

**Description of a new subspecies of the
Zariquieya troglodytes Jeannel, 1924,
from the north east of the Iberian Peninsula
(Coleoptera, Carabidae)**

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Summary. Description of *Zariquieya troglodytes* ssp. *espanoli* nov., a new subspecies from the genus *Zariquieya* Jeannel, 1924, belonging to the subtribe Molopini, is described from a subterranean cavity in the Girona province, northeast Spain.

Keywords. *Zariquieya troglodytes* ssp. *espanoli* nov., Carabidae, Molopina, Iberian Peninsula.

Introduction

The genus *Zariquieya* Jeannel, 1924, was originally described as a subgenus of genus *Molops* Bonelli, in order to include *Zariquieya troglodytes* Jeannel, an interesting cave-dwelling *Pterostichini* Molopini. In 1946, Español published a brief summary of the species and its subterranean habitats, upgrading the subgenus proposed by Jeannel to a genus. Recently, a second species has been described, *Z. boumortensis* Faille *et al.*, 2011, from a subterranean cavity in La Guàrdia d'Ares, in the province of Lleida. In the present study we describe one subspecies of the *Zariquieya troglodytes* Jeannel, discovered in the cave of La Mosquera, Beuda (Girona), Spain.

Material and methods

Specimens were examined using classical macroscopic taxonomic methods. All pictures were taken using a CANON EOS 20D fitted with a Canon EF 100m-F/2.8 lens. All measurements are given in mm. The collection acronyms used in this study are as follow:

JCC : Jordi Comas collection, Barcelona, Spain ;
EVC : Eduard Vives collection, Barcelona, Spain ;
JFC : Javier Fresneda collection, Llesp, Spain ;
MCNB : Museu Ciències Naturals Barcelona, Barcelona, Spain.

Taxonomy

Subfamily Harpalinae Bonelli, 1810
Tribe Pterostichini

Zariquieya troglodytes ssp. *espanoli* nov. (Fig. 1)

Material studied

Holotype: 1 male, 9 mm long and 2,8 mm wide Spain, Cova Mosquera, Beuda, Girona Province, 1-II-1982, J. Comas *leg.* (JCC). Paratypes : 1 female, 10 mm long and 3 mm wide from Spain, Cova Mosquera, Beuda, Girona Province, 1-II-1982, J. Comas *leg.* (JCC) ; 1 female, 12 mm long and 3,3 mm wide Spain, Cova Mosquera, Beuda, Girona Province, 1-II-1982, J. Comas *leg.* (MCNB) ; 1 female, from Cova Mosquera, Beuda Girona Province, 5-VII-1981, J. Comas & E. Cancio *leg.* (EVC) ; 1 male, from Cova Mosquera, Beuda, Girona province, 9-XI-1978, J. Hidalgo *leg.* (JFC) ; 1 female, from Cova Mosquera, Beuda, Girona Province, 5-VII-1981, E. Cancio & J. Comas *leg.* (JFC).

Description

Integuments generally reddish-brown ; head, mid and hind tibiae blackish. Head large and elongate; mandibles long and asymmetric, their external dorsal surface strongly bordered ; labrum subquadrate, bearing three pairs of setae at the anterior border; epistoma trapezoidal, slightly cleft at the middle and bearing one long seta at each side. The eyes are lacking and in their place there is a rounded convex protuberance. On the upper part of the head there is a fine transversal line between the antennal bases and two short longitudinal depressions centrally, these result in a strongly convex occiput. A prominent orbital ledge reaches from the antennal base to the protuberance that occupies the ocular region, which bears a long orbital seta.

Antennae long and slender, almost reaching the middle of elytra. Scape thick and subcylindrical, slightly arcuate and bearing a long seta on the apical external border. The second antennomere half as long as the scape. The third antennomere subcylindrical, three times the length of the second. Fourth antennomere subcylindrical and clearly shorter than the third. The remaining segments from 5 to 11 progressively slightly shorter and laterally compressed. All the segments from 3 to 11 covered with short dense golden pubescence, except for a central darker shiny smooth longitudinal band.

