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Revision of the Australian Coccinellidae (Coleoptera). Part 3. Tribe Sukunahikonini

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Abstract The Australian members of the circumtropical coccinellid tribe Sukunahikonini are revised and placed in three genera: *Scymnomorphus* Weise (five species), *Pharellus* Sicard (two species) and *Paraphellus* Chazeau (two species). *Scymnus rostratus* Lea, 1929 is transferred to *Paraphellus* as *P. rostratus* (Lea) **comb. n.** The following new species are described from Australia: *Pharellus glabratus* sp. n., *P. popei* sp. n.; *Paraphellus magnopunctatus* sp. n.; *Scymnomorphus fulvus* sp. n., *S. hirtus* sp. n., *S. ker* sp. n., *S. luteus* sp. n., *S. storeyi* sp. n. Nomenclatural history, diagnoses and distribution are provided for each species. Keys to the genera and species are included.

Key words Coccinellidae, Coleoptera, *Paraphellus*, *Pharellus*, *Scymnomorphus*, Sukunahikonini.

INTRODUCTION

This is the third paper in the series (Pope 1988; Slipinski 2004) revising Australian species of ladybird beetles (Coccinellidae). It is devoted to the tribe Sukunahikonini, which is usually classified in the subfamily Sticholotidinae, and contains the smallest and the least apparent members of Coccinellidae.

The tribe Sukunahikonini was described by Kamiya (1960) to accommodate his new genus *Sukunahikona* Kamiya from Japan. Kamiya, at the time of erecting the tribe, pointed out peculiarities of the genus in structure of the mandibles and maxillary palps, the narrow prosternal process and the asymmetrical tegmen of the male genitalia. In 1967 he (as Sasaji 1967) described an interesting wingless coccinellid species from Taiwan and placed it in a new genus *Hikonasukuna* Sasaji in the Sukunahikonini. He (Sasaji 1971) classified Sukunahikonini in the subfamily Sticholotidinae along with the tribes Sticholotidini, Serangiini and Schirozuellini. This placement was further elaborated in his major paper on phylogeny of Coccinellidae (Sasaji 1968a).

Sasaji's placement of these minute beetles in the subfamily Sticholotidinae, and his entire classification of ladybirds, has been followed by most coccinellid workers (Gordon 1977; Hoang 1982; Fürsch 1985; Kováø 1996; Vandenberg 2002) with only minor changes to suit the geographical region of their interest. The limits of the tribe Sukunahikonini as discussed in Miyatake's (1994) paper also are accepted here. As such, the tribe includes five valid genera worldwide, of which *Orculus* Sicard and *Hikonasukuna* Sasaji are limited in their geographical ranges to Central and West Africa (Sicard 1931), and Taiwan (Sasaji 1967), respectively, while the remaining three are now shown to be widespread, with *Scymnomorphus* Weise (=*Sukunahikona*) occurring commonly in the Old and New World (Chapin 1965; Gordon 1977).

Very little is known about the biology of these beetles. Kamiya (1960) collected his specimens on *Aulacaspis difficilis* (Cockerell) and Chapin (1965), Gordon (1977) and Vazirani (1982) confirm that the diaspidine scale insects as a primary food of Sukunahikonini. The only information on the immature stages in this group is a description of the larval exuviae of *Scymnomorphus japonicus* (Reitter) by Kamiya (1965) and Sasaji (1968b).

Sukunahikonini was recorded from Australia only recently (Matthews 1992), but the present contribution documents a diverse and abundant fauna of three genera and at least nine species, with many more to be discovered and described. We diagnose the Sukunahikonini and each of the genera found in Australia (*Paraphrellus* Chazeau, *Pharellus* Sicard and *Scymnomorphus*), describe the species of these genera based primarily on the adult male beetles and provide keys to these three genera and to the Australian species of each genus.

MATERIALS AND METHODS

Specimens examined were obtained from the following institutions: AMSA, Australian Museum, Sydney; ANIC, Australian National Insect Collection, Canberra; BMNH, The Natural History Museum, London; CMN, The Canadian Museum of Nature, Ottawa; CNC, The Canadian National Collection of Insects, Arachnids and Nematodes, Ottawa; QDPIB, Queensland Department of Primary Industries, Brisbane; QDPIM, Queensland Department of Primary Industries, Mareeba; QMB, Queensland Museum, Brisbane; SAMA, South Australian Museum, Adelaide.

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The measurements were made using a micrometer attached to a dissecting microscope as follows: (TL) total length, from apical margin of clypeus to apex of elytra; (PL) pronotal length, from the middle of anterior margin to margin of basal foramen; (PW) pronotal width at widest part; (EL) elytral length along suture, including scutellum; (EW) elytral width across both elytra at widest part. Male and female genitalia were dissected, cleaned in 10% solution of KOH and examined and photographed in glycerol. After examinations these have mounted in a drop of DMHF (dimethyl hydantoin formaldehyde) on a card and pinned with the specimen. Female genitalia of Sukunahikonini are very uniform and without apparent diagnostic features to be suitable for species identification.

The photographs of the whole beetles and those of their genitalia and other details were executed on a digital camera at with images enhanced using Auto-Montage software version 4.00 (Synoptics Ltd, http://www.syncroscopy.com). The distribution maps are produced from BioLink version 2.0 (CSIRO Entomology, http://www.biolink.csiro.au).

Systematics

Sukunahikonini

Sukunahikonini Kamiya 1960: 24. Type genus: *Sukunahikona* Kamiya 1960 (=*Scymnomorphus* Weise 1897).

Diagnosis. Body minute (1–3 mm), moderately to strongly convex with head in repose strongly deflexed and closely fitting under prosternum (Fig. 1); dorsum usually with apparent dorsal vestiture consisting of intermixed long and much shorter hairs; rarely vestiture consists of sparse, single setae or apparently absent. Head transverse, ventrally flattened often with clypeal and frontal regions prominent anteriorly; clypeus emarginate around exposed antennal insertions, ventral side with short antennal groove accommodating scape and pedicel along inner margin of eye. Mandible small, triangular with single apical tooth and reduced mola, without retinaculum; maxillary palp long, terminal palpomere elongate and conical (Fig. 4); labial palps slender, narrowly separated at base and inserted on distal end of prementum (Fig. 37). Antenna 8- to 11-segmented with distinct 1- to 3-segmented club. Pronotum almost always with distinct line or ridge separating anterior corners from the pronotal disc, often extending along lateral edge. Prosternum strongly reduced and narrow; prosternal process reduced to a short triangular piece or a narrow carina, usually incompletely separating procoxae. Winged or wingless; wing with greatly reduced venation, never with jugular lobe. Elytral punctures sometimes in apparent rows; epipleuron narrow usually incomplete apically, without cavities; lateral part of elytron often with a carina parallel to lateral margin (Fig. 24). Abdomen with 5–6 ventrites; ventrite 1 and 2 at least partially fused. Postcoxal line at abdominal ventrite 1 incomplete, usually with associated pits and pores. Male genitalia: tegmen asymmetrical, parameres short to reduced with 1 or more setae apically. Female genitalia (Fig. 16): ovipositor triangular elongate, lightly sclerotised bearing short styli; spermatheca small and well sclerotised.

Distribution. Circumtropical, with most of the species diversity yet to be described.

Discussion. There are five generic names proposed in this tribe but the generic concept varies a lot among authors. The African genus *Orculus* Sicard (Fürsch 1985) is distinctive because of its broadly oval body, prosternum with very narrow projection anteromedially and relatively stout terminal maxillary palpomere, but the remaining four names have been variously treated in the past. Chapin (1965), Chazeau (1977) and Gordon (1977) presented different opinions on the identity of the genus *Pharellus* and its relationship with *Scymnomorphus*. To avoid further confusion as to the validity of these genera prior to an extensive phylogenetic study of the entire group we are following the generic concepts of Chazeau (1977) and Miyatake (1994) in recognising *Pharellus* and *Scymnomorphus* as valid genera and we further classify two Australian species in the genus *Paraphellus* that has been described by Chazeau (1981) from Fiji.

Key to the genera of Sukunahikonini found in Australia

1 Antennal club composed of a single segment (Fig. 27)..... *Paraphellus* Chazeau
– Antennal club 2- or 3-segmented (Figs 13,14,53)..... 2
2 Antennal club 3-segmented (Fig. 13); prosternal process triangular (Fig. 9)..... *Pharellus* Sicard
– Antennal club 2-segmented (Fig. 53); prosternal process carina-like (Fig. 7)..... *Scymnomorphus* Weise

