

Descriptions of a new genus and new species of Dermestidae (Coleoptera: Bostrichoidea) from Liberia

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Taxonomy, new genus, new species, Dermestidae, *Orphinus*, *Liberorphinus*, Liberia

Abstract. *Liberorphinus putuensis* gen. and sp. nov. and *Orphinus (Orphinus) barclayi* sp. nov. from Liberia are described, illustrated and compared with similar genera and species. The new genus is distinguished by the structure of the antennae, male genitalia and hind wings. A list of the Dermestidae recorded from Liberia is also given.

INTRODUCTION

The family Dermestidae (Coleoptera: Bostrichoidea) comprises 1715 valid species and subspecies worldwide (Háva, 2018, 2020a). The dermestid genus *Orphinus* Motschulsky, 1858 belonging to the subfamily Megatominae, includes 134 species worldwide, of which 24 species are known from the Afrotropical Region, all belonging to the nominotypical subgenus (Háva 2016, 2020b, Kadej & Háva 2016, Háva & Matsumoto 2021). A new genus, *Liberorphinus* gen. nov. is described; it has 4 antennomeres in the antennal club, and is distinguished from closely related genera by differences in the structure of the sternites and hind wing. A new species of *Orphinus* and *Liberorphinus* from Liberia are described.

MATERIALS AND METHODS

The specimens were examined by relaxing in warm water, dissecting the abdomen and its inner contents. Genitalia are placed in a drop of dimethyl hydantoin formaldehyde (DMHF) resin and mounted on a card pinned under the specimen. Habitus photographs were taken with a Canon DSLR camera, Laowa 25mm macro lens. All photographs were processed through focus stacking software, and were later edited using GIMP. The beginning and end of label text are indicated using double quotes (“”); a double slash (//) separates the data on different labels.

The following acronyms of morphological characters were used: AS - Antennal segment(s) (preceded by number increasing from antennal insertion to the tip of the last antennomere), BL - body length (pronotum length and elytral length), EL - elytral length, EW - maximum elytral width, PL - pronotal length, PW - maximum pronotal width.

Type material is deposited in (BMNH) - Natural History Museum (formerly British Museum, Natural History), London, United Kingdom.

TAXONOMY

Genus *Liberorphinus* gen. nov.

Type species: *Liberorphinus putuensis* sp. nov. (by monotypy).

Description. Body oval, elongated, dorsum convex. Dorsal surface black (Fig. 1), ventral surfaces dark brown (Fig. 2). Antennae with 11 antennomeres, antennal club with four antennomeres; antennae brown to dark brown, with very short black setae on club. Antennal fossa circular. Elytra coarsely punctate near suture, punctures forming circular rows, other parts finely punctate. Hind wing about 2.1 times as long as wide, apically rounded, with reduced venation. Sternite X with overall outline oval, basal end deeply concave, lateral sides gently curved, apical end flat, apical half of outer margin with long setae (Fig. 9). Tegmen sub-oval, base U-shaped and sclerotised, long setae on apical end and lateral sides near the apical end (Fig. 7). Genitalia (Fig. 5). Parameres longer than median lobe, width relatively constant from base to anterior 3/4, widening and curved inwards at the apical end, apex rounded. Median lobe of constant width from near base to apex, apical end slightly rounded.

Diagnosis. New genus is very similar to genus *Orphinus*, but differs from it in the following characters: antennal club composed of 4 antennomeres, structure of abdominal sternites and venation of wing.

