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Two new species of *Oncylocotis* (Hemiptera: Heteroptera: Enicocephalidae) from Australia

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Baňař P. & Štys P. 2013: Two new species of *Oncylocotis* (Hemiptera: Heteroptera: Enicocephalidae) from Australia. In: Kment P., Malenovský I. & Kolibáč J. (eds.): Studies in Hemiptera in honour of Pavel Lauterer and Jaroslav L. Stehlík. *Acta Musei Moraviae, Scientiae biologicae* (Brno) **98(2)**: 317–325. – Two new species of the genus *Oncylocotis* Stål, 1856: *Oncylocotis stehliki* sp.nov. and *Oncylocotis lautereri* sp.nov. from Northern Territory, Australia, are described and illustrated.

Keywords. Heteroptera, Enicocephalomorpha, true bugs, *Oncylocotis*, taxonomy, morphology, Australasian Region, Northern Territory

Introduction

Oncylocotis Stål, 1856 is the richest genus of the infraorder Enicocephalomorpha, with 100 described species and many hundreds undescribed, occurring in the Old World. However, the Australian fauna of the true bug infraorder Enicocephalomorpha is poorly known (see Cassis & Gross 1995). To date, three species of the genus *Oncylocotis* have been described from Australia. Westwood (1837) described the first four species of enicocephalomorphans (in the genus *Enicocephalus* Westwood 1837, placed within family Reduviidae; two of them actually belong to the genus *Oncylocotis*), one of them, *O. tasmanicus* (Westwood, 1837) from Tasmania. Since its description, this species has been collected several times in southern regions of Australia, and has recently become distributed in the south-east coastal area, New South Wales and Tasmania (Cassis & Gross, 1995). Jeannel (1942) added two Australian species (both originally placed in the genus *Didymocephalus* Jeannel, 1942, junior synonym of *Oncylocotis*): *Oncylocotis leoninus* (Jeannel, 1942) from New South Wales and *Oncylocotis saetosus* (Jeannel, 1942) from Victoria. In this work we add two new species, the first members of this genus to be described from Northern Territory.

Material and methods

By the term "dorsal ocular index" we indicate the ratio of the minimum width of the vertex to the maximum width of the eye; this is most easily measured as twice minimum interocular distance / (maximum width across eyes minus minimum interocular distance).

Both the specimens studied are dry-mounted, with considerably deformed abdomens. Hence, abdomen and genitalia have not been studied in these unique examples.

The label data are cited verbatim, including potential errors, using a slash (/) to separate rows on one label and double slash (//) for different labels. Colour photographs were taken with a Leica MSV266. Drawings and measurements were made using a SZP 11 ZOOM stereoscopic microscope with an eye-piece graticule. SEM photographs were provided by SEM JEOL 6380 LV.

The type material is deposited in the collections of Museum and Art Gallery of the Northern Territory (MAGNT), Darwin, Northern Territory, Australia.

