

Chelotrupes annamariae n. sp., a new species of Geotrupidae (Coleoptera: Scarabaeoidea) from SW Portugal

Adam Byk

Byk A. 2012. *Chelotrupes annamariae* n. sp., a new species of Geotrupidae (Coleoptera: Scarabaeoidea) from SW Portugal. *Baltic J. Coleopterol.*, 12(2): 109 - 116.

Chelotrupes annamariae n. sp. from SW Portugal (Algarve: Lagos env.) is described and illustrated. Additionally, its systematic position and ecological specialization is discussed.

Key words: taxonomy, new species, Geotrupidae, *Chelotrupes annamariae* n. sp., SW Portugal

Department of Forest Protection and Ecology, Warsaw University of Life Sciences – SGGW, Nowoursynowska 159/34, 02-776 Warsaw, Poland, e-mail: adam_byk@sggw.pl

INTRODUCTION

The name *Chelotrupes* was originally coined by Jekel (1866) for a group of species considered by him as a subgenus of the genus *Geotrupes* Latreille, 1797. Later, in the majority of relevant publications, it was treated as a synonym of *Geotrupes* Latreille, *Ceratophyus* Fischer von Waldheim, 1824, or *Typhaeus* Leach, 1815; also, in the Catalogue of Palaearctic Coleoptera (Löbl & Smetana 2006) *Chelotrupes* Jekel is listed as a subgenus of *Typhaeus* Leach, whereas in one publication from 2008 it receives the rank of a genus (Dellacasa M. & G. 2008). The latter decision is justified by the fact that in all species classified as *Chelotrupes* Jekel, membraneous wings are reduced and beetles cannot fly while well-developed wings of the representatives of *Typhaeus* Leach make them efficient flyers.

Genus *Chelotrupes* Jekel, 1866 has hitherto contained three species:

- *Chelotrupes hiostius* (Gené, 1836)

Type material: neotype is stored in the Museo Regionale di Scienze Naturali, Torino. Geographical distribution: Sardinia.

- *Chelotrupes matutinalis* (Baudi, 1870)

Type material: lectotype and paralectotype in the Museo Regionale di Scienze Naturali, Torino. Geographical distribution: Sardinia.

- *Chelotrupes momus* (A.G. Olivier, 1789)

Type material: lectotype and paralectotype in the Muséum National d'Histoire Naturelle, Paris. Geographical distribution: Southern part of the Iberian Peninsula.

Syn. *Ceratophyus laevipennis* Mulsant & Godart, 1855; synonymized by Boucomont, 1912

Type material: type specimen should be considered lost (T. Branco - pers. inf.).

Syn. *Geotrupes andalusiacus* Deyrolle, 1869; synonymized by Boucomont, 1912

Type material: type specimen is probably held in M.L. Fairmaire's collection in the Muséum National d'Histoire Naturelle, Paris.

Syn. *Ceratophyus (Minotaurus) momus* var. *momoides* Reitter, 1892; synonymized by Boucomont, 1912

Type material: holotype – “Hispania mer., coll. Reitter”, “HOLOTYPUS 1892, *Ceratophyus momus* v. *momoides* Reitter”, “*Chelotrupes momus* det. O. Hillert” is housed in the Hungarian Natural History Museum in Budapest. Verification by the author has shown that it is a female of *Chelotrupes momus*.

Recent collecting by Polish entomologists in southwestern Portugal has resulted in the discovery of a fourth species as described below.

Chelotrupes annamariae n. sp.

