.1986, Euc. stellulata (3: ANIC), same but on Euc. and Acacia (2: ANIC); 35.35S 149.00E, Honeyseuckie Creek, 9-28.V.1985. I. Naumann, J. Cardale, maleise trap (2: ANIC); 39.19S 148.51E Wombat Ck., 6 km NE of Picadilly Circus, 750 m, II.1984, Weir, Lawrence, Johnson, flight intercept window/ trough trap (2: ANIC).

_Distribution._ Australia: Tasmania, South Australia, Victoria, Northern Territory, New South Wales, Australian Capital Territory.

_Rhyzobius weirii_ sp. nov.

(Figs 1314–1327, 1899–1904, 1944)

_Diagnosis._ This species is distinguished from _R. leai_ in having the pronotum with distinct groove near anterior angles, the antennomere III less elongate (but more than 3 times longer than antennomere IV), the antennomeres VI and VII transverse and the prosternal carinae joined roundly before the prosternal margin.

_Description._ Length 1.83–2.00 mm; TL/EW = 1.31–1.33; PL/PW = 0.49–0.52; EL/EW = 1.05–1.09.

_Body_ (Figs 1314, 1315, 1317, 1944) broadly oval, strongly convex, hemispherical, winged. Dorsal surface blackish brown, each elytron with reddish brown stripe, of somewhat irregular shape, along suture, extending from anterior margin of elytron or just beyond it and reaching near apex; this stripe is weakly curved outwardly it is surrounded by a yellowish lateral pale margin, with each of the lateral sides infuscate or overlaid. Antennae, mouthparts, dorsum with subapical and apical bristles distributed in a regular pattern on each side.

_Head._ Ocelli visible externally, each ocellus surrounded by a ring of five to eight small circular bosses. Prothorax and head capsule connected by a long head acrocephalum, head acroceps, the head acrocephalum sometimes as long as the head capsule, as pedicel, prothoracic and mesothoracic, with 3-segmented postclypeus, mesothoracic, postclypeus, rounded apically, the outer angle of the postclypeus as long or longer than the inner, with the outer angle separated by a space of about as wide as broad as the outer angle.

_Pronotum._ Anteriorly, more pointed; lateral margin of pronotum acute, the hypomeron of pronotum with a well-defined lateral margin, the lateral margin of the hypomeron broad as long as short, the pronotum rounded just before the coxal lobe, the coxal region with a weakly curved carina. Pores on first coxal area separable by a distance as wide as broad as the outer angle of the second coxal lobe.

_Anteriors._ Mesoventral groove not present, the coxal diameters equal or posteriory, prothorax.
outwardly in mid length, leaving oval, blackish spot, common for both elytra, surrounded by coarse punctures and almost impunctate inside; additional oval, preapical pale macula placed laterally to apical part of sutural stripe — sometimes fused with each other. In some individuals dorsal surface of head and pronotum is only infuscate or reddish brown, like elytral maculae. Ventral surface dark brown; antennae, mouthparts and legs, except for coxae and trochanters yellowish brown. Dorsum with double pubescence consisting of appressed setae and sparse darker stiff bristles distinct especially along margins; dorsal pubescence forming weak wavy pattern on elytra.

Head (Figs 1316, 1324) withdrawn into prothorax but with eyes partially visible externally, 0.74–0.75 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocular canthus extending slightly into eye; interocular distance 0.48–0.50 times as wide as head across eyes; interfacial setae absent. Antenna (Figs 1318, 1319) 0.90–0.92 times as long as head capsule width, 11-segmented; scape 1.45–1.50 times as long as pedicel; pedicel distinctly narrower than scape, 1.6 times as long as wide; antennomere III 3.15 times longer than wide, and at least 3 times longer than IV; antennomere IV as long as V; antennomeres VI and VII short, transverse. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere subquadrate, rounded apically. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum truncate at apex. Maxillary cardo (Fig. 1316) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.5 times as long as wide, weakly expanded apically. Mentum transverse, less than 2 times broader than long; anterior margin deeply emarginate; ventral surface with horse-shoe like impression; prementum about as long as broad; ligula reduced; labial palps separated by distance about equal to width of palpiger; apical palpomere as long and as broad as penultimate one; submentum indistinct.

Pronotum (Figs 1323–1325) with anterior angles rounded, scarcely produced anteriorly, not swollen but with distinct groove near angles; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 1318) with broad, concave area along anterior half of prothoracic lateral margin; notosternal suture obscure; prosternal process (Fig. 1320) 0.6 times as broad as longest coxal diameter, its surface with carinae weakly convergent, joined roundly just before prosternal margin; prosternum in front of coxa 0.75 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 1320) with complete raised border; mesoventral process at median length of coxa 1.65 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction arcuate posteriorly, without internal knob. Scutellum (Fig. 1323) triangular, at least as long as long
as broad; surface punctate and setose.ELYtra (Fig. 1314) with lateral margins very narrow but entirely visible from above; surface (Fig. 1325) with double size punctures, elytral epipleuron incomplete apically only (Figs 1315, 1327), 2.3 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line upturned outwardly near base of elytron. Metaventrite with complete discernens; metaventral postcoxal lines distinctly separated at middle, complete and recurved; metaepisternum with external process interlocking with fovea on elytron (Fig. 1321); metaepimeron indistinct; metendosternal stalk distinctly shorter than broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters anguately produced (Figs 1320, 1327); mid and hind tibia without visible spurs (Fig. 1322); pro- and mid tarsal claws in male appendicate; hind tarsal claws in male and claws in female with large subquadrate basal tooth.

Abdomen (Figs 1326, 1327) with 5 ventrites in both sexes; ventrite 1 1.4–1.5 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin rounded to scarcely truncate at apex; female ventrite VI (Fig. 1904) with hind margin arcuate, tergite VIII truncate; hind margin of male ventrite VI emarginate (Fig. 1902), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half complex, somewhat widening towards and at apex with submembranous insertions near apex, and base of spiculum widened and partially submembranous.

Male genitalia (Figs 1899–1901). Parameres articulated with phallobase, well developed, simple and separated, nearly twice as long as penis guide, with apices covered with simple setae; penis guide with additional small process on outer side; penis guide with lateral sides symmetrical throughout; terminal strut simple; penis base with outer arm distinctly less developed than inner arm.

Female genitalia (Fig. 1903). Proctiger (T10) reduced, small, submembranous; styli terminal; infundibulum absent; spermatheca without clear nodulus and ramous, spermathecal accessory gland adjacent to spermatheca.

Material examined. Types. Holotype, male, "13.445 143.20E. Queensland, 11 km W by N of Bald Hill, McIlwraith Range, 27.VI–12.VII.1989, T.A. Weir, 520 m, search party campsites at light trap" (ANIC).

Paratypes: same data as holotype (3: ANIC; 3: MIZ, 1 totally dissected); "13.455 143.22E, QLD, 8 km W by N of Bald Hill, McIlwraith Range, 27.VI–12.VII.1989, T.A. Weir, 500 m, mango tree site/collected at light" (1: ANIC; 1, totally dissected: MIZ).

Etymology. This species is dedicated to Tom Weir, ANIC curator and excellent beetle collector.

Rhysobius xanthurus Mulsant
(Figs 1328–1341, 1905–1910)

Rhysobius xanthurus Mulsant, 1850: 1005.

Diagnosis. *R. xanthurus* resembles *R. cyanus* by the body shape and colouration. It can be distinguished from that species by larger size, the prosternal carinae short and incomplete, the antennomere III more elongate (as compared to antennomere IV), and mid and hind tibia with distinct spurs.

**Description.** Length 5.00–5.80 mm; TL/EW = 1.60–1.70; PL/PW = 0.60–0.63; EL/EW = 1.20–1.30.

Body (Figs 1328, 1331) elongate oval, distinctly flattened, winged. Predominant body colour black; elytra with metallic blue or purple sheen; pronotum with anterior angles narrowly pale yellow; abdominal ventrites, antennae, mouthparts and tarsi orange brown. Dorsum with double pustulence consisting of appressed setae and sparse stiff bristles distinct especially along margins; dorsal pustulence forming wavy pattern on elytra.

Head (Figs 1330, 1334) entirely withdrawn into prothorax, 0.80–0.83 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; corpotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocular canthus extending slightly into eye; interocular distance 0.47–0.48 times as wide as head across eyes; interfacial setae absent. Antenna (Fig. 1333) 0.9 times as long as head capsule width, 11-segmented; scape 2 times as long as pedicel; pedicel distinctly narrower than scape, 1.4–1.5 times as long as wide; antennomere III 3 times longer than wide, and at least 3 times longer than IV; antennomere IV as long as V; antennomeres VI and VII weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere distinctly elongate, apically rounded. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum truncate at apex. Maxillary cardo (Fig. 1330) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.3–1.4 times as long as wide, broadened apically. Mentum transverse, less than 2 times broader than long; anterior margin weakly arcuate; ventral surface with horseshoe-like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpiger; apical palpomere as long and as broad as penultimate one; submentum indistinct.

Pronotum (Figs 1329, 1334, 1336, 1339) with anterior angles rounded, scarcely produced anteriorly, not swollen with regular border; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 1332) smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process (Fig. 1335) 0.5 times as broad as longest coxal diameter, its surface with short separate carinae extending slightly forward beyond prosternal process; prosternum in front of coxa 1.1 times as long as coxal longitudi-
nal diameter at the same position; anterior margin continuing as straight line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

**Anterior edge of mesoventrite (Fig. 1335)** with complete raised border; mesoventral process at median length of coxa as broad as corresponding coxal diameter; meso-metaventritic articulation with sutures obscure; junction arcuate posteriorly, without internal knob. Scutellum (Fig. 1339) triangular, as long as broad; surface punctate and setose. Elytra (Fig. 1328) with lateral margins very narrow but entirely visible from above; surface with double size punctures, elytral epipleuron incomplete apically only (Fig. 1341), 1.8–2.0 times as wide as corresponding metaepisternum. inner margin with border area narrow throughout and border line fading before base of elytron. Metaventrite with complete discrinen; metaventral postcoxal lines (Fig. 1335) distinctly separated at middle, laterally complete and straight; metaepisternum with external process interlocking with fovea on elytron; metaepimeron indistinct; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

**Legs** with trochanter roundly or somewhat angutely produced (Figs 1335, 1341); mid and hind tibia with single spur (Figs 1337, 1338); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with weak quadrate basal tooth; claws in female simple or swollen at base.

**Abdomen (Figs 1340, 1341)** with 5 ventrites in both sexes; ventrite I 1.25 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin only with median part narrowly truncate to weakly emarginate; female ventrite VI (Fig. 1909) with hind margin arcuate, tergite VIII subtruncate; hind margin of male ventrite VI emarginate (Fig. 1908), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half somewhat widening towards and at apex, and base of spiculum weakly widened.

**Male genitalia (Figs 1905–1907).** Parameres articulated with phallobase, well developed, simple and separated. about 1.6 times longer than penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; teginal strut simple; penis base with outer arm distinct less developed than inner arm.

