

***Berberomeloe bubeniki* sp. nov. (Coleoptera: Meloidae: Lyttini)  
from Alicante Region, Spain**

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**Taxonomy, new species, Coleoptera, Meloidae, Meloinae, Lyttini, *Berberomeloe*, Spain, Palearctic Region**

**Abstract.** *Berberomeloe bubeniki* sp. nov. from the Alicante province in Spain is described and illustrated. The new species is compared to other *Berberomeloe* Bologna, 1989 species, primarily to probably the most morphologically similar species - *B. indalo* Sánchez-Vialas, García-París, Ruiz & Recuero, 2020.

## INTRODUCTION

The affiliation of *Meloe chrysocomus* Miller, 1861 and *Meloe majalis* Linnaeus, 1758 to the tribe Lyttini Streubel, 1846 (Meloidae) was established by Cros (1934 and 1940), and these taxa were included in the genus *Trichomeloe* Reitter, 1911 (sensu novo) by MacSwain (1956) (see also Bologna & Di Giulio 2008). Bologna (1989) then created a new genus *Berberomeloe* for *Trichomeloe majalis* and confirmed its inclusion in the tribe Lyttini (see also Selander 1991, Bologna & Pinto 2001, 2002, Bologna et al. 2008, Bologna 2008, 2020). A second species of *Berberomeloe*, *B. insignis* (Charpentier, 1818), endemic to southern Spain, was resurrected by García-París (1998); this has been supported by molecular and larval evidence (Settanni et al. 2009). A fundamental revision of the genus *Berberomeloe* Bologna, 1989 was given by Sánchez-Vialas et al. (2020), followed by Cortés-Fossati (2020) and Ricciari et al. (2022).

The description is based on a comparison of the new species with *B. indalo* Sánchez-Vialas, García-París, Ruiz & Recuero, 2020, whose overall habitus and male external genitalia are morphologically very similar, but distinctly differentiated in diagnostic characters. In addition, the distribution area of *B. bubeniki* sp. nov. is considerably distant from the known range of the former species. The type locality (Torrevieja) is an isolated grassy meadow in a plain with shrubby vegetation on an area of about 200 m<sup>2</sup>. It is located by the sea at an altitude of 5 m a.s.l. (Fig. 1a,b). We were unable to record other specimens in the immediate vicinity.

*Berberomeloe indalo* is found in the mountainous area above Almeria, in several localities in a relatively small region (La Mela, El Puntal, Rambla Honda, Campohermoso, etc.) at an altitude of 200-700 m. These localities are over 250 km away from Torrevieja. Other species of *Berberomeloe* (for example *B. majalis*) are so clearly morphologically different (mainly by male genitalia) that any confusion is out of the question. The limited occurrence as well as the biotope and altitude is also considered important for delimitation of the new species.

## MATERIAL AND METHODS

Terminology and measurements were used according to Sánchez-Vialas et al. (2020).

The colour photographs of the habitus and diagnostic characters were taken with a Canon R, digital camera (lens Mitutoyo 10x) and with Nikon D850 digital camera (lens Microobjective 90 mm), both using Adobe Photoshop & Helicon Focus (for the authors of the photographs see “Acknowledgements” below).

Abbreviations for collections:

AWHS Antonín Wrzecionko, private collection, Horní Suchá, Czech Republic;  
BBFM Boris Bubeník, private collection, Frýdek Místek, Czech Republic;  
NMPC National Museum, Praha, Czech Republic.

### Material studied for comparison:

*Berberomeloe castuo* Sánchez-Vialas, García-París, Ruiz & Recuero, 2020: Portugal: Lagos env. 25.iv.1992, M. Smola leg.; 1 ♂, 2 ♀♀, (AWHS); 1 ♂ with same label data (BBFM); Trás-os-Montes, Braganca-Rabal, 20.v.2007, A. M. Braco leg.; 2 ♀♀, (AWHS); the same, but 3 ♀♀, (BBFM).