Similar genera differ in the number of antennomeres comprising the club:

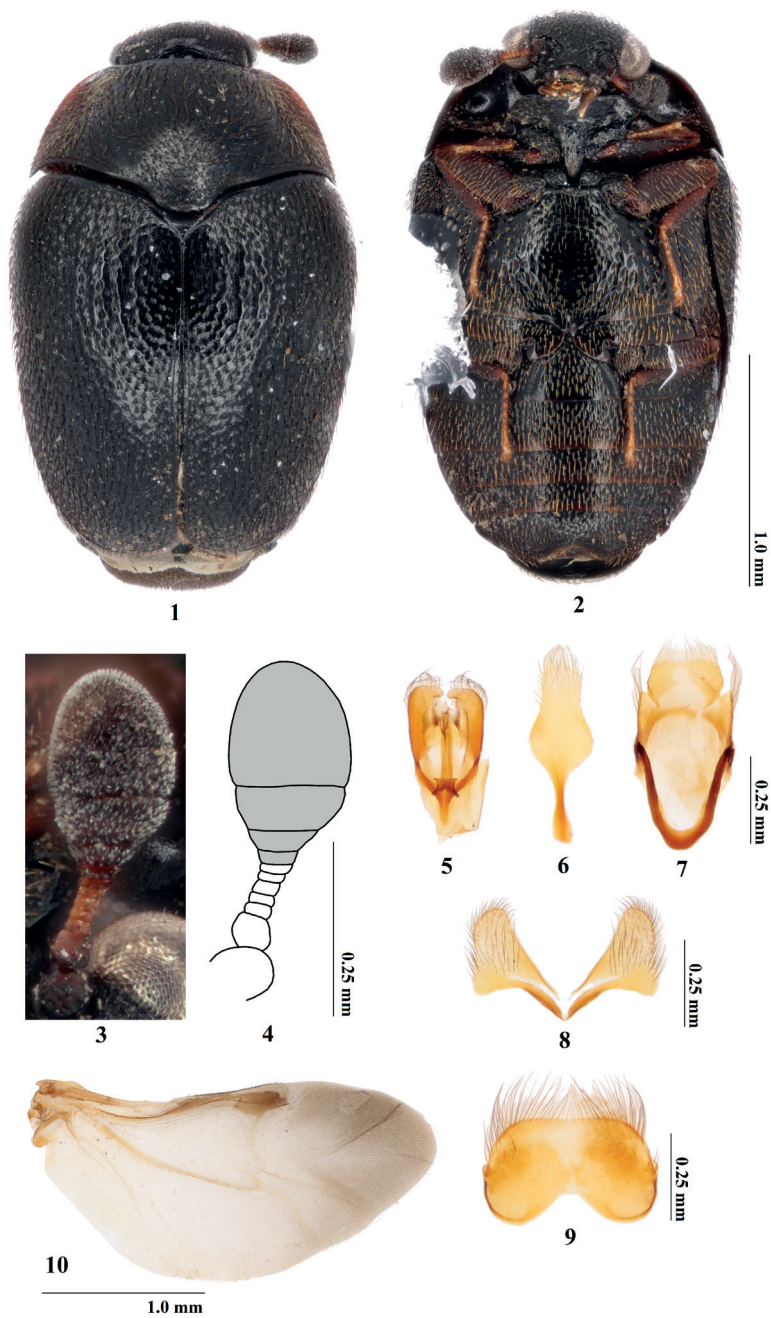
Antennal club with 4 antennomeres	<i>Liberorphinus</i>
Antennal club with 3 antennomeres	<i>Cryptorhopalum</i> , <i>Thaumaglossa</i>
Antennal club with 2 antennomeres	<i>Hemirhopalum</i> , <i>Claviella</i> , <i>Orphinus</i>

Etymology. Named after the country of origin, Liberia, and the name of genus *Orphinus*; Masculine gender.

Liberorphinus putuensis sp. nov.

(Figs. 1-10)

Type material. Holotype (♂): "LIBERIA 700 m Putu Range, Mt. Jideh ridge, Grand Gedeh County 5°38'34.79"N;8°11'02.15"W 30-31.i.2018 // General Coll. Geiser,M., Sáfián, Sz., & Simonics, G., leg. ANHRT 28, LR-001, BMNH(E) 2018-39 // NHMUK014383842", (BMNH). Additional label on red paper added: "*Liberorphinus putuensis* sp. nov. Háva & Matsumoto det. 2021, HOLOTYPE ♂". Paratype (1 ♂): with same locality labels as holotype with additional unique identification number "NHMUK014383843", (BMNH). Additional label on red paper added: "*Liberorphinus putuensis* gen. et sp. nov. Háva & Matsumoto det. 2021, PARATYPE ♂".



