

**Studies in the genus *Lorditomaeus* (Coleoptera: Scarabaeidae:  
Aphodiinae), with description of new species.  
Part 1: *opatroides*-species group**

Axel BELLMANN

Kirchlintelner Strasse 7a, D-28325 Bremen, Germany; e-mail: axellbellmann@t-online.de

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**Abstract.** Species of the genus *Lorditomaeus* Péringuey, 1901 in the *opatroides*-species group are revised. Four new species are described and illustrated: *Lorditomaeus bordati* sp. nov., *L. anetteae* sp. nov., *L. pseudopatroides* sp. nov. and *L. collartoides* sp. nov. A new name for *Aphodius deplanatus* Roth, 1851 is given: *Lorditomaeus rothi* nom. nov. New junior subjective synonyms are established: *Lorditomaeus basilewskyi* Balthasar, 1965 = *Lorditomaeus opatroides* (Klug, 1855), *L. tanganyicanus* Balthasar, 1965 = *Dilortomaeus setulosus* (Schmidt, 1908), *Aphodius aureopilosus* Boucomont, 1930 = *Brachiaphodius* [s.l.] *harpalinus* (Gerstaecker, 1884). Lectotypes are designated for *Aphodius opatroides* Klug, 1855, and *A. deplanatus* Roth, 1851. A neotype is designated for *Aphodius harpalinus* Gerstaecker, 1884. An identification key and a checklist to the species of the genus *Lorditomaeus* and *Dilortomaeus* Bordat, 2009 are given.

**Key words.** Taxonomy, revision, new species, new synonymy, catalogue, *Dilortomaeus*, Afrotropical region.

## INTRODUCTION

The genus *Lorditomaeus* was created by Péringuey (1901) with a single species, *Aphodius deplanatus* Roth, 1851. Péringuey (1901) restated the synonymy of Gemminger & Harold (1869) who placed *Aphodius opatroides* Klug, 1855 under *A. deplanatus*. In the first revision of the genus by Schmidt (1908), *Lorditomaeus* comprised nine species with seven new species, retaining *A. opatroides* as a synonym for *L. deplanatus*. In his monograph on the Aphodiinae, Schmidt (1922) listed *L. opatroides* as a valid species with *L. deplanatus* as a synonym. Schmidt (1922) also placed *Aphodius harpalinus* Gerstaecker, 1884 in *Lorditomaeus*. But, he had not studied specimens and did not include it in his identification key. Müller (1944) remarked that *A. harpalinus* is not a *Lorditomaeus*, considering it as a synonym of *Balthasarianus aureopilosus* (Boucomont, 1930). I agree with this placement, but the type of *A. harpalinus* is lost and a neotype is here designated to stabilize nomenclature.

There have been several revisions and identification keys presented for *Lorditomaeus* in the last hundred years: Schmidt (1908, 1922); Paulian (1942); Endrödi (1960, 1964); Balthasar (1965); Endrödi & Rakovič (1981); Bordat (1996, 2009). Authors for most of the older articles did not study types or male genitalia. Only Bordat (1996, 2009), in his revision of the *Lorditomaeus bifidus*-species group and description of *Dilortomaeus* Bordat, 2009 for some species previously in *Lorditomaeus* based species on male genitalia and a study of type material. Most earlier authors repeated the mistakes made by their predecessors and misinterpreted many species. The last revision of the entire genus was by Balthasar (1965), who included nineteen species for the genus *Lorditomaeus*. This is the first of several papers that will provide a current revision of all species in *Lorditomaeus*.

## MATERIAL AND METHODS

The specimens were examined with a Nikon SMZ 1270 stereomicroscope. The habitus photographs were taken with a Canon MP-E 65mm on a Canon EOS 7D Mark II and Zerene photo Stacker software. Photographs of epipharynx were taken with a Touptek Toupcam CMOS C-Mountcamera 16 MP on a Müller microscope.

Morphological terms for descriptions were adopted from Dellacasa et al. (2001). Exact label data are cited for most of the examined material. Lines within label (only for types) are separated by a vertical slash (/), each label (only for types) is separated by a double vertical slash (//), comments to label data are marked with [ ], information in quotation marks (“ ”) indicates the original spelling. The types are provided with a printed red label with new name and HOLOTYPUS/PARATYPUS. After studying types, it was obvious that many previous authors misinterpreted species, apparently basing species concepts on literature or on previous misidentifications. For this reason, several species names have lectotypes or neotypes designated to stabilize their concepts to a single specimen.

The studied material is deposited in the following public and private collections:

CAB	Collection Axel Bellmann (Bremen, Germany);
CAT	Collection Andreas Tschimmel (Zwickau, Germany);
CDD	Collection Marco & Giovanni Dellacasa, (Genoa, Italy);
CDR	Collection Dirk Rohwedder (Bonn, Germany);
CJW	Collection Jan Wieringa (Rijnsburg, Netherlands);
CME	Collection Ladislav Mencl (Týnec nad Labem, Czech Republic);
CLM	Collection Lukasz Minkina (Nowy Targ, Poland);
CMH	Collection Meindert Hielkema († Gouda, Netherlands);
CPB	Collection Patrice Bordat (Saint-Cirq, France);
CRS	Collection Rudolf Schuh (Katzelsdorf, Austria);
DEIC	Deutsches Entomologisches Institut, Müncheberg, Germany (L. Zerche, L. Behne);
MCSN	Museo Civico di Storia Naturale, Giacomo Doria, Genoa (R. Poggi);
MHNG	Muséum d'histoire naturelle, Geneva, Switzerland (G. Cuccodoro);
MKB	Museum Alexander König, Bonn, Germany (D. Ahrens);
MMB	Moravian Museum, Brno, Czech Republic (P. Baňáň);
MNHN	Muséum national d'Histoire naturelle, Paris, France (A. Mantilleri);
MNHB	Museum für Naturkunde an der Humboldt Universität, Berlin, Germany (J. Frisch, B. Jäger, J. Willers);
MRAC	Musée royal de l'Afrique Centrale, Tervuren, Belgium (M. De Meyer, S. Hanot);
MZLU	Biological Museum, Lund University, Sweden (Ch. Fägerström);
NMEC	Naturkundemuseum Erfurt, Germany (M. Hartmann);
NMPC	National Museum, Prague, Czech Republic (J. Hájek);
SMTD	Staatliches Museum für Tierkunde, Dresden, Germany (O. Jäger);
SMNS	Staatliches Museum für Naturkunde, Stuttgart, Germany (W. Schawaller);
ZSM	Zoologische Staatssammlung, Munich, Germany (M. Balke, L. Hendrich).

### ***Lorditomaeus Péringuey, 1901***

*Lorditomaeus* Péringuey, 1901: 436, 437.

TYPE SPECIES. *Lorditomaeus rothi* nom. nov. (= *Aphodius deplanatus* Roth, 1851 non *Aphodius deplanatus* Ménétries, 1832), by monotypy.

The species of the *Lorditomaeus opatroides*-species group share the following morphological characters:

- elytral stria 7 simple, not bifid;
- elytra without long erected setae on disc, at the most interval 2 and sometimes also the interval 4 on apical third with a row of long or short erected setae;
- body length more than 5 mm;
- male protibial apical spur truncate and hooked inwardly apically;
- each elytron with eight distinct visible striae.

Some species of this group differs only in male characters of the genitalia and/or head. Females of some species cannot be determined unless associated with males. For species identification,

characters of the setation on the pronotum and elytra are very important. This makes older and abraded specimens difficult to distinguish.

***Lorditomaeus opatroides* (Klug, 1855)**  
(Figs. 1–2, 17, 25, 34)

*Aphodius opatroides* Klug, 1855: 656 (original description).

*Lorditomaeus opatroides*: Schmidt 1922: 351 (new combination); Paulian 1942: 105, 107 (key and description); Endrödi 1960: 213, 216 (key and description); Endrödi 1964: 312 (key and description); Endrödi & Rakovič 1981: 60 (key); Dellacasa et al. 2001: 177 (key and description).

*Lorditomaeus basilewskyi* Balthasar, 1965: 181 (type locality: “Park National de Upemba, Mabwe, Congo); **syn. nov.**

TYPE LOCALITY. “Sena [Sinna, Mozambique]”.

TYPE MATERIAL EXAMINED. ***Aphodius opatroides***: **Lectotype**, ♂, here designated: “26038 [white label, printed] || Type [red label, printed] || Sinna Peters [blue label, handwritten] || *A. opatroides* Kl. [white label, handwritten] || *Lorditomaeus opatroides* [white label, handwritten] || Lectotypus | *Aphodius opatroides* Klug | design. Landin 1986 [in litteris] [red label, (Lectotypus) printed, residual handwritten] || *Lorditomaeus opatroides* | B. O. Landin det. [white label, handwritten] || Zool. Mus. Berlin [white label, printed] || LECTOTYPUS | *Aphodius | opatroides* Klug | des. A. Bellmann 2012 [red label, printed] || *Lorditomaeus | opatroides* (Klug) | det. Bellmann 2012 [white label, printed]” (MNHB). **Paralectotypes**, here designated, 1 ♂, 5 ♀: “26038 || Sinna Peters || Paralectotypus | *Aphodius opatroides* Klug | design. Landin 1986 [in litteris] || *Lorditomaeus | opatroides* det. B. O. Landin || Zool. Mus. Berlin || *Aphodius | opatroides* Klug | PARALECTOTYPUS || A. Bellmann des. 2012 || *Lorditomaeus opatroides* (Klug) | det. A. Bellmann 2012<sup>4</sup>, 6 exs. (MNHB).

***Lorditomaeus basilewskyi***: **Holotype**, ♂: “HOLOTYPUS || Congo belge: P.N.U. | Mabwe (585 m.) 22-XI-1948 | Mis. G.F. de Witte 1970a || MUS. ROY. AFR. CENTR. || *Lorditomaeus | basilewskyi* n.sp. | det. 1965 V. Balthasar || *Lorditomaeus | basilewskyi* | n.sp. Balth. | Holotypus || *Lorditomaeus | opatroides* (Klug) | det. Bellmann 2012<sup>4</sup> (MRAC).

ADDITIONAL MATERIAL EXAMINED. **Angola**: Western Prov., Lusu. (CPB). **Botswana**: Kasane (MNHB), Kazungula (CAB). **Cameroon**: Maroua (CPB). **Democratic Republic Congo**: Mabwe (MRAC, NMPC, CAB), Kaswabilenga (MRAC), Manyama (MRAC), Nyunzu (MRAC), Musosa (MRAC), Albertville (NMPC, ZSM), Belg. Congo (ZSM). **Central African Republic**: Ubangi-Chari (NMPC). **Malawi**: Salima (CAB). **Mozambique**: Sinna [Sena], (MNHB); Manje (MMB), Mozamb. (MCSNG). **Namibia**: Caprivi (CME). **Tanzania**: Mikumi NP (SMNS, CAB), Rukwa (MZLU). **Zambia**: Luangwa NP (MNHB), Mazabuka (CAB), Choma (CAB), Kafue NP (CAB). **Zimbabwe**: Victoria Falls (MNHB, CPB, CAB), Karoi (CAB, CDD), Guro (MMB).

