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## 62. Contribution to the Knowledge of the Amphipoda. The Family Stegocephalidae from the Adriatic Sea.

### ABSTRACT

The family *Stegocephalidae* and the genus *Stegocephaloides* are newly reported from the Adriatic Sea. *Stegocephaloides christianiensis* (Boeck 1871) is redescribed and figured, including its mouthparts which were unsufficiently known. The short diagnosis of the family *Stegocephalidae* and the genus *Stegocephaloides* are given.

### INTRODUCTION

The family *Stegocephalidae* was unknown from the Adriatic Sea. During our collecting of amphipods from the deeper sea-water, we found two specimens of *Stegocephaloides christianiensis* (Boeck) in the southern part of Adriatic Sea (coast of Crna Gora).

Because our specimens were adult females, but very small one (3.5 mm long only), we compare them with the specimens of the same species from the NE. Atlantic coast (atlantic specimens are two times longer) and we established that the specimens from the Adriatic Sea are identic with the atlantic specimens except their small size. This phenomenon is often present in the mediterranean amphipods: many amphipodous species from the Mediterranean Sea are much smaller than these from the Atlantic Sea, probably because of some ecological and other factors (see G. Karaman at Schiecke 1973).

I am thankful for the material assistance to Dr. M. E. Christiansen, curator in the Zoological Museum, University of Oslo (Norway).

#### TAXONOMICAL PART

The family *Stegocephalidae* includes 17 genera with 44 species living in the seas over the world. The most number of the species and genera live in Pacific, Atlantic and Indian Ocean, as well as in the Arctic and Antarctic regions; from the Mediterranean Sea is known only one genus and species, *Stegocephaloides christianiensis*.

This species is a type species of the genus *Stegocephaloides* Sars, and it was very important to know all details of the structure of its mouthparts.

An account that the mouthparts of *St. christianiensis* was neither sufficiently studied nor good figured, we decide to redescribe and draw all body- and mouthparts of this species.

#### Family STEGOCEPHALIDAE

**Short diagnosis:** Body smooth, urosomites free. Lateral cephalic lobes present. Eyes usually absent. Mouthparts projects a conical bundle at lower margin of head. Antenna 1 usually short and stout, like that of family *Lysianassidae*, its principal flagellum present, accessory flagellum 1-2 articulate. Labrum bilobe, labium without inner lobes. Maxilla 1 with developed both lobes, palp 1-2 articulate. Maxilla 2 with both lobes, outer lobe sometimes geniculate and gaping.

Maxilliped: both lobes well developed, palp 3-4 articulate.

Mandible without palp and molar. Coxae very characteristic, large, coxae 1-4 together made one shield. Gnathopods 1-2 feeble, simple or almost subchelate. Pereopods 3-4 simple, occasionally pereopod 4 prehensile. Pereopods 5-6 with narrow or dilated article 2, pereopod 7 with dilated article 2. Pleopods with multiarticulate rami, uropods 1-3 slender, biramous; outer ramus 1-2 articulate. Telson entire or cleft.

Genera belonging to this family: *Andaniella* Sars, *Andaniexis* Stebb., *Andaniopsis* Sars, *Andaniotes* Stebb., *Bathystegocephalus* Schell., *Euandania* Stebb., *Parandania* Stebb., *Parandaniexis* Schell., *Phippsia* Stebb., *Phippsiella* Schell., *Pseudandaniexis* Nicholls, *Stegocephalina* Steph., *Stegocephaloides* Sars, *Stegocephalopsis* Schell., *Stegocephalus* Kroyer, *Steleuthera* J. Barnard, *Tetradeion* Stebb.

## Genus *STEGOCEPHALOIDES* Sars

**Short diagnosis:** Peduncle of antenna 1 short and stout, first flagellar article inflated and long, accessory flagellum uniaarticulate. Antenna 2 slender, nearly as long as antenna 1. Labrum short, asymmetric, bilobe. Maxilla 1: inner lobe triangular, bearing numerous setae, outer lobe longer than inner one, with distal spines, palp uniaarticulate. Maxilla 2: outer lobe geniculate and gaping, bearing distal hooked spine-like setae.

**Maxilliped:** inner lobe almost reaches the distal end of first palpar article of maxilliped, more or less excavate distally, outer lobe broad, palp 4-articulate. Mandible with toothed incisor.

**Gnathopods** 1-2 simple, gnathopod 2 slightly longer than gnathopod 1, its article 6 longer than that of gnathopod 1. Pereopods 3-4 subequal, slender, simple. Pereopods 5-6 with slender article 2. Pereopod 7 with dilated and lobed article 2.