Figs. 1-10. *Liberorhynchus putuensis* gen. et sp. nov.: 1- dorsal habitus; 2- ventral habitus; 3- antennae; 4- antennae, illustration; 5- genitalia, ventral view; 6- sternite IX; 7- tegmen; 8- sternite VIII; 9- sternite X; 10- left hind wing.

Description. Male. Body oval, elongated, dorsum convex. BL: 2.11-2.22 mm, PL: 0.67-0.69 mm, PW: 1.31 mm, EL: 1.57-1.62 mm, EW: 1.48-1.54 mm.

Dorsal surface black (Fig. 1), ventral surfaces dark brown (Fig. 2). Head finely punctate, with short, recumbent, light brown setation. Palpi brown; setation on mentum denser. Eyes large, with light brown microsetae. Ocellus very faintly visible. Antennae brown to dark brown, with very short black setae on the antennal club; 11 antennomeres, with four antennomeres forming antennal club, 1st to 7th AS smooth, 1st AS rounded, 2nd rounded and smaller than 1st AS, 3rd to 7th AS short and narrow, 7th slightly wider than previous AS, 8th narrowest and shortest within the antennal club, with dense setae, 9th trapezoid, 10th AS rectangular and widest, terminal antennomere large and semi-circular (Figs. 3-4). Antennal fossa circular. Majority of pronotum surface black, lateral margins reddish brown, with punctuation like head, density of punctures relatively consistent, with relatively long, recumbent, yellowish-brown setation. Scutellum triangular, edges straight, without setation. Elytra more coarsely punctate near elytral suture, punctures forming circular rows, other parts finely punctate, with relatively long, recumbent, dark brown setation; cuticle black throughout (Fig. 1). Legs brown, with light brown setation. Ventral habitus covered with relatively long, recumbent, light brown setation. Mesosternum trapezoid, coarsely punctate, otherwise finely punctate, covered with short, light brown, recumbent setation (Fig. 2). Abdominal visible ventrites finely punctate, apical end of 5th ventrite concave with densely packed setae (Fig. 2).

Hind wing 2.1 times as long as wide, apically rounded, with reduced venation. (Fig. 10).

Sternite IX with long setae at the apical end, base narrow, widest at middle, gently narrowing towards the apical end (Fig. 6). Sternite VIII at each end sub-triangular, apical end rounded, long setae present (Fig. 8). Sternite X overall outline oval, basal end deeply concave, lateral sides gently curved, apical end flat, apical half of outer margin with long setae (Fig. 9). Tegmen sub-oval, base U-shaped and sclerotised, long setae on apical end and lateral sides near the apical end (Fig. 7).

Genitalia (Fig. 5). Parameres longer than median lobe, width relatively constant from base to anterior 3/4, widening and curved inwards at the apical end, apex rounded. Median lobe of constant width near base towards apex, apical end slightly rounded.

Female. Unknown.

Etymology. This species is named after the type locality, Putu Range.

Differential diagnosis. The new species is the only known species of this genus.

