https://doi.org/10.59893/bjc.25(2).005
Baltic J. Coleopterol. 25(2) 2025
ISSN 1407 – 8619

THE FIRST *AMARYGMUS* DALMAN, 1823 (COLEOPTERA: TENEBRIONIDAE: TENEBRIONINAE) FROM EASTERN GUADALCANAL, SOLOMON ARCHIPELAGO

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Telnov D. 2025. The first *Amarygmus* Dalman, 1823 (Coleoptera: Tenebrionidae: Tenebrioninae) from Eastern Guadalcanal, Solomon Archipelago. *Baltic J. Coleopterol., 25(2): 187 – 194.*

In the present paper, *Amarygmus marau* sp. nov., a new darkling beetle species from the subfamily Tenebrioninae Latreille, 1802 is described and illustrated. This is the first record of Amarygmini Gistel, 1848 and its most speciose genus *Amarygmus* Dalman, 1823 from the eastern part of Guadalcanal, one of the main islands in the Solomon Archipelago.

Keywords: Amarygmini, taxonomy, Papuan Region

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urn:lsid:zoobank.org:pub:23B97377-175B-46B5-877F-DCB85844A254

INTRODUCTION

Amarygmini Gistel, 1848 is a worldwide tribe of Tenebrioninae Latreille, 1802 darkling beetles and comprises 88 genera (Bouchard et al. 2021). *Amarygmus* Dalman, 1823 is predominantly an Oriental and Papuan genus with some species in the eastern Palaearctic, Australasia and the tropical Pacific. This is the largest genus in its tribe, one of the most diverse in the entire family of Tenebrionidae and comprises ten subgenera (Bouchard et al. 2021). There are nearly 1000 valid taxa attributed to *Amarygmus* (Bremer 2021), but the real diversity is likely another half higher.

In the Papuan faunal region, where the Solomon Archipelago including the Bougainville and its surrounding islands count to, the Amarygmini is the most species-rich of all tribes of Tenebrionidae (Bremer 2009). Approximately 300 species and subspecies are already described from New Guinea and adjacent insular systems (e.g., Bremer 2009, 2016; Bremer & Lillig 2014) and, likely, another 100–200 taxa are awaiting to be discovered and described. Two Amarygmini taxa were mentioned from Rennell Island in the Solomon Archipelago by Buck (1958), one was later synonymized with the widespread *A. hydrophiloides* Fairmaire, 1849 (Kaszab 1980). The Amarygmini of the Solomon Islands in general were treated and revised recently,

based predominantly on the material sampled over half a century ago. In the works of Buck (1958), Bremer (2005, 2008, 2009) and Bremer and Lillig (2014), 28 species and subspecies of *Amarygmus* and one species of *Spathulipezus* Gebien, 1921 (also misspelt '*Spathulizezus*' (Bremer 2009: 46)) are listed from the Solomon Archipelago. *Amarygmus morio* (Fabricius, 1775), previously reported from the Solomon Islands by Buck (1958), was omitted by Bremer (2009) in his revision of the Amarygmini of the archipelago.

All but one Amarygmus species from the Solomon Archipelago belong to the nominative subgenus and only *A.* (*Hyperamarygmus*) *securiger* Bremer, 2009 represents another subgenus. No new Amarygmini material from this geographic area was available until recently.

The present paper is focused on the description of the first species of *Amarygmus* from the eastern part of Guadalcanal Island, the Solomon Archipelago.

MATERIAL AND METHODS

Paired morphological structures are generally treated as singular in text. For morphological studies, a Leica S6D binocular stereomicroscope (Leica Microsystems, Wetzlar, Germany) was used. Images were produced with a Canon EOS 5D SLR camera (Canon Co., Tokyo, Japan) and a Canon EF-S 60 mm macro lens (Canon Co., Tokyo, Japan). Genitalia were relaxed in KOH solution, mounted on separate card on same pin with the corresponding specimen and fixed in a drop of DMHF for study and imaging. Helicon Focus 7 software (Helicon Soft, Kharkiv, Ukraine) was used for image stacking. Further image manipulations were done using GNU Image Manipulation Program (GIMP).
Label text is reproduced *verbatim*. Separate labels on the same specimen are separated by a double slash. The type specimen is provided with a black framed label on red paper with "HOLOTYPUS". Author's comments are given in square brackets.

