



## Redescription of *Synurella osellai* Ruffo, 1974 (Crustacea, Amphipoda) from Ordu Province (Turkey) with Some Taxonomic Notes

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### Abstract

*Synurella osellai* was described by Sandro Ruffo in 1974 from Giresun (Tirebolu) province of Turkey. *S. osellai* is collected from Fatsa in Ordu province, Turkey. We redescribed *S. osellai* in different locality from type locality. A detailed morphological redescription and illustrations of this species are given.

**Keywords:** Amphipoda, Crangonyctidae, *Synurella*, Ordu, Turkey.

### Introduction

The genus *Synurella* has a Holoarctic distribution consisting of approximately 20 known species and occurs in semi-subterranean freshwaters and coastal plain brackish habitats (Karaman, 1974; Sidorov & Palatov, 2012; Sidorov & Kovtun, 2015). According to Sidorov and Kovtun (2015), *Synurella* consist of three species-groups (including 9 species), *ambulans*-group (*S. ambulans*, *S. behningi*, *S. lepida*, *S. philareti*), *dershavini*-group (*S. dershavini*, *S. donensis*, *S. osellai*, *S. odessana*) and *wachushtii*-group (*S. wachushtii*) within the Volga-Black Sea basin. *Synurella* is represented by four species (*S. lepida*, *S. ambulans*, *S. osellai* and *S. donensis*) in Turkey (Mateus & Mateus, 1990; Özbek & Ustaoglu, 2006). In Turkey, while *ambulans*-group are represented by *S. lepida* and *S. ambulans*, *dershavini*-group are represented by *S. osellai* and *S. donensis* (Sidorov & Kovtun, 2015).

There are many literatures about the species of Amphipoda that have been redescribed (Holsinger, 1987; Gonzalez & Watling, 2002; Sidorov & Holsinger, 2007; King, 2009; Sidorov, Pankov, & Holsinger, 2012; Angyal, Balazs, Zaksek, Krizsik, & Fiser, 2015). However, the only redescription study on the genus *Synurella* is the redescription of *S. ambulans* ssp. *tenebrarum* by Skalski (1988). There is no other redescription study related to *Synurella*. *Synurella osellai* is an endemic species to Turkey. Any systematic and faunistic study of this species has not been found since it was described by Ruffo

(1974). *Synurella osellai* Ruffo, 1974 was described on the basis of 120 male and female in Giresun province of Turkey. Since then, Ekinci and Miroglu (2016) were recorded Ordu province from Turkey. However, in this literature, only faunistic recording was made and there was no description of this species. Thus, we redescribed *S. osellai* in Ordu province of Turkey.

### Material and Methods

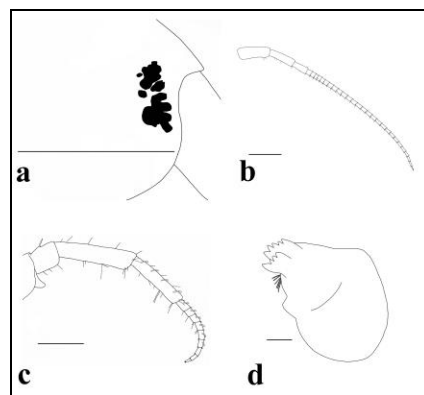
Specimens were collected with a fine-mesh handnet, having 250 µ and then first fixed in a 4% formalin solution in the field and transferred to 70% ethanol in the laboratory. The sampled specimens were examined and dissected under a stereo microscope. The body length was recorded by holding the specimen straight. Relevant literature (Karaman, 1974; Ruffo, 1974; Mateus & Mateus, 1990; Sidorov & Palatov, 2012; Sidorov & Kovtun, 2015) were used for taxonomical evaluation and identification of the specimens.

### Material Examined

9 males (6.3-9.5 mm), 8 females (6.0-7.7 mm) TURKEY, Ordu, Fatsa Province (40°54' N 37°24' E); 456 m; 02.VIII.2014; leg. and det. Ekinci, M. All materials are deposited in the Museum of Fatsa Faculty of Marine Sciences, Ordu University, Fatsa, Ordu.



**Figure 1.** Habitus of male. Lateral view. Scale: 1 mm.

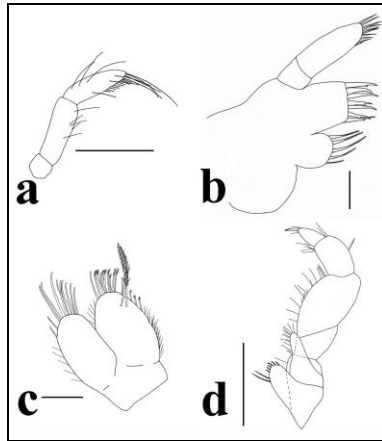


**Figure 2.** Male: (a) eye; (b) antenna 1; (c) antenna 2; (d) right mandible. Scale: (a, c) 0.5 mm; (b) 1 mm; (d) 0.1 mm.