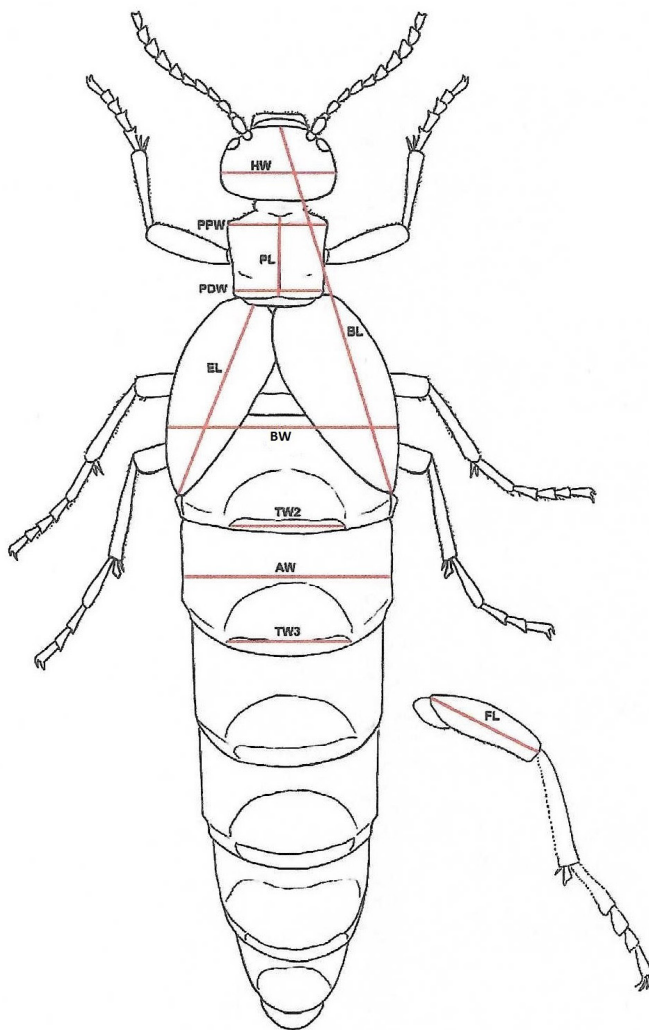
*Berberomeloe indalo* Sánchez-Vialas, García-París, Ruiz & Recuero, 2020: Spain, Andalusia, Almería prov.: 10 km N of Sorbas, El Puntal, 600 m a.s.l., 27.iii.2022, A. Wrzecionko leg., 2 ♂♂, (AWHS) (Figs. 2-7); the same, but B. Bubeník leg., 1 ♂, 1 ♀, (BBFM); 3 km N of Lucainea de las Torres, Rambla Honda, 500 m a.s.l., 22.v.2018, A. Hergovits leg., 1 ♀, (AWHS).

*Berberomeloe insignis* (Charpentier, 1818): Spain, Andalusia, Almería prov.: Tabernas, 620 m a.s.l., 25.iii.2014, Vrána leg., 2 ♀♀; 30 km S of Sorbas, Alm 540 m a.s.l., 17.iv.2011, M. Krajčík leg., 1 ♂, (all AWHS); Sorbas env., 52 m a.s.l., 20.iv.2007, J. Navarro leg., 1 ♀, (BBFM).

*Berberomeloe majalis* (Linnaeus, 1758): Spain, Community of Madrid: Torres de la Alameda env., 740 m a.s.l., 30.iii.1999, Zapata leg., 2 ♂♂, 1 ♀, (BBFM); Brea de Tajo, 786 m a.s.l., 3.iv.2008, Stárek leg., 2 ♀♀, (AWHS).

*Berberomeloe payoyo* Sánchez-Vialas, García-París, Ruiz & Recuero, 2020: Spain, Andalusia: Granada prov., Sierra de Baza, Yamula, 970 m a.s.l., 31.iii.2009, P. Croy leg., 2 ♀♀; Málaga prov., Ronda-San Pedro, 780 m a.s.l., 9.vi.2006, M. Hradský leg., 1 ♂, (all BBFM); the same, 1 ♀, (AWHS); Cadis, Castillo de Castellar, alt. 200m a.s.l., A. Hergovits - 21.5.2018, 2 ♂♂, 2 ♀♀, (BBFM).

*Berberomeloe tenebrosus* Sánchez-Vialas, García-París, Ruiz & Recuero, 2020: Spain, Andalusia, Granada prov., Sierra Nevada mts: Puerto de la Ragua pass, 2000 m, 23.iv.2007, J. Navarro leg., 2 ♂♂; La Calahorra, Puerto de la Ragua pass, 2000 m a.s.l., 12.vi.2013, P. Kylies leg., 2 ♀♀, (all AWHS); Puerto de la Ragua pass, 1950 m, 22.iii.1987, R. Sciaky leg., 1 ♂, 2 ♀♀, (BBFM).