For the definition of the Papuan Region see Gressitt (1982), Beehler *et al*. (1986), Riedel (2002), and Telnov (2011).

The holotype of the new species described herein is deposited at the Natural History Museum (formerly British Museum, Natural History), London, United Kingdom (BMNH).

RESULTS

Tenebrionidae Latreille, 1802
Tenebrioninae Latreille, 1802
Amarygmini Gistel, 1848
Amarygmus Dalman, 1823

Type species: *Chrysomela micans* Fabricius, 1794, subsequent designation.

Amarygmus (s. str.) ***marau*** **sp. nov.**
(Figs 1–2)
urn:lsid:zoobank.org:act:C288780E-F6D4-4475-84F7-9149588C3A58

Type material designated. Holotype ♂ BMNH: SOLOMON ISLANDS, Guadalcanal Is., Marau area, Puatanarau vill. env., 9°45'44"S 160°46'44"E, 09.v.2023, 20–40 m, mangroves & *Pandanus* forest, leg. D.Telnov // BMNH{E} 2023–95 Dr. D.Telnov [printed] // Amarygmus sp. n. sp. 1 [handwritten] H.J. Bremer det. 200 [printed] [label black framed].

Derivatio nominis. Toponymic. Named after the Marau area in eastern Guadalcanal, where the new species was found. Noun in apposition.

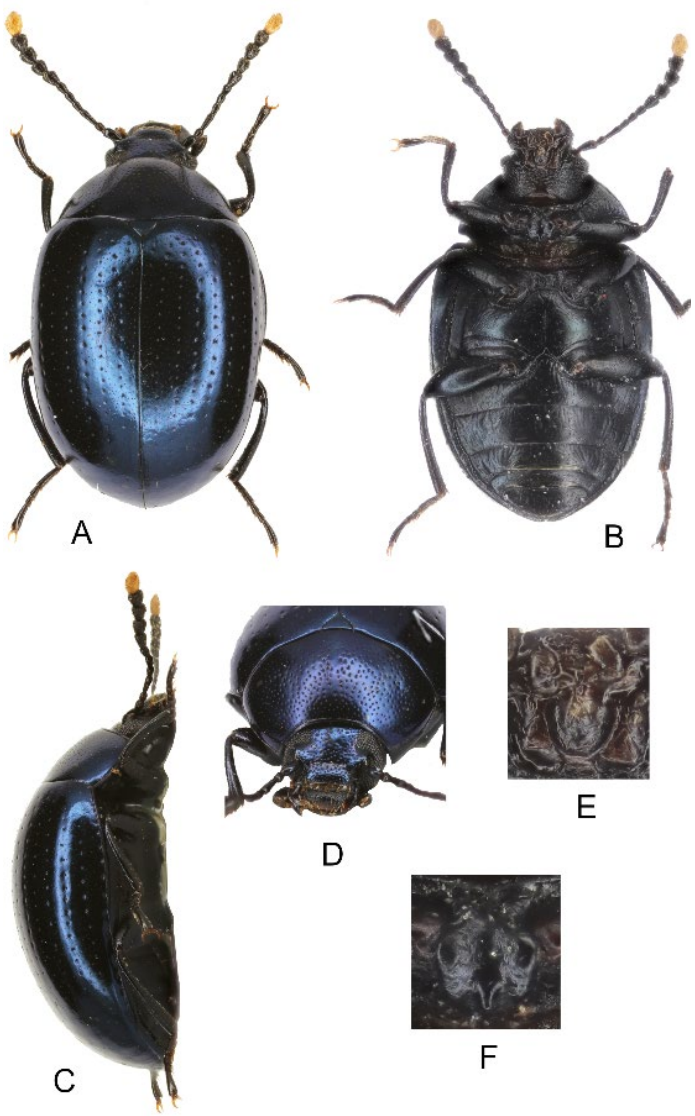

Fig. 1. *Amarygmus* (s. str.) *marau* sp. nov., holotype ♂. A – Habitus, dorsal view; B – ditto, ventral view; C – ditto, lateral view; D – ditto, forebody, frontal view; E – Mentum and labial palps, ventral view; F – Median portion of proventrite, ventral view [not to scale].