Taxonomy

Oncylocotis Stål, 1856

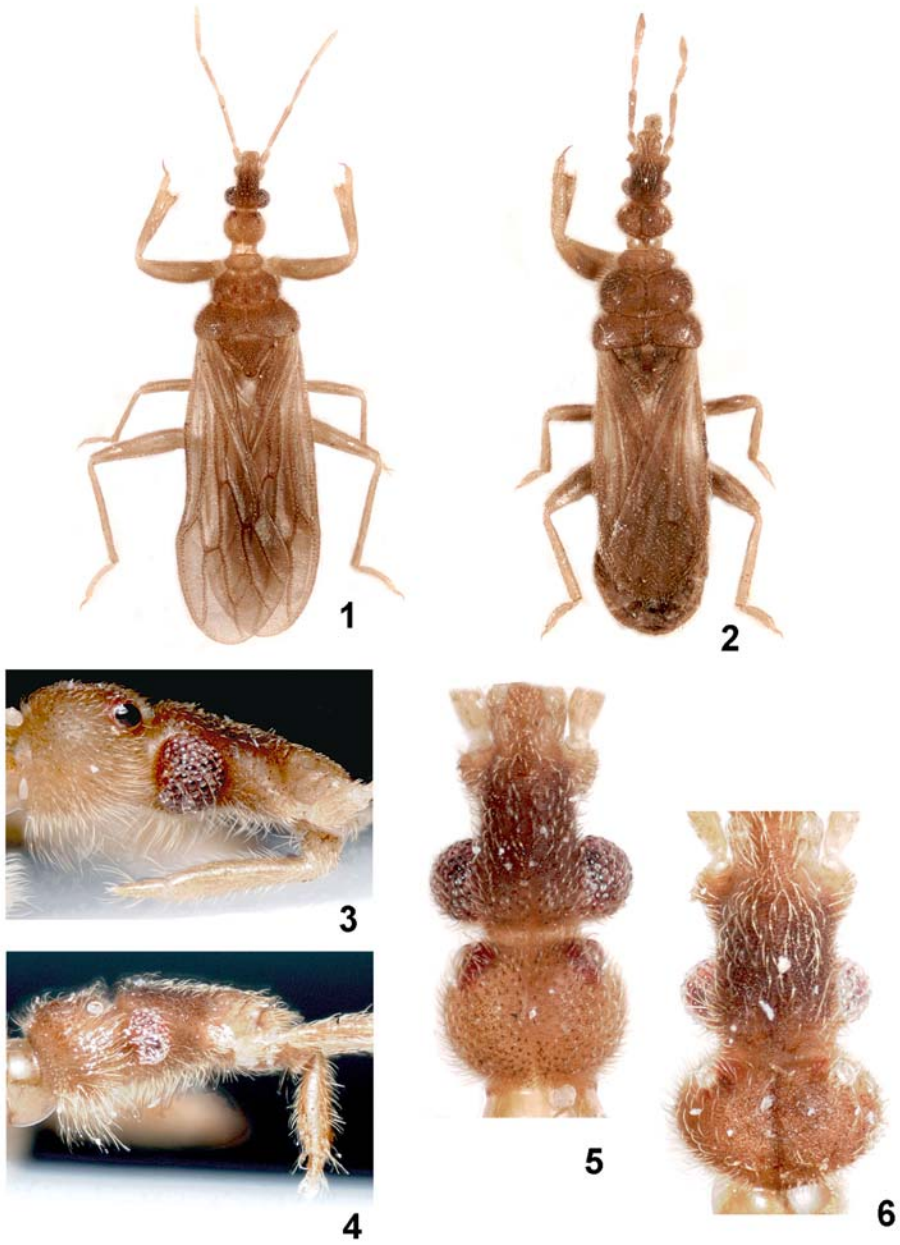
Type species: *Oncylocotis nasutus* Stål, 1856: 44; by monotypy.

Oncylocotis stehliki sp.nov. (Figs 1, 3, 5, 7–8, 11–12)

Type material. Holotype: male, labelled: 'AUSTRALIA, NT 37m alt / NITMILUK N.P. 3.12.2008 / 24°18′S, 131°34′E ; / EDIT FALLS, St. Jakl lgt.' // 'Holotype / *Oncylocotis* / *stehliki* sp. nov. / P. Baňař & P. Štys det. 2013' (MAGNT). Specimen dry-mounted on rectangular card, right fore leg mounted separately on the same card and gold-coated for SEM photography.

Diagnosis. Taking into account the newly-described *Oncylocotis stehliki* sp.nov. and all the described and undescribed species of *Oncylocotis* of which we are aware, *O. stehliki* sp.nov. may be recognized by the following unique combination of characters: legs long and slender, hind lobe of pronotum very long and wide, conspicuous setigerous granules on head and pronotum, and short, conspicuously curved vestiture of dorsum of body.

Description. Macropterous male (holotype). *Measurements* (in mm). *Total body length* – 5.33. *Head* (without neck). Total length – 0.91; posterior lobe, length – 0.38, posterior lobe, width – 0.42; distance of eye to apex of antennifer – 0.22; diatone (maximum width across eyes) – 0.49; dorsal synthlipsis (minimum interocular distance) – 0.24; eye, length – 0.21; gena, minimum width – 0.22; interocellar distance – 0.20; minimum distance ocellus–eye – 0.04. *Labium*. Total length – 0.92; segment I, length – 0.09; segment II, length – 0.11; segment III, length – 0.44; segment III, maximum height – 0.11; segment IV, length – 0.28. *Antenna*. Segment I, length – 0.18; segment II, length – 0.50; segment III, length – 0.42; segment IV, length – 0.51; segment II, basal width – 0.05, segment II, distal width – 0.06. *Pronotum*. Total length (maximum) – 0.87; collum, length (median) – 0.22, maximum width – 0.41; middle lobe, length (median) – 0.33, middle lobe, width (maximum) – 0.73; hind lobe, length (maximum) – 0.42, hind lobe, length (mediane) – 0.22, hind lobe, width (maximum) – 1.11. *Fore leg*. Femur, length – 0.89, femur, maximum width – 0.22; tibia, length – 0.80, tibia, maximum width – 0.20; tarsus, length – 0.18, tarsus, maximum width – 0.08; fore claws, length – 0.20. *Fore wing*. Maximum length – 3.20.



