

LOVRICIA AENIGMATICA – A NEW SPECIES OF TROGLOBITIC BEETLE FROM CROATIA (COLEOPTERA: CARABIDAE)

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Lovricia aenigmatica, n. sp., a highly specialized troglobitic carabid beetle from a nameless 51 m deep pit in the Biokovo Mts. (Croatia, Middle Dalmatia) is described, illustrated and compared with the related species *Lovricia jalzici* Pretner, 1979.

Keywords: Coleoptera, Carabidae, *Lovricia*, new species, Croatia, Biokovo Mts., troglobitic

Lakota, J., Mlejnek, R. & Jalžić, B.: *Lovricia aenigmatica* – nova vrsta troglobiontskog kornjaša iz Hrvatske (Coleoptera: Carabidae). *Nat. Croat.*, Vol. 11, No. 1., 19–25, 2002, Zagreb.

Rad donosi opis i crtež visokospecijalizirane vrste troglobiontskog kornjaša *Lovricia aenigmatica* iz 51 m duboke jame na Biokovu (Hrvatska, središnja Dalmacija). Vrsta se uspoređuje s *L. jalzici* Pretner, 1979.

Ključne riječi: Coleoptera, Carabidae, *Lovricia*, new species, Croatia, Biokovo Mts., troglobitic

INTRODUCTION

In 1976, Branko Jalžić discovered a small carabid beetle in the cave »Gospodska špilja« near the village of Cetina. Later, this beetle was described by PRETNER (1979) as a new species of a new genus – *Lovricia jalzici*. Only this single holotypical female specimen of this genus has been known so far. However, Roman Mlejnek, during biospeleological researches in the Biokovo Mts., has recently found a carabid specimen which can be attributed to this genus, although belonging to a new species.



Fig. 1. *Lovricia aenigmatica* n. sp. holotype female, habitus – J. Kobylák del. 1999

LOVRICIA AENIGMATICA, N. SP.**Type material:**

Holotype, female, labelled: Croatia, Middle Dalmatia, Biokovo Mts., peak Sv. Jure. env., deep pit cave, (absolute altitude) 1450 m, -25 m, 18.8.1999, R. Mlejnek lgt.

Paratype, male, labelled: same data as holotype, but 12.8.1998, R. Mlejnek lgt.

Holotype and paratype are deposited in the Croatian Natural History Museum, Zagreb.

DESCRIPTION AND DIAGNOSIS

The whole body is pale yellow brown; mouthparts, antennae and tarsi are slightly paler. The surface is covered by fine semi-lustrous flake-shaped microsculpture and very fine dispersed hairs, which almost vanish in the central parts of the head, elytra, and especially pronotum. Total length (measured from the apex of mandibles to the apex of elytra): female **2.93** mm, male **2.90** mm. Body slender, but more robust than in *Lovricia jalzici*; ratio width (measured maximum width of elytra) / total length: **0.30**.

Head conspicuously large; width/length ratio (measured from apex of mandibles to anterior margin of pronotum): **0.63**. Eyes totally absent. Head slightly but evidently widened posteriorly. Dorsal surface with fine lateral impressions approximately in the middle of the length. Top of the head with two parallel elongated impressions with a bit more granulate microsculpture, both having a little dark spot in the middle. Base of antennae with inconspicuously X-shaped shallow engraved lines with apparently rougher microsculpture. Total length of antennae: female **1.57** mm, male: **1.55** mm. Mandibles long and slender, moderately incurved. Length of mandibles (male and female): **0.2** mm. Maxillae are evidently prominent, with short prickly hair. Terminal segment of maxillary palpi pointed, awl-shaped. Antennae short, their apical segment reaching the subhumeral setiferous pore of the elytron.

