

***Endelus barriesi* n. sp. (Coleoptera: Buprestidae: Agrilinae: Aphanisticini) from Sulawesi Island, Indonesia, with lectotype designations in the *Endelus marseuli* species-group**

MARK YU. KALASHIAN

*Scientific Center of Zoology and Hydroecology, National Academy of Sciences of Armenia, P. Sevak Str. 7, 0014, Yerevan, Armenia.
E-mail: mkalashian1@gmail.com*

ABSTRACT

A new species of jewel beetle, *Endelus* (s.str.) *barriesi* n. sp. (Coleoptera: Buprestidae), belonging to *E.* (s.str.) *marseuli* Deyrolle, 1864 species-group, is described from Sulawesi Island, Indonesia. Lectotypes are designated for *E. marseuli* Deyrolle, 1864, *E. scintillans* Deyrolle, 1864 and *E. modiglianii* Kerremans, 1896. An updated key of species within this group is provided, including *Endelus lunatus* Fisher, 1921, *Endelus barclayi* Kalashian, 2011, *Endelus splendens* Kalashian, 2011, and *Endelus nairaarum* Kalashian, 2011.

KEYWORDS: Biodiversity, Coleoptera, Buprestidae, Aphanisticini, new species, lectotypes, Oriental Region, Indonesia, Sulawesi, taxonomy.

ԱՄՓՈՓՈՒՄ

Ինդոնեզիայի Սուլավեսի կղզուց նկարագրվում է *E. marseuli* Deyrolle, 1864 տեսակային խմբին պատկանող *Endelus* (s.str.) *barriesi* n. sp. (Coleoptera: Buprestidae) նոր տեսակը: Լեկտոտիպեր են նշանակվում *E. marseuli* Deyrolle, 1864, *E. scintillans* Deyrolle, 1864 և *E. modiglianii* Kerremans, 1896 տարբերակների համար: Տրվում է խմբի տեսակների նորացված որոշիչ, որն ընդգրկում է նաև *Endelus lunatus* Fisher, 1921, *Endelus barclayi* Kalashian, 2011, *Endelus splendens* Kalashian, 2011 և *Endelus nairaarum* Kalashian, 2011 տեսակները:

ՀԻՄՆԱԲԱՌՆԵՐ: Կենսաբազմազանություն, Coleoptera, Buprestidae, Aphanisticini, նոր տեսակ, լեկտոտիպեր, Հնդ-Մալայան տարածաշրջան, Ինդոնեզիա, Սուլավեսի, տարբերակում:

INTRODUCTION

Among the materials of Buprestidae kindly provided to me for study by Wolfgang Barries (Vienna, Austria), a specimen of an undescribed species of the genus *Endelus* Deyrolle, 1864 from Sulawesi Island (Indonesia) was found. This new species belongs to the recently established *Endelus marseuli* species-group (Kalashian, 2011). This group is one of the few groups below the generic level of the subtribe Aphanisticina (genera *Aphanisticus* Latreille, 1810 and *Endelus*), which are present on both sides of the Wallace' line, e.g. *Endelus* subgen. *Hexagonodelus* Kalashian,

DOI: 10.5281/zenodo.10361751; ISSN (online) 2224-6304

Received: 9 November 2023 / Revised: 15 November 2023 / Accepted: 30 November 2023
urn:lsid:zoobank.org:pub:6C6873B0-16AE-42E7-A686-8597742FFDE2

2021, *Aphanisticus chloris* Obenberger, 1928 species-group and *A. endeloides* Carter, 1924 species-group (Bellamy 2008; Kalashian, 2011; Kalashian & Kubáň 2014; Kalashian 2021). It includes seven species (including the newly described one), five of which are known from Sulawesi Island, one species is found in the Philippines (Negros Island), and one is distributed on Borneo and Sumatra Islands, and Mentawai Archipelago. The present paper is devoted to description of the new species. Additionally, the lectotypes are designated for *E. marseuli* Deyrolle, 1864, *E. scintillans* Deyrolle, 1864, and *E. modiglianii* Kerremans, 1896, to maintain nomenclatural stability in taxonomically complicated group according to Articles 61.1 and 74.1 of International Code of Zoological Nomenclature (ICZN, 1999).

