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НАУКА И УМЈЕТНОСТИ

ГЛАСНИК

ОДЈЕЉЕЊА ПРИРОДНИХ НАУКА

Књига 7

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BOGIDIELLA CYPRIA, NOVA VRSTA IZ FAMILIJE BOGIDIELLIDAE SA OTOKA KIPRA U SREDOZEMNOM MORU (190. prilog poznavanju Amphipoda)

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BOGIDIELLA CYPRIA, NEW SPECIES OF THE FAMILY BOGIDIELLIDAE FROM CYPRUS ISLAND IN THE MEDITERRANEAN SEA (Contribution to the Knowledge of the Amphipoda 190)

BOGIDIELLA CYPRIA, NOVA VRSTA IZ FAMILIJE BOGIDIELLIDAE SA OTOKA KIPRA U SREDOZEMNOM MORU
(190. PRILOG POZNAVANJU AMPHIPODA)

Abstract

A new species of the Family *Bogidiellidae (Crustacea Amphipoda, Gammaridea), Bogidiella cypria,* n. sp. is described from the subterranean waters of Cyprus Island in the Mediterranean Sea, and its taxonomic position within the family *Bogidiellidae* is discussed.

Izvod

Iz podzemnih voda otoka Kipra u Sredozemnom moru, opisana je nova vrsta iz familije *Bogidiellidae (Crustacea Amphipoda, Gammaridea), Bogidiella cypria,* n.sp., i analiziran je njen taksonomski položaj unutar familije *Bogidiellidae.*

INTRODUCTION

The subterranean fauna of *Amphipoda* of the island Cyprus, in the eastern part of the Mediterranean Sea, is very poorly studied, and no any member of the family *Bogidiellidae (Amphipoda Gammaridea)* from this island was known.

Recently (1988), dr Boris Sket from the University of Ljubljana collected various samples of the subterranean fauna during his visit to the island Cyprus, among them the samples of the

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Amphipoda also. He sent me very kindly, these samples for study, and the analyses of the taxonomic characters of the collected specimens indicated the presence of one very interesting species of the family *Bogidiellidae,* described here under the name of *Bogidiella cypria,* n.sp.

Genus *Bogidiella* Hertzog 1933 (type species: *Bogidiella albertimagni* Hertzog 1933 described from central Europe), has been later split into several genera and subgenera over the World by various authors: The genera: *Aurobogidiella* G. Karaman 1988 (type species: *Bogidiella italica* G. Karaman 1979), *Marinobogidiella* G. Karaman 1981 (type species: *Bogidiella tyrrhenica* Schiecke 1979), *Afridiella* G. Karaman & J. Barnard 1979 (type species: *Bogidiella somala* Ruffo 1970), *Marigidiella* Stock 1981 (type species: *Bogidiella brasiliensis* Siewing 1953), *Eobogidiella* G. Karaman 1981 (type species: *Bogidiella purmamacensis* Grosso & Ringuelet 1979) and genus *Nubigidiella* G. Karaman 1988 (type species: *Bogidiella nubica* Ruffo 1984).

The subgenera of genus *Bogidiella:* subgenus *Bogidiella* Hertzog 1933 (type species: *Bogidiella albertimagni* Hertzog 1933), *Hagidiella* Stock 1985 (type species: *Bogidiella (H.) prionura* Stock 1985), *Xystriogidiella* Stock 1984 (type species: *Bogidiella (X.) capricornea* Stock 1984), *Stygogidiella* Stock 1981 (type species: *Bogidiella bredini* Shoemaker 1959), *Orchestigidiella* Stock 1981 (type species: *Bogidiella orchestipes* Ruffo & Vigna-Taglianti 1977), *Mexigidiella* Stock 1981 (type species: *Bogidiella tabascensis* Villalobos 1961), *Medigidiella* Stock 1981 (type species: *Bogidiella chappuisi* Ruffo 1952), *Guagidiella* Stock 1981 (type species: *Bogidiella holsingeri* Ruffo & Vigna-Taglianti 1973) and subgenus *Antillogidiella* Stock 1981 (type species: *Bogidiella martini* Stock 1978).

Despite numerous new species of *Bogidiella* complex of genera and subgenera, described recently over the World by various authors (Stock, G. Karaman, Notenboom, etc.), the taxonomy of this group is still not satisfactorily resolved. It needs one detailed reexamination of all taxa, based on other, new taxonomic criteria, not used before, to resolve taxonomy of *Bogidiella* complex.

It is evident, that some of existing subgenera must be elevated on generic level, as that some of them, probably will be submerged into other subgenera or genera as synonyms.

On the other hands, many subgenera have been established on sexual dimorphic characters of male and/or females. As both sexes of numerous species are still unknown, the subegeneric determination of these species remains temporarily undeterminated.

Acknowledgments: I am indebted to Prof. dr *Boris Sket* from the University of Ljubljana, for the loan of material used in this study.

TAXONOMIC PART

BOGIDIELLA CYPRIA, n. sp.

Figs: I—V

Material examined: CYPRUS Island, Mediterranean Sea:

— Amathus, Limassol (= Lemesos), spring near coast, Nov., 1988, 6 spec. (leg. B. Sket);

— Neofytos, Pafos, tunnel with spring, Dec. 1, 1988, 3 spec. (leg. B. Sket).

Description: (Specimens from Limassol): Female up to 4 mm long: Body smooth, slender; head covered by single short setae (fig. I, 4), rostrum short, lateral cephalic lobes produced forward, ventroanterior sinus well developed (fig. I, 4), eyes absent.

Antenna 1 slightly exceeding 1/3 of body (ratio: 1.5 : 4.0), peduncular segments 1—3 progressively shorter; peduncular segment 1 with 2 ventral spines (fig. I, 1); main flagellum consisting of 10 articles (most of them with one aesthetasc not longer than segment itself); accessory flagellum short, 3-segmented, nearly as long as third peduncular segment of antenna 1 (fig. I, 2).

Antenna 2: peduncular segment 3 with 1 ventral spine (fig. I, 3), peduncular segment 4 with two ventral spines (fig. I, 3); flagellum short, 5-segmented (fig. I, 3), nearly al long as last peduncular segment; antennal gland cone short (fig. I, 3).

Labrum broader than long, with entire distal margin (fig. II, 6), prominent in lateral projection (fig. II, 5), Labium short, with well developed inner lobes, outer lobes with marked distal corner (fig. II, 4).

