

***Laemostenus (Sphodroides) tiouirii*, a new troglophile beetle from Tunisia (Coleoptera: Carabidae)**

Borislav GUÉORGUIEV

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Abstract. A new brachypterous, troglophile ground-beetle, *Laemostenus (Sphodroides) tiouirii* sp. n. (type locality: NE Tunisia, Jebel Serj Mt., cave of Mine) is described and illustrated. The new species possesses a set of important characters which put it close to/ or within the basal grade of the subgenus, which contains *L. aelleni* (Antoine), *L. foucauldi* (De Miré), and *L. reticulata* (Schaufuss); the new taxon is also closely related to *L. alluandi* Bedel. *Laemostenus tiouirii* sp. n. is however easily recognized from all the above-mentioned species by the combination of four characters: absence of angular protrusion on the anterior margin of male profemur, edentate claws of the onychium, differing shape of the median lobe of aedeagus in lateral aspect, and finer structure of the right paramere. An identification key for the Tunisian species of *Sphodroides* is provided.

Key words: Coleoptera, Carabidae, Sphodrini, new species, Tunisia

Introduction

At present the subgenus *Sphodroides* Schaufuss, 1865 of genus *Laemostenus* Bonelli 1810 comprises 15 species (CASALE, 2003). Most of the species live in North Africa as only two of them, *L. picicornis* (Dejean, 1831) and *L. cordicollis* (Chaudoir, 1854), inhabit territories lying outside the African continent (CASALE, 1988). The former occurs only the island of Sicily (however, it has never been confirmed again from this locality: A. Casale, personal communication), while the latter is more widespread being known from Cyprus, the Near East and Iran (ibid.).

Recently, my colleague Pavel Stoev from the National Museum of Natural History Sofia gave me a single male specimen of *Sphodroides* collected in the course of a Bulgarian-Tunisian zoological expedition carried out in the early spring of 2008. The study of the genitalia and external morphology of the specimen revealed that it belongs to a new species for the science, whose description is the purpose of present note.

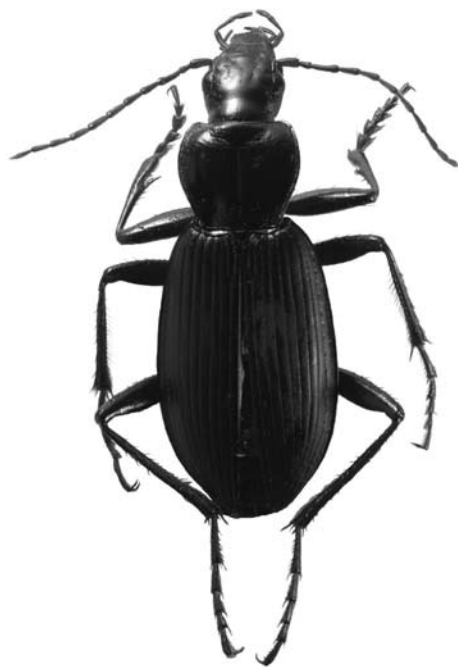
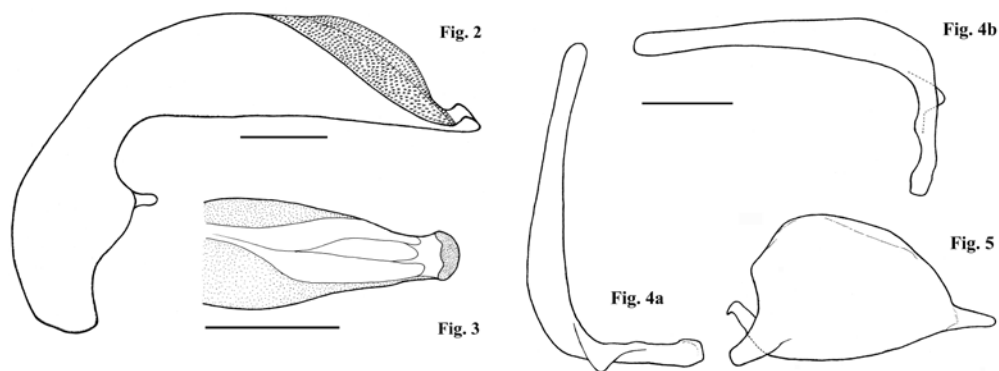