MATERIAL AND METHODS

Morphology of beetles was studied using Micromed MC-2 Zoom and MBS-10 stereomicroscopes, and measurements were taken using an ocular micrometer. Photographs of the habitus of new species was taken using a Canon EOS 550D digital camera, equipped with a Canon MP-E65 mm f/2.8 1–5× macro lens, and Helicon Focus Pro software was used for stacking the photos. Other photographs were kindly provided by Dr Antoine Mantilleri and Christophe Rivier (both from MNHN), and Dr Eduard Jendek (Bratislava, Slovakia).

Label data are cited verbatim; a slash (/) is used to separate lines on the same label and a double slash (//), to separate data from different labels. Following abbreviations are used in the text: p – for printed data, h – for handwritten data, [red] refers to label color.

Material studied is deposited in the following collections:

- BMNH – The Natural History Museum (formerly British Museum, Natural History), London, United Kingdom;
- MKCY – Mark Kalashian research collection, Yerevan, Armenia;
- MNHN – Muséum National d’Histoire Naturelle, Paris, France;
- MSNG – Museo Civico di Storia Naturale “Giacomo Doria”, Genova, Italy;
- NMPC – Národní Muzeum v Praze, Prague, Czech Republic;
- ZIN – Zoological Institute of the Russian Academy of Sciences, St. Petersburg, Russia.

TAXONOMY

Genus *Endelus* Deyrolle, 1864

Subgenus *Endelus* s. str.

Species-group *Endelus marseuli* Deyrolle, 1864

Diagnosis: Body rather robust or moderately elongate, 2.0–2.4× as long as wide, head large, distinctly widened anteriorly, eyes strongly convex, rounded or angularly projected in dorsal aspect, oculo-frontal margins obtuse-angled, concavity of frontovertex shallow. Pronotum distinctly wider posteriorly than anteriorly, slightly narrower than elytral base, disc with slightly separated transversal elevation. Elytra

with distinct humeral tubercles, slightly adpressed medially of tubercles. Coloration more or less brightly metallic, with characteristic pattern of spots and bands as in Figs 1, 3–5 (Kalashian 2011).

Species included: *Endelus* (s.str.) *marseuli* H. Deyrolle, 1864 (Borneo and Sumatra Islands, Mentawai Archipelago), *E.* (s.str.) *lunatus* Fisher, 1921 (The Philippines: Negros Island), *E.* (s.str.) *scintillans* H. Deyrolle, 1864, *E.* (s.str.) *barclayi* Kalashian, 2011, *E.* (s.str.) *splendens* Kalashian, 2011, *E.* (s.str.) *nairaarum* Kalashian, 2011, and *E.* (s.str.) *barriesi* n. sp. (last five from Indonesia: Sulawesi Island).

Endelus (s.str.) *barriesi* n. sp.

(Figs 1, 2)

LSID: urn:lsid:zoobank.org:act:36FED1E2-F71D-46C2-9BB9-44C4B6440981.

Etymology: The new species is dedicated to Wolfgang Barries (Vienna, Austria), with my deepest gratitude and respect.

Diagnosis: Body (Fig. 1) rather robust, 2.2× as long as wide, moderately convex, blackish-violet with indistinct bronzy-greenish reflection on pronotum, elytra with 3 pairs of rather small bluish-green spots – irregularly rounded on humeri, slightly obliquely transverse near mid-length and at the level of posterior ¼, elytral apex slightly brightened. Surface shiny, without shagreen except of finely microreticulated silky lustrous elytral spots and hypomera. Body length 3.52 mm, width 1.60 mm.

Description: Male. Head large, enlarged anteriorly, distinctly wider than anterior margin of pronotum, frontovertex finely arcuately concave, oculo-frontal margins widely obtuse-angled, rounded, eyes roundly slightly irregularly projected beyond head outline. Clypeus turned back, transversely triangular with anterior margin very finely arcuately emarginated. Frons strongly widened posteriorly, behind clypeus, with pair of deep round fovea laterally continued as less deep transverse grooves behind antennal cavities, and with large irregularly oval longitudinal fovea medially. Surface with rather large but very superficial and sparse punctures, anteriorly nearly indistinct. Antennae serrate from antennomere 5 which is distinctly longitudinal, antennomere 6 nearly equilateral, following antennomeres moderately transverse.

Pronotum 2.4× as wide as long, widest just behind middle. Anterior margin slightly bisinuate, edged with thin groove widely interrupted medially, sides widely slightly irregularly arcuate, weakly serrate, lateral margins with thin elevation continued along posterior margin of pronotum, the latter strongly bisinuate with wide medial lobe slightly arcuately emarginated opposite scutellum. Pronotum with wide transversal elevation on disk, flattened along sides and slightly adpressed along posterior margin. Surface with rather big superficial irregular punctures, medially sometimes fused into twisting longitudinal wrinkles.