**Uropods** 1-2 slender, with well developed both rami. Uropod 3 biramous and slender, outer ramus 1-2 articulate. Telson cleft up to half of its length. Gills appear on thoracal segments 2-7 oostegyts relatively narrow, appear on thoracal segments 2-5.

Sexual dimorphisme is weakly developed.

**Type species:** *Stegocephalus christianiensis* Boeck 1871.

**Other species:** *attingens* K. H. Barnard 1916, *auratus* Sars 1891, *australis* K. H. Barnard 1916, *camoti* J. L. Barnard 1967, *vanhoffeni* Schellenberg 1926.

### *Stegocephaloides christianiensis* (Boeck 1871)

figs. I-V

**Syn:** *Stegocephalus christianiensis* Boeck 1871, p. 128; Boeck 1876, p. 424, pl. 8, fig. 4; pl. 9, fig. 1.

*Stegocephaloides christianiensis*, Sars 1891/5, p. 202, pl. 70, fig. 2; Della Valle 1893, p. 631, pl. 59, fig. 41; Chevreux 1898, p. 478; Chevreux 1900, p. 47; Chevreux 1910, p. 177, fig. 5; pl. 8, figs. 15-28; Chevreux et Fage 1925, p. 74, figs. 64, 65; J. L. Barnard 1964, p. 13; fig. 10; Bellan-Santini et Ledoyer 1972/3, p. 925.

**Description:** Female: Body-length of our ovigerous females was up to 3.5 mm. Body smooth, urosomites free. Head with pointed lateral cephalic lobes (fig. I, 1), much higher than wide (anteroventral excavation on lateral lobe is present). Eyes absent.

**Antenna 1:** short, stout. First peduncular article slightly longer than broad, bearing several short plumose setae at ventral margin. Article 2 shorter than 1, article 3 shorter than 2 (fig. II, 1).

