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ANDREU SANTIN, RICARDO AGUILAR, OKAN AKYOL, CENKMEN RAMAZAN BEGBURS, LAURE BENOIT, GIOVANNI CHIMIENTI, FABIO CROCETTA, CEM DALYAN, ANTONIO DE LA LINDE RUBIO, BRANKO DRAGICEVIC, JAKOV DULCIC, GIANNI GIGLIO, ONUR GÖNÜLAL, TURHAN KEBAPCIOGLU, NUR BIKEM KESICI, SOTIRIS KIPARISSIS, VASILIKI KOUSTENI, EMANUELE MANCINI, FRANCESCO MASTROTOTARO, THOMAS MENUT, FEDERICA MONTESANTO, PANAGIOTA PERISTERAKI, DIMITRIS POURSANIDIS, JULIEN P. RENOULT, LUÍS SÁNCHEZ-TOCINO, EMILIO SPERONE, FRANCESCO TIRALONGO

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New records of rare species in the Mediterranean Sea (March 2021)

Andreu SANTÍN[1], Ricardo AGUILAR[2], Okan AKYOL[3], Cenkmen Ramazan BEGBURS[4], Laure BENOIT[5], Giovanni CHIMIENTI[6, 7,] Fabio CROCETTA[8], Cem DALYAN[9], Antonio DE LA LINDE RUBIO[10], Branko DRAGIČEVIĆ[11], Jakov DULČIĆ[11], Gianni GIGLIO[12], Onur GÖNÜLAL[13], Turhan KEBAPCIOGLU[14], Nur Bikem KESICI[9], Sotiris KIPARISSIS[15], Vasiliki KOUSTENI[16, 17], Emanuele MANCINI[18], Francesco MASTROTOTARO[6, 7], Thomas MENUT[19], Federica MONTESANTO[6, 7], Panagiota PERISTERAKI[15], Dimitris POURSANIDIS[20], Julien P. RENOULT[21], , Luis SÁNCHEZ-TOCINO[22], Emilio SPERONE[12], and Francesco TIRALONGO[23, 24]

[1] Institute of Marine Sciences (ICM-CSIC), Passeig Marítim de la Barceloneta 37-49, 08003, Barcelona, Spain
[2] OCEANA, Gran Via 59, 9, 28013, Madrid, Spain
[3] Ege University Faculty of Fisheries, 35440 Urla, Izmir, Turkey
[4] Akdeniz University, Fisheries Faculty, Department of Fisheries Technology, Antalya, Turkey
[5] CBGP – University of Montpellier, CIRAD, IRD, INRAE, Montpellier SupAgro, Montpellier, France
[6] Department of Biology, University of Bari, Via Orabona, 4, 70125, Bari, Italy
[7] CoNISMa, Rome, Italy
[8] Department of Integrative Marine Ecology, Stazione Zoologica Anton Dohrn, Villa Comunale, I-80121 Naples, Italy
[9] Istanbul University, Department of Biology, Division of Hydrobiology, Vezneciler, 34134 Istanbul, Turkey
[10] Agencia de Medio Ambiente y Agua, Cádiz, Spain
[11] Institute of Oceanography and Fisheries, Šetalište Ivana Meštrovića 63, 21000 Split, Croatia
[12] Department of Biology, Ecology and Earth Sciences (DiBEST), University of Calabria, Rende (CS), Italy
[13] Faculty of Aquatic Sciences, Istanbul University, Ordu street, No. 8, 34134 Laleli Fatih, Istanbul, Turkey
[14] Akdeniz University, Manavgat Tourism, Faculty Department of Recreation Management, Antalya, Turkey
[15] Hellenic Centre for Marine Research, Institute of Marine Biological Resources and Inland Waters, 71003, Heraklion, Greece
[16] Fisheries Research Institute, Hellenic Agricultural Organization-Demeter, 64007 Nea Peramos, Kavala, Greece
[17] Department of Zoology-Marine Biology, Faculty of Biology, National and Kapodistrian University of Athens, Panepistimiopolis, 15784 Athens, Greece
[18] Laboratory of Experimental Oceanology and Marine Ecology, University of Tuscia, Civitavecchia, Italy
[19] Biotope – Environmental Consulting Company, Mèze, France
[20] Foundation for Research and Technology-Hellas, Institute of Applied and Computational Mathematics, N. Plastira 100, 70013 Heraklion, Greece
[21] CEFE – University of Montpellier, CNRS, EPHE, IRD, University Paul-Valery Montpellier 3, Montpellier, France
[22] Department of Zoology, Faculty of Sciences - University of Granada, Campus Fuentenueva s/n, 18071, Granada, Spain
[23] Department of Biological, Geological and Environmental Sciences, University of Catania, Catania, Italy
[24] Ente Fauna Marina Mediterranea, Avola, Siracusa, Italy