Scutellum nearly equilaterally triangular.

Elytra approximately 1.7× as long as wide, slightly wider than pronotum, widest near humeral tubercles, slightly and nearly rectilinearly narrowed towards posterior

$\frac{2}{5}$ – $\frac{1}{3}$, then stronger, first obsoletely weakly arcuately then slightly sinuately narrowed to slightly irregularly arcuate apex. Elytra convex, narrowly flattened along sides behind humeri in anterior $\frac{1}{3}$, transversely adpressed medially of humeral tubercles. Elytral sides weakly to obsoletely serrate, fringed with thin groove almost reaching elytral apex. Surface with small distinct irregular hyphen-shaped punctures slightly smoothed posteriorly.

Hypomera without distinct sculpture apart from microreticulation, prosternal process with rather rough transversal punctures. Metasternum and sides of 1st visible ventrite with thin long oblique wrinkles somewhere connected in a net, medially and backwards divided into short transversal punctures, smoothed posteriorly, and in anal ventrite nearly indistinct.

Anal ventrite nearly straightly truncate, distally with widely rounded angles.

Male genitalia as in Fig. 2.

Female. Unknown.

Holotype: (MKCY): ♂, [Indonesia] Central – SULAWESI / Poso See 1100 m / 2000.04.25/ leg. W. Suppantischitsch (p) // Holotype / *Endelus (Endelus) / barriesi* n. sp. / M. Kalashian det. 2021 (red, p).

Distribution: Indonesia, Central Sulawesi.

Endelus (Endelus) marseuli H. Deyrolle, 1864

(Figs 3, 4)

Endelus marseuli Deyrolle, 1864: 232.

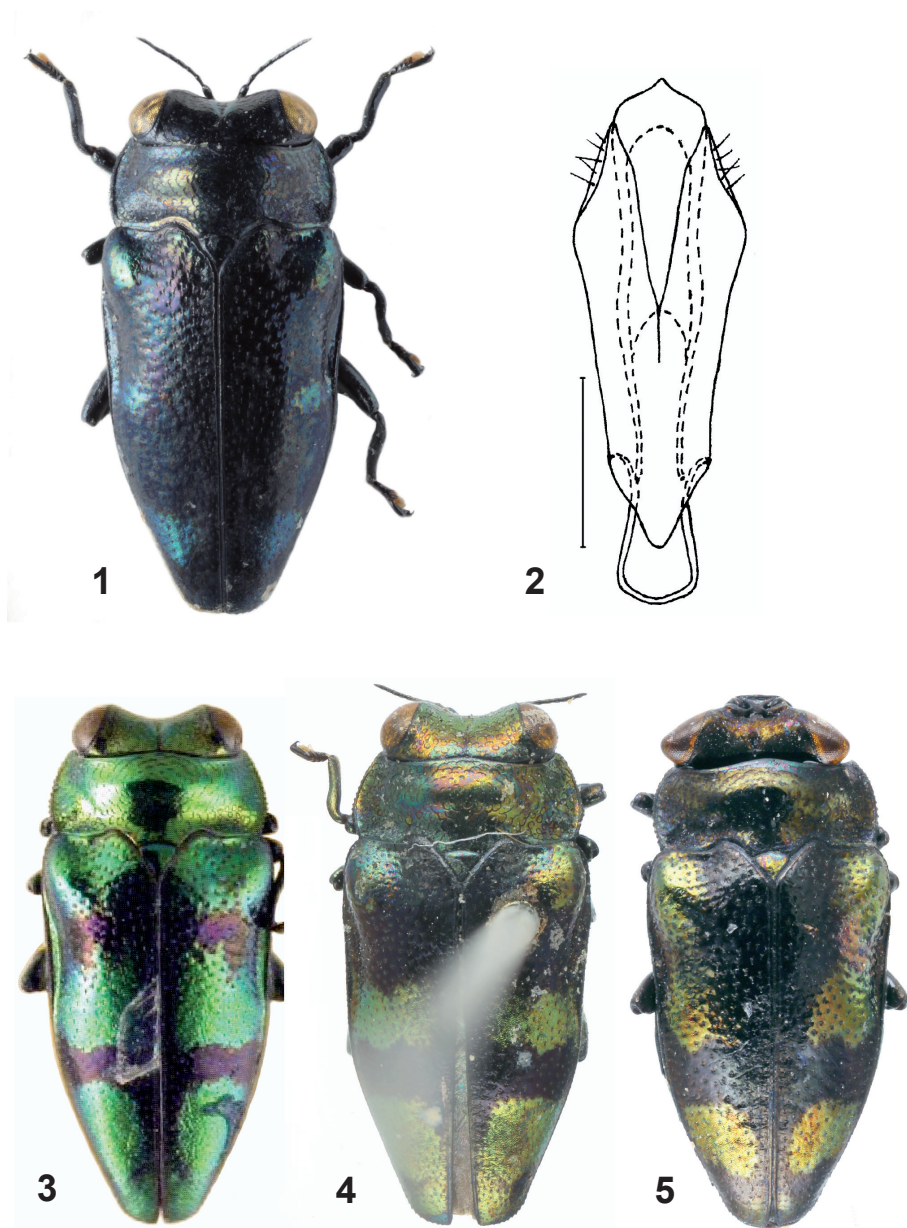
Endelus modiglianii Kerremans, 1896: 366 (syn.: Théry, 1932: 15).