Pharellus Sicard

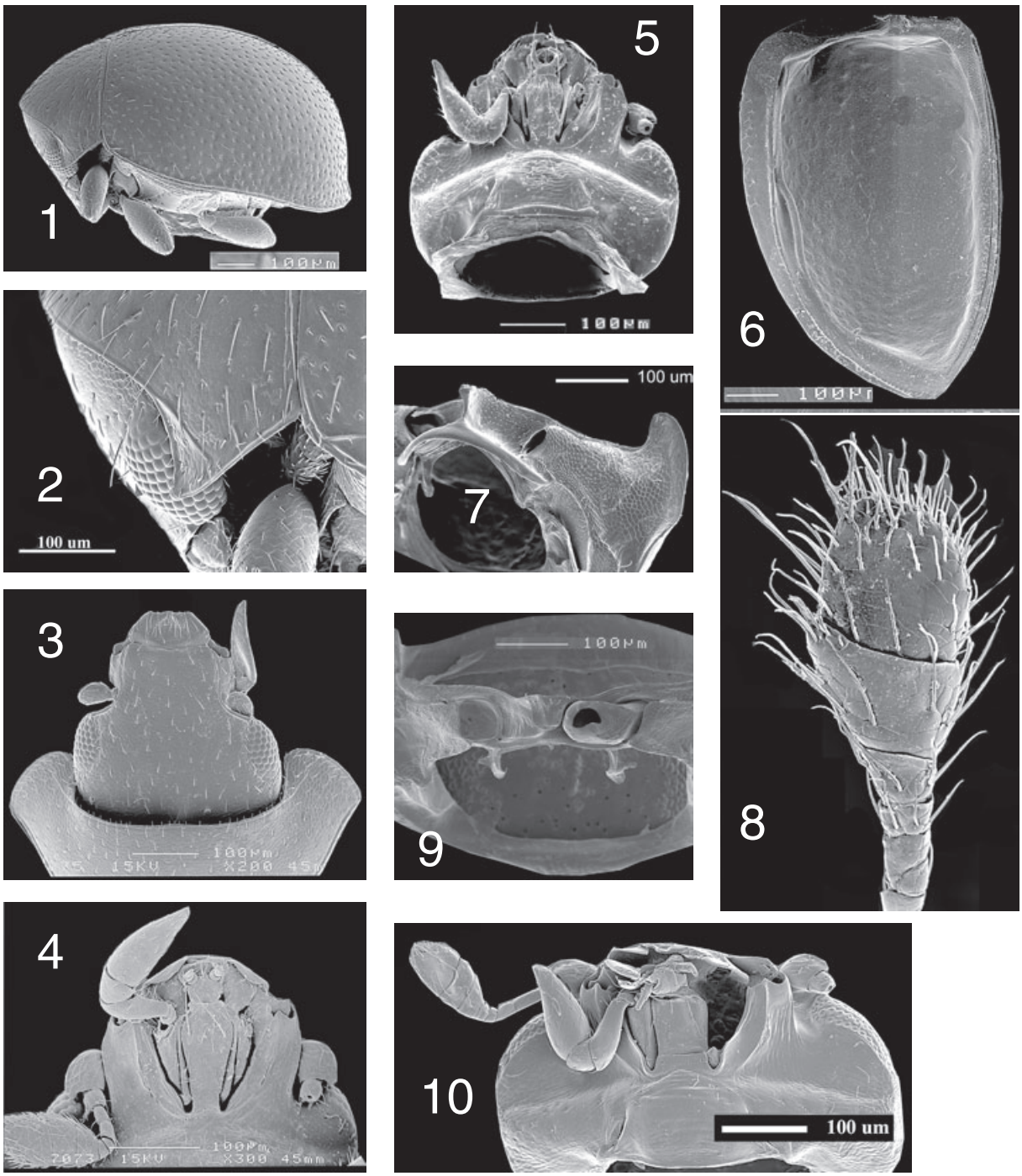
Pharellus Sicard 1928: 300. Type species by monotypy: *Pharellus minutissimus* Sicard 1928 (Java).

Diagnosis. Body minute, not exceeding 1.3 mm, distinctly convex; winged. Dorsal vestiture consisting of hairs or bristles of uniform length (Figs 1,2). Head transverse with clypeal and frontal regions usually prominent. Antenna 10-segmented with large 3-segmented club (Figs 13,14). Pronotum with distinct line or ridge separating anterior corners from pronotal disc (Fig. 2). Prosternum reduced, forming raised parallel or somewhat triangular process between coxae (Fig. 9). Mesocoxae broadly separated (Fig. 33). Elytral punctures dense and completely confused; epipleuron narrow, usually complete to apex (Fig. 6), without cavities; lateral part of elytron without an epipleural carina along elytral edge (Fig. 1). Abdomen with 6 visible ventrites, ventrite 5 arcuate or truncate posteriorly usually leaving tip of 6th ventrite exposed; ventrites 1 and 2 fused at middle (Fig. 40). Postcoxal line of abdominal ventrite 1 reaching lateral margin of ventrite with associated additional lines and pores.

Distribution. Oriental and Australian; first record from Australia.

Key to the Australian species of *Pharellus*

1 Dorsum with regular, short setae (Fig. 2); head slightly rostrate (Fig. 3) and mouthparts distinctly slender,



Figs 1–10. (**1–6**) *Pharellus popei* sp. n.: (**1**) body, lateral view; (**2**) pronotum and head, lateral; (**3**) head and pronotum, dorsal; (**4**) mouth parts, ventral; (**5**) head, ventral; (**6**) elytron ventral. (**7,8**) *Scotoscymnus luteus* sp. n.: (**7**) prosternal process; (**8**) antennal club. (**9,10**) *Pharellus glabratus*: (**9**) prosternal process; (**10**) head, ventral view.

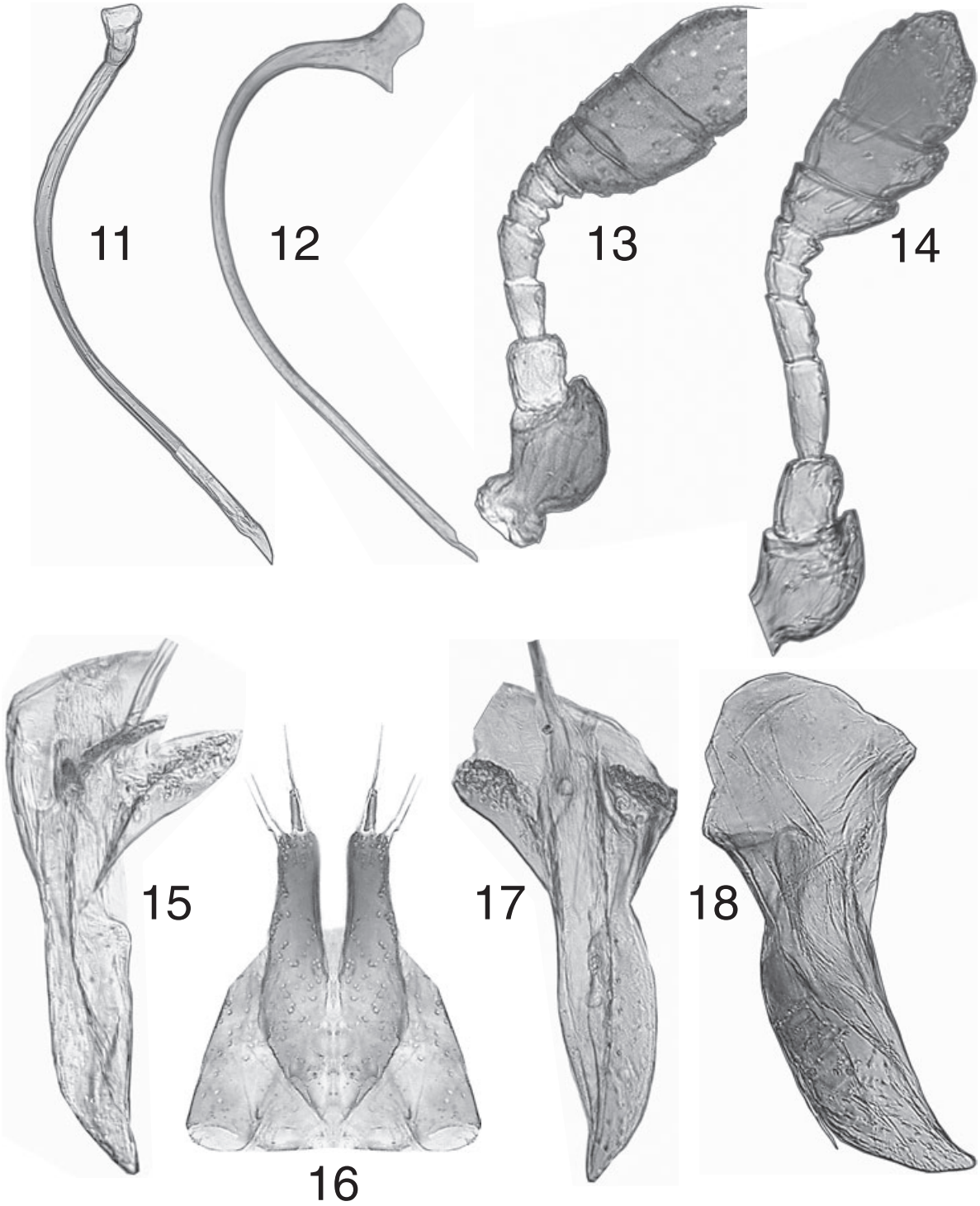
elongate (Figs 4,5); epipleuron complete to apex; male genitalia as in Figs 12, 15 and 17..... *popei* sp. n.

– Dorsum mostly glabrous, irregular setae sometimes present on pronotum and elytra, often absent; head not at all rostrate with mouthparts less elongate (Fig. 10); epipleuron ends at the level of 2nd abdominal ventrite; male genitalia as in Figs 11 and 18..... *glabratus* sp. n.

