

**ELAPHOIDELLA MABELAE N. SP., A CRENOBIONT HARPACTICOID
FROM ITALY (COPEPODA, CANTHOCAMPTIDAE)¹⁾**

BY

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RÉSUMÉ

Une nouvelle espèce de Copépodes harpacticoides, *Elaphoidella mabelae* n. sp., est décrite d'une source limnocène de l'Italie Centrale. L'espèce appartient au groupe *simplex* du genre *Elaphoidella* Chappuis, 1929, tel qu'il a été défini par Apostolov (1985) et est très proche des espèces souterraines *E. karamani* Chappuis, 1936, de la Grèce et de la Yougoslavie, et *E. simplex szegedensis* Kiefer, 1963, de la Hongrie.

INTRODUCTION

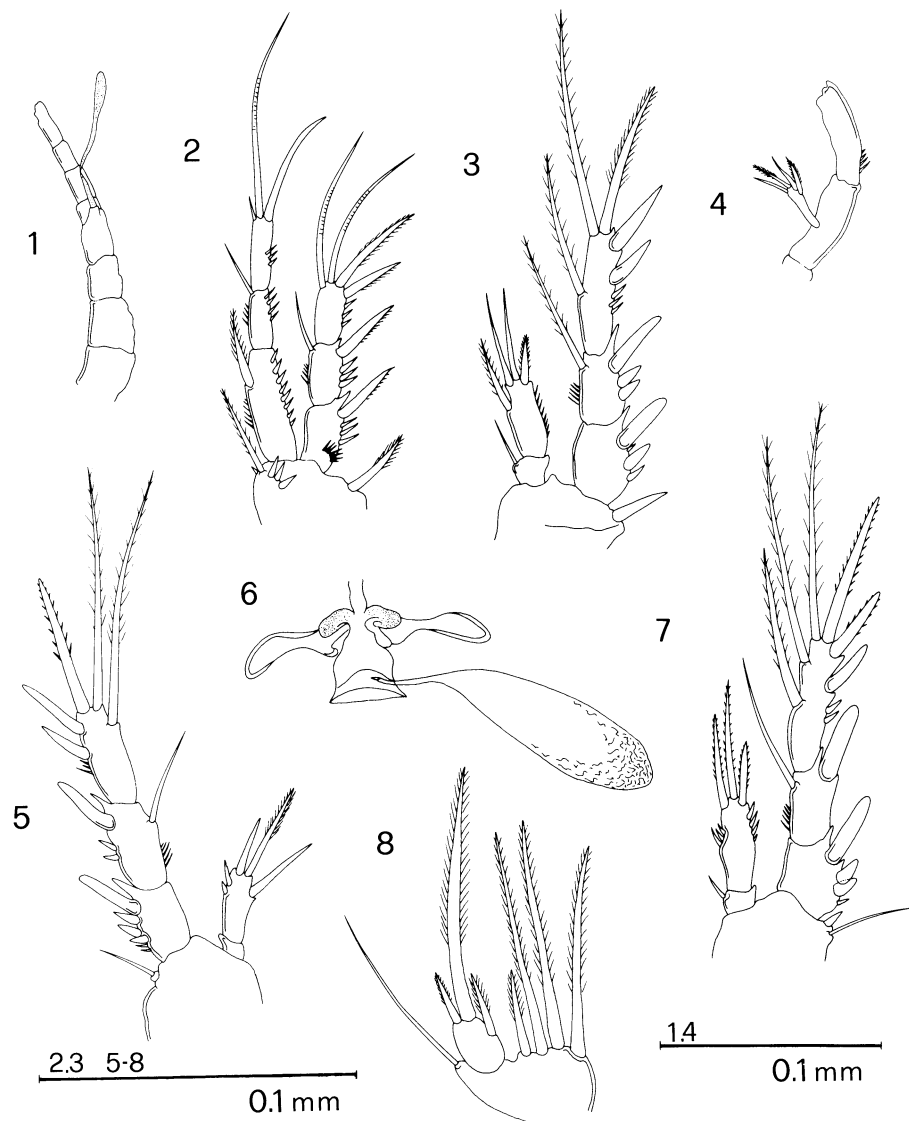
During stygobiological research in Italy by the "Dipartimento di Scienze Ambientali", University of L'Aquila, the occurrence of harpacticoid copepods was investigated in some rheocrene and limnocrene sources of the Abruzzo region (Central Apennines). Among the collected material, an undescribed species of the genus *Elaphoidella* sensu Apostolov (1985) (family Canthocamptidae G. O. Sars, 1906; cf. Lang, 1948) was discovered; this species, which belongs to the *simplex* group of *Elaphoidella* Chappuis, 1929 (Apostolov, 1985) is herein described as *Elaphoidella mabelae* n. sp.