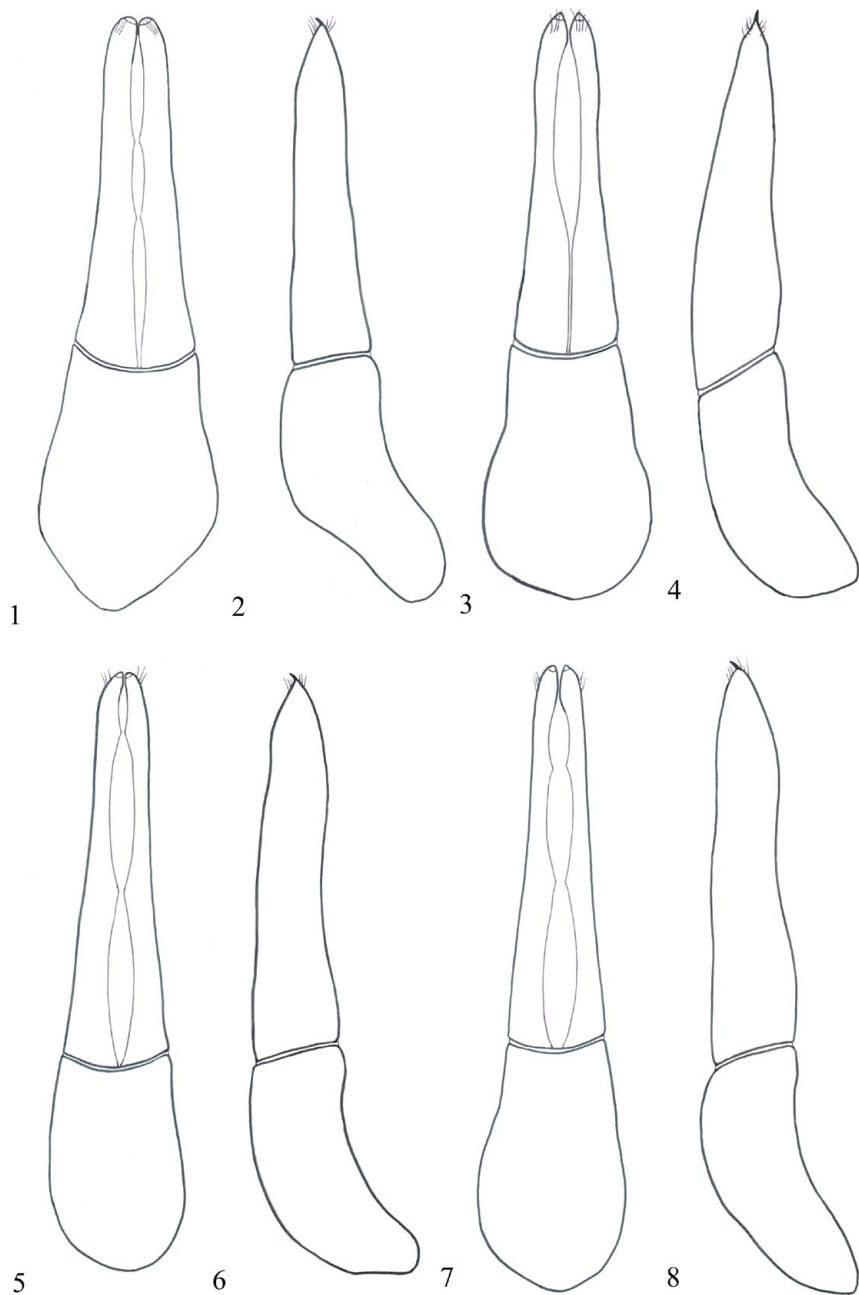
**DESCRIPTION**. Body length 5.5–7.0 mm, broadly oval, feebly convex. Pronotum and elytra widely explanate sides. Dorsal surface microreticulate, weakly shiny, elytra mostly dull, setaceous. Colour light-brown, head, pronotum and elytra with pale lateral margins; elytral intervals 2, 3, 6 and 7 basally yellowish.

**Male**. Habitus as in Fig. 25. Head transverse with gibbous epistome; anterior margin feebly sinuate at middle, widely rounded at sides with feebly upturned border; genae rounded; eyes distinctly protruding and elongately bristled. Punctuation simple with larger elongate setigerous punctures on epistome and behind frontal suture. Frontal suture grooved, not tuberculate.

Pronotum transverse, explanate at sides; punctuation dense with moderately large piliferous punctures; anterior margin with a belt of large punctures elongately setigerous. Disc without erected setae. Lateral margins bordered; feebly rounded, nearly straight; posterior angles rounded, elongately bristled; basal margin not bordered, but with row of bristled punctures, punctures more elongate near posterior angles and scutellum.

Scutellum narrow, triangular, with microreticulation.

Elytral intervals nearly flat, finely punctured, setation biseriata, only interval 1 and 8 and apical third mainly uniseriate; second to seventh interval on basal two thirds with two or three rows of fine nearly invisible setation, interval 7 in apical half, 1 and 8 entirely with sparse setation longer and more erected. Interval 8 distinctly visible, as wide as stria 7. Interval 2 in apical third with



Figs. 1–8. Aedeagus, dorsal and lateral. 1–2 – *Lorditomaes opatroides* (Klug, 1855). 3–4 – *Lorditomaes anetteae* sp. nov. 5–6 – *Lorditomaes bordati* sp. nov. 7–8 – *Lorditomaes rothi* nom. nov.

row of longer erect yellowish setae being as long that the width of interval 1 on disc (Fig. 34). Elytral striae rather wide, feebly crenulated.

Legs. Protibia apical spur truncate and hooked inwardly apically. Metatibia superior apical spur shorter than basal metatarsomere, latter longer than following three combined.

Metaventral plate flat, shiny, with fine microreticulation, medially with distinct impressed line; anterior third with dense punctures, posterior two thirds with few punctures. Punctures with short depressed seta; laterally with two or three large punctures with long erect setae.

Aedeagus (Figs. 1–2) with elongate, feebly concave, nearly straight parameres in dorsal view; nearly straight dorsally, ventrally convex, sinuate near the middle, tapering to the apex, apices bent upwards in lateral view.

**Female.** Protibia apical spur slender and acuminate apically, not hooked. Head rather narrow, epistome with coarser punctation.

**DIAGNOSIS.** This species is similar to *Lorditomaeus anetteae* sp. nov. and *Lorditomaeus pseudopatroides* sp. nov. *L. opatroides* can be distinguished from *L. anetteae* sp. nov. in lacking a short row of erected setae in apical third on interval 4 and setation on elytral disc. In *L. pseudopatroides* sp. nov. the male head is trapezoid compared to semi-circular at *L. opatroides*. Additional characters for differentiation are in the key below.

**DISCUSSION.** In his revision of the genus *Lorditomaeus*, Balthasar (1965) wrote for *L. opatroides*: “Zwischenräume der Flügeldecken der ganzen Länge nach sehr kurz behaart, ...” [“Elytral intervals with very short hairs along entire length, ...”]. Based on a study of the type of *L. opatroides*, this statement is not correct. *Lorditomaeus opatroides* has nearly invisible, fine setation on elytral disc and longer setae on the interval 2, character states present on *L. basilewskyi*. In Balthasar’s collection at the NMPC, all specimens he identified as “*L. opatroides*” have long erected setae on the intervals 2 and 4. Balthasar (1965) must not have studied types and misinterpreted his materials. He attributed the name “*L. opatroides*” to the new species *L. bordati* sp. nov., while he described the real *L. opatroides* as *L. basilewskyi*.

### ***Lorditomaeus rothi* nom. nov.**

(Figs. 7–8, 20, 28, 38)

*Aphodius deplanatus* Roth, 1851, 131 (original description) (primary homonym of *Aphodius deplanatus* Ménétries, 1832, see Dellacasa et al. 2001: 177).

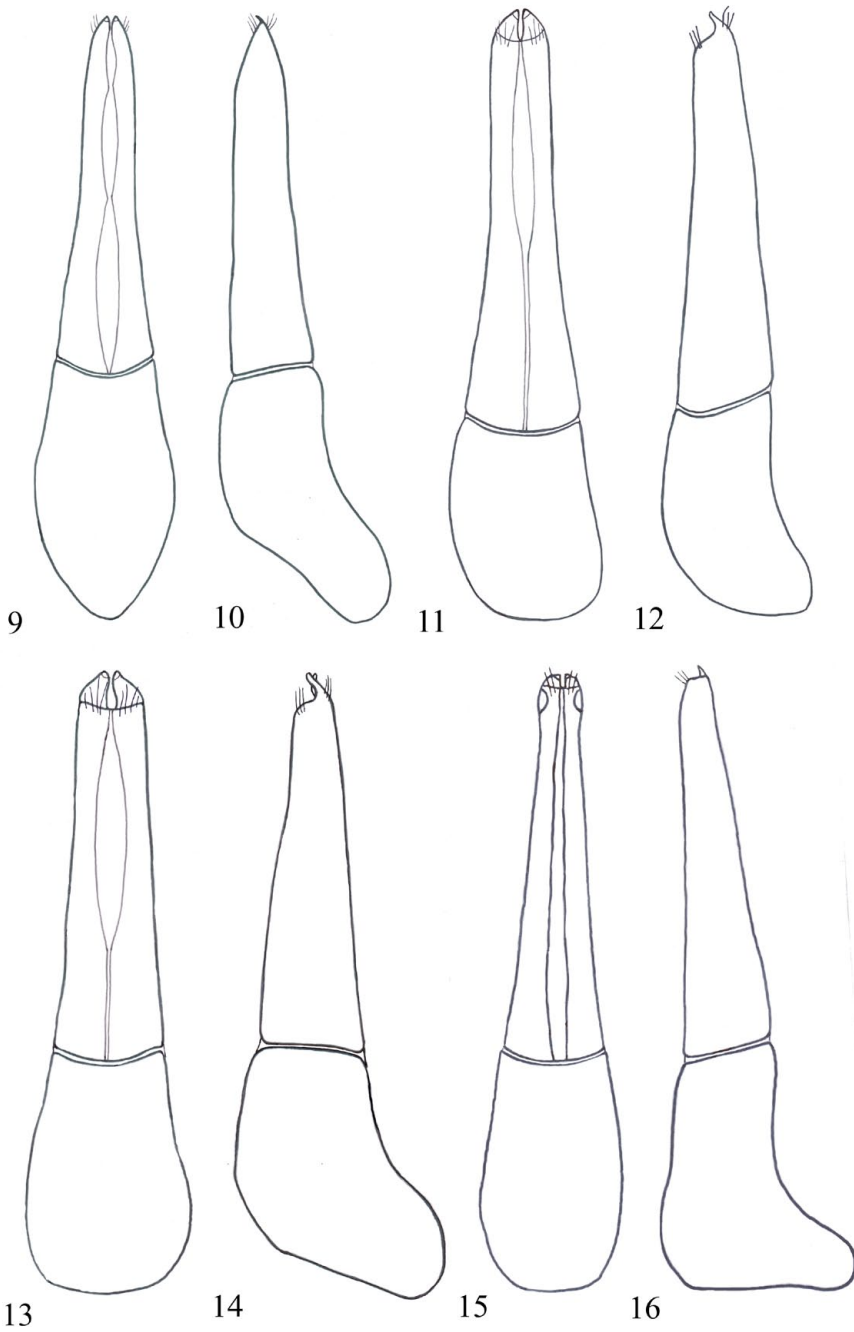
*Aphodius deplanatus*: Gemminger & Harold 1869: 1046 (catalogue); Harold 1874: 188, 189 (description and taxonomic notes).

