



## ***Microcosmus polymorphus* Heller, 1877 (Tunicata: Ascidiacea: Pyuridae)- a new Addition to the Fauna of the Turkish Coasts**

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### **Abstract**

*Microcosmus polymorphus*, an Atlanto-Mediterranean ascidian, is here recorded for the first time from the Turkish Seas. One specimen was obtained from Izmir Bay by trawling at the depth of 50 m in July 2007.

**Keywords:** *Microcosmus polymorphus*, Aegean Sea, Izmir Bay, new record.

### **Türkiye Kıyı Faunasına Yeni Bir Katkı - (*Microcosmus polymorphus* Heller, 1877 (Tunicata: Ascidiacea: Pyuridae))**

### **Özet**

Bu çalışmada, Atlanto-Mediterranean bir tür olan *Microcosmus polymorphus*'un Türkiye kıyılarından ilk kaydı verilmektedir. Söz konusu tür sadece bir birey olarak İzmir Körfezi'nden Temmuz 2007'de 50 m derinlikte trol ile elde edilmiştir.

**Anahtar Kelimeler:** *Microcosmus polymorphus*, Ege Denizi, İzmir Körfezi, yeni kayıt.

### **Introduction**

More than 2,500 Ascidiaceae species are known in the world seas, showing a large variation in form and colour. Ascidiaceae are benthic filter feeders, thus they can contribute to the decreasing bivalve production because of the competition for food (Petersen, 2007). They are found on every kind of substrate and are among the organisms responsible for fouling, often causing huge problems to aquaculture equipments. In addition, they can selectively accumulate heavy metals and hydrocarbons in their tissues and blood (Hickman *et al.*, 2000) from the marine environment and are considered good indicators for water quality monitoring.

142 Ascidiaceae species are known from the whole Mediterranean Sea, 14 of them non-indigenous (Izquierdo-Muñoz *et al.*, 2009). The genus *Microcosmus* belongs to the family Pyuridae and includes eight Mediterranean species (Koukouras *et al.*, 1995, Izquierdo- Muñoz, *et al.*, 2009). Three species, namely *M. polymorphus*, *M. sabatieri* and *M. vulgaris* are edible and commercially harvested in the

Mediterranean since the 1<sup>st</sup> Century AD (Vafidis *et al.*, 2008). Nowadays, *M. polymorphus* is eaten in large quantities in France and Italy and consumed raw.

Adult *Microcosmus* spp. host symbiotic bacteria producing compounds with antibiotic and antitumor activity (Aassila *et al.*, 2003) as well as detoxifying heavy metals (Meziti *et al.*, 2007). Both secondary metabolites and inorganic acids have been hypothesized to protect adult ascidiaceae from predation, providing them with alternative defensive strategies (Pisut and Pawlik, 2002).

### **Materials and Methods**

One specimen of *Microcosmus polymorphus* was found at 50 m depth by trawling on 28 July, 2007 from Izmir Bay (38°54'N; 26°76'E) in the Aegean Sea (Figure 1).

### **Results**

*M. polymorphus* is a solitary ascidiaceae. Its

irregular body, 5-10 cm in size, has a thick and flexible tunic, not wrinkled, brownish cross, sometimes covered with sand (Figure 2). Coat is red with streaks of yellowish-white. Specific characters are seven branchial folds at each side (Figure 3) and short, blunt pigmented dark red siphonal spines, sometimes with thin bands (Figure 4). It occurs mainly in subtidal rocky substrata and among *Posidonia oceanica* meadows between 1-50 m depth. The examined specimen was obtained from coarse sediment (rocks with gravel) in an area where fishing is not allowed due to fish ground overexploitation.

## Discussion

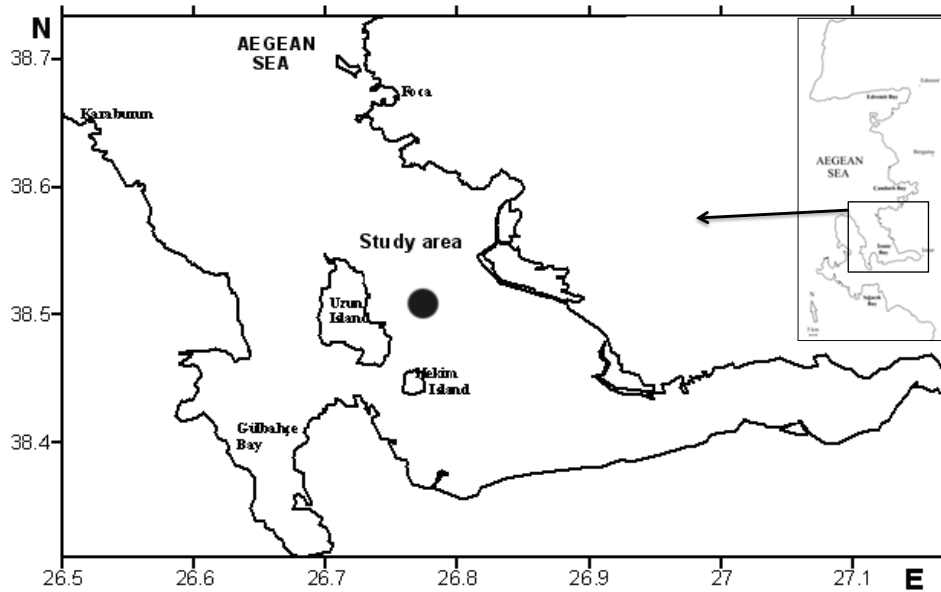
This is the first record of the species for the whole Turkish seas. After a taxonomic study of Bozcada island ascidians (Aslan, 2006), giving also information on their distribution along the Turkish

coasts, recent faunistic investigations by Çınar *et al.* (2006a, 2006b, 2008) mentioned a few new Ascidian records for Turkish Seas. According to this literature, 23 Ascidian species are known from the coast of Turkey, but not a comprehensive check-list is nowadays available.

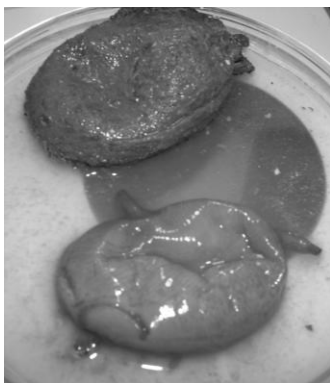
*Microcosmus polymorphus* is widely distributed in the Western Mediterranean Sea (Cornet and Ramos, 1980; Mastrototaro and Tursi, 2009), and has been reported from the Atlantic coast of Portugal (Saldanha, 1974). In the Eastern Mediterranean Sea it was firstly recorded from the Greek Aegean Sea (Koukouras *et al.*, 1995). The present record confirms its presence and establishment in the Eastern Mediterranean.

## Acknowledgements

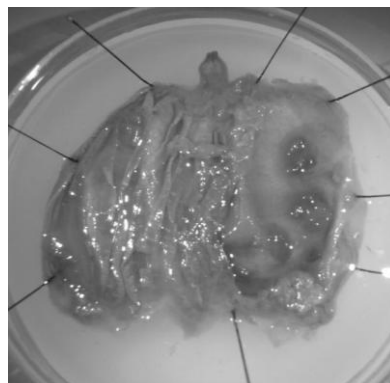
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**Figure 1.** The investigation area.



**Figure 2.** Body of *M. polymorphus* and its tunic.



**Figure 3.** Aspect of the inside of *M. polymorphus* with branchial folds.



**Figure 4.** Siphonal spines with thin bands.

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