Marine and Fishery Sciences 37 (4): 667-671 (2024)
https://doi.org/10.47193/mafis.3742024010707

NOTE

Occurrence of the Blue button *Porpita porpita* along the Italian Ionian and Tyrrhenian coasts

Antonio O. Lillo[1, 2, *], Gianvito D'Orlando[1, 2], Giovanna Filippo[1, 2], Antonella D'Amore[1, 2], Salvatore Longo[2], Achille Palma[2] and Teresa Trabace[2]

[1]Environmental Research Foundation of Basilicata Region (FARBAS), Largo C. Azzarà 1, 85100 Potenza, Italy. [2]Metaponto Research Centre, Regional Agency for the Environmental Prevention and Protection of Basilicata (ARPAB), S. S. Jonica 106, 75012 Metaponto, Italy.
ORCID *Antonio O. Lillo* https://orcid.org/0000-0001-7312-2170, *Achille Palma* https://orcid.org/0009-0002-0284-8366

ABSTRACT. New individuals of *Porpita porpita* were detected along the Italian coasts of the Mediterranean Sea. In recent years, due to warming Mediterranean waters, the species has spread even further. This observation opens new horizons for further reports of this species in the Ionian and Tyrrhenian Seas of Italy.

Key words: Cnidaria, Hydrozoa, tropicalization, Mediterranean Sea.

Presencia del botón azul *Porpita porpita* a lo largo de las costas italianas del Jónico y Tirreno

RESUMEN. Se detectaron nuevos individuos de *Porpita porpita* a lo largo de las costas italianas del Mar Mediterráneo. En los últimos años, debido al calentamiento de las aguas del Mediterráneo, la especie se ha extendido aún más. Esta observación abre nuevos horizontes para futuros informes de esta especie en los mares Jónico y Tirreno de Italia.

Palabras clave: Cnidaria, Hydrozoa, tropicalización, Mar Mediterráneo.

*Correspondence:
antoniooscar.lillo@gmail.com

Received: 17 March 2024
Accepted: 8 April 2024

ISSN 2683-7595 (print)
ISSN 2683-7951 (online)

https://ojs.inidep.edu.ar

Journal of the Instituto Nacional de Investigación y Desarrollo Pesquero (INIDEP)

Porpitidae (Goldfuss, 1818) is a family of marine hydrozoa containing three genera: *Porpema* (Haeckel, 1888), *Velella* (Lamarck, 1801) and *Porpita* (Lamarck, 1801). The Genus *Porpita* includes the species *Porpita porpita* identified for the first time by Carl Linnaeus as Medusa Porpita (Lillo et al. 2019). The species is nowaday known by the name of 'Blue button'. *Porpita porpita* (Linnaeus 1758) is a cosmopolitan marine hydroid found over the years along the coasts of the Pacific, Atlantic and Indian oceans (Zhang 1999; Kirkendale and Calder 2003; Bouillon et al. 2004; Kubota and Tanase 2007; Fisner et al. 2008; Gravili et al. 2008; Calder 2010; Pandya et al. 2013; Gul and Gravili 2014). *Porpita porpita* has a body structure divided into two parts: the floating part and the hydroid colony. The floating part is dark in color and consists of chambers that produce air to allow the organism to sink or float on the water surface. The hydroid colony has a bright blue color and their association results in a small tentacles-like structure carrying nematocysts useful for defense and prey capturing (Lillo et al. 2019). The small tentacles can cause

irritation to human skin on contact (Ramanibai et al. 2014). The Blue bottom feeds on plankton and small organisms but prefers sea slugs and violet sea snails (Gürlek et al. 2020). In the Mediterranean Sea, the species has been reported along the Syrian coasts (Mamish et al. 2019), the Maltese coasts (Deidun 2010), the Corsican Sea (Kousteni et al. 2019), the Balearic Sea (Guerrero et al. 2016). In the northeastern Mediterranean coast of Turkey it was first reported in February 1842, then in Antalya Bay in 2016 and in Iskenderun Bay in 2020 (Gürlek et al. 2020). In Italy, bibliographic research reports refer to the Ionian, Adriatic (Lillo et al. 2019) and Tyrrhenian seas (Furfaro et al. 2017). This study provides new reports of *P. porpita* in the Ionian and Tyrrhenian seas (Figure 1).