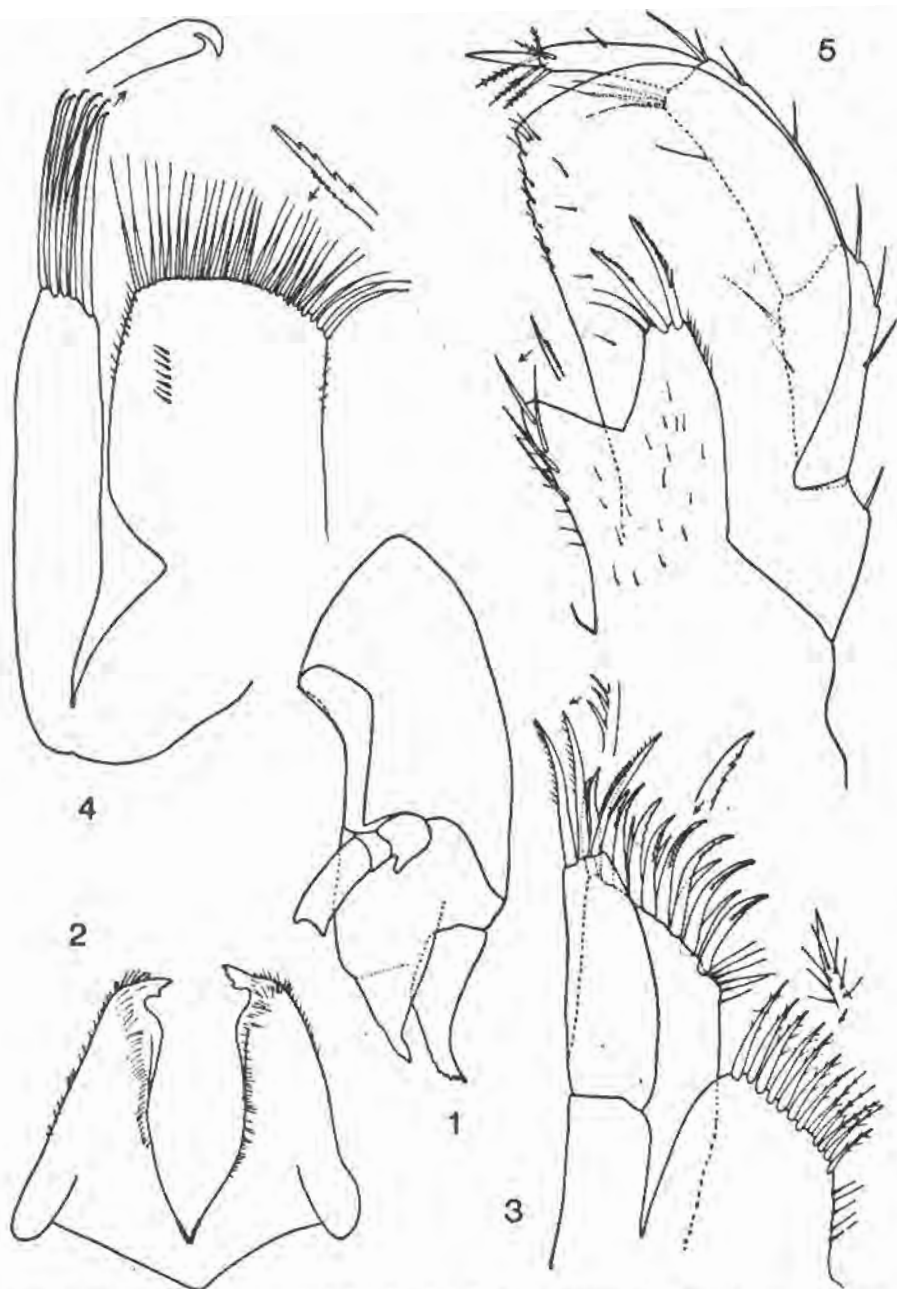


Fig. 1. *Stegocephalooides christianiensis* (Boeck), coast of Crna Gora near Ulcinj (P. 23), female 3.5 mm: 1 = head; 2 = labium; 3 = maxilla 1; 4 = maxilla 2; 5 = maxilliped.

