

Some harpacticoids from subterranean waters of Greece (Crustacea: Copepoda)

GIUSEPPE LUCIO PESCE

Istituto di Zoologia, Università di L'Aquila
Piazza R. Margherita 7, 67100 L'Aquila (Italy)

ABSTRACT

Elaphoidella moreae n. sp., *Parapseudoleptomesochra hellenica* n. sp. and *Nitocrella achaiae* n. sp. are described from phreatic subterranean waters of Greece. Moreover, new localities are reported for the species *Elaphoidella karamani* Chappuis, *Elaphoidella elaphoides* (Chappuis), *Attheyella (Brehmiella) dentata* (Poggenpol), *Attheyella (Attheyella) crassa* (Sars), *Nitocrella skirenensis* Pesce, *Nitocra spinipes* Boeck, *Bryocamptus (Bryocamptus) minutus* (Claus), and *Canthocamptus staphylinus* (Jurine).

The systematic status of the species *Elaphoidella karamani*, *Elaphoidella eucharis* Chappuis, and *Elaphoidella elaphoides* is briefly discussed.

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During researches on the underground waters of Greece by the Zoological Institute of the University of L'Aquila (Italy) from 1976 to 1980, numerous samples of harpacticoid copepods were obtained from subterranean waters (wells) of the Northern Sporades, viz. the islands of Skiros, Skiatos, Alonissos and Skopelos, from the Peloponnesus, and from the island of Zante (Pesce *et al.*, 1978; Pesce, in press).

Among the specimens there are three remarkable undescribed species of the genera *Elaphoidella* Chappuis, *Parapseudoleptomesochra* Lang and *Nitocrella* s. str. Chappuis, as well as some stygobiont or eustygophil species such as *Elaphoidella karamani* Chappuis, *Elaphoidella elaphoides* (Chappuis), *Attheyella (Brehmiella) dentata* (Poggenpol), *Nitocrella stammari* Chappuis and *Nitocrella skirenensis* Pesce.

Moreover, new localities for the species *Attheyella (Attheyella) crassa* (Sars), *Bryocamptus (Bryocamptus) minutus* (Claus), *Canthocamptus staphylinus* (Jurine) and *Nitocra spinipes* Boeck are listed.

FAM. CANTHOCAMPTIDAE Sars 1906

Elaphoidella Chappuis 1928

Elaphoidella karamani Chappuis 1936

(Figs. 1-2)

MATERIAL

9 ♀♀, 3 ♂♂ and 2 juveniles, island of Skiathos, Northern Sporades, fresh-water well near the village of Koukounaires; July 7, 1980; 12 ♀♀, 3 ♂♂, island of Skopelos, fresh-water well along the road Skopelos-Glossa, about 2 km from the village of Skopelos; July 6, 1980; 2 ♀♀, 2 ♂♂ and 3 juveniles, Peloponnesus, Argos, fresh-water well in the village of Nauplion; April 9, 1978.

DESCRIPTION

(Female)

Body length, excluding antennae, antennulae and caudal setae, 0.60 to 0.75 mm. Posterior dorsal margin of body segments faintly denticulate. Ventral mar-

gin of the abdominal segments with 2-3 rows of small hair-like setulae, the last one with 3-4 spines at the basis of each furcal ramus. Genital field as in Figure 1; anal operculum slightly convex and armed with numerous small spines.

Furcal rami subparallel, shorter than the anal segment and twice as long as broad; inner margin with a row of slender spinules, outer margin with two setae; apical margin with 3 setae, the outer about twice the length of the inner, the medial one being the longest; dorsal seta long, about as long as the furcal ramus.

Antenna 1, 8-segmented, long; aesthete on the 4th segment overreaching the tip of the last segment. Antenna 2, exopod 1-segmented, elongated, and with 2 apical and 2 subapical setae.

Mandibular palp, 2-segmented, with 4 apical setae. Other mouthparts without particular characteristics.

P₁ with endopod and exopod 3-segmented; exopod shorter than the endopod. P₂-P₄ with endopod 2-segmented and exopod 3-segmented.

Setal formula as follows:

	Endopod			Exopod		
P ₁	1	1	111	0	1	022
P ₂	-	0/1	121	0	1	122
P ₃	-	0/1	120	0	1	122
P ₄	-	0	120	0	1	122

P₅: basiendopod without spines or setae; exopod subovoidal, with 3 apical and 1 (or 0) shorter, subapical, plumose spines.

(Male)

Body length, anal operculum, P₁ and exopod of P₂ and P₃ not differing from those of the female. Furcal rami slightly shorter than in the female, and without spinules or cilia on the inner margin. Endopod of P₂ short, with 1 inner and 1 apical seta on the second segment; first seg-

ment with or without the short setula at the distal inner corner. Endopod of P₃ 3-segmented, the first segment without spine at the distal corner, spine on the second segment short, not overreaching the tip of the third segment of the exopod; distal segment ovoidal, with 2 distal plumose setae. P₄, distal segment of the exopod with two transformed spines. P₅, basiendopod without spines or setae, exopod short and armed with 3 plumose spines. P₆ consisting of a naked chitinous lamella.

REMARKS

The specimens from Greece undoubtedly belong to the species *Elaphoidella karamani* Chappuis, as described and illustrated by Chappuis (1936) and, later on, by Lang (1948) and Petrovski (1956).

Some differences were observed in the size and armature of the endopod of P₂ of the male, in the armature of the first segment of the endopod of P₃ of the females and, lastly, in the number of spines of the anal operculum, both in the males and in the females.

Moreover, other characteristics, such as the length of the caudal rami, the length of the furcal setae, the number of the spines (3-4) on the exopod of P₅ in the female and the number of spines (3-4) on the posterior margin of the last abdominal segment, differ among the populations examined, and also in specimens of the same population.