*Lorditomaeus deplanatus*: Péringuey 1901: 437, 438 (new combination); Schmidt 1908: 232, 237 (key and description); Schmidt 1910: 68 (catalogue).

**NOTE.** *Aphodius deplanatus* Ménétries, 1832 and *Aphodius deplanatus* Roth, 1851 are primary homonyms. The junior homonym, *Aphodius deplanatus* Roth, 1851, is permanently invalid and should be replaced. I propose the following replacement name: *Lorditomaeus rothi* **nom. nov.** for *Aphodius deplanatus* Roth, 1851, not Ménétries, 1832.

**TYPE LOCALITY.** “Abyssinia”.

**TYPE MATERIAL EXAMINED.** **Lectotype** for *Aphodius deplanatus*, ♀, here designated: “Abyssinia | *A. deplanatus* | Typi Roth [white label, handwritten] || Lectotypus *Aphodius deplanatus* | Roth design. Landin 1971 [*in litteris*] [red label, handwritten] || Zool. Staatsslg. München (ZSM) [blue label, printed] || *Aphodius* | *deplanatus* Roth | LECTOTYPE | A. Bellmann det. 2012 [red label, printed] || *Lorditomaeus* | *rothi* nov. nom. | det. A. Bellmann 2012 [white label, printed]” (ZSM). **Paralectotype** (female), here designated: “Abyssinia [white label, handwritten] || Paratypus | *A. Lorditomaeus deplanatus* Roth [white label with red margins, handwritten] || Paralectotype | *Aphodius* | *deplanatus* Roth | design. Landin [19]66 [*in litteris*] [white label with red border, handwritten] || *Lorditomaeus* | *deplanatus* (Roth) | B. O. Landin



Figs. 9–16. Aedeagus, dorsal and lateral. 9–10 – *Lorditomaeus collartoides* sp. nov. 11–12 – *Lorditomaeus collarti* Boucomont, 1932. 13–14 – *Lorditomaeus ellenbergeri* Paulian, 1942. 15–16 – *Lorditomaeus pseudopatroides* sp. nov.

det. [white label, handwritten] || Zool. Staatsslg. München (ZSM) [blue label, printed] || *Aphodius* | *deplanatus* Roth | PARALECTOTYPE | A. Bellmann det. 2012 [red label, printed] || *Lorditomaeus* | *rothi* nov. nom. | det. A. Bellmann 2012 [white label, printed]" (ZSM).

ADDITIONAL MATERIAL EXAMINED. **Eritrea**: Eritrea Ghinda 30.VII.1915, A. Mochi, 5 exs. (CDD); Eritrea Ghinda, II.1916, A. Mochi, 10 exs. (CDD, CAB); Eritrea Ghinda III.1906, D. Figini, 56 exs. (MCSNG, CDD, CAB); Ghinda Erythraea, 1 ex. (MHNG); Asmara Erythraea, 2 exs. (MHNG). **Ethiopia**: Abyssinie, Schimper 1850, 29 exs. (MNHN, CAB); Abyssinie Schimper, 1 ex. (MNHN); Abessinien Dr. Will, 1 ex. (MNHB); Abyssinia, 3 exs. (SMTD); Ethiopia Bahar Dar, Juli 1968 O. Sebald leg., 1 ex. (SMNS); Abyssinia, 1 ex. (MKB); [Ethiopia] Dai Badditu a Dimé V–VII.[18]96, Bottego, 1 ex. (MCSNG). **Kenya**: Afrique orient. Angl., Kenya (s.-o.) Prairies 2.000 M., Nyère, Ch. Alluaud 1909, 7 exs. (MNHN, CAB). **Tanzania**: Tanzania mer. occ., pr. Mbeya, 2006, 35 km NE of Mbeya 8°46'S; 33°41'E, 1650 m, leg. F. Kanthner, 1 ex. (SMNS); Tanzania – Ruaha NP, 800/1000 m, 2.XII.1989, R. Mourglia legit, 2 exs. (CDD); Tanzania (EAT) Ruaha NP, Iringa 800/1000 m, 08.01.1993, leg. R. Mourglia, 1 ex. (CDD). **Uganda**: Bussu Busoga, 1909, Dre E. Bayon, 2 exs. (CDD).

ETYMOLOGY. The name is dedicated to Dr. J. R. Roth, who described this species in the year 1851.

DESCRIPTION. Body 6.0–7.0 mm, broadly oval, feebly convex. Pronotum and elytra explanate sides. Dorsal surface with microreticulation, weakly shiny, setaceous. Colour light-brown, head, pronotum and elytra with pale lateral margins, elytral interval 2, 3, 6 and 7 basally yellowish.

**Male**. Habitus as in Fig. 28. Head with gibbous epistome; anterior margin feebly sinuate at middle, widely rounded at sides with feebly upturned border; genae rounded; eyes distinctly protruding and elongately bristled. Punctuation simple with few larger elongate setigerous punctures on epistome; coarse punctures only behind frontal suture. Frontal suture grooved, not tuberculate and with coarse punctures.

Pronotum transverse, explanate at sides; punctuation dense with large piliferous punctures; anterior margin with a belt of large punctures elongately setigerous (Fig. 38). Disc without erected setae. Lateral margins bordered; feebly rounded, nearly straight; posterior angles rounded, elongately bristled; basal margin not bordered, but with a row of bristled punctures, more elongate near posterior angles and scutellum.

Scutellum narrow triangular with microreticulation. Elytral intervals nearly flat, finely punctured, setation biseriata, only interval 1 and 8 and apical third uniseriate; second to seventh interval on basal two thirds mostly with distinct setation, at least at base; interval 1, 7 and 8 and on apical third of all intervals with sparse setation longer and more erect. Interval 8 as wide as stria 7. Interval 2 in apical third and sometimes also interval 4 in the front part of the apical third with row of long erect yellowish setae, hairs as long as interval 2 on disc wide. Elytral striae rather wide, feebly crenulated.

Protibia externally with three large triangular teeth and some small denticles; apical spur longer than wide, truncate, hooked inwardly apically. Basal metatarsomere as long as the following three combined, longer than superior spur.

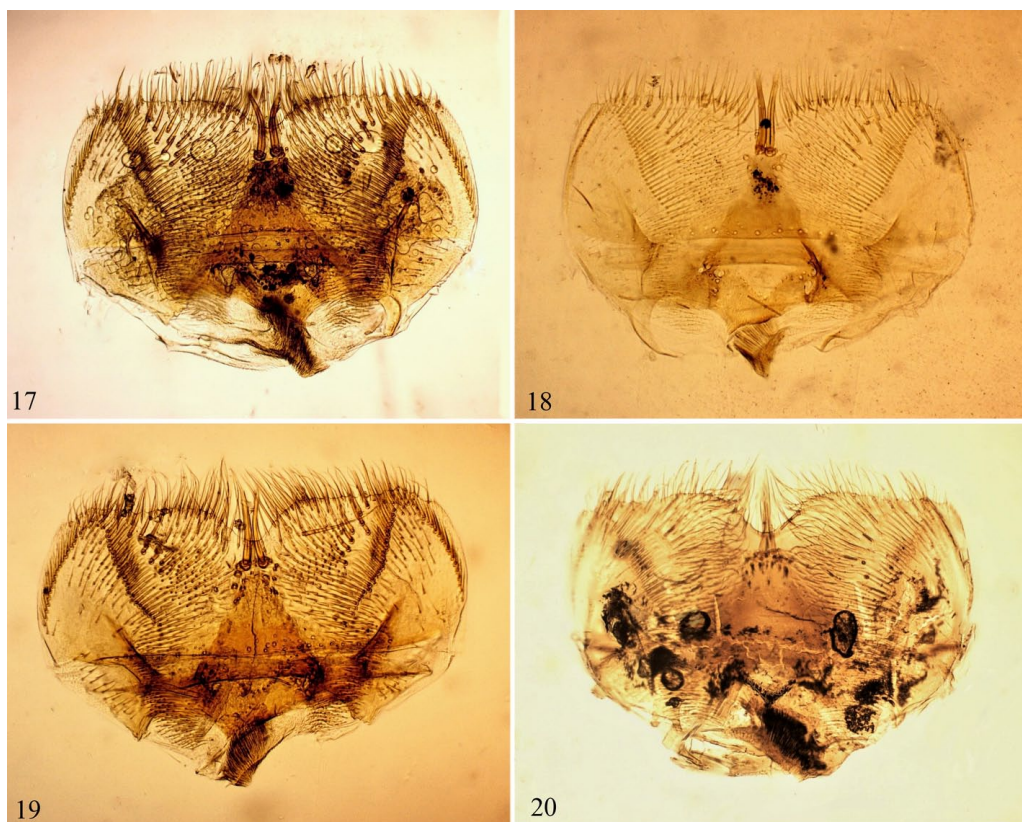
Metaventral plate flat, shiny, with fine microreticulation, medially with distinct impressed line; anterior third with dense punctures, posterior two thirds with few punctures. Punctures with short depressed setae; laterally with two or three large punctures with long erect setae.

Aedeagus (Figs. 7–8) with elongate, nearly straight parameres in dorsal view. In lateral view nearly straight dorsally, feebly bent downwards near apex, convex ventrally, widely sinuate near the middle, apices bent upwards in lateral view.

**Female**. Protibia apical spur slender and acuminate apically.

DIAGNOSIS. This species is similar to *Lorditomaeus bordati* sp. nov. It differs from *L. bordati* in lacking long erected setae on pronotal disc. Additional characters for differentiation are in the key below.

DISCUSSION. The male genitalia of *L. rothi* and *L. bordati* are nearly similar, but the constancy in the morphological characters (body size, setae on pronotal disc) with no intermediate characters observed are evidence these are distinct species. The Lectotype and the Paralectotype of *L. deplanatus* in the ZSM are females in bad condition. However, in the MNHN are 29 specimens with following data: “Abyssinie, Schimper 1850”. In a summary, Roth (1851) wrote that all beetles are collected by W. Schimper, who lives in Abyssinien. It appears the specimens in the MNHN are the same species from the same series as the types in ZSM but were not studied by Roth. In this material there are many males and females in good condition, which allowed me to study characters not readily visible on the types and to study males of the species.