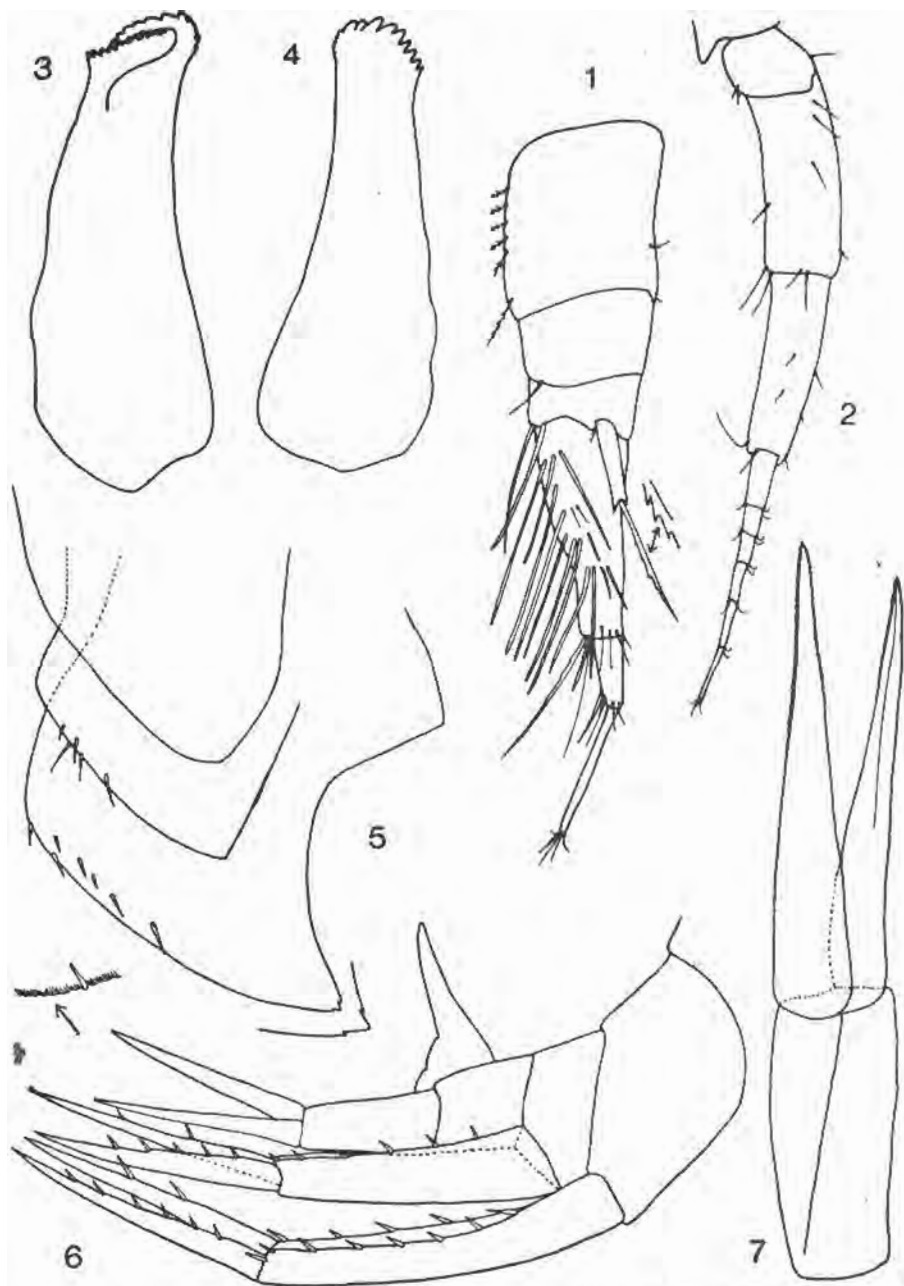


Fig. II. *Stegocephalooides christianiensis* (Boeck), coast of Crna Gora near Ulcinj (P. 23), female 3.5 mm: 1 = antenna 1; 2 = antenna 2; 3 = left mandible; 4 = right mandible; 5 = epimere; 6 = urosome with uropods; 7 = uropod 3.