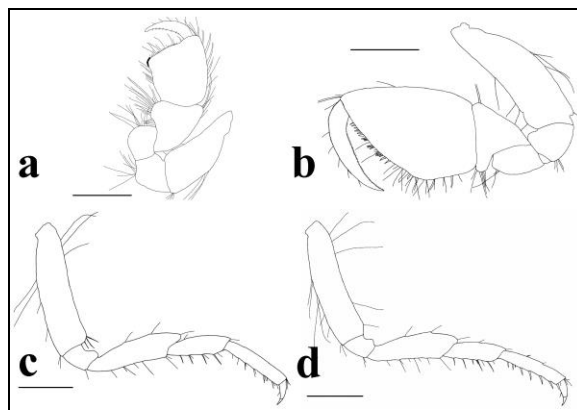
## Results

**Redescription.** Male (Figure 1), Head. Eyes (Figure 2a): vestigial 11 detached ommatidia, black. Antenna 1 (Figure 2b): 90% length of body; articles 1-2 with short setae on medioventral face; primary flagellum with 27 articles; accessory flagellum 2-articulate. Antenna 2 (Figure 2c): peduncular article 4 30% longer than article 5, both scarce setose, simple setae; flagellum with 9 articles, calceoli present. Left mandible: incisor 5-dentate, lacinia mobilis 5-dentate, setal row with 3 serrate setae, triturative molar strong, without accessory seta. Right mandible (Figure 2d): incisor 5-dentate, lacinia mobilis tetrafurcate; palp (Figure 3a) article 1 shorter than article 2-3; article 2 as long as article 3, 5 setae on inner margin; article 3 with 3 A-setae, 3 C-setae, 4 E-setae and row of about 10 D-setae. Maxilla 1 (Figure 3b): inner plate broad with 5 plumose setae; outer plate with 7 robust spines; palp articles 1 shorter than half article 2, article 2 bearing 10 stiff, simple setae apically. Maxilla 2 (Figure 3c): inner plate about 3/2 as broad as outer plate, with oblique row of 2 plumose setae, 14 setae on apex; outer plate with 11 slender setae on apex. Maxilliped (Figure 3d): inner plate with 6 small strong spines on apex, 2 long robust spines between

inner margin and apex; outer plate with a row of 13 simple setae extending from inner margin to apex; palp quadriarticulate, palp articles 1 as long as articles 3-4, article 2 strong with row of simple setae on inner margin, article 3 with stiff setae on outer margin; article 4 (dactylus) with 1 setae on inner margin and outer margin, nail long with 1 setae at hinge. Pereon. Coxalplates 1—3 similar, sub-rectangular, with 5—6 marginal setae; coxal plate 4 sub-quadrate, with 8 short setae on ventral margin; coxal plates 5-6 bilobate, with 4 short setae on posterior margin; coxal plate 7 small, with 4 short setae on posterior margin. Gnathopod 1 (Figure 4a) smaller than gnathopod 2; basis with 3 long setae on anterior margin and posterior margin; carpus/ propodus long rate 0.75, carpal lobe broad, bearing numerous setae; propodus sub-quadrate, palm with notched strong spines on inside and outside; dactylus short, with 8 tiny setules on inner and 5 setae on outer margins. Gnathopod 2 (Figure 4b): basis without setae on anterior margin, 4 setae on inner face and with 4 long setae on posterior margin; carpus/propodus long rate 0.38, carpal lobe narrow and bearing short setae; propodus sub-triangular, palm with notched strong spines on inside and outside; dactylus long, with 12 tiny setules on inner and 5 setae on outer margins. Pereopods 3 and 4



**Figure 3.** Male: (a) mandible palp; (b) maxilla 1; (c) maxilla 2; (d) maxilliped. Scale: (a, d) 0.5 mm; (b, c) 0.1 mm.