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Abstract

This Collective Article presents information on 17 taxa belonging to five (5) Phyla and extending from the Alboran Sea to the Levantine Sea. These new records were found in six (6) different ecoregions as follows: **Alboran Sea**: Second and easternmost record of the sponge *Chalinula nigra* in the Mediterranean Sea; **Western Mediterranean**: first record of the rare gobid *Gobius couchi* for Spain, based on both morphological and molecular data; new records for the rare ascidian *Ciona edwardsi* from the Marine Protected Area of Tavolara, Sardinia; several records for four (4) different species of black coral, *Antipathella subpinnata*, *Antipathes dichotoma*, *Leiopathes glaberrima* and *Parantipathes larix* from the Aeolian Archipelago, all of which are currently threatened and/or protected at a Mediterranean level; the first documented records of the sea lamprey *Petromyzon marinus* in Calabria, which is considered "Critically Endangered" in Italy; first record in the Tyrrhenian Sea and second record in the **Ionian Sea** for the crab *Ocypode cursor*, which seems to be rapidly expanding its distribution range across Italian waters; **Adriatic Sea**: Additional records of yellowmouth barracuda, *Sphyraena viridensis*, in the northern Adriatic, which seems to be experimenting a meridionalization process in the region; **Aegean Sea**: First confirmed record of the iconic gastropod *Bursa scrobilator scrobilator* in the eastern Mediterranean Sea; an additional record for the vulnerable shark *Dalatias licha*, also being the largest individual caught in eastern Mediterranean waters till the time of capture; an additional record for the rare crab *Distolambrus maltzami*, sug-

gesting the species might be more morphologically variable than originally thought; first documented record for the myctophid *Hygophum hygomii* in both Turkish waters and the north Aegean Sea; additional records for the tuna *Katsuwonus pelamis* and the sunfish *Ranzania laevis* in the eastern Mediterranean, pointing out that both species might not be as rare in the area as previously thought; **Levantine Sea**: additional records for the rare stingray *Taeniura grabata* in Turkish waters.

Introduction

There is no doubt that the Mediterranean Sea might be amongst the most diverse and anthropogenically affected seas in the world (Coll *et al.*, 2010; 2012). While the Mediterranean Sea only represents less than 1% of the total surface of the oceans, estimates consider it might hold between 4 and 18 % of all macroscopic marine organisms (Bianchi & Morri, 2000), for which it is considered a hotspot of marine diversity (Cuttelod *et al.*, 2009). On the other hand, the Mediterranean Sea is also one of the most threatened seas of the world (Coll *et al.*, 2010), with human impacts such as development and urbanization of coastal areas, tourism, pollution, maritime traffic, climate change or the unsustainable exploitation of marine resources, amongst others, being a direct threat for marine species occurring on the area (Cuttelod *et al.*, 2009). Furthermore, data is lacking for most Mediterranean species to properly assess their populations and conservation status (Boudouresque, 2004). As such, properly characterizing these species is of paramount importance for monitoring biodiversity over time and providing decision makers with the necessary tools for enabling effective conservation measures (Gerovasileiou *et al.*, 2020). To this aim, The Collective Articles: Series B, titled "New records of rare species in the Mediterranean Sea" is an effort to support the publication of information on the first occurrence or expansion of species in the Mediterranean Sea, as well as sightings of rare, threatened or protected species which might be of relevance. Works submitted to the Collective Articles are peer-reviewed by at least one reviewer and the editor. The contributors are cited as co-authors in alphabetic order as well as at the beginning of each subchapter corresponding to their record(s). As customary for the series, new records are arranged from west to east, and classified within four main regions or subchapters: Western Mediterranean Sea, Central Mediterranean Sea, Adriatic Sea and Eastern Mediterranean Sea. Starting with this collective article and here on, species will not be ordered by country, but by ecoregions *sensu* Spalding *et al.* (2007). In this sense, ecoregions are defined as "strongly cohesive areas of relatively homogeneous species composition, large enough to encompass the ecological and life history processes of its sedentary species and clearly distinct from adjacent systems" and specifically aimed for marine management and conservation purposes (Spalding *et al*., 2007).

The approximate locations of each record are shown on a map (Fig. 1), with numbers cross-referenced with Table 1, where all other related information (Phylum, sub-chapter, ecoregion, approximate location and location number, as in the map) is summarized. In the present collective article, a total of 17 taxa belonging to five (5) Phyla are presented (Table 1). Amongst others, this article includes the first confirmed records of the gastropod *Bursa scrobilator scrobilator* in the eastern Mediterranean Sea, which is considered to be an iconic Mediterranean species. Similarly, the tuna *Katsuwonus pelamis*, which had only been previously recorded in the western Mediterranean, and just recently, from the Egyptian coast, has occasionally appeared as an accidental capture in swordfish gillnets in the coast of Turkey, while small