Type material examined: *Endelus marseuli* Deyrolle, 1864, **lectotype**, designated here (MNHN) (Fig. 4): Muséum Paris / 1952 / Coll. R. Oberthur (p) // SYNTYPE (p, red paper) // Syntype / *Endelus / marseulii* Deyrolle, 1865 (p) / MNHN / EC10579 (p) // TRANSCRIPTIO / M. KALASHIAN, 2021: / *Marseulii* HDeyr. / Bornéo (p) // LECTOTYPE / *Endelus / marseuli* Deyrolle, 1864 / M. Kalashian design, 2021 (p, red). 1 **paralectotype**, same labels, but: PARALECTOTYPE / *Endelus / marseuli* Deyrolle, 1864 / M. Kalashian design, 2021 (p, red) // MNHN, EC10580; 1 **paralectotype:** *Marseuli* Deyr. / Borneo (h) // Collection / de BONNEUIL (p) / MUSÉUM PARIS / 1935 / Coll. A. THÉRY (p) / PARATYPE (p, red print) / SYNTYPE (p, red) / Syntype / *Endelus / marseulii* Deyrolle, 1865 (p) // MNHN / EC10600 (p) // PARALECTOTYPE / *Endelus / marseuli* Deyrolle, 1864 / M. Kalashian design, 2021 (p, red) // MNHN, EC10580. All three specimens are placed after bottom label: *Marseulii* / HDeyr. / Bornéo (h).

Endelus modiglianii Kerremans, 1896, **lectotype**, designated here (BMNH) (Fig. 2): Holotype (p, round paper with red contour, not original museum label) // Mentawai / Si Oban IV-VIII / Modigliani. 94 (p) // Modiglianii / Kerr. / Type (h) // Kerremans. 1903-59. (p) // = *Marseuli* HD (h) / Théry det (p) // LECTOTYPE / *Endelus / modiglianii* Kerremans, 1896 / M. Kalashian design, 2021 (p, red). 2 **paralectotypes** (MSNG): Mentawai / Si Oban IV-VIII / Modigliani. 94 (p) // Modiglianii / Kerr. / Type (h) // Kerremans. 1903-59. (p) // PARALECTOTYPE / *Endelus / modiglianii* Kerremans, 1896 / M. Kalashian design, 2021 (p, red) (p).

Additional material studied: **Indonesia:** 3 ex., Sumatra, Hindrapoera; 4 ex., Indrapoera, Cote West de Sumatra (h) / Clavereau, 901 (h); 1 ex., West Sumatra, Pd., Pariaman, ix.1995 Widgago; 11 ex., W Sumatra, Padang, vi.1995, S. Jakl lgt.; 2 ex., Sumatra, Padang, xii.1994; 6 ex., ibidem, ii.1995; 1 ex., ibidem, iv.1995; 4 ex., ibidem, v.1995; 1 ex., ibidem, vi.1995 (MKCY, NMPC, ZIN).

Distribution: Borneo (in Indonesia or Malaysia) (type locality of *E. marseuli*), Mentawai Archipelago: South Sipora Isl., Sioban (type locality of *E. modiglianii*), West Sumatra (Indrapoera, Padang, Pariaman).