Measurements. Holotype male, total body length 3.5 mm; length of exposed part of head 0.7 mm, maximum head width across compound eyes 0.9 mm, pronotal length 0.8 mm, maximum pronotal width 1.6 mm, pronotal width across anterolateral angles 0.9 mm, elytral length 2.4 mm, combined maximum width 2.1 mm, combined width across humeri 1.8 mm.

Description. Holotype male. Body regularly elliptical, evenly and broadly rounded laterally, uniformly dark blue dorsally, black ventrally, last two exposed abdominal

sternites black brown. Mouthparts including labrum, antenna and legs black, mandible black-rufous, pretarsal claws and terminal antennomere contrastingly orange yellow. Head moderately inclined, slightly glossy dorsally, flattened in dorsal aspect. Ventral head opaque on anterior, slightly glossy on posterior portion. Mandible apex bidentate, outer edge of mandible distinctly longitudinally sulcate. Terminal maxillary palpomere broadly subtriangular. Terminal labial palpomere subcylindrical, somewhat flattened dorso-ventrally, apically subtruncate. Mentum (Fig. 1E) widened anteriorly, laterally rounded-constricted towards subtruncate base. Gena slightly elevated, anteriorly terminating slightly anteriad to level of frontoclypeal suture. Genal canthus fully concealing antennal insertion from above. Frons 2.5× as wide as length of third antennomere. Compound eye slightly protruding from lateral outline of head, anterior margin deeply emarginate at insertion of antenna and at canthus. Head dorsal punctures circular, moderate. Intervening spaces moderately glossy to subopaque, narrower than (on vertex) to 3× as wide as (between compound eyes) puncture diameters, smooth or with microscopic isodiametric microsculpture. Ventral punctures large, elliptical, shallow to moderate, their backgrounds and intervening spaces in part microreticulate, narrower than puncture diameters. Antenna moderate, not reaching second third of elytra when directed posteriorly, 11-segmented with five terminal antennomeres composing loose club, seven terminal antennomeres with impressed subcircular sensorial fields. Basal antennomere moderately inflated, ~ 2.2–2.3× as long as shortened second antennomere. Third antennomere slender, twice as long as second, shorter than combined length of antennomeres 4–5. Antennomeres 7 to 11 widened, of them 8–10 transverse. Ninth antennomere hardly longer than tenth antennomere, antennomeres seven and eight slightly shorter than any of 9 and 10. Terminal antennomere elliptical, apically broadly rounded, ~ 1.5–1.6× as long as penultimate and significantly shorter than combined length of two penultimate antennomeres. Pronotum strongly transverse, disc flattened in dorsal aspect, moderately glossy, lateral sides strongly sloping. Maximum pronotal width at base. Pronotal length to maximum width ratio 0.5, pronotal length to width across anterolateral margins ratio 0.9. Anterior margin broadly and shallowly emarginate in dorsal, deeply and evenly semicircularly – in frontal view. Posterior margin slightly sinuous, medially slightly convex. Anterior and lateral edge delicately margined, lateral border in dorsal view only visible basal half of pronotum. Lateral margin in lateral view barely sinuous, not deflected. Anterolateral angle not visible in dorsal, right-angled in lateral view. Posterolateral angle rounded in dorsal, right-angled in lateral view. Dorsal pronotal punctures elliptical to circular, on median portion of disc larger and sparser than on head, on lateral sloping margins denser and shallower. Intervening spaces glossy, smooth or with microscopic isodiametric microsculpture. Scutellar shield broadly triangular, apically pointed, glossy and glabrous, minutely punctate. Elytra convex in dorsal aspect, glossy and glabrous, laterally very broadly rounded, widened in median portion where their maximum width is. Elytral length to maximum combined width ratio ~ 1.1. Elytral maximum height in anterior and median third closer to median portion. Humerus rounded in dorsal, obtuse angulate in lateral view, humeral callosity not present. Lateral margin of elytron narrowly visible in dorsal view only in anterior third, very slightly sinuous in lateral view, inclined ventrally near apex (Fig. 1C). Apical sutural angle nearly right-angled, elytral apex mutually broadly rounded. Elytron with eight striae of punctures and one short scutellar striole. Striae disappearing in apical fifth of elytron,

