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SCOTONOMUS PETRIOLII N. SP. FROM A SULPHUR CAVE IN LATIUM,
CENTRAL ITALY (COLEOPTERA STAPHYLINIDAE)

217th contribution to the knowledge of the Staphylinidae ⁽¹⁾

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Bordoni A., Magrini P. – *Scotonomus petriolii* n. sp. from a sulphur cave in Latium, Central Italy (Coleoptera, Staphylinidae) – 217th contribution to the knowledge of the Staphylinidae.

Scotonomus petriolii. n sp. from the sulphur cave "Grotta della Cava di Bassiano" (Latina) in Latium, Central Italy, is described. The new species is related to *S. andreinii* Binaghi from Campania and Basilicata. Some considerations on the particular conditions of those insect populations of that cave are given.

KEY WORDS: Coleoptera, Staphylinidae, *Scotonomus*, new species, sulphur cave, Latium, Italy.

INTRODUCTION

The discovery of a new species of *Scotonomus* Fauvel, 1872 has always a significant meaning because this genus is endemic to Italy and is composed of hypogean uncommon entities that, in the majority of cases, have a very restricted distribution.

If the species has particular morphological details and live in an environment with specific conditions, the collecting is even more challenging.

The *Scotonomus* described below was collected in a cave of the Lepini mountains in Latium from a site on which numerous entomological investigations, particularly attractive have been already carried out (DI RUSSO *et al.*, 1999; LATELLA *et al.*, 1999; NARDI *et al.*, 2002; VIGNA TAGLIANTI & MAGRINI, 2008).

This is a *Scotonomus* of unusual size, the largest so far known from the Apennines, since males measure 4.8-5.3 mm and females 5.2-6.3 mm. Only *S. sardous* Fagel from Sardinia reaches this size (4.7-5.1 mm).

It is therefore almost unnecessary to compare it with the other species, as the body is much more robust, and the aedeagus has a very particular structure, similar only to those of *S. andreinii* Binaghi, 1970 recorded from Campania and Basilicata.

Moreover, its habitat in the cave is peculiar because the other species live in the soil, deep under the rocks and usually in wooded areas, like beech woods.

Scotonomus petriolii n. sp.

MATERIAL EXAMINED – Holotype ♂: Lazio, 384 LA/LT (Grotta della Cava di Bassiano), Sezze, Latina, Petrioli, Degiovanni, Bastianini & Magrini leg. 25.iv.2009 (coll. Bordoni); paratypes: same data, 25.iv.2009, 1 ♂ (coll. Petrioli); same data, 26.iv.2010, 1 ♀ (coll. Bastianini); same data, 26.iv.2010, 1 ♀ (coll. Degiovanni); same data, 26.iv.2010, 1 ♀ (coll. Magrini); same data, 20.vii.2010, 1 ♂ (coll. Petrioli).

DESCRIPTION – Body length 5.3 mm; length from anterior margin of head to posterior margin of elytra, 2.3 mm. Yellow-brown.

Proportionally large head, well dilated posteriorly, with just rounded sides and tightly rounded back angles. Shiny surface with fine punctures, concentrated on sides. Very wide neck.

Pronotum massive, much longer and slightly wider than head, small posteriorly, with anterior angles broadly rounded, sides very weakly sinuate in the middle. Surface similar to that of the head, with little obvious traces of micro-reticulation more or less polygonal.

Elytra very short, sub-quadrangular, with humera widely rounded, with sub-rectilinear and sub-parallel sides. Surface with extremely fine and sparse punctation, with long yellowish setae directed backwards.

Abdomen with evident polygonal micro-reticulation and very dense punctation, with pubescence similar to that of the elytra.

The aedeagus has three lamella with the left, in ventral view (fig. I, 1), very strong and much longer than the right that has much more sinuous shape; the median lamina is smaller, narrower and much shorter, as is observed also in dorsal view (fig. I, 2).