***Elaphoidella mabelae* n. sp. (figs. 1-14)**

Material. — 1 ♂ (holotype), 1 ♀ and 1 ♂ (paratypes), completely dissected and mounted on slides in polyvinyl lactophenol, limnocrene source (krenal) at Capestrano, L'Aquila (Abruzzo, Central Italy), 42°16'30"N 13°46'15"E, 337 m a.s.l.; interstitial water temperature 13.1°C; pH 7.1; electric conductivity 456 µS; O₂ 3.5 mg/l; 11 May 1989; coll. M. C. Gualdoni & G. Monticelli; bottom sediment: sandstone and clay; occurring with cyclopid [*Diacyclops clandestinus* (Kiefer, 1926)] and harpacticoid [*Parapseudoleptomesochra italica* Pesce & Petkovski, 1980, *Bryocamptus (Limocamptus) echinatus* (Mrázek, 1893), *Bryocamptus (Bryocamptus) minutus* (Claus, 1863), *Parastenocaris prope trinacriae* Pesce, Galassi & Cottarelli, 1988] copepods.

Holotype and one female paratype kept in the senior author's collection at the "Dipartimento di Scienze Ambientali", University of L'Aquila, Italy; one male paratype in the collections of the Zoologisch Museum, Amsterdam, Netherlands (ZMA).

¹⁾ Contribution to the knowledge of underground water fauna in central and southern Italy: XLV. Research supported by grants M.P.I. 60% and C.N.R. - "Gruppo Nazionale di Biologia Naturalistica".



Figs. 1-8. *Elaphoidella mabelae* n. sp., female paratype. 1, antennula; 2, leg 1; 3, leg 2; 4, antenna; 5, leg 4; 6, "receptaculum seminis"; 7, leg. 3; 8, leg 5.

Description. — Female. Body subcylindrical, slender, tapering posteriorly; length, excluding antennulae and caudal setae, 570 μ m. Thoracic somites without particular ornamentation; abdominal somites with some rows of thin spinules on dorsal surface, posterior ventral margins armed with well developed spines; anal somite with some rows of thin spinules on dorsal surface and with 3 spines at the basis of each caudal ramus. Anal operculum armed with 18 stout spines.

Caudal rami subconical, not much elongated (length/width ratio: 1.3), with well developed apical setae (the inner much longer than ramus) and short lateral setae; dorsal seta short and arising from a small protuberance.

Antennula 8-segmented, aesthete on 4th segment slightly overreaching the tip of distal segment. Antenna, exopod elongated with 2 apical and 2 subapical setae.

Mouthparts as usual in the genus.

Legs 1-4, exopods 3-segmented; endopod of leg 1 3-segmented, those of legs 2-4 2-segmented. Setal formula for legs 1-4 (including appendages called spines; setae counted from outer to inner margins) as follows:

	Endopod			Exopod		
	1	2	3	1	2	3
P1	0.1	0.1	0.2.1	1.0	1.1	1.2.1
P2	0.1	1.2.1	—	1.0	1.1	2.2.1
P3	0.1	1.1.1	—	1.0	1.1	2.2.2
P4	0.0	0.2.1	—	1.0	1.1	2.2.1

Leg 5, exopod elongate, subovoidal, length about twice greatest width; armature consisting of two apical and one inner spiniform setae, the apical inner one very long and stout; inner basal expansion with 4 setae, the outer shortest, others subequal in length.

