

PARASTENOCARIS CORSICA SP. NOV. AND *PARASTENOCARIS SILVANA*
SP. NOV., FIRST PARASTENOCARIDIDAE FROM GROUNDWATER
OF CORSICA (COPEPODA, HARPACTICOIDA)

BY

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ABSTRACT

This work concerns the description of the first Parastenocarididae collected in Corsica: *Parastenocaris corsica* sp. nov. and *Parastenocaris silvana* sp. nov. The two species were collected from the phreatic waters of rivers and streams in the eastern part of the island.

P. corsica sp. nov. is peculiar since the P4 endopods are lacking in both sexes; this feature is shared only with *P. vandeli* Rouch, 1988 from the Pyrenees; *P. thyrenidis* Cottarelli, 1970 and *P. amatheia* Cottarelli, 1970 from Sardinia, and *P. diane* Chappuis, 1955 from the Pyrenees, are the other species that show similarities, mainly in male morphology, with *P. corsica* sp. nov.

P. silvana sp. nov. belongs to the group *minuta* Lang, 1948, which comprises a large number of species in southern continental and insular Europe. The new species resembles first of all the Pyrenean *P. nertensis* Rouch, 1990 and next also *P. tryphida* Cottarelli & Bruno, 1993 from Sardinia, by the simple male P4 endopod, the unusual maxilla with only one endite, and the long and narrow caudal rami.

Some information about the palaeogeographic relationships between the Iberian Peninsula, Sardinia, Corsica, and Tuscany, and, especially, the rotation of the Corsica-Sardinian microplate during late Miocene, is presented and discussed relative to the phylogenetic relationships of the two new species.

RIASSUNTO

Nel presente lavoro vengono descritte le prime specie di Parastenocarididae della Corsica: *Parastenocaris corsica* sp. nov. e *Parastenocaris silvana* sp. nov. Entrambe le specie sono state raccolte nell'ambiente freatico di corsi d'acqua a carattere torrentizio della parte orientale dell'isola.

P. corsica sp. nov. è peculiare in quanto gli endopodi P4 mancano in entrambi i sessi, tale caratteristica morfologica è condivisa solo da *P. vandeli* Rouch, 1988 dei Pirenei; *P. thyrenidis* Cottarelli, 1970 e *P. amatheia* Cottarelli, 1970, entrambe raccolte in Sardegna, e *P. diane* Chappuis, 1955 dei Pirenei sono le altre specie che mostrano somiglianze, specialmente nella morfologia del maschio, con *P. corsica* sp. nov.

P. silvana sp. nov. appartiene al gruppo di specie *minuta* Lang, 1948, composto da un gran numero di specie nell'Europa continentale meridionale e insulare. La nuova specie è affine principalmente a *P. nertensis* Rouch, 1990 dei Pirenei e secondariamente a *P. tryphida* Cottarelli & Bruno, 1993 della

Sardegna, per la semplice struttura dell'endopodite P4 del maschio, per l'insolita maxilla con solo un endite, per i rami caudali lunghi e stretti.

Alcune informazioni sui rapporti paleogeografici intercorsi tra Penisola Iberica, Sardegna, Corsica e Toscana, e in particolare sulla rotazione della micropacca sardo-corsa nel corso del tardo Miocene, e il loro significato relativamente alle relazioni filogenetiche delle due nuove specie completano il lavoro.

INTRODUCTION

Among the western Mediterranean islands, Corsica is the only one where species belonging to the genus *Parastenocaris* were never collected, even though this island was thoroughly investigated. This genus is one of the most peculiar and widespread among groundwater taxa, and several species have been collected in the western Mediterranean basin: Sicily (two species), Sardinia (eight species) and its small islands (two species), Montecristo Island (one undescribed species). Nevertheless, although various species have been collected in Sardinia, some of them from more than one locality, and though Sardinia and Corsica are linked by a common geological history, the senior author has sampled the phreatic habitat of several rivers and streams of Corsica, never recording any *Parastenocaris*. Therefore, for this last collecting trip we decided to sample in medium and high altitude rivers and streams. We thus collected two new species of *Parastenocaris* that are described and discussed in the present paper. We also provide information on the ecology and biogeography of these new species.

MATERIAL AND METHODS

Specimens were collected using the Karaman-Chappuis method (Delamare Deboutteville, 1960), fixed in 5% buffered formalin, and mounted on permanent slides in Faure's medium. They were drawn at 1250 \times magnification with an oil immersion lens, using a drawing tube mounted on a Zeiss Axioskop[®] phase-contrast microscope.

For scanning electron microscopy, some specimens fixed for 24 hours in 10% formalin, were washed twice in cacodylate buffer, pH 7.2, post-fixed in 1% osmium tetroxide in the same buffer, dehydrated in a graded ethanol series, critical-point-dried in a Balzers Union[®] CPD 020 apparatus, and coated with gold in a Balzers Union[®] MED 010 sputter coater. Observations were performed with a JEOL 1200 JEM[®] EX II scanning electron microscope.

The following abbreviations are used, when required, throughout the text and figures: A1 = antennula; A2 = antenna; Bsp = basis; Enp = endopod; Exp = exopod; Fu = caudal rami; Ga = genital field; Gsg = genital somite;