

NEW LOCALITY FOR GRASS SHRIMP, *Palaemonetes antennarius* (H. Milne-Edwards, 1837) (DECAPODA: PALAEMONIDAE) IN THE SEYHAN RIVER BASIN (TURKEY)

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Abstract: During a recent fish fauna study of the Seyhan Reservoir (Adana, Turkey) between March and May 2008, several specimens of *Palaemonetes antennarius* (H. Milne-Edwards, 1837) were collected by fish net and fish stomach content. This is a new locality for the grass shrimp, *P. antennarius* in Turkish inland water system.

Keywords: *Palaemonetes antennarius*, *Palaemonetes*, Seyhan River Basin, New locality, Turkey

Özet: **Ot Karidesi, *Palaemonetes antennarius* (H. Milne-Edwards, 1837) İçin Yeni Bir Lokalite: Seyhan Nehir Havzası (Türkiye)**

Seyhan Baraj Gölü'nde (Adana, Türkiye) Mart ve Mayıs 2008 tarihleri arasında yapılan bir balık faunası çalışması sırasında, *P. antennarius* (H. Milne-Edwards, 1837) türünün birkaç bireyi balık ağları ve balık midelerinden toplanmıştır. Bu Türkiye iç sularından ot karidesi, *P. antennarius* için yeni bir lokalitedir.

Anahtar Kelimeler: *Palaemonetes antennarius*, *Palaemonetes*, Seyhan Nehri Havzası, Yeni lokalite, Türkiye

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Introduction

The caridean prawn genus *Palaemonetes* occupies a wide variety of habitats from marine conditions to freshwater (Guerao, 1993). *Palaemonetes antennarius* (H. Milne-Edwards, 1837) distribution in the fresh waters (lakes and rivers) and sometimes in coastal brackish water lagoons and estuaries in France, Italy, Spain, Slovenia, Croatia, Greece, Turkey and Syria (Mediterranean Basin) (Holthuis, 1961; d'Udekem d'Acoz, 1999; Falciai and Palmerini, 2002; Gottstein Matóčec and Kerovec, 2002).

The grass shrimp, *P. antennarius* have been previously reported for the first time by the Holthuis (1961) from the Bileybi Antalya (estuary of the Boga river, 0-10 altitude, 18 April 1959) and Döşemealti lake, Antalya (Turkey) (300 altitude, 20 April 1959). Other previous records from Turkey were; Antalya, Topbağazı lake (Hatay) (Pretzmann, 1973), Kırkgöz Lake (Antalya) (Özbek and Ustaoglu, 2005), Kırkgöz springs (Özbek and Ustaoglu, 2005; Özbek et al. 2009), Göksu Creek, Aksu Creek (Özbek et al. 2009), Yuvarlakçay (Köyceğiz- Muğla) (Özbek et al. 2004), Bafa Lake (Geldiay et al. 1977) Bafa Lake and Demre Lagoons (Kocataş and Katağan, 1983) and Aegean Sea coast of Turkey (Ateş et al. 2004).

To date, 4 species of fresh-water shrimps have been reported from Turkey inland system: *P. antennarius*; *P. turcorum* Holthuis, 1961, *P. mesopotamicus* Pesta, 1913 and *Atyaephyra orientalis* Bouvier, 1913 (Holthuis, 1961; Özbek and Ustaoglu, 2006; Alagoz Ergüden et al. 2011; Özcan et al. 2012).

P. antennarius lives in brackish and fresh waters of the Mediterranean area (Falciai and Palmerini, 2002). Some of these habitats have large daily and *P. antennarius* inhabits stands of submerged macrophytes, finding refuge among their leaves during the day (Falciai and Palmerini, 2002; Ungherese et al. 2008).

So far the species was not known to exist in the Seyhan River Basin. The present study reports the occurrence of *P. antennarius* from the Seyhan River Basin which is also a new locality

for the species distribution for inland water system of Turkey.

Materials and Methods

The characteristics of this study area have been described by Alagöz Ergüden et al. (2011). The ecological study of fish fauna of the Seyhan reservoir (37°5'17" N, 35°17'34" E) was carried out from March to May 2008 (Figure 1).