Considering the wide variability of this species (see also Chappuis, 1953), the listed characters are to be considered of limited taxonomical value; for the same reason *Elaphoidella eucharis* Chappuis, from the Katafigui cave, near Selenitza (Peloponnesus), could be, in my opinion, a synonym for *E. karamani*.

DISTRIBUTION AND ECOLOGY

Yugoslavia and Greece, in subterranean (phreatic and cave) waters (Stygobiont).

Elaphoidella moreae n. sp.
(Fig. 3)

MATERIAL

2 ♀♀, Peloponnesus, fresh-water well along the main road Patras-Athens, near the village of Nikoleika; may 9, 1977; 4 ♀♀, 2 ♂♂ and 3

Type-locality: Peloponnesus, fresh-water well, main road Pyrgos-Patras, about 3 km from Pyrgos.

Type-material: holotype (♀) (1 slide n.G.-136.H1); paratypes: 18 ♀♀, 3 ♂♂ and 2 juveniles, dissected and mounted on coverslips in Faure's medium, or in alcohol 60%, at the Zoological Institute of the University of L'Aquila (author's collection); 2 ♀♀, 2 ♂♂, dissected and moun-

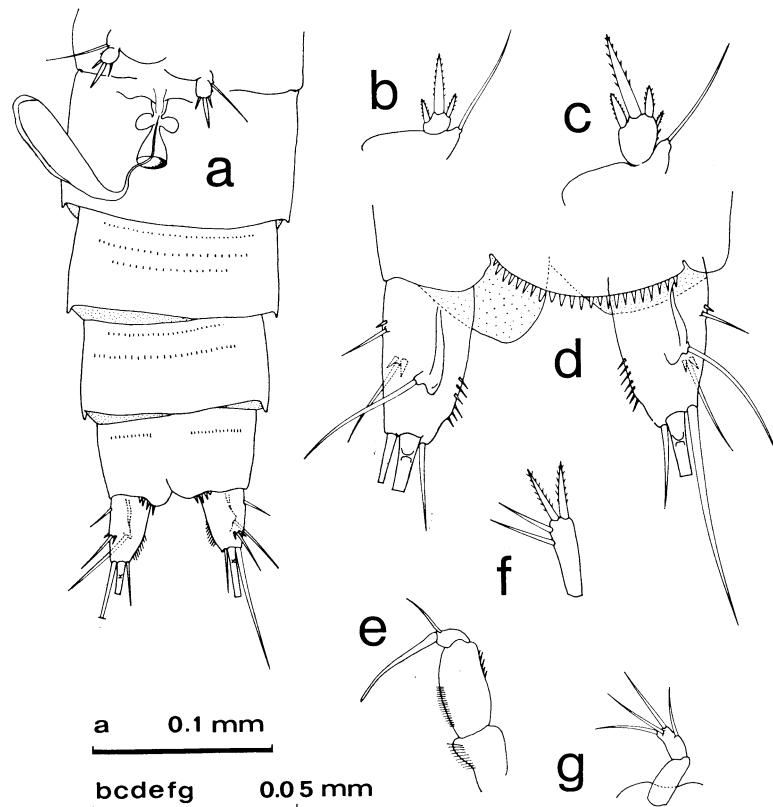


Fig. 1. — *Elaphoidella karamani* Chappuis: a: abdomen and caudal rami, ventral view (♀); b: P₅ (♂); c: P₅ (♀); d: caudal rami and anal operculum, dorsal view (♀); e: maxilliped (♀); f: antenna 2, exopod (♀); g: mandibular palp (♀).

juveniles, Peloponnesus, slightly brackish-water well at Ghition; april 11, 1978; 3 ♀♀, 1 ♂ and 4 juveniles, Peloponnesus, fresh-water wells along the main road Kalamata-Tripolis, in the surroundings of Anteia; april 12, 1978; 15 ♀♀, 5 ♂♂, Peloponnesus, freshwater wells along the main road Pyrgos-Patras, about 3 km from the village of Pyrgos; april 12, 1978.

ted on coverslips in Faure's medium, deposited at the "Prirodonaucen Muzej", Skopje; 1 ♀ and 1 ♂, dissected and mounted on coverslips in Faure's medium at the "Museum d'Histoire Naturelle", Genève; 1 ♀ and 1 ♂ at the "Zoologisch Museum", Amsterdam; 1 ♀ and 1 ♂ at the "Museo Civico di Storia Naturale", Verona.

Etymology: after Morea, the ancient Roman name for the Peloponnesus.