Figs 1–6. 1, 3, 5 – *Oncylocotis stehliki* sp.nov., male holotype (5.33 mm); 2, 4, 6 – *Oncylocotis lautereri* sp.nov., female holotype (4.24 mm); 1–2 – dorsal habitus; 3–4 – head, lateral view; 5–6 – head, dorsal view.

Coloration. Body uniformly light brown (Fig. 1), anterior lobe of head conspicuously darker than posterior lobe. Legs, antennae and labium yellowish. Abdomen dark brown.

Sculpture. All aspects of the head (except narrow median of anterior lobe, Fig. 7) and dorsal and dorsolateral faces of pronotum, except for pronotal constrictions and impressions on its middle lobe, with large setigerous tubercles. All body surfaces densely covered in very fine, minute, non-setigerous granules.

Vestiture. Dorsal and dorsolateral surfaces of head with short, conspicuously bent, semi-erect to erect setae directed forwards; lateral surfaces with longer, semi-erect setae directed forwards; ventral face of preocular part ('gena') of anterior lobe with erect setae pointing in various directions; ventral part between eyes with long, erect setae directed backwards; venter of posterior lobe of head with long (longest on head) setae directed forwards. Labium densely covered in short, semi-erect setae, mixed with sparsely distributed, longer, more protruding ones. Antennae densely covered with short, semi-erect setae, on segments II–IV mixed with longer (longer as segment diameter), more protruding setae. Thorax and forewing veins with short, conspicuously curved, semi-erect to appressed setae, directed rearwards. Dorsal and anterodorsal faces of femora and tibiae of all pairs with short, strongly curved setae, ventral and posteroventral surfaces with long, dense, straight, erect setae, only apically curved.

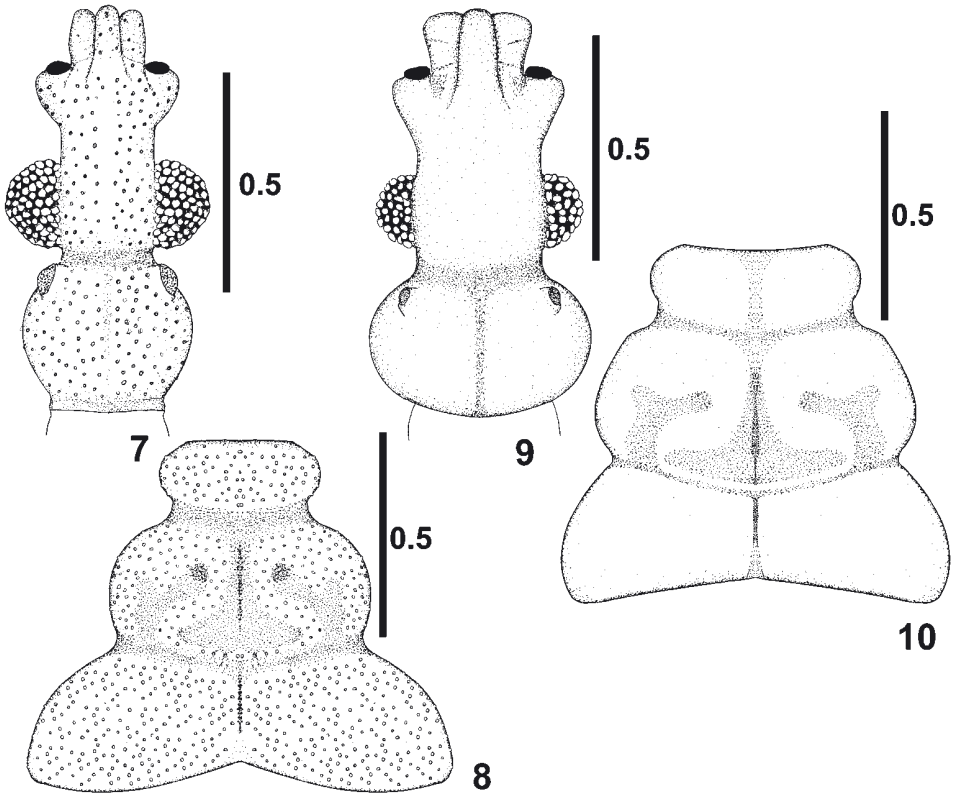
Structure. Head (Figs 3, 5, 7) slender, not quite as long as pronotum. Eyes large, prominent, ocular index 1.92. Posterior lobe with narrow median impression, slightly transverse, ratio of length to width 0.9. Ocelli very large, situated on small tubercles. Antennae long, only slightly shorter than head and pronotum together (ratio 0.9), antennal formula (longest segment first): IV=II-III-I. Labium (Fig. 3) long, reaching midway along posterior lobe, labial formula (longest segment first): III-IV-II-I.

