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B. OZTURK

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A new alien gastropod *Pseudorhaphitoma iodolabiata* (Hornung & Mermod, 1928) (Mangeliidae, Mollusca) in the Mediterranean Sea

B. ÖZTÜRK

Ege University, Faculty of Fisheries, Dept. Hydrobiology, 35100 Bornova, Izmir-Turkey

Corresponding author: bilal.ozturk@ege.edu.tr

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Abstract

The study documents the occurrence of a new alien gastropod *Pseudorhaphitoma iodolabiata* in the Mediterranean Sea, collected in Iskenderun Bay, Turkey, on September 2011. This record increases to 213 the number of alien molluscs in the Mediterranean.

Keywords: *Pseudorhaphitoma iodolabiata*, Mangeliidae, Mollusca, alien species, Iskenderun Bay, Turkey.

Introduction

The Mediterranean Sea is a marine biodiversity hot spot hosting approximately 17.000 species (Cool *et al.*, 2010). The temporal change of the species number known from the area is impressive, as only a decade earlier it was estimated at 8500 (Bianchi & Morri, 2000). In this remarkable increase of the species number, along with the other factors, i. e., increasing in the number of studies in different areas as well as at different depths and biotopes, the introduction of alien species is one of the crucial factors, which affects the change of the Mediterranean biota, especially in the eastern Mediterranean. According to Zenetos *et al.* (2010), alien biota of the Mediterranean Sea is estimated at 955 species by the end of the year 2010.

Among the Mediterranean regions, the eastern Mediterranean (especially the Levantine Sea subregion), being the nearest to the Suez Canal connecting the Red Sea to the Mediterranean, hosts the highest number of alien species with 718 records (Zenitos *et al.*, 2010). Along the Turkish coasts, among 14 systematic groups having alien representatives, Mollusca is the richest one with 105 alien species, and most of them (98 species) are known from the Turkish coast of the Levantine Sea (Çinar *et al.*, 2011).

This study reports the presence of a further alien gastropod mollusc, *Pseudorhaphitoma iodolabiata* Hornung & Mermod (1928), which was recently recorded in the Levantine Sea.



Fig. 1: Map of the area with location of the sampling station.

Materials and Methods

A specimen of *Pseudorhaphitoma iodolabiata* was collected on September 12th, 2011 in the Iskenderun Bay, Turkey, 36°31' 02" N-35° 58' 52" E (Fig. 1), within a project supported by General Directorate of Environmental Management attached to the Turkish Ministry of Environment and Urbanization. It was found in a muddy material taken at 34 m depth.

The specimen is deposited in the museum collections of the Faculty of Fisheries (ESFM), Ege University (Izmir-Turkey) with collection number ESFM-GAS/2011-6.



Fig. 2: *Pseudorhaphitoma iodolabiata*: general view of the specimen, and protoconch (D) of the shell (A=B=2.6 mm; C=dorsal view of the body whorl). Photographed by Bilal Öztürk.

Results and Discussion

Pseudorhaphitoma iodolabiata (Hornung & Mermod, 1928) (Fig. 2)

Mangilia (Clathurella) iodolabiata; Hornung & Mermod, 1928, p. 112-113, fig. 2 (original description). Type locality: Massaua (Red Sea), 20-30 m, substrate was not indicated.

Pseudorhaphitoma iodolabiata; Kilburn, 1993, p. 326; Dekker & Orlin, 2000, p. 32.

Pseudorhaphitoma iodolabiata was originally described by Hornung & Mermod (1928) from Massaua (Red Sea), from a material collected at 20-30 m depth. No detailed information of the species exists, although it was mentioned in several studies (Kilburn, 1993; Dekker & Orlin, 2000; Abubakr, 2004). It is considered a Red Sea endemic (Dekker & Orlin, 2000).

The shell height of the specimen found in the Mediterranean is 2.6 mm and consists of 3 teleconch whorls. Suture is moderately shallow and slightly undulated. The protoconch is conic and consists of nearly three whorls. The first two whorls appear as smooth while the third is axially ribbed with curved and spaced slim ribs (Fig. 2, D). The teleconch sculpture consists of axial ribs and spirals. The axial ribs (8 on the body whorl) are orthocline. The spirals are of two types: thick ones which are more evident and weak spirals consisting of granules. The thick spirals are 11-12 on the body whorl, including those on the base of the shell, which are more or less pronounced, and two on each previous whorl, located in the lower half, making the early whorls somewhat bicarinate. The weak spirals consist of microscopic lanes of granules, and their numbers vary from 5 to 7, in the interspaces between two subsequent thick spirals. The aperture is narrowly oblong, with a short siphonal canal and a moderately deep anal sinus. No formation on the columella and on the internal side of the outer

lip (i.e., denticle and nodule) was observed, as is usual for adult *Pseudorhaphitoma* specimens, probably due to the specimen being immature. The shell colour is pale yellowish.

Pseudorhaphitoma Boettger, 1895, which is known from the tropical and subtropical Indo-West Pacific and was not hitherto recorded in the Mediterranean, was discussed in detail by Kilburn (1993), and the author gave wide diagnostic information for the species in the genus distributed along the southern Africa and Mozambique coasts and, out of eight species reported from that area, six (*P. sienna*, *P. drivasi*, *P. epistomifer*, *P. ethekwini*, *P. obturata* and *P. stipendiarii*) were newly described therein. In addition, in the same study were also included some notes and photographs for 15 other *Pseudorhaphitoma* species known from the Indo-West Pacific region.

Pseudorhaphitoma species have various types of protoconch, and Kilburn (1993:321) distinguished three different types depending on their structure, shape and number of whorls. The Mediterranean specimen of *P. iodolabiata* belongs to the second group (type B), with a conical protoconch of about 2.5-3.5 whorls. Compared to the protoconchs of the species reported from southern Africa and Mozambique, the protoconch of *P. iodolabiata* is similar to that of *Pseudorhaphitoma sienna* Kilburn, 1993 (p. 323, fig. 2), but the first whorl is not depressed as in *P. sienna* and the two first whorls are smooth in *P. iodolabiata*.

According to Kilburn (1993), adult *Pseudorhaphitoma* species are characterized by an outer lip with a blunt labral tooth just anterior to the anal sinus and sometimes with additional denticles located anteriorly. The inner lip has usually a parietal nodule and occasionally 1-2 denticles on the columella. The Mediterranean specimen of *P. iodolabiata* lacks those characters, being immature.

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