punctures becoming smaller and very shallow; only first stria is complete, other striae not reaching elytral apex or represented by separate, widely spaced punctures (as are second and seventh stria). Punctures in striae moderately deep in anterior half of elytron, intervals between punctures in rows significantly wider than puncture diameters. Interstriae smooth and glossy, with microscopic isodiametric sculpture. Epipleuron complete, wide in basal half, comparatively much narrower in apical half of elytron. Prothoracic hypomeron opaque, finely and densely strigose, punctate and with several irregular and shallow sulci. Anterior portion of prosternum shorter than minimum diameter of procoxal cavity and shorter than postcoxal bridge (Fig. 1B). Median portion of proventrite flattened medially in ventral aspect, impressed laterad to middle at each procoxal cavity, with narrow and short median posterior process (Fig. 1F). Procoxa widely separated. Mesoventrite short, shallowly emarginate medially at anterior, subtruncate at posterior margin. Metaventrite strongly transverse, convex in ventral aspect, anteriorly with short and broad, distinctly margined, apically subtruncate intercoxal process, posteriorly broadly V-shapely emarginate medially to accommodate anterior process of first abdominal ventrite. Anterior process of first abdominal ventrite broadly rounded, finely margined. Sternites shallowly, irregularly sulcate and strigose laterally, comparatively smooth on median portions. Sternites V–VI at apical margin with distinct membranous field. Tergite and sternite VII broadly rounded at posterior margin. Legs moderately long, profemur subclavate, meso- and metafemur strongly clavate. Tibiae subequal in length to corresponding femurs, widened distally, hardly arched, nearly straight. Male protarsomeres not widened, four basal protarsomeres ventrally with moderately dense orange setae. Penultimate tarsomere subcylindrical, not bilobate. Terminal tarsomere long and clavate, pretarsal claw obtusely angulate at base, with short empodium. Terminal protarsomere slightly longer than combined length of remaining protarsomeres. Basal metatarsomere much shorter than combined length of remaining metatarsomeres. Aedeagus as in fig. 2.

Fig. 2. *Amarygmus* (s. str.) *marau* sp. nov., holotype ♂, aedeagus in dorsal (A), ventral (B) and lateral (C) view [not to scale].

Sexual dimorphism. Female is unknown.

Differential diagnosis. The new species falls into an informal *clavicornis* species group but can be best treated using the key provided by Bremer (2001) to species with contrastingly paler terminal antennomeres. Only one species of this group, *A.* (s. str.) *horaki* Bremer, 2001 from Seram, Central Moluccas, the holotype (Fig. 3) of which was examined from images, has the whitish yellow coloured terminal antennomere and also strongly resembles the new species in general appearance, but differs specifically in the comparatively narrower frons which is ~ 1.9–2× as wide as the length of the male third antennomere (2.5× as wide in *A.* (s. str.) *marau* sp. nov.), has the third antennomere ~ 1.1× as long as the seventh antennomere (1.2× in *A.* (s. str.) *marau* sp. nov.), the penultimate antennomere in *A. horaki* is slightly longer than wide (the penultimate antennomere is transverse in *A.* (s. str.) *marau* sp. nov.), the length to the combined width of the elytra ratio is ~ 1.6–1.7 (the ratio is 1.1–1.2 in *A.* (s. str.) *marau* sp. nov.), the elytra are comparatively stronger convex (cf. Fig. 1C and 3B), the lateral margin of the elytra is comparatively stronger sinuous in lateral view (cf. Fig. 1C and 3B), the short setal punctures are present on the mesoventrite (the mesoventrite is glabrous in *A.* (s. str.) *marau* sp. nov.) and the generally shorter body with the total length to the maximum width ratio of ~ 1.3 (the ratio is 1.4–1.5 in *A.* (s. str.) *marau* sp. nov.). The aedeagus is similarly shaped in both species.

Ecology. Collected at 20–40 m a.s.l. from a fallen rotten tree in a primary, wet and dense, dark lowland rainforest.