Differential diagnosis

Chelotrupes annamariae resembles *Chelotrupes momus* but can be distinguished by the characteristics listed in the table below:

<i>Chelotrupes annamariae</i> n. sp.	<i>Chelotrupes momus</i> (Oliv.)
Length of body 14-22 mm	Length of body 10-18 mm
Pronotum and elytra lustrous, elytral interstriae smooth	Pronotum lustrous, elytra mat, elytral interstriae microsculptured
Male	Male
Head extensively convex with small tubercle at middle of front	Head extensively convex without tubercle
Head dorsally finely and shallowly punctured	Head dorsally coarsely and deeply punctured
Middle horn of pronotum large (Fig. 1a), longer than diameter of its base	Middle horn of pronotum small (Fig. 1b), shorter than diameter of its base
Denticle on lateral horns of pronotum placed near to apex (Fig. 1a), horns not flattened at midlength between base and denticle	Denticle on lateral horns of pronotum placed in the middle (Fig. 1b), horns flattened at midlength between base and denticle
Genitalia as in Fig. 2a	Genitalia as in Fig. 2b

DESCRIPTION

Length 14-22 mm. Body black, somewhat elongated, strongly convex, lustrous. Dorsal side glabrous. Head rhomboidal, widest at eyes, distinctly narrowed towards both epistome and pronotum. Head dorsally punctured, with exten-

sive convex elevation and small tubercle at middle of front. Eyes across their entire width divided by a single narrow, setose slit (*canthus*). Epistome triangular, apical margin somewhat rounded and distinctly elevated. Labrum transverse, punctulated and setulose, anterior margin slightly concave. Mandibulae with three denticles in apical part: outer one short, triangular, with wide base; middle one long, also triangular, base narrow; inner one rectangular, apically truncated. Antennae 11-segmented; club composed of 3 segments, mat, densely setose with short setae, remaining part of antenna lustrous with sparse setae. Pronotum strongly transverse, widest anteriorly, moderately convex, shining, punctured. Pronotal sides with a single small depression, basal margin distinctly carinated, hind angles broadly rounded. Scutellum transversely triangular. Elytra convex, lustrous, with poorly marked, posteriorly often vanishing rows of fine puncture; interstriae flat, smooth. Wings reduced. Outer margin of protibiae with 5 well-developed denticles (sixth inconspicuous) and

somewhat flattened distal spur. Outer margin of meso- and metatibiae with 4 transverse setulose carinae; distal spur of mesotibiae straight, slightly flattened and apically pointed, that of metatibiae somewhat curved, also flattened but with rounded apex. All tarsomeres with sparse, long setae. First segment of metatarsi as long as the second and fourth together.

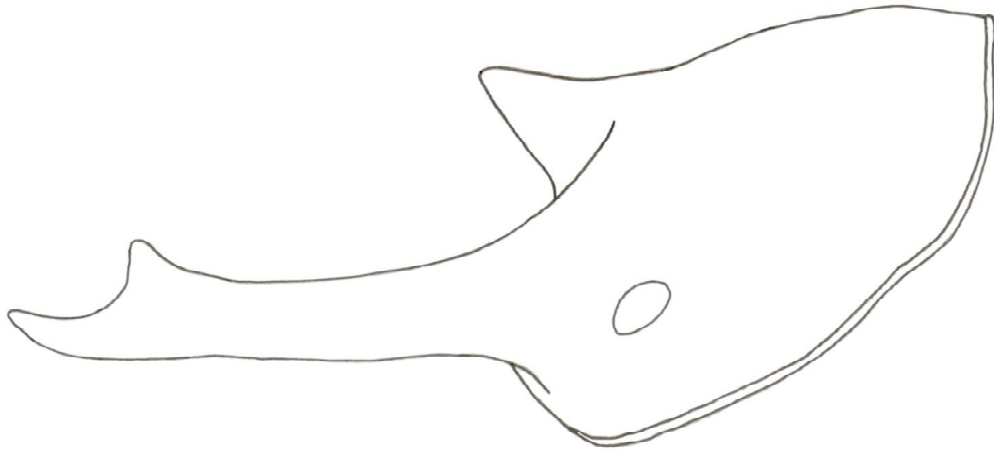


Fig. 1a. *Chelotrupes annamariae* n. sp.; male pronotum, lateral view (drawing by Marek Byk)