Pronotum slender, roundly trapezoidal, a little narrower than the head. Anterior pronotal margin apparently convex. Width / length ratio: female **0.81**, male **0.85**. Pronotum with fine median furrow surrounded by two parallel, shallow impressions with slightly rougher microsculpture. Two short, but relatively thick setae are situated below the anterior pronotal angles. Posterior pronotal angles with denser and rougher microsculpture.

Elytra almost flat, very finely marginated, posteriorly widened. Their maximum width at 2/3 of length. Humeral angles distinct. Width/length ratio: female **0.54**, male **0.51**. Each elytron has three setiferous pores with long, but very thin setae: subhumeral, subapical and apical; moreover, one short seta is situated immediately close to the apex of each elytron. Elytral striae totally missing.

Mesotibiae widened, angulate and arcuate outside at apex as in *L. jalzici*.

Sexual dimorphism: Both specimens show very small morphological differences from each other: the female has a finer microstructure of the body, pubescence is the same for both sexes, the right metafemura in the male bearing two small spines

(Fig. 2), the apical one is bigger; left metafemura bearing inconspicuous spines. Metafemuræ in female are smooth (Fig. 3), protarsi are similar in both sexes, non-dilated in the male.

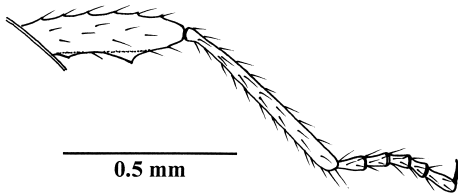


Fig. 2. Paratype male, right metafemura

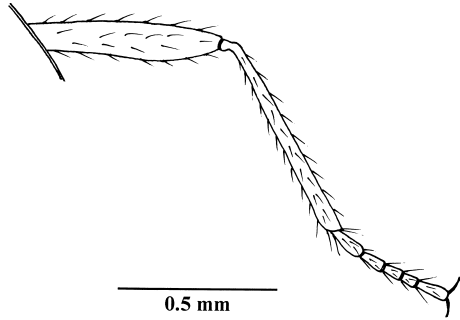


Fig. 3. Holotype female, right metafemura

Dimensions of *Lovricia aenigmatica* n. sp. (in mm):

<i>Lovricia aenigmatica</i> , n. sp.	FEMALE	MALE
Total length	2,93	2,90
Maximum width	0,9	0,85

Segments of body	width	length	width	length
Mandibles		0,2		0,2
Head (without mandibles)	0,47	0,55	0,47	0,55
Pronotum	0,42	0,52	0,42	0,5
Elytra	0,9	1,65	0,85	1,65
Antenna (total length)		1,75		1,55

Key to species of the genus *Lovricia* Pretner, 1979:

1 (2) Body smaller and slender, ratio width/length 0,25. Head widest in first part of the third of total length, maximum width of elytra at 1/2 of total length, antennae longer, overhang the subhumeral setiferous pore of elytron. 2,60 mm. Croatia, Dinara Mts., (Cetine env.), Gospodska špilja cave..... *L. jalzici* Pretner, 1979

2 (1) Body bigger and more robust, ratio width/length 0,3. Head widest in last part of the third of total length, maximum width of elytra at 2/3 of total length, antennae shorter, reaching the subhumeral setiferous pore of elytron. 2,90 – 2,93 mm. Croatia, Biokovo Mts, nameless 51 m deep pit.....*L. aenigmatica*, n. sp.

NAME DERIVATION

The specific epithet *aenigmatica* derives from the Latin adjective *aenigmaticus*, that means – enigmatic (the root is from the word *aenigma*), reflecting the unknown bionomy and the uncertain taxonomic position of this taxon.

NOTE

Since the male genitalia were immature, they were damaged during the preparation and we are not able to give a description. Therefore we designate the female as the holotype. The description of the female genitalia of *L. aenigmatica* will be furnished together with *L. jalzici* in the next contribution to the taxonomic position of the genus *Lovricia*. The problem of the male genitalia remains open.