Figs. 17–20. Epipharynx. 17 – *Lorditomaeus opatroides* (Klug, 1855). 18 – *Lorditomaeus anetteae* sp. nov. 19 – *Lorditomaeus bordati* sp. nov. 20 – *Lorditomaeus rothi* nom. nov.



***Lorditomaeus anetteae* sp. nov.**

(Figs. 3–4, 18, 26)

TYPE LOCALITY. “Ethiopia, Arba Minch”.

TYPE MATERIAL EXAMINED. **Holotype**, ♂: “Ethiopia – 14.5.2013 | 20 km N Arba Minch | Martinu Ivo lgt. || *Lorditomaeus* | *anetteae* sp. n. | HOLOTYPE | det. A. Bellmann 2020” (CAB). **Paratypes**, ♂, ♀: **Ethiopia**: same data as holotype, 3 exs. (CAB); “Ethiopia S | 20 km N Arba Minch | 14.5.2014, leg. S. Prepsl”, 2 exs. (CLM); “Ethiopia – 13.5.2013 | 23 km E Jinka | Martinu Ivo lgt.”, 1 ex. (CAB); “Ethiopia | Gamo Gofa Prov. Key Afer | leg. Werner 21.VI.2007”, 2 exs. (CAB); “Äthiopien: Prov. Gambela | 30 km W Abobo | 30.12.1984 | leg. Rybalov”, 2 exs. (SMNS, CAB); “SW Ethiopia | Southern Nations Prov. near Woito | 13.V.2013”, 1 ex. (CAB). **Sudan**: “Soudan: Disa | leg. Alliston”, 4 exs. (CPB, CAB).

ETYMOLOGY. The new species is dedicated to my wife Anette.

**DESCRIPTION.** Body length 5.6–6.5 mm, broadly oval, feebly convex. Pronotum and elytra moderate explanate sides. Dorsal surface with microreticulation, weakly shiny, setaceous. Colour light-brown, head, pronotum and elytra with pale lateral margins; elytral interval 2, 3 and 7 basally yellowish.

**Male.** Habitus as in Fig. 26. Head transverse with weakly gibbous epistome; anterior margin feebly sinuate at middle, widely rounded at sides with feebly upturned border; genae rounded; eyes distinctly protruding and elongate bristled. Punctuation simple with few larger elongate setigerous punctures on epistome, coarse punctures in front of and behind frontal suture. Frontal suture grooved, not tuberculate.

Pronotum transverse, weak explanate sides; punctuation dense with moderately large piliferous punctures, pilosity procumbent; anterior margin with a belt of large punctures elongate setigerous. Disc without erected setae. Lateral margins bordered; feebly rounded, nearly straight; posterior angles rounded, elongately bristled; basal margin not bordered, but with row of bristled punctures, latter more elongate near posterior angles and scutellum.

Scutellum narrow triangular, microreticulate, basal shortly bristled. Elytral intervals nearly flat, finely punctured, setation biseriate, only interval 1 and 8 and apical third uniseriate; second to seventh interval on basal two thirds with two or three rows of distinct setation; setation on interval 1, 7 and 8 on apical third sparse, longer and more erected. Interval 8 distinct visible, as wide as stria 7. Interval 2 in apical third with a row of longer erect yellowish setae, interval 4 in the anterior part of the apical third with short row of long erect yellowish setae. Erected setae on interval 2 shorter, shorter as interval 2 on disc wide. Elytral striae rather wide, feebly crenulated.

Protibia externally with three large triangular teeth and some small denticles; apical spur longer than wide, truncate, hooked inwardly apically. Basal metatarsomere as long as the following three combined, longer than superior spur.

Metaventral plate flat, shiny, with fine microreticulation, medially with distinct impressed line; anterior third with dense punctures, posterior two thirds with few punctures. Punctures with short depressed setae; laterally with two or three large punctures with long erect setae.

Aedeagus (Figs. 3–4) with elongate, feebly concave parameres in dorsal view. In lateral view feebly convex dorsally, feebly convex ventrally, weakly sinuate near the middle, tapering to the apex, apices straight forward in lateral view.

**Female.** Protibia apical spur slender and acuminate apically, not hooked. Pronotal punctuation less dense with larger piliferous punctures.

**DIAGNOSIS.** The new species is similar to *L. opatroides* and *L. pseudopatroides* sp. nov. It can be distinguished from the *L. opatroides* in having short row of erected setae in apical third on interval 4 and distinct visible setation on elytral disc. In *L. pseudopatroides* the male head is trapezoid

compared to semicircular in *L. anetteae* sp. nov. Additional characters for differentiation are in the key below.

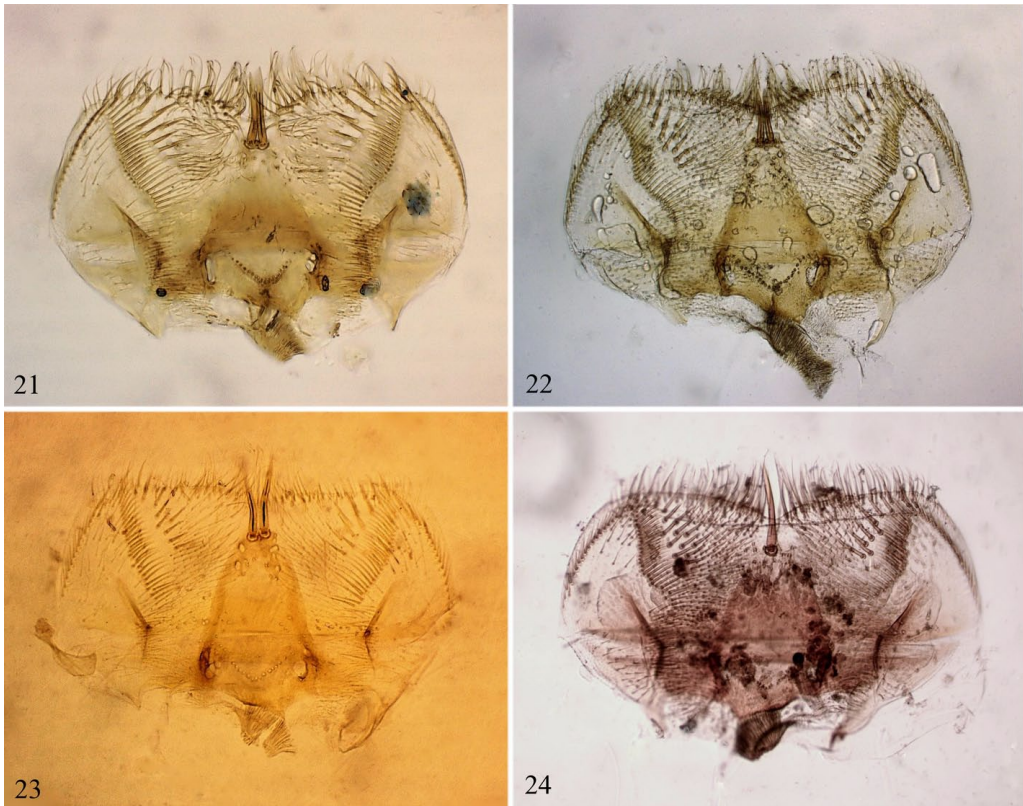
***Lorditomaeus bordati* sp. nov.**

(Figs. 5–6, 19, 27, 33, 39)

“*Lorditomaeus opatroides*”: Balthasar 1965: 184. (key and description).

TYPE LOCALITY. “Ethiopien, Prov. Ilubabor, Umg. Bedele”.

TYPE MATERIAL EXAMINED. **Holotype**, ♂: “Ethiopien, Prov. Ilubabor | Umg. Bedele, 1860 m, L. A. Puchner 13.–15.VII. [20]05 || *Lorditomaeus | bordati* sp. n. | HOLOTYPE | det. A. Bellmann 2009” (CAB). **Paratypes**, ♂, ♀: **Ethiopia**: same data as holotype, 13 exs. (CAB, CRS); “Coll Museum Tervuren | Ethiopie: Kaffa Prov. | Jimma, VII/VIII.1971 | G. de Rougemont”, 4 exs. (CPB, CAB); “Ethiopia | Kaffa Prov. | Jimma | IV.1988 | Werner K. leg.”, 2 exs. (CDD); “Ethiopia-prov. Kaffa | Mizan Teferi | 6.–8.IV.2002 lgt. Malec”, 1 ex. (CME); “Ethiopia | Gembi nr. Agaro | 15.6.1963 Linnavouri / ad lucem”, 9 exs. (NMPC, CAB); “Awasa Ethiopie | 3.VIII.[19]76 Cambefort Coll.” 3 exs. (CPB); “Abessynia | Prov. Wallega 1800 m”, 1 ex. (NMPC); “Deplanatus Roth | Abyssin. (Roth) | v. Harold || 26039 || Type”, 1 ex. (MNHB);



Figs. 21–24. Epipharynx. 21 – *Lorditomaeus collartoides* sp. nov. 22 – *Lorditomaeus collarti* Boucomont, 1932. 23 – *Lorditomaeus ellenbergeri* Paulian, 1942. 24 – *Lorditomaeus pseudopatroides* sp. nov.