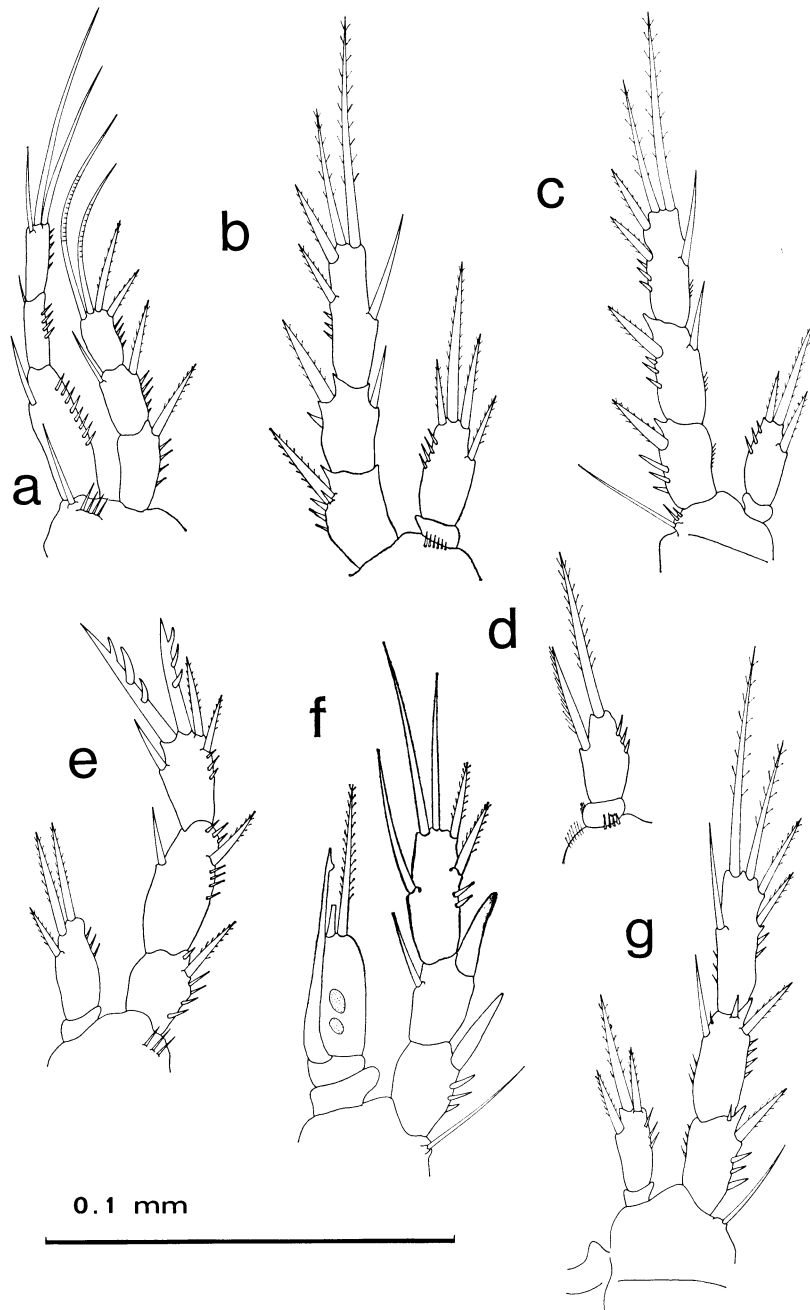


Fig. 2. — *Elaphoidella karamani* Chappuis: a: P₁ (♀); b: P₂ (♀); c: P₃ (♀); d: endopod of P₂ (♂); e: P₄ (♂); f: P₃ (♂); g: P₄ (♀).

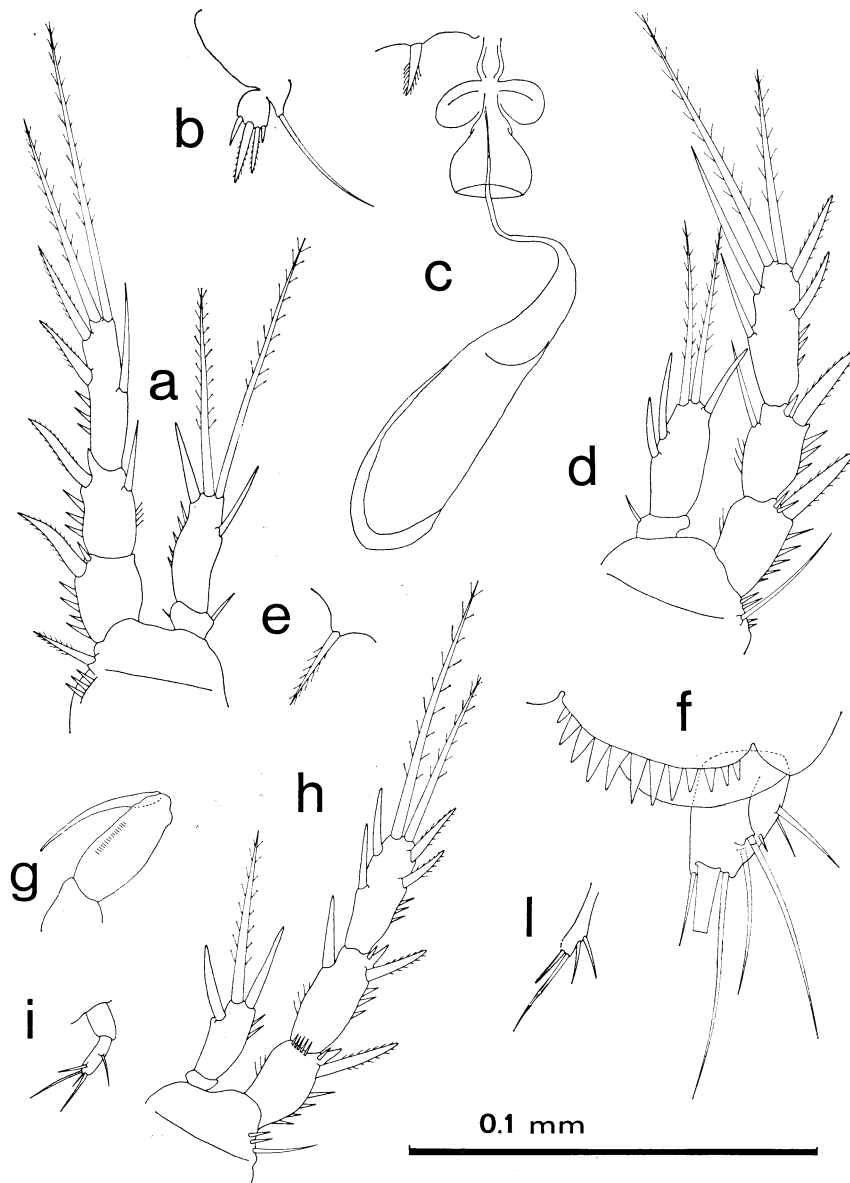


Fig. 3. — *Elaphoidella moreae* n. sp.: a: P₂ (♀); b: P₅ (♀); c: genital field of the female and spermatophora; d: P₃ (♀); e: P₄ (♀); f: caudal ramus and anal operculum, dorsal view (♀); g: maxilliped (♀); h: P₄ (♀); i: mandibular palp (♀); l: antenna 2, exopod (♀).

