

A new *Nitocrella* CHAPPUIS 1923 from phreatic waters of Skyros Island, Greece

(Crustacea: Copepoda: Harpacticoida).

By

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With 1 figure.

Abstract: *Nitocrella skyrensis* n. sp. from subterranean phreatic waters of the Island of Skyros, Northern Sporades, Greece, is described. According to the recent revision of the genus *Nitocrella* s. l. by PETKOVSKI (1976), the new species fits in the "*hirta*" group, being very closely related to *N. psammophila* CHAPPUIS 1955 and *N. juturna* COTTARELLI 1975, both from interstitial waters of Italy, and to *N. hirta bucarestiensis* DAMIAN & BOTOSANEANU 1954 from interstitial waters of Roumania.

In the course of biological researches on the underground waters of Greece, carried out by the Zoological Institute of the University of L'Aquila, Italy, during June and July 1980 we had the opportunity of sampling subterranean phreatic waters from the Northern Sporades, viz. islands of Skyros, Alonissos, Skopelos and Skiathos.

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In the wells which we investigated (PESCE in press), besides other stygobionts as cyclopoid copepods, microparasellid and asellid isopods, amphipods, syncarids, etc., some samples of harpacticoid copepods were obtained. Among this material which was submitted to me for study, an undescribed species of the interesting hypogean genus *Nitocrella* CHAPPUIS 1923 (s. restr.) was identified. This species is described as:

Nitocrella skyrensis n. sp.

Fig. 1.

Holotype: ♀, dissected and mounted on coverlips in Faure solution (SMF 9390), Greece, Northern Sporades, Skyros, fresh-water well near the village of Aspous, road Linaria – Skyros, about 150 m from the sea, 2. VII. 1980, leg. PESCE & CICOLANI.

Paratypes: 2 ♀♀, 1 ♂, partly dissected and mounted on coverlips in Faure solution, remainder in 70% alcohol (Coll. PESCE at Zoological Institute, University of L'Aquila, G. 218. H2-4), same data as holotype. — 1 ♀, dissected and mounted in Faure solution (Mus. Hist. nat. Genève), same data as holotype.

Diagnosis: A small eyeless, depigmented *Nitocrella*, with elongated and slender appendages; article 3 of the exopod P₁–P₄ armed with two setae and two spines; endopod P₂–P₄ 2-segmented, with subequal articles, the first unarmed, the second

with one spine and one long seta; basiendopod of P_5 armed with two long plumose spines in both sexes, exopod ovoidal, with four setae. Analoperculum slightly convex and armed with 10-13 small spines along the medial margin and 9-10 longer spines on each side; furcal rami short, about as long as large.

Description: ♀: General shape of the form usual in the genus; body elongated, subcylindrical, without eyes or pigment; length, excluding antennae, antennulae and furcal setae, about 499-540 microns. Rostrum small and not well defined.

Antennula 8-segmented, aesthete on the 4th article slightly longer than the following articles together; antenna, exopod 1-segmented, subtriangular, armed with three apical setae.

Mouthparts without particular characteristics.

P_1 : Exopod 3-segmented, shorter than the endopod and with subequal articles; article 1 and 2, each with a short outer spine, article 3 with two subdistal spines and two distal long setae. Endopod 3-segmented, article 1 as long as the first two articles of the exopod together, and armed with an inner subdistal spine; article 2 without setae or spines; article 3 with two distal setae of different length and a small setula.

P_2 - P_4 : Exopod 3-segmented, longer than the endopod; article 1 armed with one outer subdistal spine; article 2 armed with one outer subdistal spine and one inner subdistal seta; article 3 with two outer subdistal spines and two apical long setae. Endopod of P_2 2-segmented, well surpassing the tip of the second article of the exopod; articles of the same length, the first without spines or setae, the second armed with one setulose spine, which reaches the tip of the article 3 of the exopod, and one very long plumose seta. Endopod P_3 - P_4 2-segmented, slightly shorter than the first and the second articles of the exopod together; article 1 without spines or setae, article 2 armed with one setulose spine which reaches about $\frac{2}{3}$ of the article 3 of the exopod and one very long plumose seta.

