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-RESEARCH ARTICLE-

First Record of *Janthina globosa* Swainson, 1822 (Mollusca, Gastropoda) and *Prostheceraeus giesbrechtii* Lang, 1884 (Platyhelminthes) in the Gulf of Antalya

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Abstract

During the survey study, a holo-planktonic gastropod species *Janthina globosa* Swainson, 1822 was captured for the first time during trawl shootings at 20-30 m depths from the Gulf of Antalya on 24th June 2015. On 15th July 2015, during the underwater diving, a colourful flatworm *Prostheceraeus giesbrechtii* was observed at the hard substratum depths of 5-7 m near the old Harbour (Antalya) (36º 35' 5,15''N; 30º 42' 1,45''E). The flatworm was taken to laboratory and photographed. Its length was approximately 2-3 cm and 1-1.5 mm thick. This species is the first record for the Gulf of Antalya, the North-eastern Mediterranean part of Turkey.

Keywords:

Prostheceraeus giesbrechtii, *Janthina globosa*, Gastropoda, pink flatworm, Gulf of Antalya

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Introduction

Marine gastropod species belonging to the family Janthinidae generally show wide range of distribution at Ecuador region (Mienis, 1994). *Janthina* is a part of the macrozooplankton in the world's oceans. According to Mienis and Spanier (1987) four species of *Janthina* are present in the Mediterranean Sea: *Janthina janthina* (Linnaeus, 1758), *J. exigua* (Lamarck, 1816), *J. globosa* (Swainson, 1822) and *J. pallida* (Thompson, 1841).

These species live as pelagic on the surfaces of floating objects by air bubbles coated mucus. One would surmise that the purple sea snail's body is therefore upside-down while it is in the water. They are generally found as clustered on Anthomedusae species (*Porpita* and *Velella)* and Siphonophoran species (*Physalia*). They can either live in open seas or closed bays according to weather conditions (Legac & Mienis, 2010). In ancient times, one source of purple dye for clothing was *Janthina* purple sea snails (Jensen, 1963; Reese, 2010).

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There are many different species of worms to be found in the Mediterranean Sea. There are the errant flat worms, free spirits to wander at will; the nemertid worms, which are unsegmented and have eyes and a mouth and are active hunters on the reef. There is not much information about these animals in the literatures. Flatworms have a leaf-like, flat body which is able to undulate over the seabed by the aid of tiny cilia that beat rhythmical on their underside. They are carnivorous animals that the mouth and anus are located on the underside and the head has two lobed projections, which form antenna. They are distinguishable from nudibranchs by their lack of gills (Wood, 2015; Bergbauer and Humberg, 1999)

Pink flatworm *Prostheceraeus giesbrechtii* is the most commonly seen flatworm over the entire region. Primarily it has rather garish purple and white stripped coloration. They are growing to around 2 cm in length, it enjoys many different habitats such as cave and rocky area with darkness sandy conditions. There are pink and white longitudinal stripes on the body. There is yellowish longitudinal stripe in the middle of the body. On other side of this central strip, there are five thin white lines.

Pink flatworm *P. giesbrechtii* is a species of euryleptid flatworm that is native to the Mediterranean Sea and the Eastern Atlantic (Wood, 2015). Like other flatworms *P. giesbrechtii* probably inhabits reefs and feeds with other invertebrates. Members of the class Turbellaria are mostly hermaphrodites. Eggs directly hatch into miniature adults. They can be found up to 15-20 m depth (SeaLifeBase, 2016). Members of the order Neotaenioglossa are mostly gonochoric and broadcast spawners. Embryos develop into planktonic trocophore larvae and later into juvenile veligers before becoming fully grown adults (Ruppert *et al.*, 2004).

On the Levantine coast of Turkey (Fethiye Bay and Kaş), 6 flatworm species have been reported (Gözcelioğlu, 2011). These are *Prostheceraeus roseus, Prostheceraeus vittatus, Prostheceraeus giesbrechtii, Stylostomum ellipse, Planocera cf. graffi,* and *Pseudoceros maximum.*

In the present study, occurrence of pink flatworm *Prostheceraeus giesbrechtii* and a marine gastropod *Janthina globosa* in the Gulf of Antalya in the North-eastern Mediterranean Sea are first time given.

During the study, a holo-planktonic gastropod species with violet colour was captured during trawl hauls at 20-30 m depths in the Gulf of Antalya (coordinates 36º 49' 250'' N, 030º 52' 460'' E - 36º 49' 450'' N, 030º 59' 110'' E) on 24th June 2015. It is shown between A and B points in Figure 1. The sample was deposited in the Marine Museum No: 140, A.U. Fisheries Faculty, Antalya.

On 15th July 2015, during the underwater diving colourful flatworm was observed at the hard substratum depths of 5-7 m near the old Harbour in Antalya (C point - 36º 35' 5,15''N; 30º 42' 1,45''E) (Figure 1).