Pharellus popei sp. n. (Figs 1–6,12,13,15,17,60)

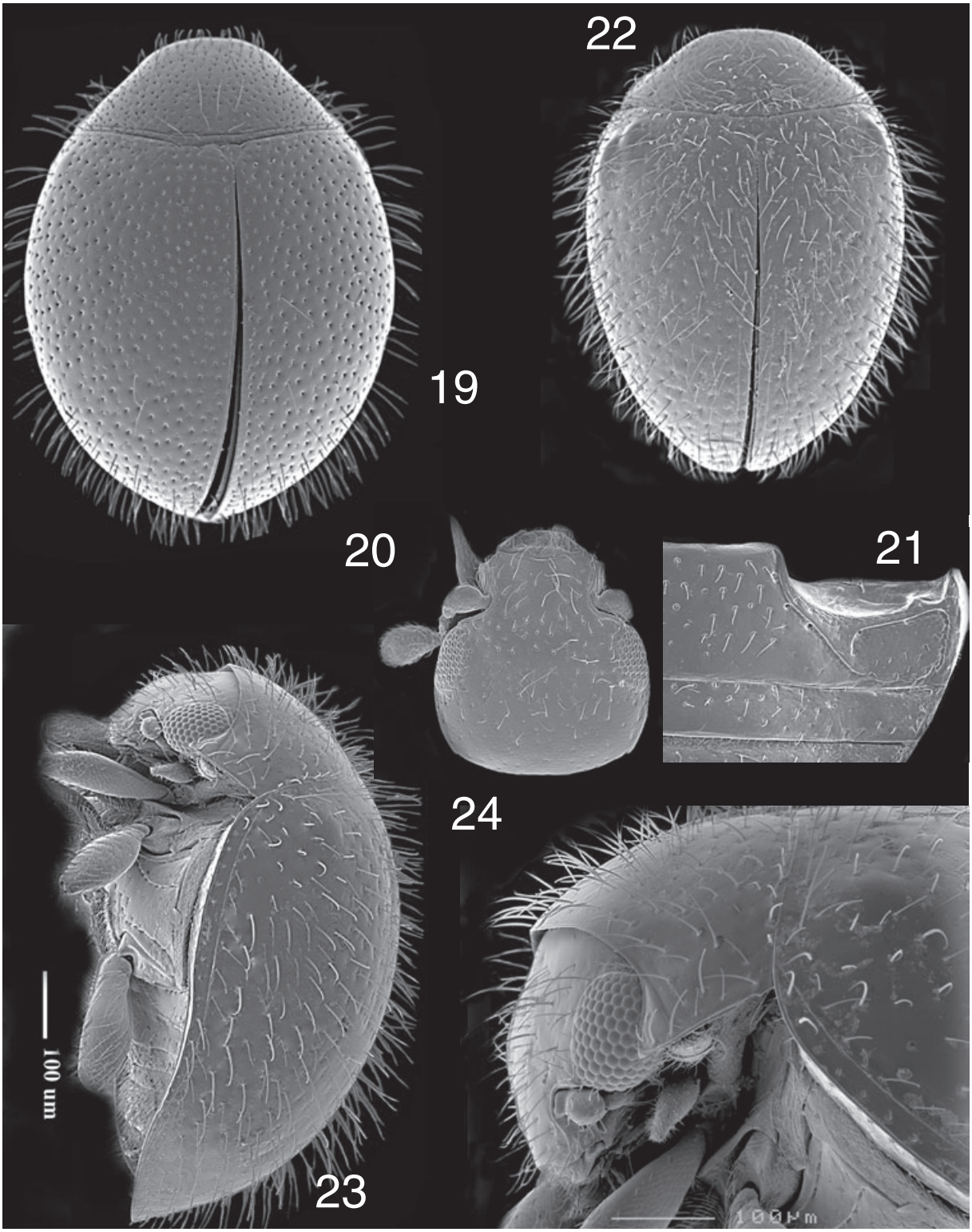
Coccinellidae Genus A: Matthews 1992: 14.

Types. ***Australia*, *New South Wales.*** Holotype male, 11 km SSE Narrandera, 2.x.1990, *Accacia pendula*, C. Reid (ANIC). **75 Paratypes.** ***New South Wales.*** 15 km WSW Lockhart (35°17′S, 146°34′E), on *A. pendula*, C. Reid, 17.i.1986



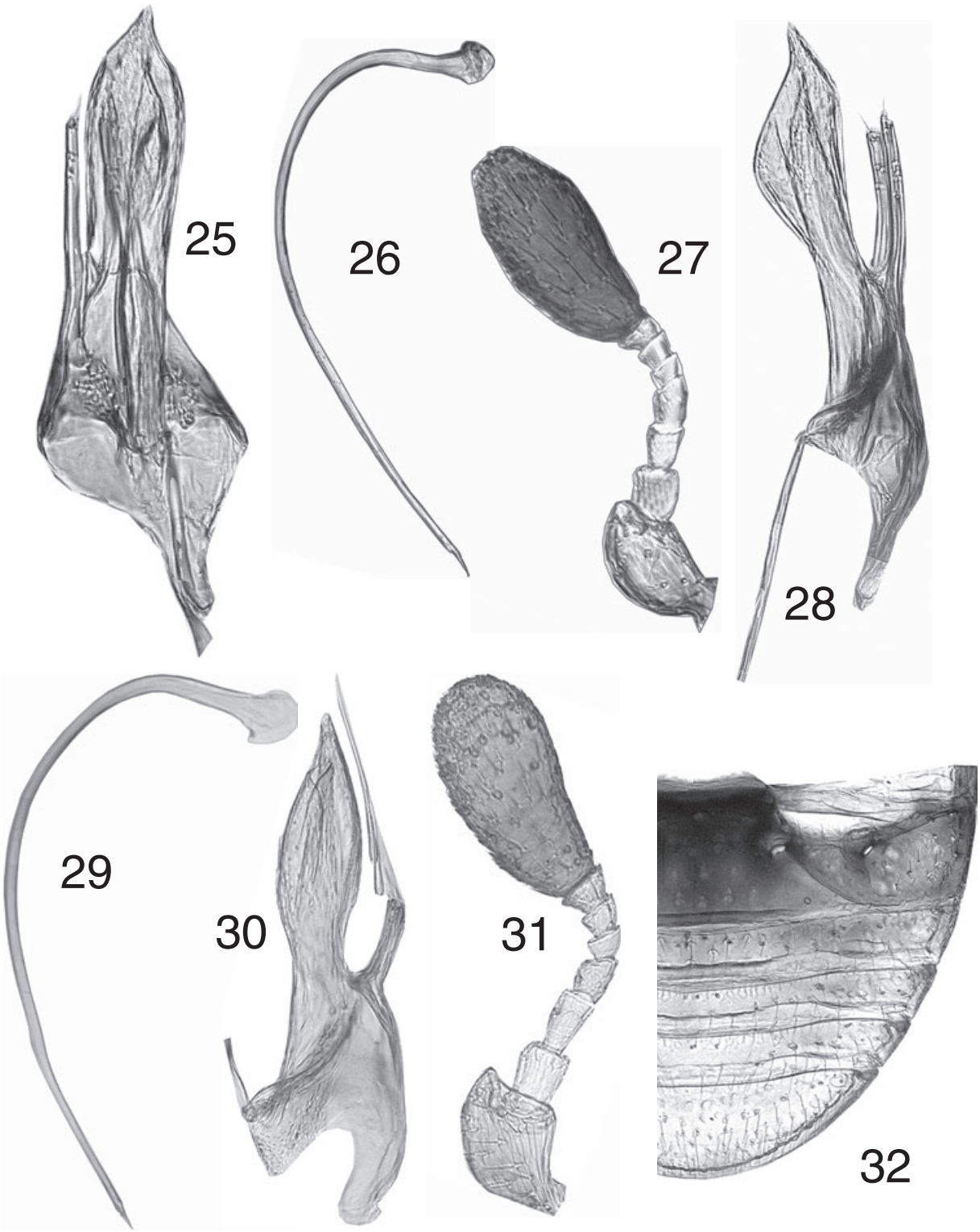
Figs 11–18. *Pharellus* species. (**11,14,16,18**) *Pharellus glabratus* sp. n. (**12,13,15,17**) *Pharellus popei* sp. n. (**11,12**) median lobe; (**13,14**) antenna; (**15**) tegmen, lateral; (**16**) ovipositor; (**17**) tegmen, inner view; (**18**) tegmen, lateral.

(ANIC); Fowlers Gap Research Stn. (31°05′S, 141°44′E), J. Cardale, 29.xi.1981 (ANIC). ***Northern Territory.*** 17.7 km SW by W of Mt Sanford HS (17°04′S, 130°25′E), M. Mendum, 31.viii.1969 (ANIC); 5 km NNW of Cahills Crossing, East Alligator R. (12°23′S, 132°57′E), E. Britton, 5.xi.1972 (ANIC); Magela Ck., 9 km SSE of Mudginbarry HS [Mudginberri HS] (12°40′S, 132°54′E), E. Britton, 6.xi.1972 (ANIC). ***South Australia.*** 10 km SW of Swan Reach (34°38′S, 139°31′E), on vegetation, C. Reid, 13.v.1986 (ANIC); 20 km NE of Mannum (34°47′S, 139°27′E), C. Reid, vs. 1989 (ANIC); 47 km SE of Keith (36°24′S, 140°43′E), G. Gross & D. Lacis, 24.iv.1979 (SAMA); Adelaide, in flood debris A.M. Lea (SAMA); Adelaide (34°56′S, 138°36′E), C. Manuel (ANIC); Big Heath Cons. Pk. (37°05′S, 140°32′E), E.



Figs 19–24. (**19–21**) *Paraphellus rostratus* (Lea): (**19**) dorsal view; (**20**) head, dorsal; (**21**) abdominal ventrites 1 and 2 laterally. (**22–24**) *Scymnomorphus fulvus* sp. n.: (**22**) dorsal view; (**23**) lateral view; (**24**) head and pronotum lateral view.