Mandibles with well developed conical triturative molar bearing one distolateral finger ended with distal plumose seta (fig. II, 7, 10); left mandible with 5-toothed incisor (fig. II, 11) and 4-toothed lacinia mobilis accompanied by 3—4 rakers (fig. II, 11). Right mandible with 4-toothed incisor and pluritoothed lacinia mobilis consisting of two plates (fig. II, 7, 8, 9), accompanied by 4 rakers. Mandibular palp 3-segmented, second segment with 1—2 setae (fig. II, 7), third segment remarkably narrower than second one, bearing 4 distal setae (fig. II, 7).

Maxilla 1: inner plate with 3 setae (fig. II, 2), outer plate bearing 7 spines (4 posterior spines with 2—4 strong lateral teeth each, 3 anterior spines very finely multitoothed) (fig, II, 1, 2, 3)) palp 2-segmented, not reaching tip of spines of outer plate (fig. II, 2) and bearing 3 distal setae.

Maxilla 2: inner plate with 6 distal slender and 2 facial stronger setae (fig. I, 6) (one facial seta is sitting near edge), outer plate with 9 distal setae (fig. I, 6).

Maxilliped: inner plate short, with 2 distal bicuspidate spines (fig. I, 5); outer plate short, with 3 distal spines and with crenellated distoinferior margin (fig. I, 5), palp 4-segmented, segment 4 with short nail and 2 subdistal ventral setae (fig. I, 5).

Coxae 1—7 shallow, distinctly much broader than long (= high) (fig. IV, 5—7); coxa 1 with ventroanterior seta only, coxae 2—4 with ventroanterior and ventroposterior seta; coxae 5—7 with one posterior spine (fig. IV, 5—7); coxae 3—4 with slightly concave ventral margin; coxa 5 hardly longer (= higher) than 4; coxae 5—6 bilobe, coxa 7 entire.

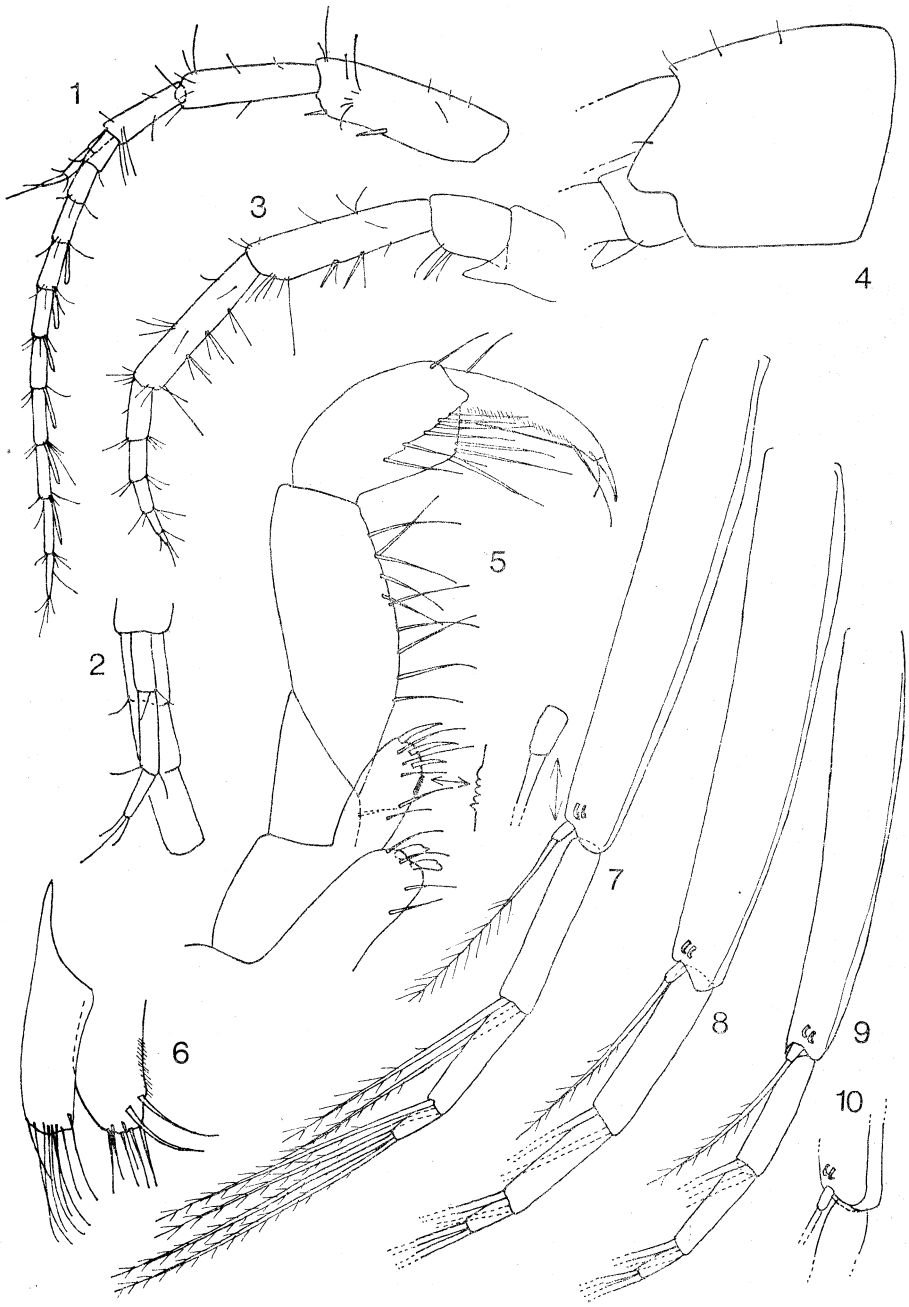
Gnathopod 1 is larger than gnathopod 2 (fig. III, 1, 4). Gnathopod 1: segment 2 at posterior margin with 3—4 long setae and 1 short distal seta (fig. III, 1), at anterior margin with 1—2 short setae (fig. III, 1); segment 5 short, with long narrow distoposterior lobe pointed apically and bearing 3 setae (fig. III, 1); segment 6 ovoid, longer than broad; palm very oblique, on outer face with row of slender spines (fig. III, 1, 2); finely crenellated only near the corner spine (fig. III, 3); palm defined on outer face by one short corner spine, on inner face by 2 groups of 2 spines (fig. III, 2, 3); dactyl at inner margin with 2 teeth, at outer margin with one median seta (fig. III, 2).