Genus *Orphinus* Motschulsky, 1858

***Orphinus (Orphinus) barclayi* sp. nov.**

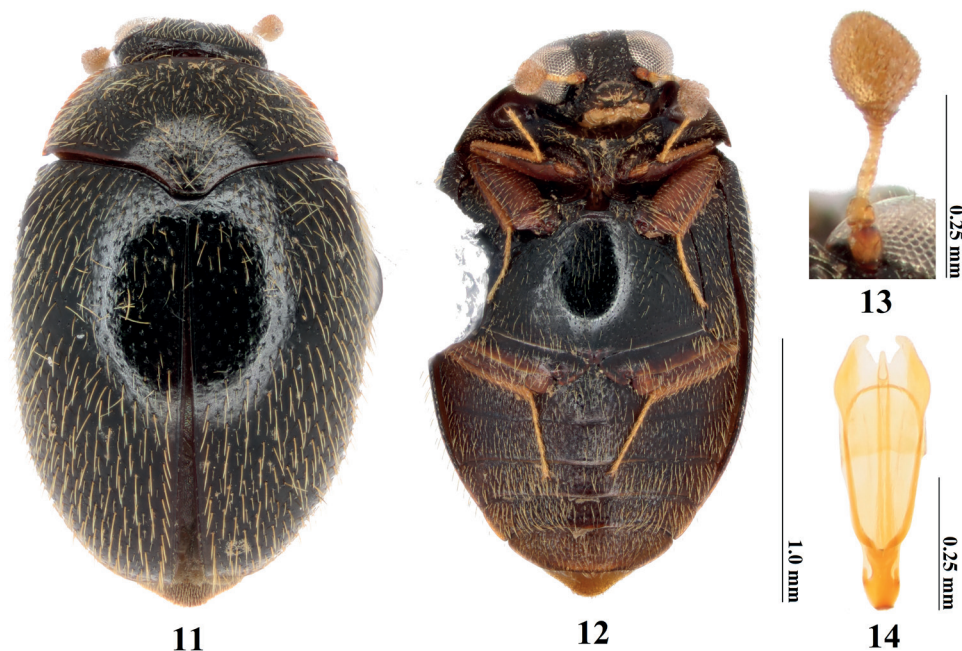
(Figs. 11-14)

Type material. Holotype (♂): "LIBERIA 700m Putu Range, Mt. Jideh ridge, Grand Gedeh County 5°38'34.79"N;8°11'02.15"W 30-31.i.2018 // General Coll. Geiser,M., Sáfián, Sz., & Simonics, G., leg. ANHRT 28, LR-001, BMNH(E) 2018-39 // NHMUK014383844", (BMNH). Additional label on red paper added: "*Orphinus (Orphinus) barclayi* sp. nov. Háva & Matsumoto det. 2021, HOLOTYPE ♂".

Description. Male. Body oval, elongated, dorsum convex. BL: 2.00 mm, PL: 1.11 mm, PW: 1.31 mm, EL: 1.56 mm, EW: 1.33 mm.

Dorsal surface dark brown (Fig. 11), ventral surface dark brown (Fig. 12). Head finely punctate, with short, recumbent, light brown setation. Palpi brown; setation on mentum denser. Eyes very large, with light brown microsetae. Ocellus on frons present. Antennae light brown with brown setae, with 11 antennomeres, antennal club formed of two antennomeres, 1st to 9th AS smooth, 1st AS rounded, 2nd trapezoid and smaller than 1st AS, 3rd to 9th AS short and narrow, 10th AS trapezoid and short, terminal antennomere large and nearly circular with one side slightly right angled (Fig. 13). Antennal fossa circular. Pronotum on the disc punctate like head, relatively consistent density of punctures, with relatively long, recumbent, yellowish-brown setation. Scutellum triangular, anterior end nearly straight, without setation. Elytra finely punctate, with relatively long, recumbent, yellowish-brown setation; cuticle dark brown throughout (Fig. 11). Legs brown, with light brown setation. Mesosternum coarsely punctate laterally, otherwise finely punctate, covered with light brown, short, recumbent setation (Fig. 12). Abdominal visible ventrites finely punctate, with relatively long, recumbent, light brown setation, apical end of 5th ventrite nearly flat (Fig. 12).

Genitalia (Fig. 14). Parameres longer than median lobe, width relatively constant from base to anterior 1/3, widens towards the apical end, apex rounded. Median lobe constant width throughout, gently narrowing near apex, apical end slightly rounded.



Figs. 11-14. *Orphinus (Orphinus) barclayi* sp. nov.: 11- dorsal habitus; 12- ventral habitus; 13- antenna; 14- genitalia, ventral view.

