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The collembolan fauna of Maestrazgo caves (Teruel, Spain) with description of three new species

RAFAEL JORDANA[1,3], FLOREN FADRIQUE[2] & ENRIQUE BAQUERO[1]

[1]*Department of Zoology and Ecology, University of Navarra, PO Box 177, 31080 Pamplona, Navarra, Spain. E-mail: rjordana@unav.es; ebaquero@unav.es*

[2]*Associació Catalana de Bioespeleologia, BIOSP. Moreres, 3. 43890 L´Hospitalet, Tarragona. E-mail: biosp@hotmail.com*

[3]*Corresponding author*

Abstract

Three new species of cavernicolous Collembola belonging to genera *Pygmarrhopalites* and *Oncopodura* from five caves at El Maestrazgo (Teruel, Spain) are described: *Pygmarrhopalites maestrazgoensis* **sp. nov.**, *P. cantavetulae* **sp. nov.** and *Oncopodura fadriquei* Jordana & Baquero **sp. nov.** In addition five other species have been found in the same caves: *Heteromurus nitidus* (Templeton, 1836), *Pseudosinella encrusae* Gisin & Gama, 1969 (second record of the species), *Megalothorax minimus* Willem, 1900, *Protaphorura aconae* Arbea & Jordana 1994 (second record of the species), and *Schaefferia decemoculata* (Stach, 1939) (*sensu*: Thibaud 1970). The explorations of cave fauna in these cavities has been carried out by the "Associació Catalana de Bioespeleologia" under the sponsorship of CEMAT (Centro de Estudios del Maestrazgo Turolense).

Key words: Collembola, Arrhopalitidae, *Pygmarrhopalites*, Oncopoduridae, *Oncopodura*, biospeleology, taxonomy

Introduction

The "Associació Catalana de Bioespeleologia" conducted a first bio-speleological sampling sufficiently comprehensive for a group of caves Maestrazgo Region (Teruel, "Iberic Range"). This range has been poorly studied for Iberian wildlife because of its traditional geographic isolation, and an average altitude of 1500 meters with summits of 2000 m (Lozano 2007).

The caves in which these springtails have been collected are located in the region of Maestrazgo (Teruel, Spain). They are carved in limestone of the Cretaceous period that corresponds to the last phase of the Mesozoic, predominant geological materials in this area. The caves are located at an average altitude of 1500 m asl.

The climate of the region corresponds to a continental model, strongly influenced by the altitude. Extreme temperatures range from 25 °C degrees below zero in the higher areas to 40 °C above zero in the lowest (annual average: 12.5 °C at Alcorisa, 7 °C at Mosqueruela). Rainfall is generally low, with mean values for the region of 500 mm, rising on the eastern slopes of the mountains, favoured by the woodlands and influenced by the Mediterranean Sea. Rainfall descends from north to west, which also increased continentality of the climate. In the higher regions rainfall of 600 mm can be recorded with abundant snowfall. Logically, the weather affects their eponymous interior cavities, roughly, is an annual average of the area where the cave is located. Thus, we recorded 5.95 °C in the St. Victor Cave (1605 m asl), 8.35 °C in the La Cija Cave (1583 m asl) and 10.38 °C in the Turcacho Cave (1216 m asl).

There are no references to the Class Collembola in this geographical area; only some references about the associated fauna in which the class Collembola is cited as potential prey of other animals. This is the first study in which some caves from this region of "Iberic Range" have been sampled for Collembola capture. The bio-speleological work has been developed in five caves: Torcacho, La Cija, Sopero, San Victor and Sauco. A total of 210 specimens have been captured, belonging to 8 species. Among them there are two new species of *Arrhopalites* and one of *Oncopodura*. A species of *Pseudosinella* is cited for a second time.

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