

**Research article**[urn:lsid:zoobank.org:pub:B16BB4C6-99B4-45F2-BCCD-6223E6C42E89](https://zoobank.org/pub/B16BB4C6-99B4-45F2-BCCD-6223E6C42E89)**Revision of the genus *Melitonoma* (Coleoptera, Chrysomelidae). 1.  
History, type species and revision of the *M. juvenca* species group**Jan BEZDĚK Mendel University in Brno, Department of Zoology, Fisheries, Hydrobiology and Apiculture,  
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**Abstract.** A brief history of the taxonomy of the genus *Melitonoma* Chevrolat, 1836, is presented. The type species of *Melitonoma* is discussed. *Cryptocephalus pallens* Fabricius, 1787, which is the type species of *Melitonoma* by monotypy, is now classified in the genus *Diapromorpha* Lacordaire, 1848. A request to the ICZN Commission to establish another type species for *Melitonoma* is necessary to maintain nomenclatural stability. The *Melitonoma juvenca* species group is established for large species of *Melitonoma* with black legs, head and apex of elytron. Western African representatives of this group are revised based on the study of the primary type specimens. Four species are recognised: *Melitonoma juvenca* (Lacordaire, 1848), *M. simoni* Weise, 1881, *M. vinculata* Weise, 1910 and *M. dalaba* sp. nov. (from the Republic of Guinea). The following new synonyms are proposed: *Melitonoma juvenca* (Lacordaire, 1848) = *M. inclusa* Jacoby, 1895 (syn. nov.); *Melitonoma simoni* Weise, 1881 = *Clytra ivoirensis* Pic, 1933 (syn. nov.). Lectotypes are designated for *Melitonoma juvenca*, *M. simoni*, *M. vinculata* and *M. inclusa*. *Melitonoma puncticollis* Lefèvre, 1883 and *M. terminata* Jacoby, 1903 are resurrected from synonymy with *M. juvenca*, pending further investigation as they do not belong to the *M. juvenca* species group. The status of *Clytra decempunctata* Olivier, 1808, and *Coptocephala (Anisognatha) berlandi* Pic, 1939 remains unresolved due to the probable loss of their type specimens, hence they are considered nomina dubia.

**Keywords.** Leaf-beetles, Afrotropical Region, western Africa, new species, new synonymy, nomen dubium.

Bezděk J. 2025. Revision of the genus *Melitonoma* (Coleoptera, Chrysomelidae). 1. History, type species and revision of the *M. juvenca* species group. *European Journal of Taxonomy* 976: 208–237.  
<https://doi.org/10.5852/ejt.2025.976.2791>

**Introduction**

The widespread tribe Clytrini Kirby, 1837 includes about 1600 species and 210 subspecies (Bezděk pers. data), not including the subtribe Acolastina Schöller, 2024, established recently for the genus *Acolastus* Gerstaecker, 1855, previously classified in *Cryptocephalini* Gyllenhal, 1813 (Schöller 2024).

The genus *Melitonoma* Chevrolat, 1836 is exclusively Afrotropical and has never been thoroughly revised. Currently, 64 valid species and six subspecies are classified in *Melitonoma* (Bezděk pers. data).

The genus name *Melitonoma* was proposed by Chevrolat in the second edition of Dejean's (1836) catalogue. The *Melitonoma* entry in Dejean's catalogue includes 12 names, but 10 of them are nomina nuda. Sturm (1843) listed under *Melitonoma* only *Cryptocephalus pallens* Fabricius, 1787, currently classified in *Diapromorpha* Lacordaire, 1848, and one other nomen nudum.

The current concept of *Melitonoma* follows Lacordaire (1848), who used *Melitonoma* as a subgenus of *Clytra*, as well as introduced many other currently valid generic names, and gave the first description of the genus. Altogether he included 10 species (*Clytra decempunctata* and nine newly described), all from Afrotropical Africa except *C. fasciatopunctata* Lacordaire, 1848, from India. Subsequent authors often attributed the authorship of *Melitonoma* to Lacordaire (e.g., Thomson 1858; Chapuis 1874; Harold 1874; Jacoby & Clavareau 1906; Clavareau 1913). Harold (1874) catalogued 17 species of *Melitonoma*, but part of them belong to the genus *Damia* Lacordaire, 1848, which he treated as a synonym of *Melitonoma*. Chapuis (1874) divided *Melitonoma* into two subgenera, *Melitonoma* (s. str.) and *Damia*, which was also followed in subsequent catalogues by Jacoby & Clavareau (1906) and Clavareau (1913). In the second half of the 19<sup>th</sup> century and the period before the First World War, 34 species-level taxa were described (Thomson 1858; Gerstaecker 1871; Harold 1880; Weise 1881, 1902, 1907, 1908, 1909, 1910; Lefèvre 1883a, 1883b, 1884, 1891; Jacoby 1889, 1895, 1898a, 1898b, 1903a, 1903b; Péringuey 1892; Gestro 1895). Three Oriental taxa were excluded from *Melitonoma* by Jacoby (1908). In their catalogues of Clytrini, Jacoby & Clavareau (1906) listed 32, while Clavareau (1913) listed 33 species of *Melitonoma*.

Additional taxonomic publications about *Melitonoma* were published in the mid-20<sup>th</sup> century. Burgeon (1942) and Jolivet (1954, 1955) described 13 new species-level taxa of *Melitonoma* from Congo. Additional nine new species from eastern Africa were added by Bryant (1959). Seven single descriptions were also published by Pic (1933, 1936, 1939a, 1939b, 1939c, 1951a, 1951b). Finally, 21 species or subspecies from various parts of the Afrotropical Region were described by Lev N. Medvedev and his coauthors (Medvedev 1962, 1970a, 1970b, 1975, 1978, 1987, 1989, 1993c, 1993d, 1993e, 2000, 2005, 2008a, 2008b; Erber & Medvedev 2002; Medvedev & Kantner 2004; Medvedev & Beenen 2005).

Recently, three North African taxa described by Pic (1894, 1897) were transferred to *Tituboea* (Bezděk & Regalin 2015). *Melitonoma pictipennis* Jacoby, 1898 was synonymised with *Smeia undata* (Thunberg, 1821), and *Cryptocephalus decemnotatus* Thunberg, 1787 was transferred to *Melitonoma* and redescribed by Bezděk (2019).

A thorough revision of the type material and determination of the extensive museum material of the genus *Melitonoma* is currently underway. The present paper is the first of an intended series of revisional papers and includes a revision of the West African species of the *M. juvenca* species group with a description of *M. dalaba* sp. nov. Also, the problem with the type species of the genus *Melitonoma* is thoroughly explained.

## Material and methods

All measurements were made using an ocular grid mounted on an MBS-10 stereo microscope (at 16× magnification for the body length and 32× magnification for the remaining measurements). Photographs of specimens were taken with a Canon 800D digital camera with a Canon MP-E 65 mm objective. Images of the same objects at different focal planes were combined using Helicon Focus 8 software and edited with Corel Photopaint 12.

Specimens studied herein are deposited at the following institutes and collections:

JBCB	=	Jan Bezděk collection, Brno, Czech Republic
MFNB	=	Museum für Naturkunde Berlin, Leibniz-Institute for Evolution and Biodiversity Science, Berlin, Germany (Bernd Jaeger)
MNHN	=	Museum national d’Histoire naturelle, Paris, France (Antoine Mantilleri)
NHMUK	=	Natural History Museum, London, UK (Michael Geiser)
NMPC	=	Národní Muzeum, Praha, Czech Republic (Lukáš Sekerka)
RBCN	=	Ron Beenen collection, Nieuwegein, The Netherlands
ZIN	=	Zoological Institute of the Russian Academy of Sciences, St Petersburg, Russia (Alexey G. Moseyko)

Exact label data are cited for historical type specimens; a double slash (//) divides the data on different labels, and a single slash (/) divides the data in different rows. Type localities are cited in the original spelling. Other comments and remarks are placed in square brackets: [p] – preceding data are printed, [h] – preceding data are handwritten, [w] – white label, [b] – blue label and [r] – red label.

## Results

### *Type species*

The genus name *Melitonoma* first appeared in the second edition of Dejean’s catalogue, with authorship attributed to Chevrolat, as elucidated by Bousquet & Bouchard (2013). The entry in Dejean’s catalogue includes 12 names, but 10 of them are nomina nuda. *Clytra decempunctata* Olivier, 1808, is provided with a question mark meaning species inquirendum. Therefore, it is deemed not to be originally included (ICZN 1999, Art. 67.2.5). The only available name is *Cryptocephalus pallens* Fabricius, 1787, which becomes the type species of *Melitonoma* by monotypy (Bousquet & Bouchard 2013). *Cryptocephalus pallens* is also explicitly mentioned as type species by Chevrolat (1846). The subsequent designation of *Clytra decempunctata* Olivier, 1808, by Monrós (1953) is therefore invalid.

*Cryptocephalus pallens* is now classified in the genus *Diapromorpha*, which is in direct conflict with the current arrangement of *Melitonoma*. Bousquet & Bouchard (2013) suggested a request to the Commission to retain *Clytra decempunctata* as type species of *Melitonoma*. However, the description by Olivier (1808a) and the drawing in the Atlas (Olivier 1808b: no. 96, pl. II) are not sufficient to clearly prove the species identity. The species was mistakenly described from the locality “Nouvelle-Hollande” [Australia]. Some important characteristics (e.g., the coloration of the legs) are not stated in Olivier (1808a, 1808b); therefore, the description can refer to several tens of species of *Melitonoma*. Lacordaire (1848) assigned one female from Senegal from Dejean’s collection to *M. decempunctata*. Based on a male from Sierra Leone externally similar to Dejean’s female, Medvedev (2000) treated *M. simoni* Weise, 1881 as a subspecies of *M. decempunctata*. However, both Lacordaire’s and Medvedev’s concepts of *M. decempunctata* are nothing but speculation that is unsupported by the examination of the primary type material. Unfortunately, the type specimens of *Clytra decempunctata* were not traced in MNHN (Mantilleri 2024 pers. com.) and should be considered lost. In summary, I suggest treating *Clytra decempunctata* as a nomen dubium. For this reason, in the near future I will propose another species to the Commission, which will be a more appropriate type species of the genus *Melitonoma*.

## Taxonomy

Class Insecta Linnaeus, 1758  
Order Coleoptera Linnaeus, 1758  
Suborder Polyphaga Emery, 1886  
Superfamily Chrysomeloidea Latreille, 1802  
Family Chrysomelidae Latreille, 1802  
Subfamily Cryptocephalinae Gyllenhal, 1813  
Tribe Clytrini Kirby, 1837  
Subtribe Clytrina Kirby, 1837  
Genus *Melitonoma* Chevrolat, 1836

### *Melitonoma juvenca* species group

## Description

Large species (body length 6.0–9.1 mm) with black head, legs and elytral apex.

## Remarks

This group currently includes four species from West Africa, one of which (*M. vinculata*) also occurs in East Africa. Species included: *Melitonoma juvenca* (Lacordaire, 1848), *M. simoni* Weise, 1881, *M. vinculata* Weise, 1910 and *M. dalaba* sp. nov.

### *Melitonoma juvenca* (Lacordaire, 1848)

Figs 1–3

*Clythra* (*Melitonoma*) *juvenca* Lacordaire, 1848: 379. Type locality: “Du Sénégal et de la côte de Guinée”.

*Melitonoma inclusa* Jacoby, 1895: 170, syn. nov. Type locality: “Togo (Bismarckburg)” [from the title, near today's Konkoa, Togo].

*Melitonoma juvenca* – Medvedev 1973: 188 (faunistics); 2000: 348 (comments, key); 2008a: 149 (key).  
— Medvedev & Beenen 2005: 361 (faunistics).