Thorax. Pronotum with very conspicuous constrictions. Collum long, ratio of length to width 0.54, with well-developed precollum. Middle lobe short and wide, more than twice as wide as long (ratio 2.21); with wide, inversely T-shaped impression in the middle, reaching from collum-middle lobe constriction almost to posterior margin of middle lobe. Sublateral parts of middle lobe with, deep, broad and paired Y-shaped impressions, their inner branches longer than the outer ones, terminating in deep pits (Fig. 8). Hind lobe robust, long and wide, ratio of maximum length to maximum width 0.38, with narrow median ridge. Venter of thorax not studied.

Macropterous, forewing overlapping apex of abdomen, membrane lustrous, venation conspicuous, contrasting with membrane, not studied in detail.

Fore legs long and slender. Ventral surface of fore-femur straight, dorsal surface slightly convex; ratio of length to maximum width 4.04. Fore tibia widening regularly towards apex, widest in a short apicitibial process, four times longer than wide. Bristle comb composed of approximately 32 setae. Apicitibial armature characteristic of *Oncylocotis*, formed by a compact group of seven spiniform setae; two short ventral setae, medial row of three long, strong setae, and two dorsal setae, slightly curved ventrally (Figs 11–12). Tarsal armature of two pairs (anterior and posterior) of spiniform setae, as illustrated in Fig. 11.

Middle and hind legs very slender, without peculiarities.



Figs 7–10. 7–8 – *Oncylocotis stehliki* sp.nov., male holotype; 9–10 – *Oncylocotis lautereri* sp.nov., female holotype; 7, 9 – head, dorsal view; 8, 10 – pronotum, dorsal view. Scale bar in mm.

Etymology. Patronymic, dedicated to our friend and colleague Dr. Jaroslav L. Stehlík for the occasion of his 90th birthday.

Differential diagnosis. *Oncylocotis stehliki* sp.nov. differs from *O. tasmanicus* and *O. saetosus* in its smaller body size (5.3 mm; 6–7 mm in *O. tasmanicus* and *O. saetosus*); from *O. lautereri* sp.nov. in larger body size (4.25 mm in *O. lautereri* sp.nov.) and from all other described Australian species in its short, conspicuously curved vestiture of dorsum of body (longer, more erect in other species).

Collecting circumstances. The single specimen of this species was attracted to light.

Distribution. Australia, Northern Territory, Nitmiluk National Park.

***Oncylocotis lautereri* sp.nov.** (Figs 2, 4, 6, 9–10, 13–14)

Type material. Holotype: female, labelled: 'AUSTRALIA, NT ; 63m alt. / Litchfield N.P. 20–27.11.2008 / TJAYNERA FALLS / 13°15′S, 130°44′E / L. Hovorka lgt.' // 'Holotype / *Oncylocotis* / *lautereri* sp. nov. / P. Baňař & P. Štys det. 2013' (MAGNT). Specimen is dry-mounted on rectangular card, right foreleg mounted separately on the same card and gold-coated for SEM photography.

