Notes on the Distribution and Ovipositor Morphology of Mylaris gigas (Linnaeus, 1767), Mylaris maxima (Germar, 1824), and Taphrosomadohrnii Kirsch, 1866 (Coleoptera: Tenebrionidae: Stenochiinae: Cnodalonini)

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NOTES ON THE DISTRIBUTION AND OVIPOSITOR MORPHOLOGY OF MYLARIS GIGAS (LINNAEUS, 1767), MYLARIS MAXIMA (GERMAR, 1824), AND TAPHROSOMA DOHRNI KIRSCH, 1866 (COLEOPTERA: TENEBRIONIDAE: STENOCHINAE: CNODALONINI)

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ABSTRACT

New records on the geographical distribution of Mylaris gigas (Linnaeus, 1767), Mylaris maxima (Germar, 1824), and Taphrosoma dohrni Kirsch, 1866 are presented, and a distribution map is provided. Their ovipositors are described, illustrated, and compared for the first time. Taphrosoma doorknob is considered an incorrect subsequent spelling of T. dohrni and therefore an invalid name.

Key Words: genitalia, Neotropical, taxonomy, nomenclature

Taphrosoma dohrni was described from Bogotá, Colombia, but Blackwelder (1945) only listed the species as occurring in South America without providing exact locations or countries.

This study was part of a morphological study of M. gigas, M. maxima, and T. dohrni by ELS while an undergraduate student at Universidade Federal do Rio de Janeiro (Brazil). This study revealed inconsistencies between our observations and previously published data on the morphology of the group (Tschinkel and Doyen 1980). Additionally, we take this opportunity to expand the geographical distribution of these species and provide, for the first time, a distribution map.

MATERIAL AND METHODS

Sixty-seven specimens were examined (22 specimens of M. gigas, 19 of M. maxima, and 26 of T. dohrni) for this study. The specimens belong to the following institutions:

DZRJ Coleção Entomológica Professor José Alfredo Pinheiro Dutra, Rio de Janeiro, Brazil
MNRJ Museu Nacional, Rio de Janeiro, Brazil
CPAC Embrapa Cerrados’ Collection, Planaltina, Distrito Federal, Brazil
MLPA Museo La Plata, La Plata, Argentina
IFML Museo do Instituto Fundacion Miguel Lillo, Tucuman, Argentina
MAIC Michael A. Ivie Collection, Montana State University, Bozeman, MT, USA

The morphological terminology follows Matthews et al. (2010), and dissection protocols follow Tschinkel and Doyen (1980). Photographs of adult habitus were taken using a digital camera Nikon 7000 with a Sigma 150 mm macro lens, while ovipositor photographs were taken with a Leica S8 APO with a digital camera (Leica DMC 2900) attached. The distribution map was made using Google Earth and Quantum GIS 2.18, using the maps available in the website www.naturalearthdata.com, a free public database of maps.

**DISTRIBUTION**

New localities for *M. gigas* in Costa Rica (Puntarenas and Limón) and Paraguay (Itapua and Alto Paraguay) and *M. maxima* in Paraguay (Itapua) and Argentina (Misiones) are presented. *Taphrosoma dohrni* is poorly represented in collections, which may be the reason for its inaccurate geographical documentation. We refine its distribution from South America in general (Blackwelder 1945) to Colombia (Kirsch 1866), Brazil, Ecuador, and Peru. The map (Fig. 19) illustrates the geographical distribution of the specimens examined in our study. *Mylaris gigas* and *M. maxima* occur together in two distinct biomes in Brazil, the Atlantic Rainforest and Cerrado, while *M. gigas* and *T. dohrni* occur in Amazonian Forest.

**Mylaris gigas** (Linnaeus, 1767) (Figs. 1–4)


**PARAGUAY:** Itapua: Hohenau, XI.1958, Foster leg., Molinari det. 1959, 1 M; Alto Paraguay XI.1951, without leg., Molinari det. 1959, 1 F (IFML).

**Distribution.** Mexico, Guatemala, Nicaragua, Panama, Colombia, French Guiana, Suriname, Brazil, Peru, Bolivia, Argentina (Blackwelder 1945). **New country records:** Paraguay and Costa Rica (Fig. 19).

**Mylaris maxima** (Germain, 1824) (Figs. 5–8)


**ARGENTINA:** Misiones: Cainguas, Campo Grande, X.1949, Alverenga leg., 1 F (MNRJ), Santa Catarina: Joinville, Brückner leg., 1 F (MNRJ).

**Distribution.** Brazil (Blackwelder 1945). **New country records:** Argentina and Paraguay (Fig. 19).

**Taphrosoma dohrni** Kirsch, 1866 (Figs. 9–12)

**Examined Material. ECUADOR:** 1 F without other data (MLP); Pastaza: Mera (Rio Anzu, Hacienda Ila) VIII.1885, Majche leg., 1961, Molinari det., 1 M, 1 F; Oriente Puyo (800 m), VIII.1885, without leg., Molinari det. 1969, 3 M, 6 F; without other data 3 F, 6 M. **PERU:** Pasco: Chuchur[a], Kulzer det. 1950, without other data, 1 M (IFML).

**Distribution.** South America (Blackwelder 1945). The distribution of this species is poorly documented in the catalogs of Blackwelder (1945) and Gebien (1911, 1941), which lack specific localities. Kirsch (1866) described it from Bogotá, Colombia. In our study, we examined specimens from Brazil, Peru, and Ecuador (Fig. 19).

**Ovipositor and Incorrect Spelling**

While studying the morphology of these three species, we noted that *T. dohrni* has a different type of ovipositor than that mentioned in the classic study of female Tenebrionidae genitalia by Tschinkel and Doyen (1980). The type of ovipositor stated in Appendix III of Tschinkel and Doyen (1980) for *Taphrosoma* is the cnodalonine type, characterized by having three coxites (coxites three and four fused). However, we found in *T. dohrni* an ovipositor of the stenochiine (= coelometopine) type, which has four complete, non-fused coxites (Figs. 15, 18).

An inconsistency concerning the *Mylaris* ovipositor was also found. In Appendix III of Tschinkel and Doyen (1980), *Mylaris* was listed under the stenochiine type of ovipositor, while in Appendix IV it was listed as the cnodalonine type. In our study, we found that the ovipositors of *M. gigas* (Figs. 13, 16) and *M. maxima* (Figs. 14, 17) are of the stenochiine type (four complete coxites).

**Figs. 13–18.** Ovipositor, ventral view: 13) *Mylaris gigas*; 14) *Mylaris maxima*; 15) *Taphrosoma dohrni*. Apical part of ovipositor: 16) *M. gigas*; 17) *M. maxima*; 18) *T. dohrni*. cx = coxite; pp = paraproct. Paraprocts absent in Fig. 15.
Due to the poor condition of the old specimens, the paraprocts of T. dohrni were not studied. Additionally, while checking the information in Appendix IV of Tschinkel and Doyen (1980), we found that the species name listed, “Taphrosoma doorknob Kirsch,” is an incorrect subsequent spelling according to Article 33.3 of the International Code of Zoological Nomenclature (ICZN 1999). According to Tschinkel (W. Tschinkel in litt. to ELS), Taphrosoma doorknob was probably a joke not intended to make it to print, and as the specimen was destroyed during the study, it is not possible to know the correct identification of it.

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