

Short scientific note

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First record of *Laemostenus (Laemostenus) barbarus* (Lucas, 1846) in Sardinia (Coleoptera: Carabidae, Harpalinae, Sphodrini)

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Abstract

The rare W-Mediterranean carabid beetle *Laemostenus barbarus* (Lucas, 1846) is here reported for the first time from Sardinia and confirmed to Calabria. The currently known distribution and ecology of this species are briefly discussed.

Keywords: ground beetles, Carabidae, Italy, new records.

Introduction

Laemostenus Bonelli, 1810 is a speciose genus with 224 species currently accepted and grouped in 14 subgenera (Casale, 2017; Lorenz, 2021), probably originating from Euro-Mediterranean area and presently distributed in the western Palearctic region, Central Asia, and Himalayan region (Casale 1988). Genus *Laemostenus* displays a comparatively wide spectrum of habitat occupancy and life strategies, including several specialized elements with strong adaptation to hypogean environment. Some species, such as *L. terricola* (Herbst, 1784) and *L. complanatus* (Dejean, 1828), are nowadays subcosmopolitan due to anthropogenic dispersal.

Materials and Methods

The specimen from Aspromonte (Calabria) reported in this study was collected in the framework of the project “*Studi su presenza, distribuzione e ruolo nella conservazione degli ecosistemi forestali dei Coleotteri in Direttiva Habitat e saproxilici del Parco Nazionale dell’Aspromonte*”, carried out from 2014 to 2018, while the Sardinian specimen was collected during a survey in northern Sardinia. Both the specimens are preserved in the first authors’ personal collection (CGA).

Botanical nomenclature follows Bartolucci et al. (2018).

Laemostenus barbarus (Lucas, 1846)

Material examined. Italy: Sardinia, Logudoro (Mejlogu), Bânari (Sassari province), Sa Tancasa, 460 m, 18 Aug 1998, A.B. Biscaccianti leg., 1 ♂ (CGA); **Italy: Calabria**, Aspromonte National Park, Samo (Reggio Calabria province), stream Apo Scipo, Vallone Fedavolito, 38°06’47.5”N, 15°57’27.1”E, 1280 m, 10 Oct 2014, A.B. Biscaccianti, E. Castiglione, F. Manti leg., 1 ♀ (CGA).

Discussion

Laemostenus barbarus (Figs 1-6) exhibits a W-Mediterranean chorotype (sensu Vigna Taglianti et al. 1999), restricted to Maghreb (Morocco, Algeria, Tunisia), southern Italy (northern Sicily and southern Calabria), and Sardinia (present paper) (Sciaky & Pavesi 1986; Casale 2017; Casale et al. 2021). It is the southern vicariant of the closely related *L. venustus* (Dejean, 1828), whose southernmost known locality is in southern Campania: Vallo della Lucania (Magistretti 1965). It should be noted that the latter locality was erroneously attributed to northern Calabria by Sciaky & Pavesi (1986); furthermore, the ancient quotations of *L. venustus* for Sicily (Ragusa, 1883) and Sardinia (Burmeister 1939) are almost certainly to be referred to as *L. barbarus* (see also Casale 1988).

The presence of *L. barbarus* in Sardinia could be autochthonous. Indeed, as for other beetles with a Sardini-

an-Sicilian-Maghrebian distribution, the species may have colonized the island during the Messinian salinity crisis. However, considering the attitude of the Sphodrini to anthropogenic dispersal (Casale 1988), its occurrence in Sardinia could be alternatively interpreted also in this way.

Ecology of *L. barbarus* and *L. venustus* is substantially similar: according to several authors (Ghiliani, 1887; Müller 1926; Bonadona 1971), both species have dendrophilic habits, most likely in relation to a foleophilic behavior in burrows of micromammals inside old trees (Casale 1988; Pescarolo 1985). However, *L. barbarus* is more strictly associated to oak and beech forests than *L. venustus* (Bedel 1899; Bruneau de Miré 1958; Lundberg et al. 1987; Casale 1988). Indeed, our specimen from Aspromonte was collected in an old-growth oak forest dominated by *Quercus petraea* (Matt.) Liebl. subsp. *austrotyrrhenica* Brullo, Guarino & Siracusa, with large amount of deadwood, while the Sardinian specimen was collected inside the rotten wood of *Quercus suber* L. in a typical grazed cork oak wood of northern Sardinia. There are no known cave-dwelling populations of *L. barbarus*, unlike *L. venustus*.

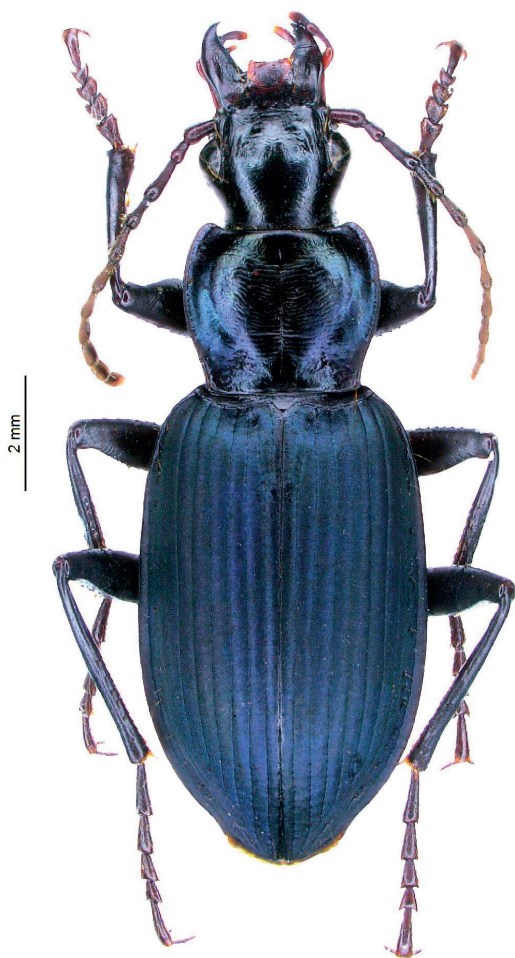


Fig. 1 – *Laemostenus barbarus* (Lucas, 1846) from Sardinia, Bânari: habitus, male.

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Figs 2-6 – Male genitalia of *Laemostenus barbarus* (Lucas, 1846) from Sardinia, Bânari: **2**, median lobe of aedeagus in lateral view; **3**, median lobe of aedeagus in dorsal view; **4**, male gonostomite (IX invaginated abdominal segment); **5**, right paramere; **6**, left paramere.

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