## Differential diagnosis

In habitus, *Melitonoma juvenca* is most similar to *M. dalaba* sp. nov. The pronotum of *M. juvenca* is covered with distinct and well visible punctation, which is similar to that of *M. dalaba* sp. nov. Male protarsomeres I of both species are elongate, but in *M. juvenca* protarsomere I is shorter, 1.75 times as long as wide, while in *M. dalaba* sp. nov. it is longer, 2.45 times as long as wide (Figs 2N, 9O). The two species also differ in the shape of the penis, which is subhexagonal without an apical process in *M. juvenca*, but with a distinct triangular apical process in *M. dalaba* sp. nov. (Figs 3A–F, 9F–K). In *M. simoni*, the pronotum is completely or almost completely smooth, male protarsomere I (Fig. 5E) is slightly shorter, 2.20 times as long as wide, and the penis is elongated and narrow with a triangular apical third (Fig. 6A–F). In *M. vinculata*, the pronotum is covered with very fine punctation, visible under higher magnification, male protarsomere I (Fig. 7N) is very short, 1.10 times as long as wide, and the apical part of the penis is rounded laterally, with the tip widely triangular (Fig. 8A–F). Most specimens of *M. juvenca* have an orange base colour, while specimens of *M. simoni* and *M. vinculata* have a yellow or yellowish-brown base colour.

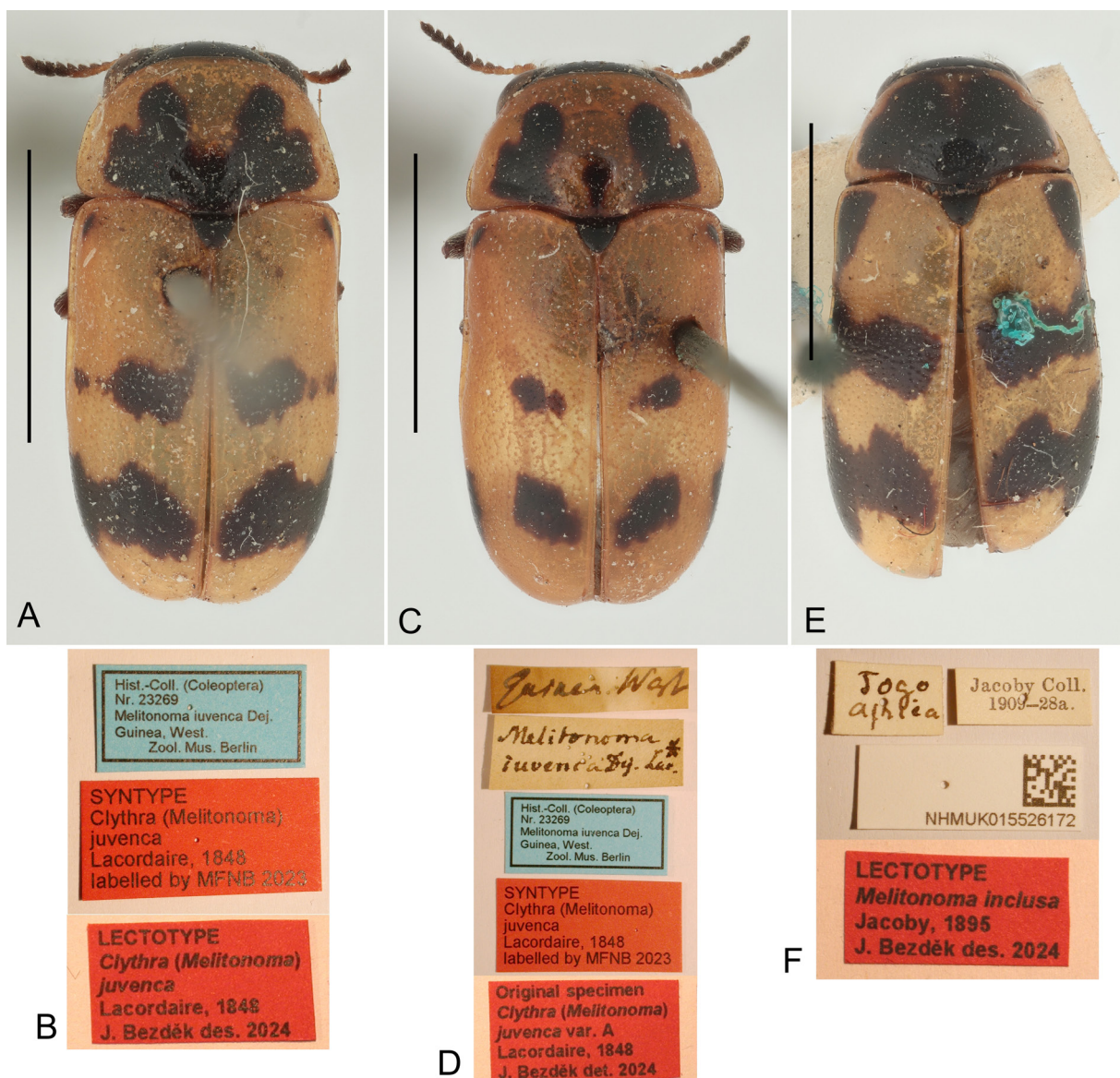
Females of *M. juvenca*, *M. simoni* and *M. vinculata* differ, in addition to the punctation of the pronotum, by the shape of the spermatheca, which is question mark-shaped in *M. juvenca* and *M. simoni*, while it is more C-shaped in *M. vinculata*. In *M. juvenca* the spermathecal duct is very thin without any coils, ca as long as the spermatheca. In *M. simoni* it is ca 2.5 times as long as spermatheca and forms many small

coils. In *M. vinculata* it forms a large tangled-up ball (Figs 3I, 6I, 8I). The middle dorsal rectal sclerite is missing in *M. juvenca* (observed in three females), while it is present in *M. simoni* and *M. vinculata* (Figs 3J, 6J, 8K).

### Type material

**Lectotype of *Clythra juvenca*** (here designated)

REPUBLIC OF GUINEA • ♂ (Fig. 1A–B); “Hist.-Coll. (Coleoptera) / Nr. 23269 / *Melitonoma iuvenca* Dej. / Guinea, West. / Zool. Mus. Berlin [b, p] // SYNTYPE / *Clythra (Melitonoma) juvenca* / Lacordaire, 1848 / labelled by MFNB 2023 [r, p] // LECTOTYPE / *Clythra (Melitonoma) juvenca* / Lacordaire, 1848 / J. Bezděk des. 2024 [r, p]”; MFNB.



**Fig. 1.** A–D. *Melitonoma juvenca* (Lacordaire, 1848), type specimens. A. Lectotype, ♂ (MFNB, 6.0 mm). B. Ditto, labels. C. Original specimen of var. A, ♂ (MFNB, 6.4 mm). D. Ditto, labels. E. *Melitonoma inclusa* Jacoby, 1895, lectotype, ♀ (NHMUK, 6.7 mm). F. Ditto, labels. Scale bars = 3.0 mm.

**Lectotype of *Melitonoma inclusa*** (here designated)

TOGO • ♀ (Fig. 1E–F); “Togo / Africa [w, h] // Jacoby Coll. / 1909–28a. [w, p] // NHMUK015526172 [w, p] // LECTOTYPE / *Melitonoma inclusa* / Jacoby, 1895 / J. Bezděk des. 2024 [r, p]”; NMHUK.

**Paralectotype of *Melitonoma inclusa***

TOGO • 1 ♀; “8. [w, h] // Type / H. T. [w, p, round label with red collar] // TYPE [w, p] // Togo / Africa [w, h] // Jacoby Coll. / 1909–28a. [w, p] // *Melitonoma inclusa* Jac. / Type [b, h] // NHMUK015526167 [w, p] // PARALECTOTYPE / *Melitonoma inclusa* / Jacoby, 1895 / J. Bezděk des. 2024 [r, p]”; NMHUK.

**Other material examined**

BENIN • 2 ♂♂, 1 ♀; 105 km N of Parakou, Bembereke (Borgou); 2 Jul. 2001; F. and L. Kantner leg.; NMPC • 1 ♂; 55 km NNE of Parakou, Son Tou (Borgou); 4 Jul. 2001; F. and L. Kantner leg.; NMPC.

GHANA • 2 ♀♀; Cape coast; 8 Jun. 1982; C.I.E. leg.; on maize; NHMUK.

REPUBLIC OF GUINEA • 1 ♀; Guinea; Chevrolat Coll.; NHMUK • 1 ♂ (Fig. 1C–D), original specimen of *Clythra juvenca* var. A; “Guinea West”; MFNB.

SENEGAL • 1 ♀; Senegal; MFNB.

TOGO • 1 ♂; Bismarckburg; 20–27 Oct. 1893; L. Conradt leg.; MFNB • 1 ♀; Bismarckburg; 8 Aug.–24 Sep. 1892; L. Conradt leg.; MFNB • 1 ♀; “zw. Klein-Popo und Bismarckburg” [between Anecho and Bismarckburg]; 8–24 Aug. 1892; L. Conradt leg.; MFNB • 6 ♂♂, 12 ♀♀; Fazao-Malfakassa NP, Mare aux crocodiles campsite; 8°44′58.8″ N, 0°48′51.8″ E; 26 Aug.–8 Sep. 2018; M. Aristophanous, M. Geiser, P. Moretto and B. Sanbena leg.; Sudanian savannah/gallery forest; NHMUK • 2 ♂♂, 1 ♀; same data as for preceding; JBCB • 3 ♂♂, 4 ♀♀; Fazao-Malfakassa NP, Point de vue campsite; 8°48′50″ N, 0°49′3.2″ E; 16–24 Aug. 2018; M. Aristophanous, M. Geiser, P. Moretto and B. Sanbena leg.; Sudanian savannah; NHMUK • 1 ♂; Fazao-Malfakassa NP, East of Bounako ranger station; 9°10′14.1″ N, 0°57′33.4″ E; 25–26 Aug. 2018; M. Aristophanous, M. Geiser, P. Moretto and B. Sanbena leg.; Sudanian savannah; NHMUK.