DESCRIPTION

(Female)

Body length, excluding antennae, antennulae and furcal setae, 0.75 to 0.85 mm. Posterior dorsal margin of the body segments denticulate; ventral margin of the abdominal segments with rows of hair-like setulae; last abdominal segment with 3-4 small spines at the basis of each furcal ramus. Genital field as in Figure 3. Anal operculum slightly convex and armed with 12-15 stout spines.

Furcal rami subconical, short, about 1.4-1.5 times longer than wide, and without cilia or spinules on the inner margin; outer margin with 2 long and 1 shorter setulae; dorsal seta very long, more than twice as long as the furcal rami, and implanted on a chitinous lamella; distal margin with 3 setae, the outer about as long as the dorsal one, the medial the longest.

Antenna 1, 8-segmented, aesthete on the 4th segment overreaching the tip of the last segment. Antenna 2, exopod 1-segmented, elongated and with 2 apical and 2 subapical setae.

Mouthparts without particular characteristics as compared with the other species of the genus.

Exopod of P₁-P₄ 3-segmented; endopod of P₁ 3-segmented; endopod of P₂-P₄ 2-segmented.

Setal formula as follows:

	Endopod			Exopod		
P ₁	1	1	111	0	1	022
P ₂	-	1	122/1	0	1	122
P ₃	-	0/1	111 221	0	1	222
P ₄	-	0	111	0	1	222

P₅ with naked basiendopod and short exopod, about as long as broad, and armed with four plumose spines.

(Male)

Body length, anal operculum, armature of P₁ and exopod of P₂ and P₃ no different from those of the female. Furcal rami slightly shorter than in the female, without cilia or spinules on the inner margin. Endopod of P₂ with 1-2 inner and 1 apical, very long setae on the distal segment; first segment with 1 spine on the sub-distal inner margin. Endopod of P₃ 3-segmented, the first segment without spines or setae; spine on the second segment reaching about the tip of the distal segment of the exopod; distal segment ovoidal, and with 2 plumose setae apically. P₄, distal segment of the exopod armed with 6 short spines, the apical ones transformed; endopod, distal segment with 1 stout inner and 2 apical spines. P₆ consisting of a chitinous lamella. P₅ and furcal rami resembling those of the female.

AFFINITIES

Elaphoidella moreae n. sp. quite clearly belongs to the "group IV" of *Elaphoidella* after Lang (1948). Within this group it is most closely related to *E. karamani* and *E. eucharis* (= *karamani*?) owing to the absence of spines and setae on the basiendopod of P₅ in both female and male.

However, the new species is easily distinguishable from the above species in these characters: (1) the armature of the distal segment of the exopod of P₃ and P₄, consisting of 6 spines or setae (on the contrary 5 spines or setae both in *karamani* and *eucharis*); (2) the shorter caudal rami (L/1 = about 2 in *karamani* and *eucharis*, 1.4-1.5 in *E. moreae* n. sp.); (3) the armature of the endopod of P₂ of the male; (4) the furcal dorsal seta much longer than the furcal rami (in *karamani* and *eucharis* the same seta is shorter or about as long as the furcal rami).

DISTRIBUTION AND ECOLOGY

Greece, Peloponnesus, in subterranean (phreatic) waters (Stygobiont). At present time endemic for the Peloponnesus.

Elaphoidella elaphoides (Chappuis 1923)
(Fig. 4)

According to Petkovski, *E. elaphoides* shows a wide variability: many forms exist also in the same population, which are differentiated by the length of the caudal rami that may range from a ratio 1.2 to 1.7, the presence or absence of cilia or spinules on the inner margin of