Setal formula of P_1 - P_4 as follows:

	exopod	endopod
P_1	0 0 022	1 0 120
P_2	0 1 022	- 0 020
P_3	0 1 022	- 0 020
P_4	0 1 022	- 0 020

P_5 : Basiendopod with two inner long setulose spines and one outer seta; exopod ovoidal, slightly longer than large ($L/1 = 1.18-1.20$), armed with four setae.

Abdominal segments, each with a posterior row of small hair-like spinules; segments 1 and 2 partly fused dorsally. Genital field as in Fig. 1g. Analoperculum slightly convex, armed with 10-13 small spines along the medial margin and 9-10 longer spines on each lateral side.

Furcal rami sub-conical, short ($L/1 = 0.99-1.02$); outer margin with one small seta, about at $\frac{1}{2}$ of the furcal rami; dorsal margin with a long seta, about 3.5 times longer than each furcal ramus, apically there are four setae: inner and outer ones subequal in length and about 1.5 times longer than furcal rami; the medial distal setae are the longest and of different size, the inner about twice the length of the outer one. At the basis of the dorsal seta as well as of the inner apical one there is a row of 4-5 small spinules.

♂: The construction and the armature of the ♂ thoracic appendages are comparable to those of ♀♀. Exopod of P_5 shorter than in ♀ and about as long as large; basien-