“Abessinien | Dr. Will”, 1 ex. (MNHB); “Nubien | Platara. [?] || deplanatus Roth | Nubia”, 1 ex. (MNHB); “Abyssinien || Coll. C. Felsche | Kauf 20, 1918”, 1 ex. (SMTD); “Gimiran [?] || Coll. C. Felsche, Kauf 20, 1918”, 1 ex. (SMTD); “Juddo Uollega | 1900 m IV–V || Abyssinien 1938 | Prov. Wallega [Welega] | F.B. Neuhaus”, 2 exs. (ZSM), “Abyssinie merid. | Pays Sidamo (Alt. 1300–2000 m) | Mission du Bourc de Bozas 1903”, 1 ex. (MNHN); “Abyssinie Mission de Bonchamps | Ch. Michel & M. Potter 1899”, 1 ex. (MNHN); “Eth. Wadera | 5°47'N 39°18'E | leg. Borghesio || 24/5/1995 – 1800 m | st. bovino | Foresta”, 24 exs. (CDD, CAB); “Ethiopia Sokora | 5°37'N 39°18'E | leg. Borghesio || 14/4/1995 – 1400 m | st. bovino | Boscaglia ad Acacia”, 7 exs. (CDD, CAB); “Ethiopia Dole | 5°54'N 38°55'E | leg. Borghesio || 19/5/1995 – 1700 m | st. bovino | Residui foresta”, 2 exs. (CDD); “Eth. Italia | 5°57'N 38°59'E | leg. Borghesio || 20/5/1995 – 1875 m | st. bovino | Boscaglia/ Pascolo”, 1 ex. (CDD); “Bahar dac Tana | VII-95 G. Guiglia”, 3 exs. (CDD); “Ethiopia | Arsi region VI.1990 | Koffele 2400 m | Werner K. leg.”, 8 exs. (CDD, CAB); “Bale reg. (Eth.) | Adaba, m 2700 | VI.1990 | leg. Werner K.”, 24 exs. (CDD, CAB); “Ethiopia | Illubabor Prov. | 12 km SW Bedele | IV.1993 | Werner K. leg.”, 19 exs. (CDD, CAB); “Ethiopia | Illubabor Prov. | 60 km SSE Bedele | IV.1993 | Werner K. leg.”, 3 exs. (CDD); “Ethiopia prov. Illubabor | Bedele 24.–26.3.2002 | lgt. Malec”, 2 ex. (CME); “Ethiopia EIP | 3 km n Bedele | N8°28.591' || E36°20.497 | 10.07.2015/2050 m | leg. R. Beck, R. Wanninger”, 19 exs. (CAT, CAB); “E-Ethiopia, Hararge | Hirna, KaraJara | 2180m, 20.IV.2006 | leg. R. Beck”, 1 ex. (CAB); “Ethiopia Prov. | Illubabor, Metu | 30.3.2002 lgt. Malec”, 2 ex. (CME); “Ethiopia | Shoa Prov. | 2400 m Ambo/ Guder | VII.1990 | Werner K. leg.”, 3 exs. (CDD); “Ethiopia | Arsi Region VI.1990 | Wondo Genet, 1850 m | Werner K. leg.”, 7 exs. (CDD, CAB); “S. Ethiopia Gidole Prov. | Gamu Gofa, 2200 m | 37°26'E 5°34'N, 23.II. | 5.III.1960 W. Richter leg.”, 1 ex. (SMNS); “Sidamo Prov. (Eth.) | near Dilla | VI.1994 | leg. Werner”, 19 exs. (CDD, CAB); “Äthiopien: | Ambo 2250 m | 13.10.1990 leg. Rybalov”, 1 ex. (SMNS); “Ethiopia-W | 2170m, 30 km S Nekemte | N 08°54' E 36°27' | lgt. J. Halada, 4.IV.2007”, 4 ex. (CME, CLM); “Ethiopia | 22 km nw Dola-Mena | N 06°35', E 039°45' | 28.05.2015, 1750 m. | A. Kudrna Jr. lgt.”, 1 ex. (CAB); “Ethiopia S. 2400 m, Dorze Lodge | 25 km N of Arba Minch, 2400 m | leg. Maior 7.–11.4.2016”, 8 exs. (CAB); “Ethiopia, SNNSP st. | Arba Minch-Dorze | N06°10'E37°35', 2340m | leg. J. Halada 3.4.2016”, 7 exs. (NME, CAB); “Ethiopia-S | S of Umer, 1200m | 06°54'N 40°51'E | J. Halada leg., 30.–31.5.2015”, 1 ex. (NME); “Ethiopia-SW | 70 km S Jima (N.P.), 1230m | 7.–8.V.2015 J. Halada leg.”, 2 exs. (NME); “Ethiopia 1 (pro ABCJCH) | 30 km S Nekemte | 04.–05.04.2007 | leg. Arnošt Kudrna, junior | Coll. & Det. Ing. Jiří Chromý”, 13 exs. (MMB, CAB); “Ethiopia | 40 km W Bonga | 01.04.–01.05.2007 | A. Kudrna jr. lgt.”, 12 exs. (MMB, CAB); “Ethiopia, 3 ABCJCH | 6 km E Tepi 07.–08.4.2007 | leg. Arnošt Kudrna jr. | Coll. & Det. Ing. Jiří Chromý”, 14 exs. (MMB, CAB); “Ethiopia, 2 ABCJCH | 15 km SW Bedele | 05.04.2007 | leg. Arnošt Kudrna jr. | Coll. & Det. Ing. Jiří Chromý”, 18 exs. (MMB, CAB); “Ethiopia, 4 ABCJCH | Near Betela | 08.04.2007 | leg. Arnošt Kudrna jr. | Coll. & Det. Ing. Jiří Chromý”, 1 ex. (MMB); “Ethiopia, 14 ABCJCH | 30 km NE Sodo | 20.04.2007 | leg. Arnošt Kudrna jr. | Coll. & Det. Ing. Jiří Chromý”, 18 exs. (MMB, CAB); “Arussi Galla | A. Ganale Gudda | III.V.[18]93, V. Bottego || Museo Civ. | Genova”, 1 ex. (MCSNG).

**ETYMOLOGY.** The new species is dedicated to my colleague Patrice Bordat, specialist in the Afrotropical Aphodiinae, who gave me the inspiration and much support for this work.

**DESCRIPTION.** Body 6.6–7.7 mm, broadly oval, feebly convex. Pronotum and elytra explanate sides. Dorsal surface with microreticulation, weakly shiny, setaceous. Colour brown, head, pronotum and elytra with pale lateral margins; elytral interval 2, 3, 6 and 7 basally yellowish.

**Male.** Habitus as in Fig. 27. Head transverse with weakly gibbous epistome; anterior margin feebly sinuate at middle, widely rounded at sides with feebly upturned border; genae rounded; eyes distinctly protruding and elongately bristled. Punctuation simple with few larger elongate setigerous punctures (mostly with two setae) on epistome and behind frontal suture. Frontal suture grooved, not tuberculate.

Pronotum transverse, explanate sides. Punctuation double and dense with large piliferous punctures, pilosity procumbent; anterior margin with belt of large punctures elongately setigerous. Disc with long erected setae (Fig. 39). Lateral margins bordered; feebly rounded, nearly straight; posterior angles rounded, elongately bristled; basal margin not bordered, but with a row of bristled punctures, more elongate near posterior angles and scutellum.

Scutellum narrow triangular, microreticulate, basal shortly bristled.

Elytral intervals nearly flat, finely punctured, setation biseriata, only interval 1 and 8 on apical third uniseriate; second to seventh interval on basal two thirds with distinct setation; elytra on interval 1, 7 and 8 and on apical third of all intervals with sparse pubescence longer and more erect. Interval 2 in apical third and interval 4 in the front part of the apical third with a row of long

erect yellowish setae (Fig. 33). This seta nearly twice the length of the width of the interval 2 on disc. Interval 8 distinct, as wide as stria 7. Elytral striae rather wide, feebly crenulated.

Protibiae externally with three large triangular teeth and some small denticles; apical spur longer than wide, truncate, hooked inwardly apically. Basal metatarsomere as long as the following three combined, longer than superior spur.

Metaventral plate flat, shiny, with fine microreticulation, medially with distinct impressed line; anterior third with dense punctures, posterior two thirds with few punctures. Punctures with short depressed setae; laterally with two or three large punctures with long erect setae.

Aedeagus (Figs. 5–6) with elongate, nearly straight parameres in dorsal view. In lateral view nearly straight dorsally, bent downwards near apex, convex ventrally, widely sinuate near the middle, apices bent upwards in lateral view.

**Female.** Protibia apical spur slender and acuminate apically, not hooked.

**DIAGNOSIS.** The new species is very similar to *L. rothi* and can be distinguished in having long erected setae on pronotal disc. Additional characters for differentiation are in the key below. See the discussion at *L. rothi*.

**DISCUSSION.** See the Discussion under *L. opatroides*.

### ***Lorditomaeus collarti* Boucomont, 1932**

(Figs. 11–12, 22, 30, 35)

*Lorditomaeus collarti* Boucomont, 1932: 52 (original description).

*Lorditomaeus collarti* Balthasar, 1965: 186 (key and description).

*Lorditomaeus opatroides* ssp. *collarti*: Paulian 1942: 105, 107 (new subspecies, key and description).

*Lorditomaeus opatroides* ab. *collarti*: Endrődi 1960: 213, 216 (new aberration, key and description); Endrődi 1964: 306, 312 (key and description).

*Lorditomaeus opatroides* ab. *scutellaris*: Endrődi 1957: 218 (new aberration, catalogue); Endrődi 1960: 213, 216 (key and description); Endrődi 1964: 312 (key and description).

**TYPE LOCALITY.** “Congo, Lomami, Kamina”.

**TYPE MATERIAL EXAMINED.** **Holotype**, ♂: “HOLOTYPUS || MUSÉE DU CONGO | Lomami; Kamina | 1930 R. Massart || R. DÉT. 2071 G || Boucomont det. 1932 | *Lorditomaeus* | *collarti* n. sp.” (MRAC).

**ADDITIONAL MATERIAL EXAMINED.** **Democratic Republic Congo:** Ituri (MRAC); Uelé (MRAC); Haut Uelé Watsa (MRAC); Stanleyville a Kilo (MRAC); Elisabethville (MRAC, NMPC, MHNG); Katanga V. Lubumbashi (MRAC); Katanga Kundelungu (MRAC); Kipiri (MRAC); Kaniama (MRAC). **Ethiopia:** Wallega (ZSM); **KENYA:** Lake Nakuru NP (CDD, CAB); Chingola (CME). **Malawi:** Nyika NP (MNHB, CAB, CPB); Plateau de Zomba (MNH, CAB); Mt. Mulanje (CDD). **Tanzania:** Dodoma (CAB); Songea (MHNG, CAB); Babati (CAB); Pungani (MNHB, CAB). **Zambia:** Mutanda Falls (CAB); Solwezi (CME, CAB); Kipirin Mhposhi (CAB); Chimfunsi (CAB); Choma (MMB).

**DESCRIPTION.** Body length 5.8–7.0 mm, broadly oval, feebly convex. Pronotum and elytra explanate sides. Dorsal surface with microreticulation, weakly shiny, setaceous. Colour light-brown, head, pronotum and elytra with pale lateral margins, elytral interval 2, 3, 6 and 7 basal yellowish.

**Male.** Habitus as in Fig. 30. Head mostly trapezoid with weakly gibbous epistome; anterior margin distinct sinuate at middle with distinct upturned border, mostly straight at sides; genae rounded; eyes distinctly protruding and elongate bristled. Punctuation simple with few larger elongate setigerous punctures on epistome and behind frontal suture. Frontal suture grooved, not tuberculate.

Pronotum transverse, explanate sides; punctuation dense with large piliferous punctures, lateral punctures denser and coarser; anterior margin with belt of large punctures elongate setigerous.

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Figs. 25–28. Habitus, dorsal. 25 – *Lorditomaeus opatroides* (Klug, 1855). 26 – *Lorditomaeus anetteae* sp. nov. 27 – *Lorditomaeus bordati* sp. nov. 28 – *Lorditomaeus rothi* nom. nov.



25



26



27



28

Disc without erected setae. Lateral margins bordered; feebly rounded, nearly straight; posterior angles rounded, elongately bristled; basal margin not bordered, but with a row of bristled punctures, more elongate near posterior angles and scutellum.

Scutellum narrow triangular, microreticulate, basally shortly bristled.

Elytral intervals nearly flat, finely punctured; basal two thirds with fine nearly invisible setation; apical third with setation distinctly longer and more erect; Interval 7 in apical half with longer and erect pubescence; interval 2 and 4 apically without a long erect yellowish setae, this setae shorter as interval 1 on disc wide (Fig. 35); interval 8 nearly invisible; stria 7 strong near the stria 8. Elytral striae rather wide, feebly crenulated.