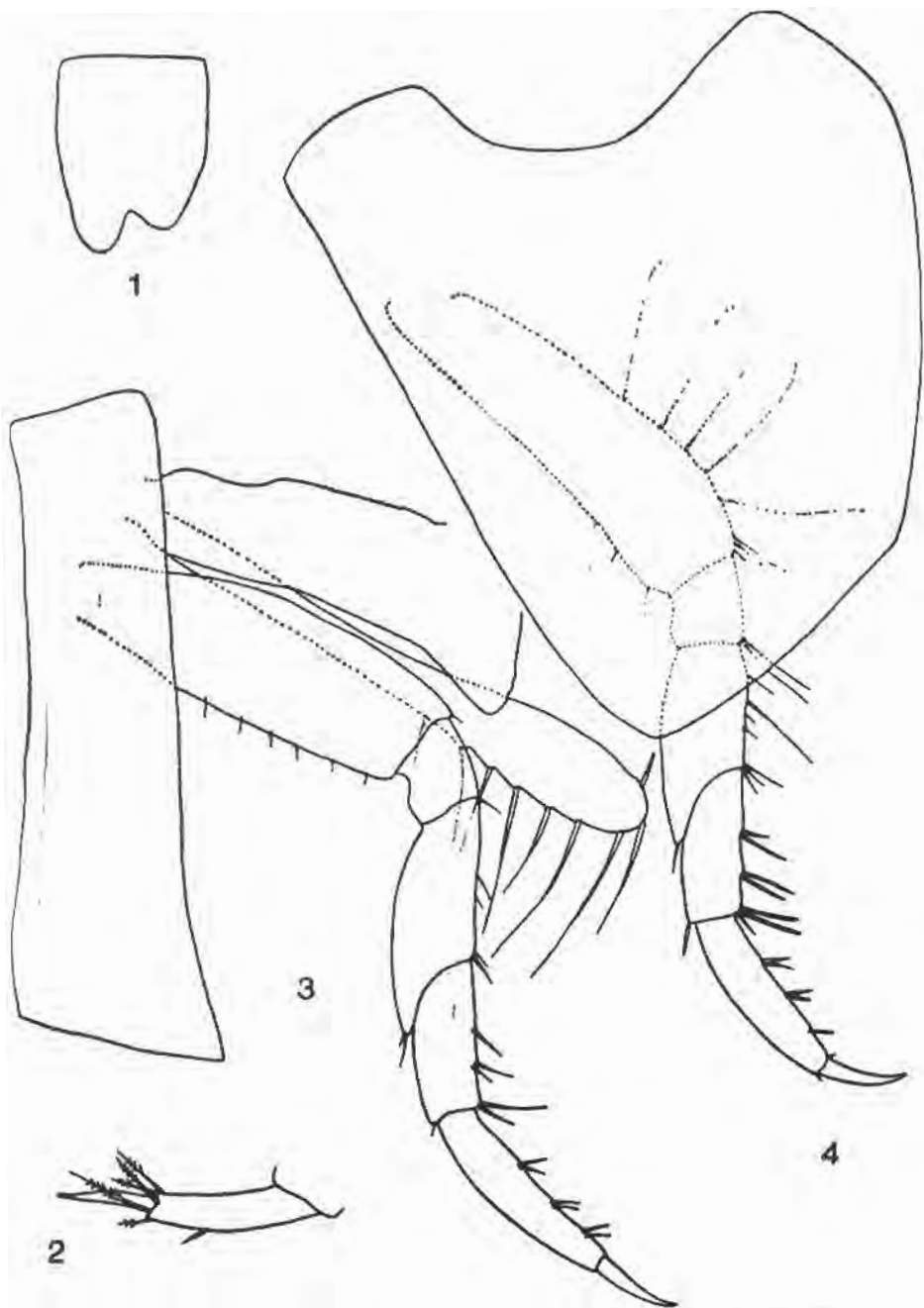


Fig. III. *Stegocephalooides christianiensis* (Boeck), coast of Crna Gora near Ulcinj (P. 23), female 3.5 mm: 1 = labrum; 2 = palpar articles 3-4 of left maxilliped; 3 = pereopod 3; 4 = pereopod 4.