Gnathopod 2: segment 2 slightly longer and narrower than that of gnathopod 1, along posterior margin with 3—4 long medial setae and 2 short subdistal setae (fig. III, 4); segment 5 without posterior lobe and reaching nearly half of segment 6 (fig. III, 4); segment 6 remarkably narrower than that of gnathopod 1, with parallel lateral margins (fig. III, 4, 6); palm oblique nearly to 1/3 of posterior margin of segment 6; palm not crenellated except near the corner spine (fig. III, 6, 7, 8) and bearing a row of slender spines; palm defined on outer face by one corner spine, on inner face by 1—2 spines (fig. III, 6—8); dactyl like that of gnathopod 1, but shorter (fig. III, 6).

Pereopods 3—4 similar to each other, slender, with slightly dilated segment 2 bearing spine-like setae along posterior margin (fig. IV., 1, 3); segment 6 with 2 distal spines, dactyl shorter than half of segment 6, bearing one long seta at inner margin (fig. IV, 2, 4), nail shorter than pedestal (fig. IV, 2, 4).

Fig. I. *Bogidiella cypria*, n. sp., Amathus, Limassol, female 4 mm : 1 = antenna 1; 2 = accessory flagellum; 3 = antenna 2; 4 = head; 5 = maxilliped; 6 = maxilla 2; 7 = pleopod 1; 8 = pleopod 2 9—10 = pleopod 3.

Sl. I. *Bogidiella cypria*, n. sp., Amathus, Limassol, ženka 4 mm : 1 = prva antena; 2 = bočni bič; 3 = druga antena; 4 = glava; 5 = maksiliped; 6 = maksila 2; 7 = pleopod 1; 8 = pleopod 2; 9—10 = pleopod 3.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Pereopods 5—7 progressively longer, and pereopod 7 nearly reaching posterior tip of uropods 1—2 and much longer than pereopod 5 (fig. V, 3, 5, 7).

Pereopod 5: segment 2 along posterior margin with row of 5—6 spines (fig. V, 3), dactyl shorter than half of segment 6, bearing one long seta at inner margin, nail shorter than pedestal (fig. V, 3,4).

Pereopod 6 like pereopod 5 but longer; dactyl slightly longer (fig. V, 5, 6) than that of pereopod 5 but reaching only half of segment 6.

Pereopod 7: segment 2 narrow, unlobed, along posterior margin with several strong spines (fig. V, 7); segment 6 with row of setae along anterior margin (fig. V, 7, 8); dactyl reaching nearly half of segment 6, with short nail and 1 inner marginal seta (fig. V, 9).

No any trace of Hertzog's organ was observed of pereopods 3—7.

Pleopods 1—3 unmodified, pleopod 3 shorter than pleopods 1—2 (fig. I, 7—9). Peduncle of pleopods 1—3 long, smooth, bearing 2 retinacula each; inner ramus of pleopods 1—3 very small, with strong distal plumose seta (fig. I, 7—10); outer ramus 3-segmented, each egment with 2 plumose setae (fig. I, 7—9). Outer ramus is remarkably shorter than peduncle.

Epimeral plates 1—3 with subpointed ventroposterior corner and slightly sinusoid posterior margin (fig. II, 13).

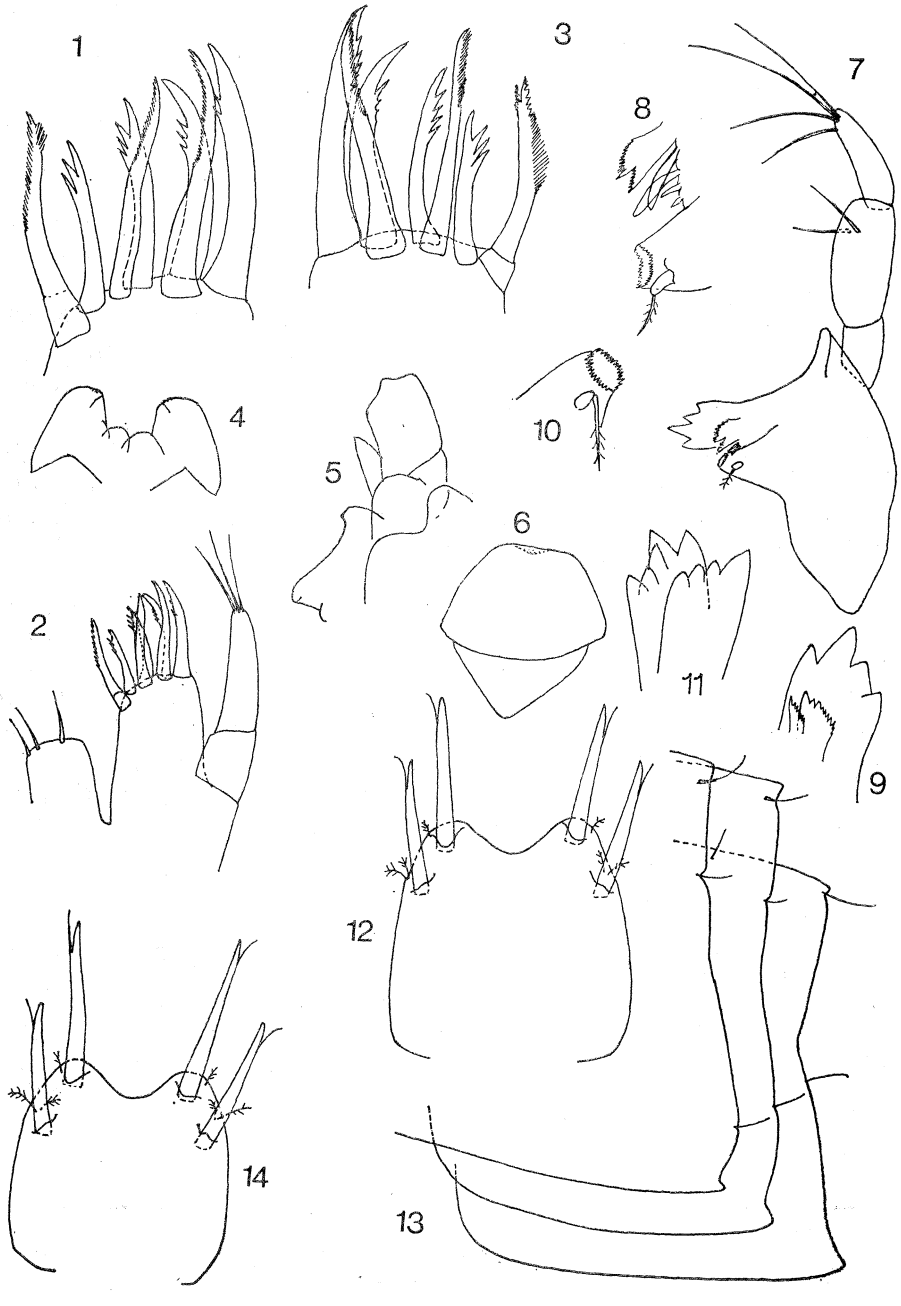
Urosomite 1 near basis of peduncle of uropod 1 without spine (fig. IV, 8). Uropod 1: peduncle with one strong basifacial spine and with one distoexternal and one distointernal spine (fig. IV, 8); outer ramus shorter than inner one, both rami unmodified, bearing 4 distal unequal simple spines (the longest spine nearly reaching half of ramus-length) (fig. IV, 8).