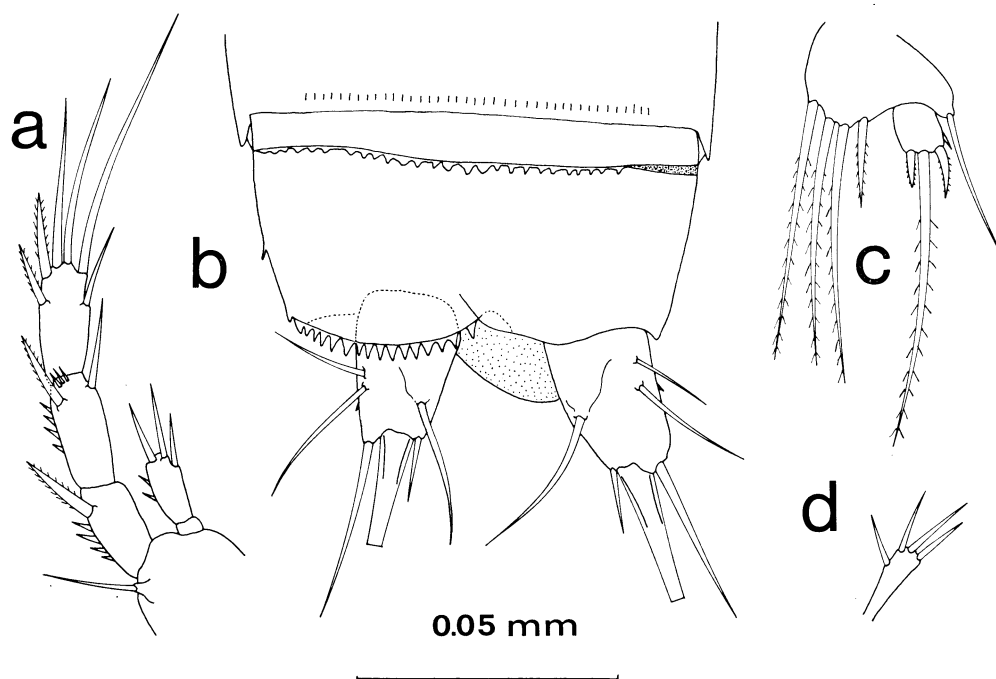


Fig. 4. — *Elaphoidella elaphoides* Chappuis: a: P₄ (♀); b: caudal rami and anal operculum, dorsal view (♀); c: P₅ (♀); d: antenna 2, exopod (♀).

MATERIAL

3 ♀♀ and 2 juveniles, island of Alonissos, northern Sporades, fresh-water well at Patitiri; July 5, 1980.

REMARKS

The specimens we examined belong quite clearly to the species *E. elaphoides* as described and illustrated by Chappuis (1923) and later by Petkovski (1956, 1959).

the caudal rami, and the armature of the endopod of P₂ and P₃ in the female.

Some of these forms seem to correspond to some other species (*E. minos* Chappuis, *E. varians* Chappuis and most probably *E. juxtaputealis* Damian and Botosaneanu) from the Balkan Peninsula (Greece and Crete included), which Petkovski (1959) described as forming a "Rassenkreis" around *E. elaphoides*.

The new finding and some others of the same species we recently collected

from subterranean water in Italy (Pesce, in press) seem to confirm the remarkable variability of *E. elaphoides* as well as supporting the hypothesis of Petkovski.

DISTRIBUTION AND ECOLOGY

Northern Europe, Italy, Balkan Peninsula, in subterranean and epigeal waters (Stygophil).

Attheyella s.l. Brady 1880

Subgen. *Attheyella* s. str. Chappuis 1928

Attheyella (Attheyella) crassa (Sars 1863)

MATERIAL

Numerous ♀♀, ♂♂ and some juveniles from the following localities: Peloponnesus, fresh-water wells along the main road Patras-Athens; may 9, 1977; Peloponnesus, fresh-water wells along the main road Ghition-Kalamata; april 11, 1978; Peloponnesus, fresh-water wells in the surroundings of the village of Pyrgos; april 13, 1978; Attica, fresh-water wells along the main road Corinth-Athens; may 9, 1977; island of Zante, fresh-water and brackish-water wells at Lithakia, Planos and Ag. Nicolaos (spring near the sea coast); april 9, 1979; island of Skiros, fresh-water well at Aspous; july 2, 1980.

Subgen. *Brebmiella* Chappuis 1928

Attheyella (Brebmiella) dentata (Poggenpol 1874)

MATERIAL

1 ♀ and 1 ♂, Attica, fresh-water well along the main road Corinth-Athens, about 4 km from Corinth; april 9, 1978.

Bryocamptus (Bryocamptus) Chappuis 1928

Bryocamptus (Bryocamptus) minutus (Claus 1863)

MATERIAL

1 ♀, island of Zante, fresh-water well at Bohali; april 9, 1979.

Canthocamptus Westwood 1836

Canthocamptus staphylinus (Jurine 1820)

MATERIAL

Numerous ♀♀, ♂♂ and some juveniles, Peloponnesus, fresh-water well at Ghition; april 11, 1978.

FAM. AMEIRIDAE Monard 1927; Lang 1936

Parapseudoleptomesochra Lang 1965; Petkovski 1976

Parapseudoleptomesochra hellenica n. sp. (Fig. 5)

MATERIAL

3 ♀♀, 1 ♂ and 1 juvenile, island of Skiros, northern Sporades, fresh-water well along the road Linaria-Skiros, near the village of Aspous; july 2, 1980; 2 ♀♀, island of Skiros, fresh-water well at Molos; july 1, 1980.

Type-locality: island of Skiros, fresh-water well at Aspous.

Type-material: holotype (♀) (1 slide, n.G218.H1), 1 ♀, 1 ♂, 1 juvenile (paratypes), dissected and mounted on coverslips in Faure's medium at the Zoological Institute of the University of L'Aquila (author's collection); 1 ♀ (paratype), dissected and mounted on coverslips in Faure's medium at the "Museum d'Histoire Naturelle", Genève; 1 ♀ dissected and mounted on coverslips in Faure's medium at the "Prirodonaučen Muzej", Skopje; 1 ♀, in alcohol 60°, at the "Zoologisch Museum", Amsterdam.

DESCRIPTION

(Female)

Body cylindrical, elongated, unpigmented and eyeless; total length, excluding antennae, antennulae and furcal setae, 0.42 to 0.49 mm. Posterior dorsal margin of the body segments without denticulation or chitinous lamellae; ventral margin of the abdominal segments with some rows of hair-like setules, the last one also with a row of slender spines on the anterior ventral margin, and with 12-15 spines at the basis of each furcal ramus. First two abdominal segments partially fused. Genital field as in Figure 5. Anal operculum slightly convex and armed with numerous spinules along the medial margin and with 5 or 6 stouter spines on each side.