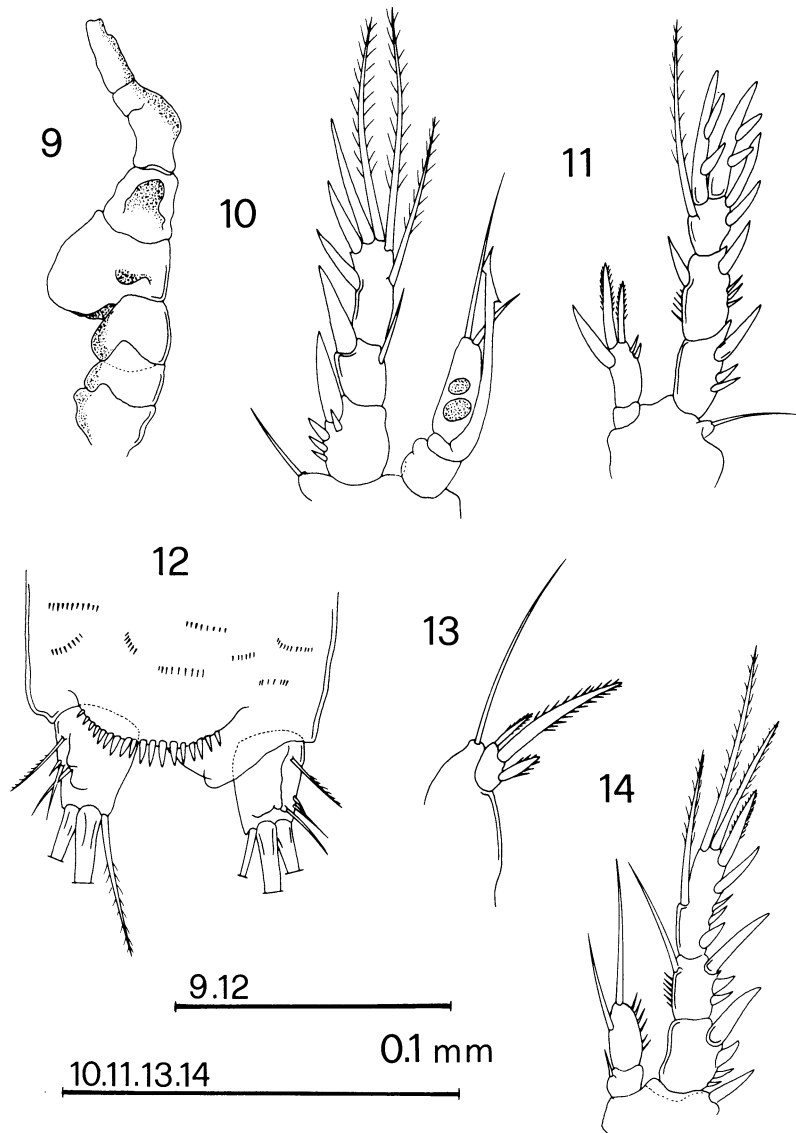
Male. Body form similar to that of the female; length, excluding antennulae and caudal setae, 460-470 μm . Antennula prehensile.

Leg 1 as in female; leg 2, endopod segment 2 with 1 inner and 1 apical setae; leg 3, spines of exopod segments 1 and 2 stout, endopod as in fig. 10; leg 5, exopod short, about as long as wide, armed with 3 spiniform setae, the inner the longest; basal expansion naked. Caudal rami differing from those of female by the shortness of the inner apical seta (shorter than furcal ramus, versus longer in the female).

Etymology. — Specific epithet after Miss Dr. Mabel Christina Gualdoni, who actively participated in the field work and collected the new species.

Affinities. — Following Apostolov's (1985) review of the genus *Elaphoidella* Chappuis, 1929, *E. mabelae* n. sp. belongs to the *simplex* group of species, which are characterized by a distal exopodal segment of leg 4 armed with 4-5 spines or setae. Within this group the new species is close to *E. karamani* Chappuis, 1936, from phreatic and cave waters of Yugoslavia and Greece and to *E. simplex szegedensis* Kiefer, 1963, from phreatic waters of Hungary.

E. mabelae n. sp. shares with the above taxa the identical armature of the distal endopodal segment of legs 2 to 4, both in male and female; moreover, it resembles *E. simplex szegedensis* Kiefer, 1963, also in the armature of the first segment of the endopods of legs 2 to 4.



Figs. 9-14. *Elaphoidella mabelae* n. sp. 9-11, 13, 14, male holotype; 12, female paratype. 9, antenna; 10, leg 3; 11, leg 4; 12, caudal rami and anal somite; 13, leg 5; 14, leg 2.

The new species differs from these species and subspecies in the morphology and armature of the caudal rami and of the anal operculum, the morphology of the genital field and the original combination of other morphological characteristics such as the construction and armature of leg 5, the armature of the distal exopodal segment of leg 3 and leg 4 (male), and the presence of an internal seta on the first endopodal segment of legs 2 and 3.