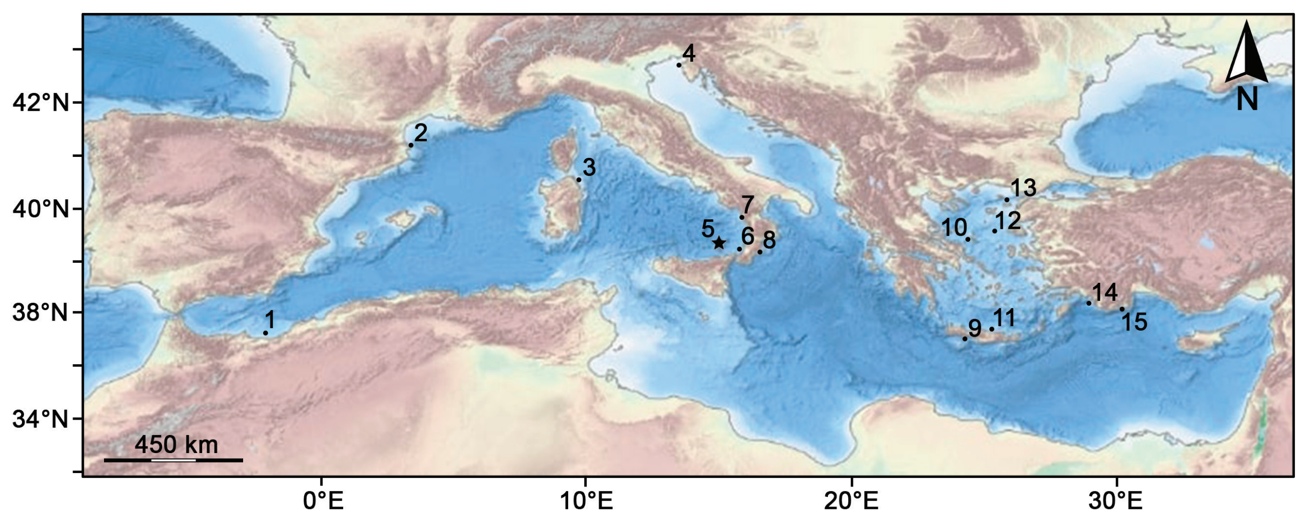

Fig. 1: Approximate locations of records of new species in the Mediterranean Sea presented in "New Mediterranean Biodiversity Records (March, 2021)". Location numbers correspond with those on Table 1. Stars represent multiple records for several species in the same area. The digital Terrain Model data products have been obtained and modified from the EMODnet Bathymetry portal http://www.emodnet-bathymetry.eu).

Table 1. Information about species records by phylum. Sub-chapters (SC), basin (WMED – Western Mediterranean Sea, CMED – Central Mediterranean Sea, ADRIA – Adriatic Sea, and EMED – Eastern Mediterranean Sea), location, Ecoregion *sensu* Spalding *et al.* (2007), and Location Number (LN) as in Figure 1. * Indicates multiple sightings in various close-by locations.

Taxon	SC	Basin	Location	Ecoregion	LN
Phylum Porifera					
Chalinula nigra Boury-Esnault & Lopes, 1985	1.1	WMED	Chafarinas Islands	Alboran Sea	1
Phylum Cnidaria					
Antipathella subpinnata (Ellis & Solander, 1786)	1.4	WMED	Aeolian Archipelago*	Western Mediterranean	5
Antipathes dichotoma Pallas, 1766	1.4	WMED	Aeolian Archipelago*	Western Mediterranean	5
Leiopathes glaberrima (Esper, 1792)	1.4	WMED	Aeolian Archipelago*	Western Mediterranean	5
Parantipathes larix (Esper, 1788)	1.4	WMED	Aeolian Archipelago*	Western Mediterranean	5
Phylum Artropoda					
Distolambrus maltzami (Miers, 1881)	3.4	EMED	Johnston Bank, northwest of Lesvos island	Aegean Sea	12
Ocypode cursor (Linnaeus, 1758)	1.5	WMED	Palmi, southwestern Calabria	Western Mediterranean	6
		CMED	North to Capo Rizzuto, eastern Calabria	Ionian Sea	8
Phylum Mollusca					
Bursa scrobilator scrobilator (Linnaeus, 1758)	3.1	EMED	Damnoni Bay, Crete	Aegean Sea	9
Phylum Chordata					
Subphylum Tunicata					
Ciona edwardsi Roule, 1884	1.3	WMED	Olbia, Sardinia	Western Mediterranean	3
Subphylum Vertebrata					
Dalatias licha (Bonnaterre, 1788)	3.2	EMED	Off Skyros Island	Aegean Sea	10
Gobius couchi Miller & El-Tawil, 1974	1.2	WMED	Cadaqués, Spanish Mediterranean coast	Western Mediterranean	2
Hygophum hygomii (Lütken, 1892)	3.5	EMED	Gökçeada Island	Aegean Sea	13
Katsuwonus pelamis (Linnaeus, 1758)	3.6	EMED	south of Cape Kurtoğlu, Fethiye region	Aegean Sea	14
Petromyzon marinus Linnaeus, 1758	1.6	WMED	Calabria	Western Mediterranean	7
Ranzania laevis (Pennant, 1776)	3.3	EMED	Kokkini Hani, Crete	Aegean Sea	11
Sphyraena viridensis Cuvier, 1829	2.1	ADRIA	Tar Cove, Mirna estuary	Adriatic Sea	4
Taeniura grabata (Geoffroy Saint-Hilaire, 1817)	3.7	EMED	Finike Bay	Levantine Sea	15

schools of the species have also been identified from the area since at least two years ago. Both cases represent a considerable expansion of the distribution range of the aforementioned species within the Mediterranean basin, and question whether or not certain species considered as 'rare' in the eastern Mediterranean have simply been overlooked until now. An additional proposed explanation might be that these records represent an ongoing expansion range for the species, which could be, to an extent, induced or facilitated by climate change-related phenomena. This appears to be an ongoing trend for several species here reported, with the crab *Ocypode cursor* rapidly expanding its distribution range across Italy, with new records at both sides of the Calabrian region, at the Tyrrhenian and Ionian Seas, additional sightings of the yellowmouth barracuda *Sphyraena viridensis* which, once a rare species in the Adriatic, it is now increasing in numbers an experiencing a northward spreading of its distribution in the region and, finally, the second and easternmost record of the sponge *Chalinula nigra* in the Mediterranean, which had only been previously recorded in the basin at the Strait of Gibraltar. This article also provides additional sightings of protected or threatened species, including the first occurrence in the Calabria region of the lamprey *Petromyzon marinus*, which is considered "Critically Endangered" in Italian waters, the presence of a female *Dalatias licha* from the Aegean Sea, which is considered as "Vulnerable" according to the IUCN Red

List and, finally, the occurrence of several endangered and/or protected black coral species in the Aeolian Archipelago, *Antipathella subpinnata*, *Antipathes dichotoma*, *Leiopathes glaberrima* and *Parantipathes larix*, highlighting the importance of conservation measures to be taken in the archipelago to protect its benthic diversity. Finally, this article reports on new localities for rare or unique species, including the first records of the gobid *Gobius couchi* for Spain, the first records for the tunicate *Ciona edwarsi* in Sardinia, from the Marine Protected Area of Tavolara, the occurrence of the sunfish *Ranzania laevis* from Crete, suggesting that the island might be an spawning site for the species, and additional records of the rare crab *Distolambrus maltzami* from a deep coralligenous bank of the Aegean Sea and the fish *Hygophum hygommi* and the stingray *Taeniura grabata* in Turkish waters, respectively.