Fig. 1. Habitus of imago



Figs. 1-5. *Laemostenus tiouirii* sp. n., holotype
 Fig. 2. Median lobe of aedeagus, left lateral view
 Fig. 3. Median lobe of aedeagus, apical part in dorsal view
 Fig. 4a-b. Right paramere
 Fig. 5. Left paramere
 Scale lines: 0.5 mm (Figs. 2, 4-5); 1 mm (Fig. 3)

Systematic part

Laemostenus (Sphodroides) tiouirii new species

(Figs. 1-5)

Type material. Holotype ♂, labelled: “NE Tunisia: Zaghouan Distr., Jebel Serj Mt., Grotte de la Mine, March 2008, M. Tiouiri leg.” [typeset white label] / “Holotype *Laemostenus (Sphodroides) tiouirii* species nova B.V. Guéorguiev det. 2008” [typeset red label]. The holotype is kept in the entomological collection of the National Museum of Natural History, Sofia.

Type locality. North-East Tunisia, Jebel Serj Mountain, cave of Mine.

Diagnosis. The new species is distinct from the other species of *Sphodroides* by the following combination of characters: metatrochanteri normal, reniform, round at apex; eyes as long as or slightly shorter than temporae; male metabiae straight; even intervals of elytra slightly wider than odd ones; two supraorbital setiferous punctures; anterior margin of male profemur smooth; claws of onychium edentate on ventral side.

Description of holotype. A brachypterous *Laemostenus* species with length from apex of longer mandible to elytral apex 17.2 mm and maximal width 6 mm (Fig. 1). Head and pronotum black, elytra black with slight violet lustre; antennae, palpi, lateral margins of pronotum, epipleurae, and legs in part (coxae, trochanteri, tarsi) brown to brown-reddish. Microsculpture of tegument isodiametric, distinct on head, pronotum and elytra.

Proportions: width of pronotum / width of head 1.38; width of pronotum / length of pronotum 1.12; length of elytra / length of pronotum 2.13; width of elytra / width of pronotum 1.15; length of elytra / width of elytra 1.67.

Head elongate with frontal furrows shallow; disc smooth. Eyes not prominent, as long as or slightly shorter than temporae. Labrum relatively long, anterior margin with 3+3 marginal setiferous punctures. Clypeus emarginate anteriorly, with 1+1 marginal setiferous punctures somewhat removed from anterior margin; suture between clypeus and frons distinct only in middle. Antennae pubescent from second fifth of article 4; end of article 8 exceeding basal margin of pronotum.

Pronotum clearly cordiform, widest before middle; anterior part smooth, slightly vaulted laterally; disc flat, smooth; basal and lateral parts flat, punctured; midline distinct, not reaching both anterior and posterior borders; two posterolateral impressions indistinct. Anterior margin emarginate; fore angles obtuse. Lateral margins slightly sinuate before hind angles; 2+2 lateral setiferous punctures present, anterolateral ones situated before middle of pronotum and separated from lateral bead by distance at least equal to width of setiferous punctures. Posterior margin straight; hind angles obtuse.

Elytra elongate, narrower basally, gradually widened apically as widest in posterior third, very slightly sinuate before apex. Shoulders moderately prominent forward, obtusely angulate; basal bead reaching scutellum. Scutellar stria and scutellar setiferous punctures present; elytral striae finely punctured; intervals almost flat. Hind wings reduced.

Body underneath smooth; anterior margin of metaepisternae shorter than inner margin. Legs long and slender; anterior margin of each profemur smooth; claws of onychium edentate on ventral side.

Median lobe of aedeagus in lateral view with: fine and elongate basal bulb almost perpendicular to apical part having convex dorsal margin and concave basal orifice; short and more constricted intermediate medial part; apical part long, with convex dorsal margin, straight ventral margin, and apex with elevated dorsal edge before tip (Fig. 2); median lobe in dorsal view slightly

constricted before apex, apical plate well-differentiated round in front and doubly concave at back (Fig. 3). Right paramere long, fine, basally bearing triangular process (Fig. 4a-b). Left paramere as it is Fig. 5.

Etymology. The new species is named after Mr. Mohamed Tiouiri, a prominent Tunisian speleologist, who collected the new species.