**Female genitalia (Fig. 1910).** Proctiger (T10) distinct, at least partly sclerotized plate; styli absent; infundibulum sclerotized, tube-like, enclosing the sperm duct; sperm duct short, simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

**Material examined.** Types not studied.

Key to New Guinean species of Rhizobius

1. Dorsum uniformly blackish or deeply black ........................................... 2
   - Dorsum bicoloured (black and brown, orange or yellowish) .................. 5

2. Elytra with strongly intensive, three-coloured (green, violet and blue) metallic sheen (Fig. 1957) ........................................... metallicus sp. nov.
   - Elytra with moderately intensive, unicoloured metallic sheen or without metallic sheen ........................................... 3

3. Antenna bicoloured; elytra more coarsely punctate; prosternal carinae subparallel, joined roundly before prosternal margin (Fig. 614); mid and hind tibia with single spur (Figs 610, 616) ........................................... iracildae sp. nov.
   - Antenna unicoloured, pale; elytra less coarsely punctate; prosternal carinae separate or joined anteriorly forming triangle; mid and hind tibia without spurs ........................................... 4

4. Body larger and more elongate; pronotum not swollen towards anterior angles (Figs 22, 28); prosternal carinae complete and separate (Fig. 25); mesoventral process slightly broader than mesoscutal diameter (Fig. 25) ........................................... amabilis Weise
   - Body smaller and shorter; pronotum distinctly swollen towards anterior angles (Fig. 924); prosternal carinae joined anteriorly forming triangle (Fig. 927); mesoventral process distinctly broader than mesoscutal diameter (Fig. 927) ........................................... papuensis sp. nov.

5. Elytra black with small, preapical, yellowish, round oval spot on each elytron (Fig. 1951); pronotum black ........................................... bipunctatus sp. nov.
   - Elytra black without spots, or with brown apex; pronotum brown or bicoloured (black and brown) ........................................... 6
6. Ventral antennal grooves reaching beyond posterior margin of eyes, straight (Figs 641, 715); pronotum with regular border (Figs 646, 724) .................... 7
   Ventral antennal grooves distinctly circular bent towards outer margin of eye (Fig. 947); pronotum with at least distinct groove near anterior angles (Fig. 952) ........................................ 8

7. Prosternal process smooth without carinae (Fig. 643); elytra black with yellow apices (Fig. 1954) .......................................................... jaya sp. nov.
   Prosternal carinae joined roundly before prosternal margin and continuing anteriorly as single carina (Fig. 725); elytra entirely black (Fig. 1955) .......... .......................... leucochaeus sp. nov.

8. Pronotum black with anterior and lateral margins brown (Fig. 1960); pronotal lateral margins distinctly swollen towards anterior angles and with groove near angles (Figs 952, 954) ................................ poonani sp. nov.
   Pronotum brown, at most weakly infuscate at base (Fig. 1952); pronotal lateral margins not swollen, but with groove near anterior angles (Fig. 517) .... .......................... 9

9. Mid and hind tibia with single spur; prosternal carinae joined roundly before margin and continuing anteriorly as single carina (Fig. 516) ....................... .......................... gonzalez sp. nov.
   Mid and hind tibia without spurs; prosternal carinae separate or joined but not continuing anteriorly as single carina ................................................. 10

10. Body more convex (Fig. 1260); elytra mostly black with violet metallic sheen, apex somewhat paler (Fig. 1959); prosternal carinae complete and separated (Fig. 1263); male ventrite V with admedian setose patches, apical margin narrowly truncate ......................................... violaceus sp. nov.
    Body less convex (Fig. 759); elytra entirely black with cupreous metallic sheen (Fig. 1956); prosternal carinae joined roundly just before prosternal margin (Fig. 761); male ventrite V simply setose and with apical margin rounded .......... luciae sp. nov.

Descriptions of New Guinean species of Rhyzobius

Rhyzobius amabilis Weise
(Figs 18–31, 1348–1353)

Rhyzobius amabilis Weise, 1918: 223.

Diagnosis. This species is most similar to R. papuensis, but can be distinguished from it by larger body, sparser and shorter pubescence on the dorsum, the pronotum not swollen towards anterior angles and the prosternal process having complete, separate carinae.
Description. Length 3.10–3.45 mm; TL/EW = 1.19–1.20; PL/PW = 0.48–0.50; EL/EW = 0.92–0.95.

Body (Figs 18–20) broadly oval, strongly convex, hemispherical, winged. Dorsum brownish black or black; elytra with bluish or purple metallic sheen; ventral surfaces of pro-, meso- and metathorax, and abdominal ventrite I at least infuscate; mouthparts, antennae, legs except for coxae and abdominal ventrites II–V dark brown. Dorsum with moderately long and uniform pubescence; dorsal pubescence forming weak wavy pattern on elytra; elytral bristles apparently absent.

Head withdrawn into prothorax but with eyes partially visible externally (Figs 21, 22); ventral antennal grooves distinctly circular bent towards outer margin of eye (Figs 21, 24). Eyes with inner orbits convergent, closer near vertex than anteriorly; with ocular canthus extending slightly into eye; interocular distance about 0.52 times as wide as head across eyes; interfacetal setae distinct. Antenna about 0.58 times as long as head capsule width, 11-segmented; scape 1.8 times as long as pedicel; pedicel distinctly narrower than scape; antennomere III about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII quadrate or at most weakly elongate. Antennal club (Fig. 26) 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere subquadrate, apically rounded. Anterior clypeal margin distinctly emarginate with median area membranous (Fig. 22). Labrum rounded apically. Maxilla (Fig. 24) with cardo transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.2 times as long as wide, weakly expanded apically. Mentum (Figs 21, 24) weakly transverse, less than 2 times broader than long; anterior margin subtruncate; ventral surface with horseshoe like impression; prementum transverse; ligula scarcely expanded antero-laterally; labial palp separated by distance about equal to width of palpiger; apical palpomere as long as and about as broad as penultimate one; submentum distinct.

Pronotum (Figs 22, 28) about 0.5 times as long as broad; anterior angles rounded, weakly produced anteriorly, not swollen but with distinct groove near angles; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Figs 21, 24, 26) with broad, concave area delimited outwardly by crescent shaped groove; notosternal suture obscure; prosternal process about 0.35 times as broad as longest coxal diameter, its surface with complete, separate carinæ (Figs 25, 26); prosternum in front of coxa 0.65 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line; much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Figs 25, 26) with complete raised border; mesoventral process at median length of coxa 1.1 times as broad as corresponding coxal diameter; meso-metaventre articulation with suture obscure; junction forming a straight line. Scutellum (Fig. 27) triangular, transverse; surface punctate and setose. Elytra (Figs 18, 20, 27) with lateral margins very narrow but entirely visible from above; surface with single size punctures, elytral epipleuron (Figs 19,
29) incomplete apically only, 2.3 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line upturned outwardly near base of elytron (Fig. 26). Metaventrite (Fig. 25) with complete discrinem; metaventral postcoxal lines distinctly separated at middle, complete and recurved; metaepisternum with externall process interlocking with fovea on elytron; metaepimeron indistinct.

Legs with trochanters angulately produced (Figs 25, 26, 29); mid and hind tibia without visible spurs (Figs 23, 31); protarsal claws in male appendiculate; tarsal claws in female with large subquadrate basal tooth.

Abdomen (Figs 29, 30) with 5 ventrites in both sexes; ventrite I 1.25 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male with admedian setose patches, hind margin rounded; female ventrite VI with hind margin rounded (Fig. 1352), tergite V (Fig. 1353), tergite VIII with hind margin of male ventrite VI subtruncate (Fig. 1351), tergite VIII widely truncate. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half somewhat widening towards and at apex, and base of spiculum widened.

Male genitalia (Figs 1348–1350). Parameres articulated with phallobase, well developed, simple and separated, about 1.6 times longer than penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegminal struts simple; penis base with outer arm distinctly less developed than inner arm.

Female genitalia (Fig. 1353). Proctiger (T10) distinct, at least partly sclerotized plate; styli absent; infundibulum absent; sperm duct simple, uniform in diameter; spermatheca with only nodulus or ramus developed; spermathecal accessory gland adjacent to sperm duct.

Material examined. Types. Holotype female, "Rhizobius amabilis m Typus/ Misool Insel" (NRMS).


*Rhizoibus bipunctatus* sp. nov.
(Figs 179–192, 1394–1399, 1951)

**Diagnosis.** This species is easily distinguished from all other New Guinean *Rhizoibus* in having a small, yellow preapical spot on each, deeply black elytron.

**Description.** Length 2.07–2.38 mm; TL/EW = 1.55–1.65; PL/PW = 0.53–0.58; EL/EW = 1.15–1.23.

Body (Figs 179, 180, 182, 1951) elongate oval, moderately convex, winged; predominantly black; each elytron with small, preapical, round, yellow spot, some-
times extending laterally reaching lateral margin of elytron; mouthparts (at least in parts), antennal stalk, connection between femora and tibiae, apices of tibiae and tarsi blackish brown; abdominal ventrites III–V brown. Dorsum with double pubescence consisting of rather short appressed setae and very sparse darker stiff bristles present along margins only; dorsal pubescence forming weak wavy pattern on elytra.

Head (Figs 183, 190) dorsally exposed, 0.82–0.83 times as long as wide; ventral antennal grooves long, straight, reaching distinctly behind eyes; corporotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits arcuate, closest at middle; ocular canthus extending slightly into eye; interocular distance 0.57–0.59 times as wide as head across eyes; interfaccetal setae absent. Antenna (Fig. 181) 0.85 times as long as head capsule width, 11-segmented; scape 1.2–1.3 times as long as pedicel; pedicel about as broad as scape, 1.4–1.5 times as long as wide; antennomere III 2.0–2.2 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII at most weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere subquadrate, apically rounded. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum truncate at apex. Maxillary cardo (Fig. 183) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.6–1.7 times as long as wide, subparallel-sided. Mentum transverse, less than 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe like impression; prementum weakly elongate; ligula parallel-sided; labial palps separated by distance about equal to width of palpgere; apical palpomere as long as or and as broad as penultimate one; submentum distinct.

Pronotum (Figs 185, 188–190) with anterior angles obtuse, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and without clear border at least along part of its length; hind margin without border. Prothoracic hypomeron (Fig. 184) smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process (Fig. 184) 0.65 times as broad as longest coxal diameter, its surface with complete carinae joined anteriorly forming triangle; prosternum in front of coxa 0.6 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line, much more posterior than anterior pronotal margin, procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 184) with complete raised border; mesoventral process at median length of coxa 1.1 times as broad as corresponding coxal diameter; meso-metaventritne articulation with suture visible; junction arcuate or somewhat angulate posteriorly, without internal knob. Scutellum (Fig. 189) triangular, transverse; surface punctate and setose. Elytra (Fig. 179) with lateral margins very narrow but entirely visible from above; surface (Fig. 189) with single size punctures, elytral epipleuron incomplete apically only (Figs 180, 192), 1.5 times as wide as corresponding metaepisternum, inner margin with border area narrow throughout and border line fading before base of elytron. Metaventrite with complete discrimen;
metaventral postcoxal lines (Fig. 184) distinctly separated at middle, complete and recurved; metaepisternum with external process interlocking with fovea on elytron (Fig. 191); metaepimeron indistinct; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters simple (Figs 184, 192); mid and hind tibia without visible spurs (Figs 186, 187); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male and claws in female with subquadrate basal tooth.

Abdomen (Fig. 192) with 5 ventrites in both sexes; ventrite I 1.55 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin only with median part narrowly weakly emarginate; female ventrite VI (Fig. 1395) with hind margin rounded, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1397), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half weakly widening towards apex, and base of spiculum widened and partially submembranous.

Male genitalia (Figs 1396, 1398, 1399). Parameres articulated with phallobase, reduced, narrow and about 0.5 times as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegminal strut simple; penis base with outer arm obsolete.