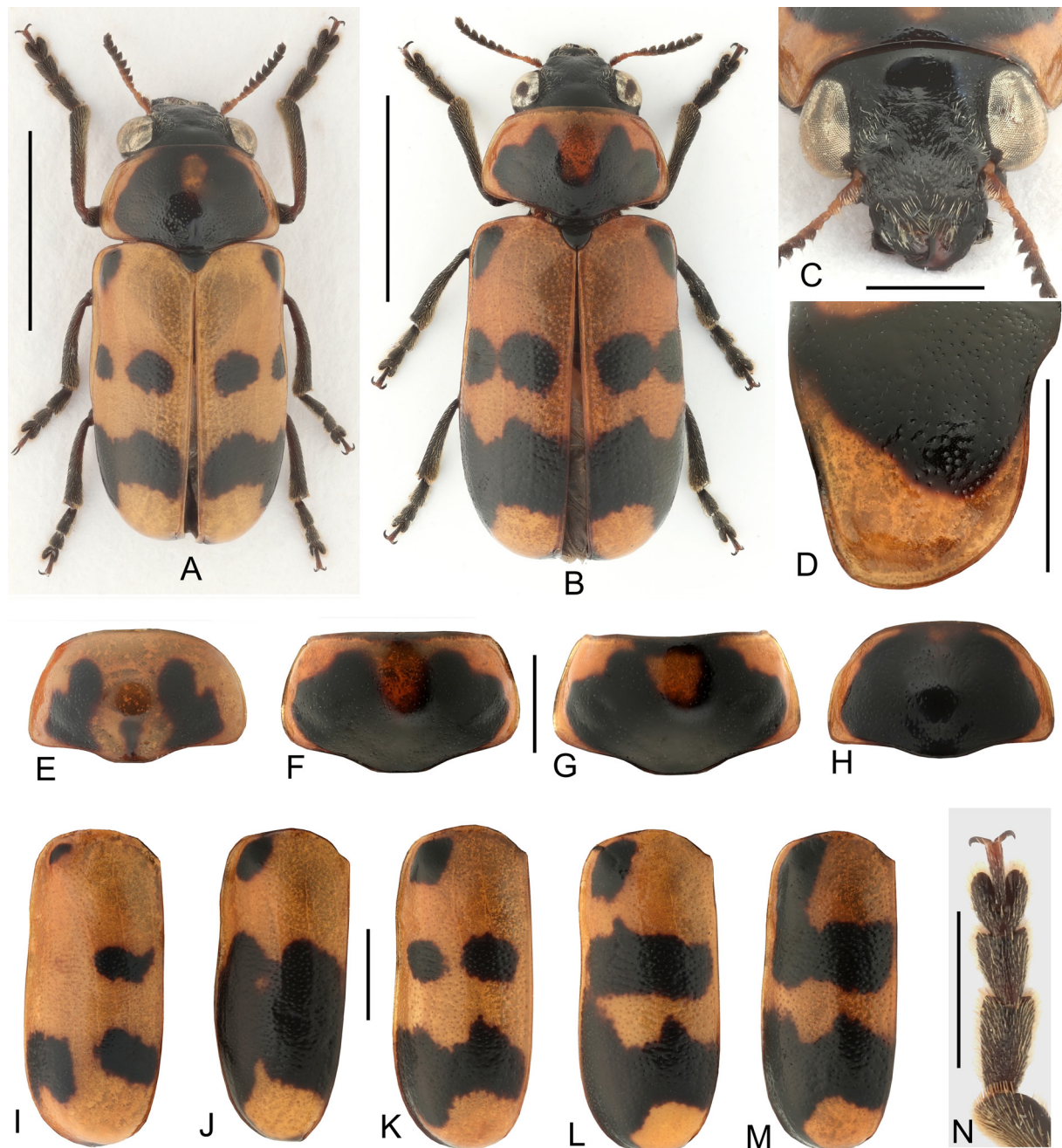
**Description**

**Male** (Fig. 2A)

APPEARANCE AND COLORATION. Body length: 6.0–6.9 mm. Body elongate, subparallel, convex. Head black. Pronotum usually with large black spot touching posterior margin, spot deeply incised in middle of anterior margin, lateral and anterior pronotal margins yellowish brown to orange; rarely black spot enlarged, touching also anterior pronotal margin or black pattern reduced to three spots (two larger irregular spots laterally and one small elongate spot in middle) (Fig. 2E–H). Scutellum black. Elytra yellowish brown to orange with five black spots (1, 2, 2) and black apex of elytra; pairs of spots usually connected forming one or two transverse bands, rarely both bands connected, or humeral spot connected with middle exterior spot, or middle exterior spot missing (Fig. 2I–M). Ventral side of body black, except pronotal hypomeron yellowish brown to orange. Antennomeres I–III orange (I sometimes darkened), IV–VI black with orange bases, VII–XI black. Legs black, in very old specimens can be dark reddish brown.

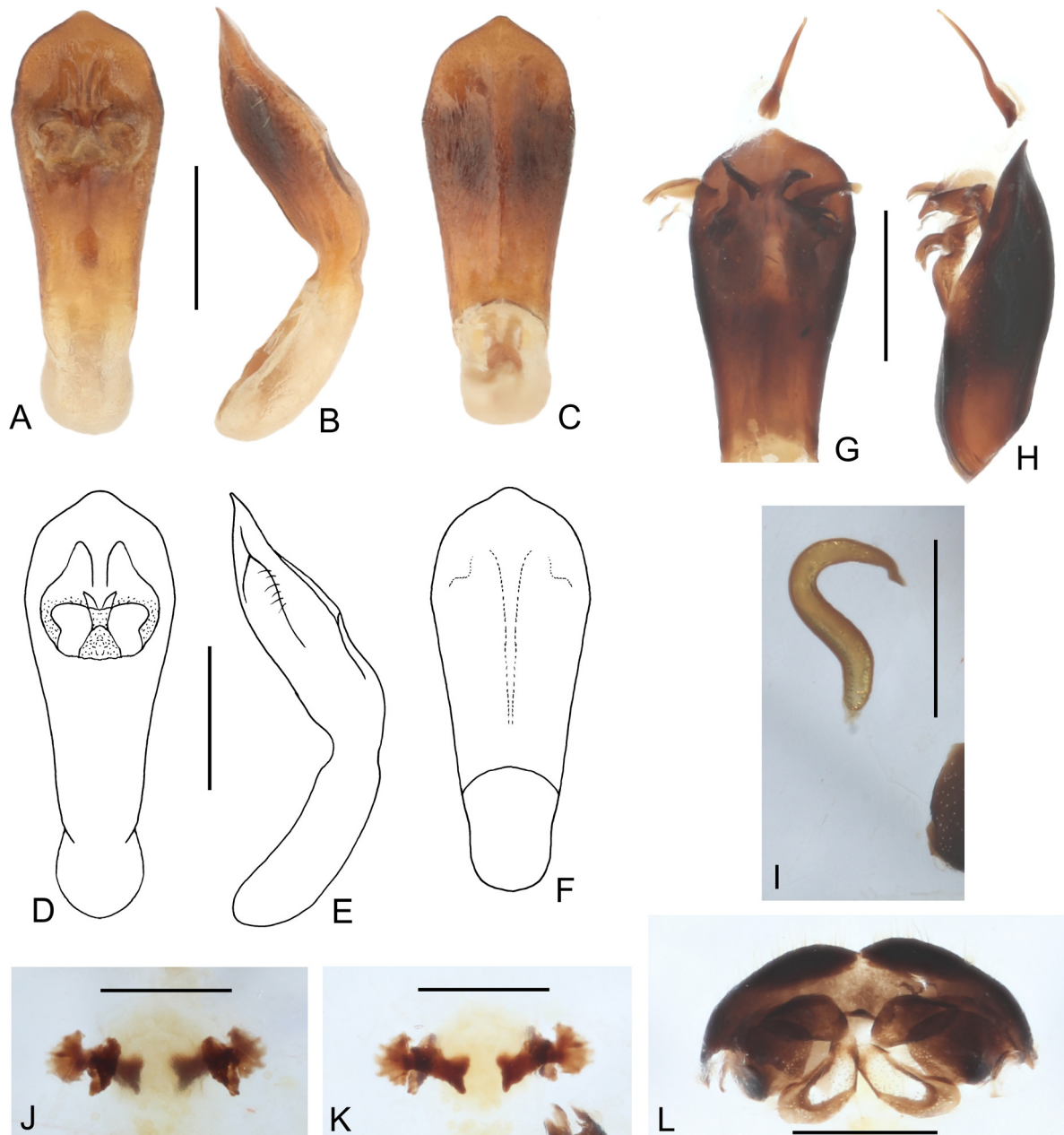
HEAD (Fig. 2C). Mandibles moderately enlarged, basal parts slightly swollen, apical parts flat, even and glabrous, lateral sides covered with long pale setae; left mandible somewhat larger, with lateral margin straight and oblique, and apex hook-like, lateral side with distinct groove. Labrum transverse with rounded anterior angles and shallowly emarginated anterior margin, surface smooth and glabrous except small punctures along margins bearing pale setae. Anterior margin of clypeus widely-shallowly

emarginated. Anterior part of head slightly convex and uneven, covered with small punctures and along anterior margin of clypeus also with short setae. Eyes moderately large. Frons wide, 2.50–2.70 times as wide as diameter of eye, surface uneven, almost glabrous, except setae cumulated along internal margins of eyes. Frons separated from vertex by shallowly impressed rounded line. Vertex convex, glabrous, lustrous, covered with indistinct punctures. Antennae short, 0.17 times as long as body, antennomere I club-shaped, III very small, antennae shortly serrated from antennomere IV.



**Fig. 2.** *Melitonoma juvenca* (Lacordaire, 1848). **A.** Male (NMPC, Benin, 6.8 mm). **B.** Female (NHMUK, Togo, 7.6 mm). **C.** Head of male. **D.** Pronotum, lateral view. **E–H.** Pronotum, variability. **I–M.** Elytra, variability. **N.** Male protarsus. Scale bars: A–B = 3.0 mm; C–N = 1.0 mm.

**PRONOTUM.** Convex, transverse, 1.65–1.75 times as wide as long, widest before base. Surface lustrous, covered with small fine punctures (Fig. 2D), punctation disappearing along anterior and lateral margins, punctures bear microscopic setae visible only in high magnification. Anterior margin straight to slightly concave, lateral margins moderately rounded, posterior margin slightly rounded and moderately expanded in scutellar area. Anterior margin thinly bordered only in lateral parts, middle part unbordered, lateral margins widely bordered and posterior margin thinly bordered. Anterior angles obtusangulate, posterior angles rounded, all angles with setigerous pore bearing long seta. Posterior angles slightly



**Fig. 3.** *Melitonoma juvenca* (Lacordaire, 1848). **A–H.** Male (NHMUK). **I–K.** Female (NHMUK). **A–C.** Penis in dorsal, lateral and ventral views. **D–F.** Penis in dorsal, lateral and ventral views (drawings). **G–H.** Penis with everted internal sclerites in dorsal and lateral views. **I.** Spermatheca. **J.** Dorsal rectal sclerites. **K.** Ventral rectal sclerites. **L.** Tergite VIII and ovipositor. Scale bars = 0.5 mm.



elevated above elytral base. Scutellum subtriangular, with rounded tip, glabrous, impunctate, along basal margin impressed and punctate.

ELYTRA. Subparallel, 1.45–1.50 times as long as wide (measured in middle) and 0.50 times as long as body. Surface glabrous, subopaque, densely covered with very fine, confused punctures and fine microsculpture. Humeral calli developed. Basal margin forming sharp keel. In lateral view, lateral margin of each elytron sinuate. Epipleura lustrous, glabrous, slightly concave, very wide at base, gradually narrowed posteriorly, disappearing in  $\frac{2}{3}$  of elytral length. Macropterous.

VENTRAL SIDE OF BODY. Densely covered with short setae. Abdomen more or less concave in lateral view. Pygidium moderately convex.

LEGS. Protibiae and protarsi moderately enlarged. Protarsomere I (Fig. 2N) elongate, 1.75 times as long as wide, as wide as II, lateral sides slightly rounded, protarsomere II 1.32 times as long as wide, parallel in apical half, convergent in basal half, length ratio of protarsomeres I–III and V equals 100-71-68-67 (100 = 0.70 mm). Mesotarsomere I elongate, parallel, with narrowed base, as wide as II, length ratio of mesotarsomeres I–III and V equals 100-60-60-80 (100 = 0.50 mm). Metatarsomere I elongate, subparallel, with narrowed base, as wide as II, length ratio of metatarsomeres I–III and V equals 100-60-60-80 (100 = 0.5 mm). Claws simple.

PENIS (Fig. 3A–F). Widest in apical quarter, apical part subhexagonal, tip rounded, apical margins wide and flat. In lateral view, dorsal margin slightly sinuate, ventral margin bent at middle in form of right angle, apex sharp. In ventral view, penis with long keel, wider and convex in apical part, sharp and narrow in median part, distinctly concave laterally from keel, anteroapically with small elevation on each side. Line of short setae visible along lateral margin in ventral view. Ventral surface and most of dorsal surface covered with punctures and wrinkles. Internal sac (Fig. 3G–H) with three pairs of small hook-like sclerites and one long needle-like sclerite, 0.77 times as long as width of penis in widest place.

#### Female (Fig. 2B)

Body length: 6.2–7.7 mm. Head, mandibles, tarsi and protibiae not enlarged. Abdomen convex in lateral view, last abdominal ventrite with medial hollow. Apex of pygidium slightly emarginated. Spermatheca question mark-like, with gradually narrowing and sinuate apical part, spermathecal duct very thin, without any coils, ca as long as spermatheca (Fig. 3I). Dorsal rectal sclerites small, longitudinally suboval, with slightly irregular margins, without middle dorsal sclerite (Fig. 3J). Ventral rectal sclerites transverse, slightly oblique, anterior margin emarginated near base, distal part fan-shaped and distinctly wider than proximal part (Fig. 3K). Tergite VIII and ovipositor as in Fig. 3L.

#### Distribution

Benin (present paper), Ghana (Medvedev 1973; present paper), Republic of Guinea (Lacordaire 1848; present paper), Senegal (Lacordaire 1848; present paper) and Togo (present paper). Based on the examination of the voucher specimen, the record of *M. juvenca* from Niger (Medvedev & Beenen 2005) refers to *M. puncticollis* Lefèvre, 1883.

#### Remarks

Jacoby & Clavareau (1906) listed *Melitonoma inclusa* as a synonym of *M. simoni*. Two female syntypes of *M. inclusa* deposited in NHMUK were examined. In one syntype, the head and pronotum are missing. The pronotum of the second syntype is covered by fine, dense punctures, which allows me to propose *M. inclusa* as a new synonym of *M. juvenca*.