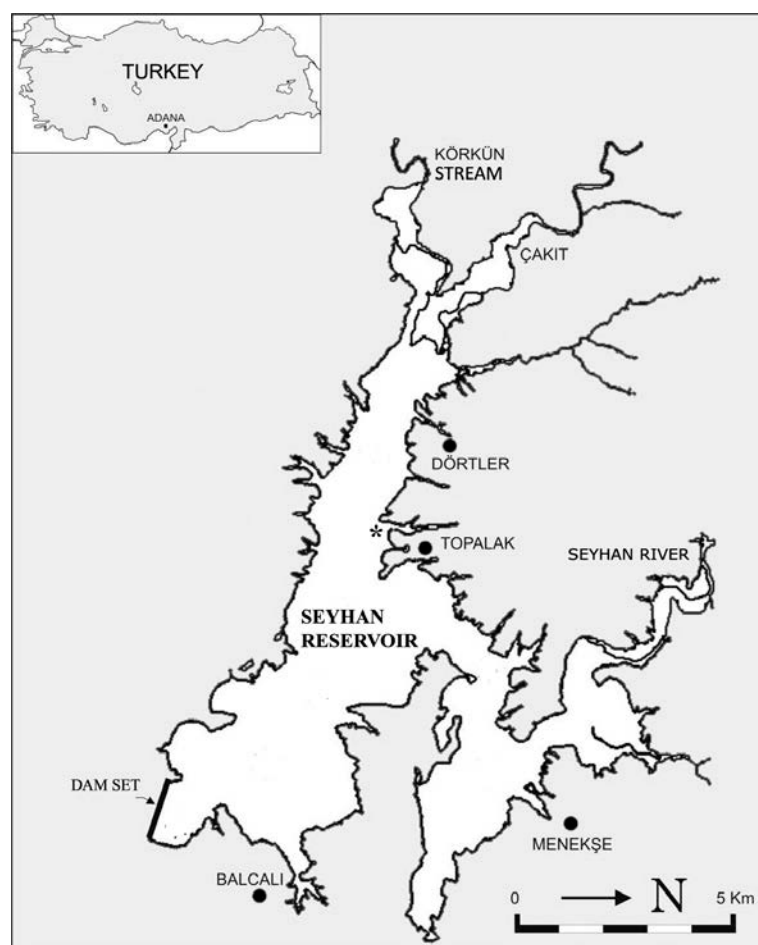


Figure 1. Map of the sampling location (★) of *P. antennarius*

The specimens were preserved in 70% ethanol and deposited in the Museum of the Faculty of Fisheries, Mustafa Kemal University, İskenderun-Hatay (MSM) (Collection No: MSM-MALI/2011-04 (two specimens) (Figure 2).



Figure 2. *P. antennarius* (H. Milne-Edwards, 1837) (♀TL: 42.1 mm); Lateral view [Photo Dr. T. Özcan]

Results and Discussion

In present study, a total of 4 *P. antennarius* specimens were collected from the Seyhan Reservoir between March and May 2008. The specimens of *P. antennarius* were collected between 0.5 and 15 m depth which is rich in aquatic vegetation. The specimens were obtained by fish nets over muddy bottoms. The water temperature was measured as 26°C. Also, 16 specimens of *P. antennarius* were collected in the fish stomach content (6 shrimp specimens in stomach two male specimens of trout; TL: 31.5-33 cm, W: 422.08-457.77 g, Age: 2 and 3, and 10 shrimp specimens in stomach one male specimen of catfish; TL: 100 cm, W: 7.500 g and Age: 7).

Alagöz Ergüden et al. (2011) reported *Atyaephyra orientalis* as a prey item of fish species [*Silurus glanis* Linnaeus, 1758; *Oncorhynchus mykiss* (Walbaum, 1792)] in the same area. Aquatic invertebrates, crustaceans and microalgae are the food source for Rainbow trout (Kara and Alp, 2005; Alagöz Ergüden et al. 2010). Arthropoda, diptera larvae, insects, small fish, zooplankton and on plant materials as a prey item for catfish (Schoonbee, 1969; Bruton, 1979; Yalçın et al. 2001).

P. antennarius inhabits fresh (lakes and rivers) and brackish waters (Holthuis, 1961; Udekem d'Acoz, 1999; Falciai and Palmerini, 2002; Gottstein Matočec and Kerovec, 2002). The grass shrimp *P. antennarius* is a benthic oligostenohaline opportunistic omnivore decapod species (Matočec et al. 2006) and the species is very sensitive to environmental pollution (Bazzanti et al. 1997; Gottstein Matočec et al. 2006). According to Ungherese et al. (2008), *P. antennarius* inhabits stands of submerged macrophytes, finding refuge among their leaves during the day. *P. antennarius* inhabits waters with pH higher than 8.0, temperature above 18 – 20 °C for at least 3 – 4 months (necessary for fixation of the eggs to the pleopods), specific concentration ranges of some ions (Na⁺, K⁺ and Ca²⁺) and optimum salinity of approximately 3-5 ‰ (Parry, 1957; Parry and Potts, 1965; Dalla Via, 1986).

The catfish, *Silurus glanis* Linnaeus, 1758; and rainbow trout, *Oncorhynchus mykiss* (Walbaum, 1792) feeds on *P. antennarius* as a prey item.

Conclusion

So far, *P. antennarius* has not been reported from the Seyhan river basin. Present study reports new locality and it was first reported in the Seyhan River Basin.

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