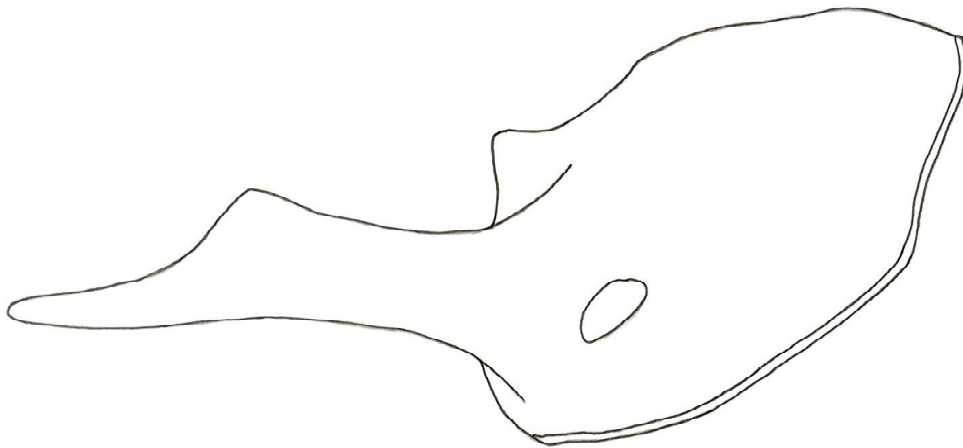


Fig. 1b. *Chelotrupes momus* (Oliv.); male pronotum, lateral view (drawing by Marek Byk)

Male (Figs. 3a, b). Dorsal side of head sparsely shallowly punctured. Tubercle at middle of front poorly indicated. Apical spur of protibiae straight, its apex rounded. Anterior part of pronotum with 3 horn-like outgrowths: lateral pair directed anterograde, long, reaching beyond apical margin of labrum, with denticle near apex, not flattened

at middle between base and denticle; median horn much shorter (but longer than diameter of its base), conical, directed obliquely upwards, its ventral surface sloping at angle to anterior surface of pronotum. Anterior angles of pronotum narrowly rounded. Pronotal punctures grouped at anterior angles, on sides, and sometimes along base. Male genitalia as in Fig. 2a.

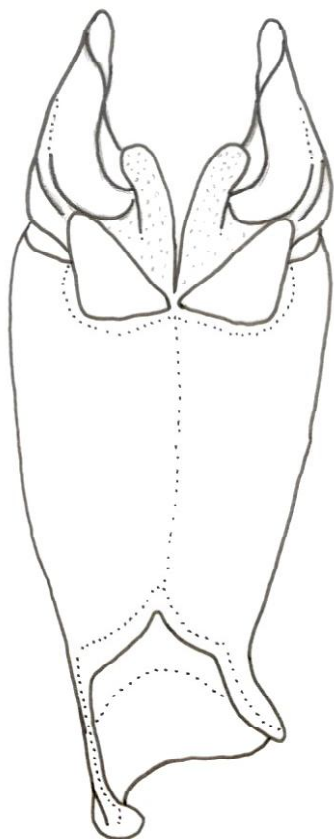


Fig. 2a. *Chelotrupes annamariae* sp. n.; aedeagus, ventral view (drawing by Marek Byk)

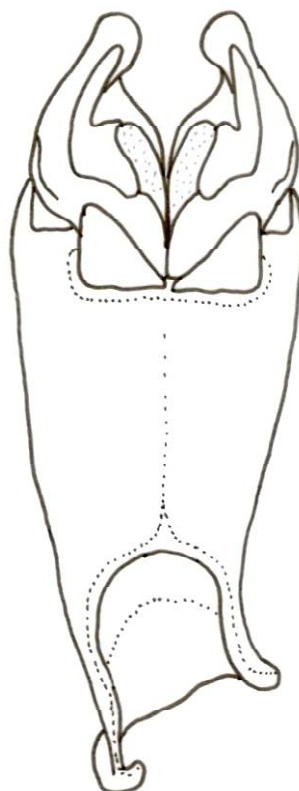


Fig. 2b. *Chelotrupes momus* (Oliv.); aedeagus, ventral view (drawing by Marek Byk)

Female (Figs. 4a, b). Dorsal side of head densely deeply punctured. Frontal tubercle prominent. Distal spur of protibiae curved apically. Pronotum with transverse ridge in anterior part and single sharp tubercle at each anterior angle. Sides of pronotum flattened near base, sinuated just behind anterior angles and prolonged into denticles. Pronotal surface densely and deeply punctured, in central and basal parts punctures shallower and sparser.