Two taxa, *Melitonoma puncticollis* Lefèvre, 1883, and *M. terminata* Jacoby, 1903, are resurrected from the synonymy with *M. juvenca*. Clavareau (1913) listed *M. terminata* as a synonym of *M. puncticollis*

and Medvedev (1971) synonymised *M. puncticollis* with *M. juvenca* without any comments. The type specimens of both taxa were examined. They do not belong the *M. juvenca* species group; moreover, they represent two different species. However, their identities will be resolved later in a subsequent paper on *Melitonoma*.

In the original description, Lacordaire (1848) explicitly mentioned the male from Klug's collection and the female from Dejean's collection. The collection of Johann Christoph Friedrich Klug is deposited now in MFNB. In the historical accession book, two specimens (males) of *Melitonoma juvenca* are entered under the number 23269. One of the males with one large irregular black spot on the pronotum and a black posterior transverse band on the elytra agrees well with the description and is designated here as a lectotype. The second male, with a black pronotal pattern fragmented into three spots and an interrupted posterior transverse band on the elytra, agrees with variety A in Lacordaire (1848). This male was expressly excluded from the type series as a distinct variant marked by a letter (Art. 72.4.1, ICZN 1999).

The female from Dejean's collection was not examined. The Clytrini from Dejean's collection were probably bought by Marquis de Brème within "cryptocephalides" (Mannerheim 1842) and are deposited in the Museo Regionale di Scienze Naturali di Torino.

***Melitonoma simoni*** Weise, 1881

Figs 4–6

*Melitonoma simoni* Weise, 1881: 112. Type locality: "Ashante-Lande" [Ashanti Empire in today's Ghana].

*Clytra ivoirensis* Pic, 1933: 4, syn. nov. Type locality: "Côte d'Ivoire".

*Clytra ivoirensis* – Pic, 1938: 4 (duplicate description).

*Melitonoma simoni* – Medvedev 1978: 58 (faunistics).

*Melitonoma decempunctata* ssp. *simoni* – Medvedev 2000: 348 (comments, key); 2008a: 149 (key).

*Melitonoma decempunctata* – Medvedev & Beenen 2005: 361 (faunistics).

**Differential diagnosis**

The pronotum of *Melitonoma simoni* is completely or almost completely impunctate, while it is covered with distinct and well-visible punctation in *M. juvenca* and *M. dalaba* sp. nov., or it is covered with very fine punctation, visible under higher magnification in *M. vinculata*. Male protarsomeres I of *M. simoni*, *M. juvenca* and *M. dalaba* sp. nov. are elongate. In males of *M. simoni*, protarsomere I is 2.20 times as long as wide, while in *M. juvenca* it is shorter, 1.75 times as long as wide. In *M. dalaba* sp. nov., it is longer, 2.45 as long as wide (Figs 2N, 5E, 9O). The penis of *M. simoni* is elongate and narrow with an apical third triangular (Fig. 6A–F), while it has a distinct triangular apical process in *M. dalaba* sp. nov. (Fig. 9F–K). Most specimens of *M. simoni* have a yellow or yellowish-brown base colour, while the specimens of *M. juvenca* and *M. dalaba* sp. nov. have an orange base colour.

In addition to the punctation of the pronotum, females of *M. simoni*, *M. juvenca* and *M. vinculata* differ by the shapes of the spermatheca and spermathecal duct. In *M. simoni* and *M. juvenca*, the spermatheca is question mark-shaped. The spermathecal duct forms many small coils in *M. simoni*, while it is without any coils in *M. juvenca*. In *M. vinculata*, the spermatheca is C-shaped and spermathecal duct forms a large, tangled-up ball (Figs 3I, 6I, 8I).

**Type material**

**Lectotype of *Melitonoma simoni*** (here designated)

GHANA • ♂ (Fig. 4A–B); "Ashante / Simon [b, h] // ♂ [w, h] // *Melitonoma / Simoni* \* [w, h] // Cotypus [r, p] // SYNTYPE / *Melitonoma / simoni* / Weise, 1881 / labelled by MFNB 2023 [r, p] // LECTOTYPE / *Melitonoma simoni* / Weise, 1881 / J. Bezděk des. 2024 [r, p]"; MFNB.

### Paralectotypes of *Melitonoma simoni*

GHANA • 1 ♀; “Ashante / Simon [b, h] // ♀ [w, h] // Cotypus [r, p] // SYNTYPE / *Melitonoma / simoni* / Weise, 1881 / labelled by MFNB 2023 [r, p] // PARALECTOTYPE / *Melitonoma simoni* / Weise, 1881 / J. Bezděk des. 2024 [r, p]”; MFNB • 1 ♀ (Fig. 4C–D); “Ashante / Simon [b, h] // Ashante [w, h] // ♀ [w, h] // Cotypus [r, p] // SYNTYPE / *Melitonoma / simoni* / Weise, 1881 / labelled by MFNB 2023 [r, p] // PARALECTOTYPE / *Melitonoma simoni* / Weise, 1881 / J. Bezděk des. 2024 [r, p]”; MFNB.

### Syntype of *Clytra ivoirensis*

COTE D’IVOIRE • 1 ♀ (Fig. 4E–F); “COTE D’IVOIRE / DIMBROKO [w, p] // type [w, h] // *Clytra / ivoirensis* / n. sp [w, h] // TYPE [r, p] // Museum Paris / Coll. M. Pic [b, p] // *Melitonoma / 10-punctata* Lac. [h] / L.N. Medvedev det. 19 [p] 90 [w, h] // SYNTYPE / *Clytra / ivoirensis* Pic, 1933 [w, p] // SYNTYPE [r, p] // MNHN, Paris / EC26175 [w, h]”; MNHN.

### Other material examined

CAMEROON • 1 ♂, 1 ♀; “Jaunde-Stat” [Yaoundé City]; 800 m a.s.l.; Zenker leg.; MFNB • 1 ♀; Joko; MFNB.

COTE D’IVOIRE • 1 ♀; Man; Oct. 1970; J. Roggeman leg.; RBCN • 2 ♀♀; Tonkoui Mt; 07°26’42” N, 07°38’41” W; 1135 m a.s.l.; 1–8 Nov. 2015; M. Aristophanous, P. Moretto and E. Ruzzier leg.; NHMUK.

LIBERIA • 2 ♀♀; Nimba Mts Camp; 07°31’45” N, 08°31’37” W; 1165 m a.s.l.; 3–13 Dec. 2017; M. Aristophanous, S. Sáfíán, G. Simonics and L. Smith leg.; JBCB.

NIGERIA • 1 ♂; Lagos; 10 Oct. 1946; W.E.S. Merret leg.; NHMUK • 1 ♀; Lagos; 28 Sep. 1948; W.E.S. Merret leg.; NHMUK • 1 ♀; Ibadan; F.D. Golding leg.; NHMUK.

REPUBLIC OF GUINEA • 1 ♂; Tabuna valley; 14 Sep.–21 Nov. 1982; S.V. Murzin leg.; MFNB • 1 ♂; Guinea; ex mus. Murray, Fry coll.; NHMUK • 15 ♂♂, 15 ♀♀; Dalaba, Forêt de Tinka; 10°43’14” N, 12°15’22” W; 1289 m a.s.l.; 25–28 Sep. 2019; M. Geiser, M. Leno, S. Koivagui, W. Miles, L. Mulvaney and Sz. Safian leg.; degraded upland forest; NHMUK • 15 ♂♂, 13 ♀♀; Dalaba, Forêt de Goubel; 10°39’27” N, 12°15’44” W; 1413 m a.s.l.; 10–18 Sep. 2019; M. Geiser, M. Leno, S. Koivagui, W. Miles, L. Mulvaney and Sz. Safian leg.; upland forest and savannah; NHMUK • 2 ♂♂; Dalaba, Forêt de Tangama; 10°40’41” N, 12°15’58” W; 1243 m a.s.l.; 9 Sep. 2019; M. Geiser, M. Leno, S. Koivagui, W. Miles, L. Mulvaney and Sz. Safian leg.; upland forest; NHMUK • 2 ♂♂, 8 ♀♀; Ditinn, Chute de Ditinn; 10°49’08” N, 12°11’30” W; 771 m a.s.l.; 18–25 Sep. 2019; M. Geiser, M. Leno, S. Koivagui, W. Miles, L. Mulvaney and Sz. Safian leg.; Guinea savannah and gallery forest; NHMUK.

SIERRA LEONE • 1 ♂; “S. Leone”; NHMUK.

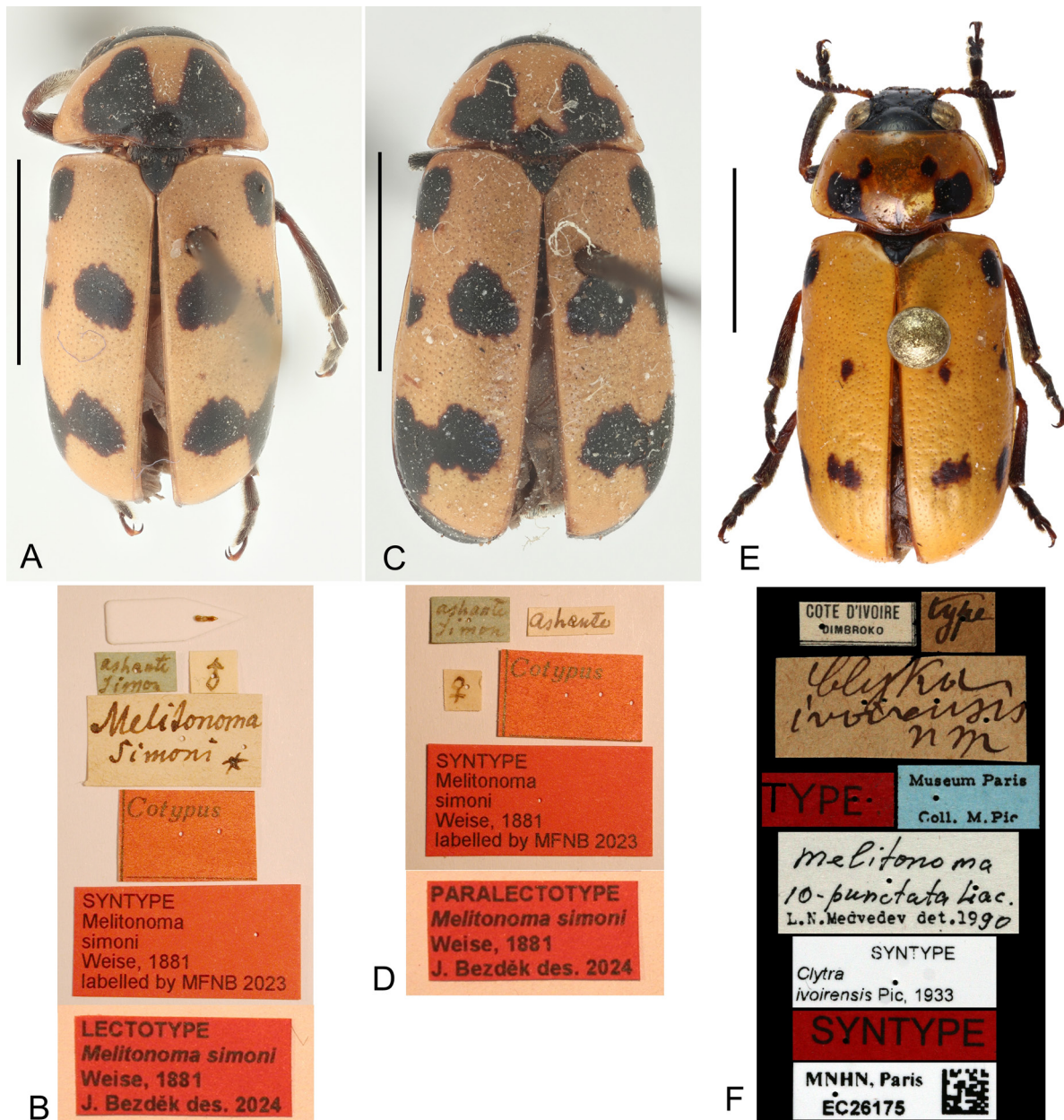
TOGO • 1 ♂, 1 ♀; “Togo Hinterland”; Kling leg.; MFNB • 2 ♂♂, 1 ♀; Bismarckburg; 20 Sep.–15 Oct. 1890; R. Büttner leg.; MFNB • 1 ♀; Bismarckburg; L. Conradt leg.; MFNB • 1 ♂; Bismarckburg; 12 Oct. 1892; L. Conradt leg.; MFNB • 1 ♀; Kloto; Nov. 1998; G. Goergen leg.; forest area; JBCB.