Affinities. *Laemostenus tiouirii* **sp. n.** possesses a set of important characters which put it close to/ or within the basal grade of the subgenus. This grade contains three species, e.g. *L. aelleni* (Antoine, 1952), *L. foucauldi* (Bruneau de Miré, 1958), and *L. recticollis* (Schaufuss, 1865) having several plesiomorphic characters of importance (CASALE, 1988: 853). These characters are: metatrochanteri normal, reniform, round at apex; male metabia straight; even intervals of elytra slightly wider than odd ones; two supraorbital setiferous punctures; anterior margin of male profemur smooth. The different shape of the median lobe of aedeagus in lateral aspect (Fig. 2) and finer structure of right paramere (Fig. 4a-b) well-distinguished the new species from other three species. In addition, the new species is distinct from *L. aelleni* and *L. recticollis* s.l. in the edentate claws of the onychium ventrally. On the other side, *L. tiouirii* sp. n. resembles *L. alluaudi* Bedel, 1899 in the external morphology. However, the former species differs from the latter one in the form of the aedeagus in lateral view (Fig. 2; see also CASALE, 1988: 864, Fig. 1288) and the polarity of a sexually dimorphic character on the anterior margins of male profemur (anterior margin angulately protruding in *L. alluaudi*; same smooth in *L. tiouirii* sp. n.).

Notes on the type locality. The cave of Mine is situated in Aptian Cretaceous limestone of the Jebel Serj Mt. at ca. 800 meters above sea level, near to the Oueslatia Town, North-East Tunisia. The length of the cave is ca. 1700 meters, and the maximal depth is 295 meters. The main chamber of the cave is located at the extremity of a narrow mine gallery about 250 m long, plunging 50 m deep. In the main chamber of the cave, which is ca. 200 m long and ca. 75 m in wide giving shelter of a bat-colony, its floor being covered with guano heaps. The holotype of *Laemostenus tiouirii* **sp. n.** has been found at minus 40 meters depth, after the first descend. The mean annual rainfall in the region measured at the Kairouan meteorological station is 306 mm, with a minimum during the summer (May-September). The average cave temperature is between 13 and 14 °C, which is much lower than the outside average temperature (19.5 °C). Above the cave the soil is thin and the vegetation mostly composed of sparse trees (green oak, Alep pine and Montpellier maple) and bushes.

Key of the species of *Laemostenus* (*Sphodroides*) from Tunisia (Fig. 6):

- 1 Species with metatrochanteri elongate (in females) or pointed at apex (in males).
..... *L. picicornis picicornis* (Dejean, 1831)
- Species with metatrochanteri normal, reniform, round at apex. 2
- 2 Species with claws of onychium dentate on ventral side
..... *L. recticollis recticollis* (Schaufuss, 1865)
- Species with claws of onychium edentate on ventral side. 3
- 3 Species with anterior margin of male profemora angulately protruding.
..... *L. alluaudi* Bedel, 1899
- Species with anterior margin of male profemora smooth..... *L. tiouirii* **sp. n.**



Fig. 6. Map of the known localities of *Laemostenus (Sphodroides)* in Tunisia

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References

CASALE A. 1988. Revisione degli Sphodrina (Coleoptera, Carabidae, Sphodrini). – Museo regionale di Scienze naturali Torino, Monografia, 5: 1-1024.

CASALE A. 2003. Subtribe Sphodrina Laporte, 1834. – In: Löbl, L. & Smetana, A. (eds.). Catalogue of Palaearctic Coleoptera. Volume 1. Archostemata-Myxophaga-Adephaga. Apollo Books, Stenstrup, Denmark, 532-544.

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Author's address:

Borislav Guéorguiev, National Museum of Natural History – BAS, Tsar Osvoboditel Blvd. 1, 1000 Sofia, Bulgaria, e-mail: bobivg@yahoo.com

Laemostenus (Sphodroides) tiouirii, нов троглофилен вид бръмбар от Тунис (Coleoptera: Carabidae)

Борислав В. ГЕОРГИЕВ

(Резюме)

Представено е описание на нов брахицерен троглофилен вид от семейство Carabidae – *Laemostenus (Sphodroides) tiouirii* sp. n. с типово находище североизточен Тунис, планина Жбел Серж, пещерата на Мин. В систематично отношение, новият вид стои най-близо до три вида от примитивния комплекс на подрода (*L. aelleni*, *L. foucauldi*, and *L. recticollis*), както и до *L. alluandi*. Представен е определителен ключ на тунизийските видове от *Sphodroides*.