

**FURTHER RECORDS OF *MELIBE VIRIDIS* (MOLLUSCA, NUDIBRANCHIA)
IN THE MEDITERRANEAN SEA, WITH OBSERVATIONS ON THE SPAWNING**

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ABSTRACT: *Melibe viridis* (Kelaart, 1858) has been found in the north-western part of the Ionian Sea, in the Bay of Porto Cesareo and in the Mar Grande of Taranto. Spawning was observed in this latter area.

RÉSUMÉ: *Melibe viridis* (Kelaart, 1858) a été trouvée dans partie nord-occidentale de la Mer Ionienne, dans la baie de Porto Cesareo et dans la Mar Grande de Taranto. Dans cette dernière station, la pondue a été observée.

In recent years the number of records of exotic immigrant species in the Mediterranean has increased considerably (Golani *et al.* 2002; Galil *et al.* 2002; Zenetos *et al.* 2003).

Melibe viridis (Kelaart, 1858) is a nudibranch gastropod (suborder Dendronotia family Tethyidae) with a wide distribution in the Indian and Western Pacific Oceans (Cattaneo-Vietti & Thompson, 1989; Gosliner and Smith, 2003; Zenetos *et al.* 2003). The species was first described as *Meliboea viridis* by Kelaart (1858) but this description was ignored by subsequent authors who reported it as *Melibe fimbriata* Alder & Hancock, 1864, *Melibe vexillifera* Bergh, 1880, *Promelibe mirifica* Allan, 1932 and probably *Melibe japonica* Eliot, 1913. The revision by Gosliner and Smith (2003) considers all these names as synonyms of *Meliboea viridis* and suggests retaining the name *Melibe viridis* (Kelaart, 1858).

The first record of *M. viridis* in the Mediterranean Sea dates back to 1970 from the Bay of Argostoli, Cefalonia Island, northeastern Ionian Sea (Moosleitner, 1986: *Melibe sp.*). Further records were from the Gulf of Corinth in 1980 (Moosleitner, 1986), the Astakos Inlet in 1982 (Thompson & Crampton, 1984), the Strait of Messina in 1984 (Mojetta, 1998), the Aegean Sea at Milos Island in 1994 (Koutsoubas & Cinelli, 1996), Djerba Island in the Gulf of Gabès, Tunisia (Cattaneo-Vietti *et al.*, 1990), Stari Grad Bay at the Island of Hvar, Croatia (Despalatović *et al.*, 2002) and in eastern Sicily (Scuderi & Russo, 2003). The name *M. fimbriata* was used in all these papers the name.

Here we report *M. viridis* from the north-western part of the Ionian Sea (Italy) where we observed its spawning.

The benthic communities of Marine Reserve of Porto Cesareo and the Mar Grande basin of Taranto (Fig. 1) were surveyed (Panetta *et al.*, 2002; 2004). Sampling was carried out during December 1999 at Porto Cesareo and during July 2000 at Taranto. After the first findings, a more detailed diving survey was carried out in the Mar Grande. Qualitative sampling was thus performed in October and December 2003 by visual *census* along two transects of c. 100 m (surface area c. 200 m²) from the coastline down to 10 m depth. The seawater temperature was measured using a multi-parametric probe. Specimens of *M. viridis* were photographed and collected. They were anesthetized by adding crystals of menthol to the seawater and were subsequently fixed in seawater formalin (10%). Identification was based on keys by Thompson & Crampton (1984) and Gosliner & Smith (2003). The total length including the dilated buccal hood was measured in each specimen collected.

In December 1999 two specimens of *M. viridis* were photographed in the Marine Reserve of Porto Cesareo on muddy bottoms with *Cladophora prolifera* down to 30 m in depth (seawater temperature was 13.68 °C at the surface and 14.45 °C at the bottom). In July 2000 five specimens of *M. viridis* were photographed in the Mar Grande of Taranto on a muddy bottom with *Caulerpa prolifera* turf down to 10 m depth (seawater temperature was 28.15 °C at the surface and 25.73 °C at the bottom). The

subsequent scuba diving survey (October and December 2003) confirmed the presence of *M. viridis* on the south-eastern side of Mar Grande with an observed density of c. 5 specimens/200 m².

The specimens collected in October 2003 were observed in the spawning phase, as had previously been observed at Hvar Island, in the Adriatic, by Despalatović *et al.*, (2002) also in the month of October. Figure 2 shows a spawning specimen of *M. viridis*. The seawater temperature during this period was 23.3 °C along the water column. The ten specimens collected in October and December 2003 measured from 60 to 143 mm long.

The present finding of *M. viridis* is the first record in the north-western Ionian Sea. It regards two sites known for eutrophic conditions (Tursi *et al.* 1981; Parenzan, 1983; Alabiso, 1997) and characterized by muddy bottoms with algal turf where *M. viridis* finds food and resources (Thompson & Crampton, 1984; Koutsoubas & Cinelli, 1996; Gosliner & Smith, 2003). This is the second observation of the species spawning in the Mediterranean Sea (Despalatović *et al.*, 2002).