Female genitalia (Fig. 1394). Proctiger (T10) reduced, small, submembranous; styli terminal; infundibulum sclerotized, tube-like, enclosing the sperm duct; sperm duct short, simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.


Etymology. The name of this new species refers to two pale spots on the elytra.

Distribution. Indonesia: Irian Jaya.

Rhyzobius gonzalezii sp. nov.
(Figs 508–521, 1544–1549, 1952)

Diagnosis. R. gonzalezii closely resembles R. violaceus and R. luciae, especially in body size; shape and colouration, but R. gonzalezii is covered with uniform pubescence; its mid and hind tibia are provided with single spur; and the prosternal process has carinae joined before prosternal margin and continuing anteriorly as a single carina.

Description. Length 2.75–3.20 mm; TL/EW = 1.28–1.34; PL/PW = 0.49–0.50; EL/EW = 1.03–1.07.
Body (Figs 508, 509, 513, 1952) broadly oval, strongly convex, hemispherical, winged; bicoloured with head, prothorax, apex of elytra, abdominal ventrites II–V, antennae or at least stalks, dark brown; most of elytra black with violet or purple metallic sheen; pronotum along mid part of basal margin sometimes black; ventral surfaces of meso- and metathorax, abdominal ventrite I, elytral epipleura and legs black, with only tarsi, apices of tibiae and tibio-femoral connections infuscate. Dorsum with moderately long and uniform pubescence, not forming pattern on elytra; elytral bristles apparently absent.

Head (Figs 510, 514) entirely withdrawn into prothorax, 0.69–0.70 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; corporotentorial absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; with ocular canthus extending slightly into eye; interocular distance 0.5 times as wide as head across eyes; interfacial setae absent. Antenna (Fig. 512) 0.9 times as long as head capsule width, 11-segmented; scape 1.8 times as long as pedicel; pedicel distinctly narrower than scape. 1.55–1.60 times as long as wide; antennomere III 3.25–3.50 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII subquadrate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere about as long as broad, apically rounded. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum truncate at apex. Maxillary cardo (Fig. 510) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.40–1.45 times as long as wide, broadened apically (Fig. 511). Mentum strongly transverse, at least 2 times broader than long; anterior margin deeply emarginate; ventral surface with horse-shoe like impression; prementum about as long as broad; ligula reduced; labial palps separated by distance about equal to width of palpiger; apical palpmere as long and as broad as penultimate one; submentum distinct.

Pronotum (Figs 514, 517, 520) with anterior angles rounded, scarcely produced anteriorly, not swollen but with distinct groove near angles; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Figs 511, 516) with broad, concave area along anterior half of prothoracic lateral margin; notosternal suture distinct, simple; prosternal process (Fig. 516) 0.65 times as broad as longest coxal diameter, its surface with carinae joined before apex and continuing anteriorly as single carina; prosternum in front of coxa about 0.8 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 516) with complete raised border; mesoventral process at median length of coxa 1.3 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction somewhat angulate posteriorly, with internal knobs. Scutellum (Fig. 520) triangular,
transverse; surface punctate and setose. Elytra (Fig. 508) with lateral margins very narrow but entirely visible from above; surface (Fig. 520) with single size punctures, elytral epipleuron incomplete apically only (Figs 509, 521). 2 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line upturned outwardly near base of elytron. Metaventral with complete discremen; metaventral postcoxal lines (Fig. 516) distinctly separated at middle, complete and recurved; metaepisternum with external process interlocking with fovea on elytron (Fig. 515); metaepimeron indistinct; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with fore and mid trochanters angulate (Fig. 516), and hind trochanters roundly produced (Fig. 521); mid and hind tibia with single spur (Figs 518, 519); pro- and mid tarsal claws in male and female appendiculate; hind tarsal claws in male and female with small subquadrate basal tooth.

Abdomen (Fig. 521) with 5 ventrites in both sexes; ventrite I 1.33 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than ventrite VI with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin only with median part narrowly truncate; female ventrite VI (Fig. 5148) with hind margin arcuate, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1547), tergite VIII rounded. Stermite IX with central part membranous; apodeme of male sternite IX with its apical half very narrow and rod-like towards apex, and base of spiculum widened.

Male genitalia (Figs 1544–1546). Parameres articulated with phallobase, well developed, simple and separated, about 1.5 times as long as penis guide, densely setose along at least half of their length, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; terminal struts simple; penis base with outer arm obsolete.

Female genitalia (Fig. 1549). Proctiger (T10) reduced, small, submembranous; styli strongly reduced and hardly visible; infundibulum absent; sperm duct very short, simple, uniform in diameter, spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.


Paratypes: same data as holotype (2: SMNS; 2: MIZ, one dissected on slide), Papua N.G: Moroba Prov. Aseki, Ocowa, 1700–1800 m, 10–11.04.1998, leg. A. Riedel" (1: SMNS); Moroba Prov. Ca. 10 km S Garaina, Saueri, 1400–1700 m, 22.03.1998 (1: SMNS); Paniya Mulia(s) Wuyuncrei, 1900–2200 m, 6–7.07.1994, leg. A. Riedel (1: MIZ, dissected on slide).

Etymology. This species is dedicated to Guillermo González, a Chilean coccinellid specialist.

Distribution. Indonesia: Irian Jaya; Papua New Guinea.

Diagnosis. This species differs from other related species in having an asymmetrical pronotum, the incipient, subparallel, joined by a second spur, and the pronotum with deep, triangular posterior angles obtuse.

Description. Length 5.52 mm, EL/EW = 1.05–1.15.

Body (Figs 612–614) very thin, easily creased, with 2–3 wings divided near to wings, and with a dark brown spot on elytron; very similarly shaped to C. pappatus and C. pappatus in having an asymmetrical pronotum, the incipient, subparallel, joined by a second spur, and the pronotum with deep, triangular posterior angles obtuse.

Head (Figs 611, 615) very thin, easily creased, with 2–3 wings divided near to wings, and with a dark brown spot on elytron; very similarly shaped to C. pappatus and C. pappatus in having an asymmetrical pronotum, the incipient, subparallel, joined by a second spur, and the pronotum with deep, triangular posterior angles obtuse.

Antennae (Fig. 616) very thin, easily creased, with 2–3 wings divided near to wings, and with a dark brown spot on elytron; very similarly shaped to C. pappatus and C. pappatus in having an asymmetrical pronotum, the incipient, subparallel, joined by a second spur, and the pronotum with deep, triangular posterior angles obtuse.

Pronotum (Fig. 617) very thin, easily creased, with 2–3 wings divided near to wings, and with a dark brown spot on elytron; very Similarly shaped to C. pappatus and C. pappatus in having an asymmetrical pronotum, the incipient, subparallel, joined by a second spur, and the pronotum with deep, triangular posterior angles obtuse.
Rhizobius iracildae sp. nov.
(Figs 606–620, 1584–1589, 1953)

*Diagnosis.* This species can be distinguished from similarly colored *R. amabilis* and *R. paupenensis* in having bicolored antennae, more coarsely punctate elytra, the prosternal carinae subparallel, joined roundly before reaching anterior margin, and mid and hind tibiae with single spur.

*Description.* Length 2.85–3.65 mm; TL/EW = 1.36–1.45; PL/PW = 0.47–0.50; EL/EW = 1.05–1.15.

*Body* (Figs 606, 607, 609, 1953) broadly oval, strongly convex, hemispherical, winged; deeply black usually with green or purple metallic sheen on elytra; antennal stalk or at least a few basal antennomeres and mouthparts dark brown; tarsi blackish brown. Dorsum with moderately long and uniform pubescence, not forming pattern on elytra; very sparse elytral bristles sometimes present along margins.

*Head* (Figs 608, 617) withdrawn into prothorax but with eyes partially visible externally, 0.75–0.78 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; corporotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocular canthus extending slightly into eye; interocular distance 0.52–0.55 times as wide as head across eyes; interfacetal setae indistinct. Antenna (Fig. 612) 0.86–0.90 times as long as head capsule width, 11-segmented; scape 1.65–1.70 times as long as pedicel; pedicel distinctly narrower than scape, 1.4 times as long as wide; antennomere III 2.5 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV shorter than V; antennomeres VI and VII weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere subquadrate, apically rounded. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum truncate at apex. Maxillary cardo (Fig. 608) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpmere 1.55–1.70 times as long as wide, parallel-sided. Mentum transverse, less than 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe-like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpgere; apical palpmere as long and as broad as penultimate one; submentum distinct.

*Pronotum* (Figs 611, 613, 615, 617) 0.50–0.53 times as long as broad; anterior angles obtuse, not swollen but with distinct groove near angles; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 614) with broad, concave area delimited outwardly by crescent shaped groove; notosternal suture distinct, simple; prosternal process (Fig. 614) 0.65 times as broad as longest coxal diameter, its surface with carinae scarcely convergent, joined roundly just before prosternal margin; prosternum in front of coxa 0.6 times as long as coxal longitudinal diameter at the same position; anterior margin
continuing as straight line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 614) with complete raised border; mesoventral process at median length of coxa as broad as corresponding coxal diameter; meso-metaventrite articulation with suture visible; junction arcuate posteriorly, without internal knob. Scutellum triangular, transverse; surface punctate and setose. Elytra (Fig. 606) with lateral margins very narrow but entirely visible from above; surface (Fig. 615) with single size punctures, elytral epipleuron incomplete apically only (Figs 607, 620), 1.55 times as wide as corresponding metaepisternum, inner margin with border area narrow through and border line fading before base of elytron. Metaventrite with complete discrmen; metaventral postcoxal lines (Fig. 614) distinctly separated at middle, complete and recurved; metaepisternum with external process interlocking with fovea on elytron (Fig. 619); metaepimeron distinct, visible ventrally; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters roundly produced (Figs 614, 620); mid and hind tibia with single spur (Figs 610, 616); pro- and mid tarsal claws in male appendicate; hind tarsal claws in male and claws in female with subquadrate basal tooth.

Abdomen (Figs 618, 620) with 5 ventrites in both sexes; ventrite I 1.25 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose. hind margin of mid ventricle only with median part narrowly truncate; female ventricle VI (Fig. 1588) with hind margin shallowly excised, tergite VIII rounded; hind margin of male ventricle VI emarginate (Fig. 1585), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX somewhat widening at apex, and base of episciaum widened and partially submembranous.

Male genitalia (Figs 1584, 1586, 1587). Parameres articulated with phallobase, well developed, simple and separated, as long as penis guide, densely setose along at least half of their length, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegminal struts simple; penis base with outer arm distinctly less developed than inner arm.

Female genitalia (Fig. 1589). Proctiger (T10) reduced, small, submembranous; styli strongly reduced and hardly visible; infundibulum sclerotized, tube-like, enclosing the sperm duct; sperm duct short, simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.


Distribution. Distribution:

Riedel, 3300 m" (4: SMNS; 1: MIZ); Tal, 19-20.10.1993, leg. A. Riedel" (3: SMNS; 2: MIZ); 2950 m, leg. A. Riedel" (1: SMNS; 2: MIZ).

Etymology. This species is dedicated to Dr. Iracilda Maria de Moura Lima (Federal University of Alagoas, Brasil), a coccinellid specialist.

Distribution. Indonesia: Irian Jaya.

Rhyzobius jaya sp. nov.
(Figs 639–651, 1596–1601, 1954)

Diagnosis. Distinctly bicoloured pronotum and bicoloured elytra will separate easily this species from all other Papuan Rhyzobius.