NOTES – The holotype measures 5.3 mm in length (with forebody 2.3 mm); the male paratype measure 4.8 mm (2.3 mm); the female paratype measure 5.2 mm (2.6 mm) to 6.3 mm (2.7 mm).

The structure of the aedeagus, although it is very characteristic and isolated from other species of the Apennines, can be still compared with those of *S. andreinii*. The lamella of the left, in ventral view, is more robust, wider and longer, and has rounded apex; the lamella of the right has a very different form and the median is wider and shorter. From *S. petriolii* this species is also distinguished by the much shorter, slender and flatter body and by the smaller and more rounded head.

To our knowledge this is the first Staphylinid described from a sulphur cave in Italy.

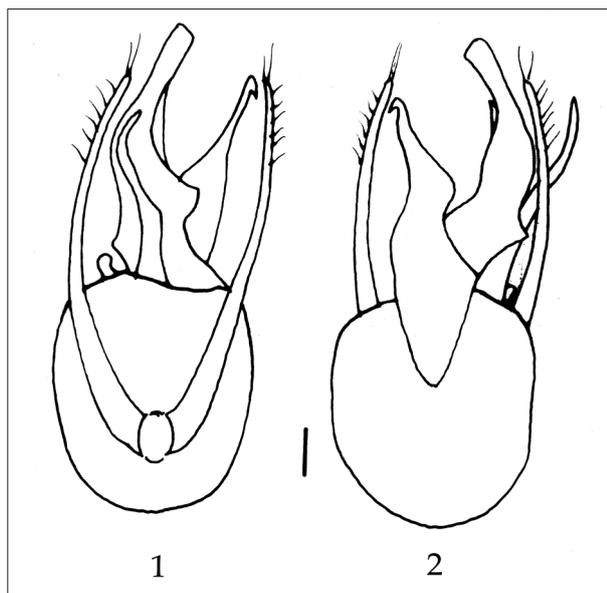


Fig. I – *Scotonomus petriolii* n. sp.: (1) aedeagus in ventral and (2) dorsal view (scale: 0,1 mm).

The place of collection is a cave that opens on the southern slope of Mount Acquapuzza in Lepini. It holds sulphurous waters with rich specialized fauna, including *Proasellus stefanellii* Ruffo & Vigna Taglianti, 1967 (Crustacea). Other underground elements are, *Nepa cinerea* (Linné, 1758) (Heteroptera), *Anillus petriolii* Magrini (*in litt.*), *Laemostenus latialis* Leoni, 1907, *Duvalius nardii* Vigna Taglianti & Magrini, 2008, (Col. Carabidae), *Tychobythinus* sp. (Col. Pselaphidae), *Neobisium* sp. (Pseudoscorpiones) and eucavernicolous species living on the walls like *Meta menardi* (Latreille) and *Nesticus eremita* Simon (Arachnidae), *Dolichopoda geniculata* (Costa) and *Gryllomorpha dalmatina* (Ocskay) (Orthoptera).

This environment was found to contain massive radon. Analysis of nitrogen and carbon isotope ratios showed that the animals in the sulfur areas feed sulfur bacteria. Is it possible that this fact may explain in part the size of the collected specimens? It is well known that the activity of sulfur bacteria frees sulfuric acid that contributes to the formation of caves. The biological material produced by

sulfur bacteria is the basis of the food chain of hypogean fauna. The food based on sulfur bacteria and the presence of massive radon may therefore have played a role in speciation, justifying the rich biodiversity of this cave.

ACKNOWLEDGEMENTS

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RIASSUNTO

SCOTONOMUS PETRIOLII N. SP.
DI UNA GROTTA SULFUREA DEL LAZIO, ITALIA
CENTRALE (COLEOPTERA STAPHYLINIDAE)

Gli autori descrivono *Scotonomus petriolii* n. sp. della Grotta cava di Bassiano presso Latina, nel Lazio, comparandola con *S. andreinii* Binaghi della Campania e della Basilicata. Vengono espresse alcune considerazioni sulle particolari condizioni ambientali di tale grotta sulfurea, ricca di radon e sulla sua notevole biodiversità animale.

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