Protibiae externally with three large triangular teeth and some small denticles; apical spur longer than wide, truncate, hooked inwardly apically. Basal metatarsomere longer than the following three combined, longer than superior spur.

Metaventral plate flat, shiny, with fine microreticulation, medially with distinct impressed line; anterior third with dense punctures, posterior two thirds with few punctures. Punctures with short depressed setae; laterally with two or three large punctures with long erect setae.

Aedeagus (Figs. 11–12) with elongate, feebly concave, nearly straight parameres in dorsal view. In lateral view dorsal nearly straight, strongly bent downwards near apex, nearly straight ventrally, apices strongly bent upwards in lateral view.

**Female.** Protibia apical spur slender and acuminate apically, not hooked. Head transverse with weakly gibbous epistome; anterior margin feebly sinuate at middle, widely rounded at sides.

**DIAGNOSIS.** This species is most similar to *L. ellenbergeri* Paulian, 1942 and *L. collartoides* sp. nov. The species differs to *L. collartoides* sp. nov. distinctly in trapezoid shape of the males head. It differs from *L. ellenbergeri* in the lacking setation on elytral disc. Additional characters for differentiation are in the key below. Single females are nearly not to differ.

### ***Lorditomaeus ellenbergeri* Paulian, 1942**

(Figs. 13–14, 23, 31, 37)

*Lorditomaeus Ellenbergeri* Paulian, 1942: 104, 106. (original description).

*Lorditomaeus ellenbergeri* Endrödi, 1964: 306 (key and description); Balthasar 1965: 177, 193 (key and description); Endrödi & Rakovič 1981: 60 (key and description).

**TYPE LOCALITY.** “Rhodésia du sud, Selukwe”.

**TYPE MATERIAL EXAMINED.** **Holotype**, ♂: “Museum Paris | Rhodésia du sud [Zimbabwe] | Selukwe | A. Ellenberger 1915 || *Lorditomaeus* | *ellenbergeri* n. sp. | R. Paulian det. || TYPE || HOLOTYPE || Holotype | *Lorditomaeus* | *ellenbergeri* Paulian, 1942 || MNHN, Paris | EC13715” (MNHN) [aedeagus of the holotype is broken and lost].

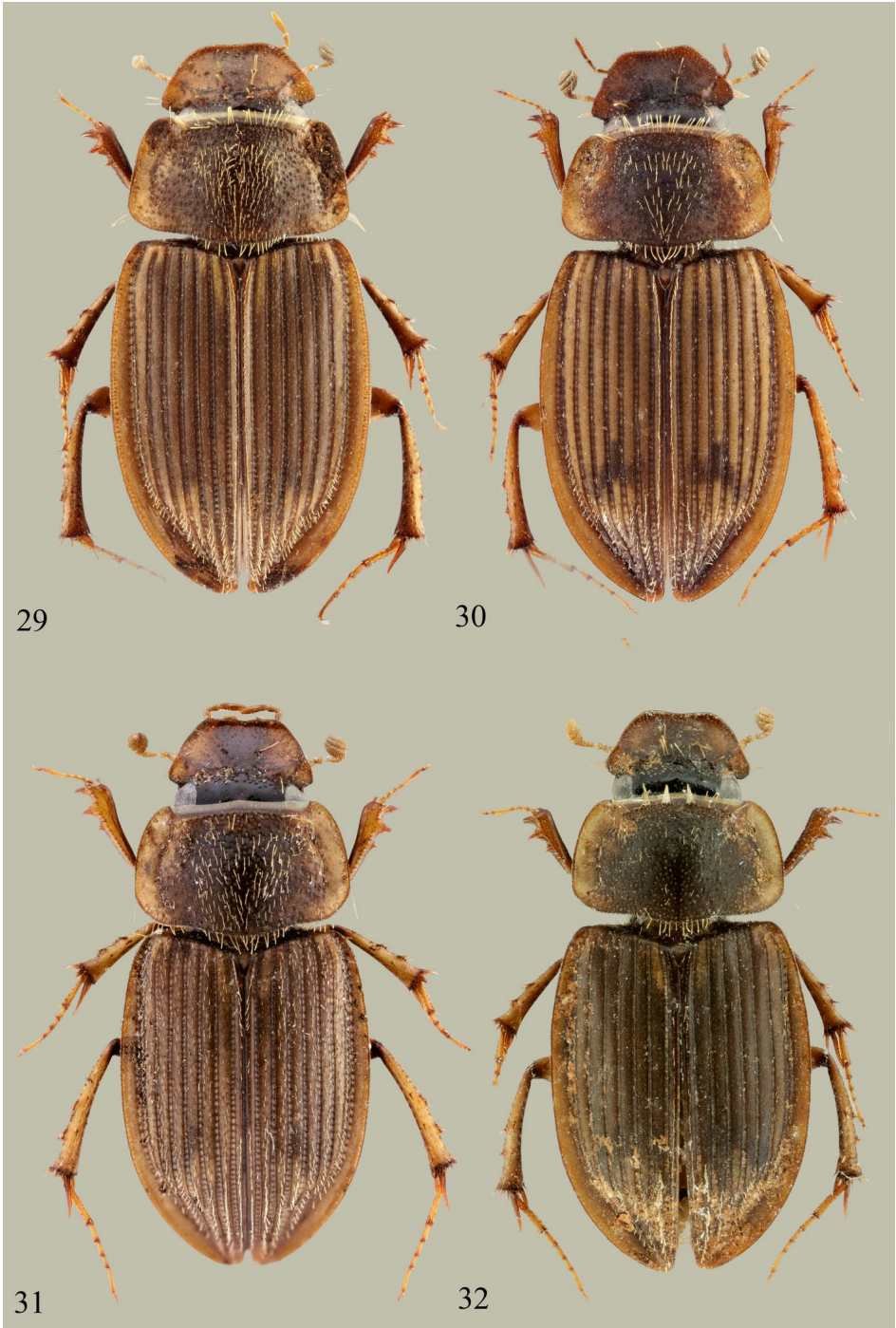
**ADDITIONAL MATERIAL EXAMINED.** **Zimbabwe:** Nyanga NP (MNHB, CAB); Harare (MNHN); Rupisi (CDD); Gweru (CDD, CAB, CME), Mvuma (CME), N of Chivhu (CME).

**DESCRIPTION.** Body length 5.7–6.5 mm, broadly oval, feebly convex. Pronotum and elytra explanate sides. Dorsal surface with microreticulation, weakly shiny, setaceous. Colour light-brown, head, pronotum and elytra with pale lateral margins; interval 2, 3, 6 and 7 basal yellowish; elytral apex with a light spot, which is dark anteriorly.

**Male.** Habitus as in Fig. 31. Head trapezoid with weakly gibbous epistome; anterior margin wide sinuate at middle with distinct upturned border, nearly straight at sides (Fig. 37); genae rounded;

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Figs. 29–32. Habitus, dorsal. 29 – *Lorditomaeus collartoides* sp. nov. 30 – *Lorditomaeus collarti* Boucomont, 1932. 31 – *Lorditomaeus ellenbergeri* Paulian, 1942. 32 – *Lorditomaeus pseudopatroides* sp. nov.



eyes distinctly protruding and elongate bristled. Punctuation simple with few larger elongate setigerous punctures on epistome and behind frontal suture. Frontal suture grooved, not tuberculate.

Pronotum transverse, explanate sides; punctuation dense with large piliferous punctures, lateral punctures denser and coarser; anterior margin with belt of large punctures elongate setigerous. Disc without erected setae. Lateral margins bordered; feebly rounded, nearly straight; posterior angles rounded, elongately bristled; basal margin not bordered, but with a row of bristled punctures, more elongate near posterior angles and scutellum.

Scutellum narrow triangular, microreticulate, basally shortly bristled.

Elytral intervals nearly flat, finely punctured; basal two thirds with distinct setation; at least on interval 3, 5 and 7, apical third setation longer and more erect; interval 7 in apical half with longer and erect setation. Interval 2 and 4 apically without a long erected yellowish setae, this setae shorter as interval 1 on disc wide. Interval 8 nearly invisible; stria 7 strong near the stria 8. Elytral striae rather wide, feebly crenulated.

Protibiae externally with three large triangular teeth and some small denticles; apical spur longer than wide, truncate, hooked inwardly apically. Basal metatarsomere as long as the following three combined, longer than superior spur.

Metaventral plate flat, shiny, with fine microreticulation, medially with distinct impressed line; anterior third with dense punctures, posterior two thirds with few punctures. Punctures with short depressed setae; laterally with two or three large punctures with long erect setae.

Aedeagus (Figs. 13–14) with elongate, nearly straight parameres in dorsal view. In lateral view nearly straight dorsally, in basal third feebly concave, strongly bent downwards near apex, straight ventrally, apices strongly bent upwards in lateral view.

**Female.** Protibia apical spur acuminate apically, not hooked. Head transverse with weakly gibbous epistome; anterior margin feebly sinuate at middle, widely rounded at sides

**DIAGNOSIS.** This species is similar to *L. collarti* and *L. collartoides* sp. nov. It distinctly differs from *L. collartoides* sp. nov. in trapezoid shape of the male head and from *L. collarti* in the setaceous elytral disc. Additional characters for differentiation are in the key below. Single females are difficult to identify.

### *Lorditomaeus collartoides* sp. nov.

(Figs. 9–10, 21, 29, 36)

**TYPE LOCALITY.** “Cameroon, Tubah, Big Babanki”.

**TYPE MATERIAL EXAMINED.** **Holotype**, ♂: “Cameroon, NW prov., 1362 m | Tubah sdiv.: Big Babanki env. | leg. M. Häckel III.2008 | *Lorditomaeus collartoides* sp. n. | HOLOTYPE | det. A. Bellmann 2011” (CAB). **Paratypes**, ♂, ♀: **Cameroon**: same data as Holotype, 16 exs. (CAB); “CW Africa, Cameroon | Big Babanki | Lgt. R. Sehna III.2008”, 39 exs. (CAB); “Cameroon: North-West prov.; | E env. of Big Babanki; 1200 m | 06°06.698'N 10°15.938'E; | 5.–13.III.2008; Martin Riha leg.”, 19 exs. (SMNS, CAB); “Cameroon: North- West prov. 1200 m | E env. of Big Babanki | 06°06.698'N 10°15.938'E | 5.–13.III.2008; J. Horak leg.”, 2 exs. (CLM); “CW-Africa, Cameroon | iii.2008, Big Babanki | Lgt. R. Sehna”, 8 exs. (CME, CAB); “Bafoussam | Cameroun | Coll. R. Paulian”, 1 ex. (MNHN); “Cameroon | Maroua | 26.VIII.1978 | leg. De Miré”, 1 ex (CPB); “Cameroon | Maroua | 20.XI.1969”, 4 exs. (CPB); “Cameroon | Maroua | VIII.1959”, 1 ex (CPB). **Benin**: “NW Benin | 5 km N of Tanougou | 26.–29.06.2001 | A. Kudrna JR. lgt.”, 1 ex. (CAB); “N. Benin Alphaouara | Réserve de la Djona | 23.–28.IX.2003, Marc 24 | Excr. Elephants, Josso, Juhel, Montfort rec.”, 1 ex. (CPB). **Burkina Faso**: “Burkina Faso Forêt de Kou | 20 km W of Bobo Dioulasso | 23.7.2009, M.A. Hielkema”, 3 exs. (CMH); Burkina Faso | Forêt de Kou | 17.9.2009, M.A. Hielkema”, 3 exs. (CAB). **Mali**: “Mali-Süd | Kenieroba – | Kangaba | 06.2016, leg. R. Beck”, 1 ex. (CAB). **Niger**: “Niger: Maradi Dept. | Maradi, 1.–20.VII. | 1980, P. Bouchard | blacklight trap”, 3 exs.

