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- SHORT COMMINACITION-

New Records of *Porpita porpita* (Linnaeus, 1758) (Cnidaria: Hydrozoa) in the Mediterranean Sea

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Abstract

New records of *Porpita porpita* are reported from the Mediterranean Sea. Although the species appears to be widespread in the basin, the number of reported records is scarce. In this study, we report additional record of the species from the Ionian and Adriatic Italian seas.

Keywords:
Blue botton, Ionian Sea, Adriatic Sea, Italy, Hydroid
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Introduction

Porpita porpita (Linnaeus 1758), commonly known as the blue button, is a colonial hydroid of the Porpitidae family (Gul & Gravili, 2014). Porpitidae family includes three genera: *Porpema* Haeckel, 1888, *Velella* Lamarck, 1801 and *Porpita* Lamarck, 1801. *Porpita porpita* was originally described as *Medusa porpita* Linnaeus 1758. All the past species of the genus *Porpita* are currently considered synonyms of *Porpita porpita* (Schubert 2019). It lives near the sea surface as a floating organism transported by the current (Fisner et al., 2008; Pandya et al., 2013; Chowdhury et al., 2016). The body of *P. porpita* consists of two parts: the floating part and the hydroid colony. The former is able to sink or float the animal thanks to small chambers that produce air. The latter structure has small tentacles armed with stinging nematocysts and is used for the defense and capture of preys. The diet of *P. porpita* is represented by zooplankton, copepods, larval stage of fish and fish eggs. *Porpita porpita* can cause slight irritation to human skin (Ramanibai et al., 2014). It is a cosmopolitan species recorded from tropical and subtropical waters of the Pacific,

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Atlantic and Indian Oceans (Zhang 1999; Kirkendale & Calder 2003; Bouillon et al. 2004; Kubota & Tanase 2007; Fisner et al. 2008; Gravili et al. 2008; Calder 2010; Pandya et al. 2013; Gul & Gravili 2014), but its presence, although scattered, is also reported in the Mediterranean Sea (Macali and Tiralongo 2019 In Kousteni et al., 2019).

Material and Methods

The past published records of *Porpita porpita* in the Mediterranean Sea are shown in the Fig.1 (Gravili et al., 2015; Furfaro et al., 2017; Saygin, 2017; Macali and Tiralongo 2019 In Kousteni et al. 2019), while additional records from Italy were taken from the dataset GBIF.org (24th August 2019) (Tab.1). Additional records of other specimens were recorded thought direct observations in August 2017: a specimen of *P. porpita*, was recorded along the Adriatic coast of Puglia, exactly at Vieste (41°52'11.69"N, 16°11'1.50"E) and another specimen at the "Reserve Island of Varano" (41°55'5.15"N, 15°45'0.78"E). In August 2018, another specimen was observed near the "Acquarotta Canal" (41°55'47.13"N, 15°21'50.35"E), at Lesina. A fourth additional specimen was recorded on 4th August 2019 at Policoro (40° 11'18.16 "N, 16 ° 46'56.70" E) (Tab.2). The species was placed in a plastic bucket, photographed and then released (Fig. 2).

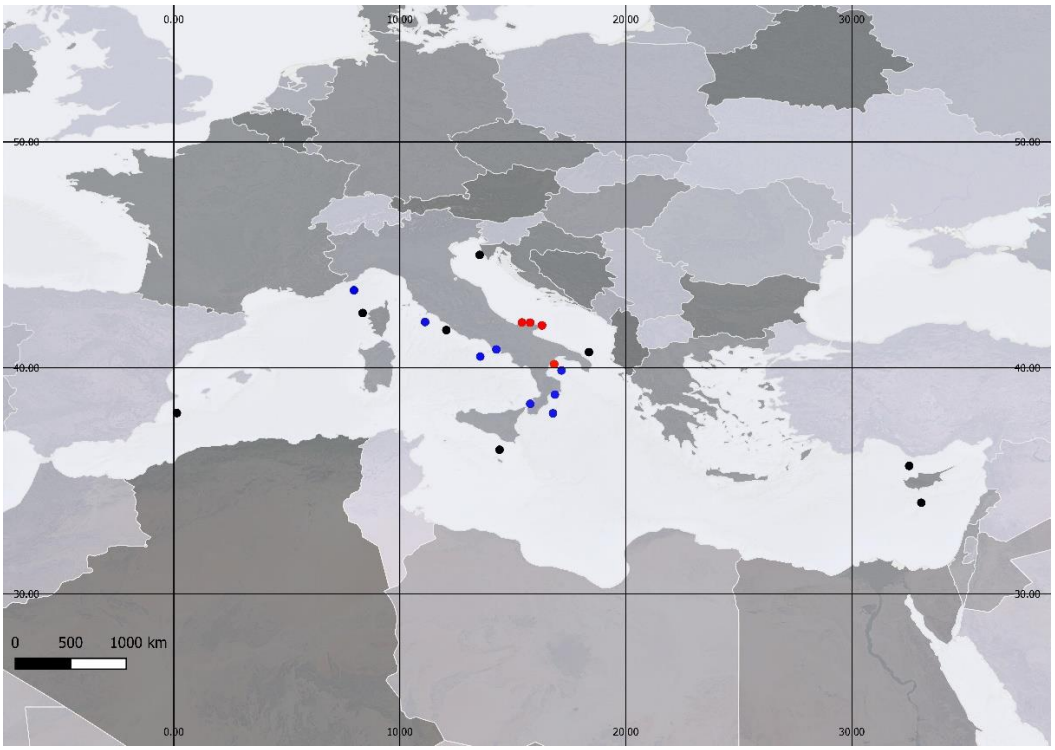

Figure 1. Mediterranean records of *Porpita porpita*, in black past records, in blue GBIF dataset records and in red new records of the present work.