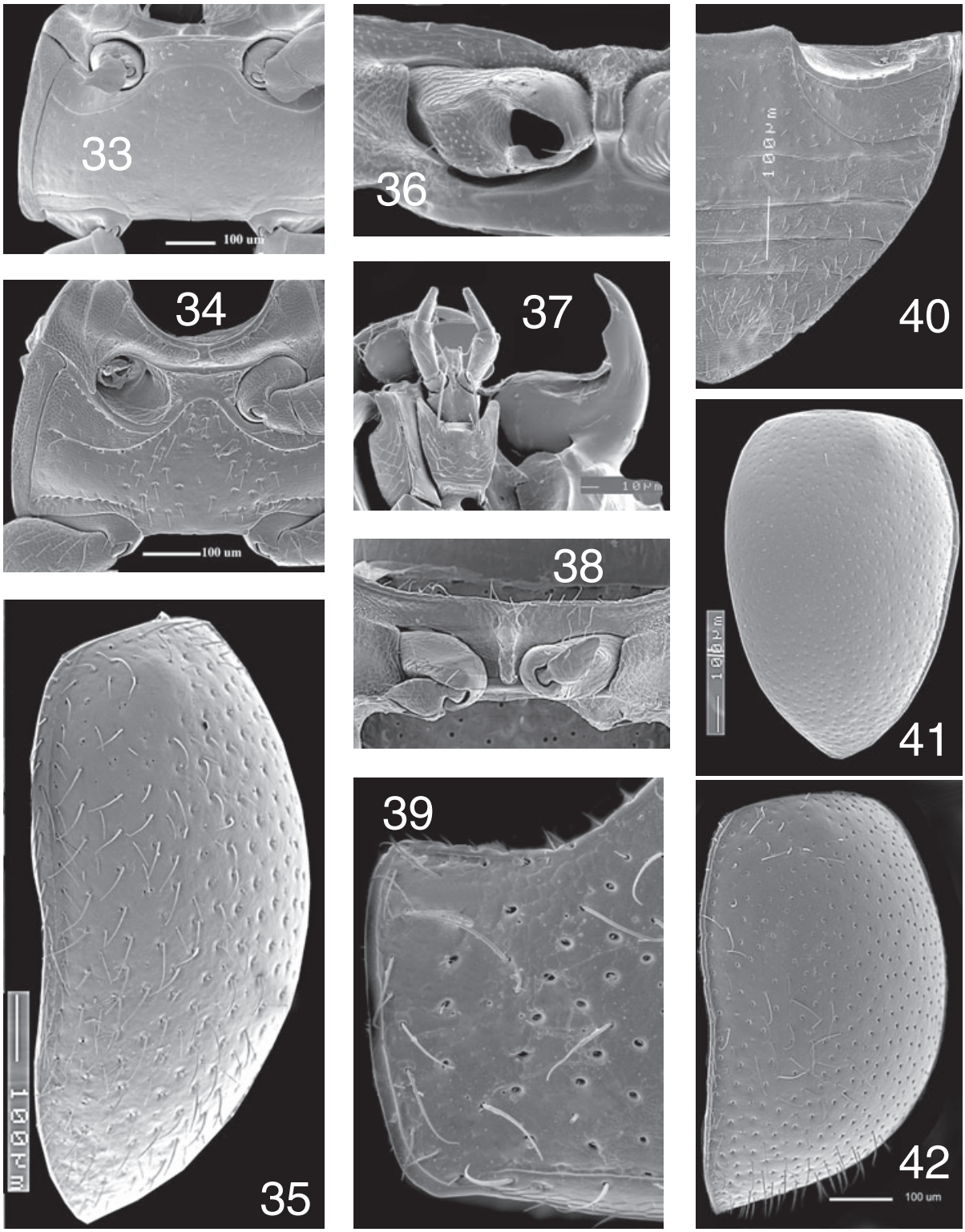
Matthews & J. Forrest, 25.iii.1981 (SAMA); Brookfield Conservation Park (34°21′48′S, 139°31′E), J. Stelman & S. Williams, 3.xi.1991 (ANIC); Brookfield Conservation Park, Site No. 3 (34°22′S, 139°27′E), J. Lawrence, T. Weir & W. Dressler, 3.ix.1991 (ANIC); Morgan, 16 km NW (34°02′S, 139°39′E), Britton, Misko & Pullen, 16.xii.1970 (ANIC); Myponga (35°23′S, 138°28′E), A. Elston (AMSA); Old Billa Kalina HS (29°55′S, 136°11′E), J. Forrest, 14.v.1981 (SAMA); Ooldea (30°27′S, 131°50′E), A. Lea (SAMA); Port Lincoln (34°44′S, 135°52′E), Blackburn (SAMA); Saddle-



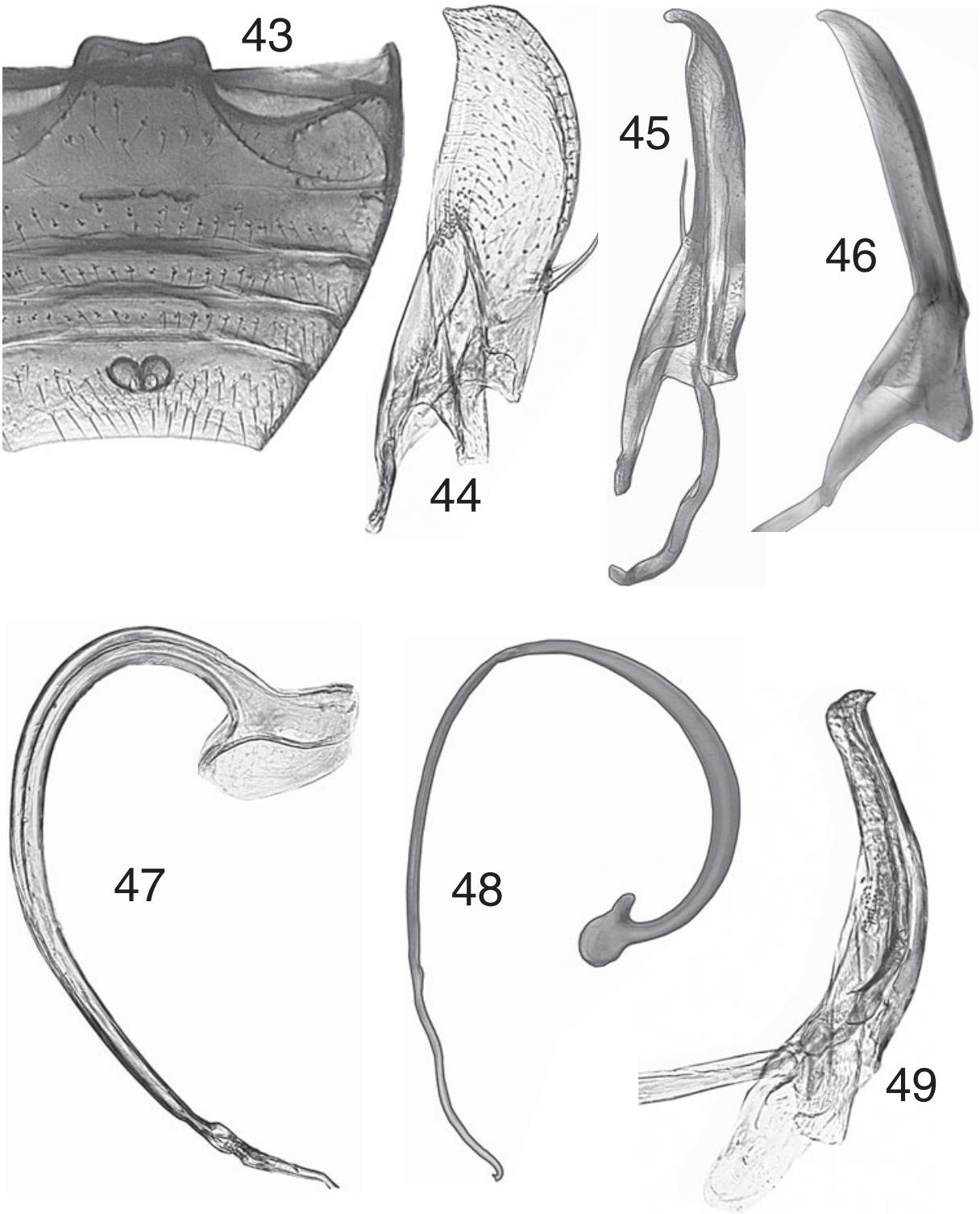
Figs 25–32. (**25–28**) *Paraphellus rostratus* sp. n., male: (**25**) tegmen inner view; (**26**) median lobe; (**27**) antenna; (**28**) tegmen, lateral. (**29–32**) *Paraphellus magnopunctatus* sp. n.: (**29**) median lobe; (**30**) tegmen, lateral; (**31**) antenna; (**32**) abdomen.

worth (34°05′S, 138°47′E), W.C. i.1960 (SAMA). ***Western Australia.*** 20 km E of Merredin (31°29′S, 118°29′E), C. Reid, 11.i.1986 (ANIC); 11.3 km WNW of Balladonia HS (32°26′S, 123°45′E), Britton, Upton & Balderson, 13.x.1968 (ANIC); Geraldton 28°46′S, 114°37′E, Lea (SAMA); Perth (31°57′S, 115°51′E), viii.1958 (ANIC); Swan R. (31°51′S, 116°00′E), Lea (SAMA).

Diagnosis. This species is superficially similar to *Paraphellus rostratus* and these species can be confused easily, due to their same body shape, size and shortly rostrate heads. The obvious



Figs 33–42. (**33**) *Pharellus glabratus* sp. n., pterothorax, ventral. (**34–37**) *Scymnomorphus hirtus* sp. n.: (**34**) pterothorax, ventral; (**35**) elytron, lateral; (**36**) prosternal process; (**37**) labium and mandible, ventral. (**38,39**) *Paraphellus rostratus* (Lea): (**38**) prosternal process; (**39**) pronotum, lateral part. (**40,41**) *Pharellus glabratus* sp. n.: (**40**) abdomen, lateral part; (**41**) elytron, dorsal. (**42**) *Paraphellus rostratus* (Lea), elytron lateral.