Uropod 2 unmodified, peduncle with one distroexternal and one distointernal spine (fig. IV, 8); outer ramus shorter than inner one, both rami with 4 distal unequal spines (the longest spine nearly reaching half of rami-length) (fig. IV, 8).

Uropod 3 long, biramous (fig. V, 1), both rami narrow, 1-segmented, subequal long, bearing lateral and disal spines; peduncle shorter than half of rami-length, bearing 2 distal spines (fig. V, 1, 2).

Fig. II. *Bogidiella cypria*, n. sp., Amathus, Limassol, female 4 mm : 1—3 = maxilla 1; 4 = labium; 5—6 = labrum; 7—9 = right mandible; 10—11 = left mandible; 12 = telson 13 = epimeral plates 1—3; 14 = telson, female 2,8 mm.

Sl. II. *Bogidiella cypria*, n. sp., Amathus, Limassol, ženka 4 mm : 1—3 = maksila 1; 4 = labium; 5—6 = labrum; 7—9 = desna mandibula; 10—11 = lijeva mandibula; 12 = telzon; 13 = epimeralne ploče 1—3; 14 = telzon, ženka 2,8 mm.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Telson nearly as long as broad, distally remarkably incised, bearing two distal and 2 subdistal strong spines (fig. II, 12, 14).

Coxal gills ovoid, with peduncle, occur on pereonites 4—6 (fg. IV, 3; V, 3, 5).

Oostegyts narrow, without marginal setae in our specimens, occur on pereonites 2—5 (fig. III, 4; IV, 1, 3).

Male: unknown.

Variability: Epimeral plates 1—3 never sharply pointed ventroposteriorly; a single longer hairs occur on head and urosomites (fig. I, 4; IV, 8).

The rakers on mandibles unequal, usually 2 long and 2 short.

The specimens in hands from Neofytos (Pafos) are smaller than these of Limassol, reaching only up to 2 mm (all females only).

Their segment 2 of gnathopods 1—2 along posterior margin with only 2 medial long setae and 1 short distal seta. Segment 6 of gnathopod 1 with 2 single spines on inner face (2+2 in holotype); segment 6 of gnathopod 2 at inner face with one subcorner spine only.

Mouthparts like these in holotype. Segment 2 of gnathopods 1—2 in specimens from Limassol along posterior margin with 4, rarely only 3 long median setae.

Segment 6 of gnathopod 2 in specimens from Limassol, at inner face provided with 1—2 subcorner spines (in holotype one gnathopod with 2 spines, other gnathopod with 1 spine).

Holotype: Female 4 mm. Holotype is preserved in KARAMAN's Collection in Titograd, Yugoslavia.

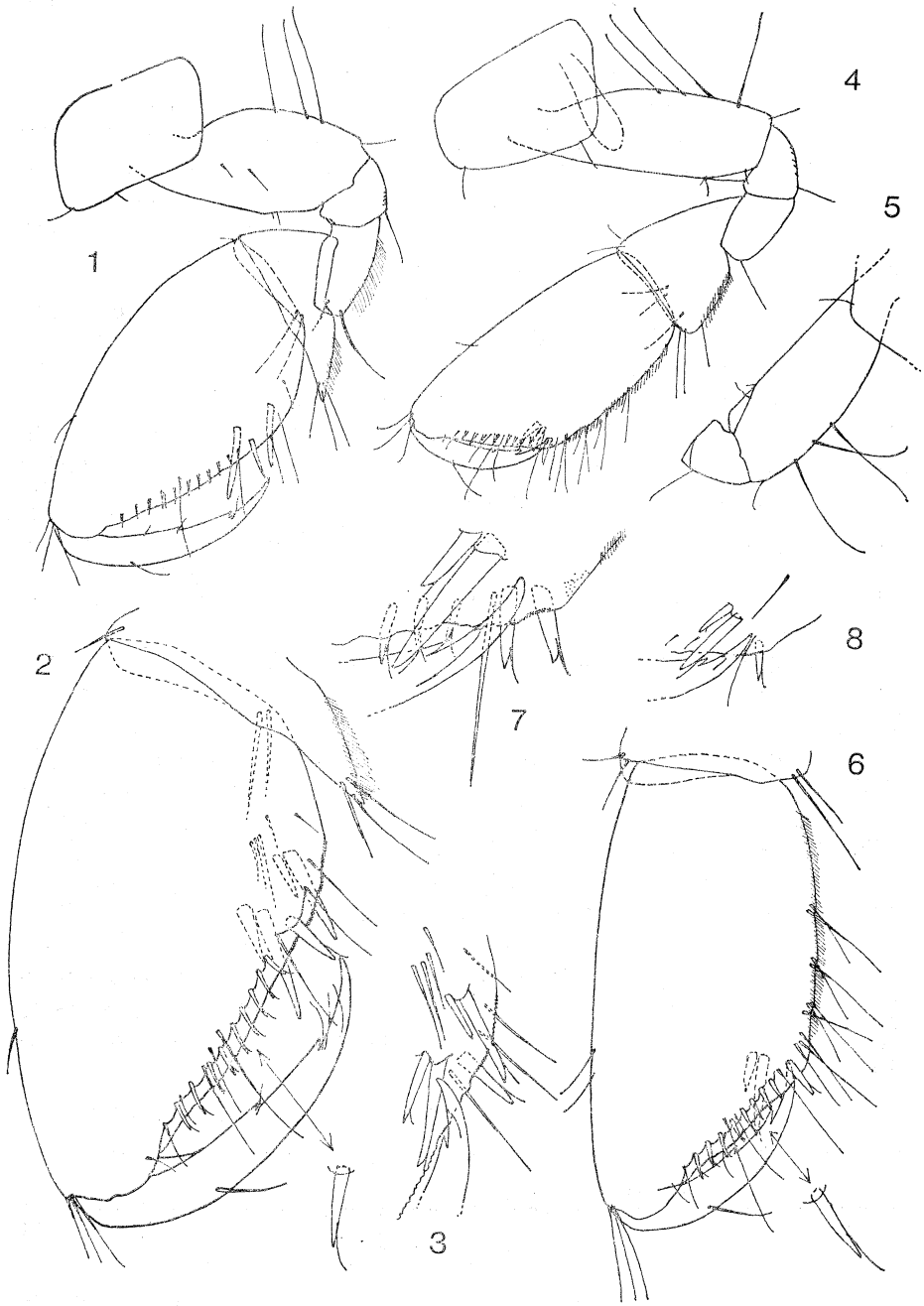
Loc. typ.: Cyprus island, Limassol, Amathus.