Regarding the methodological aspects of the records, it is interesting to note that those come from various different origins, with four records having been recorded by SCUBA diving, five from fishers' by-catch, two from scientific dredging/trawls, one by *in situ* observation and, finally, one by using Remotely Operated Vehicles (ROVs). In this sense, it is worth noticing that while ROV were only used in one of the sections of the article, the authors were able to report sightings for four different species of black corals with *in situ*, imaging, highlighting the potential of ROV for the study of deep-sea fauna (Bo *et al*., 2020). Three records of fishes were based on specimens deposited in zoological collections under a reference code. Another noteworthy aspect of the contributions is that ten out of 16 records resulted from collaboration or contact between scientists and recreational divers or fishers, highlighting the importance that communication between the scientific community and other sea users might represent for accurately mapping the distribution of marine fauna as well as monitoring changes on their populations.

1. WESTERN MEDITERRANEAN SEA

1.1. Crossing the Pillars of Hercules: First records of *Chalinula nigra* Boury-Esnault & Lopes, 1985 (Haplosclerida, Porifera) in the western Alboran Sea

Andreu SANTÍN, Antonio DE LA LINDE RUBIO and Luis SÁNCHEZ-TOCINO

Haplosclerids might be considered as one of the most common sponge inhabitants of the sublittoral North Atlantic and Mediterranean sponge fauna (de Weerdt, 1986). Nevertheless, while they might be easily recognizable at family or even genus level underwater, the subtle differences in spicule and skeletal morphology between species makes species identification hazardous (de Weerdt, 1986). In 2019 an unidentified black haplosclerid was observed for the first time in the 'Isla del Rey', the westernmost island of the Chafarinas Islands (western Alboran Sea, in front of the Moroccan coast; 35.1791° N, 2.4205° W). The species was locally abundant at ca. 13 m depth, where it grew onto rubble and big boulders alongside with *Axinella* spp., *Chondrosia reniformis* Nardo, 1847, *Eunicella singularis* (Esper, 1791) *Leptogorgia* spp., and *Halocynthia papillosa* (Linnaeus, 1767), as well as numerous unidentified encrusting sponges and bryozoans (Fig. 2A and B). The next year, the sponge was reencountered in the area, having expanded its distribution to the northern wall next to its first sighting site, and a few individuals could be sampled and identified as *Chalinula nigra* Boury-Esnault & Lopes, 1985 (accession n°: MZB 2021-0471), which is here redescribed:

External appearance: Numerous branches spreading from a common base, up to 15 cm high, which later divide one or more times, usually with a bifid termination. Oscula are numerous and can easily be seen across the branches, usually on its upper face (Fig. 2B). The surface is somewhat conulose due to the primary fibres, which protrude 1-2 mm from it. No detachable ectosome present. The sponge is soft and elastic, with a characteristic black to dark brown colour when live, which turns greyish when in spirit.

Spicules: Exclusively thin oxea with straight to slightly bent shafts (Fig. 2C), very regular in size, and with somewhat acerate ends. Size range: 105.5 - *116.8* - 131.3 ± 7.4 x 1.8 - *2.3* - 3.3 ± 0.4 µm.

Skeletal arrangement: A more or less regular ladder-like network of spongin fibres intersecting at right angles (Fig. 2D). The fibres are filled with dense oxea tracts (Fig. 2E), ranging between 5 to 40 spicules. Primary and secondary fibres can only be told apart based on their position in the skeleton, with on overall diameter of 21.3 - *46.6* - 84.1 ± 16.2 µm. Most meshes between the fibres are somewhat rectangular and very variable in size, ranging 70 - *173.4* - 551 ± 55.7 x 58 - *119.9* - 550 ± 40.9 µm, yet most would fall between 120 - 220 µm. Finally, isolated spicules could be observed along the meshes.

Remarks: This note reports the third record for this ill-known species, which was previously just known from the Azores (Boury-Esnault & Lopes, 1985) and the Strait of Gibraltar (Carballo & García-Gómez, 1994). Compared to the original description, individuals from the Chafarinas appear to possess wider spongin fibres, doubling those of the Azores, while, on the contrary, its oxeas appear to be slightly shorter and thinner (Boury-Esnault & Lopes, 1985). Individuals from the Strait of Gibraltar would fall between both, with oxeas in range with Azorean samples, but with slightly wider fibres (Carballo & García-Gómez, 1994). Yet, *Chalinula* species have