### Description

#### Male (Fig. 5A)

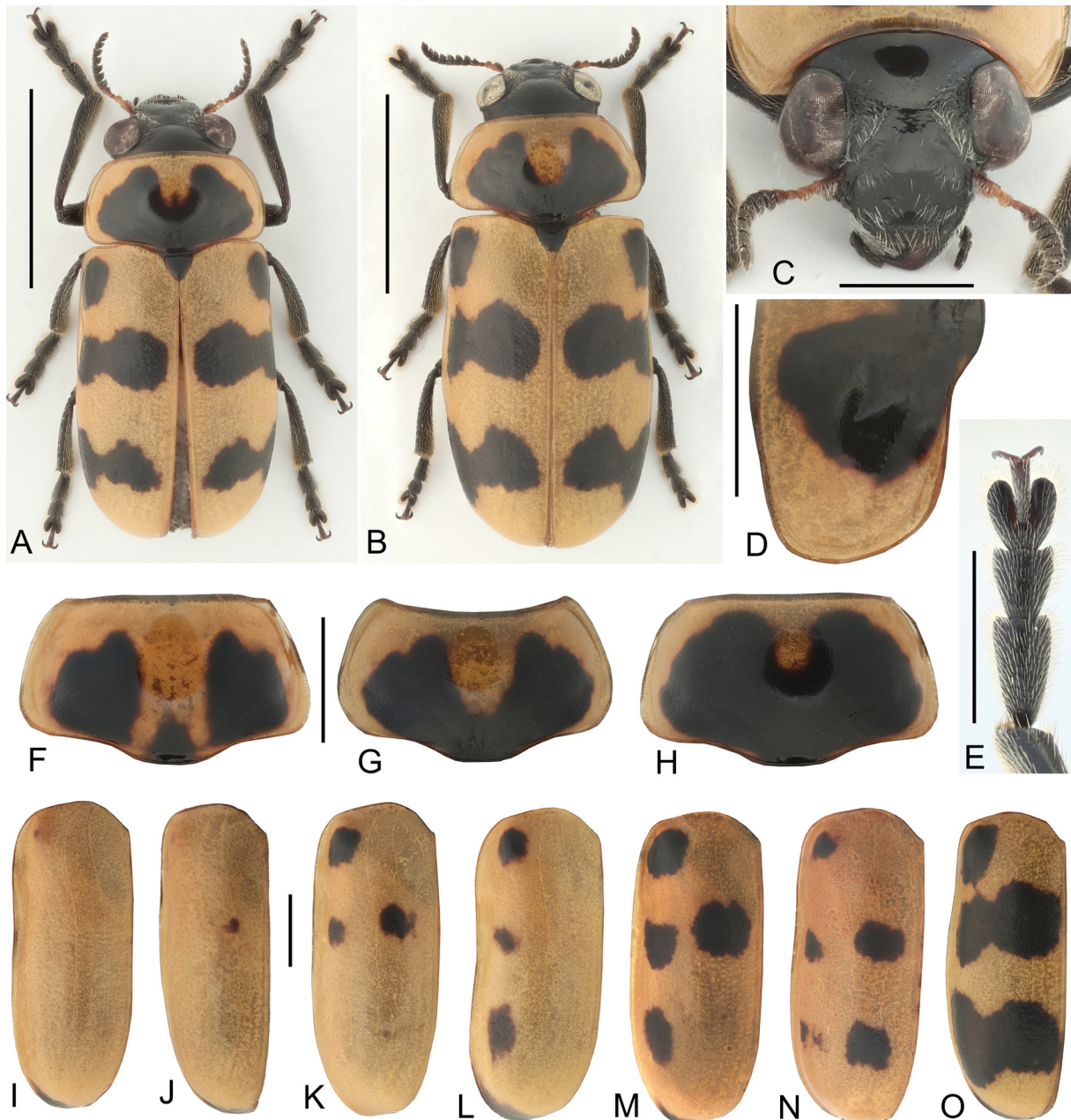
APPEARANCE AND COLORATION. Body length: 6.0–7.8 mm. Body elongate, subparallel, convex. Head black. Pronotum usually with large black spot touching posterior margin, spot deeply incised in middle of anterior margin, lateral and anterior pronotal margins yellow to yellowish brown; rarely black spot not incised in middle, or black pattern reduced to three spots (two larger irregular spots laterally and one small elongate spot in middle) (Fig. 5F–H). Elytra yellow to yellowish brown with variable black pattern

(basic pattern with five black spots (1, 2, 2) and black apex of elytra): palest specimens with 0–5 isolated spots and black apex of elytra; or pairs of spots connected forming two transverse bands; or posterior band connected with black apex by black stripe on lateral margin of elytron (Fig. 5I–O); very rarely black color on elytral apex reduced and not quite clearly distinct (Fig. 5K). Scutellum black. Antennae black with antennomeres I–IV yellow, I and III–IV often more or less darkened, V black sometimes with brownish base. Legs black, in very old specimens can be dark reddish brown. Ventral side of body black, except pronotal hypomeron yellow to yellowish brown.



**Fig. 4.** A–D. *Melitonoma simoni* Weise, 1881, type specimens. A. Lectotype, ♂ (MFNB, 7.4 mm). B. Ditto, labels. C. Paralectotype, ♀ (MFNB, 7.3 mm). D. Ditto, labels. E. *Clytra ivoirensis* Pic, 1933, syntype, ♀ (MNHN, 9.1 mm). F. Ditto, labels. Scale bars = 3.0 mm.

HEAD (Fig. 5C). Mandibles slightly enlarged, dorsal side flat and glabrous, basal parts not swollen, lateral sides covered with long pale setae; left mandible somewhat larger, apex hook-like. Labrum transverse with rounded anterior angles and shallowly emarginated anterior margin, surface subopaque, covered very fine microsculpture, glabrous, except small punctures along margins bearing pale setae. Clypeus slightly impressed along widely shallowly emarginated anterior margin. Anterior part of head slightly convex, uneven, covered with small punctures with tendency to form longitudinal wrinkles and anterolaterally also with short setae. Eyes moderately large. Frons wide, 1.75–1.90 times as wide as diameter of eye, surface uneven, almost glabrous, except setae cumulated along internal margins of eyes. Frons separated from



**Fig. 5.** *Melitonoma simoni* Weise, 1881. **A.** Male (NHMUK, Republic of Guinea, 7.0 mm). **B.** Female (NHMUK, Republic of Guinea, 7.5 mm). **C.** Head of male. **D.** Pronotum, lateral view. **E.** Male protarsus. **F–H.** Pronotum, variability. **I–O.** Elytra, variability. Scale bars: A–B = 3.0 mm; C–O = 1.0 mm.

vertex by shallowly impressed rounded line. Vertex convex, glabrous, lustrous. Antennae short, 0.22 times as long as body, antennomere I club-shaped, III very small, antennae shortly serrated from antennomere IV.

**PRONOTUM.** Convex, transverse, 1.70–1.80 times as wide as long, widest before base. Surface lustrous (Fig. 5D), almost impunctate, usually with some punctures along middle part of posterior margin, in some specimens fine punctures visible also on pronotal disc. Disc often with indistinct traces of one or two transverse impressions in posterior half of pronotum. Anterior margin straight, lateral margins moderately rounded, posterior margin nearly straight and moderately expanded in scutellar area. Anterior margin thinly bordered only in lateral parts, middle part unbordered, lateral margins widely bordered and posterior margin thinly bordered. Anterior angles narrowly rounded, posterior angles widely rounded, all angles with setigerous pore bearing long seta. Posterior angles slightly elevated above elytral base. Scutellum subtriangular with rounded apex, impunctate, and glabrous, sometimes with indistinct median keel.

**ELYTRA.** Subparallel, 1.45–1.57 times as long as wide (measured in middle) and 0.65–0.75 times as long as body. Surface glabrous, subopaque, densely covered with very fine, confused punctures and fine microsculpture. Humeral calli developed. Basal margin forming sharp keel. In lateral view, lateral margin of each elytron sinuate. Epipleura lustrous, glabrous, slightly concave, very wide at base, gradually narrowed posteriorly, disappearing in  $\frac{2}{3}$  of elytral length. Macropterous.

**VENTRAL SIDE OF BODY.** Densely covered with setae. Abdomen more or less concave in lateral view. Pygidium moderately convex.

**LEGS.** Protibiae and protarsi moderately enlarged. Protarsomere I (Fig. 5E) elongate, 2.20 times as long as wide, lateral sides slightly rounded, as wide as II, protarsomere II 1.14 times as long as wide, parallel in apical half, convergent in basal half, length ratio of protarsomeres I–III and V equals 100-66-66-83 (100 = 0.60 mm). Mesotarsomere I elongate, subtriangular, as wide as II, length ratio of mesotarsomeres I–III and V equals 100-60-60-80 (100 = 0.50 mm). Metatarsomere I elongate, subparallel, with narrowed base, as wide as II, length ratio of metatarsomeres I–III and V equals 100-75-75-100 (100 = 0.4 mm). Claws simple.

**PENIS** (Fig. 6A–F). Elongate, relatively narrow, 4.10 times as long as wide, widest at anterior third, apical third triangular, tip rounded, middle third slightly convergent basally, basal third subparallel. In lateral view, penis widely bent, apical part slightly sinuate. Ventral side slightly convex, without any ridges or impressions. Internal sac (Fig. 6G–H) with three pairs of small hook-like sclerites and one very long and thin internal sclerite, 0.34 times as long as penis.

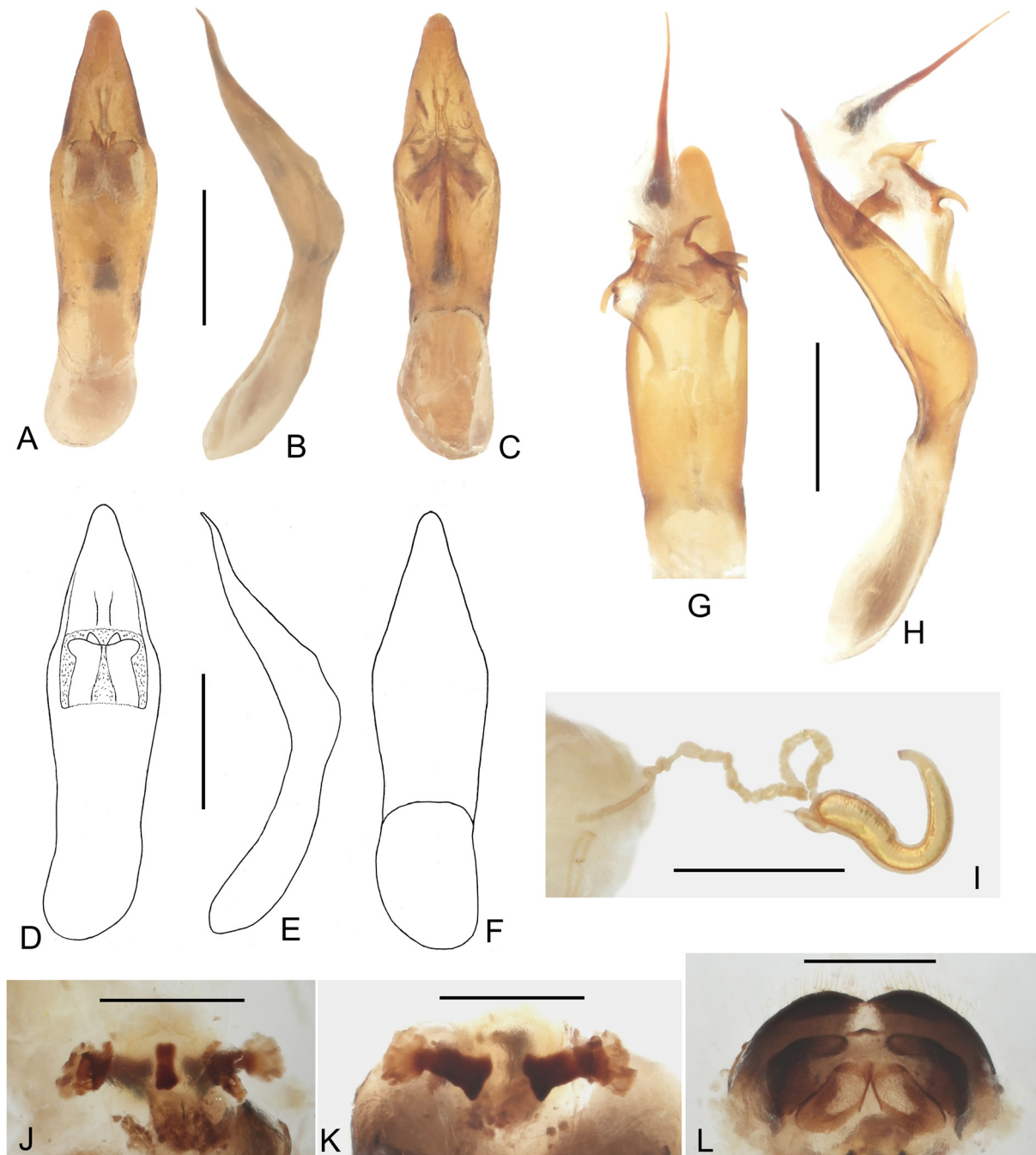
#### **Female** (Fig. 5B)