Abbreviations of collections

ABCW – A. Byk private collection, Warsaw (Poland)

AMCW – A. Matusiak private collection, Warsaw (Poland)

HNHM – Hungarian Natural History Museum, Budapest (Hungary)

MBCK – M. Bidas private collection, Kielce (Poland)

MKCK – M. Kaźmierczak private collection, Koio (Poland)

MNHN – Muséum National d’Histoire Naturelle, Paris (France)

SGGW – Department of Forest Protection and Ecology, Warsaw University of Life Sciences – SGGW, Warsaw (Poland)

TGCG – T. Gazurek private collection, Gliwice (Poland)



Fig. 3a. Male *Chelotrupes annamariae* n. sp.; body, dorsal view (photo by Cosmin - Ovidiu Mancu)

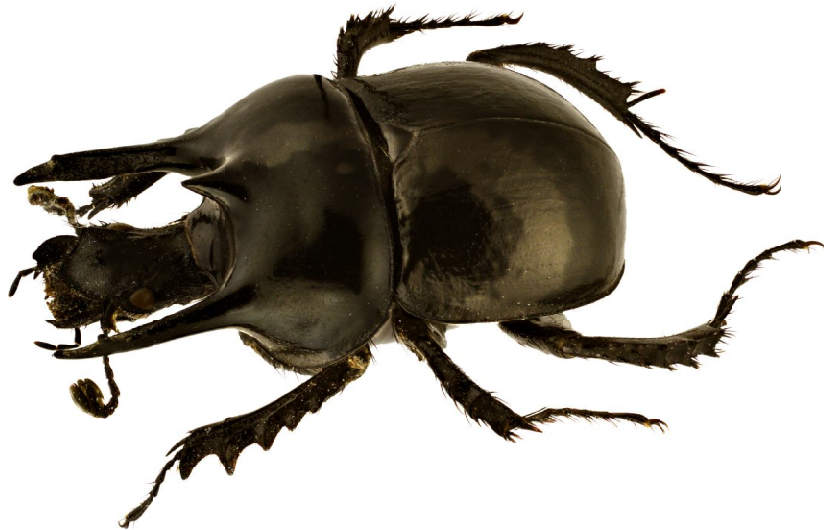


Fig. 3b. Male *Chelotrupes annamariae* n.sp.; body, lateral view (photo by Cosmin - Ovidiu Mancu)



Fig. 4a. Female *Chelotrupes annamariae* n. sp. body, dorsal view (photo by Cosmin - Ovidiu Manci)



Fig. 4b. Female *Chelotrupes annamariae* n. sp. body, lateral view (photo by Cosmin - Ovidiu Manci)

Type material

Holotype – male: “7 XII 2006, Portugal, Vila do Bispo at Lagos, leg. T. Gazurek” [MNHN].