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Figs. 33–35. Elytra, lateral, examples for the length of the setae on interval 2. 33 – *Lorditomaeus bordati* sp. nov. 34 – *Lorditomaeus opatroides* (Klug, 1855). 35 – *Lorditomaeus collarti* Boucomont, 1932.





33

34

35

(CDD, CAB). **Nigeria:** “Nigeria: NCSt | Katsina CRH | 5.IX.1970 | J. T. Medler”, 2 exs. (CDD, CAB); “Nigeria: | Western State | Ile-Ife, XI.1971 | J. T. Medler”, 2 exs. (CDD); “Nigeria Lama Bura GR | 630 m, 11 04 57N, 0837 26E | 21.–25. VIII.2006 leg. Léonhard & Vingerhoet”, 4 exs (CPB). **Senegal:** “Senegal | Kaolak, Niore du Rip | 24.07.2008 | P. Moretto leg.”, 13 exs. (CDD, CAB); “Senegal | Foret de Bandia | VIII.1971 || Museum Paris | A. Villiers”, 11 exs. (MNHN; CAB); “Senegal | Bolou vill. Tambacounda | 11.VII.2008 | leg. Ph. Moretto”, 2 exs (CPB); “Senegal | Thies”, 5 exs. (MHNG); **Ghana:** “Imperial College | Ghana Expdn. 1960 | 19.8.1960 | Zuarungu, N.T.”, 3 exs. (MZLU, CAB). **Gambia:** “The Gambia, Basse LGA | just N Sabi, 28.ix.2019 | 13°14.64’N 14°11.60’W | in Equus dung, alt. 31 m | A. M. Bouma & J. J. Wieringa”, 1 ex. (CJW); **Sudan:** “Soudan | Equatoria Lotti forest | 14.–17.3.1963 | Linnavuori”, 2 exs. (NMPM). **Kenya:** “00°21’38”N / 034°51’24”E | Kenya-Western | Kakamega Forest (Buyangu) | 06.–09.04.2003 | leg. Dirk Rohwedder”, 5 exs. (CDR, CAB); “KENYA, west | Kakamega, 1500–1600 m | KAKAMEGA FOREST | leg. local people I–IV.2006”, 1 ex. (CAB); “Kenya 19.vii.2002 | Kakamega Forest N.R. | farming land (4) | 0.21,28 N; 34.51,45 E | light trap”, 6 exs. (MNHB, CAB); “Kenya 05.vii.2002 | Kakamega Forest N.R. | farming land (4) | 0.21,28 N; 34.51,45 E | light trap”, 1 ex. (MNHB). **Democratic Republic Congo:** “Foret de Kawa | Lac Albert 23-IV-29 | A. Collart”, 3 exs. (MNHN).

ETYMOLOGY. This species is similar to *Lorditomaeus collarti* Boucomont, 1932.

DESCRIPTION. Body length 5.5–7.0 mm. broadly oval, feebly convex. Pronotum and elytra explanate sides. Dorsal surface with microreticulation, weakly shiny, setaceous. Colour brown, head, pronotum and elytra with pale lateral margins; elytral interval 2, 3, 6 and 7 basal yellowish; elytral apex with light spot, which is dark anteriorly.

**Male.** Habitus as in Fig. 29. Head transverse with weakly gibbous epistome; anterior margin only feebly sinuate at middle, widely rounded at sides without distinct upturned border (Fig. 36); genae rounded; eyes distinctly protruding and elongate bristled. Punctuation simple with few larger elongate setigerous punctures on epistome and behind frontal suture. Frontal suture grooved, not tuberculate.

Pronotum transverse, explanate sides; punctation dense with large piliferous punctures; anterior margin with belt of large punctures elongately setigerous. Disc without erected setae. Lateral margins bordered; feebly rounded, nearly straight; posterior angles rounded, elongately bristled; basal margin not bordered, but with a row of bristled punctures, more elongate near posterior angles and scutellum.

Scutellum narrow triangular, microreticulate, basally shortly bristled.

Elytral intervals nearly flat, finely punctured; basal two thirds with fine nearly invisible setation; apical third setation longer and more erect; on interval 2 without a row of long erected setae in apical third, this setae shorter as interval 1 on disc wide; interval 7 in apical half with longer and erected setation. Interval 8 nearly invisible; stria 7 strong near the stria 8. Elytral striae rather wide, feebly crenulated.

Protibiae externally with three large triangular teeth and some small denticles; apical spur longer than wide, truncate, hooked inwardly apically. Basal metatarsomere longer than the following three combined, longer than superior spur.

Metaventral plate flat, shiny, with fine microreticulation, medially with distinct impressed line; anterior third with dense punctures, posterior two thirds with few punctures. Punctures with short depressed setae; laterally with two or three large punctures with long erect setae.

Aedeagus (Figs. 9–10) with elongate, feebly concave parameres in dorsal view. In lateral view nearly straight dorsally, feebly bent downwards near apex, feebly concave ventrally, tapering to the apex, apices bent upwards in lateral view.

**Female.** Protibia apical spur acuminate apically, not hooked.

DIAGNOSIS. This species is most similar to *L. collarti* and *L. ellenbergeri*. It distinctly differs from *L. collarti* in the male widely rounded head and from *L. collarti* in the setaceous elytral disc. Additional characters for differentiation are in the key below. Single females are difficult to identify.

DISCUSSION. *Lorditomaeus collartoides* sp. nov. is a widespread species with geographical differences in morphology. In the western part of distribution from Senegal to Nigeria the specimens

are smaller (5.5–6.0 mm), more convex dorsally, and the lateral margins of the pronotum and elytra are moderately flattened. In the eastern part of distribution from Cameroon to Kenya the specimens are bigger (6–7 mm), more flattened, and the lateral margins of the pronotum and elytra widely flattened. The transition between the two variations is gradual. The male genitalia are identical across the distribution. In my opinion it is one species with geographical variations.

***Lorditomaeus pseudopatroides* sp. nov.**

(Figs. 15–16, 24, 32)

TYPE LOCALITY. “Angola, Huila Prov., Negola”.

TYPE MATERIAL EXAMINED. **Holotype**, ♂: “11/12-XI-2013, Huila Prov. | 3,5 km SW Negola | 14°28'16”S, 14°08'53”E, ANGOLA, P. Schüle leg. || *Lorditomaeus* | *pseudopatroides* sp. n. | HOLOTYPE | det. A. Bellmann 2020” (CPB). **Paratypes**, ♂, ♀: same data as holotype, 7 exs. (CPB, CAB).

ETYMOLOGY. The new species is very similar to *Lorditomaeus opatroides* (Klug, 1855).

DESCRIPTION. Body length 5.8–6.5 mm, broadly oval, feebly convex. Pronotum and elytra explanate sides. Dorsal surface with microreticulation, weakly shiny, setaceous. Colour light-brown, head, pronotum and elytra with pale lateral margins; elytral interval 2, 3, 6 and 7 basal yellowish; elytral apex with light spot, which is dark anteriorly.

**Male.** Habitus as in Fig. 32. Head trapezoid with weakly gibbous epistome; anterior margin wide sinuate at middle with distinct upturned border, straight at sides; genae rounded; eyes distinctly



Figs. 36–39. Head and Pronotum, dorsal and lateral. 36 – *Lorditomaeus collartoides* sp. nov. 37 – *Lorditomaeus ellenbergeri* Paulian, 1942. 38 – *Lorditomaeus rothi* nom. nov. 39 – *Lorditomaeus bordati* sp. nov.

protruding and elongate bristled. Punctuation simple with few larger elongate setigerous punctures on epistome and behind frontal suture. Frontal suture grooved, not tuberculate.

Pronotum transverse, explanate sides; punctuation dense with large piliferous punctures, lateral punctures denser and coarser; anterior margin with belt of large punctures elongately setigerous. Disc without erected setae. Lateral margins bordered; feebly rounded, nearly straight; posterior angles rounded, elongately bristled; basal margin not bordered, but with a row of bristled punctures, more elongate near posterior angles and scutellum.

Scutellum narrow triangular, microreticulate, basally shortly bristled.

Elytral intervals nearly flat, finely punctured; basal two thirds with fine nearly invisible setation; apical third setation longer and more erect; interval 3, 4 and 6 in apical third and interval 7 in apical half with longer and more erect setation; interval 8 without setae; interval 2 in apical third with row of distinctly longer erect yellowish setae, this setae as long as interval 1 on disc wide; interval 8 nearly invisible; stria 7 strong near the stria 8; elytral striae rather wide, feebly crenulated.

Protibiae externally with three large triangular teeth and some small denticles; apical spur longer than wide, truncate, hooked inwardly apically. Basal metatarsomere as long as the following three combined, longer than superior spur.

Metaventral plate flat, shiny, with fine microreticulation, medially with distinct impressed line; anterior third with dense punctures, posterior two thirds with few punctures. Punctures with short depressed setae; laterally with two or three large punctures with long erect setae.

Aedeagus (Figs. 15–16) with narrow elongate, nearly straight parameres in dorsal view, weakly widened at apex. In lateral view nearly straight dorsally, angularly bent downwards near apex, nearly straight ventrally, apices strongly bent upwards and frontwards in lateral view.

**Female.** Protibia apical spur acuminate apically, not hooked. Head transverse with weakly gibbous epistome; anterior margin feebly sinuate at middle, widely rounded at sides.

**DIAGNOSIS.** This species is most similar to *L. opatroides*. The species differs distinct in trapezoid male head compared to widely rounded head of *L. opatroides*. Additional characters for differentiation are in the key below.

**DISCUSSION.** The male genitalia is similar to those of *L. collarti* and *L. ellenbergeri*, but the external characteristics easily distinguish *L. pseudopatroides* sp. nov. from the other two species.

### *Brachiaphodius* [s.l.] *harpalinus* (Gerstaecker, 1884)

*Aphodius harpalinus* Gerstaecker, 1884: 49 (original description).

*Lorditomaenus harpalinus*: Schmidt 1922: 354 (new combination); Paulian 1942: 103 (key and description); Balthasar 1965: 212, 213 (key and description).