Body length: 6.2–9.1 mm. Head, mandibles, tarsi and protibiae not enlarged. Abdomen convex in lateral view, last abdominal ventrite with medial hollow. Apex of pygidium shallowly emarginated. Spermatheca (Fig. 6I) question mark-like, with gradually narrowing apical part and wider basal part, spermathecal duct ca 2.5 times as long as spermatheca, forming many small coils. Tergite VIII and ovipositor as in Fig. 6L. Dorsal rectal sclerites: two narrow, slightly bent and oblique lateral sclerites and one median longitudinally narrowly elongate sclerite (Fig. 6J). Ventral rectal sclerites relatively wide, slightly oblique, basal part moderately extended, middle part parallel, distal part fan-shaped and wider than middle part (Fig. 6K).

#### **Distribution**

Cameroon (Medvedev 1978, present paper), Côte d'Ivoire (Pic 1933, 1938; Medvedev & Beenen 2005; present paper), Ghana (Weise 1881; Medvedev 1978), Liberia (present paper), Nigeria (present paper),

Republic of Guinea (present paper), Sierra Leone (present paper) and Togo (present paper). Based on the study of relevant material, the record of *Melitonoma decempunctata* from Côte d'Ivoire by Medvedev & Beenen (2005) refers to *M. simoni*.



**Fig. 6.** *Melitonoma simoni* Weise, 1881. **A–H.** Male (NHMUK). **I–K.** Female (NHMUK). **A–C.** Penis in dorsal, lateral and ventral views. **D–F.** Penis in dorsal, lateral and ventral views (drawings). **G–H.** Penis with everted internal sclerites in dorsal and lateral views. **I.** Spermatheca. **J.** Dorsal rectal sclerites. **K.** Ventral rectal sclerites. **L.** Tergite VIII and ovipositor. Scale bars = 0.5 mm.

**Remarks**

The number of type specimens was not specified in the original description, but a body length span is given (Weise 1881). Three syntypes (one designated here as a lectotype) are deposited in the Weise collection in MFNB. One additional syntype is deposited in the collection of Lev N. Medvedev deposited now in ZIN (Moseyko 2023 pers. com.).

*Coptocephala (Anisognatha) berlandi* was explicitly described based on one specimen from “Guinée Française: Kouroussa”, deposited in the Muséum national d’Histoire naturelle, Paris (Pic 1939c). The holotype was considered lost and it was replaced in the collection by a picture of the elytral pattern and another piece of paper with a description of the beetle (Medvedev 1992). In the same paper, Medvedev (1992) synonymised *C. berlandi* with *Melitonoma simoni*. The original description (Pic 1939c) of *C. berlandi* agrees very well with species of the *M. juvenca* species group. Moreover, Pic (1939c) explicitly mentioned the fine and sparse punctuation of the pronotum what would indicate that it refers to *M. juvenca* rather than *M. simoni*. However, without examination of the holotype, it is only speculation. Because the holotype was considered lost, I suggest treating *Coptocephala (Anisognatha) berlandi* as nomen dubium.

***Melitonoma vinculata*** Weise, 1910  
(Figs 7–8)

*Melitonoma vinculata* Weise, 1910: 25. Type locality: “Dahome” [= today’s Benin].

*Melitonoma vinculata* – Jolivet 1951: 36 (faunistics). — Pic 1952: 502 (faunistics). — Medvedev & Beenen 2005: 363 (faunistics).

**Differential diagnosis**

*Melitonoma vinculata* can be distinguished from other species by the short protarsomere I of males, 1.10 times as long as wide, while at least 1.75 times as long as wide in *M. juvenca*, *M. simoni* and *M. dalaba* sp. nov. The pronotum of *M. vinculata* is covered with very fine punctures, visible under higher magnification, while the pronotum of *M. juvenca* and *M. dalaba* sp. nov. are covered with distinct and well-visible punctuation. The pronotum of *M. simoni* is almost impunctate. The penis of *M. vinculata* is similar to that of *M. juvenca*, but it has rounded lateral sides and an apex widely triangular, with the tip slightly pointed in *M. vinculata* (Fig. 8A, D), while it is subhexagonal in *M. juvenca* (Fig. 3A, D).

*Melitonoma vinculata* is also very similar to the darkest aberrations of *M. duodecimpunctata* Jacoby, 1898, from Zimbabwe, Republic of South Africa and Malawi. Almost all specimens of *M. vinculata* can be distinguished by the completely black legs, but very rare aberrations with pale tibiae and tarsi are problematic. Such specimens can be distinguished from the darkest aberrations of *M. duodecimpunctata* only by the structures of male and female genitalia.

**Type material****Lectotype** (here designated)

BENIN • ♂ (Fig. 7A–B); “♂ [w, h] // Dahomey / Dr. Schultz [b, h] // *Meliton. / vinculata* / m [w, h] // Cotypus [r, p] // SYNTYPE / *Melitonoma / vinculata* / Weise, 1910 / labelled by MFNB 2023 [r, p] // LECTOTYPE / *Melitonoma vinculata* / Weise, 1910 / J. Bezděk des. 2024 [r, p]”; MFNB.

**Other material examined**

KENYA • 1 ♀; E shore of Victoria Nyanza near Karungu; 28–29 Apr. 1911; S.A. Neave leg.; NHMUK  
• 1 ♀; Kisumu; 22–24 Apr. 1911; S.A. Neave leg.; NHMUK.

UGANDA • 1 ♀; Bussu-Busoga; 1909; E. Bayon leg.; NHMUK • 1 ♂; Mawokota; 20 Apr. 1913; C.C. Gowdey leg.; NHMUK • 1 ♂, 1 ♀; Kampala; 3–20 Apr. 1918; C.C. Gowdey leg.; NHMUK • 8 ♂♂



9 ♀♀; Entebbe; 5–11 Jul. 1911; S.A. Neave leg.; NHMUK • 2 ♂♂; Entebbe; 30 May 1913; C.C. Gowdey leg.; NHMUK • 1 ♀; Entebbe; 17 Jun. 1913; C.C. Gowdey leg.; NHMUK • 1 ♂; Entebbe; 5–9 Apr. 1914; C.C. Gowdey leg.; NHMUK • 3 ♂♂, 6 ♀♀; Entebbe; 20–25 Apr. 1914; C.C. Gowdey leg.; NHMUK • 4 ♂♂, 8 ♀♀; Entebbe; 20–28 May 1914; C.C. Gowdey leg.; NHMUK • 6 ♂♂, 6 ♀♀; Entebbe; 10–13 Jul. 1914; C.C. Gowdey leg.; NHMUK • 1 ♂; Semliki Plains; 8–9 Nov. 1911; S.A. Neave leg.; NHMUK • 1 ♂, 1 ♀; Semliki Plains near S shore of Lake Albert; 25–27 Nov. 1911; S.A. Neave leg.; NHMUK.

## Description

### Male (Fig. 7C)

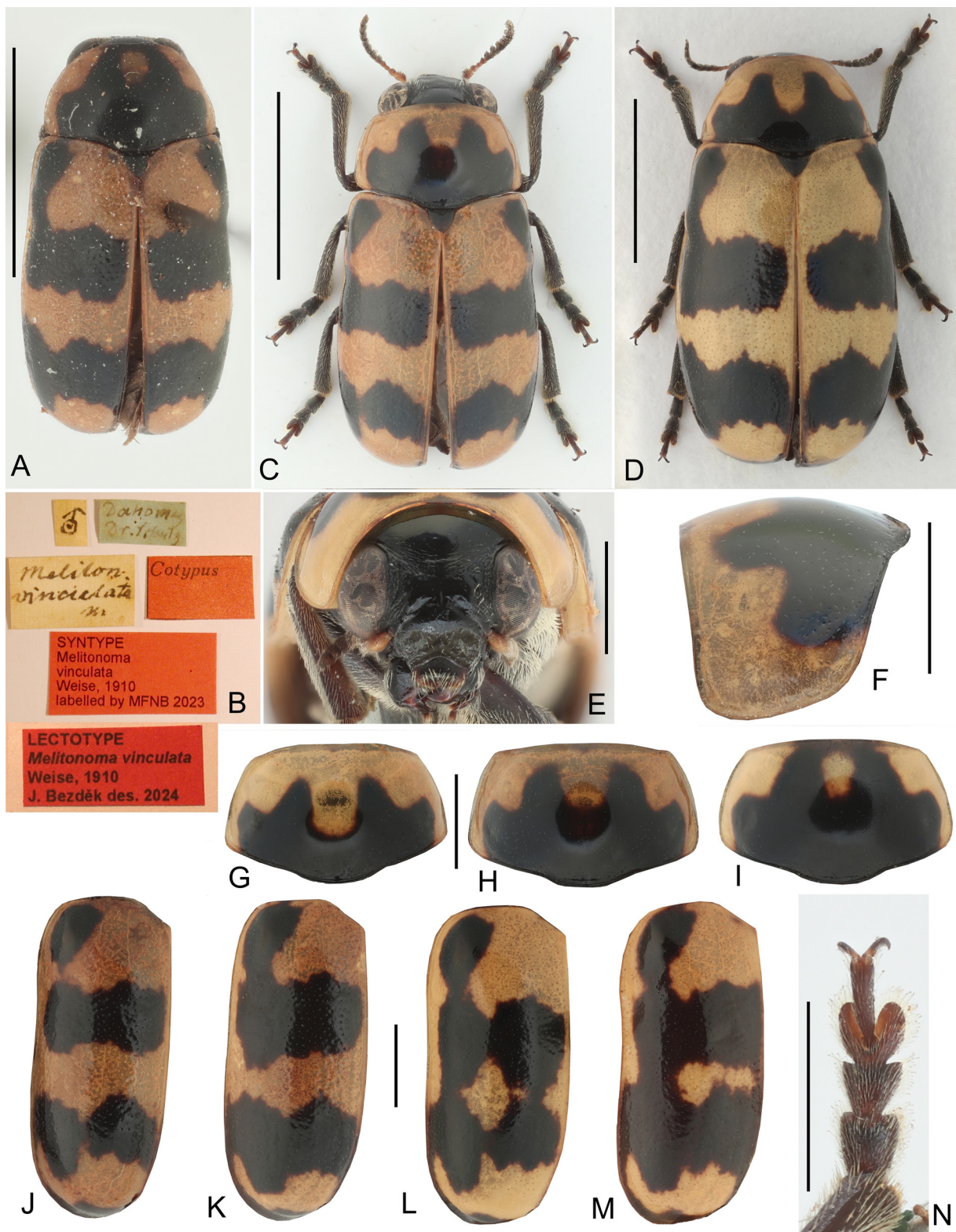
APPEARANCE AND COLORATION. Body length: 6.2–6.9 mm. Body elongate, subparallel, convex. Head black. Pronotum yellowish brown with large black spot covering basal half of pronotum except margins, anteriorly spot produced to two branches not touching anterior pronotal margin. Very rarely branches shortened or touching anterior pronotal margin (Fig. 7G–I). Scutellum black. Elytra yellowish brown with large humeral spot, two transverse bands and apex of elytra black; humeral spot usually connected with anterior transverse band, anterior transverse band not touching lateral and sutural elytral margins, posterior transverse band touching lateral and sutural elytral margins, often connected also with apical black spot by narrowly black lateral margin, rarely also both transverse bands connected (Fig. 7J–M). Ventral side of body black, pronotal hypomerion yellowish brown, often with darkened or black interior part, abdominal ventrite I sometimes with yellow basal margin. Antennomeres I–IV orange (often with darkened dorsal side), V black with orange base, VI–XI black. Legs black, very rarely tibiae and tarsi pale.