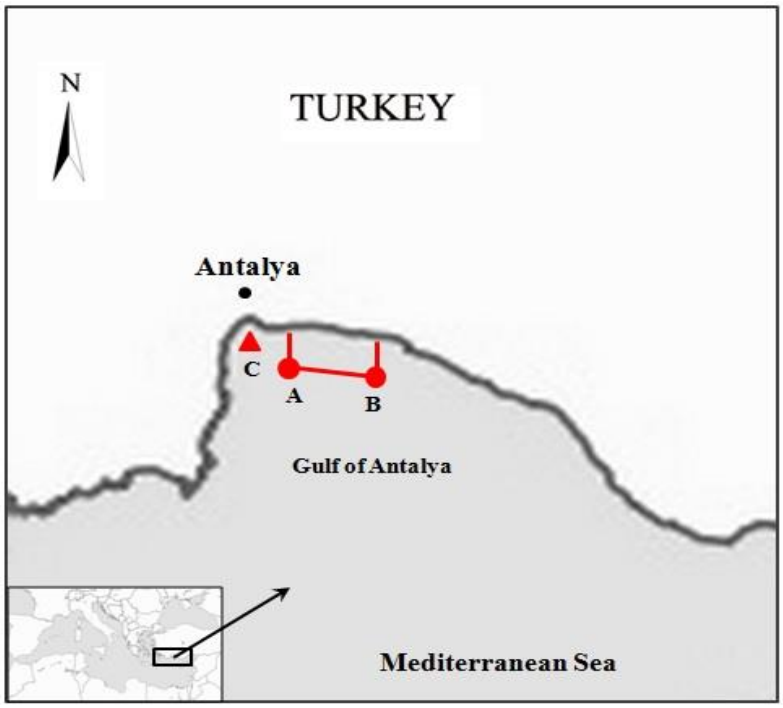

Figure 1: Sampling locations A-B for *Janthina globose* and C for *Prostheceraeus giesbrechtii*.

The cuptured specimen of *J. globosa* was 19 mm height (TL) and width 13 mm. The shell of *J. globosa* is fragile, thin and light purple, banded at the suture with pale color. Body whole globose and regularly convex; lacks of angle at periphery (Figure 2). According to species identification given by Ramakrishna et al. (2007), this gastropod has been determined as *Janthina globosa* Swainson, 1822.

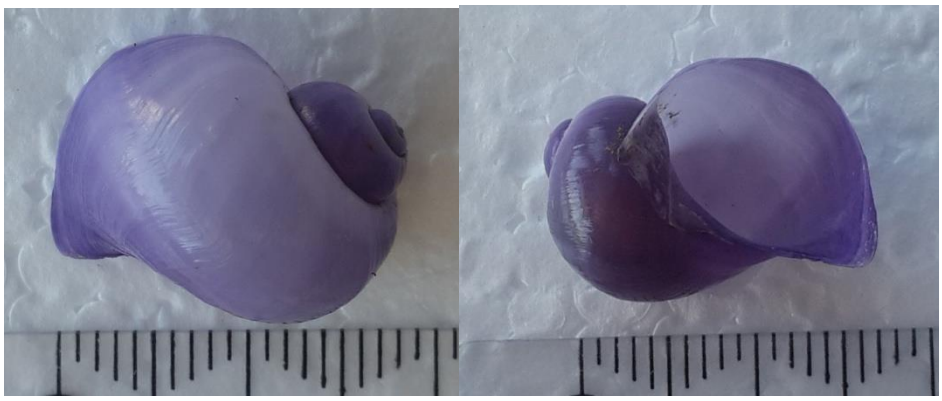

Figure 2. *Janthina globosa* Swainson, 1822 from the Gulf of Antalya.

During the underwater survey, the colourful flatworm was observed at the hard substratum at depths of 5-7 m near the old Harbour (Antalya). The flatworm was taken and photographed. It was identified as Eurylepidae family member *Prostheceraeus giesbrechtii* (Figure 3). Its length was approximately 2-3 cm and 1-1.5 mm thick.

A **B**

Figure 3: *Prostheceraeus giesbrechtii* from near the old Harbour Antalya (A, in the laboratory; B, at natural rocky area)

Janthinidae family generally shows wide range distribution around the Ecuador region (Mienis, 1994). The range is throughout the tropical Pacific and Atlantic oceans (Keen, 1971). Ramakrishna *et al*. **(**2007) reported that the windth and lenght of *J. globosa* from Indian coastal waters changed between 25.10-16.10 mm and 35.00-20.40 mm, respectively. In this study, the windth and lenght of the sample were found as 13.00 and 19.00 mm. *J. globosa* from the Gulf of Antalya are smaller than those of Ramakrishna *et. al.* **(**2007).

To date, two species, *J. janthina* and *J. nitens*, have been reported from shore of Turkey (Mediterranean) in the check list when marine molluscs were updated (Demir, 2003; Öztürk *et al*,. 2014). However, there is no information given about who and where reported. In the present study, *J. globosa* was reported for the first time in the Gulf of Antalya, north-eastern Mediterranean Sea.

Regarding the previous studies, there is no data about Pink flatworm, *Prostheceraeus giesbrechtii* and marine gastropod, *Jantine globosa* from Gulf of Antalya. This species are found in the Aegean Sea and extended at most to the Kaş coast, the border between the Aegean and northeastern Mediterranean Sea (Gözcelioğlu, 2011). This study gives its occurrence and extension to the Gulf of Antalya.

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