Records belong to different sources, such as scientific publications (Gravili et al. 2015; Furfaro et al. 2017; Lillo et al. 2019) and the Global Biodiversity Information Facility (https://www.gbif.org) (Table 1). New records come from direct observations in Ionian and Tyrrhenian Seas. Some specimens of *P. porpita* were reported along the Calabrian Ionian coasts, exactly in Catanzaro Lido (38° 49′ 29.16″ N, 16° 37′ 29.88″ E) and in Sellia Marina (CZ) (38° 53′ 18.24″ N, 16° 46′ 13.49″ E) (38° 52′ 36.99″ N, 16° 44′ 33.99″ E), respectively, in August 2021 and July 2023. In addition, other specimens were reported along the Tyrrhenian coast in Sabaudia (LT) (41° 17′ 50.13″ N, 13° 0′ 33.03″ E) in June 2021. It should be noted that all specimens were carefully placed in a plastic bucket, photographed and later released (Figure 2).

Porpita porpita is a cosmopolitan species with a very extensive range from the tropical waters of the oceans to the Mediterranean Sea. In recent years, reports have increased through direct observations, scientific bibliography and environmental datasets,

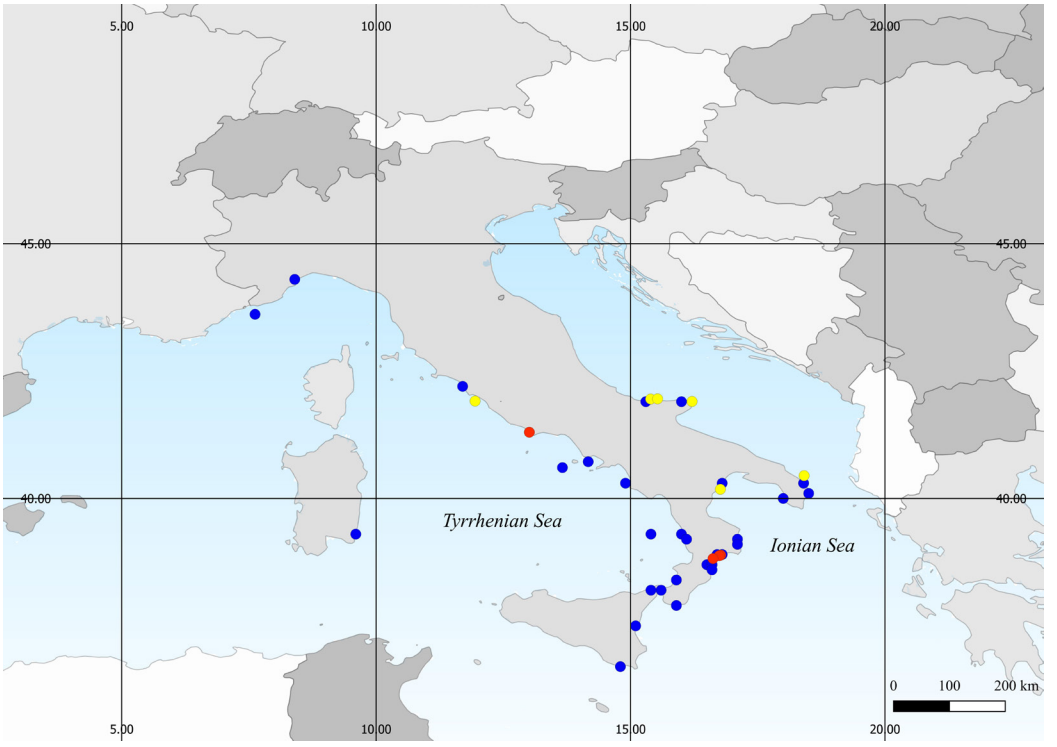

Figure 1. *Porpita porpita* records in Ionian and Tyrrhenian Sea from 2010 to 2024. Past records (yellow), GBIF dataset records (blue) and new records (red).

Table 1. Records of *Porpita porpita* from Italian coasts (GBIF 2024).