HEAD (Fig. 7E). Mandibles very slightly enlarged, dorsal sides flat, glabrous, lateral margins rounded, apices hook-like, lateral sides of mandibles covered with pale setae. Labrum transverse with rounded anterior angles and shallowly emarginated anterior margin, surface covered with small punctures bearing pale setae. Anterior margin of clypeus with wide shallow triangular emargination. Anterior part of head lustrous, very slightly convex, covered with small punctures and along anterolateral margins of clypeus also with short setae. Eyes moderately large. Frons wide, 1.80–1.85 times as wide as diameter of eye, surface uneven, almost glabrous, except setae cumulated along internal margins of eyes. Frons separated from vertex by shallowly impressed rounded line. Vertex convex, glabrous, lustrous. Antennae short, 0.20 times as long as body, antennomere I club-shaped, I and II dorsally covered with long setae, III very small, antennae shortly serrated from antennomere IV.

PRONOTUM. Convex, transverse, 1.50–1.55 times as wide as long, widest before base. Surface lustrous (Fig. 7F), sparsely covered with very fine punctures visible only in high magnification. Anterior margin straight, lateral margins slightly rounded, posterior margin widely rounded and moderately expanded in scutellar area. Anterior margin thinly bordered only in lateral parts, middle part unbordered, lateral margins widely bordered and posterior margin thinly bordered. Anterior and posterior angles rounded, with setigerous pore bearing long seta. Posterior angles not elevated above elytral base. Scutellum subtriangular, with rounded tip, glabrous, impunctate, along basal margin impressed.

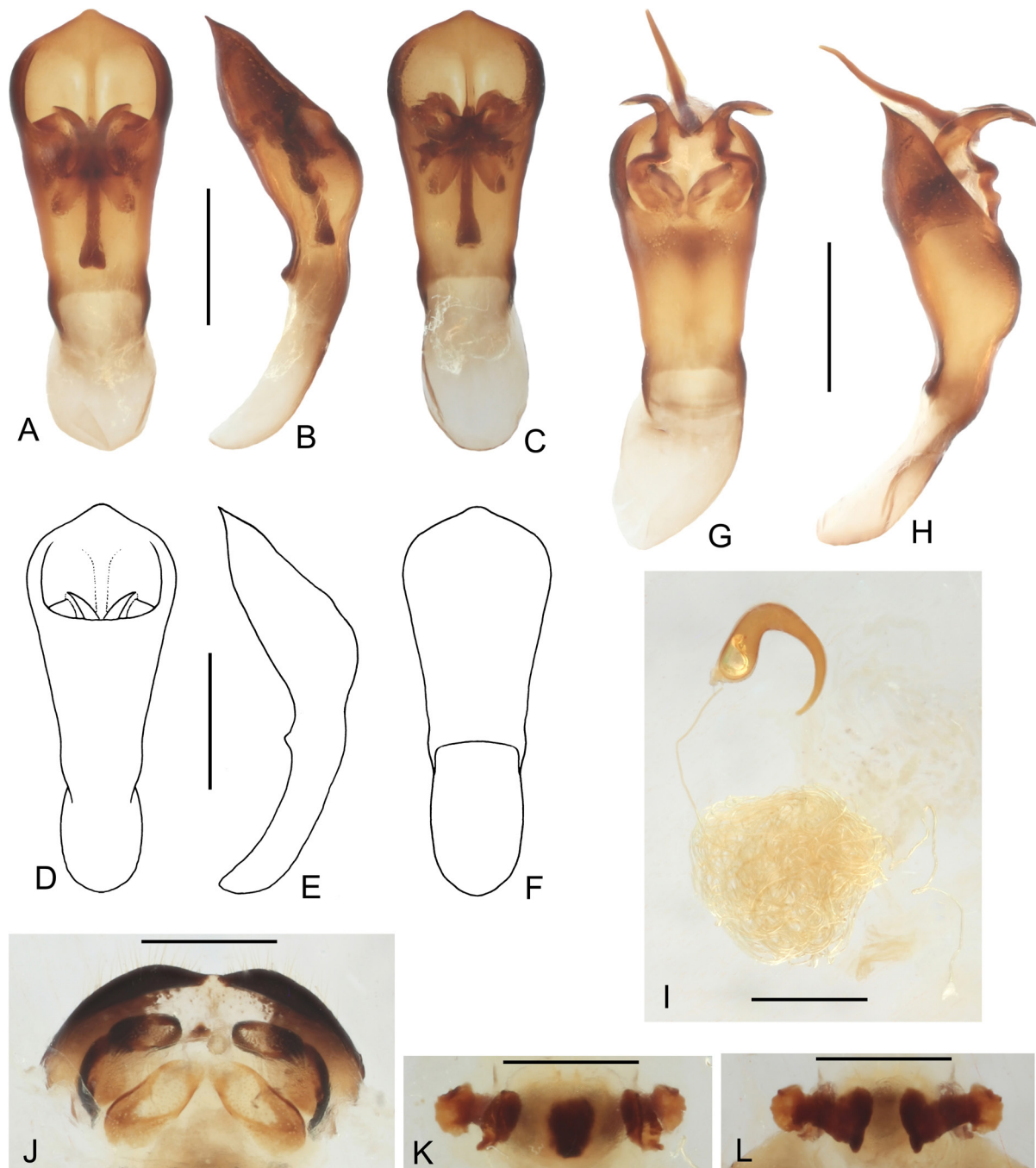
ELYTRA. Subparallel, 1.35–1.40 times as long as wide (measured in middle) and 0.70 times as long as body. Surface glabrous, subopaque to lustrous, densely covered with very fine, confused punctures and fine microsculpture. Humeral calli developed. Basal margin forming sharp keel. In lateral view, lateral margin of each elytron sinuate. Epipleura lustrous, glabrous, slightly concave, wide at base, narrowed in middle part, disappearing in  $\frac{2}{3}$  of elytral length. Macropterous.

VENTRAL SIDE OF BODY. Densely covered with short setae. Abdomen more or less concave in lateral view. Pygidium moderately convex.



**Fig. 7.** *Melitonoma vinculata* Weise, 1910. **A.** Lectotype, ♂ (MFNB, 6.3 mm). **B.** Ditto, labels. **C.** Male (NHMUK, Uganda, 6.4 mm). **D.** Female (RBCN, Uganda, 7.3 mm). **E.** Head of male. **F.** Pronotum, lateral view. **G–I.** Pronotum, variability. **J–M.** Elytra, variability. **N.** Male protarsus. Scale bars: A, C–D = 3.0 mm; E–N = 1.0 mm.

LEGS. Protibiae and protarsi not enlarged. Protarsomere I (Fig. 7N) short, 1.20 times as long as wide, as wide as II, lateral sides slightly convergent basally, protarsomere II as long as wide, triangular, length ratio of protarsomeres I–III and V equals 100-71-71-114 (100 = 0.40 mm). Mesotarsomere I subtriangular, as wide as II, length ratio of mesotarsomeres I–III and V equals 100-71-71-114 (100 =



**Fig. 8.** *Melitonoma vinculata* Weise, 1910. **A–H.** Male (NHMUK). **I–K.** Female (NHMUK). **A–C.** Penis in dorsal, lateral and ventral views. **D–F.** Penis in dorsal, lateral and ventral views (drawings). **G–H.** Penis with everted internal sclerites in dorsal and lateral views. **I.** Spermatheca. **J.** Tergite VIII and ovipositor. **K.** Dorsal rectal sclerites. **L.** Ventral rectal sclerites. Scale bars = 0.5 mm.

0.40 mm). Metatarsomere I subtriangular, as wide as II, length ratio of metatarsomeres I–III and V equals 100-71-71-128 (100 = 0.4 mm). Claws simple.

**PENIS** (Fig. 8A–F). Widest in apical fifth, apical part widely triangular with rounded lateral sides, tip slightly pointed and rounded. In lateral view, apex sharp, dorsal margin slightly bulged at anterior third. In ventral view, penis regularly convex, without keel or impressions. Internal sac (Fig. 8G–H) with three pairs of hook-like sclerites and one long needle-like sclerite, 0.85 times as long as width of penis in widest place.

#### **Female** (Fig. 7D)

Body length: 6.8–7.8 mm. Head, mandibles, tarsi and protibiae not enlarged. Abdomen convex in lateral view, last abdominal ventrite with medial hollow. Apex of pygidium slightly emarginated. Spermatheca (Fig. 8I) C-shaped, with gradually narrowing apical part and wider basal part, spermathecal duct forming large tangled-up ball in middle part. Tergite VIII and ovipositor as in Fig. 8J. Dorsal rectal sclerites: two oblique, suboval, posteriorly pointed lateral sclerites and one large, median, longitudinally suboval sclerite (Fig. 8K). Ventral rectal sclerites relatively wide, slightly oblique, basal part significantly extended and posteriorly pointed, middle part slightly converging distally, distal part fan-shaped, wider than middle part but narrower than basal part (Fig. 8L).

#### **Distribution**

Benin (Weise 1910; Pic 1952), Congo (Jolivet 1951), Kenya (present paper) and Uganda (Medvedev & Beenen 2005; present paper). Voucher specimens from Congo were not examined; therefore, the occurrence in Congo requires verification.

#### **Remarks**

The number of type specimens was not specified in the original description (Weise 1910), but since a body length range was given, Weise had at least two specimens available. Only one syntype (designated here as a lectotype) is deposited in the Weise collection in MFNB. The deposition of other type specimens is unknown to me.

#### *Melitonoma dalaba* sp. nov.

[urn:lsid:zoobank.org:act:7DFBB80C-C755-4529-94E6-EC5384C122D2](https://zoobank.org/act:7DFBB80C-C755-4529-94E6-EC5384C122D2)

Fig. 9

#### **Differential diagnosis**

The males of *Melitonoma dalaba* sp. nov. are characterised by elongate protarsomeres I, 2.45 times as long as wide which are longer than in males of *M. juvenca* (1.75 times as long as wide) and of *M. simoni* (2.20 times as long as wide) (Figs 2N, 5E, 9O). The pronotum of *M. dalaba* sp. nov. is covered with distinct and well-visible punctation, which is, however, less intensive than in *M. juvenca* (Figs 2D, 9E). The pronotum of the other two species, *M. simoni* and *M. vinculata*, is completely, or almost completely impunctate, or covered with very fine punctures visible under higher magnification. The penis of *M. dalaba* sp. nov. is relatively wide with a distinct triangular apical process, while the penis of *M. juvenca* and *M. vinculata* are without a triangular apical process, and that of *M. simoni* is remarkably and regularly tapered along its apical third (Figs 3A–F, 6A–F, 8A–F, 9F–K).

#### **Etymology**

The name “dalaba” refers to the type locality. Noun in apposition.

## Type material

### Holotype

REPUBLIC OF GUINEA • ♂ (Fig. 9A–B); Dalaba, Forêt de Goubel; 10°39'27" N, 12°15'44" W; 1413 m a.s.l.; 10–18 Sep. 2019; M. Geiser, M. Leno, S. Koivagui, W. Miles, L. Mulvaney and Sz. Safian leg.; upland forest and savannah; NHMUK, NHMUK\_014527975.

### Paratypes

REPUBLIC OF GUINEA • 2 ♂♂; same data as for holotype; NHMUK, NHMUK\_014527959, NHMUK\_014527969.

## Type locality

Republic of Guinea, Dalaba, Forêt de Goubel, 10°39'27" N, 12°15'44" W.