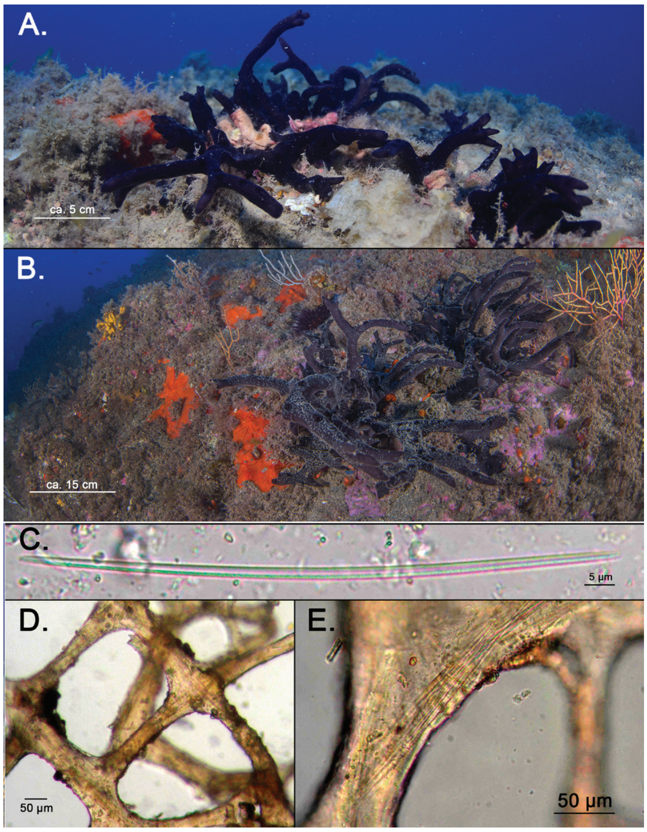

Fig. 2: A and B) Individuals of *Chalinula nigra* growing onto rocky coralligenous substrates in el 'Tajo del Pirata', partially covered by an algal turf. Scale bars are approximate. C) Detail of the oxeas as seen on an optical microscope; scale 5 µm. D) Spongin fibers in a ladder-like reticulation, with primary and secondary fibers undistinguishable; scale 50 µm. E) Detail of the spongin fibers, where several oxea can be seen forming the tracts of the skeleton; scale 50 µm.

been shown to possess a considerable amount of intraspecific spicular and fibre size variation (Van Soest, 1976; de Weerdt, 1986), and the observed differences might reflect different environmental conditions along its area of distribution. Finally, this report represents the first record for the western Alboran Sea and might suggest the species has recently crossed the Strait of Gibraltar (36.13° N, 5.35° W), which was previously known as its distribution limit (Carballo *et al.*, 1997).

1.2. First records of *Gobius couchi* Miller & El-Tawil, 1974 from Spain

Julien P. RENOULT, Laure BENOIT and Thomas MENUT

Couch's goby, *Gobius couchi*, Miller & El-Tawil, 1974 is an uncommon benthic species occurring in the North-Eastern Atlantic, in the Mediterranean and Black Sea, where it was recently recorded in Crimea (Karpova & Boltachev, 2018). It inhabits relatively shallow waters, at 1-20 m depth, usually on sedimentary bottoms, with algae or seagrasses, and on hard bottoms.

On 19th July 2013, a specimen of *G. couchi* was photographed during a night dive at Cadaqués, on the Spanish Mediterranean coast (Fig. 3) (42.2847° N, 3.2871° E), at a depth of 2 m, at the interface between sand and *Posidonia oceanica* meadows.

To confirm the identity of the species, two specimens were collected from the same area on 28th August 2020. All morphological and colour characters matched those of the species (Karpova & Boltachev, 2018). The two female specimens were stored at the Natural History Museum Rijeka with code PMR VP4929 (40.8 + 9.0 mm;

Fig. 3: A) Individual photographed in 2013 in Cadaqués, representing the first record of Gobius couchi for Spain; B) Specimen PMR VP4929 collected in 2020.

D1: VI, D2: I/14, A: I/12; left side: scale in lateral series: 41, P: 16), and at the Center for Functional and Evolutionary Ecology in Montpellier with code JR290820-02 (39.5 + 8.8 mm; D1: VI , D2: I/13, A: I/12; left side: scale in lateral series: 39, P: 15). Both individuals present the following characters: pre-dorsal area with scales, all three head canals present, pore *α* just posterior to the orbit, suborbital papillae without longitudinal row *a*, pelvic fin rounded.

We also sequenced a 652 base pairs of the cytochrome oxidase subunit 1 (COI) mitochondrial gene for individual PMR VP4929 (Genbank accession n°: MW459354; BOLD record n°: JR290820-01). DNA purifications were performed using the 96-Well Plate Animal Genomic DNA Miniprep Kit (Biobasic, Canada) from a piece of muscle removed prior specimen fixation in formaldehyde 4% and stored in 96° ethanol. We performed PCR amplification using the primer cocktail C_FishF1t1-C_FishR1t1 and the same protocol as in Ivanova *et al.* (2007). A BLAST of the sequence against the NCBI nucleotide library returned a single match above 90% identity: Genbank accession n°KY176488 (98.91% identity; 98% cover). This accession number corresponds to an individual from Turkey erroneously labelled as *G. fallax*: in their phylogenetic analysis of the genus *Gobius*, Iglésias *et al.* (2021) found that KY176488 branches within clade with maximal bootstrap support that includes five other gobies, all identified as *G. couchi* by the authors. Thus, DNA barcoding identifies PMR VP4929 as *G. couchi*.

The present finding represents the first record of *G. couchi* from Spanish waters (Báez *et al.*, 2019), and underlines the importance of underwater photography for the detection of uncommon small benthic and cryptobenthic fish (Tiralongo *et al.*, 2020a).

