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**A NEW CYCLOPID
FROM SUBTERRANEAN PHREATIC WATERS
OF GREECE
ACANTHOCYCLOPS
(*ACANTHOCYCLOPS*) *CEPHALLENUS* N. SP.
(CRUSTACEA : COPEPODA)**

by Giuseppe L. PESCE
Zoological Institute of University of L'Aquila, Italy

ABSTRACT

During researches still in progress on the biology of underground phreatic waters of Greece, fairly large numbers of interstitial cyclopoid copepods were obtained from fresh-water wells of Epirus and of the Island of Cephalonie (PESCE and coll., 1978; MAGGI and PESCE, 1978).

Among these materials two new species of the genus *Acanthocyclops* Kiefer were identified, of which one, *A. (Megacyclops) dussarti*, from Epirus, has been recently described (PESCE and MAGGI, 1977); the second, from the Island of Cephalonie, is reported in the present paper.

ACANTHOCYCLOPS (ACANTHOCYCLOPS) CEPHALLENUS n. sp.

Material

1 ♀ (holotype) and 1 ♂ (allotype), completely dissected and mounted in Faure solution on microscope slides labelled GA.1-GA.2; 35 paratypes (♂♂, ♀♀ and juveniles), preserved in alcohol 70° and glycerol, or dissected and mounted in Faure solution on microscope slides labelled GA.3-GA.27. Greece, Ag. Ephinia (Cepha-

lonie), station G.57, fresh-water well (water level on 0.70 m; water depth 6.50 m; temperature : 16.5 °C; pH : 7.3; bottom sediment composed of small limestone detritus; coll. Pesce, Maggi and Miranda, 7 may 1977). Accompanying fauna : amphipods (*Salentinella angelieri*), microparasellid isopods (*Microcharon latus*), harpacticoid copepods, ostracods, nematods, gastropods and some mosquito larvae.

Holotype and allotype deposited at the « Museo Civico di Storia Naturale di Verona », Italy; paratypes deposited at the Zoological Institute, University of L'Aquila, Italy (author's collection).

Description (female)

A large *Acanthocyclops*, well over 1350 µm long (including furcal rami; not including furcal setae, antennae and antennulae). Genital segment short, with *receptaculum seminis* not well defined; other abdominal segments subequal in size and much larger than long; posterior margin of each segment indented except the last one, which bears a range of numerous small spinules. Anal operculum well developed and armed with numerous thin hairs on each lobe.

Antennula

It is composed of 17 articles; articles 1,4 and 7 are the longest ones; article 12 bears a long aesthete which reaches up one half of the article 15.

Antenna

4-segmented and armour with numerous setae of different length, some of which are plumose.

Trunk limbs

All rami are three-segmented. The spine formula of the exopodites 3 is : 2 3 3 3. The setae formula is the following :

	P ₁	P ₂	P ₃	P ₄
art. 1	1/1	1/1	1/1	1/1
art. 2	1/2	1/2	1/2	1/2
art. 3	4/4	4/4	4/4	4/2