Morphometric measurements taken: HW, head width; PPW, pronotum proximal width; PDW, pronotum distal width; PL, pronotum length; EL, elytra length; BL, body length (only taken from the holotype of each newly described species); BW body width (only taken from the holotype of each newly described species); TW2, second tergal bar width; TW3, third tergal bar width; AW, abdominal width; FL, femur length.

(P. Chamorro drawing. Adopted from Sánchez-Vialas et al. 2020).

## DESCRIPTION

### *Berberomeloe bubeniki* sp. nov.

(Figs. 1-7)

**Type locality.** E Spain maritime, Valencian Community, Alicante prov., Torreveija, 38°1'21.540"N 0°39'36.540"W, 5 m a.s.l.

**Type material.** Holotype (♂) labelled: "20.-26.III./2022-España Torreveija-reg. Alicante, alt. 5 m, Leg. A. Wrzecionko [white label, printed]". Allotype and paratypes (4 ♂♂, 21 ♀♀): same data as holotype, but some paratypes "Leg. B. Bubenik & A. Wrzecionko". All types with red printed label: "HOLOTYPUS [or ALLOTYPUS/

PARATYPUS] *BERBEROMELOE bubeniki* sp. nov. A. Wrzeczionko det. 2023".  
Holotype and allotype deposited in BBFM paratypes in AWHs, BBFM and NMPC.

**Description and differential diagnosis.** Body length (frons to posterior margin of elytra): males 17.4-21.5 mm (holotype 18.2 mm), females 13.9-19.6 mm. Maximum width: males 9.2-10.5 mm (holotype 10.5 mm), females 6.7-10.7 mm.

Table 1: Mean and standard deviation (SD) of the morphometric measurements (in mm) from 26 specimens of *Berberomeloe bubeniki* sp. nov.:

	Mean	SD
Pronotum length	3.20	0.50
Pronotum proximal width	4.42	0.64
Pronotum distal width	4.02	0.56
Head width	5.49	0.72
Width of the second tergal bar	8.96	1.03
Width of the third tergal bar	9.04	1.04
Length of metafemur	5.10	0.59
Length of elytra	10.14	1.15

Dorsal surface silky black, with fine microreticulation. Posterior margin of abdominal terga except terga 7 and 8 with red-orange coloured transversal bar.

Head more shiny than in *B. indalo*. Longitudinal medial line very gently impressed towards anterior half of head and ending with noticeable small impression (Fig. 7). Surface covered with small, well-separated punctures (in *B. indalo* - with larger and deeper punctures). Triangular impression anteriorly of each antennal pit (absent in *B. indalo*). Anterior margin adjacent to cervix with small short setae. Labrum with 2 mm width and 1 mm length.

Antennae starting from scape and pedicel and almost entire flagellum different in shape than in *B. indalo*. Especially last 4 antennomeres significantly different. Overall, the entire antenna more subtle and flatter than in *B. indalo* (Fig. 3).

Pronotum rectangular only rarely subquadrate (Fig. 6), all pronotum corners are horizontally wider and vertically narrower. The midline is barely noticeable, shorter and the punctures are small and sparse. Towards the middle of the pronotum, it is completely absent and the surface has a very shiny character, in contrast to *B. indalo*, where the punctures are larger in the middle of the pronotum and the entire surface is matte. Diffuse lateral depressions located mainly at anterior corners and mostly absent in posterior. All four corners not distorted laterad, but almost rectangle (in *B. indalo* twisted and curved).

Elytra. The trusses have character of a fine wavy microstructure without sharp edges and are therefore more matte at *B. bubeniki* sp. nov. In contrast, the trusses of *B. indalo* have sharper, deeper and shorter edges of the wavy microstructure and thus a glossier surface.

Abdomen. Red-orange coloured transverse bar of tergites I-VI is similarly wider in both species.

Male genitalia as in Figs. 4-5.

**Female.** Habitus similar to male.



1a



1b

1a

Figs. 1a-d. Figs. 1a-b The type locality: Eastern Spain maritime, Valencian Community, Alicante province, Torrevieja,  $38^{\circ}1'21.540''\text{N}$   $0^{\circ}39'36.540''\text{W}$ , alt. 5 m. Isolated grassy meadow in a plain with shrubby vegetation on an area of about 200 m<sup>2</sup>. Figs. 1c-d. Living imago of *Berberomeloe bubeniki* sp. nov. (Photographs by B. Bubeník.).