Description. Length 2.77–3.23 mm; TL/EW = 1.64–1.67; PL/PW = 0.48–0.50; EL/EW = 1.18–1.20.

Body (Figs 639, 640, 642, 1954) elongate oval, moderately convex, winged; predominantly black; pronotum, except for medio-basal area, apex of elytra, hypomera, apices of femora, tibiae, mouthparts (except for maxillary palpi) and antennal stalk yellowish; antennal club, maxillary palpi and tarsi more or less infuscate. Dorsum with short pubescence, not forming pattern on elytra; very sparse elytral bristles sometimes present along margins.

Head (Figs 641, 647) dorsally exposed, 0.78–0.80 times as long as wide; ventral antennal grooves long, straight, reaching distinctly behind eyes; corporotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocular canthus extending slightly into eye; interocular distance 0.58–0.59 times as wide as head across eyes; interfacetal setae absent. Antenna (Fig. 644) 0.80–0.85 times as long as head capsule width, 11-segmented; scape 2.0–2.1 times as long as pedicel; pedicel about as broad as scape, 1.33–1.35 times as long as wide; antennomere III 2.65–2.75 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII subquadrate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere subquadrate, apically rounded. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum truncate at apex. Maxillary cardo (Fig. 641) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.4–1.5 times as long as wide, parallel-sided. Mentum transverse, less than 2 times broader than long; anterior margin deeply emarginate; ventral surface without horseshoe impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance...
about equal to width of palpiger; apical palpmere as long and as broad as penultimate one; submentum distinct.

**Pronotum** (Figs 645–647) with anterior angles obtuse, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and without clear border at least along part of its length; hind margin without border. Prothoracic hypomeron (Fig. 643) smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process (Fig. 643) 0.7 times as broad as longest coxal diameter, its surface smooth, without carinae; prosternum in front of coxa 0.65 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

**Anterior edge of mesoventrite** (Fig. 643) with complete raised border; mesoventral process at median length of coxa about as broad as corresponding coxal diameter; meso-metaventral articulation with suture visible; junction arcuate posteriorly, without internal knob. Scutellum (Fig. 648) triangular, transverse; surface punctate and setose. Elytra (Fig. 639) with lateral margins very narrow but entirely visible from above; surface with single size punctures, elytral epipleuron incomplete apically only (Figs 640, 651), 1.25 times as wide as corresponding metaepisternum, inner margin with border area narrow throughout and border line fading before base of elytron. Metaventre with complete discrmen; metaventral postcoxal lines (Fig. 643) distinctly separate at middle, complete and recurved; metaepisternum with external process interlocking with fovea on elytron; metaepimeron distinct, visible ventrally; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

**Legs** with trochanters simple (Figs 643, 651); mid and hind tibia without visible spurs (Figs 649, 650); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male and claws in female with subquadratle basal tooth.

**Abdomen** (Fig. 651) with 5 ventrites in both sexes; ventrite I 1.17 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, posteriorly reaches about half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin distinctly emarginate; female ventrite VI (Fig. 1597) with hind margin arcuate, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1601), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half very narrow and rod-like towards apex, and base of spiculum widened and partially submembranous.

**Male genitalia** (Figs 1598–1600). Parameres articulated with phallobase, well developed, simple and separated, about 1.3 times as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegminal strut simple; penis base with outer arm obsolete.

**Female genitalia** (Fig. 1596). Proctiger (T10) distinct, at least partly scleritized plate; styli small, terminal; infundibulum absent; sperm duct very short, simple.
uniform in diameter; spermatheca with only nodulus developed, spermathecal accessory gland adjacent to sperm duct.


**Etymology.** The specific epithet is a noun in apposition, in reference to the type locality of this new species.

**Distribution.** Indonesia: Irian Jaya.

*Rhizobius leucochaetus* sp. nov.

(Figs 713–726, 1624–1629, 1955)

**Diagnosis.** *R. leucochaetus* can be distinguished from *R. poorani* by its pronotum with only lateral margins brown and not swollen towards its anterior angles, the head with ventral antennal grooves long and straight and more densely pubescent body covered with white hairs.

**Description.** Length 3.25–3.65 mm; TL/EW = 1.48–1.52; PL/PW = 0.50–0.53; EL/EW = 1.19–1.23.

**Body** (Figs 713, 714, 716, 1955) broadly oval, strongly convex, hemispherical, winged; predominantly black; head including mouthparts, sides of pronotum, ventral surface of prothorax, antennae, legs except for meso- and metacoxae, and abdominal ventrites III–V orange brown. Dorsum with moderately long appressed setae and very sparse stiff bristles along margins only; dorsal pubescence not forming pattern on elytra.

**Head** (Figs 715, 721) withdrawn into prothorax but with eyes partially visible externally, 0.76–0.78 times as long as wide; ventral antennal grooves long, straight, reaching distinctly behind eyes; corporotergitum absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocellar canthus extending slightly into eye; interocellar distance 0.55 times as wide as head across eyes; interfacial setae absent. Antenna (Fig. 717) 0.9 times as long as head capsule width, 11–segmented; scape 1.83–1.85 times as long as pedicel; pedicel distinctly narrower than scape, 1.63–1.70 times as long as wide; antennomere III 3 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII subquadrat. Antennal club 3–segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere subquadrat, rounded at apex. Anterior eyelepal margin distinctly emarginate with median area membranous. Labrum truncate at apex. Maxillary cardo (Figs 715, 718) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.42–1.50 times as long as wide, nearly parallel-sided. Mentum strongly transverse, at
least 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpiger; apical palpomere as long and as broad as penultimate one; submentum distinct.

**Protonum** (Figs 719, 720, 721, 724) with anterior angles rounded, scarcely produced anteriorly, not swollen with regular border; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 725) with broad, concave area delimited outwardly by crescent shaped groove; notosternal suture distinct, simple; prosternal process (Fig. 725) 0.55 times as broad as longest coxal diameter, its surface with carinae joined before apex and continuing anteriorly as single carina; prosternum in front of coxae 0.5 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

**Anterior edge of mesoventrite** (Fig. 725) with complete raised border; mesoventral process at median length of coxa 1.25 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction forming a straight line, without internal knob. Scutellum (Fig. 719) triangular, at least as long as broad; surface punctate and setose. Elytra (Fig. 713) with lateral margins very narrow but entirely visible from above; surface (Fig. 719) with single size punctures, elytral epipleuron incomplete apically only (Figs 714, 726), 1.75 times as wide as corresponding metaepisternum, inner margin with border area narrow throughout and border line fading before base of elytron. Metaventrite with complete discernible; metaventral postcoxal lines (Fig. 725) distinctly separated at middle, complete and recurved; metaepisternum with external process interlocking with fovea on elytron; metaepimeron distinct, visible ventrally; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters simple (Figs 725, 726); mid and hind tibia without visible spurs (Figs 722, 723); pro- and mid tarsal claws in male appendicular; hind tarsal claws in male and claws in female with subquadrate basal tooth.

**Abdomen** (Fig. 726) with 5 ventrites in both sexes; ventrite I 1.35 times as long as ventrite II; abdominal postcoxal lines separate medianly, recurved and complete; deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin only with median part narrowly truncate or scarcely emarginate; female ventrite VI (Fig. 1628) with hind margin rounded, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1627), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half very narrow and rod-like towards apex, and base of spiculum widened and partially submembranous.

**Male genitalia** (Figs 1624-1626). Parameres articulated with phallobase, well developed, simple and separated, nearly as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides sinuate but distinctly band-like.

Fe male. Territorial; style enclosing entire apical margin of penis strongly and adjacent to it.

**Material:**

**Etymology:** The name referring to the covering of body with a metallic cuprous color.

**Distribution:**
Diagnosis: species with two pairs of paired, joined parameres on abdomen; V in male appendicular; cupreous color.

**Description:**
Bo down, antennae, all segments pro- and mesoventrite hind tibia apically only; surfaces of ventrite I (apical part) black; hind tibia and tarsus darker than body, apically with a white distinct line.

Head: eyes relatively large; rostrum wide; vestiture of facial grooves; corporal vestiture with intervals between scales; abdomen, 11-segmented, tegmina, elytra, each with intervals between scales;

Female genitalia: volsella, segment 5, wide, arista, apices of segment 5, narrow, segment 5, with scales.
sinuate but symmetrical throughout; tegminal strut simple; genital base with outer arm distinctly less developed than inner arm.

**Female genitalia** (Fig. 1629). Proctiger (T10) reduced, small, submembranous; styli strongly reduced and hardly visible; infundibulum sclerotized, tube-like, enclosing the sperm duct; sperm duct simple, uniform in diameter; spermathecae strongly elongate, without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.


**Etymology.** The specific epithet means in Greek "white-haired" and refers to white hairs covering the dorsum of this species.

**Distribution.** Indonesia: Irian Jaya.

**Rhyzobius luciae** sp. nov.

(Figs 755–766, 1648–1653, 1956)

**Diagnosis.** This species can be distinguished from *R. violaceus* by the prosternal carinæ joined roundly reaching anterior margin, the antennomere III less elongate and the ventrite V in male simply setose and apically rounded. Moreover the elytra of *R. luciae* have distinct cupreous, metallic sheen.

**Description.** Length 2.45–2.73 mm; TL/EW = 1.33–1.34; PL/PW = 0.49–0.52; EL/EW = 1.07–1.10.

**Body** (Figs 755, 756, 759, 1956) broadly oval, strongly convex, hemispherical, winged; bicoloured with head, prothorax, legs, antennæ and at least abdominal ventrites II–V orange brown; elytra black with cupreous metallic sheen; ventral surfaces of meso- and metathorax, elytral epipleura and abdominal ventrite I (at least in part) black. Dorsum with double pubescence consisting of appresed setae and sparse darker stiff bristles; dorsal pubescence not forming pattern on elytra; elytral bristles distinct especially along margins.

**Head** (Figs 757, 758) entirely withdrawn into prothorax, 0.7 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; corporotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocelli canthus extending slightly into eye; interocular distance 0.5 times as wide as head across eyes; interfacial setae absent. Antenna (Fig. 763) 0.8 times as wide as head capsule width, 11-segmented; scape 2 times as long as pedicel; pedicel distinctly narrower than scape, 1.45–1.55 times as long as wide; antennomere III 3.00–3.25 times longer than scape, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII subquadrate. Antennal club 3-segmented, with two terminal segments asymmetrical; penultimate antennomere about as long as terminal segment;
terminal antennomere about as long as wide, rounded at apex. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum truncate at apex. Maxillary cardo (Fig. 757) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.35–1.40 times as long as wide, weakly expanded apically. Mentum strongly transverse, at least 2 times broader than long; anterior margin deeply emarginate; ventral surface with horsehoe like impression; prementum as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palps; apical palpomere as long and as broad as penultimate; submentum distinct.

Pronotum (Figs 758, 764, 765) with anterior angles rounded, scarcely produced anteriorly, not swollen but with distinct groove near angles; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 761) with broad, concave area along anterior half of prothoracic lateral margin; notosternal suture distinct, simple; prosternal process (Fig. 761) 0.7 times as broad as longest coxal diameter, its surface with carinae convergent, joined roundly just before prosternal margin; prosternum in front of coxa 0.6 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 761) with complete raised border; mesoventral process at median length of coxa 1.25 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction arcuate posteriorly, without internal knob. Scutellum (Fig. 765) triangular, transverse; surface punctate and setose. Elytra (Fig. 755) with lateral margins very narrow but entirely visible from above; surface (Fig. 765) with single size punctures, elytral epipleuron incomplete apically only (Figs 756, 766), 2 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line upturned outwardly near base of elytron. Metaventrite with complete suture; metaventral postcoxal lines distinctly separated at middle, complete and recurved; metaepisternum with externall process interlocking with fovea on elytron; metaepimeron distinct, visible ventrally; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters angulately produced (Figs 761, 766); mid and hind tibia without visible spurs (Figs 760, 762); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with large subtriangular basal tooth; claws in female with subquadrate basal tooth.