Distribution: Cyprus island.

Remarks and Affinities. Based on present taxonomy of the family *Bogidiellidae*, our species from Cyprus belongs to the genus *Bogidiella* Hertzog 1933 (sensu lato), although some specific taxonomic characters of this species opened the possibility, that, after the further revision of the family *Bogidiellidae*, may be *B. cypria* can be removed to some other genus (shape of mouthparts, etc.).

Fig. III. *Bogidiella cypria*, g. sp., Amathus, Limassol, female 4 mm : 1—3 = gnathopod 1; 4—8 = gnathopod 2.

Sl. III. *Bogidiella cypria*, n. sp., Amathus, Limassol, ženka 4 mm : 1—3 = gnatopod 1; 4—8 = gnatopod 2.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On the other hand, as the males of *B. cypria* are still unknown, the subgeneric position of this species within the genus *Bogidiella* remains uncertain.

Bogidiella cypria, n.sp. is very similar to the species *Bogidiella calicali* G. Karaman 1988 known from Sardinia, by elevated number of long posterior medial setae on segment 2 on gnathopods 1—2, by presence of inner ramus on pleopods 1—3, by presence of 3 setae on inner plate of maxilla, 1, by shape and armature of telson, relatively narrow segment 2 of pereopods 5—7, etc.

But, *B. calicali* differs from *B. cypria* by more narrow segment 6 of gnathopod 1 by different shape of spines on outer plate of maxilla 1, etc.

Other known species of genus *Bogidiella* from Sardinia *(B. ichnusae, B. vandeli, B. chappuisi pescei, B. silverii)* differ from *B. cypria by* different shape of maxilla 1 and some other characters:

Bogidiella ichnusae Ruffo & Vigna-Taglianti 1975, differs also by presence of only 2 spines on telson; *Bogidiella silverii* Pesce 1981, differs also by presence of only one long medial posterior seta on segment 2 of gnathopods 1—2, inner plate of maxilla 1 provided with 2 setae only.

Bogidiella vandeli Coineau 1968 and *Bogidiella chappuisi pescei* G. Karaman 1988 differ also by absence of inner ramus of pleopods 1—3.

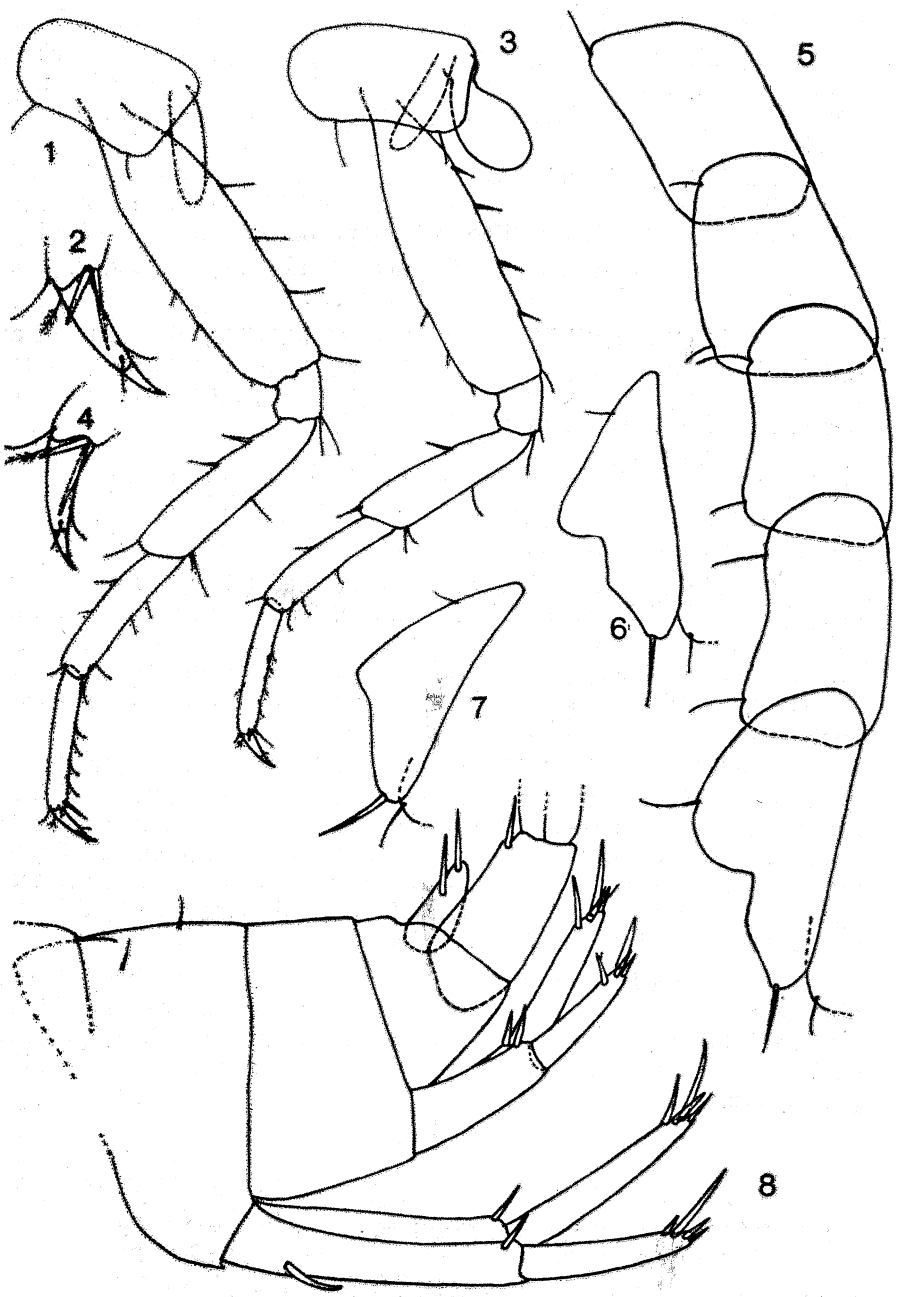
Bogidiella cypria is also rather similar to the known (5) *Bogidiella species* from Spain (Stock & Notenboom 1985), especially by shape of distolateral seta on mandibular molar), but differ from *B. cypria* by shape of maxilla 1.