Antennula 8-segmented, aesthete on the 4th segment longer than the following

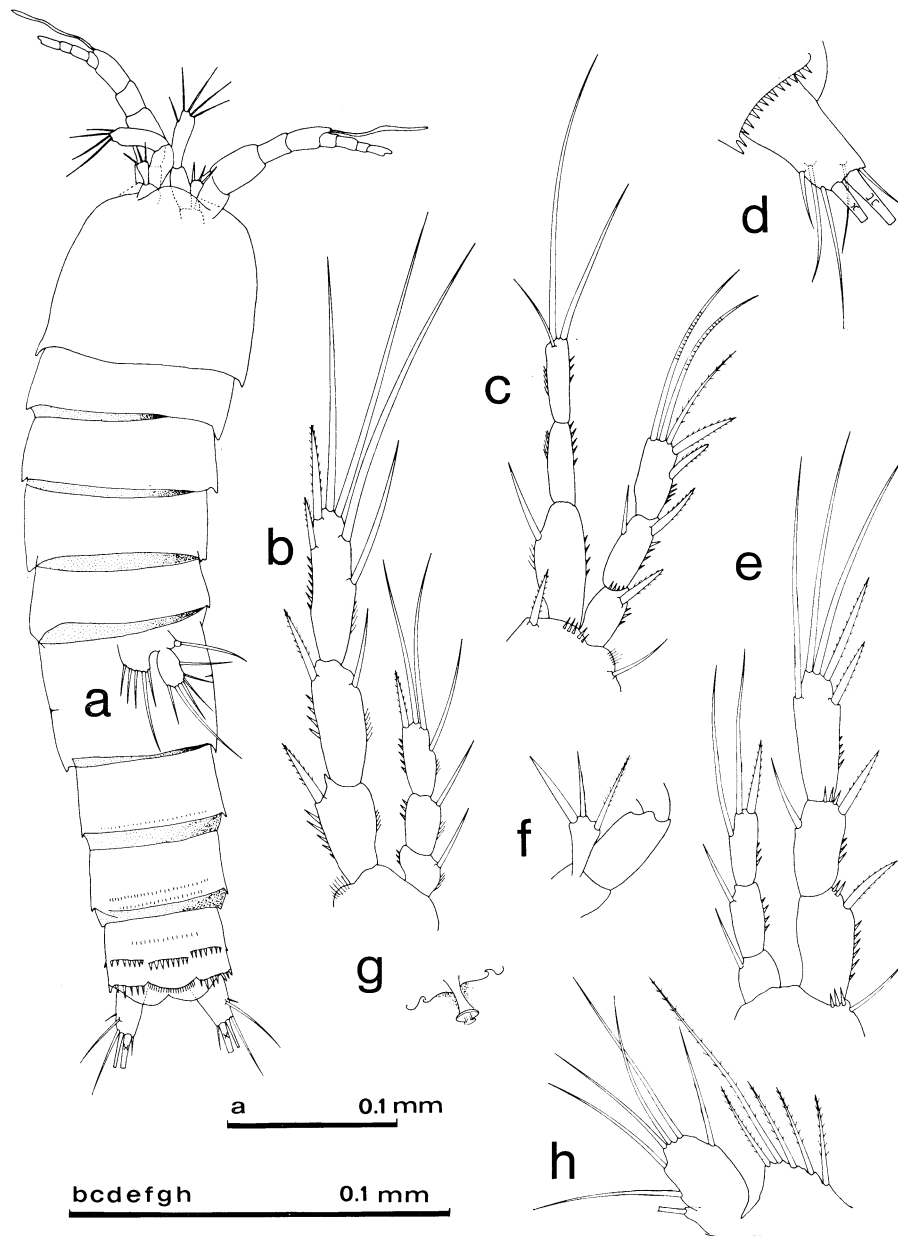


Fig. 5. — *Parapseudoleptomesochra hellenica* n. sp.: a: body (♀), dorsal view; b: P₄ (♀); c: P₁ (♀); d: caudal ramus, ventral view (♀); e: P₂ (♀); f: antenna 2, exopod (♀); g: genital field (♀); h: P₅ (♀).

articles together. Antenna, exopod 1-segmented, triangular, armed with 3 apical setae.

Mouthparts without particular characteristics.

P₁: basis with short inner spine, which reaches about the 1/2 of the first article of the endopod; exopod 3-segmented, shorter than the endopod; article 1 with one outer subdistal spine, article 2 with one outer subdistal spine and one inner short seta, article 3 with 3 spines and 2 long apical setae. Endopod 3-segmented, article 1 about as long as the first two articles of the exopod together and armed with an inner seta; article 2 without spines or setae, article 3 with two long apical setae and 1 slender subdistal seta.

P₂-P₃: exopod 3-segmented, longer than the endopod; article 1 armed with 1 outer subdistal spine, article 2 with one outer subdistal spine and 1 inner seta, article 3 with 2 outer spines, 2 apical and 1 sub-apical inner setae. Endopod 3-segmented, reaching the tip of the 2nd article of the exopod; proximal article shorter than the others and armed with 1 inner seta; article 2 and 3 subequal in length, article 2 with 1 inner seta, article 3 with 3-4 sub-apical and apical setae.

P₄: exopod 3-segmented, longer than the endopod; first article as long as the first and the second articles of the endopod together and armed with 1 outer subdistal spine; article 2 with 1 outer subdistal spine and 1 inner seta; article 3 armed with 2 outer spines and 2 apical and 2 inner, long setae.

Setal formula as follows:

	Endopod			Exopod		
P ₁	1	0	120	0	1	023
P ₂	1	1	120	0	1	122
P ₃	1	1	111 211	0	1	122
P ₄	1	1	220	0	1	222

P₅, basiendopod armed with an outer seta and 5 setulose spines, the second from the outer about twice as long as the others; exopod oval, about 1.5-1.6 times longer than wide, armed with 6 long setae.