Female. Unknown.

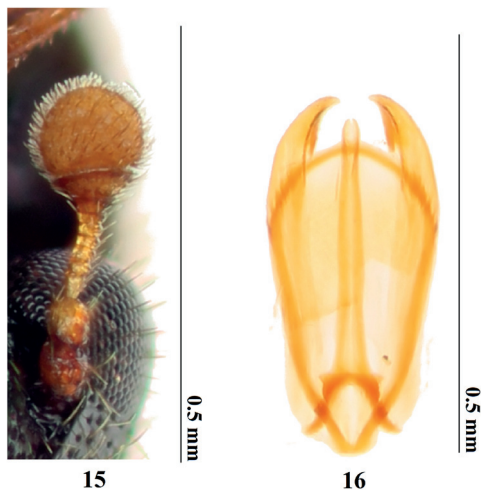
Etymology. The epithet is a patronym honouring Maxwell V. L. Barclay (BMNH), a British Coleopterist.

Differential diagnosis. The new species belongs to the nominotypical subgenus due to the structure of the terminal antennomere (Háva 2020b). It differs by its characteristic elytral colour, structure of antennae and male genitalia from other known Afrotropical *Orphinus* species. The new species is similar to *O. congoanus* Pic, 1950 and *O. geiseri* Háva & Matsumoto, 2021 with unicoloured brown elytra (without fasciae or spots), but differs in the following characters:

- 1) Elytra and pronotum covered with dark brown or black setation; male anterior pronotal angles visible from above *O. congoanus* Pic, 1950
Elytra and pronotum covered with yellowish-brown setation; male anterior pronotal angles not visible from above (2)
- 2) Terminal antennomere (Fig. 15) male genitalia (Fig. 16) *O. geiseri* Háva & Matsumoto, 2021
Terminal antennomere (Fig. 13) male genitalia (Fig. 14) *O. barclayi* sp. nov.

The next most similar species differ by the bicolorous elytra:

- Elytra black with orange-brown apical third *O. apicebrunneus* Háva, 2003
Elytra dark brown with light brown suture in the posterior 1/3 *O. holusai* Háva, 2016



Figs. 15-16. *Orphinus (Orphinus) geiseri* Háva & Matsumoto, 2021: 15- antenna; 16- genitalia, ventral view.

Thaumaglossa escalerae Herrmann & Háva, 2013

Material examined: 1 ♂: "LIBERIA 700m Putu Range, Mt. Jideh ridge, Grand Gedeh County 5°38'34.79"N;8°11'02.15"W 30-31.i.2018 // General Coll. Geiser,M., Sáfián, Sz., & Simonics, G., leg. ANHRT 28, LR-001, BMNH(E) 2018-39 // NHMUK014383845", J. Háva det., (BMNH).

Distribution. Species known from Ghana, Guinea Equatorial, Liberia and Zambia (Háva & Matsumoto 2020).

LIST OF DERMESTIDAE RECORDED FROM LIBERIA

Subfamily Attageninae

Attagenus fasciatus (Thunberg, 1795)

Subfamily Dermestinae

Dermestes (Dermestinus) maculatus DeGeer, 1774

Subfamily Megatomininae

Liberorphinus putuensis sp. nov.

Orphinus (Orphinus) barclayi sp. nov.

Thaumaglossa bimaculata Arrow, 1915

Thaumaglossa conradti Pic, 1927

Thaumaglossa escalerae Herrmann & Háva, 2013

ACKNOWLEDGEMENTS. The sampling and study of materials from Liberia was made possible thanks to the support of the African Natural History Research Trust (Leominster, UK) and Richard E. L. Smith. The paper was supported by the Ministry of Agriculture of the Czech Republic, institutional support MZE-RO0118. We would like to express thanks to Maxwell V. L. Barclay (BMNH) for comments on the manuscript.

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Received: 10.2.2021

Accepted: 30.3.2021

Printed: 5.10.2021