Table 1. Records of *Porpita porpita* taken from GBIF (Global Biodiversity Information Facility).

Country or area	**Coordinates**	**Month & year**	**Basis of record**
Tarquinia (VT), Italy	42.2N, 11.7E	2016 September	Human observation
Palmi (RC), Italy	38.4N, 15.9E	2016 August	Human observation
Ionian Sea, Italy	38.9N, 16.7E	2014 August	Human observation
Ionian Sea, Italy	37.5N, 17.3E	2009 November	Material sample
Ionian Sea, Italy	39.8N, 17.4E	2009 November	Material sample
Ionian Sea, Italy	39.8N, 17.4E	2009 November	Material sample
Ionian Sea, Italy	39.9N, 17.4E	2009 November	Material sample
Ionian Sea, Italy	39.8N, 17.4E	2009 November	Material sample
Ligurian Sea, Italy	43.3N, 7.9E	2009 October	Material sample
Tyrrhenian Sea, Italy	39.9N, 12.8E	2009 October	Material sample

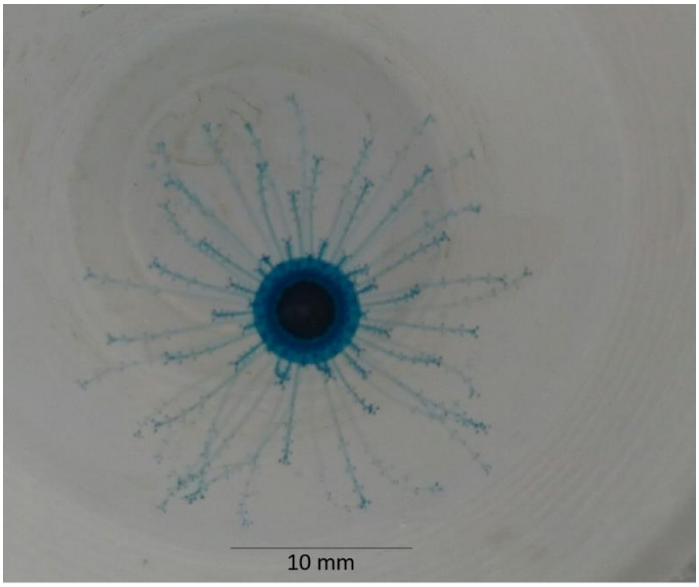

Figure 2. The specimen *of Porpita porpita* collected at Policoro.

Table 2. New records of *Porpita porpita* from the Adriatic and Ionian Sea.

Country or area	**Coordinates**	**Period**	**Marine sector**
Policoro (MT), Italy	40°11'18.16"N, 16°46'56.70"E	2019 August	Ionian Sea
Reserve Isola Varano, (FG) Italy	41°55'5.15"N, 15°45'0.78"E	2018 August	Adriatic Sea
Vieste (FG), Italy	41°52'11.69"N, 16°11'1.50"E	2018 August	Adriatic Sea
Lesina (FG), Italy	41°55'47.13"N, 15°21'50.35"E	2017 August	Adriatic Sea

Results and Discussion

As reported by the dataset of GBIF, during the period 2009–2019, *P. porpita* has been recorded 10 times in different areas of the Mediterranean Sea through direct observations and sample examination. The species was identified as *P. porpita* Linnaeus, 1758 (Class Hydrozoa Owen, 1843; Order Anthoathecata Cornelius, 1992; Family Porpitidae Goldfuss, 1818; Genus Porpita Lamarck, 1801) through the morphological features defined by Calder (1988) and Schuchertm (2010). *Porpita porpita* is a cosmopolitan species with a range extended in all the oceans and in the Mediterranean Sea. The records of *P. porpita* in the Mediterranean Sea are scarce and quite scattered, but this species is probably more common than indicated by the literature (Kousteni et al., 2019). Most of the records were from the central Mediterranean Sea. However, in last years, the species seems to suddenly increase its abundance in the Mediterranean, as it was demonstrated by the several recent records here presented from the Ionian and Adriatic seas. These new records could be related to the increase in water temperature of the Mediterranean Sea (Bianchi, 2007). Furthermore, these conditions have allowed the settlement of tropical species introduced over the years through ballast waters (Boero, 2002; Schuchert, 2010). The spatial distribution of the species can have a considerable impact on fishery and coastal resources (Chowdhury et al., 2016). For this reason, it is important to study how the flowering of new species or jellyfish acts on the ecosystem and on fishing (Saygin, 2017). For this reason, in 2008 the Jellywatch program (http://www.ciesm.org/marine/programs/jellywatch.htm) was launched by the CIESM (The Mediterranean Science Commission). This program aims to gather all information on the distribution, population size and all "jellyfish" blooms in the Mediterranean Sea (Saygin, 2017).

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