The species of genus *Bogidiella* from Greece *(B. longiflagellum, B. cerberus, B. skopljensis, B. chappuisi, B. minotaurus differ* remarkably also from our species:

Bogidiella chappuisi Ruffo 1952 and *B. minotaurus* Rufo & Schiecke 1976, differ from *B. cypria* by different shape of maxilla 1. by very narrow segment 2 of pereopods 5—7, by shape and armature of telson.

Fig. IV· *Bogidiella cypria,* n. sp., Amathus, Limassol, female 4 mm : 1—2 = pereopod 3; 3—4 = pereopod 4; 5= coxae 1—5; 6 = coxa 6; 7 = coxa 7; 8 = urosome with uropods 1—2.

Sl. IV. *Bogidiella cypria,* n. sp., Amathus, Limassol, ženka 4 mm : 1—2 = pereopod 3; 3—4 = pereopod 4; 5 = kokse 1—5; 6 = koksa 6; 7 = koksa 7; 8 = urozom sa uropodima 1—2.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Bogidiella skopljensis (S. Karaman 1933) differs from *B. cypria* by presence of only 2 spines on telson and 2 setae on inner plate of maxilla 1, by different shape of maxilla 1, pereopods, etc.

Bogidiella longiflagellum S. Karaman 1959 and *B. cerberus* Bou & Ruffo 1979, differs from *B. cypria* by presence of only 2 spines of telson, by different shape of gnathopods 1—2 and maxilla 1, etc.

Bogidiella balearica Dancau 1973, known from Maiorca Island, differs from our species by different shape and armature of telson and maxilla 1, by different shape of pereopods 5—7, etc.

The species known from Corsica island *(B. cyrnensis, B. paolii)* differs also remarkably from our species:

Bogidiella paolii Hovenkamp, F. et al. 1983, differs from our species by presence of large Hertzog's organ on pereopods, by deeply incised telson provided with very long spines, by presence of only 2 setae on inner plate of maxilla 1, etc.

Bogidiella cyrnensis Hovenkamp, F. at all. 1983, differs from *B. cypria* by presence of only 2 spines on telson, by absence of inner ramus on pleopods 1—3, by presence of Hertzog's organ on pereopods, by presence on 2 setae on inner plate of maxilla 1, etc.

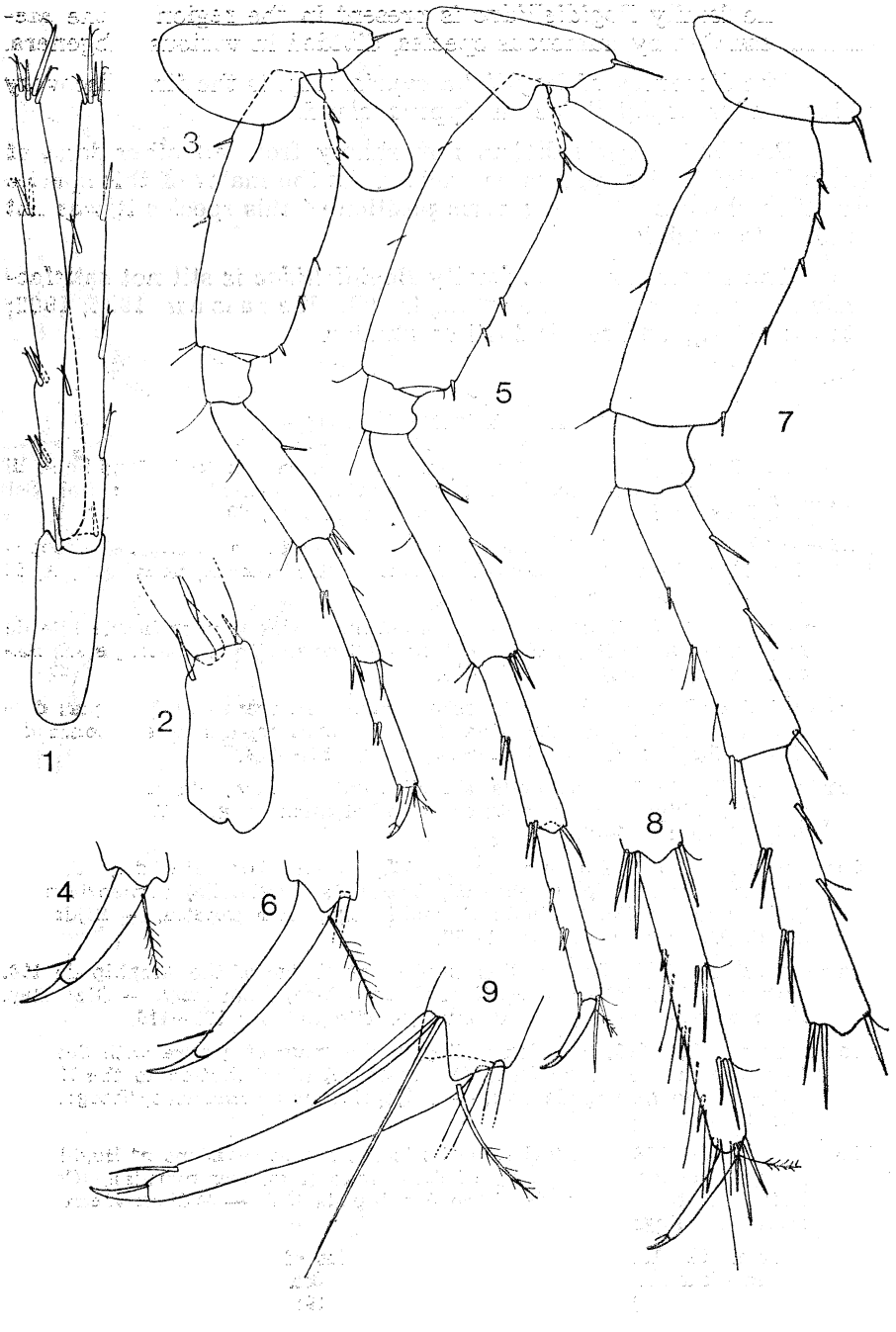
G. Karaman & Pesce described (1980) a new subspecies, *Bogidiella ichnusae africana*, n. ssp. from Algeria (Biskra), but this taxon differs from our species by presence of Hertzog's organ on pereopods 3—7, by absence of inner ramus on pleopods 1—3, by presence of only 2 setae on inner plate of maxilla 1, by different shape of gnathopods, etc.