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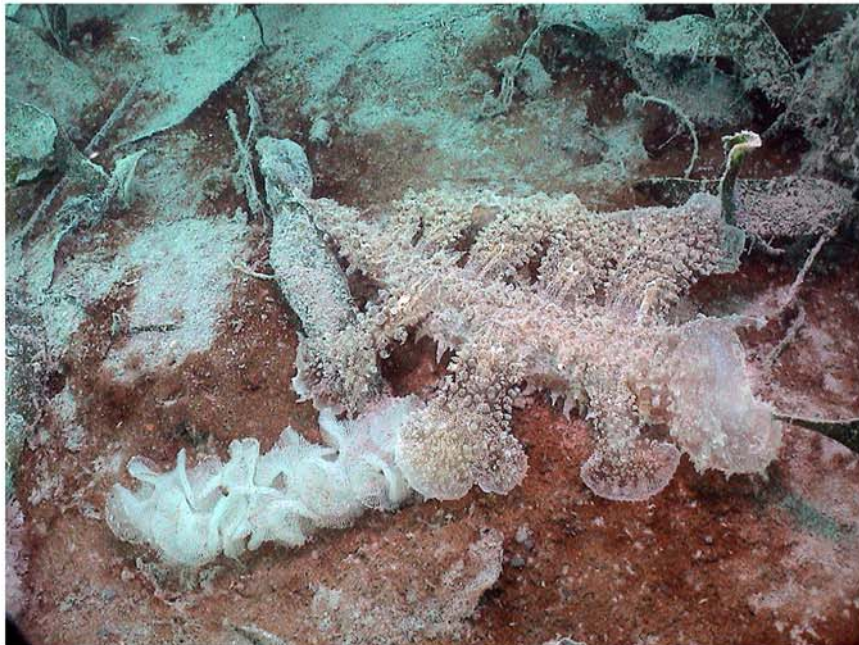
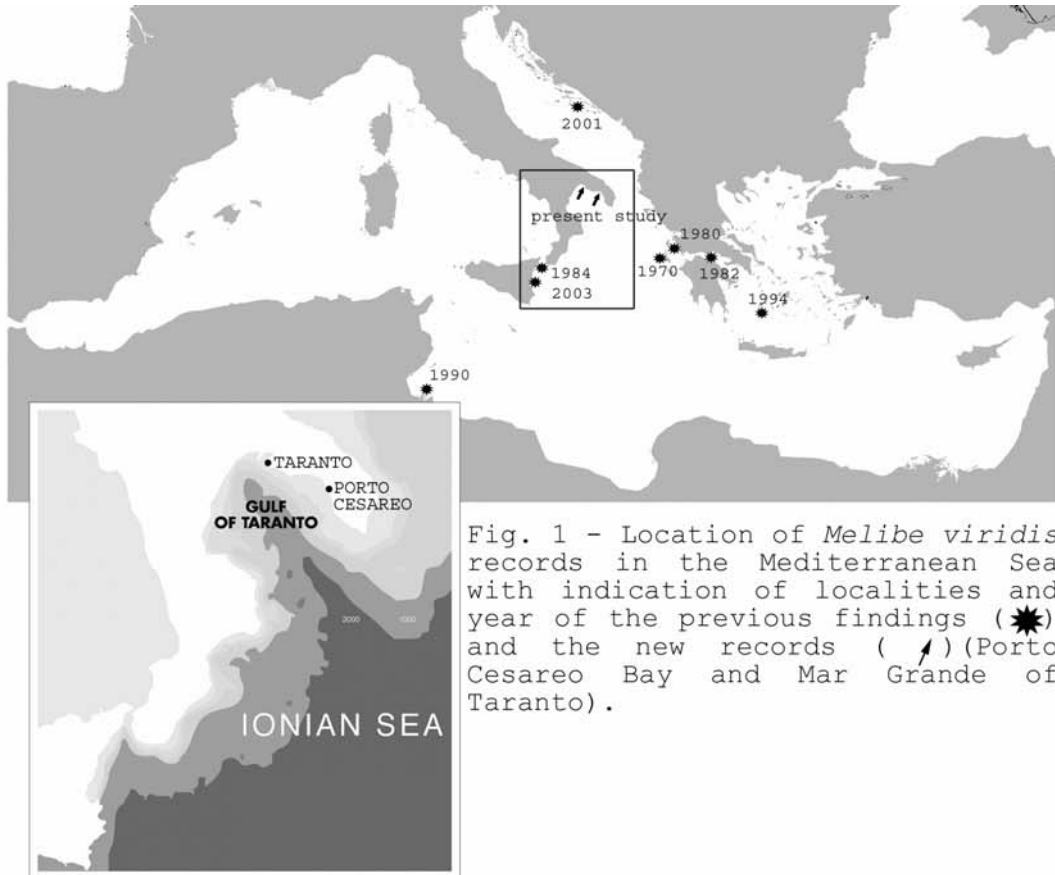


Fig. 2 - *Melibe viridis* with egg mass photographed in the Mar Grande of Taranto (October, 2003).