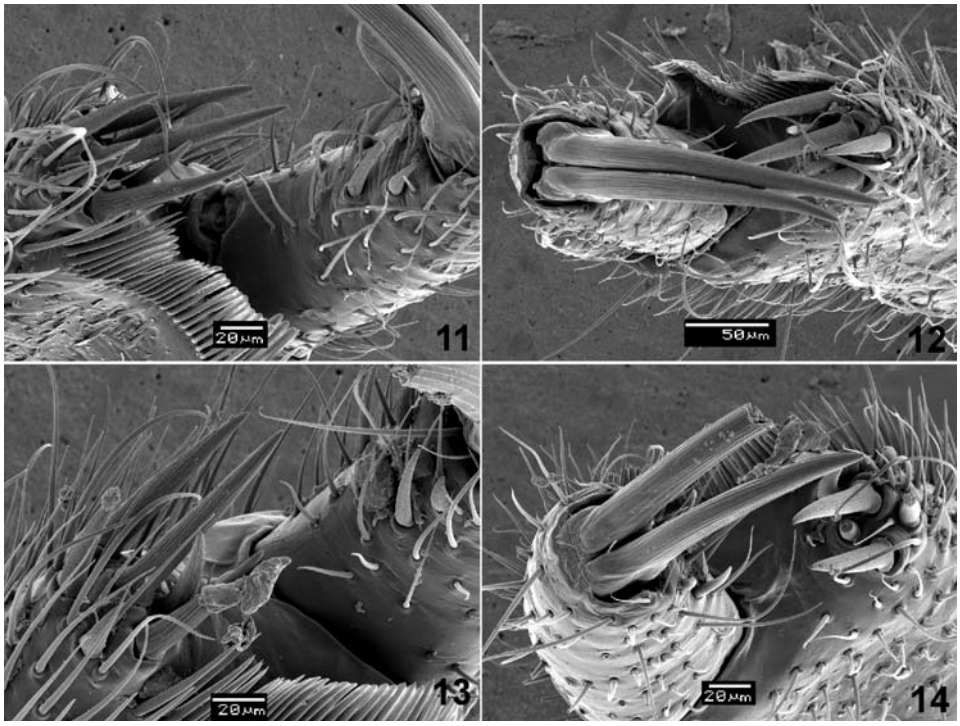
Diagnosis. Taking into account the newly-described *Oncylocotis lautereri* sp.nov. and all the described and undescribed species of *Oncylocotis* of which we are aware, *O. lautereri* sp.nov. may be recognized by the following unique combination of characters: legs very short and robust, ratio of fore-femur and fore-tibia length to their width less than 3, conspicuously longer setae on ventral surface of posterior lobe of head than those on the anterior, and very short antennae (ratio of antenna length to combined length of head and pronotum 0.7).

Description. Submacropterous female (holotype). *Measurements* (in mm). *Total body length* – 4.24. *Head* (without neck). Total length – 0.81; posterior lobe, length – 0.25, posterior lobe, width – 0.46; distance of eye to apex of antennifer – 0.22; diatone (maximum width across eyes) – 0.42; dorsal synthlipsis (minimum interocular distance) – 0.28; eye, length – 0.17; gena, minimum width – 0.27; interocellar distance – 0.27; minimum distance ocellus–eye – 0.08. *Labium*. Total length – 0.68; segment I, length – 0.07; segment II, length – 0.09; segment III, length – 0.38; segment III, maximum height – 0.11; segment IV, length – 0.14. *Antenna*. Segment I, length – 0.14; segment II, length – 0.33; segment III, length – 0.29; segment IV, length – 0.38; segment II, basal width – 0.03, segment II, distal width – 0.07. *Pronotum*. Total length (maximum) – 0.84; collum, length (median) – 0.21, maximum width – 0.49; middle lobe, length (median) – 0.36, middle lobe, width (maximum) – 0.78; hind lobe, length (maximum) – 0.29, hind lobe, length (mediane) – 0.20, hind lobe, width (maximum) – 0.91. *Fore leg*. Femur, length – 0.71, femur, maximum width – 0.26; tibia, length – 0.56, tibia, maximum width – 0.20; tarsus, length – 0.13, tarsus, maximum width – 0.09; fore claws, length – 0.13. *Fore wing*. Maximum length – 2.11.

Coloration. Body uniformly brown (Fig. 2), anterior lobe of head somewhat darker than posterior lobe. Legs and labium lighter. Abdomen dark brown.

Sculpture. All body surfaces densely covered in very fine, minute granules, setigerous and non-setigerous.