Bogidiella copia G. Karaman 1988, known from Dead Sea region (En Gedi region), agree with our species by presence of inner ramus on pleopods 1—3, by presence of 3 setae on inner plate of maxilla 1, but differs from *B. cypria* by broad segment 2 of pereopods 5—7, by different shape of outer plate of maxilla 1, different number of long setae on segment 2 of gnathopods 1—2, different shape and armature of telson, etc.

Bogidiella hebraea Ruffo 1963, also known from Dead Sea region (Ein Hakikar), agree with *B. cypria* by shape of telson, but differs from later by absence of inner ramus of pleopod 3, by presence of 2 long median setae at posterior margin of segment 2 on gnathopod 2, etc.

Fig. V. *Bogidiella cypria*, n. sp., Amathus, Limassol, female 4 mm : 1—2 = uropod 3; 3—4 = pereopod 5; 5—6 = pereopod 6; 7—9 = pereopod 7.

Sl. V. *Bogidiella cypria*, n. sp., Amathus, Limassol, ženka 4 mm : 1—2 = uropod 3; 3—4 = pereopod 5; 5—6 = pereopod 6; 7—9 = pereopod 7.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CONCLUSIONS

The family *Bogidiellidae* is present in the region of the Mediterranean Sea by numerous species, divided in various subgenera.

The discovery of *Bogidiella cypria*, n.sp. is the first discovery of the family *Bogidiellidae* on Cyprus island.

Bogidiella cypria differs remarkably from all other taxa of genus *Bogidiella* by various characters. As the males of this species are still unknown, the subgeneric position of this species it was not possible to establish.

The taxonomy of the family *Bogidiellidae* is stil not satisfactorily resolved despite some attempts (G. Karaman 1981; 1982; Stock 1981), and needs further studies.

LITERATURE CITED

Bou, C., Ruffo, S. 1979. Contributo alla conoscenca delle Bogidiella di Crecia (Crustacea Amphipoda, Gammaridae). — Natura, Soc. ital. Sci. nat. Mus. civ. stor. nat. e Acquario civ. Milano, 70 (4): 295—309.

Coineau, N. 1968. Contribution à l'étude de la fauna interstitielle Isopodes et Amphipodes. — Mem. Mus. Nat. Hist. Naturelle, nouv. ser., A, 55 (3): 147—216.

Dancau, D. 1973. Observations sur les Amphipodes souterrains de l'ile de Majorque. Genre Bogidiella Hertzog. — Travaux Inst. Speologie »E. Racovitza«, Bucarest, 12: 113—119.

Grosso, L., Ringuelet, R. 1979. Fauna subternanea de las aguas dulces de la Republica Argentina, I. Dos nuevas especis de anfipodos del genero Bogidiella. — Limnobios,, 1 (9): 381—394.

Hertzog, L. 1933. Bogidiella albertimagni sp. nov., ein neuer Grundwasseramphipode aus der Rheinebene bei Strassburg. — Zool. Anzeiger, 102, (9—10): 225—227.

Hovencamp, F., Hovencamp, W., Van der Heide, J. 1983. Two new hyporheic Amphipods, Bogidiella (Bogidiella) cyrnensis n.sp., and Bogidiella (Medigidiella ?) paolii n.sp., from Corsica. — Bijdragen tot de Dierkunde, 53 (1): 82—92.

Karaman, G. 1979. Contribution to the Knowledge of the Amphipoda 106. Two new Bogidiella species (fam Gammaridae) from Italy. — Glas. Rep. Zavoda zašt. prirode, prirod. muzeja, Titograd, 12: 101—115.

Karaman, G., 1981. Revision of Bogidiella-group of genera with description of some new taxa (fam. Gammaridae) (Contribution to the Knowledge of the Amphpoda 121). — Poljoprivreda i šumarstvo, Titograd, 27 (3): 23—44.

Karaman, G., 1982. Critical remarks to the recent revisions of Bogidiella-group of genera with study of some taxa (fam. Gammaridae) (Contribution to the Knowledge of the Amphipoda 126). — Poljoprivreda i šumarstvo, Titograd, 28 (3—4): 31—57.

Karaman, G. 1988a. New genera and species of the subterranean family Bogidiellidae from the Near Est (Contribution to the Knowledge of the Amphipoda 179). — Studia Marina, Kotor, 19: 31—51.

Karaman, G. 1988b. Two new species of genus Bogidiella Hert. from Sardinia and France, with remarks to B. vandeli Coineau 1968 (Gammaridea, fam. Bogidiellidae) (Contribution to the Knowledge of the Amphipoda 180). — Poljoprivreda i šumarstvo, Titograd, 34 (4): 25—41.

Karaman, G. 1988. c. The new genus of the Family Bogidiellidae (Gammaridea) from coastal seawater (mesopsammon) of Italy. Aurobogidiella, n. gen. Contribution to the Knowledge of the Amphipoda 182). — Poljoprivreda i šumarstvo, Titograd, 34 (4): 93—105.

Karaman, G. 1988d. Bogidiella chappuisi pescei, new subspecies from the subterranean freshwater of Sardinia, with remarks to some other taxa (Gammaridea, fam. Bogidiellidae) (Contribution to the Knowledge of the Amphipoda 184). — in press.

Karaman, G., Barnard, J. L. 1979. Classificatory revisions in Gammaridean Amphipoda (Crutacea), part. 1. — Proc. Biol. Soc. Washington, 92 (1): 106—165.

Karaman, S. 1933. Über zwei neue Amphipoden, Balcanella und Jugocrangonyx aus dem Grundwasser von Skoplje. — Zool. Anzeiger, 103 (1—2): 41—47.

Karaman, S. 1959. Über eine neue Art und Unterart der Gattung Bogidiella (Crustacea Amphipoda) aus Jugoslawien. — Acta Zool. Acad. Sc. Hungaricae, 4 (3—4): 339—348.

Pesce, G. L. 1981. A new phreatic Bogidiella from subterranean waters of Sardinia (Crustacea, Amphipoda, Gammaridae). — Revue Suisse Zool. 88 (1): 157—162, Geneve.

Ruffo, S. 1963. — Studi sui Crostacei Anfipodi, LVII. Una nuova specie di Bogidiella (Crust. Amphipoda) della depressione del Mar Morto. — The Bull. Research Council Israel, vol. 11 B, 4: 188—195.

Ruffo, S. 1970. — Studi sui Crostacei Anfipodi LXIV. Bogidiella somala n. sp. delle acque soterranee della Somalia (Crust, Amphipoda). — Monitore Zoologico Italiano, 3 (6): 159—171.