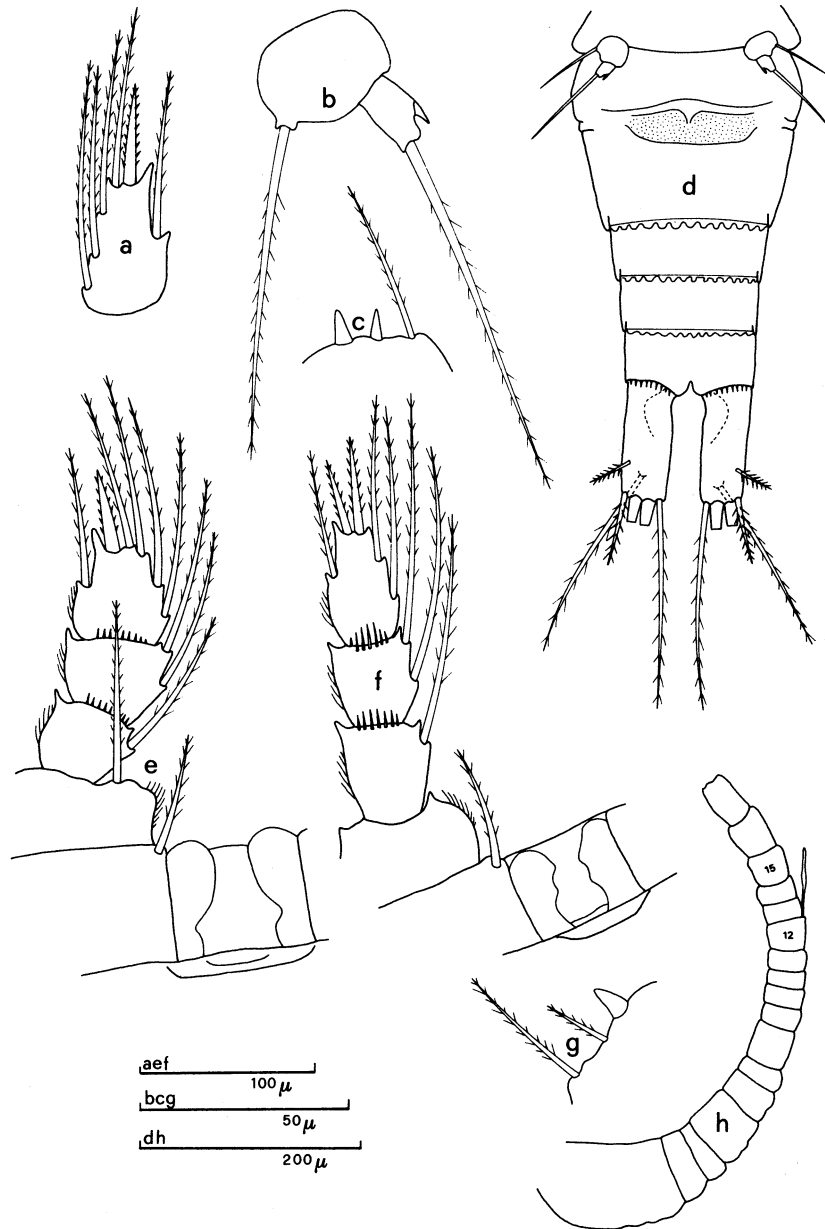


FIG. 1. — *Acanthocyclops (Acanthocyclops) cephalenus* n.sp.
 a : article 3 of the endopodite of P₃; b : P₅; c : P₆, female; d : abdomen and furca, ventral view; e : endopodite P₁; f : endopodite P₄; g : P₆, male; h : antennula.

P_1 : precoxal plate with two lateral lobes without spinules or hairs; at the base stands a long straight seta which reaches well the half of the segment 3 of the endopodite; article 3 of the endopodite about as long as large ($L/l = 0.91-1.01$) and apically armed with a stout spine slightly shorter or as long as the article.

P_2-P_3 : article 3 of the endopodite 1.65-1.70 longer than large, and armed with an apical spine which is shorter than the article.

P_4 : precoxal plate without prominent tubercles, spinules or hairs; article 3 of the endopodite 1.60-1.65 longer than large, and armed with two apical slender spines, of which the inner is slightly longer than the outer, but it is shorter than the article. Basal article armed with a slender seta on the inner margin. There are no differentiated setae on the outer margin of the article 3 of the endopodite.

P_5 : composed of two articles, the basal one slightly larger than long and armed with a long plumose seta, the apical one with the typical short spine and the apical long plumose seta; its morphology perfectly agrees with that of the subgenus *Acanthocyclops*.

P_6 : composed of two short and stout spines and a long seta.

Furca

Furcal rami parallel, well separated and 2.5 times longer than wide. Apical inner seta (Ti) long and over 2 times (2.37-2.67) longer than the outer apical one (Te). Dorsal seta very long, longer than the furcal rami and about as long as the apical inner seta. Medial distal setae of different size, the inner about 1.60 (1.55-1.65) as long as the outer one.

Males (allotype and paratypes) show a mean length markedly lower than in the females and slightly under 1 000 μm . The structure of the thoracopods is as in the female. P_6 bears a short spine and two setae of different length, the outer one twice as the inner one. Furcal rami slightly shorter than in the female and 2.25-2.30 as long as wide.

Acanthocyclops (Acanthocyclops) cephalenus n.sp. is closely related to *A. (A.) gordani* Petkovski, from phreatic waters of Yugoslavia, for the shape of the furcal rami, the very exceptional length of their dorsal setae, the presence of 4 internal marginal setae on the article 3 of the exopodites P_1-P_4 ; moreover, as well as Petkovski pointed out in *A. (A.) gordani*, the new species shows features of both the subgenus *Acanthocyclops* and *Megacyclops*, but

for the morphology of P_5 it is to be considered as a true *Acanthocyclops*. Particularly, for the shortness of the furcal rami as well as for its ecology the new species could be considered in the same phyletic line of the following other subterranean species of the genus : *A. (A.) kieferi* (Chappuis-1925) from the underground waters of Rumania, Yugoslavia and Germany; *A. (A.) rhenanus* Kiefer 1937 from a cave in Spain and *A. (A.) sensitivus* (Greater et Chappuis 1914) from the phreatic habitat of Europe (Germany, Belgium, Austria, etc.).

From all the above species, as well as from the others of the genus, *A. (A.) cephalenus* n.sp. differs by the remarkable shortness of the furcal rami, the mean ratio between the inner and the outer apical setae on the furcal rami, the shape of the precoxal plate of P_4 , the morphology and the armature of the endopodite 3 of P_4 and the shortness of the spine on the article 3 of the endopodite of P_1 .

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RÉSUMÉ

Description d'un Cyclopite troglobie nouveau, *Acanthocyclops (Acanthocyclops) cephalenus* n. sp., provenant des eaux souterraines phréatiques de l'île de Céphalonie (Grèce). La nouvelle espèce se rapproche de *A. (A.) gordani* Petkovski des eaux souterraines de la Yougoslavie; comme celle-ci, la nouvelle espèce est, par certains caractères, intermédiaire entre *Acanthocyclops* et *Megacyclops*.

A. (A.) cephalenus n. sp. se distingue de toutes les autres espèces du genre par les branches furcales très courtes, par la longueur considérable des soies dorsales des branches furcales et par la forme et l'ornementation de l'endopodite de P_1 et de P_4 .

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