## Description

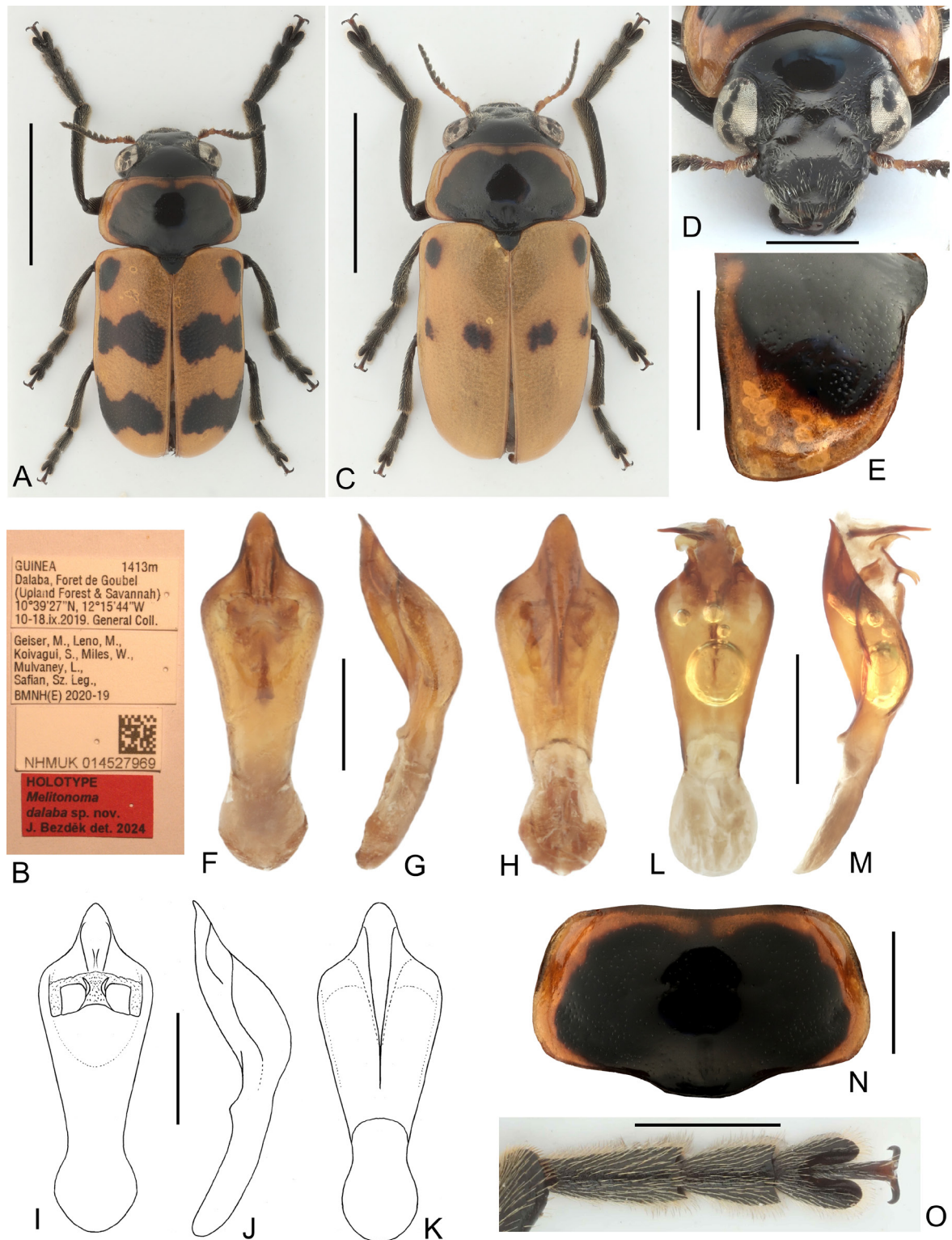
### Male

APPEARANCE AND COLORATION. Body length: ♂♂: 6.7–7.2 mm (holotype 7.2 mm). Body elongate, subparallel, convex, almost glabrous. Head black, with dark brownish apices of mandibles. Pronotum with large black spot touching posterior margin, anterior margin of spot nearly straight, anterior, lateral and lateral parts of posterior pronotal margins orange (Fig. 9N). Scutellum black. Elytra orange with humeral black spot, two transverse black bands not touching lateral and sutural margins and black apex of elytra (holotype and one paratype); black pattern, reduced with humeral spot smaller, anterior transverse band fragmented to two small spots, posterior black band missing, and apical black margin narrower (one paratype, Fig. 9C). Ventral side of body black, except pronotal hypomeron orange. Antennomeres I–III orange (I with darkened dorsal side), IV–V black with orange bases, VI–XI black. Legs black.

HEAD (Fig. 9D). Mandibles moderately enlarged, dorsally even and glabrous, lateral sides covered with long pale setae; left mandible somewhat larger, with lateral margin straight and oblique, and apex hook-like. Labrum transverse with rounded anterior angles and shallowly emarginated anterior margin, surface semiopaque, with several punctures, pale setae cumulated on anterior angles and anterior margin, several setae also on disc. Anterior margin of clypeus with wide shallow triangular emargination. Anterior part of head slightly impressed along anterior margin, surface slightly convex and uneven, covered with small punctures and short setae. Eyes moderately large. Frons wide, 2.10 times as wide as diameter of eye, surface uneven, almost glabrous, except setae cumulated along internal margins of eyes. Frons separated from vertex by shallowly impressed rounded line. Vertex convex, glabrous, lustrous, impunctate. Antennae short, 0.23 times as long as body, antennomere I club-shaped, III very small, antennae shortly serrated from antennomere IV.

PRONOTUM (Fig. 9N). Moderately convex, transverse, 1.87 times as wide as long, widest in basal quarter. Surface (Fig. 9E) lustrous, covered with fine punctures disappearing in middle line and along lateral and anterior margins, punctures with very short microscopic setae almost invisible at a cursory glance, surface with two shallow vertical impressions along basal margin. Anterior margin almost straight, lateral margins slightly rounded, convergent anteriorly, posterior margin slightly rounded and moderately expanded in scutellar area. Anterior margin unbordered in middle part, thinly bordered laterally, lateral margin widely bordered and posterior margins thinly bordered. Anterior angles rounded, posterior angles widely rounded. Anterior setigerous pores placed on anterior margin close to anterior angle, posterior pores placed in middle of rounding. Posterior angles slightly elevated above elytral base. Scutellum subtriangular, with rounded tip, glabrous, impunctate, shallowly impressed in middle basal margin.

ELYTRA. Subparallel, widest at posterior third, 1.40 times as long as wide and 0.64 times as long as body. Surface glabrous, dull, densely covered with very fine, confused punctures and fine microsculpture.



**Fig. 9.** *Melitonoma dalaba* sp. nov. **A.** Holotype, ♂ (NHMUK, 7.0 mm). **B.** Ditto, labels. **C.** Paratype, ♂ (NHMUK, 6.8 mm). **D.** Head of male. **E.** Pronotum, lateral view. **F–H.** Penis in dorsal, lateral and ventral views. **I–K.** Penis in dorsal, lateral and ventral views (drawings). **L–M.** Penis with everted internal sclerites in dorsal and lateral views. **N.** Pronotum, dorsal view. **O.** Male protarsus. 3.0 mm; D–E, N–O 1.0 mm; F–M = 0.5 mm.

Humeral calli developed. Basal margin forming sharp keel. In lateral view, lateral margin of each elytron sinuate. Epipleura lustrous, glabrous, slightly concave, very wide at base, gradually narrowed posteriorly, disappearing in  $\frac{2}{3}$  of elytral length. Macropterous.

VENTRAL SIDE OF BODY. Densely covered with setae. Abdomen more or less concave in lateral view.

LEGS. Protibiae and protarsi moderately enlarged. Protarsomere I (Fig. 9O) elongate, 2.45 times as long as wide, slightly narrower than protarsomere II, parallel in apical half, slightly convergent basally, protarsomere II 1.35 times as long as wide, length ratio of protarsomeres I–III and V equals 100-66-60-64 (100 = 0.80 mm). Mesotarsomere I elongate, parallel, as wide as II, length ratio of mesotarsomeres I–III and V equals 100-58-50-66 (100 = 0.60 mm). Metatarsomere I elongate, parallel, with narrowed base, as wide as II, length ratio of metatarsomeres I–III and V equals 100-60-60-80 (100 = 0.50 mm). Claws simple.

PENIS (Fig. 9F–K). Penis 2.95 times as long as wide, widest at anterior quarter, middle part convergent, narrowest at basal quarter, basal part slightly wider. Apical part forming large subtriangular process. Dorsal surface in apical part with finger-shaped elevation, laterally surrounded by distinct concavities. In lateral view, penis bent in middle, apical half wider with sharp apex, basal half narrow, almost straight. In ventral view, apical part with finger-shaped elevation, in middle part narrowed to sharp keel. Internal sac (Fig. 9L–M) with three pairs of hook-like sclerites and one long and thin internal sclerite, 0.25 times as long as penis.

#### **Female**

Unknown.

#### **Distribution**

Republic of Guinea.

#### **Discussion**

Taxonomic knowledge of Clytrini varies significantly by region. Nearctic species were taxonomically assessed by Moldenke (1970). Part of the Neotropical species and genera were revised, such as by Monrós (1954) and more recently by Agrain *et al.* (2007, 2017), Agrain & Roig-Juñent (2011) and Agrain (2013, 2014). New World Clytrini genera were reclassified by Moldenke (1981). The Palaearctic fauna (except China) is very well documented and keyed (see, e.g., Warchałowski 2003, 2010; Bezděk & Regalin 2015). The large publications that cover the Indian Subregion (Jacoby 1908), China (Gressitt & Kimoto 1961) and continental SE Asia (Kimoto 1981) are already out of date. The large number of recent descriptions, which have not been placed in their proper context, have made the taxonomic situation of Clytrini in these regions confusing and require comprehensive revisions. Additionally, Clytrini from Sundaland and the species-poor fauna of the Australian Region are awaiting modern taxonomical assessment.

The Afrotropical fauna of Clytrini urgently requires comprehensive revision. Over the past approximately 70 years, Afrotropical Clytrini were intensively studied by Lev N. Medvedev and his coauthors, who described a large number of new species. However, many of these descriptions are short and insufficient, usually without photographs of habitus and accompanied only by schematic drawings of the genitalia. Only several genera were thoroughly revised, such as *Diapericera* Lacordaire, 1848 (Erber & Medvedev 2003b), or *Plecophthalma* Medvedev & Regalin, 1997 (Medvedev & Regalin 1997). Some other genera have been revised in the form of an identification key supplemented with descriptions of new species, such as *Barybaena* Lacordaire, 1848 (Medvedev 1993a; Erber & Medvedev 2003a), *Gyriodera*

Lacordaire, 1848 (Medvedev 1989), *Atelechira* Lacordaire, 1848 (Medvedev 1993b), or *Afrophthalma* Medvedev, 1978 (Medvedev 2006).

The taxonomy of the tribe Clytrini is beset by the problem of poorly defined genera with unclear taxonomic borders. Some genera are defined based on European species, to which Oriental and Afrotropical species were subsequently assigned, but those characters do not fully correspond with European ones (typically, e.g., *Clytra* Laicharting, 1781 or *Coptocephala* Chevrolat, 1836). Species-rich genera like *Smaragdina* Chevrolat, 1836, *Aetheomorpha* Lacordaire, 1848, *Clytra* or *Coptocephala* include many species units where it is unclear whether they are species groups, subgenera or even separate genera. Taxonomical boundaries are also unclear in the genus *Melitonoma*, where some species very similar to *Smaragdina* and *Tituboea* Lacordaire, 1848 can be found. Molecular studies, which could significantly help with genus classification, are completely lacking in Old World Clytrini. The importance of also making a thorough study of old type material cannot be underestimated, as was documented for example by Bezděk & Regalin (2015), Bezděk (2016, 2019) or Geiser & Bezděk (2019).

## Acknowledgements

I would like to thank all curators and colleagues listed in the Material and methods chapter for giving me the opportunity to study their collections. Special thanks are due to Alexey G. Moseyko (ZIN) for the information about specimens of *Melitonoma* in the collection of Lev N. Medvedev now deposited in ZIN, and to Antoine Mantilleri and Christophe Rivier (MNHN) for the tracing of type specimens of *Melitonoma* deposited in MNHN and for the photographs of the syntype of *Clytra ivoirensis*.

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*Manuscript received: 18 April 2024*

*Manuscript accepted: 22 October 2024*

*Published on: 20 February 2025*

*Topic editor: Tony Robillard*

*Section editor: Max Barclay*

*Desk editor: Pepe Fernández*

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