NOTES ON ECOLOGY AND THE TAXONOMIC STATUS

The finding of a new species of *Lovricia* is remarkable from both the ecological and taxonomic points of view. The type species of the genus was discovered in the cave 'Gospodska špilja' at the low altitude of only 400 m a.s.l. (JALŽIĆ, 1973) UTM: XJ17 in the *Quercus – Carpinetum orientalis* ass. This is highly in contrast with the type locality of *L. aenigmatica*, which is situated 90 km south-eastwards in a mountainous area at 1450 m a.s.l., UTM: XY60, in a *Homogyno alpinae – Fagetum silvaticae* ass. The new finding locality is a pit without a name, investigated by speleologists from Makarska in 1993. It is situated in the area called Lipi dočić, south west of Sv. Jure peak. The pit is 51 metres deep and of simple morphology (Fig. 4). Air temperatures measured during 4 visits ranged from 1.2 °C (03.05.1999) to 3.6 °C (01.10.1998). Besides the n. sp., there were also other beetles in the pit: *Roubaliella biocovensis* Jeannel, 1925 and *Speoplanes giganteus biocovensis* J. Müller, 1934. The excessive scarcity of specimens of this genus probably arises from their very hidden bionomy. These beetles probably live in a system of microcaverns and fissures, whence they migrate to larger caves or accessible abysses only exceptionally. Sometimes, they migrate from ground microfissures following running water in the ground of caves.

The description of the new *L. aenigmatica* supplements and improves the peculiar morphological characters of this genus, but does not make precise its taxonomic position in the family Carabidae. The generic diagnosis of *Lovricia* is relatively very clear: – pointed, awl-shaped apical segment of maxillary palpi; middle tibiae, widened and incurved posteriorly outside; typical position of fixed setiferous pores with very long and thin setae; lack of elytral striae and very small size.

The taxonomic position of this genus, however, is not satisfactory. CASALE & LANEYRIE (1982) list it at the end of the subfamily Trechinae among »the genera with an uncertain taxonomic position«. It could be attributed to a distinct tribe of carabids of uncertain position at the moment. The question of the taxonomic position, or allocation of a new tribus of the family Carabidae remains accordingly open and will be discussed as further material – mature males, in particular – becomes available.

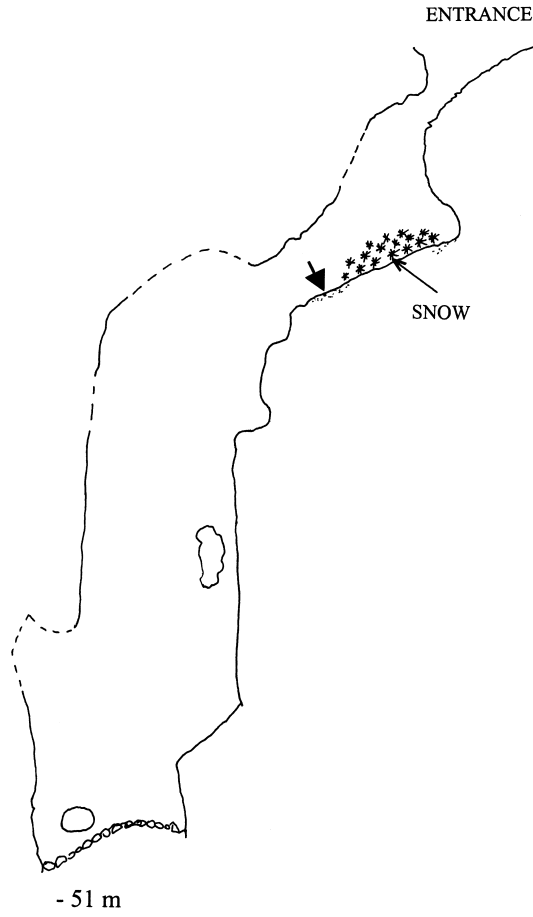


Fig. 4. Pit profile

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