Paratypes: “7 XII 2006, Portugal, Vila do Bispo at Lagos, leg. T. Gazurek”, 20 exx. (13 male, 7 female) [MNHN, HNHN, SGGW, TGCG, ABCW]; “12 II 2010, Portugal, Vila do Bispo at Lagos, leg. A. Byk”, 1 ex. (female) [ABCW]; “15 II 2012, Portugal, Vila do Bispo at Lagos, leg. M. Bidas”, 1 ex. (male) [MBCK]; “15 II 2012, Portugal, Vila do Bispo at Lagos, leg. A. Matusiak”, 2 exx. (male) [AMCW]; “14 II 2012, Portugal, Sagres at Lagos, leg. M. Bidas”, 2 exx. (male, female) [MBCK]; “14 II 2012, Portugal, Sagres at Lagos, leg. M. Kaźmierczak”, 1 ex. (male) [MKCK]; “14 II 2012, Portugal, Sagres at Lagos, leg. A. Matusiak”, 7 exx. (4 male, 3 female) [AMCW]; “Lusit. Coll. E. Friv.”, “FRIV. 2898”, “*Ceratophius momus* F. coll. E. Frivaldszky”, “*Chelotrupes* sp. det. O. Hillert 2010”, 1 ex. (male) [HNHN].

Distribution

Known from two localities near Lagos in SW Portugal.

Bionomics

This species – a coprophage of the telocoprid group, unable to fly (wings reduced) – probably inhabits maritime areas of southern Portugal. Found between November and March near excrements of rabbits and sheep.



Fig. 5. Label of the holotype (photo by Tomasz Mokrzycky)

Name derivation

The name is dedicated to my daughter Anna Maria Bischoff-Byk.

ACKNOWLEDGEMENTS

The author wishes to thank Tristão Branco (Portugal) for valuable taxonomic suggestions, Otto Merkl (Hungary) for the loan of *Chelotrupes* specimens housed in the Hungarian Natural History Museum, Budapest, Olivier Montreuil (France) for the loan of specimens preserved in the Muséum National d’Histoire Naturelle, Paris, Tomasz Gazurek (Poland) for a gift of collected specimens, and Cosmin-Ovidiu Mancu (Romania) for taking the colour photographs.

REFERENCES

- Boucomont A. 1912. *Scarabaeidae: Taurocerastinae, Geotrupinae*. Pars 46. *Coleopterorum Catalogus auspiciis et auxilio*. W. Junk, Berlin, 47 pp.
- Dellacasa M., Dellacasa G. 2008. Revision of the genus *Chelotrupes* Jekel, 1866 n. stat. (Insecta, Coleoptera, Geotrupidae). *Zoosystema*, 30(3): 629-640.
- Fischer von Waldheim G. 1824. *Entomographie de la Russie, et genres des Insectes*. Entomographia Imperii Rossici, sue Caesariae Majestati Alexandro I dicata. Volume II. Mosquae: Augusti Semen Typographi, XX + 264 pp.
- Jekel H. 1866. Essai sur la classification naturelle des *Geotrupes* Latreille et descriptions d’espèces nouvelles. *Annales de la Société entomologique de France* ser. 4, 5: 513-618.
- Latreille P.A. 1797. *Précis des caractères génériques des Insectes, disposés dans un ordre naturel*. Brive: F. Bourdeaux, XIV + 201 + 7 pp.

Leach W.E. 1815. Entomology. Pp. 57-172. In: Brewster D. (ed.) The Edinburgh encyklopaedia. Volume 9. Edinburgh: Balfour, 384 pp.

Received: 21.10.2012.

Accepted: 15.12.2012.

Deyrolle E. 1869. Petites Nouvelles. Petites Nouvelles entomologiques, 1er Année, N° 3:9-11.

Löbl I., Smetana A. (eds.) 2006. Catalogue of Palaearctic Coleoptera, vol. 3. Apollo Books, Stenstrup, 690 pp.

Mulsant E., Godard A. 1855. Description de quelques Coléoptères nouveaux ou peu connus. Opuscules entomologiques, 6: 1-8.

Olivier A.G. 1789. Entomologie, ou histoire naturelle des insectes, avec leurs caractères génériques et spécifiques, leur description, leur synonymie, et leur figure enluminée. Baudouin, Paris, 1, 190 pp.

Reitter E. 1892. Bestimmungs-Tabellen der Lucaniden und coprophagen Lamellicornen des palaearktischen Faunengebietes. Brünn: Edmund Reitter, 230 pp.