**Figure 4.** Male: (a) gnathopod 1; (b) gnathopod 2; (c) pereopod 3; (d) pereopod 4. Scale: 0.5 mm.

(Figure 4c, 4d) sub-equal in length; bases sub-linear bearing short setae on both margins; dactyli short, inner margin with 1 long seta and 1 tiny setula at hinge. Pereopods 5-7 (Figure 5a, 5b, 5c): sub-equal in length; bases of pereopods 5 and 6 slightly broader proximally than distally; dactyli short, inner margin with 1 long seta and 1 tiny setula at hinge. Pleon. Epimeral plates 1—3 (Figure 6a): posterior margins of plates concave with 4—5 stiff setae; distoposterior corners hooked-like; ventral margin of epimeral plate 1 with 2 strongly notched spines; epimeral plates 2 and 3 concave, bearing 5 strong notched sub-marginal spines. Pleopods 1—3: sub-equal, peduncular articles each with 4 retinacula (Figure 5d); inner rami and outer rami with 11 articles, fringed with plumose setae. Urosome: urosomites completely fused but sutures visible, lacking dorsal armament. Uropod 1: peduncle with 7 setae on outer margin, 1 setae on inner margin; outer ramus as long as inner ramus; inner ramus and outer ramus with 4 spines on apices. Uropod 2: peduncle with 2 setae on outer margin and 1 setae on inner margin; outer ramus shorter than inner ramus; inner ramus and outer ramus with 5 spines on apices. Uropod 3 (Figure 6c): uniramous, peduncle cone-shaped, about twice as long as endopodite. Telson (Figure 6b): not tapered distally, elongate, as long as uropod 3; apical margin cleft,

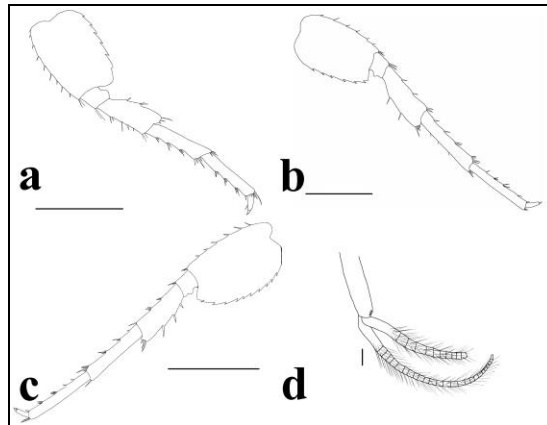
about 1/2 of total length, with 5 spines on apex.

Female, sexually dimorphic characters. Smaller than male, with more slender body. Antenna 1 half of total body length; nearly twice as long as antenna 2. Gnathopod 1 almost twice as long as gnathopod 2. Telson cleft, about 1/2 of total length, V-shaped.

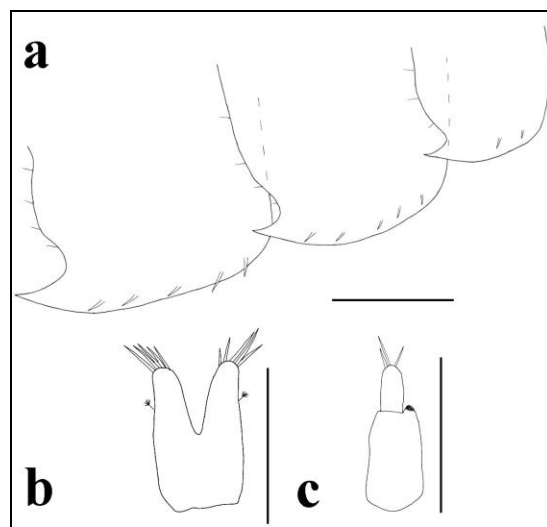
**Diagnosis:** A medium-large species. Body semitransparent. Eyes black, positioned at the front of the head. Antenna 1 very long, comprised about 90% of total body length; more than twice as long as antenna 2; calceoli present. Gnathopod 2 almost twice as long as gnathopod 1. Epimera 1-3 hook-shape and very pointed. Pleopods with 4 retinacula. Telson cleft, about 1/2 of total length, V-shaped. Uropod 3 shorter than telson and uropods 1-2.

**Variability:** Examined specimens have variations in the number of flagellum segments of antenna 1. This character seems to be age-dependent. Among the specimens, the number of flagellum segments of antenna 1 varies between 21 and 27.

**Habitat:** Specimens were sampled from an active fount trough which have mud-detritus sediment and alga vegetation.



**Figure 5.** Male: (a) pereopod 5; (b) pereopod 6; (c) pereopod 7; (d) retinacula. Scale: (a, b, c) 1 mm; (d) 0.1 mm.



**Figure 6.** Male: (a) epimera 1—3 ; (b) Telson; (c) Üropod 3. Scale: 0,5 mm.

Remarks. *Synurella osellai* has a number of unique features: (1) Epimera 1-3 hook-shape and very pointed; (2) pleopods with 4 retinacula; (3) telson cleft, about  $\frac{1}{2}$  of total length, V-shaped; (4) calceoli present.

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