Ruffo, S. 1984. Bogidiella nubica n. sp. from interstitial waters of the Sudan (Crustacea: Amphipoda). — Hydrobiologia, 110: 131—134.

Ruffo, S., Delamare-Deboutteville, C., 1952. Deux nouveaux Amphipodes souterraines de France, Salentinella angelleri n. sp. et Bogidiella chappuisi n. sp. — C. R. Acad. Sci Paris, 234: 1636—1638.

Ruffo, S., Schiecke, U. 1976. Una nuova Bogidiella di Creta. — Boll. Mus. civ. St. Nat. Verona, 3: 147—155.

Ruffo, S., Vigna-Taglianti, A. 1973. Three new subterranean Bogidiella from Mexico and Guatemala (Crustacea, Amphipoda). — Acad. Nazionale de Lincei, Roma, 370 (171): 105—134.

Ruffo, S., Vigna-Taglianti, A. 1975. Una nuova Bogidiella della Sardegna. — Fragmenta entomologica, 11 (1): 73—82, Roma.

Ruffo, S., Vigna-Taglianti, A. 1977. Secondo contributo alla conoscenza del genere Bogidiella in Messico e Guatemala (Crustacea, Amphipoda, Gammaridae). — Quaderno no. 171 »Subterr. fauna Mexico« part. III, Further res. ital. zool. miss. Mexico, Nat. Acad. Lincei Roma, pp. 125—172.

Schiecke, U. 1979. Neue Amphipoda (Crustacea) vom Golf von Neapel (Italia). — Boll. Mus. civ. St. Nat. Verona (1978), 5: 355—368.

Shoemaker, C. R. 1959. Three new cave Amphipods from the West Indies. — Journal of the Washington Acad. Sci., 49 (8): 273—283.

Siewing, R. 1953. Bogidiella brasiliensis, ein neuer Amphipode aus dem Küstengrundwasser Brasilien. — Kieler Meeresforschungen, 9: 243—247.

Stock, J. H. 1978. Bogidiella martini, un nouvel Amphipode souterrain de l'Ile Saint-Martin (Antilles) et la zoogeographie des Bogidiellidae. — Intern. Journal Speleology 9 (2): 103—113.

Stock, J. H. 1981. The taxonomy and zoogeography of the family Bogidiellidae (Crustacea, Amphipoda) with emphasis on the West Indian taxa. — Bijdragen tot de Dierkunde, 51 (2): 345—374.

Stock, J. H. 1984. First record of Bogidiellidae (Crustacea, Amphipoda) from the Pacific: Bogidiella (Xystriogidiella n. subgen.) capricornea, new species from the Great Barrier reef. — Bull. Marine Science, 34 (3): 380—385.

Stock, J. H. 1985. Bogidiellidae (Amphipoda) from Haiti and some general rules on the occurence of Crustacea Malacostraca in inland groundwaters of the West Indies. — Stygologia 1 (2): 208—223.

Stock, J. H., Notenboom, J. 1988. Five new bogidiellid Amphipoda from Spain — the first freshwater records in the Iberian Peninsula. — Hydrobiologia, 164: 75—95.

Villalobos, A. F. 1960. Un anfipodo cavernicola nuevo de Mexico, Bogidiella tabascensis, n. sp. — Ann. Inst. Biol. Mexico, 31 —1—2): 317—334.

Gordan S. KARAMAN

BOGIDIELLA CYPRIA, NOVA VRSTA IZ FAMILIJE BOGIDIELLIDAE SA OTOKA KIPRA U SREDOZEMNOM MORU
(190. Prilog poznavanju Amphipoda)

Rezime

Podzemna fauna *Amphipoda* otoka Kipar u istočnom dijelu Sredozemnog mora, veoma je slabo proučavana, i do sada nije bio poznat ni jedan predstavnik familije *Bogidiellidae (Amphipoda Gammaridea)* sa tog otoka.

Nedavno nam je prof. dr Boris Sket sa Ljubljanskog Univerziteta, poslao nekoliko uzoraka podzemnih *Amphipoda* koje je sakupio za vrijeme boravka na tom otoku. Analiza tog materijala je pokazala da se radi o jednom predstavniku iz familije *Bogidiellidae*, novom za nauku, kojeg smo ovdje opisali i nacrtali pod imenom *Bogidiella cypria*, n. sp.

Bogidiella cypria, n. sp. je opisana iz dva lokaliteta na južnom dijelu otoka Kipra: Amathus (Limassol)i Neofytos (Pafos), u izvorima nedaleko mora.

Kako su sve sakupljene jedinke bile ženke, to nije bilo moguće utvrditi kojem podrodu unutar roda *Bogidiella* ova vrsta pripada.

Međutim, *B. cypria* se jasno razlikuje od svih ostalih poznatih vrsta roda *Bogidiella* iz bazena Sredozemnog mora nizom karaktera.

Bogidiella cypria je dosta slična vrsti *Bogidiella calicali* G. Karaman 1988, poznate iz Sardinije, ali se ova poslednja razlikuje od *B. cypria* užim segmentom 6 prvog gnatopoda, drugačijim oblikom trnova na vanjskoj grani prve maksile, itd.

Ostale *Bogidiella*- vrste iz Sardinije (*B. ichnusae* Ruffo & Vigna-Taglianti 1975, *B. vandeli* Coineau 1968, *B. chappuisi pescei* G. Karaman 1988, *B. silverii* Pesce 1981), razlikuju se od vrste *B. cypria* drugačijom građom prve maksile i nekim drugim odlikama.

Bogidiella balearica Dancau 1973 poznata iz otoka Majorke, razlikuje se od naše vrste različitim oblikom i armaturom telzona i maksile 1, drugačijim pereopodima itd.

Vrste poznate sa otoka Korzike (*Bogidiella cyrnensis* Hovenkamp at al. 1983 and *B. paolii* Hovenkamp at al. 1983) također se razlikuju od naše vrste nizom sličnih karaktera.

Bogidiella ichnusae africana (G. Karaman & Pesce 1980) poznata iz sjeverne Afrike (Alžir) razlikuje se od *B. cyprea* prisustvom Hertzogovog organa na pereopodima 3—7, odsustvom unutrašnje grane pleopoda 1—3, različitim oblikom gnatopoda 1—2, itd.

Taksonomija familije *Bogidiellidae*, posebno kompleksa roda *Bogidiella* Hert. 1933, još uvijek je nedovoljno proučena i nije zadovoljavajuće riješena usprkos pojedinim dosadašnjim pokušajima (G. Karaman 1981; 1982; Stock 1981), i zahtjeva daljne studije.