Abdomen (Fig. 766) with 5 ventrites in both sexes; ventrite I 1.3 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in male distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin rounded; female ventrite VI (Fig. 1652) with hind margin arcuate, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1651), tergite VIII rounded. Stermite IX with central part membranous; apicale and base truncate.

Malae well developed, smoothly setose; penisguiding plate subterminal.

Female, styli simple, terminal appendix acicular.
nous; apodeme of male sternum IX with its apical half broad and plate-like at apex, and base of spiculum widened and partially submembranous.

**Male genitalia** (Figs 1648–1650). Parameres articulated with phallobase, well developed, simple and separated, about 1.5 times as long as penis guide, densely setose along at least half of their length, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegminal strut simple; penis base with outer arm obsolete.

**Female genitalia** (Fig. 1653). Protiger (T10) reduced, small, submembranous; styli strongly reduced and hardly visible; infundibulum absent; sperm duct simple, uniform in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

**Material examined.** Types. **Holotype**, male, New Guinea, "Irian Jaya, Paniai Mulia(s) Wuyernei, 1900-2200 m, 6-7.07.1994, leg. A. Riedel" (SMNS).


**Etymology.** This species is dedicated to Dr. Lucia Massuti de Almeida (Federal University of Paraná, Brasil), a coccinellid specialist.

**Distribution.** Indonesia: Irian Jaya.

**Rhyzobius metallicus** sp. nov.
(Figs 781–793, 1660–1665, 1957)

**Diagnosis.** This is a very distinctive species of *Rhyzobius* characterized by its very intensive, three-coloured (green, violet and blue) metallic sheen on the elytra.

**Description.** Length 2.87–3.33 mm; TL/EW = 1.32–1.37; PL/PW = 0.48–0.51; EL/EW = 1.06–1.11.

**Body** (Figs 781, 782, 784, 1957) broadly oval, strongly convex, hemispherical, winged. Dorsum black with very intensive green, violet and bluish metallic sheen on elytra; venter black with mouthparts, tarsi and antennae blackish brown. Dorsum with double pubescence consisting of short appressed setae and very sparse darker stiff bristles; dorsal pubescence not forming pattern on elytra; elytral bristles present along margins only.

**Head** (Figs 783, 788) withdrawn into prothorax but with eyes partially visible externally. 0.76–0.80 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; corporotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocular canthus extending slightly into eye; interocular distance about 0.53 times as wide as head across eyes; interfacial setae distinct. Antenna (Figs 785, 786) 0.95 times as long as head capsule width, 11-segmented; scape 1.7–1.9 times as long as pedicel; pedicel distinctly narrower than scape, 1.5–1.6 times as long as wide; antennomere III 3.15–3.30 times longer than wide, and about 1.5–2.5
times as long as IV; antennomere IV as long as V; antennomeres VI and VII weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere distinctly shorter than terminal segment; terminal antennomere longer than wide, apically rounded and densely setose. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum rounded apically, Maxillary cardo (Fig. 783) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.25–1.30 times as long as wide, broadened apically. Mentum strongly transverse, at least 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe-like impression; prementum as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpiger; apical palpomere as long and as broad as penultimate one; submentum distinct.

Pronotum (Figs 787, 788, 791) with anterior angles rounded, scarcely produced anteriorly, not swollen but with distinct groove near angles; anterior margin without border, lateral margin with entire border; hind margin without border. Prothoracic hypomeron with broad, concave area delimited outwardly by crescent shaped groove; notosternal suture distinct, simple; prosternal process (Fig. 790) 0.75 times as broad as longest coxal diameter, its surface with carinae subparallel, joined roundly just before prosternal margin; prosternum in front of coxa 0.65 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 790) with complete raised border; mesoventral process at median length of coxa 1.35 times as broad as corresponding coxal diameter; meso-metaventral articulation with suture obscure; junction angulate posteriorly, without internal knob. Scutellum (Fig. 791) triangular, about as long as broad; surface punctate and setose. Elytra (Fig. 781) with lateral margins very narrow but entirely visible from above; surface (Fig. 791) with single size punctures, elytran epipleuron incomplete apically only (Figs 782, 793), 2.5 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite with complete discrimen; metaventral postcoxal lines (Fig. 790) distinctly separated at middle, complete and distinctly recurved; metaepisternum with external process interlocking with fovea on elytron; metaepimeron distinct, visible ventrally; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters roundly produced (Figs 790, 793); mid and hind tibia without visible spurs (Fig. 789); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with large subtriangular basal tooth; tarsal claws in female with subquadrate basal tooth.

Abdomen (Figs 792, 793) with 5 ventrites in both sexes; ventrite I 1.5 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite
V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male with postero-median concavity covered with admedian setae, hind margin only with median part narrowly emarginate; female ventrite VI (Fig. 1664) with hind margin shallowly excised, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1663), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half broad and plate-like at apex, and base of epignum widened and partially submembranous.

**Male genitalia** (Figs 1660–1662). Parameres articulated with phallobase, well developed, simple and separated, about as long as penis guide; with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental struts simple; penis base with outer arm distinctly less developed than inner arm.

**Female genitalia** (Fig. 1665). Proctiger (T10) reduced, submembranous; styli small, terminal; infundibulum sclerotized, tube-like, enclosing the sperm duct; sperm duct simple, uniform in diameter; spermatheca without clear nodule and ramus, spermathecal accessory gland adjacent to sperm duct.

**Material examined.** Types. **Holotype,** male, "SE NG, Betege, 20 km NW of Koroba, 1600 m, 23.09.1963, R. Strastman coll., Bishop" (1: BPBM);

**Paratypes. New Guinea.** "NE Lake Sirunki, 2550 m, 14.03.1963, J. Sedlacek collector, Bishop" (1: BPBM; 1 dissected on slide: MIZ); "NE Lake Sirunki, 2570 m, 17.06.1963, J. Sedlacek collector, Bishop" (1: BPBM; 1 MIZ); "NE Lake Sirunki, 2600–2900 m, 15.06.1963, J. Sedlacek collector, Bishop" (1: BPBM; 1 MIZ); "NE Lake Sirunki, 2500 m, 1.V.1963, J. Sedlacek collector, Bishop" (1: BPBM); "SE, Mt. Giluwe, 2300–2400 m, 5.06.1963, same collector (1: BPBM); same, but 1.05, and 2500 m (1 dissected on slide: MIZ); "NE, Mt. Wilhelm, 2800–2900 m, 6.07.1963, J. Sedlacek coll., Bishop" (1: MIZ); NE, Kepilam, 2420–2490 m, 23.06.1963, J. Sedlacek coll., Bishop" (1: MIZ); "NE, Tomba, slopes of Mt. Hagen, 2500–2650 m, 24.05.1963, J. Sedlacek coll., Bishop" (1: BPBM).

**Etymology.** The name of this beautiful beetle refers to its very intensive metallic green, violet and blue sheen on the elytra.

**Distribution.** Papua New Guinea.

**Rhyzobius pappensis** sp. nov.

(Figs 917–930, 1719–1724, 1958)

**Diagnosis.** This species differs from *R. amabilis* in having smaller body and the dorsum covered with denser and longer pubescence, pronotum distinctly swollen towards its anterior angles and prosternal carinae joined anteriorly forming a triangle.

**Description.** Length 2.15–3.00 mm; TL/EW = 1.20–1.23; PL/PW = 0.45–0.48; EL/EW = 0.97–1.00.

**Body** (Figs 917, 918, 920, 1958) broadly oval, strongly convex, hemispherical, winged. Dorsal surface brownish black or black with blue metallic sheen on elytra; ventral surfaces at least infuscate; mouthparts, antennae, abdominal ventrites and at
least tibiae and tarsi brown. Dorsum with moderately long and uniform pubescence, forming wavy pattern on elytra.

Head (Figs 919, 925) entirely withdrawn into prothorax, 0.78–0.79 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; corpopotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocellar canthus extending slightly into eye; interocular distance 0.49–0.51 times as wide as head across eyes; interfacial setae distinct. Antenna 0.7 times as long as head capsule, 11-segmented; scape 1.5 times as long as pedicel; pedicel distinctly narrower than scape, 1.55 times as long as wide; antennomere III 2.65 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV longer than V; antennomeres VI and VII subquadrangle. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere subquadrangle, apically rounded. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum rounded apically. Maxillary cardo (Fig. 919) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.40–1.47 times as long as wide, parallel-sided. Mentum transverse, less than 2 times broader than long; anterior margin weakly arcuate; ventral surface with horsehoe like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance equal to width of palpiger; apical palpomere as long and as broad as penultimate one; submentum distinct.

Pronotum (Figs 924–926) with anterior angles rounded, weakly produced anteriorly, swollen towards anterior angles and with groove near angles; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 921) with at least short, somewhat crescent shaped groove perpendicular to notosternal suture; notosternal suture obscure; prosternal process (Fig. 927) 0.55 times as broad as longest coxal diameter, its surface with complete, convergent carinae joined anteriorly forming triangle; prosternum in front of coxa 0.6 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as arcuate line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 927) with complete raised border; mesoventral process at median length of coxa 1.25 times as broad as corresponding coxal diameter; meso-metaventral articulation with suture obscure; junction forming a straight line, without internal knob. Scutellum (Fig. 926) triangular, at least as long as broad; surface punctate and setose. Elytra (Fig. 917) with lateral margins very narrow but entirely visible from above; surface with single size punctures, elytral epipleuron incomplete apically only (Figs 918, 930), 2.6 times as wide as corresponding metaventralnum, inner margin with border area widening towards elytral base and border line upturned outwardly near base of elytron (Fig. 921). Metaventrite with complete discernment; metaventral postcoxal lines distinctly separated at middle, complete and recurved; metaventral with external process interlocking with focus

on elytron; metasterna of metasternum IX and X with metasternal suture on same side of metasternal suture. Legs without visible spurs; hind femur with two spurs; hind tarsal claws male with subquadrangle; male subapical, female with subquadrangle.

Abdomen (Fig. 919) 6–8 times as long as wide; segments V and VI complete; pygidial plate between sternites V and VI and between sternite V and VII subquadrangle. Posterior margin of pygidial plate with suture between sternites V and VI; posterior margin of pygidial plate between sternites VI and VII subquadrangle. Posterior margin of pygidial plate between sternites VII and VIII subquadrangle. Posterior margin between sternites VIII and IX with suture between sternites VIII and IX. Posterior margin of pygidial plate between sternites IX and X with suture between sternites IX and X. Anterior margin of pygidial plate between sternites X and XI subquadrangle. Male genititalia well developed, spurs of pygidial plate completely developed, lateral sides symmetric, sternum IX distinctly less developed.

Female genitalia sparse, with seminal duct openings, spermathecal accessory glands.

Material examined. Thea, 600–720 m, 0.8 m.a.

Paratypes: same collecting data as holotype.

Etymology. Thea, female.


Diagnosis. This species is distinguished by its coloration (brown and black)
on elytron; metepimeron indistinct; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanteres angulate produced (Figs 927, 930); mid and hind tibiae without visible spurs (Figs 922, 923); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with large subtriangular basal tooth; tarsal claws in female with subquadrate basal tooth.