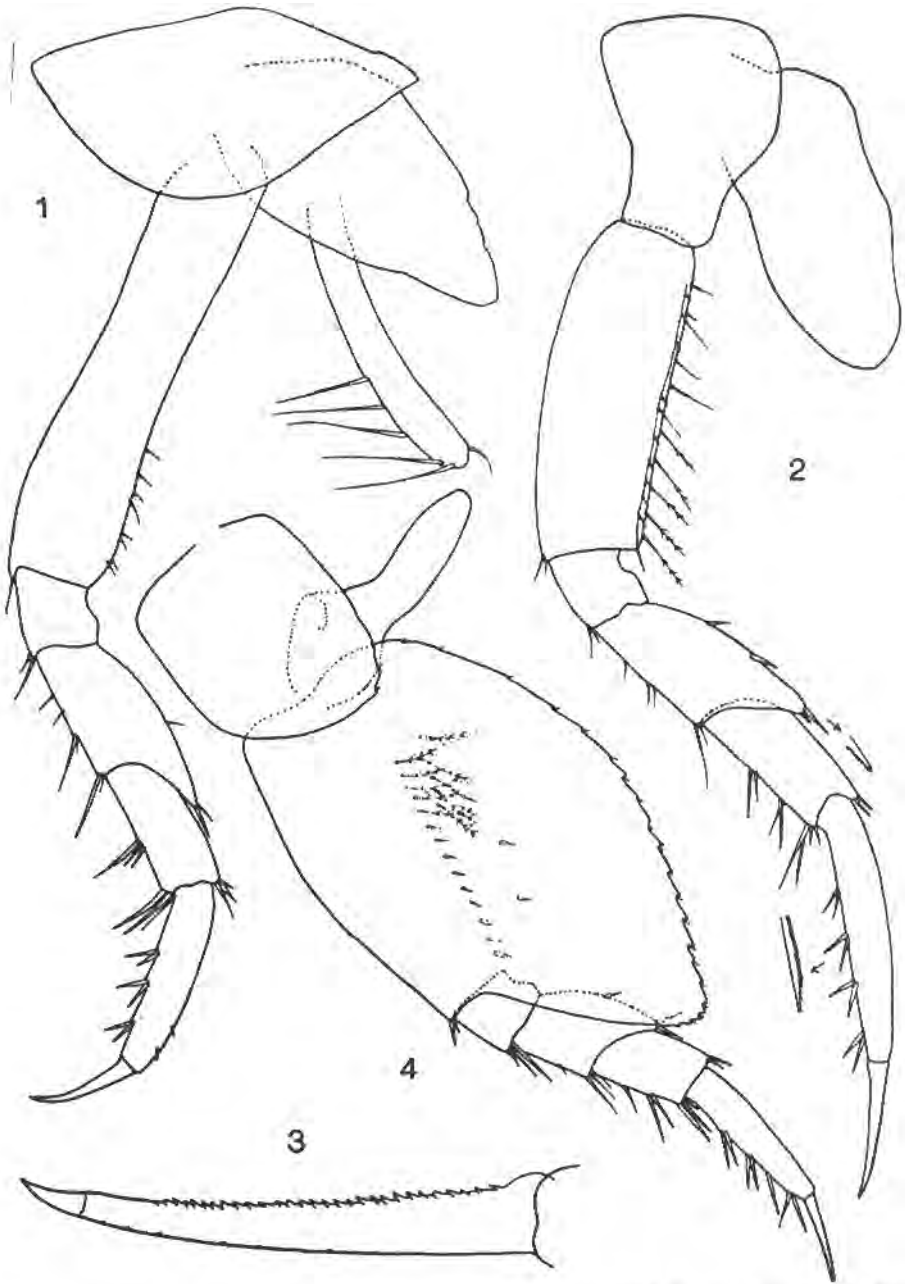


Fig. IV. *Stegocephalooides christianiensis* (Boeck), coast of Crna Gora near Ulicinj (P. 23), female 3.5 mm: 1 = pereopod 5; 2 = pereopod 6; 3 = dactyl of pereopod 6; 4 = pereopod 7.

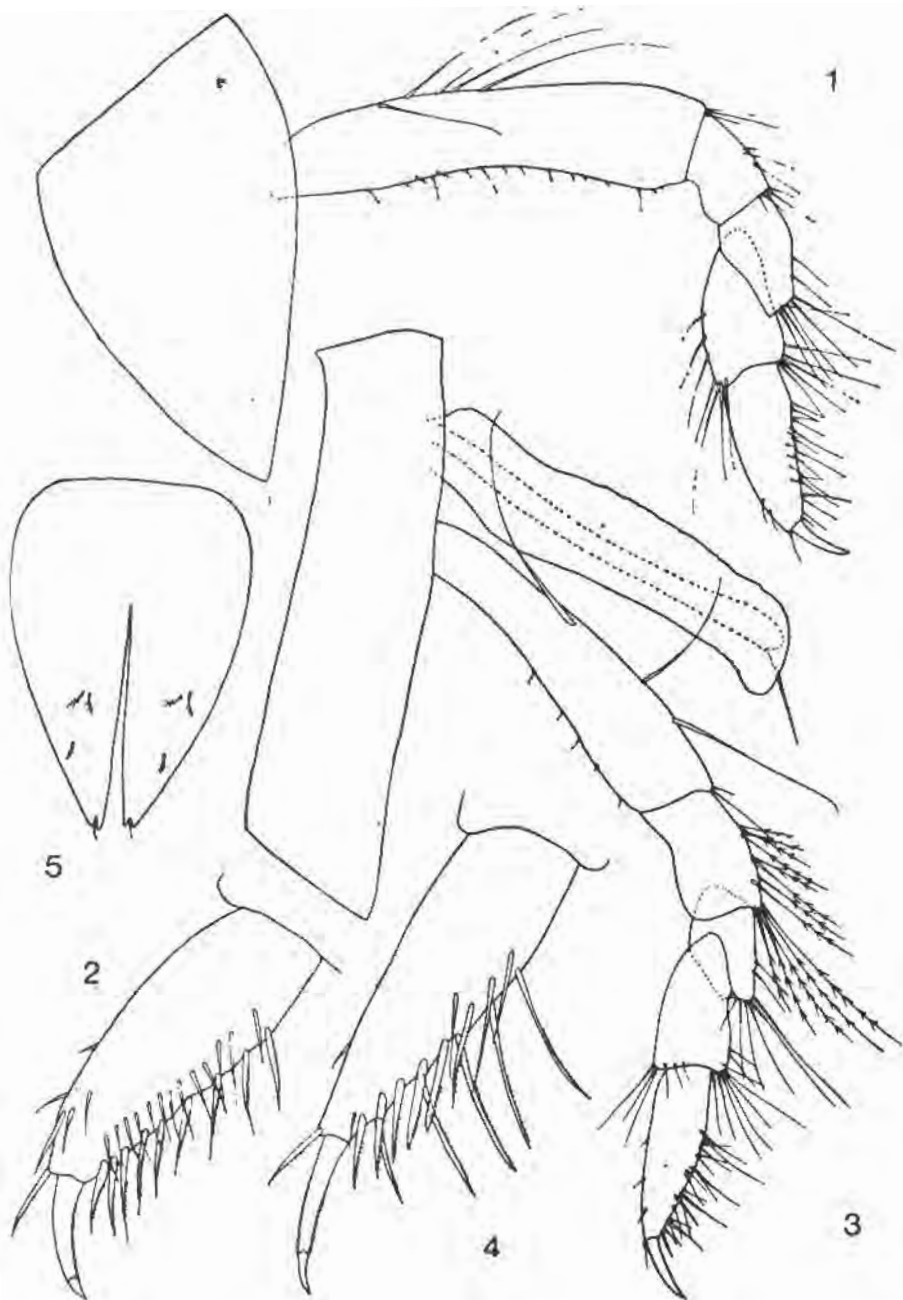


Fig. V. *Stegocephaloides christianiensis* (Boeck), coast of Crna Gora near Ulcinj (P. 23), female 3.5 mm: 1, 2 = gnathopod 1; 3, 4 = gnathopod 2; 5 = telson.