Caudal rami subparallel, longer than broad (L/1 = 1.7 to 1.9); outer margin with 1 small and 1 longer seta; dorsal seta short; apical inner seta much shorter than the outer one; medial apical setae of different lengths, the inner about three times longer than the outer.

(Male)

Length, excluding antennae, antennulae and furcal setae, 0.39 to 0.44 mm. Basiendopod of P₅ armed with 2-3 barbed spines; exopod shorter than in the female and armed with 5 setae. P₆ consisting of a chitinous lamella, which bears two subequal setae. Other characteristics as in the female.

AFFINITIES

Parapseudoleptomesochra hellenica n. sp. is close to *P. iranica* (Löffler) from phreatic subterranean waters of Iran, and most like *P. italica* Pesce & Petkovski from phreatic subterranean waters in Italy. It resembles the former because of the armature of the exopod of P₁-P₄ and the morphology and armature of the caudal rami; the latter because of the armature of both the exopod and the endopod of P₂-P₄.

P. hellenica n. sp. differs from the above species as follows: from *P. iranica* by the armature of the basiendopod of P₅ (♂) and the morphology and armature of the anal operculum; from *P. italica* by the smaller and slender body and by the length and armature of the caudal rami.

DISTRIBUTION AND ECOLOGY

P. hellenica n. sp. to-day is endemic to the island of Skiros, northern Sporades, Greece (stygiobiont).

Nitocra Boeck 1864

Nitocra cfr. *spinipes* Boeck 1864

MATERIAL

1 ♀, 1 ♂ and 1 juvenile, island of Zante, spring at Ag. Nicolaus, about 5 m from the sea coast; april 9, 1979.

REMARKS

Most of the important diagnostic features of the present form fit the original description of the species by Boeck (1864), except for the following characteristics; firstly, the first segment of the endopod of P₁ slightly overreaches the second segment of the exopod both in male and in female (on the contrary, in *N. spinipes* the same segment not reaches the tip of the second segment of the exopod); secondly, the basiendopod of P₅ of the male is armed with 3 spines (in *N. spinipes* it is armed with 4 spines, exceptionally with 3 spines); lastly, the anal operculum is armed, both in the female and in the male, with 9-10 spines (12-14 in *N. spinipes*).

Despite these variations, which could characterize the population of Zante, we feel that the present form belongs to *N. spinipes* on the basis of the general body shape, the characteristic setal formula of P₁-P₄, and the morphology and armature of the female P₅.

To specify the status from this material is scarcely possible because our specimens are too few and poorly preserved.

Nitocrella Chappuis 1923; Petkovski 1976

Nitocrella achaia n. sp.

(Fig. 6)

MATERIAL

1 ♀, 1 ♂ and 2 juveniles, Peloponnesus, fresh-water well along the main road Pyrgos-Katakolon; april 13, 1978; 3 ♀♀, Peloponnesus, fresh-water well along the road Killini-Patras, at Kavasilas; april 13, 1978.

Type-locality: Kavasilas, Peloponnesus (fresh-water well).

Type-material: holotype (♀) (1 slide n.G132.H1); paratypes (1 ♀, 1 ♂), dissected and mounted on coverslips in Faure's medium, at the Zoological Institute of the University of L'Aquila (author's collection); 1 ♀, dissected and mounted on coverslips in Faure's medium, at the "Museum d'Histoire Naturelle", Genève; 1 ♀, dissected and mounted on coverslips in Faure's medium, at the "Prirodonaucen Muzej", Skopje.

Etymology: after the mediaeval name of the Peloponnesus, "Achaia".

DESCRIPTION

(Female)

Total body length, excluding antennae, antennulae and caudal setae, 0.45 to 0.53 mm. Distal margin of the thoracic segments without spines or denticulations. Abdominal segment, dorsal margin with numerous rows of hair-like setulae; last abdominal segment with a row of stouter spines, besides the hair-like elements. Genital field as in Figure 6. Anal operculum armed with 4-5 stout spines and, laterally, with 4-5 spines of about the same size.

Furcal rami long, about twice as long as wide ($L/1 = 1.7$ to 1.8), and armed as follows: 1 small and 1 longer outer subapical setae; 1 dorsal seta, longer than each furcal ramus; two medial apical setae of different length, and 1 outer and 1 or 2 inner apical setae (the inner shorter than the half of the outer one and much shorter than each furcal ramus).

Antenna 1, 8-segmented, aesthete on the 4th segment overreaching the tip of the last one. Antenna 2, exopod 1-segmented, armed with 3 plumose setae.

Mouthparts without particular characteristics.

P₁: exopod and endopod 3-segmented; first segment of the endopod as long as the first two segments of the exopod together.

P₂-P₃: exopod 3-segmented, endopod 2-segmented, overreaching the first segment of the exopod.

P₄: exopod 3-segmented, endopod 2-segmented and as long as the first segment of the exopod.