Abdomen (Figs 928, 929, 930) with 5 ventrites in both sexes; ventrite I 1.35 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male with admedian setose patches, hind margin only with median part narrowly truncate; female ventrite VI (Fig. 1723) with hind margin rounded, tergite VIII rounded; hind margin of male ventrite VI scarcely emarginate (Fig. 1722), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half complex, somewhat widening towards apex, and base of scuplum widened and partially membranous.

Male genitalia (Figs 1719–1721). Parameres articulated with phallobase, well developed, simple and separated, about 1.6 times longer than penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegminal struts simple; penis base with outer arm distinctly less developed than inner arm.

Female genitalia (Fig. 1724). Proctiger (T10) reduced, small, submembranous; styli strongly reduced and hardly visible; infundibulum absent; sperm duct simple, uniform in diameter; spermatheca with only nodulus or ramus developed, spermathecal accessory gland adjacent to sperm duct.


Paratypes: same data as holotype (11: BPBM: 6: MIZ, 2 dissected on slide); "NE, Torricelli Mts., Siaute, sea level, 9-17.XI.1958/ W.W. Brandt collector, Bishop" (1: BPBM); "NE, Ambuini, Sepik R., 200 m, 9.V, 1963/ R. Strautman coll. Bishop" (1: BPBM); "NE, Wewak, 0–100 m, VIII.1968/ N.L.H. Krauss collector, Bishop Museum" (1: BPBM); "PNG, NG, NE: Morobe Dist., Huon Penin.: Bandong, 1250 m, 2.VI.1979/ W.C. Gagne collector, Bishop Museum, Acc. #1980.2/ Pseudanus conoides" (1: BPBM).

Etymology. The name of this new species refers to country of its origin, Papua New Guinea.


Rhyzobius poorani sp. nov. (Figs 945–957, 1731–1736, 1960)

Diagnosis. This species is most similar to R. leucochaetus having the pronotum bicolloured (brown and black) while the elytra entirely black. It is, however, distinguished by the
pronotum distinctly swollen towards its anterior angles and with not only lateral but also anterior margin brown, and by the ventral antennal grooves circularly bent towards outer margin of eye.

**Description.** Length 2.40–2.90 mm; TL/EW = 1.35–1.42; PL/PW = 0.48–0.50; EL/EW = 1.02–1.08.

**Body** (Figs 945, 946, 948, 1960) broadly oval, strongly convex, hemispherical, winged; predominantly black with head, pronotum along lateral, and anterior margins, ventral surface of prothorax and abdominal ventrites II–V, antennae and legs except for mid and hind coxae brown; elytra with blue metallic sheen. Dorsum with double pubescence consisting of appressed setae and sparse darker stiff bristles; dorsal pubescence not forming pattern on elytra; elytral bristles present on entire dorsum but distinct especially along margins.

**Head** (Figs 947, 954) entirely withdrawn into prothorax, 0.73–0.75 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; corporalotroctum absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocular canthus extending slightly into eye; interocular distance 0.57–0.60 times as wide as head across eyes; interfascicular setae absent. Antenna (Fig. 956) 0.9 times as long as head capsule width, 11-segmented; scape 1.50–1.55 times as long as pedicel; pedicel distinctly narrower than scape, 1.5–1.6 times as long as wide; antennomere III 3.0–3.3 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere subquadrate, apically rounded. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum truncate at apex. Maxillary cardo (Fig. 947) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.25–1.32 times as long as wide, subparallel-sided. Mentum transverse, less than 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance equal to width of palpiger; apical palpomere as long and as broad as penultimate one; submentum distinct.

**Pronotum** (Figs 952–955) with anterior angles rounded, very weakly produced anteriorly, swollen towards anterior angles and with groove near angles; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 951) with broad, concave area along anterior half of prothoracic lateral margin; notosternal suture distinct, simple; prosternal process (Fig. 951) about 0.55 times as broad as longest coxal diameter, its surface with carinae joined before apex and continuing anteriorly as single carina; prosternum in front of coxa 0.5 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line, much more posterior than anterior pronatal margin; procoxal cavity distinctly transverse, without visible bordering line.
Anterior edge of mesoventrite (Fig. 951) with complete raised border; mesoventral process at median length of coxa as broad as corresponding coxal diameter; meso-metasomal articulation with suture visible; junction arcuate posteriorly, without internal knob. Scutellum (Fig. 955) triangular, transverse; surface punctate and setose. Elytra (Fig. 945) with lateral margins very narrow but entirely visible from above; surface (Fig. 955) with single size punctures, elytral epipleuron incomplete apically only (Figs 946, 957), 1.8 times as wide as corresponding metaepistemum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite with complete discrinen; metaventral postcoxal lines (Fig. 951) distinctly separated at middle, complete and recurved; metaepistemum with external process interlocking with fovea on elytron; metaepimeron indistinct; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

Legs with trochanters rounded or somewhat anguately produced (Figs 951, 957); mid and hind tibiae without visible spurs (Figs 949, 950); pro- and mid tarsal claws in male appendix; hind tarsal claws in male and claws in female with small quadrature basal tooth.

Abdomen (Fig. 957) with 5 ventrites in both sexes; ventrite I 1.25 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male smooth and simply setose, hind margin rounded; female ventrite VI (Fig. 1735) with hind margin arcuate, tergite VIII rounded; hind margin of male ventrite VI emarginate (Fig. 1734), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half very narrow and rod-like towards apex, and base of piculum widened and partially submembranous.

Male genitalia (Figs 1731–1733). Parameres articulated with phallobase, well developed, simple and separated, nearly 3 times longer than penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegittal struts simple; penis base with outer arm obsolete.

Female genitalia (Fig. 1736). Proctiger (T10) distinct, at least partly sclerotized plate; styli terminal; sperm duct simple, uniform in diameter; spermatheca without clear nodulus or ramus, spermathecal accessory gland adjacent to sperm duct.


Etymology. This species is dedicated to Dr. J. Poorni (Project Directorate of Biological Control, Bangalore, India), a coccinellid specialist. The specific epithet is a noun in apposition.

Distribution. Indonesia: Irian Jaya.
*Rhyzobius violaceus* sp. nov.  
(Figs 1257–1270, 1876–1881, 1959)

**Diagnosis.** This species can be separated from *R. luciae* by the protostral carinae complete and separate, antennomere III more elongate and the male ventricle V apically narrowly truncate and covered with admedian setose patches. Moreover *R. violaceus* has the elytra with violet metallic sheen.  

**Description.** Length 2.90–2.93 mm; TL/EW = 1.31–1.33; PL/PW = 0.51–0.53; EL/EW = 1.07–1.08.  

**Body** (Figs 1257, 1258, 1260, 1959) broadly oval, strongly convex, hemispherical, winged; bicoloured with head, prothorax, apex of elytra, posterior half of abdominal ventricle I and ventrites II–V orange brown; most of elytra black with violet metallic sheen; ventral surfaces of meso and metathorax, basal half of ventricle I, elytral epipleura and legs except for tarsi black; tarsi and sometimes connections between femora and tibiae infuscate. Dorsum with double pubescence consisting of appressed setae and sparse darker stiff bristles; dorsal pubescence not forming pattern on elytra; elytral bristles distinct along margins only.  

**Head** (Figs 1259, 1261) withdrawn into prothorax but with eyes partially visible externally, 0.80–0.83 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; corporotentorium absent. Eyes dorsally less than 0.5 times length of head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocular canthus extending slightly into eye; interocellar distance 0.51–0.52 times as wide as head across eyes; interfacial setae indistinct. Antenna (Fig. 1268) 0.8 times as long as head capsule width, 11-segmented; scape 1.6–1.7 times as long as pedicel; pedicel distinctly narrower than scape, 1.5–1.6 times as long as wide; antennomere III 3.45–3.50 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere subquadrate, rounded apically. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum truncate at apex. Maxillary cardo (Fig. 1259) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.45–1.50 times as long as wide, weakly expanded apically. Mentum transverse, less than 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpiger; apical palpomere as long and as broad as penultimate one; submentum distinct.  

**Pronotum** (Figs 1261, 1262, 1265, 1269) with anterior angles rounded, weakly produced anteriorly, not swollen but with distinct groove near angles; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 1263) with broad, concave area delimited outwardly by crescent shaped groove; notosternal suture distinct, simple; prosternal process (Fig. 1263) 0.65 times as broad as longest coxal diameter, its surface with complete.
separate carinae; prosternum in front of coxa at least 0.6 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as weakly arcuate line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

**Anterior edge of mesonotum** (Fig. 1263) with complete raised border; mesovenentral process at median length of coxa about 1.4 times as broad as corresponding coxal diameter; meso-metaenstral articulation with suture obscure; junction somewhat angulate posteriorly, without internal knob. Scutellum (Fig. 1269) triangular, at least as long as broad; surface punctate and setose. Elytra (Fig. 1257) with lateral margins very narrow but entirely visible from above; surface (Figs 1257, 1269) with double size punctures especially on disc, additionally with almost impunctate long oval area along suture in mid length, surrounded with very coarse punctures; elytral elytrum incomplete apically only (Figs 1258, 1270), 2.2 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line upturned outwardly near base of elytron. Metaenstral with complete discrimen; metaenstral postcoxal lines (Fig. 1263) distinctly separated at middle, complete and recurved; metaepisternum with external process interlocking with fovea on elytron (Fig. 1267); metaepimeron distinct, visible ventrally; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

**Legs** with trochanters angulately produced (Figs 1263, 1270); mid and hind tibia without visible spurs (Figs 1264, 1266); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male and claws in female with subtriangular basal tooth.

**Abdomen** (Fig. 1270) with 5 ventrites in both sexes; ventrite I 1.3 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male with admedian setose patches, hind margin only with median part narrowly truncate; female tergite VIII rounded (Fig. 1880); hind margin of male ventrite VI emarginate (Fig. 1879), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX widening at apex, and base of spiculum widened and at least partly membranous.

**Male genitalia** (Figs 1876–1878). Parameres articulated with phallobase, well developed, simple and separated, about 1.5 times longer than penis guide, densely setose along at least half of their length, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; teginal strut simple; penis base with outer arm distinctly less developed than inner arm.

**Female genitalia** (Fig. 1881). Prostiger (T10) reduced, submembranous; styli terminal; infundibulum absent; sperm duct simple, uniform in diameter; spermatic duct without clear nodulus and ramus, spermaticdcal accessory gland adjacent to sperm duct.

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Paratypes: same data as holotype, but 1600-1700 m, 11-12.03.1998 (1: SMNS); Morobe Prov. Ca. 10 km S Garaina, Saueri, 1600-1800 m, 24-25.03.1998 (2: MIZ, dissected on slide).

Etymology. The name of this species refers to a violet sheen on the elytra.


Key to Oriental species of *Rhyzobius*

1. Body long oval; elytra brown; antenna 10-segmented .............................................. *brevicorns* Weise
   - Body broadly oval; elytra black; antenna 11-segmented .......................................... 2

2. Dorsum bicoloured, head and pronotum just beyond head brown, the rest of pronotum and elytra black (Fig. 1946); antenna 0.63–0.65 times as long as head width; prosternal carinae complete and separate (Fig. 1034) ..........................................................
   - Dorsum uniformly black; antenna 0.75–0.85 times as long as head width; prosternal carinae joined before anterior prosternal margin and continuing anteriorly as a single, short carina (Figs 590, 1179) .............................................. 3

3. Pronotum conspicuously swollen towards anterior angles (Figs 582, 586); prothoracic hypomeron with concave area along anterior half of prothoracic margin but without a groove (Fig. 590); .............................................. *indicus* sp. nov.
   - Pronotum weakly swollen towards anterior angles (Figs 1180, 1181); prothoracic hypomeron with concave area along anterior half of prothoracic margin delimited outwardly by deep groove (Fig. 1176) .............................................. *sumatrensis* sp. nov.