1c



1d



Fig. 2. Habitus of males: *Berberomeloe bubeniki* sp. nov. (holotype) from Spain, Alicante province, Torrevieja, alt. 5 m; *B. indalo* Sánchez-Vialas et al. 2020 from Spain (left) Alicante prov., El Puntal, alt. 600 m. (right) (Photographs by I. Jeniš.)

**Morphometric variability.** As in Table 1 (see above).

**Name derivation.** The new species is named in honour of Boris Bubeník, Frýdek Místek, Czech Republic, one of the collectors of the new species.

**Geographic distribution.** So far known only from the type locality situated in eastern Spain (Alicante province).



**B. bubeniki**



**B. indalo**

Fig. 3. Details of male antennae (anterior view) of *Berberomeloe bubeniki* sp. nov. (holotype) and *B. indalo* Sánchez-Vialas et al. 2020 from Spain, Alicante province, El Puntal. (Photographs by V. Štrunc.)



**B. bubeniki**



**B. indalo**

Fig. 4. Details of male genitalia (tegmen, dorsal view) of *Berberomeloe bubeniki* sp. nov. (holotype) and of *B. indalo* Sánchez-Vialas et al. 2020 from Spain, Alicante province, El Puntal. (Photographs by I. Jeniš.)





Fig. 5. Details of male genitalia (aedeagus, lateral view) *Berberomeloe bubeniki* sp. nov. (holotype) and *B. indalo* Sánchez-Vialas et al. 2020 from Spain, Alicante province, El Puntal. (Photographs by I. Jeniš.)

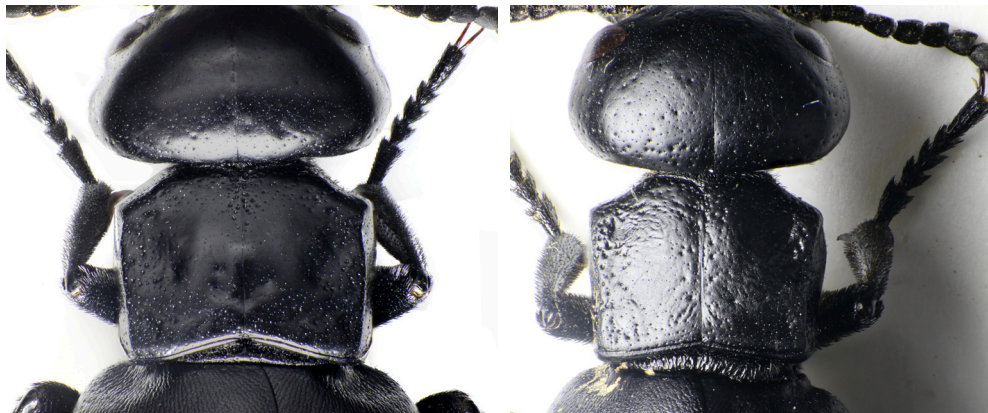


Fig. 6. Details of male head and pronotum (dorsal view) of *Berberomeloe bubeniki* sp. nov. (holotype) (left) and *B. indalo* Sánchez-Vialas et al. 2020 from Spain, Alicante province, El Puntal (right). (Photographs by I. Jeniš.)

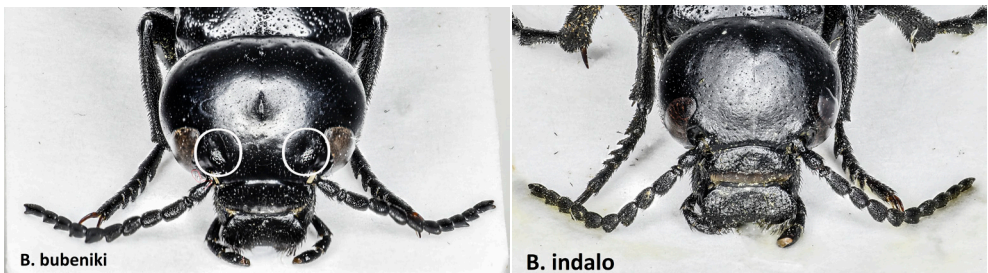


Fig. 7. Male heads (frontal view) of *Berberomeloe bubeniki* sp. nov. (holotype) and *B. indalo* Sánchez-Vialas et al. 2020 from Spain, Alicante province, El Puntal. Triangular impression anteriorly of each antennal pit only by *B. bubeniki* sp. nov. (in rings). (Photographs by V. Štrunc.)

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