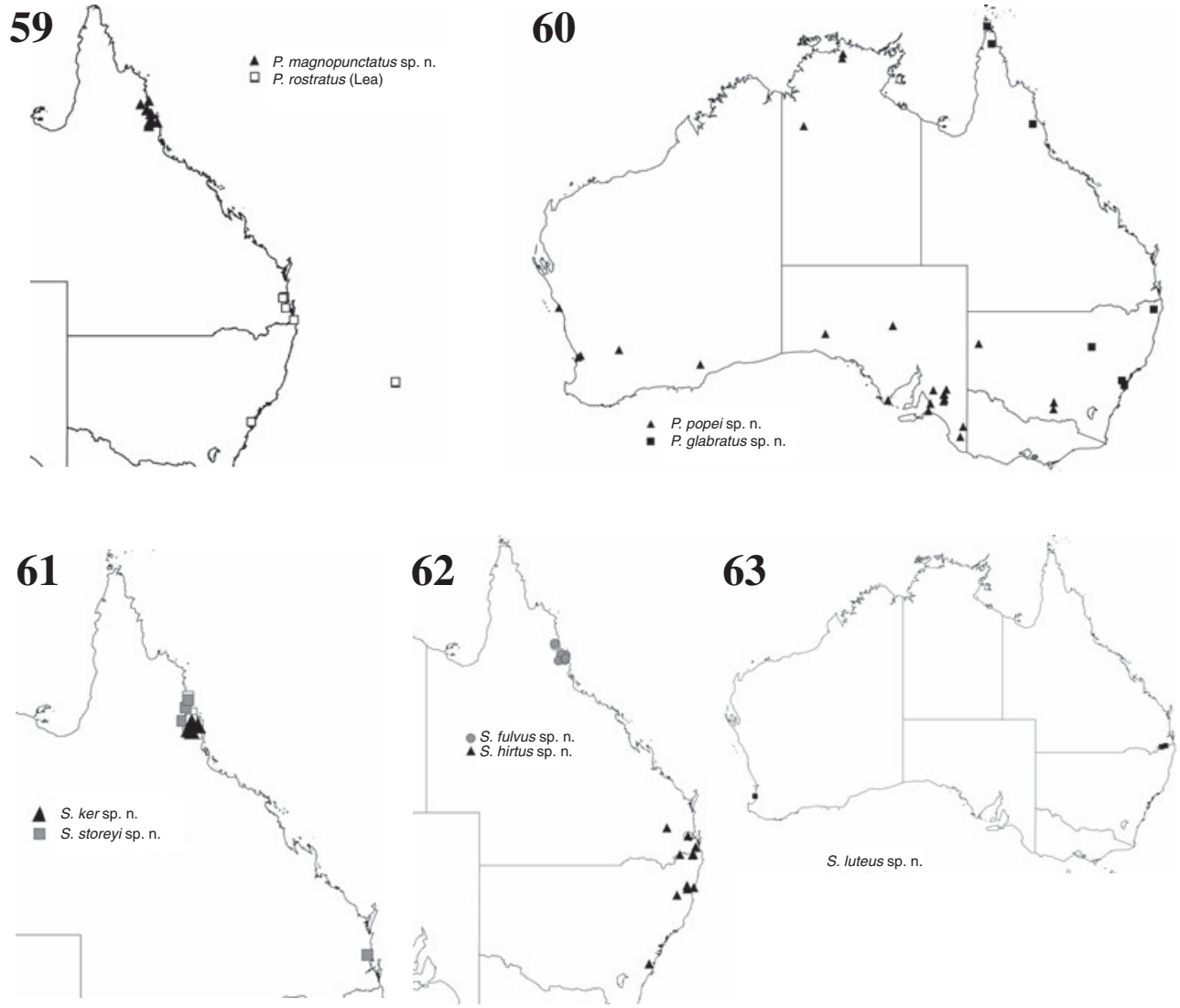
Figs 43–49. *Scymnomorphus* spp., males. (**43,45,46,48**) *Scymnomorphus fulvus* sp. n. (**44,47,49**) *Scymnomorphus ker* sp. n. (**43**) abdomen; (**44,45**) tegmen, inner view; (**46,49**) tegmen, lateral view; (**47,48**) median lobe.

differences in their antennal club (1-segmented in *Paraphellus* vs. 3-segmented in *Pharellus*) serve as the best character to separate the genera.

Description. Length 1.0–1.2 mm; TL/EW = 1.2–1.3; PL/PW = 0.3–0.4; EL/EW = 0.9–1.0. Winged; form oval, convex (Fig. 1); surfaces distinctly setose with setae short, erect and pointing backwards. Brown to dark brown, ventral side opaque, dark brown, labrum and appendages brown. Dorsal surfaces between punctures with microsculpture, shiny. Head flat, regularly punctate and covered with short setae; punctures

Figs 50–58. *Scymnomorphus* spp., males. (**50–53**) *Scymnomorphus storeyi* sp. n.: (**50**) tegmen, inner view; (**51**) tegmen, lateral; (**52**) median lobe; (**53**) antenna. (**54–56**) *Scymnomorphus hirtus* sp. n.: (**54**) median lobe; (**55**) tegmen, inner view; (**56**) tegmen, lateral. (**57,58**) *Scymnomorphus luteus* sp. n.: (**57**) tegmen, inner view; (**58**) median lobe.

2–3 diameters apart, each puncture smaller than an eye facet and bearing a short seta. Clypeus distinctly prominent forming short rostrum, weakly arcuate anteriorly (Fig. 3). Eyes small, coarsely facetted, dorsally separated by about 4 times width of an eye. Antenna 10-segmented with long 3-segmented club (Fig. 13). Pronotum widest just before base and gradually narrowing anteriorly, pronotal margins narrowly explanate and entirely visible from above; anterolateral line distinct not reaching lateral margin (Fig. 2). Disc strongly convex medially, suddenly sloping laterally, finely punctate, punctures as



Figs 59–63. Distribution maps.: (**59**) *Paraphellus*; (**60**) *Pharellus*; (**61–63**) *Scymnomorphus*.

large as those on frons, 2–4 diameters apart with interspaces densely reticulate but shiny. Scutellum triangular, well visible, glabrous. Elytron shiny, densely punctate, punctures irregular and 2–3 times as large as those on pronotum, usually separated by 1–2 diameters, interspaces shiny and usually polished. Elytral margins narrow, entirely visible from above, edges finely crenulate. Epipleuron narrow and extending to apex (Fig. 6). Abdomen: ventrite 5 arcuate posteriorly, usually exposing 6th ventrite apically; postcoxal line of first ventrite incomplete, almost reaching lateral margin; postcoxal disc sparsely punctate. Male genitalia (Figs 12,15,17): tegmen 0.5 times, median lobe 1.2 times as long as abdomen; trabes about as long as the basal piece; parameres apparently absent (Fig. 17). Female: not externally different from male.

Etymology. This species is named after our friend and colleague Robert D. Pope (formerly BMNH) in recognition of his valuable contributions to the taxonomy of the Coccinellidae.

Distribution. Widely distributed in Australia (Fig. 60).

Pharellus glabratus sp. n. (Figs 9–11,14,16,18,33,40,41,60)

Types. ***Australia*, *New South Wales.*** Holotype, male, Maroota, sandstone flora, E. Britton 4.iv.1968 (ANIC). **8 Paratypes.** ***New South Wales.*** Cabramatta, Georges R. Valley, M. Nikitrin, 29.xiii.1962 (BMNH); Casino 28°52′S, 153°03′E, C. Reid, 5.vii.1992 (ANIC); Maroota (33°27′S, 151°00′E), E. Britton, 6.iv.1968 (ANIC); Sydney (33°46′S, 151°09′E), Lea (SAMA); Warrumbungle NP Camp Pincham (31°18′S, 149°02′E), C. Reid, 20–24.xi.1985 (ANIC). ***Queensland.*** Hann and, 13 km WNW Mareeba (16°55′S, 145°15′E), Storey & Dickinson, 7.xii.1988 (QDPIM); Heathlands Dump Site 11°45′S, 142°35′E, P. Zborowski & L. Miller, 18.viii.1992 (ANIC); Horn Island 10°37′S, 142°17′E, K. Houston & K. Sadler, 2.xii.1986 (QDPIB)

Diagnosis. This species is different from all known species of the Sukunahikonini because of its apparently glabrous dorsum. It is different from the only other Australian congener in

having a shorter head, shorter mouthparts with stouter maxillary palps (Fig. 10) and differently structured antenna (Figs 13,14).

Description. Length 1.1–1.3 mm; TL/EW = 1.3; PL/PW = 0.3–0.4; EL/EW = 1.0–1.1. Winged; form oval, convex; surfaces apparently glabrous (Fig. 41) with short setae on dorsum irregular and often absent except for a regular transverse row along pronotal base. Dark brown, ventral side opaque; labrum and appendages yellowish brown. Dorsal surfaces between punctures highly polished, shiny. Head flat, sparsely punctate and shortly setose, punctures as large as eye facets, 3–4 diameters apart, interspaces smooth. Clypeus weakly prominent anteriorly, not forming a rostrum, anterior margin weakly arcuate. Eyes normal, coarsely facetted, dorsally separated by about 3–4 times width of an eye. Antenna 10-segmented with long 3-segmented club (Fig. 14). Pronotum widest just before base and gradually narrowing anteriorly, pronotal margins not explanate but entirely visible from above; anterolateral line distinct but not reaching lateral margin. Disc regularly convex, sparsely punctate, punctures twice as large as those on vertex, 2–4 diameters apart with interspaces smooth and shiny. Scutellum elongate, triangular, well visible, glabrous. Elytron shiny, punctate, punctures dual; larger punctures of about size of pronotal ones and mostly in regular rows, usually separated by 1–2 diameters; intervals with much smaller punctures also in regular rows, puncture interspaces shiny and usually polished. Elytral margins smooth, narrow and visible from above at basal 2/3. Epipleuron narrow, extending to level of abdominal ventrite 3. Abdomen: ventrite 5 arcuate posteriorly, usually exposing 6th ventrite apically; postcoxal line of first ventrite incomplete, almost reaching lateral margin, postcoxal disc as in Fig. 40. Male genitalia (Figs 11,18): tegmen 0.5 times, median lobe 1.2 times as long as abdomen; trabes about as long as basal piece; parameres strongly reduced, apparently absent. Female: not externally different from male.

Etymology. This species name is derived from Latin *glaber* referring to the apparently hairless body of this beetle.

Distribution. Widely spread along the eastern coast from northern Queensland to central New South Wales (Fig. 60).