Vestiture. Dorsal and lateral surfaces of head with long, dense and "soft" semi-erect setae, slightly curved and directed forwards, except for the extreme rear part of the posterior lobe, where the setae are directed rearwards. Ventral surface of anterior lobe of head with erect setae pointing in various directions, but mostly directed rearwards, ventral face of posterior lobe with very long (in contrast to those on anterior lobe), erect setae, slightly directed forwards. Labium densely covered in semi-erect setae, mixed on all segments with longer setae. Antennae densely covered in semi-erect setae on all segments, on distal half of segment II and segments III and IV mixed with longer, more protruding setae. Thorax and fore wing veins densely covered with long, semi-erect to erect, slightly curved setae, directed rearwards. All surfaces of femora and tibiae covered



Figs 11–14. Apicitibial armature of *Oncylocotis* spp. 11–12 – *Oncylocotis stehliki* sp.nov., male holotype; 13–14 – *Oncylocotis lautereri* sp.nov., female holotype; 13, 15 – apex of fore-tibia and fore-tarsus, anterior view; 14, 16 – apex of fore-tibia, lateroventral view.

in semi-erect, slightly curved setae of equal length; on dorsal and ventral surfaces and the posterior surfaces of the forelegs and anterior surfaces of mid- and hind legs mixed with long, erect, trichobothrium-like setae that stand out from the rest.

Structure. Head (Figs 4, 6, 9) robust and wide, almost as long as pronotum. Eyes medium-sized, ocular index 4.0. Posterior lobe with broad, deep median impression, conspicuously transverse, almost twice as wide as long; ratio of length to width 0.54. Ocelli small, situated on small tubercles. Antennae very short, much shorter than head and pronotum together (ratio 0.7), antennal formula (longest segment first): IV-II-III-I. Labium (Fig. 4) short, reaching anterior margin of eye, labial formula (longest segment first): III-IV-II-I.

Thorax. Pronotum (Fig. 10) narrow with shallow constrictions. Collum robust, wide, ratio of length to width 0.42, with well-developed precollum. Middle lobe long, robust, more than twice as wide as long (ratio 2.16); with broad, inversely T-shaped impression in the middle, reaching from collum-middle lobe constriction almost to posterior margin

of middle lobe. T-shaped impression with narrow median ridge continuing on pronotal hind lobe. Sublateral parts of middle lobe with pair of shallow, narrow, Y-shaped impressions. Hind lobe short, ratio of maximum length to maximum width 0.32, with narrow median ridge. Venter of thorax not studied.

Submacropterous, forewing not reaching apex of abdomen, membrane lustrous, venation conspicuous, not studied in detail.

Forelegs stout and robust. Ventral surface of fore-femur straight, dorsal surface conspicuously convex; ratio of length to maximum width 2.73. Fore-tibia widening regularly towards the apex, widest at a minute apicitibial process, where the ratio of length to maximum width is 2.8. Bristle comb composed of approximately 28 setae. Apicitibial armature very similar to *O. stehliki* sp.nov., formed by a group of seven spiniform setae; two short ventral setae (anterior one minute), medial row of three long, strong setae and two dorsal setae, slightly curved ventrally (Figs 13–14). Tarsal armature of two pairs (anterior and posterior) of spiniform setae, as illustrated in Fig. 13.

Mid- and hind legs short and stout, without peculiarities.

Etymology. Patronymic, dedicated to our colleague and friend Dr. Pavel Lauterer for the occasion of his 80th birthday.

Differential diagnosis. *Oncylocotis lautereri* sp.nov. differs from all known Australian species of *Oncylocotis* in its smaller body size (4.25 mm, other species at least 5.0–5.5 mm or more) and in unusually short antennae (ratio of length to combined length of head and pronotum 0.7, in other species 0.9–1.0).

Collecting circumstances. The single specimen of this species was attracted to light.

Distribution. Australia, Northern Territory, Litchfield National Park.

Discussion

Undescribed species of *Oncylocotis* abound in both the Australian and Papuan faunas. To describe all the taxa available is at present beyond us, particularly since some of the more broadly-distributed species exhibit surprisingly large and complex phenotypic variation within traits usually regarded as stable and diagnostic in the genus and family. This apparently intraspecific diversity seems to be a mix of variation – individual, sexual, population and cline. On the other hand, some less abundant species with restricted ranges appear to be easily diagnosed and two of them we do not hesitate to describe here, even though they are based on only single individuals.

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