*Aphodius* (*Trichaphodius*) *aureopilosus*: Boucomont 1930: 403 (type locality: “Mulange, Br. O. Afr.”); **syn. nov.**

*Aphodius* (*Balthasarianus*) *aureopilosus*: ? Müller 1944: 145 (new synonym?).

**TYPE LOCALITY.** “Kenya, Eastern, Mwingi, Nguni”.

**TYPE MATERIAL EXAMINED.** *Aphodius harpalinus*: **Neotype**, ♂ here designated: “Kenya, Eastern | Mwingi, Nguni | leg. Snizek 29.10.1999 [white label, printed] || *Aphodius* | *harpalinus* Gerstaecker | NEOTYPUS | desig. A. Bellmann 2021 [red label, printed] || *Brachiaphodius* s.l. | *harpalinus* (Gerstaecker) | det. A. Bellmann 2021 [white label, printed]” (MNHB). *Aphodius* (*Trichaphodius*) *aureopilosus*: **Syntype**, ♀: “Mulange | Br. O. Afr. || Museum Paris 1936 | Coll. A. Boucomont || TYPUS || *Aphodius* | *aureopilosus* n.sp. || *aureopilosus* Bouc. | B. O. Landin det. || MZLU 00167935 || MZLU 2021 085 || *Brachiaphodius* | *harpalinus* (Gerstaecker, 1884) | det. A. Bellmann 2022” (MZLU).

**DISCUSSION.** Gerstaecker (1884) described *A. harpalinus* from Massai-Land collected by G. A. Fischer. After Horn & Kahle (1935–37) the Gerstaecker collection and the type of *A. harpalinus* must be in the Zoologisches Museum Berlin (MNHB) or in the Universität Greifswald, Zoologisches Institut und Museum (ZIMG). The Typus was searched for in the collections at the MNHB

and ZIMG. In both collections the type wasn't found (Jaeger, e-mail 3. December 2021 and Michalik, e-mail 13. March 2020), probably it was lost during the Second World War. To clarify the identity of *A. harpalinus* and to preserve the nomenclature stability the above neotype is designated here.

Müller (1944: 145) stated that *A. harpalinus* is not a *Lorditomaeus* as presented in Schmidt (1922) and Paulian (1942), and it could be *Aphodius (Balthasarianus) aureopilosus* Boucomont, 1930. Müller may have seen the type of *A. harpalinus* before it was probably lost in the Second World War. The original description of *A. harpalinus* fits perfectly with *B. aureopilosus*. I agree with Müller, and here fully synonymize the two species.

### ***Dilortomaeus setulosus* (Schmidt, 1908)**

*Lorditomaeus setulosus* Schmidt, 1908: 232, 233 (original description); Balthasar 1965: 208, 209 (key and description); Bordat 1990: 460 (key and description).

*Dilortomaeus setulosus*: Bordat 2009: 134 (new combination).

*Lorditomaeus tanganyicanus* Balthasar, 1965: 176, 211, 212 (type locality: "Tanganyika-Territorium, Longido, Masai District"); **syn. nov.**

In 1988 Patrice Bordat studied the type of *Lorditomaeus tanganyicanus* from MRAC which is a female and he assumed it was the same species than *L. setulosus* of his collection. In 1991 he saw the type of *L. setulosus* from DEI which he designed as lectotype (Bordat 1990) and he recognized the synonymy of the species (Bordat in litt.).

### **Keys to the genera and species of *Lorditomaeus* and *Dilortomaeus***

- 1 Lateral margins of pronotum not flattened, the anterior impression lacking or only weak; elytra with 10 striae, striae 9 distinctly visible, stria 10 is indistinct at lateral margin. .... ***Dilortomaeus*** Bordat, 2009
- Lateral margins of pronotum mostly flattened, the anterior impression in most distinctly visible, deep; elytra mostly with 9 striae, stria 8 distinctly visible, stria 9 is indistinct at lateral margin. .... ***Lorditomaeus*** Péringuey, 1901

#### ***Lorditomaeus* species groups**

- 1 Male protibia apical spur slender and apically more acuminate. .... ***blattoides***-species group
- Male protibia apical spur truncate and hooked inwardly apically. .... 2
- 2 Elytral 7 stria bifid. .... ***bifidus***-species group
- Elytral 7 stria simple. .... 3
- 3 Each elytra with nine distinct visible striae; all intervals with setation uniform, uniseriate and weakly erected. .... ***invenustus***-species group
- Each elytra with eight distinct visible striae; intervals with other setation. .... 4
- 4 Elytra with long erected setae on disc, at least the apical third of the interval 2 and 4 with some short rows of long erected setae and/or body length less than 4.5 mm. .... 5
- Elytra without long erected setae on disc, at most the apical third of the interval 2 and 4 with one row of long erected setae, body length more than 5 mm. .... ***opatroides***-species group
- 5 Body length small: 3.5–4.0 mm. .... ***aequus***-species group
- Body length larger: more than 4 mm. .... ***proditor***-species group

#### ***opatroides* species group**

- 1 Pronotum with long erected setae on disc (Fig. 39); elytra in apical third on interval 2 and 4 with a row of long erected setae; body length 6.6–7.7 mm; East Africa. .... ***L. bordati*** sp. nov.
- Pronotum without long erected setae on disc (Fig. 38); elytra in apical third on interval 2 and 4, only on second interval, or without a row of long erected setae; body length variable. .... 2
- 2 Elytra on interval 2 with a row of long erected setae in apical third (Figs 33, 34). .... 3
- Elytra on interval 2 without a row of long erected setae in apical third (Fig. 35). .... 6

- 3 Setation on elytra in basal two thirds nearly invisible or lacking; on apical third only on interval 2 with short erected setae. .... 4
- Setation on elytra in basal two thirds mostly moderate or distinctly visible, at least basally; on apical third with long or short erected setae on interval 2 or on interval 2 and 4. .... 5
- 4 Head in both sexes transverse and rounded (Fig. 36); frons nearly truncate, feebly sinuate at middle, widely rounded at sides; border feebly upturned anteriorly; interval 8 entirely with distinct setae. .... *L. opatroides* (Klug)
- Head in male mostly trapezoid (Fig. 37), frons distinct sinuate at middle, sometimes nearly straight at sides; border distinctly upturned anteriorly; interval 8 without any setae; Angola. .... *L. pseudopatroides* sp. nov.
- 5 Erected setae on interval 2 in elytral apical third longer (shorter as on Fig. 33 and longer as on Fig. 34), as long as interval 2 on disc wide; frons with coarse punctures, not extended onto epistome; body length 6–7 mm; East Africa. .... *L. rothi* nom. nov.
- Erected setae on interval 2 shorter (Fig. 34), shorter as interval 2 on disc wide; coarse punctures on frons more or less widely extended onto epistome; body length 5.6–6.5 mm; East Africa. .... *L. anetteae* sp. nov.
- 6 Basal two third of elytra with distinct setation, mostly in two rows on intervals 3, 5, and 7 or on all intervals; head in male trapezoid with nearly straight sides (Fig. 37); Zimbabwe. .... *L. ellenbergeri* Paulian
- Basal two third of elytra with nearly invisible setation, only interval 7 in apical half or sometimes with a complete row of distinct setation; head in male trapezoid or in both sexes transverse and rounded. .... 7
- 7 Head in both sexes transverse and rounded (Fig. 36); frons nearly truncate, feebly sinuate at middle, wide rounded at sides; border not upturned anteriorly. .... *L. collartoides* sp. nov.
- Head in male mostly trapezoid (Fig. 37), frons distinct sinuate at middle, mostly straight at sides; border distinctly upturned anteriorly. .... *L. collarti* Boucomont

### Preliminary list of the genera *Lorditomaeus* and *Dilortomaeus*

*Lorditomaeus* Péringuey, 1901

#### *aequus* species group

*Lorditomaeus aequus* Schmidt, 1908

*Lorditomaeus ferreri* Bordat, 1997

*Lorditomaeus tenuis* Schmidt, 1908

#### *bifidus* species group

*Lorditomaeus bifidus bifidus* Schmidt, 1908

= *Lorditomaeus lunatulus* Schmidt, 1910

*Lorditomaeus bifidus occidentalis* Bordat, 1996

*Lorditomaeus cambeforti* Bordat, 1983

*Lorditomaeus fornicatus* Schmidt, 1908

*Lorditomaeus fratris* Bordat, 1996

*Lorditomaeus horni* (Balthasar, 1937)

= *Lorditomaeus infuscatus* var. *pauper* Endrődi, 1960

*Lorditomaeus infuscatus* Schmidt, 1908

= *Lorditomaeus pauliani* Endrődi, 1951

= *Lorditomaeus medius* Balthasar, 1965

*Lorditomaeus magnus* Balthasar, 1965

*Lorditomaeus morettoii* Bordat, 2000

*Lorditomaeus similis* Bordat, 1996

#### *blattoides* species group

*Lorditomaeus blattoides* Petrovitz, 1969

#### *invenustus* species group

*Lorditomaeus invenustus* Schmidt, 1908

= [*Aphodius squalidus* Dejean, 1833, nomen nudum]

#### *opatroides* species group

*Lorditomaeus anetteae* sp. nov.

*Lorditomaeus bordati* sp. nov.

*Lorditomaeus collarti* Boucomont, 1932

= [“*Lorditomaeus opatroides* ab. *scutellaris* Endrödi, 1957”]

***Lorditomaeus collaroides* sp. nov.**

***Lorditomaeus ellenbergeri* Paulian, 1942**

***Lorditomaeus opatroides* (Klug, 1855)**

= *Lorditomaeus basilewskyi* Balthasar, 1965 **syn. nov.**

***Lorditomaeus pseudopatroides* sp. nov.**

***Lorditomaeus rothi* nov. nom.**

= *Lorditomaeus deplanatus* (Roth, 1851)

#### **proditor species group**

***Lorditomaeus mirandus* Balthasar, 1965**

***Lorditomaeus orthochaetus* Balthasar, 1965**

***Lorditomaeus proditor* (Gestro, 1895)**

***Lorditomaeus uhligi* Bordat, 1995**

***Dilortomaeus* Bordat, 2009**

***Dilortomaeus angolensis* (Bordat, 1994)**

***Dilortomaeus deformis* Bordat, 2009**

***Dilortomaeus excultus* (Péringuey, 1908)**

***Dilortomaeus senegalensis* Bordat, 2013**

***Dilortomaeus setulosus* (Schmidt, 1908)**

= *Lorditomaeus lunatulus* Schmidt, 1910

= *Lorditomaeus tanganyicanus* Balthasar, 1965 **syn. nov.**

= *Aphodius* (*Trichaphodius*) *kitwiensis* Balthasar, 1933

= [“*Lorditomaeus gridellii* Endrödi, in litt.” (Dellacasa 1987)]

[***Lorditomaeus youngai* (Endrödi, 1967)**

may belong to the genus *Dilortomaeus* (Bordat in litt.); a study of the holotype is necessary for a final classification]

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