Figs 1–5. *Endelus* (*Endelus*) spp.: (1, 2) *E. barriesi* n. sp., holotype, male (photo: M. Kalashian); (3) *E. modiglianii* Kerr., lectotype (photo: E. Jendek); (4) *E. marseuli* Deyrolle, lectotype (photo: ©MNHN/C. Rivier); (5) *E. scintillans* Deyr., lectotype (photo: ©MNHN/C. Rivier). Figs 1, 3–5, habitus in dorsal view; Fig. 2, male genitalia. Scale bar 0.25 mm for Fig. 2.

Notes: Described from an unstated number of specimens (Kerremans 1896). A specimen deposited at the BMNH has been selected as a lectotype. Synonymy of *E. modiglianii* Kerremans, 1896 was established by A. Théry (1932). Examination of types of *E. marseuli* and *E. modiglianii*, as well as numerous specimens from Sumatra, showed some minor but rather stable differences in the degree of development of the color pattern of elytra between the beetles from Borneo compared to those from Mentawai and Sumatra. However, clear definition of the status of different populations requires additional material from Borneo Island.

Endelus (Endelus) scintillans H. Deyrolle, 1864

(Fig. 5)

Endelus (Endelus) scintillans H. Deyrolle, 1864: 232.

Lectotype (designated here, MNHN): MUSEUM PARIS, COLL. OBERTHUR (p) // SYNTYPE (p, red) // SYNTYPE / *Endelus / scintillans* Deyrolle, 1864 (p) // MNHN, Paris / EC11743 (p) / TRANSCRIPTIO / M. KALASHIAN, 2021: / *Scintillans* HDeyr. / Makassar (p) // LECTOTYPE / *Endelus / scintillans* H. Deyrolle, 1864 / M. Kalashian design, 2021 (p, red). 1 paralectotype: same labels, but: MNHN, Paris / EC11742 (p) // PARALECTOTYPE / *Endelus / scintillans* H. Deyrolle, 1864 / M. Kalashian design, 2021 (p, red). Both specimens are placed after bottom label: *Scintillans / HDeyr. / Makassar* (h).

Additional material studied: Celebes (h) // *Endelus / scintillans* H.D. (h) / Dr Obenberger det. (p) (NMPC).

Distribution: So far known from South Sulawesi – Makassar (type locality) and Pangi (Théry 1932).

Key to the species of *Endelus (Endelus) marseuli* Deyrolle-species-group

- 1 Eyes rounded in dorsal aspect (Figs 1, 3, 4) 2
- Eyes angularly projected from head outline in dorsal aspect (as in Fig. 5) 4
- 2 Body more elongate, 2.3× as long as wide, elytra 1.75× as long as wide. Punctuation of head and pronotum denser and more distinct. 3.0 mm. The Philippines: Negros Island *lunatus*
- Body more robust, 2.0–2.2× as long as wide, elytra 1.50–1.7× as long as wide. Punctuation of head and pronotum sparser and less distinct 3
- 3 Dorsal surface darker, blackish-violet with indistinct bronzy-greenish reflection on pronotum, elytral spots smaller, bluish-green, elytral apex slightly brightened. 3.52 mm. Sulawesi *barriesi*.
- Head, pronotum and bright portions of elytral pattern golden with fine greenish reflection or green with fine golden reflection. Elytral pattern formed by bigger spots and bands, posterior spot reaching elytral apex. 3.1–3.7 mm. Borneo and Sumatra Isl., Mentawai Archipelago *marseuli* (Figs 3, 4)
- 4 Oculofrontal margins very obtuse-angled, frontovertex very slightly concave. Background coloration of body golden-yellow, with very slight greenish or reddish reflection. 3.4–3.8 mm. Sulawesi *scintillans* (Fig. 5.)