Latitude (N)	Longitude (E)	Event date
37.9	15.9	2023 Aug 18
41.9	16	2022 July 10
36.7	14.8	2021 December 3
37.5	15.1	2020 August 1
44.3	8.4	2019 July 31
39.1	17.1	2018 August 12
41.9	15.3	2017 August
40.1	18.5	2017 August
40	18	2017 September
39.1	17.1	2016 August 11
38.4	15.9	2016 August 04
42.2	11.7	2016 Sep 18
39.3	16	2015 July
39.3	9.6	2015 July
39.2	17.1	2015 July
38.7	16.6	2015 August
39.2	16.1	2015 August
38.7	16.5	2015 August
38.7	16.5	2015 August
40.3	16.8	2015 August
38.9	16.8	2015 August
38.7	16.6	2015 August
40.3	18.4	2015 September
38.9	16.7	2014 August 10
38.6	16.6	2014 August
39.1	17.1	2013 August 5
38.8	18.4	2012 June
40.3	14.9	2012 July
40.3	18.4	2012 July
39.3	15.4	2012 August
38.2	15.6	2010 August
40.3	18.4	2010 August
38.2	15.4	2010 August

indicating that this species is probably becoming widespread in Mediterranean waters (Kousteni et al. 2019; Lillo et al. 2019). New reports can be linked to the increase of water temperature (Bianchi 2007) leading to a tropicalization of the Mediterranean Sea. In addition to the climate change, introduction of tropical species is due to anthropic impact, such as ballast water. These events lead to serious damage to the ecosystem balance such as predation of native species, increased competition for the same trophic resource or considerable impacts on fishing activities (Boero 2002; Schuchert 2010; Chowdhury et al. 2016). The Mediterranean Science Commission (CIESM) launched a program called 'Jellywatch' in 2008 to collect reports on the distribution, population size and all blooms events of jellyfish in the Mediterranean Sea (Saygin 2017). This program is continually updated and the collection of new records is useful to monitor the expansion of the species.

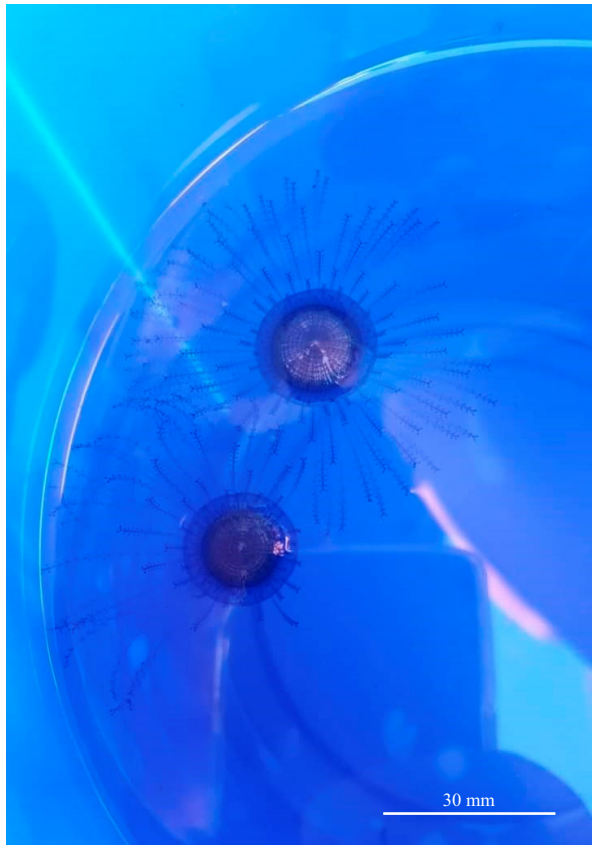

Figure 2. *Porpita porpita* specimens found in Sellia Marina (CZ), Italy.

Author contributions

Antonio O. Lillo: conceptualization, methodology, software, validation, formal analysis, investigation, resources, data curation, writing-original draft, writing-eview and editing, visualization, supervision, project administration. Gianvito D'Orlando: investigation, resources, writing-original draft, writing-review and editing, visualization. Giovanna Filippo: visualization. Antonella D'Amore: visualization. Salvatore Longo: visualization. Achille Palma: visualization, supervision. Teresa Trabace: validation, visualization, supervision.

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