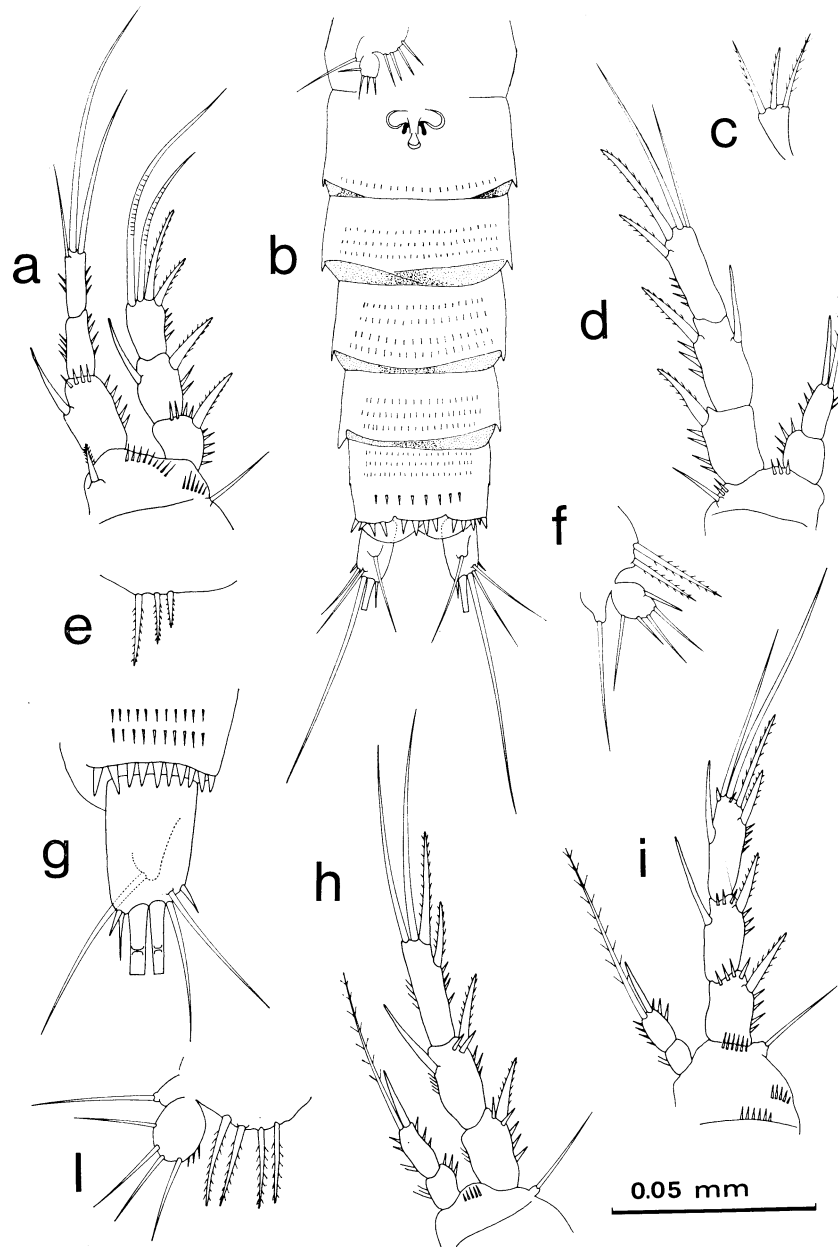


Fig. 6. — *Nitocrella achaiiae* n. sp.: a: P₁ (♀); b: abdomen and caudal rami (♀), dorsal view; c: antenna 2 (♀), exopod; d: P₂ (♀); e: P₆ (♂); f: P₅ (♂); g: caudal ramus, ventral view (♀); h: P₃ (♀); i: P₄ (♀); l: P₅ (♀).

Setal formula as follows:

	Endopod			Exopod		
P ₁	1	0	120	0	1	022
P ₂	—	0	020	0	1	022
P ₃	—	0	020	0	1	022
P ₄	—	0	020	0	1	122

P₅: basidendopod armed with 4 plumose setae of the same length, and 1 outer slender seta; exopod ovoidal slightly longer than wide ($L/1 = 1.30$ to 1.35) and armed with 4 slender setae. P₆ consisting of two slender, small setae.

(Male)

Body length, excluding antennae, antennulae and caudal setae, 0.39 to 0.43 mm. Antenna 1 transformed. P₅, basidendopod with 2 plumose long spines and 1 outer seta; exopod ovoidal and armed with 5 setae; P₆ consisting of a chitinous lamella bearing 3 plumose setae of different lengths.

AFFINITIES

Nitocrella achaiae n. sp. fits in the "chappuisi" group of *Nitocrella* s. str., after Petkovski (1976). Within this group it is close to *N. stammeri* Chappuis, from the subterranean (cave and phreatic) waters of Italy and Turkey, due to the armature of both the endopod and the exopod of all the legs.

From the above species, *N. achaiae* n. sp. is easily distinguished by numerous characteristics, viz. the length of the caudal rami, the ratio between the inner and the outer apical setae of the furcal rami, the morphology of the genital field, the morphology of the exopod of the female P₅, the armature of the exopod of the male P₅, and, lastly, the armature of the basidendopod of P₅ in both males and females.

DISTRIBUTION AND ECOLOGY

At present endemic for the Peloponnese. In phreatic subterranean waters (Stygobiont).

Nitocrella cfr. *stammeri* Chappuis 1938

MATERIAL

1 ♀, Attica, fresh-water well along the main road Corinth-Athens, Ag. Theodoris; april 9, 1978.

REMARKS

The only specimen we have may refer, though damaged, possibly to the species *Nitocrella stammeri* Chappuis, but because it lacks some appendages and antennae, we attribute it dubitatively to the above species.

To-day *N. stammeri* is known from the subterranean (phreatic and cave) waters of Italy (Sardinia included), Turkey and Greece.

According to some authors, this species could be considered a recent immigrant (*thalassoid species*) which colonized subterranean waters in connection with Pliocene regressions of the Mediterranean sea.

Nitocrella skirensis Pesce (in press)

MATERIAL

3 ♀♀, 1 ♂ and some juveniles, island of Skiros, fresh-water well at Aspous (road Linaria-Skiros), about 150 m from the sea-coast; july 2, 1980; 2 ♀♀ and 1 ♂, island of Skiros, brackish-water well at Linaria; july 2, 1980; 1 ♀, island of Skiros, brackish-water well at Molos, about 10 m from the sea-coast; july 3, 1980.

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