1.3. Records of the yellow-sulphur ascidian *Ciona edwardsi* (Roule, 1884) along Sardinian coasts (Tyrrhenian Sea, Italy)

Federica MONTESANTO and Francesco MASTROTOTARO

Ciona edwardsi in first found and described along the Mediterranean coasts of France as *Pleurociona edwardsi* by Roule (1884). Afterwards, this species has been considered as junior synonym of *C. intestinalis* Linnaeus, 1767 until further specimens were reported and described along the coasts of Banyuls-sur-mèr (France, Mediterra-

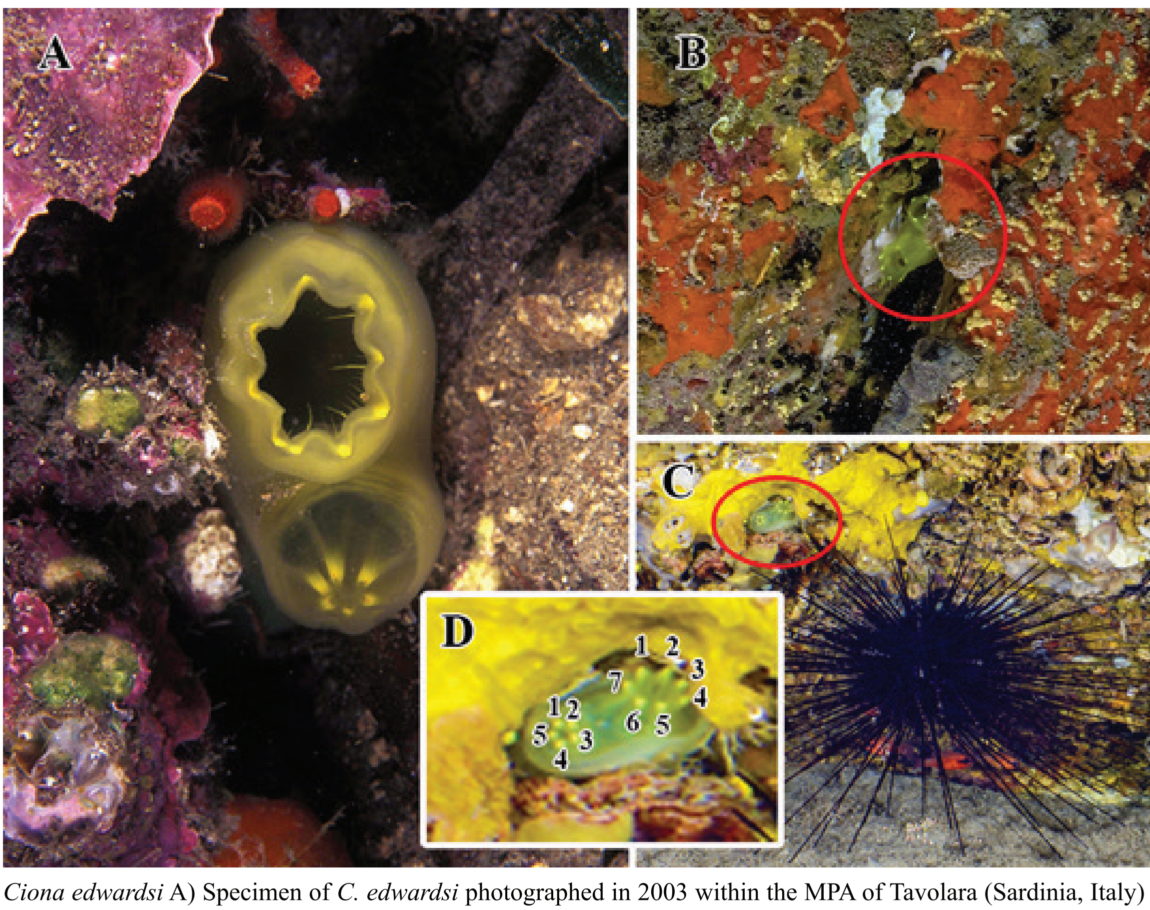

Fig. 4: *Ciona edwardsi* A) Specimen of *C. edwardsi* photographed in 2003 within the MPA of Tavolara (Sardinia, Italy) at depth of about 30 m, simple oral tentacles and yellow colouration and accumulation of pigments lying between each lobe are visible. B and C) Two specimens of *C. edwardsi* photographed in a cave within the MPA of Tavolara (both encircled in red) in November 2020. D) Magnification of a specimen of *C. edwardsi* showing the oral siphon with 7 lobes and the atrial one with 5 lobes. Photo credit: Egidio Trainito.

nean Sea) by Copello *et al.* (1981). Furthermore, genetic data and experimental crosses clearly showed a complete reproductive isolation between *C. edwardsi* and the co-generic species *C. intestinalis* (Linnaeus, 1767), *C. roulei* Lahille 1887*,* and *C. robusta* Hoshino & Tokioka, 1967, confirming *C. edwardsi* as a valid species (Mastrototaro *et al.*, 2020b and references therein).