Paraphellus Chazeau

Paraphellus Chazeau 1981: 119. Type species by original designation: *Paraphellus pacificus* Chazeau 1981.

Diagnosis. Body minute, not exceeding 1.5 mm, distinctly convex; winged or wingless. Dorsal vestiture consisting hairs of uniform length (Fig. 19). Head transverse with clypeal and frontal regions usually distinctly prominent (Fig. 20). Antennae 8-segmented with large 1-segmented club (Fig. 27). Pronotum with or without distinct line or ridge separating anterior corners from pronotal disc. Prosternum strongly reduced, forming raised parallel sided process between coxae (Fig. 38). Elytral punctures dense and completely irregular; epipleuron narrow, incomplete apically, without cavities; lateral part of elytron without an epipleural carina along elytral margin (Fig. 42). Abdomen with five visible ventrites (Fig. 32), ventrite 5 rounded posteriorly, sometimes the apex of 6th ventrite visible from below; ventrites 1 and 2 entirely fused. Postcoxal line of abdominal ventrite 1 incomplete, never reaching lateral margin of ventrite, with associated additional lines and pores.

Distribution. Pacific and Australian; first record from Australia.

Key to the Australian species of *Paraphellus*

1 Pronotum with distinct line separating anterior corners; abdominal ventrite 1 with two large pores on each side associated with postcoxal lines (Fig. 32); northern Queensland..... *magnopunctatus* sp. n.

– Pronotum without line separating anterior corners (Fig. 39); abdominal ventrite 1 with numerous small pores associated with postcoxal lines; Lord Howe Island, southern Queensland and New South Wales..... *rostratus* (Lea)

Paraphellus rostratus (Lea) comb. n. (Figs 19–21,25–28,38,39,42,59)

Scymnus rostratus Lea 1929: 243.

Types. Holotype male Lord Howe I, A.M. Lea/ 11662, Type (with letter TY indicated below the specimen on the mounting card) (holotype and paratype, SAMA); same data but 19886 Scymnus rostratus Lea, Lord Howe Isl, Cotype (1 paratype, SAMA).

Other specimens examined. ***Lord Howe Island.*** Eastern slopes of Roach Island (31°31′S, 159°05′E), ex *Lagunaria patersonia* C. Reid & H. Smith, 29.xii.2000 (AMSA; ANIC); Erskine Valley (31°34′S, 159°04′E), ex *Melaleuca howeana*, C. Reid & H. Smith, 28.xi.2000 (AMSA); Little Slope (31°35′S, 159°04′E), ex *Melaleuca howeana*, P. Flemons & J. Tarnawski, 30.xi.2000 (ANIC); Lord Howe Island; A.M. Lea (SAMA); Malabar Ridge (31°31′S, 159°04′E), leaf litter, S. & J. Peck, 20.v.1980 (ANIC); North Bay, G.B. Monteith, 19.xi.1979 (QMB); Transit Hill (31°32′S, 159°05′E), K.J. Lambkin, 8.i.1978 (QDPIB). ***New South Wales.*** Wahr'nga [Wahroonga] (33°43′S, 151°07′E), H.J. Carter, iv.1937 (ANIC). ***Queensland.*** Beerwah (26°51′S, 152°57′E), B.K. Cantrell, 28.ix.1986 (QDPIB); same data but 29.x.1986 (QDPIB); Brisbane (27°28′S, 153°02′E), under bark of spotted gum K.J. Houston, 16.vi.1983 (QDPIB); Palm Beach, Gold Coast (28°07′S, 153°28′E), J.G. Brooks, 2.i.1934 (ANIC).

Description. Length 1.0–1.1 mm; TL/EW = 1.3–1.4; PL/PW = 0.3–0.4; EL/EW = 1.0–1.1. Winged; form elongate oval (Fig. 19), convex; surfaces distinctly and uniformly setose with setae mostly suberect and pointing backwards. Brown to dark brown, ventral side testaceous; labrum and appendages yellowish brown. Surfaces between punctures highly polished and strongly shiny. Head flat, regularly punctate and shortly setose, punctures 1–2 diameters apart; each puncture as large as an eye facet, and with a short curved seta. Clypeus distinctly prominent forming short rostrum, weakly arcuate anteriorly (Fig. 20). Eyes small, coarsely facetted, dorsally separated by about 4 times width of an eye. Antenna 8-segmented with long

1-segmented club (Fig. 27). Pronotum widest just before base and gradually narrowing anteriorly, pronotal margins narrowly explanate and entirely visible from above; anterolateral line indistinct (Fig. 39). Disc strongly convex medially, sloping laterally, densely punctate, punctures as large as those on frons, 2–3 diameters apart, laterally punctures becoming slightly coarser and denser. Scutellum oval, well visible, glabrous. Elytron (Fig. 42) shiny, sparsely and coarsely punctate, punctures irregular and 2–3 times as large as those on pronotum, usually separated by less than 1 diameter. Elytral margins narrow but entirely visible from above. Epipleuron narrow and extending to level of abdominal ventrite 3. Abdomen: postcoxal line of first ventrite incomplete, not reaching lateral margin, postcoxal disc as in Fig. 21. Male genitalia (Figs 25,26,28). Tegmen 1.1 times, median lobe 1.5 times as long as abdomen; trabes about as long as basal piece; parameres moderately developed, each with single moderately long seta at apex. Female: not externally different from male.

Distribution. Lord Howe Island, NSW, southern Queensland (Fig. 59).

Paraphellus magnopunctatus sp. n. (Figs 29–32,59)

Types. ***Australia, Queensland.*** Holotype, male, Longlands Gap BS1 (17.28S 145.29E), 1150 m, Malaise trap, L. Umback, 3.i-5.ii.1996 (ANIC). **15 Paratypes.** ***Queensland.*** 26 km up Tinaroo Ck. Rd. via Mareeba (17°06′S, 145°37′E), Storey & Brown, 29.ix.1983 (QDPIM); 4 km NNW of Kuranda (16°47′S, 145°37′E), Storey & Halfpapp, 20.ii.1985 (QDPIM); 7.5 km NNW of Kuranda (16°46′S, 145°37′E), Storey & Halfpapp, 20.xii.1984 (QDPIM); 8 km W Kuranda (16°49′S, 145°34′E), H. & A. Howden, 23.xii.1986 (CMN); BS1 Longlands Gap (17°28′S, 145°29′E), L. Umback, 3.i.1996 (ANIC); same but 30.xi.1995 (ANIC); Clacherty Rd., Julatten 16°31′S, 145°23′E, A. Walford-Huggins, 4.ii.1983 (QDPIB); CT2 2 km SSW Cape Tribulation (16°05′S, 145°28′E), L. Umback, 4.i.1996 (ANIC); Hugh Nelson Range, 21 km S of Atherton (17°25′S, 145°28′E), Storey & Brown, 26.viii.1984 (QDPIM); Julatten 16°37′S, 145°20′E, A. Walford-Huggins, 13.x.1986 (ANIC); Russell River at Bellenden Ker Landing (17°16′S, 145°57′E), Earthwatch, Qld Museum, 1.xii.1981 (QMB); Windsor and via Mt Carbine [Mount Windsor and] (16°15′S, 145°02′E), Storey & Titmarsh, 16.x.1983 (QDPIM); Wongabel State Forest via Atherton (17°18′S, 145°28′E), Storey & Halfpapp, 29.iii.1990 (QDPIM); Wongabel State Forest, 6 km S of Atherton (17°18′S, 145°31′E), Storey & Brown, 1.v.1984 (ANIC).

Diagnosis. This species is externally identical to *P. rostratus* except for the following characters. Length 0.8–1.0 mm; TL/EW = 1.1–1.3; PL/PW = 0.4–0.5; EL/EW = 1.0. Pronotum with distinct line separating anterolateral angle. Pronotal and elytral margins narrower but still well visible from above. Abdomen (Fig. 32) with 2 big pores on each side associated with postcoxal lines. Male genitalia (Figs 29,30). Tegmen 1.2 times and median lobe 1.8 times as long as abdomen; trabes about as long as the basal piece; parameres moderately developed, each with 2 long setae at apex (Fig. 30).

Etymology. The specific epithet is derived from Latin *magnus* (= large) referring to a large pores on abdominal ventrite 1.

Distribution. Queensland (Fig. 59).

Scymnomorphus Weise

Scymnomorphus Weise 1897: 303. Type species, designated by Pope (1962: 628): S*cymnomorphus rotundatus* Weise 1897 (Africa).

Scotoscymnus Weise 1901: 458 (unnecessary replacement name). Gordon 1977: 189; Fürsch 1985: 283; Miyatake 1994: 235.

Sukunahikona Kamiya 1960: 23. Type species by original designation: *Sukunahikona japonica* Kamiya 1960. Synonymised by Fürsch (1985: 283).

Diagnosis. Body minute, not exceeding 1.5 mm, distinctly convex; mostly winged. Dorsal vestiture consisting of intermixed long and much shorter hairs (Fig. 22). Head transverse; clypeal and frontal regions usually prominent, sometimes rostrate. Antenna 10-segmented with 2-segmented club (Fig. 53). Pronotum almost always with distinct line or ridge separating anterior corners from pronotal disc, sometimes extending along lateral edge. Prosternum strongly reduced and narrow; prosternal process reduced to a narrow carina (Figs 7,24). Elytral punctures at least along suture in apparent rows; epipleuron narrow, incomplete apically, without cavities; lateral part of elytron with an epipleural carina originating at humeral angle and extending to level of epipleura, parallel to lateral margin (Figs 23,24); carina sometimes very closely appressed to margin, forming thick, double edge. Abdomen with six visible ventrites, ventrite 5 truncate posteriorly (Fig. 43); ventrite 1 and 2 almost entirely fused. Postcoxal line of abdominal ventrite 1 incomplete or reaching lateral margin, usually with associated pits and pores.

Distribution. Circumtropical; first record from Australia.