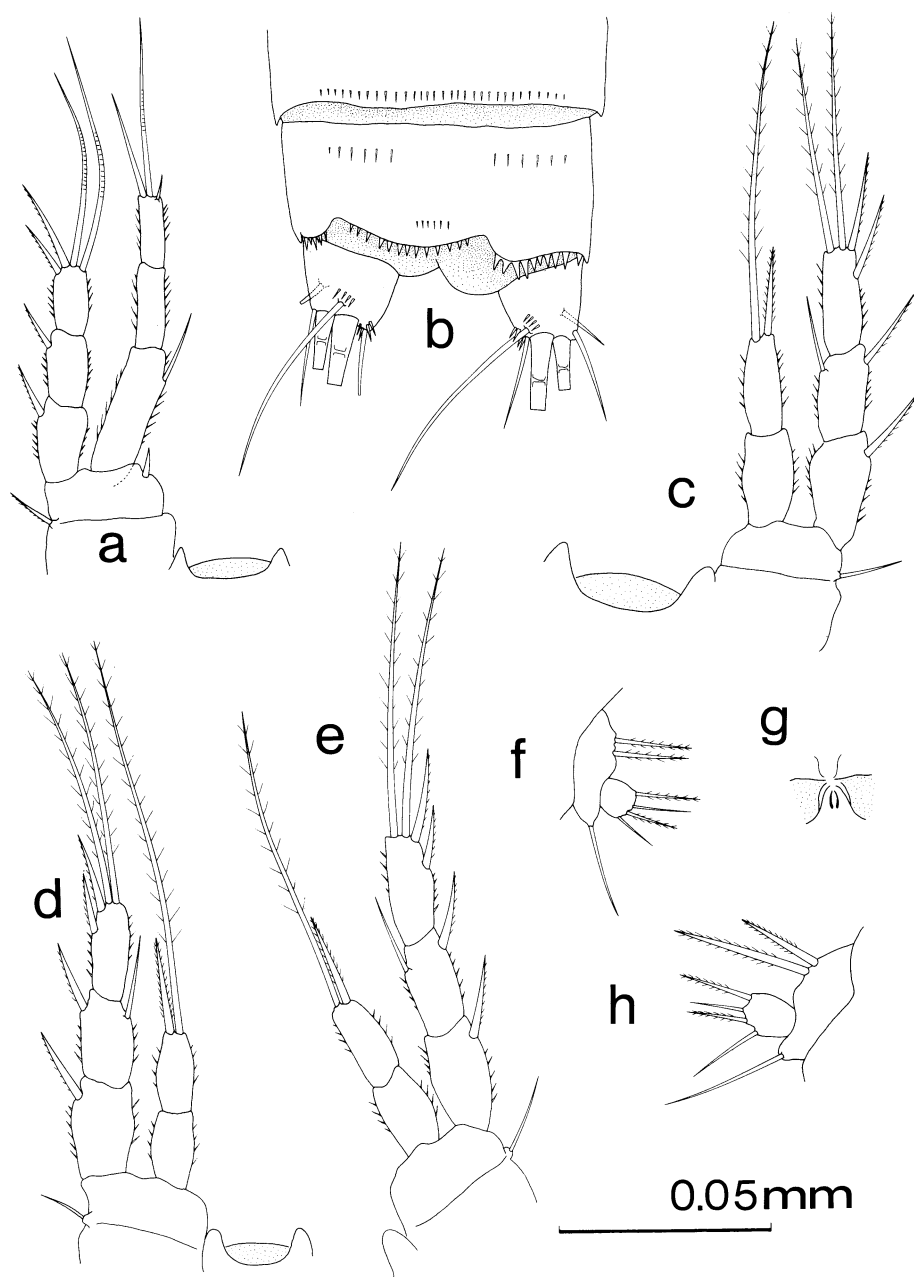


Fig. 1. *Nitocrella skyrensis* n. sp. — a-e, g-h) Holotype ♀ SMF 9390; f) Paratype ♂ Coll. PESCE G. 218.H3. — a) P₁; b) furcal rami, dorsal view; c) P₂; d) P₄; e) P₃; f) P₅; g) genital field; h) P₅.

dopod of P_5 similar to that of ♀ and armed with two long spines. P_6 consisting of a chitinous lamella with two small setae of different length.

Distribution and ecology: *Nitocrella skyrensis* n. sp. is at present known only from its type-locality, viz. Skyros, Northern Sporades.

The new species lives in subterranean phreatic waters (water level from the soil surface, in the examined well: 4.20 m; water depth 0.50 m; water temperature 14.9° C; pH 7.1; bottom sediment composed of thin sandstone). It was associated with other harpacticoid copepods like *Elaphoidella* sp. and *Attheyella crassa* (SARS 1863) as well with cyclopoid copepods [*Thermocyclops oblongatus* (SARS 1927) and *Eucyclops serrulatus* (FISCHER 1851)], microparasellid isopods (*Microcharon* sp.), ostracods, amphipods, water mites and some mosquito larvae.

Affinities: We follow PETKOVSKI (1976) in subdividing the genus *Nitocrella* CHAPPUIS 1923 (s. restr.) into three distinct groups of species, viz. *vasconica*-group, which is characterized by six setae or spines on the article 3 of the exopod of P_4 , *chappuisi*-group, with five setae or spines on the article 3 of the exopod of P_4 and *hirta*-group, with 3-4 setae or spines on the same article.

According to the above revision, *N. skyrensis* n. sp. fits well into the *hirta*-group, being very close to *psammophila* CHAPPUIS 1955 and *juturna* COTTARELLI 1975 respectively from subterranean waters of Northern and Central Italy, and to *hirta bucarestiensis* DAMIAN & BOTOSANEANU 1954 from interstitial waters of Roumania.

Particularly, it is most similar to *psammophila* and to *juturna* by the construction and armature of the exopod P_2 - P_4 , the number of setae or spines on the endopod of P_1 - P_3 , the morphology and armature of the analoperculum and, at last, by the distinct abdominal segments 1 and 2; with *hirta bucarestiensis* it shares the morphology and armature of the exopods and endopods of P_2 - P_4 , the armature of the basiendopod of P_5 and the shape and armature of the exopod of P_5 .

From these species, *skyrensis* n. sp. differs as follows:

From *psammophila* in lacking inner spine on the 2nd article of exopod P_1 , in having subequal articles of endopods P_2 - P_4 (versus first article of the same endopods about $1/2$ length of second one), in shorter furcal rami and different ratio among the apical furcal setae.

From *juturna* in lacking inner spine on the 2nd article of exopod P_1 , in having two setae on the 2nd article of the endopod of P_4 (versus 2nd article of the endopod of P_4 with only one seta), in the quite different shape of the exopod of P_5 and in having shorter furcal rami.

From *hirta bucarestiensis* in having an inner seta on the 1st article of the endopod of P_1 , in shorter furcal rami and by a different armature on the analoperculum.

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