This rare species of the Mediterranean Sea has been found so far only along rocky infra- and circalittoral French coasts, where it was firstly described, along coasts of Northeast Spain, in Medes (Lafargue *et al.*, 1986) and Balearic Islands (Ramos *et al.*, 1991), and along the Italian coasts in the Gulf of Naples, Sicily (Copello *et al.*, 1981; Mastrototaro & Relini, 2011 and references therein), and more recently in the Ligurian Sea (Mastrototaro & Relini, 2011). Despite the fact that it is particularly difficult to recognize ascidian species only through photo-identification, *C. edwardsi* is very peculiar since it is characterized by a very evident bright sulphur-yellow coloration and a cylindrical body without any epibionts (Copello *et al.*, 1981). This species has six longitudinal muscle bands and lobed siphons, the oral one has usually 8-10 lobes, while the atrial one 6-8, with an accumulation of yellow pigments at the base of each lobe (Mastrototaro *et al.*, 2020b). *Ciona edwardsi* is a sciaphilous species that lives in shady sites such as small crevices of the rocks or in caves in mesophotic or moderately deep waters (Copello *et al.*, 1981; Mastrototaro & Relini, 2011). It has never been reported from shallow sites, neither in harbours nor in lagoons. We report further records of *C. edwardsi* along the Mediterranean coasts, from the Marine Protected Area of Tavolara (Italy, Olbia, Tyrrhenian Sea) (40.881° N, 9.698° E). Specimens of the species were found and photographed in 2003 (Fig. 4A) and more recently in November 2020 in the crevices of a small cavity of the rocks at about 30 and 47 m depth, respectively (Fig. 4B-C). The specimens photographed showed the typical bright yellow colour of the tunic, simple oral tentacles (Fig. 4A) and no epibionts (Fig. 4A-D). The smaller specimen showed less lobes, 7 at oral siphon and 5 at atrial one (Fig. 4D). The biodiversity of the small caves was mainly characterized by the presence of *sciaphilous* species such as encrusting sponges, calcareous algae, cnidarians, and the echinoderm *Centrostephanus longispinus* (Philippi, 1845) (Fig. 4B-C). The peculiar coloration and the habitat predilection of this species allowed its identification along Sardinian coasts, increasing the knowledge of its distribution in the Mediterranean Sea.

1.4. Antipatharians of the Aeolian Archipelago (Southern Tyrrhenian Sea)

Giovanni CHIMIENTI and Ricardo AGUILAR

The volcanic archipelago of the Aeolian Islands is characterized by a complex marine topography, including active volcanoes, seamounts, channels and canyons. It hosts a suite of important habitats for the benthic fauna, from shallow to deep waters, resulting in a hotspot of biodiversity (Esposito *et al*., 2018; Mastrototaro *et al*., 2020a). A series of ROV dives were carried out during 2018 aboard the Ketch Catamaran *Ranger* by Oceana to explore the archipelago's mesophotic and bathyal seabed. The four most common Mediterranean species of black corals (Anthozoa, Antipatharia) are here reported.

Antipathella subpinnata (Ellis & Solander, 1786) was observed North of Lipari Island. A forest of this species was settled on rocks encrusted by coralline algae from 83 to 130 m depth (Fig. 5A, Table 2). Few small colonies were also observed on bathyal rocks at 612 m depth, representing the deepest record known for this species (Chimienti *et al*., 2020). *A. subpinnata* was previously known to be present at Stromboli Island, with few isolated colonies at 52-58 m depth (Bo *et al*., 2008).

Three large colonies of *Leiopathes glaberrima* (Esper, 1788) were found at 187-345 m depth off Stromboli, Filicudi and Panarea Islands, settled on large rocky outcrops, on small hard bottoms interspersed with mud and on vertical rocky walls, respectively (Fig. 5C-D, Table 2). *Parantipathes larix* (Esper, 1788) and *Antipathes dichotoma* (Pallas, 1766) as well were observed on these three types of substrate. In particular, isolated colonies of *P. larix* were observed on the rocky bottom from Lipari and Salina to Stromboli Islands, between 129 and 349 m depth, while *A. dichotoma* was quite widespread all around the archipelago, from 129 to 697 m depth (Fig. 5B, Table 2).

Antipatharians are considered important habitat formers of the Mediterranean mesophotic and aphotic zones, worthy of conservation measures (Bo *et al*., 2008; Chimienti *et al*., 2020). The four species here reported are included in the list of endangered or threatened species (Annex II) of the Barcelona Convention. Three of them are also listed as "Near Threatened" in the Red List by the International Union for Conservation of Nature (Otero *et al*., 2017), while *L. glaberrima* is reported as "Endangered". The new occurrences of black corals further underline the importance of adopting conservation measures for the Aeolian Archipelago.

