MAGDELAINELLA BOZIDARCURCICI N. SP. (COLEOPTERA, CHOLEVIDAE), A NEW ENDEMIC BEETLE FROM SOUTHWEST SERBIA

S. B. ĆURČIĆ and M. M. BRAJKOVIĆ

Institute of Zoology, Faculty of Biology, University of Belgrade,
11000 Belgrade, FR Yugoslavia,
and Centre for Biospeleology in Southeast Europe,
11000 Belgrade, FR Yugoslavia.

Abstract - A new species of hypogean beetles, Magdelainella bozidarcurcići n. sp. (Cholevidae, Bathysciinae), is described from the Pećina u Potkapilijama Cave, village Trudovo, nr. Nova Varoš, southwest Serbia. From its closest congener (M. winkleri Jeannel, M. hussoni Jeannel and M. serbica Müller), this new form is clearly distinct in many important respects such as body size, length to breadth ratios of some antennomeres, shape of pronotum and elytra, form of mesosternal carina, form of aedeagus, shape of paramerae and specific setation, and the peculiar form of the structures forming the inner sac. Additionally, this new species has been illustrated, described and thoroughly diagnosed. It is apparent that M. bozidarcurcići belongs to an old phyletic lineage of the Tertiary origin, which is relic and endemic both to southwest Serbia and the Balkan Peninsula.

INTRODUCTION

The distribution of the bathysciine genus Magdelainella Jeannel is restricted to the western part of the Balkan Peninsula (Serbia, Bosnia and Herzegovina and Albania). Its members are musciculous and endogean species, characterized by the bathyscioid body form and the minute size (1.80 - 2.30 mm). The genus Magdelainella is divided into 'subgenera': Magdelainella s. str. and Knirschiella Güeroguiev (Güeroguiev 1976).

This cholevid genus includes 5 species: M. kauti Apfelbeck (from Bosnia and Herzegovina), M. serbica J. Müller (from western Serbia and southeastern Bosnia and Herzegovina), M. ravasini J. Müller (from Albania), M. winkleri Jeannel (from Serbia) and M. hussoni JeanneI (from Serbia) (Müller 1904, 1922; Apfelbeck 1907; Jeannel 1924, 1934; Pretner 1963, 1968). All species of Magdelainella are endemic either to a certain mountain range or to some cave systems (Pretner 1968). Among these species, there are 3 endogean representatives and 2 troglobitic forms M. hussoni (from the Cave Maja Hajne, v. Budjevo, nr. Sjenica, southwestern Serbia) and M. kauti (from the Mračna Pećina Cave, v. Banja Stijena, nr. Rogatica, Bosnia and Herzegovina; Jeannel 1924, 1934; Pretner 1968).

In this study, some bathysciine beetles, collected in 2002, have been examined. The specimens from the "Pećina u Potkapilijama" Cave, v. Trudovo, nr. Nova Varoš (Mt. Javor), belongs to a new endemic species, Magdelainella bozidarcurcići n. sp. In addition, the present study comprises a description and diagnosis of this new taxon. All type specimens (two males and two females) are deposited in the collection of the Centre of Biospeleology in Southeast Europe, Belgrade, FR Yugoslavia.

SYSTEMATIC PART

MAGDELAINELLA BOZIDARCURCICI, NEW SPECIES

Etymology - After Prof. Dr. Božidar Ćurčić, a noted Serbian zoologist.

Type-locality "Pečina u Potkapilijama" Cave, v. Trudovo, nr. Nova Varoš (Javor Mt.), southwest Serbia, October 26, 2002 (holotype male; collected by S. B. Ćurčić, B. M. Mitić and M. O. Mitić) and August 2002 (allotype female, paratype male and paratype female; collected by S. B. Ćurčić and B. M. Mitić).

Diagnosis - From its closest congeners (M. winkleri Jeannel, M. hussoni Jeannel and M. serbica J. Müller), Magdelainella bozidarcurcići n. sp. is easily distinguished by the different body size, by the shape of some antennomeres, by the shape of pronotum and elytra, by the form of mesosternal carina, by the shape of paramerae, by the different position of their setae, and by the peculiar form of the copulatory piece of the inner sac (Figs. 1-4, 8).
Description - Small-sized. Body length with straightened head: 2.19 mm; body length with hidden head: 1.75-2.05 mm. Body colour dark yellowish to brownish. Surface of the body, legs, antennae and palpi hairy. The form of the beetle body bathyscoid, ovoid, convex, slightly attenuated posteriorly (Fig. 1). Segments shiny, with some microsculptures. Elytra with transverse lines. Body hairs small and short, yellowish, covering the surface of the beetle body.

Pronotum convex, transverse (maximal width/length ratio: 1.69-2.00), with some short-laid discal pubescence (Fig. 1). Lateral pronotal margins regularly arcuate; pronotal base length greater than maximal elytral length. Anterior pronotal margin slightly protruding forwards. Pronotal base straight in the middle part, but curved towards posterior pronotal angles. Pronotal disc with some tiny punctures.

Mesosternal carina high, almost obtuse-angled, with slim border; its posterior prolongation lacking. Its ventral border convex at the middle part, but slightly concave just before the angle of mesosternal carina (Fig. 8). Intercoxal apophyse narrow.

Legs gracile, moderately elongated (Fig. 1). Male protibiae dilated distally, wider than female protibiae. Mesotibiae moderately arcuate, each with 3-4 strong spines in their exterior margin. Metatibiae almost straight. Anterior tarsi pentamericous, dilated in the males (Fig. 1).