Descriptions of Oriental species of *Rhyzobius*

*Rhyzobius brevicorns* Weise
(Figs 204–213, 1406–1408)


Diagnosis. This is the only species of Oriental *Rhyzobius* with brown, elongate oval and moderately convex body and the only known *Rhyzobius* with 10-segmented antenna.

Description. Length 1.90 mm; TL/EW = 1.50; PL/PW = 0.54; EL/EW = 1.13.

Body (Figs 204, 205, 209) elongate oval, moderately convex, winged; dark brown; only ventral surface of head including antennae and mouthparts, prothoracic hypomeron, apical cerites, legs and ventral surface of abdomen with fine punctures. Antennae: antenna 10-segmented. Antennal scapes elongate, reaching hind margin of elytra. Postclypeus: postclypeus (Fig. 204) 0.6 times as long as pronotum, shorter than prothoracic hypomeron, posteriorly emarginate. Pronotum: prothoracic hypomeron with concave area along anterior half of prothoracic margin but without a groove. Elytra: elytra (Fig. 205) slightly convex, without a groove. Width of elytra about 1.5 times as long as head width.

Legs: coxae (Fig. 204) united, coxal diameter 1.4 times as long as width; mesosternal process (Fig. 204) reaching middle of pronotum. Abdomen: abdominal tergites and sternites with fine punctures; tergal scuta (Figs 204–209) elongate, posteriorly emarginate, anteriorly pointed. abdomen: abdominal tergites and sternites with fine punctures; tergal scuta (Figs 204–209) elongate, posteriorly emarginate, anteriorly pointed.
hypomera and legs weakly paler. Dorsum with moderately long and uniform pubescence, not forming pattern on elytra.

Head (Figs 206, 208) dorsally exposed; ventral antennal grooves absent. Eyes dorsally 0.50–0.75 times as long as head capsule, with inner orbits arcuate, closest at middle; not emarginate; interocular distance 0.52 times as wide as head across eyes; interfacial setae distinct. Antenna 0.6 times as long as head capsule width, 10-segmented; scape 3 times as long as pedicel; pedicel about as broad as scape, about 0.57 times as long as wide; antennomere III 2.6 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV longer than V; antennomeres VI and VII very short, transverse. Antennal club 4-segmented, with penultimate segment asymmetrical; penultimate antennomere distinctly longer than terminal segment; terminal antennomere distinctly transverse, weakly rounded apically. Anterior clypeal margin with weak, rounded lateral lobes. Labrum truncate at apex. Maxillary cardo (Fig. 208) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.35 times as long as wide, parallel-sided. Mentum strongly transverse, about 2 times broader than long; anterior margin truncate; ventral surface without horseshoe impression; prementum transverse; ligula slightly expanded antero-laterally; labial palps separated by distance about equal to width of palpiger; apical palpomere shorter and narrower than penultimate one; submentum distinct.

Pronotum (Figs 206, 207, 210) with anterior angles rounded, not produced anteriorly, not swollen with regular border; anterior margin without border; lateral margin slightly upturned and without clear border at least along part of its length; hind margin with entire border line. Prothoracic hypomeron (Fig. 208) smooth, without groove or concavity; notosternal suture distinct, simple; prosternal process (Fig. 208) 0.6 times as broad as longest coxal diameter, its surface with complete, convergent, separate carinae; prosternum in front of coxa 0.7 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line; much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 208) with complete raised border; mesoventral process at median length of coxa 1.2 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction forming a straight line. Scutellum (Fig. 207) triangular, transverse; surface punctate and setose. Elytra (Fig. 204) with lateral margins not or hardly visible from above; surface with double size punctures, elytral epipleuron obsolete in apical half (Fig. 205), 1.4 times as wide as corresponding metaepisternum, inner margin with border area narrow throughout and border line fading before base of elytron. Metaventrite with complete discrimen; metaventral postcoxal lines separated at middle, complete and distinctly recurved (Fig. 208); metaepisternum without interlocking device; metepimeron distinct, visible ventrally.

Legs with trochanters rounded (Figs 208, 211); mid and hind tibia without visible spurs (Figs 212, 213); tarsal claws in male appendiculate.
Abdomen (Fig. 211) with 5 ventrites in male; ventrite I 1.35 times as long as ventrite II; abdominal postcoxal lines separate mediately, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in male smooth and simply setose, hind margin weakly emarginate; hind margin of male ventrite VI emarginate (Fig. 1408), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half narrow, rod-like, and base of spiculum weakly widened.

Male genitalia (Figs 1406, 1407). Parameres articulated with phallobase, well developed, simple and separated, about as long as penis guide, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm distinctly less developed than inner arm.

Female unknown.

Material examined. Types. Lectotype (here designated), male, “Rhizobius brevicornis in Borneo/ Syntypes Rhizobius brevicornis Weise, 1895/ labeled by MNHUB 2008” (NMB).

Note. The lectotype of Rhizobius brevicornis Weise, 1895 is designated to stabilize the taxonomic status of this species.

Distribution. Borneo.

*Rhizobius indicus* sp. nov.

(Figs 579–590, 1575–1578, 1945)

Diagnosis. This species resembles *R. sumatrensis* in its body shape and colouration but differs from it in having the pronotum conspicuously swollen towards anterior angles; the prothoracic hypomeron with concave area along anterior half of prothoracic margin but without a groove, and oval area along mid length of elytral suture covered with micropunctures surrounded with macropunctures.

Description. Length 2.67 mm; TL/EW = 1.33; PL/PW = 0.50; EL/EW = 1.03.

Body (Figs 579, 584, 587, 1945) broadly oval, strongly convex, hemispherical, winged; black; elytra with blue metallic sheen; mouthparts, antennae and tarsi brown. Dorsum with double pubescence consisting of appressed setae and sparse dark stiff bristles; dorsal pubescence not forming pattern on elytra; elytral bristles present on entire dorsum.

Head (Figs 581, 586) withdrawn into prothorax but with eyes partially visible externally; ventral antennal grooves distinctly circular bent towards outer margin of eye. Eyes with inner orbits convergent, closer near vertex than anteriorly; ocular canthus extending slightly into eye; interocular distance 0.55 times as wide as head across eyes; interfacial setae distinct. Antenna (Fig. 585) 0.75 times as long as head capsule width, 11-segmented; scape 1.4 times as long as pedicel; pedicel distinctly narrower than scape, 1.5 times as long as wide; antennomere III 4.3 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical, penultimate antennomere about as long as terminal segment, with apices directed at apex. Mandibles outside of head; mandibular apex expanded apex. Posterolateral angles of male pronotum rounded (Fig. 1328), anterior margin emarginate; distance about 1.2 times distance at base of pedicel.

Pronotum broad, scarcely parallel-sided; angles of pronotum obtuse; propleura without bumps or tubercles. Anterior margin of pronotum (Fig. 1327) not joined before middle of pronotum; middle of pronotum and anterior margin of mesonotum slightly rounded.

Antennae mesosomal; antennomeres I–VII wholly dark; VII slightly lighter on inner edge; antennomeres VIII and IX with dark basal sections and apical segments.

Elytra 1.65 times as long as broad, with double grooves. Metaventrite distinctly separated from metasternum by furrow. Metaventrite distinctly separated from metasternum by furrow. Metaventrite distinctly separated from metasternum by furrow.

Legs without visible spines or bristles; maxillary palp slightly curved. Hind tarsal segments in male 3-segmented; in female 2-segmented.

Abdominal segments II–IX as ventrites, segment VII deep, posteriorly reaching beyond posterior margin of elytra. Sternite VIII rounded. Sternite IX with its inner margin weakly emarginate. Male genitalia as described for *R. brevicornis*.
nal segment; terminal antennomere subquadrate, apically rounded. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum emarginate at apex. Maxillary cardo (Fig. 581) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.7 times as long as wide, weakly expanded apically. Mentum strongly transverse, at least 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe-like impression; prementum about as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpiger; apical palpmere as long and as broad as penultimate one.

**Pronotum** (Figs 580, 582, 583, 586) with anterior angles weakly rounded, scarcely produced anteriorly, swollen towards anterior angles and with groove near angles; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 581) with broad, concave area along anterior half of prothoracic lateral margin; notosternal suture obscure; pro-sternal process (Fig. 590) 0.55 times as broad as longest coxal diameter, its surface with carinæ joined before apex and continuing anteriorly as single, short carina; prosternum in front of coxa 0.75 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as straight line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

**Anterior edge of mesoventrite** (Fig. 590) with complete raised border; mesoventral process at median length of coxa as broad as corresponding coxal diameter; meso-metaventral articulation with suture obscure; junction forming a straight line. Scutellum (Fig. 583) triangular, transverse; surface punctate and setose. Elytra (Fig. 579) with lateral margins very narrow but entirely visible from above; surface with double size punctures, elytral epipleuron incomplete apically only (Figs 584, 589). 1.65 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite (Fig. 590) with complete discrimen; metaventral postcoxal lines distinctly separated at middle, complete and recurved; metaepisternum with external process interlocking with fovea on elytron; metaepimeron indistinct.

**Legs** with trochanter angles angulately produced (Figs 589, 590); mid and hind tibia without visible spurs (Fig. 588); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male swollen at base.

**Abdomen** (Fig. 589) with 5 ventrites in male; ventrite I 1.15 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in male smooth and simply setose, hind margin only with median part narrowly truncate; hind margin of male ventrite VI weakly emarginate (Fig. 1578), tegrite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half very narrow and rod-like towards apex, and base of spiculum widened and partially submembranous.

**Male genitalia** (Figs 1575–1577). Parameres articulated with phallobase, well developed, simple and separated, about 2.3 times longer than penis guide, with apices covered with simple setae; penis guide without additional processes, with
lateral sides symmetrical throughout; tegminal strut simple; penis base with outer arm obsolete.

Female unknown.


**Etymology.** This new species is named after country of origin.

**Distribution.** India.

*Rhyzobius riedeli* sp. nov.
(Figs 1026–1038, 1911–1916, 1946)

**Diagnosis.** This species resembles *R. sumatrensis* and *R. indicus* but differs from these species in having more oval body, shorter antennae, brown head and the prosternal process with complete, separate carinae.

**Description.** Length 3.23–3.33 mm; TL/EW = 1.31–1.32; PL/PW = 0.46–0.49; EL/EW = 0.98–1.02.

**Body** (Figs 1026, 1027, 1033, 1946) broadly oval, strongly convex, hemispherical, winged; predominantly black; elytra with violet, metallic sheen; head including mouthparts and antennae, and legs, except for mid and hind coxae light brown; pronotum just beyond head dark brown. Dorsum with moderately long and uniform pubescence; dorsal pubescence not forming pattern on elytra.