Distribution. So far known from Guadalcanal, the Solomon Islands.

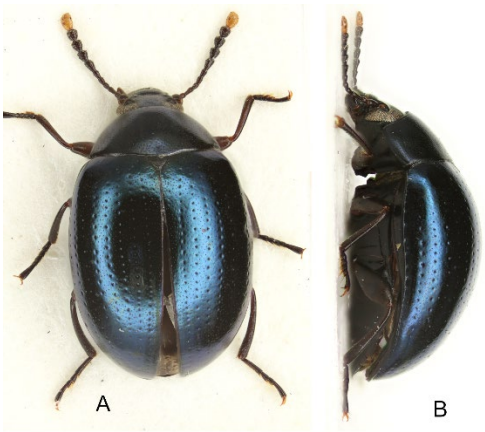

Fig. 3. *Amarygmus* (s. str.) *horaki* Bremer, 2001, holotype ♂. A – Habitus, dorsal view; B – ditto, lateral view [not to scale]. Images courtesy Ditta & Michael Balke, Zoologische Staatssammlung, Munich, Germany.

DISCUSSION

With the description of *Amarygmus* (s. str.) *marau* sp. nov., the total number of Amarygmini in the Solomon Archipelago achieved 29. Five of these species are common either with New Guinea (*A.* (s. str.) *parallelus* Kaszab, 1958) or the Bismarck Archipelago (*A. egenus* Bremer, 2002) or are widely distributed across the Papuan Region, Wallacea and the tropical Pacific from the Moluccas eastwards to Vanuatu (*A.* (s. str.) *parallelus* (Fairmaire, 1883)), inhabit also some parts of the Australian continent (*A.* (s. str.) *cuprarius iodicollis* Guérin-Méneville, 1830) or even reaching as far westwards as the Indian Subcontinent (*A.* (s. str.) *hydrophiloides* Fairmaire, 1849).

Twenty-four species appear endemic to the Solomon Archipelago. From Guadalcanal, 14 species are yet recorded (Bremer 2009; Bremer & Lillig 2014) including the new one described herein. Together with Bougainville which has 13 recorded *Amarygmus* species, this is more than from any other island of the archipelago. Prior to

this study, no records of Amarygmini were available from the Marau area on the eastern tip of Guadalcanal. Additional material of *Amarygmus* sampled by the 2023 multiinstitutional expedition to the Solomon Islands is available but not yet processed. Therefore, supplementary records or new descriptions from this still understudied geographic area are likely.

The fact that *Amarygmus horaki*, the morphologically closest species to *A. marau* sp. nov., occurs in the Central Moluccas supports the hypothesis that both the Moluccas and the Solomon Islands should be treated as parts of the Papuan biogeographic region.

ACKNOWLEDGEMENTS

I am deeply indebted to Joseph Hurutarau, Veira Pulekera, Rose Babaua and their colleagues at the Ministry of Environment, Climate Change, Disaster Management and Meteorology (Honiara, Solomon Islands) for professional and prompt support of the 2023 multi-institutional expedition to the Solomon Islands, providing the research and export permits and friendly attitude. I am thankful to the local counterparts and guides Peter Mane (Puatanarau, Guadalcanal, Solomon Islands) and Denver Newter (Honiara, Guadalcanal Island, Solomon Islands) for their assistance during the fieldwork in the country. Kristīne Greķe (Latvian National Museum of Natural History, Rīga) and Mārtiņš Kalniņš (Daugavpils University, Daugavpils, Latvia) are thanked for accompanying and assisting with the material sampling in the Solomon Islands.

Ditta and Michael Balke (Zoologische Staatssammlung, Munich, Germany) are acknowledged for providing images of the type material of *A. horaki*. Hans J. Bremer (Osnabrück, Germany) is thanked for valuable consultations, checking the manuscript and confirming the status of the new species. I am grateful to the editor and anonymous reviewers for valuable comments which helped to improve the overall quality of the manuscript.

The author's 2023 fieldwork in the Solomon Islands was supported by the internal grant No FSO22001 of the Natural History Museum, London, United Kingdom.

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Received: 12.10.2025.
Accepted: 01.12.2025.