Principal flagellum slightly longer than peduncle, 3-4 articulate. First flagellar article long and inflated, but shorter than the peduncle, bearing numerous long aesthetascs in several rows and one distal slender spine, crenellated at ventral margin only. Flagellar article 2 short, flagellar article 3 nearly two times as long as article 2. Accessory flagellum uniaarticulate, bearing one distal spine like seta reaching top of first flagellar article (fig. II, 1).

Antenna 2: as long as antenna 1, its peduncular article 3 short, ped. articles 4-5 of subequal length, poorly setose. Flagellum shorter than peduncle, 6-articulate (fig. II, 2); antennal gland cone short.

Mouthparts: Epistome marked, convex (fig. I, 1); labrum longer than broad, bilobe and asymmetric, incised nearly 22 percent of its length (fig. III, 1). Labium without inner lobes, outer lobes slender, bearing one distal unidigitate process (fig. I, 2).

Maxilla 1: inner lobe subtriangular, bearing a row of distoinferior strong plumose setae (fig. I, 3), outer lobe moderately long, bearing cca 15 distal spines: 4 smooth spines at inferior margin and cca 11 toothed spines at anterior margin; palp uniaarticulate, almost exceeds the basis of the spines of outer lobe and bears 3 long strong circumplumose setae at distal margin (fig. I, 3).

Maxilla 2: outer lobe slender, gaping and geniculate, bearing 6-8 distal slender spine-like setae (each seta has one distal hook (fig. I, 4). Inner lobe shorter and broader, bearing a row of distal crenellated spine-like setae and one row of short setae on the surface (fig. I, 4).

Maxilliped: inner lobe deeply excavate distally, bearing several slender crenellated spine-like setae on each distal top, as well as several crenellated spine-like setae at inferior margin; inner lobe almost reaches the distal end of first palpar article (fig. I, 5). Outer lobe very broad, longer than the first two palpar articles. Outer and distal margin of outer lobe are smooth and straight, but distal part of inner margin is slightly crenellated, bearing several short setae. Palp 4-articulate, slender: first and second palpar article are subequal in length, third article is nearly 65 percent as long as article 2, article 4 is nearly 50 percent as long as article 3 (fig. I, 5). Third palpar article bears several distal plumose setae.

Mandible: left and right mandible are asymmetric: left mandible is slightly broader, bearing distal lamella, right mandible is narrower, without distal lamella; both mandible with toothed incisor (fig. II, 3, 4). Palp and molar absent.

Coxa 1 triangular, less than two times as long as broad (fig. V, 1), coxae 2-3 more than three times as long as broad, with parallel lateral margins (figs. III, 3; V, 3). Coxa 4 rather longer than broad, very large, with proximoposterior sinus (fig. III, 4). Coxae 5-7 relatively short (fig. IV, 1, 2, 4).

Gnathopod 1: article 2 slender, almost as long as remaining part of the gnathopod. Articles 3-4 short. Article 5 nearly 1.7 times as long as broad, bearing setae at both margins. Article 6 longer than article 5, narrower distally than proximally, bearing strong pectinate setae at posterior margin and simple setae on inferior surface and anterior margin. Dactyl almost as long as the width of article 6, nail short (fig. V, 2).

Gnathopod 2: article 2 slender; articles 3-4 shorter, article 3 bears plumose setae at posterior margin. Article 5 nearly 1.7 times as long as broad. Article 6 longer and more slender than article 5, narrower distally than proximally, with two rows of stout pectinate spine-like setae at posterior margin. Dactyl longer than the width of article 6, with short nail (fig. V, 3, 4).

Pereopods 3-4 like to each other, with relatively slender articles poorly setose. Distoanterior top of article 4 produced, article 6 shorter than article 2, dactyl nearly 40 percent as long as article 6 (fig. III, 3, 4).

Pereopod 5: article 2 slender, nearly as long as the remaining part of the pereopod; article 3 short, article 4 with distoposterior protrusion. Article 6 longer than article 5, dactyl nearly half as long as article 6, finely crenellated at inferior margin (fig. IV, 1, 3). Anterior margin of articles 2-6 with several spine-like setae.