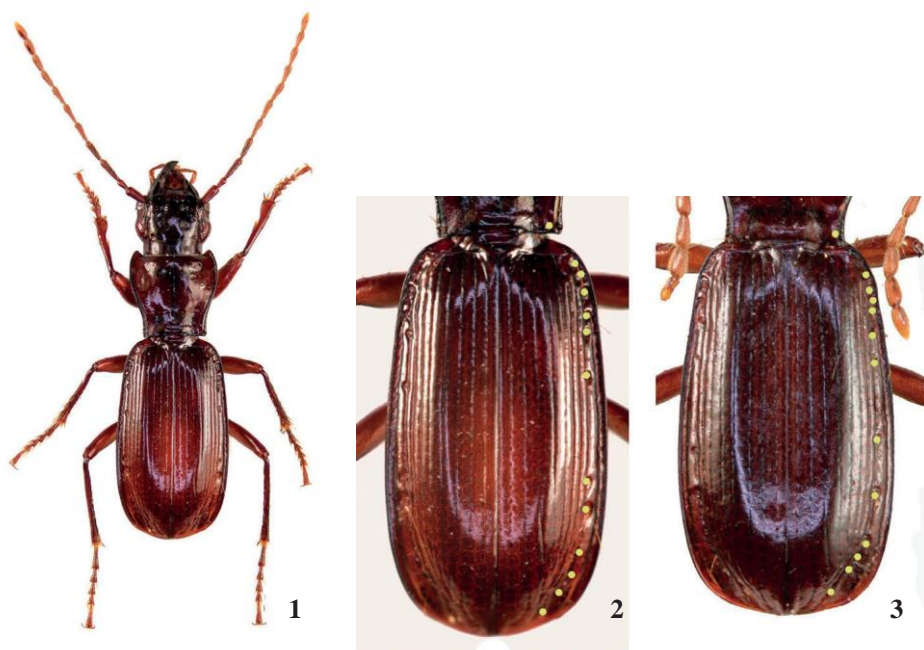


Fig.1. *Zariquieya troglodytes* ssp. *espanoli* nov. Holotype, Cova La Mosquera. **Fig. 2.** *Z. troglodytes* ssp. *troglodytes*, location of lateral setae. **Fig. 3.** *Z. troglodytes* ssp. *espanoli* nov., location of lateral setae.

Neck broad, smooth, bearing a long post-ocular seta. The underside of the head with long slender maxillary and labial palpi, the last segment oval and weakly compressed, truncate at apex. The second maxillary segment bearing two long setae internally. Labium broad, deeply cleft at the middle, with a laminate bifid tooth. Collar region convex and smooth.

Pronotum subquadrate, slightly wider than long (5x5,2), anterior border straight with projecting anterior angles at either side. Posterior border weakly arcuate ;

posterior lateral angles almost straight, bearing one long seta. Sides sinuate, posteriorly strongly constricted and bordered ; one large seta at either side of the anterior fifth. Pronotal disc longitudinally grooved and with a transversal fold at the middle of the posterior border. Prosternum short and broad, very prominent, smooth and shiny ; prosternal process compressed and truncate posteriorly. Procoxal cavities oval and closed behind. The entire surface of the pronotum smooth and shiny.

Mesosternum short and broad ; anteriorly constricted and bordered, posteriorly widened ; mesosternal process prominent and parallel-sided, its posterior border cleft in order to fit into the metasternal process. Mesocoxae globose and slightly compressed. Metasternum short and broad, process anteriorly triangular and posteriorly bifid.

Elytra long and narrow, subparallel (7,2x4,1), slightly depressed on the discal part of the suture. Shoulders barely projecting. Sides of elytra slightly arcuate, wider towards the apical third and rounded at apex. The external border of elytra is wide and bears long umbilicate setae (Figs 2-3) ; one humeral group of four long umbilicate setae that progress to elytral stria 8 with two very separated lateral setae, the last one almost in the middle of the elytral border. The distribution of the apical setae is as follows, one subapical seta in stria 7, four setae in 8 and one lateral seta also on stria 8. Elytral apex strongly bulging with very flattened lateral borders. Epipleurae broad and smooth. Abdominal ventrites broad and short, arcuate, the second ventrite is clearly the longest. The male pygidium bears two long setae at the posterior border, the pygidium of the female bears four setae.



Figs 4-5-6. *Z. troglodytes* ssp. *espanoli* nov., **4.** Male genital segment ; **5.** Aedeagus ; **6.** Left. paramer.