Elytra short (maximal length/width ratio: 0.89-0.97), ovoid, rounded at the apex, widest in the anterior part, just below the elytra base (Fig. 1). Elytral disc convex, covered with short and laid setae. Sutural striae present. Lateral elytral margins convex. Scutellum triangular, moderately large (Fig. 1).

Aedeagus moderately long, slightly arcuated, narrowing (lateral view; Fig. 3) and pointing apically (dorsal view; Fig. 2). Paramerae elongated, reaching the level of the median lobe apex (Fig. 2). Paramerae carry each 3 setae at the thickened apex (one lateral exterior seta, one laterodorsal internal seta and one subapical dorsal seta; Fig. 4). Basal bulbus of aedeagus rounded and elongated (Figs. 2, 3). Saccus internus with a sclerotized complex armature (Fig. 2). Two bispinose teeth situated in the middle part of the inner sac. Many of tiny thorns situated above these teeth, and two lamellar parts are found below the same teeth. A chitinized-formed structure is situated in the basal part of the internal sac.

Male genital segment (urete) subovate, setose, with two pointed processes (Fig. 5).

Female styli as in Fig. 6. Gonostyli elongated, thorn-like, pointed, and almost straight. Each stylus with a single apical seta, three inner and one outer seta (Fig. 6). Spermatheca small, curved, elongated, but thickened apically (Fig. 7). Spermatheca moderately sclerotized.

ECOLOGY AND DISTRIBUTION

The new bathyscine beetle (Magdelainella bozidarcurciei n. sp.) inhabits the "Pećina u Potkapilijama" Cave. This cave is situated in the v. Trudovo, nr. Nova Varoš (Mt. Javor), southwestern Serbia. It is only 15-20 m long. The specimens of bathyscine beetles were collected in the mid-part of the cave (under stones) which is dark, cold (9°C) and with high humidity.
Figs. 2-8. *Magdelainella bozidarcuiici* n. sp. 2 - aedegus with inner sac (dorsal view), holotype male; 3 - aedegus (lateral view), holotype male; 4 - left paramere (dorsal view), holotype male; 5 - male genital segment (dorsal view), holotype male; 6 - left stylus (dorsal view), allotype female; 7 - spermatheca, allotype female; 8 - ventral border of the mesosternal carina (lateral view), paratype female. Scale line = 0.10 mm.
Apart from *Magdelainella bozidarcurci*, the "Pećina u Potkapiliću" Cave is also inhabited by some other beetles (Coleoptera, Pselaphidae), by the diplopod *Brachydesmus* (Brachydesmus) herzegovinensis Verhoeff, 1897, by the chilopod *Lithobius* sp. (Chilopoda), by the pseudoscorpion *Roncus pantici* Ćurčić and Dimitrijević, by some collembolans, spiders, opilions, nematodes and annelids.

**RELATIONSHIP OF THE NEW SPECIES**

The new taxon is easily separated from its close congeners by a number of distinctions: by the body size (2.19 mm in *M. bozidarcurci*; 2.00 mm in *M. serbica*; 2.00 mm in *M. winkleri*; and 2.30 mm in *M. hussoni*), by the antennomere XI length/antennomeres IX+X length ratio, by the shape of pronotum and elytra, by the form of mesosternal carina, by the form of acedagus, by the shape of paramerae, by the different position of their setae, and by the specific form of the structures from the inner sac (copulatory piece; *Jeanne* et *Husson* 1924, 1934; *Müller* 1904, 1922) (Figs. 1-4, 8).

It is obvious that the taxonomic status of all other members of the genus *Magdelainella* Jeannel is still far from being complete. Further, much more remains to be done before its division into 2 „subgenera” could be either clarified or rejected.

The new species of *Magdelainella* Jeannel, *M. bozidarcurci* n. sp., is of the Tertiary origin. It is endemic and relic to some caves in southwest Serbia.

**Acknowledgements** - We are grateful to M. O. Mitrić for the help in collecting some specimens considered in this study. We are also indebted to Prof. Dr. B. P. M. Ćurčić and Dr. S. E. Makarov, who identified pseudoscorpions and diplopods from the "Pećina u Potkapiliću" Cave. Last, but not the least, we want to express our gratitude to V. T. Tomić, M. Sc., and B. M. Mitrić for their excellent technical assistance.

**REFERENCES**


**MAGDELAINELLA BOZIDARCURCI N. SP. (COLEOPTERA, CHOLEVIDAE)**

**НОВИ ЕНДЕМИЧАН ТВРДОКРИЛАЦ ИЗ ЈУГОЗАПАДНЕ СРБИЈЕ**

С. Б. ЂУРЧИЋ и М. М. БРАЈКОВИЋ

Институт за зоологију. Биолошки факултет. Универзитет у Београду
11000 Београд, СР Југославија
и Ђулар за биоспеолошку југовестичку Европу.
11000 Београд, СР Југославија.

Нова врста пећинских холесничких тврдокрилаца (*Magdelainella bozidarcurci* n. sp.) описана је из Пећине у Поткапилићу у северном Трудову, близу Нове Вароши (пластима Јашов), југозападна Србија. Упркос сличности са својим врстама (*M. winkleri* Jeannel, *M. hussoni* Jeannel и *M. serbica* Müller), нова врста се јасно разликује од свих других по многим важним својствима: телесној дужини, односима дужине и ширине чланака појединих антеномери, облику пронотума и елитри, форми мезостернали каринач, форми елата, облику парамета и специфичном положају њихових сета, као и посебној форми структура унутрашње врелице.

Нова врста холесничка батицница припада једној од старих фаунских линија терцијарне старости и представља реликт и ендемита југозападних Србије и Балканског полуострва.