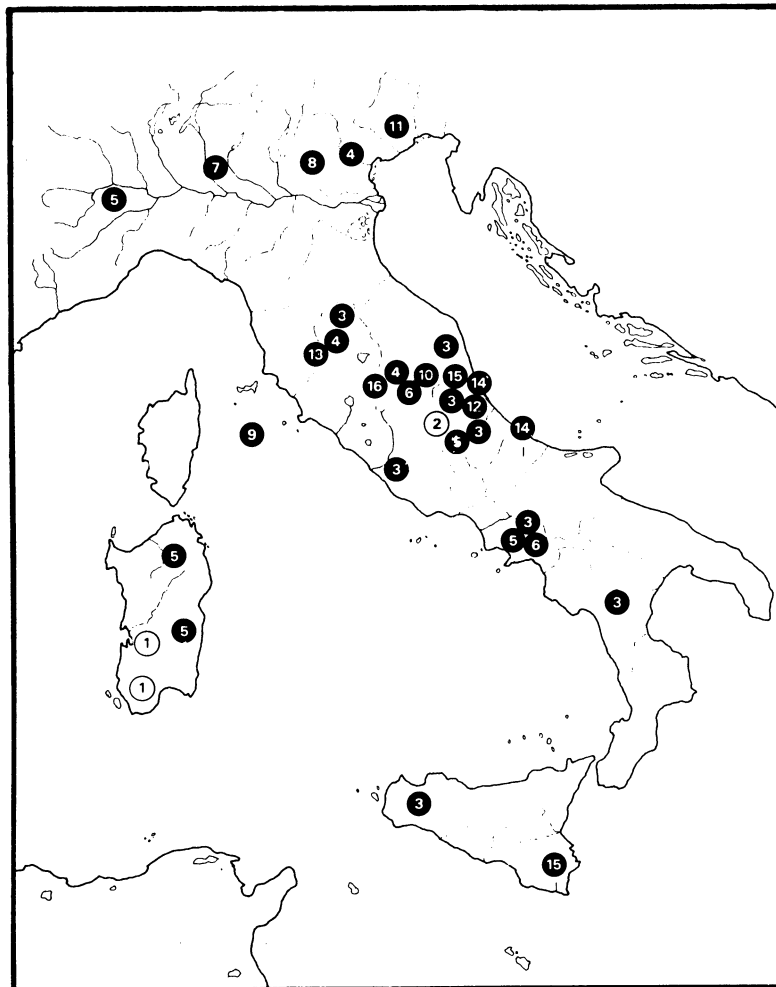


Fig. 15. Distribution of the species of *Elaphoidella* Chappuis, 1929 in Italy (1-2: *simplex* group; 3-12: *gracilis* group). 1, *E. nuragica* Pesce & Galassi, 1986; 2, *E. mabelae* n. sp.; 3, *E. elaphoides* (Chappuis, 1923); 4, *E. phreatica* (Chappuis, 1925)); 5, *E. gracilis* (G. O. Sars, 1863); 6, *E. plutonis* Chappuis, 1938; 7, *E. bidens* (Schmeil, 1894); 8, *E. ruffoi* (Chappuis, 1953); 9, *E. oglasae* Cottarelli & Torrisi, 1974; 10, *E. tiberina* Pesce & Galassi, 1983; 11, *E. cvetkai* Petkovski, 1983; 12, *E. aprutina* Pesce, Galassi & Apostolov, 1987; 13, *E. italica* Pesce, Galassi & Apostolov, 1987; 14, *E. paraelaphoides* Pesce, Galassi & Apostolov, 1987; 15, *E. rossellae* Pesce, Galassi & Apostolov, 1987; 16, *E. subplutonis* Pesce, Galassi & Apostolov, 1987.

At present *E. mabelae* n. sp. is the first representative of the *simplex* group of the genus *Elaphoidella* Chappuis, 1929 in the Italian Peninsula, the other species of the same group from Italy being *E. nuragica* Pesce & Galassi, 1986 from hyporheic waters of Sardinia; all other species of the genus *Elaphoidella* Chappuis, 1929, from this country (Pesce et al., 1987) fall into the *gracilis* group as defined by Apostolov (1983) (fig. 15).

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