Discussion. There is little doubt that *Sukunahikona* is synonymous with *Scymnomorphus*, although the carina along the elytral edge is much more strongly developed in *Suhunahikona* and almost absent in the type species of *Scymnomorphus*. With current concept of the genera of Sukunahikonini some species described by Gordon (1977) or Gordon and Almeida (1991) as *Scotoscymnus* and those described by Chapin (1965) as *Pharellus* may belong to other genera.

Note. Weise (1897) described *Scymnomorphus* from Africa, but subsequently (Weise 1901) proposed *Scotoscymnus* as an unjustified replacement name under the mistaken belief that his *Scymnomorphus* was a junior homonym of *Scymnomorpha* Blackburn (1892). Weise's action has been followed by all subsequent researchers, without noticing that there is a 2-letter difference between the supposedly homonymous names.

Key to the Australian species of *Scymnomorphus*

1 Body yellowish or lightly brown..... 2
– Body deep brown to black or with elytra differently coloured than pronotum..... 3

2 Elytra with epipleural carina well separated from elytral margin (Fig. 24); male with glandular openings at middle of ventrite 5 (Fig. 43); male genitalia as in Figs 45, 46 and 48..... ***fulvus* sp. n.**
– Elytra with epipleural carina close to margin; males without gland openings on ventrite 5; male genitalia as in Figs 57 and 58..... ***luteus* sp. n**
3 Elytra brown, pronotum dark brown; length 1.2–1.4 mm; male genitalia as in Figs 54–56..... ***hirtus* sp. n.**
– Elytra deep piceous to black; length 1.2 mm or less; male genitalia different from those in Figs 54–56..... 4
4 Body uniformly deep dark brown to black; epipleural carina very close to lateral margin of elytron; male genitalia as in Figs 50–52..... ***storeyi* sp. n.**
– Pronotum and head lighter than elytra; epipleural carina distinctly separated from elytral margin; male genitalia as in Figs 44, 47 and 49..... ***ker* sp. n.**

Scymnomorphus hirtus sp. n. (Figs 34–37,54–56,62)

Types. ***Australia*, *New South Wales.*** Holotype male, Styx River S.F., 2.3 km SE on Brushwood Rd., 29 km SE of Wollomombi (30°40′S 152°10′E), 960 m, 25.vi.1983, D.S. Chandler (ANIC). **17 Paratypes.** ***New South Wales.*** Acacia Plateau (28°23′S, 152°19′E), Davidson (ANIC); same locality, J. Armstrong (ANIC); Black Bull FR., Wild Cattle Ck. S.F. (30°09′S, 152°43′E), C. Reid, 9.iv.1993 (ANIC); Bruxner Park, Sealy Lookout (30°15′S, 153°06′E), C. Reid, 8.iv.1993 (ANIC); Dorrigo National Park (30°20′S, 152°43′E), M. Lowman, xi.1982 (ANIC); Robertson Nat. Res. (34°35′S, 150°35′E), C. Reid, 25.xii.1993 (ANIC); Sheepstation Cr. 16 km NE of Wiangaree (28°24′S, 153°02′E), S. & J. Peck, 13.vi.1982 (ANIC); Styx River S.F., 2.3 km SE on Brushwood Rd., 29 km SE of Wollomombi (30°40′S, 152°10′E), D.S. Chandler, 25.vi.1993, litter (ANIC); Wiangaree S.F. (28°22′S, 153°05′E), T. Weir & A. Calder, *Nothofagus moorei*, 10.ii.1983 (ANIC). ***Queensland.*** Joalah N.P. Tamborine Mt (27°56′S, 153°12′E), J. Lawrence & T. Weir, 18.x.1978 (ANIC); Mt Glorious 27°20′S, 152°46′E, T. Hiller, 30.i.1987 (ANIC); Bunya Mts Nat. Pk, nr. Paradise Falls (26°52′S, 151°35′E), I. Naumann & J. Cardale, 6.x.1984 (ANIC).

Diagnosis. This species is externally almost identical to *S. luteus*, and no reliable characters could be found so far to separate them, although *S. hirtus* is more reddish brown and *S. luteus* is more yellowish brown. The male genitalia of both species are distinctly different and should be consulted for sound identification.

Description. Length 1.2–1.4 mm; TL/EW = 1.4–1.5; PL/PW = 0.3–0.4; EL/EW = 1.1–1.2. Winged; form elongate, slender weakly convex; surfaces distinctly setose with setae erect or semi-erect, on pronotum pointing in various directions, pointing mostly backwards on elytra (Fig. 35). Dark reddish brown; head and pronotum usually distinctly darker than elytra; ventral side dark brown; anterior part of clypeus, labrum and appendages yellowish to orange. Surfaces between punctures highly polished and strongly shiny. Head dorsally flat, regularly punctate, punctures 2 diameters apart, each puncture as large as an eye facets and bearing a long curved seta. Clypeus prominent, weakly arcuate anteriorly. Eyes large, coarsely facetted, dorsally separated by about 2.5 width of an eye. Antenna 10-segmented with narrow 2-segmented club. Pronotum widest at base and distinctly narrowing anteriorly; pronotal margins very narrow and hardly visible from above; anterolateral line very close to the anterior angle, not clearly joining lateral margin. Pronotal disc convex, coarsely punctate, punctures as large as those on frons, 2 diameters apart. Scutellum triangular, large, glabrous. Elytron shiny, sparsely and coarsely punctate, punctures irregular except for sutural row, about as large as those on pronotum and 2–4 diameters apart. Elytral margins narrow, visible from above at basal 1/3. Pubescence composed of curved semi-erect hairs and interspaced with about twice as long erect setae. Lateral part of elytron with an epipleural carina very close to margin, forming thickened border and extending to level of abdominal ventrite 2. Abdomen: postcoxal line of first ventrite incomplete but reaching lateral margin, postcoxal disc sparsely punctate. Male genitalia (Figs 54–56). Tegmen 1.4 times, median lobe 1.5 times as long as abdomen; trabes about 1.5 times as long as basal piece; parameres strongly reduced, each with single moderately long seta at apex. Female not externally different from male.

Etymology. The specific epithet is derived from the Latin *hirtus* referring to the densely setose body.

Distribution. Southern Queensland and New South Wales (Fig. 62).

Scymnomorphus luteus sp. n. (Figs 7,8,57,58,63)

Types. ***Australia*, *New South Wales.*** Holotype male Roseberry S.F., Mt Glennie, 30 km NNW of Kyogle, 800 m, S. & J. Peck, 21.viii.1982 (ANIC). **2 Paratypes.** ***New South Wales.*** Tooloom Plateau, 14 km W Urbenville (28°29′S, 152°24′E), I. Naumann, 14.ii.1984 (ANIC). ***Western Australia.*** 43 km N of Bunbury, coast road (32°57′S, 115°38′E), D. Colless, 1.x.1970 (ANIC).

Diagnosis. This species is extremely similar to *S. hirtus* and is not distinguishable from that species except for the very different male genitalia and the slight difference in body colour.

Description. Identical as in *S. hirtus* except for the following points.

Length 1.1–1.2 mm; TL/EW = 1.4–1.5; PL/PW = 0.3; EL/EW = 1.1–1.2. Dark yellowish brown; head and pronotum usually the same colour as elytra; ventral side fuscous; labrum and appendages yellowish. Male genitalia (Figs 57,58). Tegmen 1.2 times, median lobe 0.9 times as long as abdomen; trabes 1.3 times as long as basal piece; parameres strongly reduced, each with few moderately long setae at apex.

Etymology. The specific epithet is derived from the Latin *luteus* referring to the yellowish colour of the body.

Distribution. Known only from 2 specimens from northern New South Wales and single specimen from Western Australia (Fig. 63).

Scymnomorphus fulvus sp. n. (Figs 22–24,43,45,46,48,61)

Types. ***Australia*, *Queensland.*** Holotype male, Bellenden Ker Range, Cable Tower 3, 1054 m, Earthwatch/Qld Museum, 17.x–15.xi.1981 (QMB). **25 Paratypes.** ***Queensland.*** 11 km up Mt Lewis Rd. (16°35′S, 145°17′E), H. Howden & R. Storey, 8.i.1987 (ANIC); 26 km up Tinaroo Ck. Rd. via Mareeba (17°06′S, 145°37′E), Storey & Brown, 19.vii.1983 (QDPIM); Bell Peak North, 10 km E Gordonvale (17°05′S, 145°53′E), Monteith, Yeates & Thompson, 13.x.1982 (QMB); Bellenden Ker Range, Cable Tower 3 (17°16′S, 145°52′E), Earthwatch, Qld Museum, 17.x.1981 (QMB; ANIC); Mossman Gorge 16°26′S, 145°16′E, L. Masner, under growth, 23.ii.1984 (CMN, ANIC); Mt Bartle Frere, South Peak summit (17°24′S, 145°49′E), Earthwatch, Qld Museum, 6.xii.1981 (ANIC); Mt Demi, 7 km SW of Mossman (16°30′S, 145°19′E), D. Yeates & G. Thompson, 29.x.1983 (QMB); Mt Edith, Lamb Range 17°02′S, 145°37′E, Monteith, Yeates & Thompson, 12.x.1982 (QMB); Mt Glorious 27°20′S, 152°46′E, H. & A. Howden, 27.iv.1989 (CMN); Mt Glorious N.P., L. Masner, 28.ii.1984 (CNC); Mt Glorious nr. Brisbane (27°20′S, 152°46′E), H. & A. Howden, 1989 (CNC, ANIC); Mt Tamborine N.P., L. Masner, 3.iii.1984 (CNC); Nelson Range 19 km NW Millaa Millaa [Huge Nelson Range] (17°25′S, 145°28′E), S. & J. Peck, 24.vi.1982 (ANIC).

Diagnosis. This species is easily distinguished from all known species of *Scymnomorphus* because of its peculiar glandular openings located at the middle of abdominal ventrite 5 in males (Fig. 43).