- Oculofrontal margins less obtuse-angled, concavity of frontovertex deeper. Background coloration of body darker, golden-green, dark bronzy with greenish reflection or nearly black with bluish or violet reflection.....5
- 5 Body more robust, 2.05–2.10× as long as wide, elytra 1.6× as long as wide. Body dark bronzy with more or less distinct greenish reflection on sides of pronotum, elytra dark violet-blue with 3 pairs of bluish-green spots of moderate size – rounded near humeri and at the level of posterior ¼, and slightly obliquely transverse near middle. 3.12–3.5 mm. Sulawesi.....*barclayi*
- Body more elongate, 2.25–2.40× as long as wide, elytra 1.7-1.8 as long as wide.....6
- 6 Body nearly black with bluish or violet reflection more pronounced on elytra, elytra with bluish-green pattern of two pairs of rather small slightly irregularly round spots on humeral tubercles and apically, narrow band widely interrupted near suture approximately at middle and pair of large oblique spots between posterior ¼ and apical spots. Frons with indistinct traces of punctures, vertex with sparse very superficial punctures of moderate size. 3.0–3.7 mm. Sulawesi *splendens*
- Body golden-green, elytra dark violet-blue with golden-green pattern of pair of large spots on humeri, two bands near middle and posterior 1/4 widely interrupted near suture, and pair of small indistinct spots apically. Frons with few big rounded superficial punctures, on vertex punctures denser and bigger, flat but rather distinct. 3.50–3.53 mm. Sulawesi*niraarum*

ACKNOWLEDGEMENTS

I would like to express my deepest gratitude to my good friend Wolfgang Barries (Vienna, Austria), who provided me with the interesting materials for study. Additionally, I am very thankful to my colleagues and friends for the opportunity to work in the collections of their institutions and private collections, namely: Dr Maxwell V.L. Barclay (BMNH), Dr Jean Menier (MNHN, retired), Dr Lukáš Sekerka and the late Dr Svatopluk Bílý (both from NMPC), Vítězslav Kubáň (Šlapanice near Brno, Czech Republic), and Dr Mark Volkovitsh (ZIN). I am also very much grateful to Dr Antoine Mantilleri and Christophe Rivier (both from MNHN) and to Dr Eduard Jendek (Bratislava, Slovakia) who provided me with photographs for this study. The author extends his sincere appreciation to reviewers, whose valuable comments and suggestions allowed for the improvement of this manuscript.

REFERENCES

- BELLAMY, C.L. 2008. *A world catalogue and bibliography of the Jewel Beetles (Coleoptera: Buprestoidea)*. Vol. 4: Agrilinae: Agrilina through Trachyini. Pensoft, Sofia–Moscow, pp. 1932–2684.
<https://books.pensoft.net/books/9490>
- DEYROLLE, H. 1864. Description des Buprestides de la Malaisie recueillis par M. Wallace. *Annales de la Société Entomologique de Belgique* 8: 1–272, 305–312.
<https://www.biodiversitylibrary.org/item/46156#page/15>
- ICZN [International Commission on Zoological Nomenclature]. 1999. *International Code of Zoological Nomenclature. Fourth ed.* International Trust for Zoological Nomenclature, London, 106 p.

- KALASHIAN, M.Yu. 2011. New species of *Endelus* Deyrolle, 1864 (Coleoptera: Buprestidae) from Sulawesi, Indonesia. In: Telnov, D. (Ed.), *Biodiversity, biogeography and nature conservation in Wallacea and New Guinea*. Vol. 1. The Entomological Society of Latvia, Riga, pp. 83–87, pl. 16.
<https://www.biodiversitylibrary.org/item/253723#page/85>
- KALASHIAN, M.Yu. 2021. A new species of *Endelus* Deyrolle, 1864 (Coleoptera: Buprestidae) from Sulawesi, Indonesia with description of *Endelus* (*Hexagonodelus*) subgen. nov. In: Telnov, D., Barclay, M.V.L., Pauwels, O.S.G. (Eds), *Biodiversity, Biogeography and nature conservation in Wallacea and New Guinea*. Vol. 4. The Entomological Society of Latvia, Riga, pp. 215–220.
- KALASHIAN, M.Yu. & KUBÁŇ, V. 2014. New species of *Aphanisticus* Latreille, 1810 (Coleoptera, Buprestidae) from Sulawesi and Australia. In: Telnov, D. (Ed.), *Biodiversity, Biogeography and Nature Conservation in Wallacea and New Guinea*, Vol. 2. The Entomological Society of Latvia, Riga, pp. 213–218, pls 29–30.
<https://www.biodiversitylibrary.org/item/252866#page/214>
- KERREMANS, C. 1896. Énumération des Buprestides recueillies par M. le Docteur E. Modigliani a Sumatra et dans les îles Mentawai. *Annali del Museo Civico di Storia Naturale di Genova, Serie 2* **16** (36): 361–371.
<https://www.biodiversitylibrary.org/item/32715#page/369>
- THÉRY, A. 1932. Contribution a l'étude des espèces du genre *Endelus* H. Deyr. (Coleopt. Buprestidae). *Novitates Entomologicae* **2**: 1–23.