**Head** (Figs 1028, 1030) dorsally exposed, 0.75 times as long as wide; ventral antennal grooves distinctly circular bent towards outer margin of eye; corporotentorium absent. Eyes dorsally 0.50–0.75 times as long as head capsule, with inner orbits convergent, closer near vertex than anteriorly; ocular canthus extending slightly into eye; interocular distance 0.47–0.48 times as wide as head across eyes; interfacial setae distinct. Antenna (Fig. 1035) 0.63–0.65 times as long as head capsule width, 11-segmented; scape 1.25 times as long as pedicel; pedicel distinctly narrower than scape, 1.35 times as long as wide; antennomere III 3.6 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII subquadrate. Antennal club 3-segmented, with 2 subterminal segments asymmetrical; penultimate antennomere about as long as terminal segment; terminal antennomere subquadrate, apically rounded. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum truncate at apex. Maxillary cardo (Fig. 1028) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.1–1.2 times as long as wide, short, weakly expanded apically. Mentum transverse, less than 2 times broader than long; anterior margin arcuate; ventral surface with horseshoe like impression; prementum about as long as broad; ligula reduced; labial palps separated by distance about equal to width of palpiger; apical palpomere as long and as broad as penultimate; submentum indistinct.

**Pronotum** (Figs 1029, 1030, 1036, 1038) with anterior angles rounded, weakly produced anteriorly, not swollen but with distinct groove near angles; anterior margin without border; lateral sides symmetrical throughout; tegminal strut simple; penis base with outer arm obsolete.

Female unknown.


**Etymology.** This new species is named after country of origin.

**Distribution.** India.
without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 1034) with broad, concave area delimited outwardly by crescent shaped groove; notosternal suture obscure; prosternal process (Fig. 1034) 0.6 times as broad as longest coxal diameter, its surface with complete, separate carinae; prosternum in front of coxa 0.5 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as arcuate line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

**Anterior edge of mesoventrite** (Fig. 1034) with complete raised border; mesoventral process at median length of coxa 1.3 times as broad as corresponding coxal diameter; meso-metaventrite articulation with suture obscure; junction angulate posteriorly. Scutellum (Fig. 1038) triangular, transverse; surface punctate and setose. Elytra (Fig. 1026) with lateral margins very narrow but entirely visible from above; surface (Fig. 1038) with single size punctures, elytral epipleuron incomplete apically only (Figs 1027, 1037). 3.25 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line upturned outwardly near base of elytron. Metaventrite with complete discernia; metaventral postcoxal lines (Fig. 1034) distinctly separated at middle, complete and recurved; metaepisternum with externall process interlocking with fovea on elytron; metaepimeron indistinct; metendosternite stalk nearly as long as broad; tendons separated by slightly less than width of stalk and placed on laminae.

**Legs** with trochanters angulately produced (Figs 1034, 1037); mid and hind tibia without visible spurs (Figs 1031, 1032); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with large subtriangular basal tooth; tarsal claws in female with quadrate basal tooth.

**Abdomen** (Fig. 1037) with 5 ventrites in both sexes; ventrite I 1.5 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in female distinctly longer than IV, with hind margin arcuate and smooth; ventrite V in male with postero-median concavity covered with admedian setae, hind margin only with median part narrowly truncate to emarginate; female ventrite VI (Fig. 1015) with hind margin rounded, tergite VIII rounded; hind margin of male ventrite VI truncate (Fig. 1014), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half complex, somewhat widening at apex, and base of siculae widened, partially submembranous and with a pair of small sclerites.

**Male genitalia** (Figs 1911–1913). Parameres articulated with phallobase, well developed, simple and separated, about 1.8 times as long as penis guide, densely setose along about half of their length, with apices covered with simple setae; penis guide without additional processes, with lateral sides symmetrical throughout; tegmental strut simple; penis base with outer arm distinctly less developed than inner arm.

**Female genitalia** (Fig. 1916). Proctiger (T10) distinct, at least partly sclerotized plate; styli, small, terminal; infundibulum absent; sperm duct simple, uniform
in diameter; spermatheca without clear nodulus and ramus, spermathecal accessory gland adjacent to sperm duct.

**Material examined.** Types. **Holotype,** male: „Js. Halmahera, Buli. Maba, 6-7.11.1999, 20-200 m, leg. A. Riedel” (SMNS).

**Paratypes:** same data as holotype (1: MIZ); „Js. Halmahera, Tobelo, Mamuya, 12-11.1999, 20-500 m, leg. A. Riedel” (1: SMNS); "Morotai, W. Daruba. Raja, 18.XI.1999, 50-100 m, leg. A. Riedel” (1: female: MIZ, dissected).

**Etymology.** Dedicated to Dr. Alexander Riedel (Karlsruhe Museum), the collector of many specimens examined in this study including the type series of this species.

**Distribution.** Indonesia, Maluku: Halmahera Is., Morotai Is.

*Rhyzobius sumatrensis* sp. nov.
(Figs 1174–1186, 1836–1839, 1947)

**Diagnosis.** *R. sumatrensis* is most similar to *R. indicus* but is distinguished from that species by the pronotum at most weakly swollen towards anterior angles, the prothoracic hypomeron with concave area along anterior half of prothoracic margin delimiting outwardly by a deep groove, and the elytra uniformly punctate.

**Description.** Length 2.77 mm; TL/EW = 1.38; PL/PW = 0.51; EL/EW = 1.03.

**Body** (Figs 1174, 1175, 1184, 1947) broadly oval, strongly convex, hemispherical, winged; predominantly black; antennae, mouthparts and tarsi yellowish brown; tibiae and abdominal ventrites dark brown. Dorsum with moderately long and uniform pubescence; dorsal pubescence not forming pattern on elytra.

**Head** (Figs 1176, 1178) dorsally exposed; ventral antennal grooves distinctly circular bent towards outer margin of eye. Eyes with inner orbits convergent, closer near vertex than anteriorly; ocular canthus extending slightly into eye; interocular distance 0.55 times as wide as head across eyes; interfacetal setae distinct. Antenna (Fig. 1177) 0.85 times as long as head capsule width, 11-segmented; scape 1.7 times as long as pedicel; pedicel distinctly narrower than scape, 1.5 times as long as wide; antennomere III 3 times longer than wide, and about 1.5–2.5 times as long as IV; antennomere IV as long as V; antennomeres VI and VII weakly elongate. Antennal club 3-segmented, with two subterminal segments asymmetrical; penultimate antennomere as long as terminal segment; terminal antennomere subquadrate, rounded apically. Anterior clypeal margin distinctly emarginate with median area membranous. Labrum emarginate at apex. Maxillary cardo (Fig. 1176) transverse with outer angle reaching slightly outside of mouth cavity; terminal palpomere 1.4 times as long as wide, weakly expanded apically. Mentum transverse, less than 2 times broader than long; anterior margin deeply emarginate; ventral surface with horseshoe like impression; prementum as long as broad; ligula parallel-sided; labial palps separated by distance about equal to width of palpgere; apical palpomere about as long and as broad as penultimate; submentum distinct.

**Pronotum** (Figs 1171–1173) produced anteriorly, anterior margin without outer border. Prothoracic hypomeron outwardly by crescent shape process (Fig. 1179) 0.6 times carinae convergent, joint anteriorly as single, where as coxal longitudinal arcuate line, raised and distinctly transverse, meet.

**Anterior mesoventral punc- tures** coxal diameter anteriorly; mesoventre, posteriorly. Surface of Elytra (Fig. 1183) slightly sparing convex surface (Fig. 1183) on side (Figs 1175, 1186), 2.2 times with border area wider than elytron. Metaventrite with distinctely separated at metaventrite.

**Legs** with trochanters, mid and hind tibia without male appendiculate; hind.

**Abdomen** (Fig. 1177) as ventrake II; abdomen deep, posteriorly reaching into male with postero-median only with median part membranous; ventrake VI widely truncate; part membranous; apodeme edge like at apex, and base of small sclerites.

**Male genitalia** developed, simple and sub- tese along about half of without additional processes simple; penis base with.

**Female unknown.**


**Etymology.** Named after...
Pronotum (Figs 1178, 1180, 1181, 1183) with anterior angles rounded, scarcely produced anteriorly, swollen towards anterior angles and with groove near angles; anterior margin without border; lateral margin with entire border; hind margin without border. Prothoracic hypomeron (Fig. 1176) with broad, concave area delimited outwardly by crescent shaped groove; notosternal suture distinct, simple; prosternal process (Fig. 1179) 0.6 times as broad as longest coxal diameter, its surface with carinae convergent, joined rounded just before prosternal margin and continuing anteriorly as single, short carina; prosternum in front of coxa about 0.5 times as long as coxal longitudinal diameter at the same position; anterior margin continuing as arcuate line, much more posterior than anterior pronotal margin; procoxal cavity distinctly transverse, without visible bordering line.

Anterior edge of mesoventrite (Fig. 1179) with complete raised border; mesoventral process at median length of coxa 1.15 times as broad as corresponding coxal diameter; meso-metaventral articulation with suture obscure; junction arcuate posteriorly. Scutellum (Fig. 1183) triangular, transverse; surface punctate and setose. Elytra (Fig. 1174) with lateral margins very narrow but entirely visible from above; surface (Fig. 1183) with single size punctures, elytral epipleuron incomplete apically only (Figs 1175, 1186), 2.25 times as wide as corresponding metaepisternum, inner margin with border area widening towards elytral base and border line fading before base of elytron. Metaventrite with complete discrmen; metaventral postcoxal lines (Fig. 1179) distinctly separated at middle, complete and recurved; metaepimeron indistinct.

Legs with trochanters rounded or somewhat angulate produced (Figs 1179, 1186); mid and hind tibia without visible spurs (Figs 1182, 1185); pro- and mid tarsal claws in male appendiculate; hind tarsal claws in male with large quadrates basal tooth.

Abdomen (Fig. 1186) with 5 ventrites in male; ventrite I 1.5 times as long as ventrite II; abdominal postcoxal lines separate medially, recurved and complete, deep, posteriorly reaches distinctly more than half length of ventrite I; ventrite V in male with postero-median concavity covered with admedian setae, hind margin only with median part narrowly truncate to weakly emarginate; hind margin of male ventrite VI widely truncate (Fig. 1839), tergite VIII rounded. Sternite IX with central part membranous; apodeme of male sternum IX with its apical half broad and plate-like at apex, and base of epandrium widened, partially submembranous and with a pair of small sclerites.

Male genitalia (Figs 1836–1838). Parameres articulated with phallobase, well developed, simple and separated, about 1.4 times longer than penis girdle, densely setose along about half of their length, with apices covered with simple setae; penis girdle without additional processes, with lateral sides symmetrical throughout; tegmental struts simple; penis base with outer arm distinctly less developed than inner arm.

Female unknown.


Etymology. Named after the Island of its origin.

Distribution. Indonesia: Sumatra.
Species Incertae Sedis

Rhyzobius gratus, Weise


Weise described this species based on a single female, which was probably deposited in the former „Zoological Museum in Buitenzorg“ – now Bogor Museum in Indonesia. It has not been available for study.

Based on Weise’s description, *R. gratus* is similar to *R. violaceus*, *R. gonzalezi* and *R. luciae* by the body size, shape and colouration. However, the elytra of *R. luciae* and *R. gonzalezi* have brown apices, while *R. violaceus* having entirely black elytra, has additional cupreous not blue metallic sheen. Moreover the shape of prosternal carinae described by Weise is most similar to condition in *R. violaceus*, not in *R. luciae* or *R. gonzalezi*, although *R. violaceus* seems to have the body more elongate than *R. gratus*. Additionally, all these newly described species have the eyes coarsely facetted.

Therefore, without a study of the type specimen of *R. gratus*, its taxonomic status can not be resolved.
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