Description. Length 1.0–1.1 mm; TL/EW = 1.3–1.4; PL/PW = 0.2–0.3; EL/EW = 1.1–1.2.

Winged; form elongate oval (Fig. 22), weakly convex; surfaces distinctly setose with setae mostly erect and pointing in various directions. Yellowish or yellowish-brown; head and pronotum rarely slightly darker than elytra or pronotum with darker markings laterally near base; ventral side testaceous; clypeus, labrum and appendages yellow. Surfaces between punctures highly polished and strongly shiny.

Head flat, regularly punctate, punctures 2 diameters apart, each puncture as large as an eye facet and bearing a short curved seta. Clypeus prominent, weakly arcuate anteriorly. Eyes large, coarsely facetted, dorsally separated by about 2–2.5 times width of an eye. Antenna 10-segmented with narrow 2-segmented club. Pronotum widest at base and distinctly narrowing anteriorly; pronotal margins very narrow and hardly visible from above; anterolateral line indistinct, obliterated by coarse punctures, very close to the anterior angle and joining lateral margin. Disc convex, coarsely punctate, punctures as large as those on frons, 2–3 diameters apart, laterally punctures becoming coarser and denser. Scutellum triangular, small, glabrous. Elytron shiny, sparsely and coarsely punctate, punctures dual and mostly in regular rows; large punctures form rows and each puncture bears long and erect seta, with smaller punctures along intervals less regular and bearing short and weakly erect setae. Elytral margins narrow, visible from above at basal 2/3 only. Lateral part with epipleural carina distinctly separated from margin (Figs 23,24), forming double, thickened border of epipleuron and extending to a level of abdominal ventrite 3. Abdomen: postcoxal line of first ventrite incomplete, not reaching lateral margin; postcoxal disc as in Fig. 43; ventrite 5 in male with admedian glandular openings. Male genitalia (Figs 45,46,48). Tegmen 1.5 times and median lobe 1.7 times as long as abdomen; trabes as long as basal piece; parameres strongly reduced, each with single moderately long seta at apex. Female not externally different from male except for the abdominal ventrite 5 without admedian openings.

Etymology. The specific epithet is derived from the Latin *fulvus* referring to the tawny colour of the body of this small species

Distribution. Queensland (Fig. 62).

Scymnomorphus storeyi sp. n. (Figs 50–53,60)

Types. ***Australia*, *Queensland.*** Holotype male, 1 km WNW of Cape Tribulation CT1 (16.04S 145.28E), 10 m, Malaise trap, 5.xii.1985–4.i.1996, L. Umback (ANIC). **52 Paratypes.** ***Queensland.*** 16 km up Davies Ck. Rd. via Mareeba (17°02′S, 145°36′E), Storey & Halfpapp, 2.x.1984 (QDPIB); 26 km up Tinaroo Ck. Rd. via Mareeba (17°06′S, 145°37′E), Storey & Brown, 9.vi.1983 (QDPIM; ANIC); same 19.vii.1983 (QDPIM); same 24.viii.1983 (QDPIM); 7.5 km NNW of Kuranda (16°46′S, 145°37′E), Storey & Halfpapp, 15.i.1985 (QDPIM); Beerwah 26°51′S, 152°57′, B. Cantrell, 28.ix.1986 (QDPIB; Bellenden Ker Range, Cable Tower 3 (17°16′S, 145°52′E), Earthwatch, Qld Museum, 17.x.1981 (ANIC); Clacherty Rd., Julatten 16°31′S, 145°23′E, A. Walford-Huggins, 4.ii.1983 (QDPIM); Cow Bay, N of Daintree River; 16°12′S, 145°28′E, K. Halfpapp, 3.viii.1990 (QDPIM); Davies Ck., 19 km WSW of Mareeba (17°01′S, 145°35′E), Storey & Halfpapp, 6.xi.1984 (QDPIM); Davies Ck., 22 km WSW of Mareeba (17°05′S, 145°15′E), Storey & Halfpapp, 2.x.1984 (QDPIM); East Palmerston [Palmerstone] (17°36′S, 145°50′E), on bananas, K. Halfpapp, 6.iv.1990 (QDPIM); Hugh Nelson Range, 21 km S of Atherton (17°25′S, 145°28′E), Storey & Brown, 21.vi.1984 (QDPIM); Millaa Millaa Falls (17°30′S, 145°37′E), Storey & Halfpapp, 4.i.1990 (QDPIM); Wongabel State Forest, 6 km S of Atherton (17°18′S, 145°31′E), Storey & Brown, 9.i.1984, 10.ii.1984 & 10.xi.1983 (QDPIM).

Diagnosis. This is the smallest species of *Scymnomorphus* known from Australia. The similarly sized *S. fulvus* is yellowish brown not piceous or black and has an epipleural elytral carina very well separated from the elytral margin.

Description. Length 0.8–0.9 mm; TL/EW = 1.4–1.45; PL/PW = 0.3; EL/EW = 1.1–1.2.

Winged; form oval, convex; surfaces distinctly setose with erect setae on pronotum and elytra pointing in various directions. Black or dark piceous brown; ventral side deeply brown;

clypeus, labrum and appendages yellowish brown. Surfaces between punctures highly polished and strongly shiny.

Head flat, regularly punctate, punctures irregular, each 0.5–0.7 times as large as an eye facet and bearing a short curved seta. Clypeus prominent, weakly arcuate anteriorly. Eyes large, coarsely facetted, dorsally separated by about twice width of an eye. Antenna 10-segmented with narrow 2-segmented club (Fig. 53). Pronotum widest at base and distinctly narrowing anteriorly; pronotal margins very narrow and hardly visible from above; anterolateral line distinct, very close to anterior angle and clearly joining lateral margin. Disc convex, finely and irregularly punctate, punctures as large as those on frons, 2–4 diameters apart. Scutellum triangular, large, glabrous. Elytron shiny, coarsely punctate, punctures dual and mostly in regular rows (especially those on disc); large punctures in rows and bearing long and erect setae, smaller punctures along intervals less regular and bearing short and more inclined setae. The elytral margins narrow, visible from above at basal 2/3 only. Lateral part with the epipleural carina very close to elytral margin, forming thickened border and extending to level of abdominal ventrite 2. Abdomen: postcoxal line of first ventrite reaches lateral margin of abdomen; postcoxal disc without punctures inside. Male genitalia (Figs 50–52). Tegmen 1.5 times, and median lobe 3.0 times as long as abdomen; trabes about as long as basal piece; parameres strongly reduced, each with single moderately long seta at apex. Female not externally different from male.

Etymology. The species is dedicated to Dr Ross Storey of the QDPIM, a very keen and dedicated beetle collector and distinguished entomologist.

Distribution. Queensland (Fig. 61).

Scymnomorphus ker sp. n. (Figs 44,47,49,62)

Types. ***Australia*, *Queensland.*** Holotype male, Bellenden Ker Range, Cable Tower 3 (17°16′S, 145°52′E), 1054 m, Malaise trap, rainforest; Earthwatch/Qld Museum, 17.x–5.xi.1981 (QMB). **5 Paratypes.** 26 km up Tinaroo Ck. Rd. via Mareeba (17°06′S, 145°37′E), Storey & Brown, 29.ix.1983 (QDPIM); same locality but 19.vii.1983 (QDPIM); Bellenden Ker Range, Cable Tower 3 (17°16′S, 145°52′E), Earthwatch, Qld Museum, 17.x.1981 (ANIC); Hugh Nelson Range, 21 km S of Atherton (17°25′S, 145°28′E), Storey & Brown, 21.vi.1984 (QDPIM, ANIC); Millaa Millaa Falls (17°30′S, 145°37′E), Storey & Halfpapp, 4.i.1990 (QDPIM).

Etymology. The species name is formed from the second part of the Bellenden Ker Massif range, the type locality of this ladybird.

Diagnosis. This species is quite similar to *S. storeyi* but easily recognised by its dorsal setae being shorter and apparently denser, and the epipleural carina along the edge of elytron distinctly separated from the elytral margin.

Description. Length 1.1–1.2 mm; TL/EW = 1.2; PL/PW = 0.3; EL/EW = 1.0–1.1.

Winged; form oval, convex; dorsal surfaces densely setose with most of the setae short, suberect and pointing in various directions. Blackish or dark brown, head and pronotum lighter, usually deep brown, ventral side deeply brown to almost black; clypeus, labrum and appendages yellowish. Surfaces between punctures highly polished and strongly shiny. Head flat, regularly punctate, punctures irregular, each about as large as an eye facet, and bearing a short curved seta. Clypeus prominent, weakly arcuate anteriorly. Eyes large, coarsely facetted, dorsally separated by about twice width of an eye. Antenna 10-segmented with narrow 2-segmented club. Pronotum widest at base and distinctly narrowing anteriorly; pronotal margins very narrow and hardly visible from above; anterolateral line distinct, very close to anterior angle and clearly joining lateral margin. Disc convex, finely and irregularly punctate, punctures as large as those on frons, 2–4 diameters apart. Scutellum triangular, large, glabrous. Elytron shiny, coarsely punctate, punctures dual and appear to be in regular rows near suture but becoming distinctly irregular laterally; large punctures in rows and bearing long and erect setae, smaller punctures along intervals less regular and bearing short and more inclined setae. Elytral margins narrow, visible from above at basal 2/3. Lateral part with epipleural carina separated from margin, forming thickened border and extending to level of abdominal ventrite 3. Abdomen: postcoxal line of first ventrite complete to lateral margin of ventrite; postcoxal disc smooth inside. Male genitalia (Figs 44,47,49). Tegmen 1.2 times and median lobe 1–1.2 times as long as abdomen; trabes about 1.3 times as long as basal piece; parameres strongly reduced, each with single moderately long seta at apex. Female not externally different from male.

Distribution. Queensland (Fig. 61).

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