Pereopod 6: article 2 slender, slightly less than 3 times as long as broad, with simple and plumose setae at posterior margin (fig. IV, 2). Article 3 short, article 4 produced distoposteriorly. Article 6 longer than article 5, dactyl nearly 55 percent as long as article 6. Anterior margin of articles 5-6 with simple and fine crenellated spine-like setae. Posterior margin of article 4 with single spines.

Pereopod 7 is remarkably shorter than pereopod 6. Article 2 ovoid, dilated, with distoposterior lobe exceeding the top of article 4. Posterior margin of article 2 crenellated, top of the lobe is narrow. Inferior surface of article 2 bears a row of short spines and several plumose setae (fig. IV, 4). Article 3 short, article 4 slightly produced in distoposterior portion; article 5 shorter than article 6, article 6 slender, dactyl nearly 55-60 percent as long as article 6. Anterior margin of articles 3-6 with slender spines.

Pleopods with well developed ramus and both rami, bearing 2 retinacula each; rami are multiarticulate.

Epimera 1 with subangular distoposterior corner and convex posterior margin (fig. II, 5), smooth. Epimera 2 with angular distoposterior corner and straight posterior margin. Epimera 3 with toothed and produced distoposterior corner, and with concave posterior margin. Distal margin of epimere 2-3 with several spine-like setae each.

Uropod 1 slender, its peduncle longer than rami; outer ramus slightly longer than inner one, peduncle and both rami with spines at superior margin (fig. II, 6).

Uropod 2: peduncle almost as long as rami, inner ramus slightly longer than outer one; peduncle and both rami with spines at superior margin (fig. II, 6).

Uropod 3 not reaches the distal end of uropods 1-2, slender. Peduncle shorter than rami, rami lanceolate, inner ramus longer than outer one (fig. II, 6). The margins of uropods 1-3 are very fine crenellated.

Telson longer than broad, incised nearly 60 percent of its length. Each lobe bifurcate distally, bearing one short distal simple seta and 3 plumose setae on dorsal surface (fig. V, 5).

Gills simple, with not completely straight margins, appear on thoracal segments 2-7 (figs. III, 3; IV, 1, 2, 4; V, 3). Oostegyts narrow, appear on thoracal segments 2-5, broader distally than proximally (figs. III, 3; IV, 1; V, 3).

Variability: The number of the marginal teeth on epimera 3, as well as the number of the setae on epimera 2-3 and pereopods 3-4 are variable.

Material examined: Southern Adriatic, coast of Crna Gora: Petrovac, P. 14 (25 June, 1968), depth 90-100 m, one spec.; Ulcinj, P. 23 (19 June, 1968), depth 322-420 m, one spec. (leg. G. Karaman).

Norway: Rödbjerget, Trondhjemsfjord, depth 40-50 mathmos (G. O. Sars 1891) (F. 13612, Oslo Museum Coll.); Sunde, Hardangerfjord (G. O. Sars) (F. 13610, Oslo Museum Coll.).

Localities cited from Adriatic Sea: newly reported from this region in this work.

Loc. typ.: NE. Atlantic (Bohuslän).

Distribution: Arctic Sea, N. Atlantic, Mediterranean Sea.

Ecology: *Stegocephaloides christianiensis* was found in Adriatic Sea on muddy bottom, on 90-420 m depth.

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## Re z i m e

### 62. PRILOG POZNAVANJU AMPHIPODA FAMILIJA STEGOCEPHALIDAE U JADRANSKOM MORU

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Na osnovu istraživanja dubljih voda Jadranskog mora, nađena je u obalnim vodama Crne Gore vrsta amfipoda *Stegocephaloides christianiensis* (Boeck 1871). Predstavnici familije *Stegocephalidae*, kojoj pripada i rod *Stegocephaloides* Sars, su bili do sada nepoznati u Jadranskom moru, i nalaz ove vrste u Jadranu potvrđuje pretpostavku da je dubokomorska fauna Jadrana veoma slična ili čak identična sa dubokomorskom faunom Sredozemnog mora.

*Stegocephaloides christianiensis* (Boeck) je nađena na dubinama od 90 do 420 m, na muljevitom dnu. Kako neki dijelovi tijela ovog račića nijesu bili dovoljno poznati, posebno građa usnog aparata, to smo detaljno opisali i nacrtali ovu vrstu, koja je ujedno i tip roda *Stegocephaloides* Sars.