Male genitalia (Figs 4, 5, 6) with the median lobe elongate, slender and barely arcuate ; the apex laminate and triangular. Endophallus visible dorsally and lacking visible internal sclerites, basally assymmetrical and with very dissimilar lateral parameres ; the right paramer is very small and triangular whereas the left paramer (Fig. 6) is trapezoidal and laminate, more dilated at the distal tip. Male genital segment (Fig. 4) subtriangular, with sides arcuate, widely emarginate on the lateral region of the upper border. Female genitalia (Fig. 7) with an elongate cylindrical spermatheca in the *bursa copulatrix*, with a duct connecting to a globose annex gland which presents a long duct terminating in dendritic ramifications (Deuve, 1993).



Fig. 7. Female genitalia, spermathecal complex in dorsal view, with annex gland.

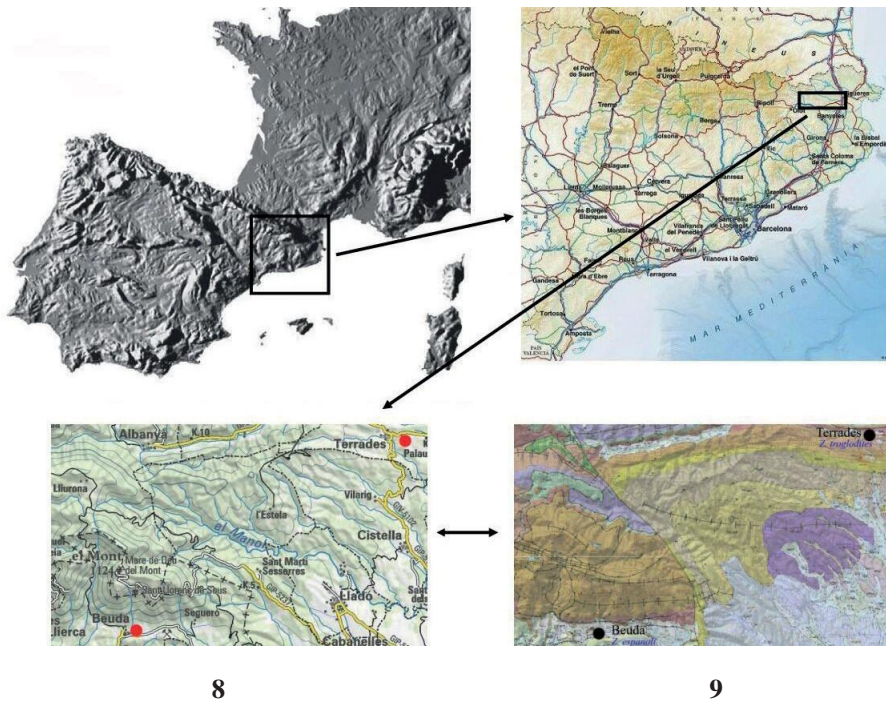


Fig. 8. Topographic map of the region where Cova Mosquera and Avenç de Tailèxà (Girona, Spain) are located. Bauma de Brugué, the type locality of *Z. troglodytes*, Avenç del Mas Vilar (Bellès, 1978). Fig. 9. Geological map of the region where both cavities are located, Girona, Spain.

This new subspecies is very similar to *Zariquieya troglodytes* ssp. *troglodytes* Jeannel, (Escolà *et al.*, 1983) from the Avenc de Taleixà, Terrades (Girona) from which it differs mainly by the ocular protuberances, which are rounder than in *Z. troglodytes* ssp. *espanoli* nov. The posterior angles of the pronotum of *Z. troglodytes* ssp. *espanoli* nov. are straighter and less prominent; the humeri are less pronounced; the elytra depression is weaker and the apical protuberance is much less apparent; the prosternal process is not bordered or lobate, and is shorter than in *Z. troglodytes* ssp. *espanoli* nov. The aedeagus is less arcuate and the left paramere is trapezoidal, widened on its apical border. It can be distinguished from *Z. boumortensis* Faille *et al.*, 2011, because this last species lacks the discal depression of the elytra and it presents a weak scar in the ocular region.

Etymology

We describe the new subspecies in honour of our mentor, the late Prof. Dr Francesc Español i Coll (1907-1999), for his very important contribution to study of the Catalanian subterranean fauna. (Ortuño, 1996).

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A. Lagar.

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