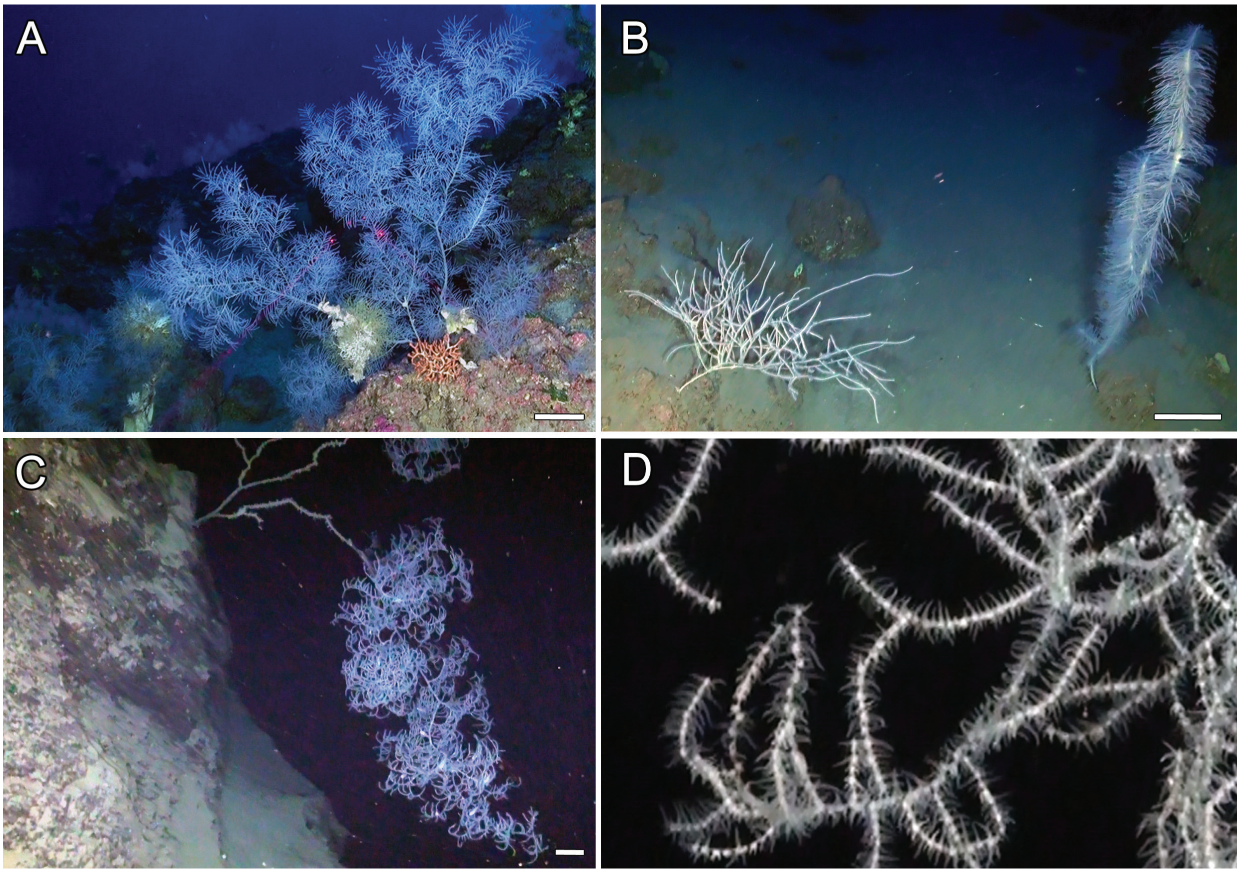

Fig. 5: A) *Antipathella subpinnata* on rocks encrusted by coralline algae; B) *Antipathes dichotoma* (left) and *Parantipathes larix* (right) on small rocks interspersed with sandy mud; C) *Leiopathes glaberrima* on a vertical rocky wall; D) Detail of the polyps of *L. glaberrima*. Scale bars: 10 cm.

Table 2. Records of black corals from the Aeolian Archipelago, with indication of the area, geographic coordinates, depth range and type of substrate.

Species	Area	Lat. N	Lon. E	Depth (m)	Substrate
Antipathella subpinnata	NE Lipari	38.54490	14.93775	83-130	Encrusted rocks
	NE Lipari	38.53705	14.96945	612	Rocks on mud
Antipathes dichotoma	NW Filicudi	38.56910	14.50619	647	Rocks on mud
	NE Lipari	38.54466	14.93905	129-218	Encrusted rocks
	SW Lipari	38.46478	14.87002	207-298	Rocky bottom
	SE Panarea	38.63568	15.13545	351	Vertical rocky wall
	NE Stromboli	38.83085	15.24322	217-697	Rocky bottom
Leiopathes glaberrima	NW Filicudi	38.57048	14.53052	187	Encrusted rocks
	SE Panarea	38.63584	15.13524	345	Vertical rocky wall
	NE Stromboli	38.81533	15.26890	275	Rocks on mud
Parantipathes larix	N Salina	38.63223	14.90297	157	Rocks on mud
	NE Lipari	38.54483	14.93830	129-158	Encrusted rocks
	SE Panarea	38.63580	15.13530	349	Vertical rocky wall
	NE Stromboli	38.82799	15.24491	202	Rocky bottom

1.5. *Ocypode cursor* (Linnaeus, 1758) expands its range along the Mediterranean coasts: first record from the Tyrrhenian Sea and a new record from the Ionian Sea

Francesco TIRALONGO and Emanuele MANCINI

Crabs of the family Ocypodidae Rafinesque, 1815 are semi-terrestrial species, common on sandy beaches and on mudflats of tropical, subtropical and temperate waters worldwide. These crabs are characterized by a narrow front, long eyestalks and smooth (or ridged) dactyls in walking legs. In the Mediterranean Sea, *Ocypode cursor* (Linnaeus, 1758) is the only member of the Ocypodidae family (Strachan *et al*., 1999). Furthermore, it represents a protected taxon (Deidun *et al*., 2017). In Sicily mainland, the species was recorded for the first time in 2009 at Sampieri, subsequently expanding its range along the entire south coast and in the southeastern one (Relini, 2009; Mytilineou *et al*., 2016; Deidun *et al*., 2017; Tiralongo *et al*., 2020c). We present the first records of the species for Calabria, with the first record from the Tyrrhenian Sea (northwesternmost record in the Mediterranean Sea) and a new record from the Ionian Sea. On 24th July 2020, an adult specimen of *O. cursor* was observed at Palmi (Southwestern Calabria, Tyrrhenian Sea, 38.39467° N, 15.86195° E) (Fig. 6A). On 26th July 2020, several specimens (juveniles and adults) and burrows of *O. cursor* were observed at the beach of Pizzo Greco, north to Capo Rizzuto (eastern Calabria, Ionian Sea, 38.92192° N, 17.12420° E) (Fig. 6B-C). The present records increase the knowledge on the distribution of the species in Italy and in the Mediterranean Sea. After the 2016, the species undergone a rapid expansion of its range along Italian coasts, where in a few years it was recorded in several locations of the southern and southeastern coast of Sicily and in Apulia (Tiralongo *et al*., 2020c). Moreover, while along the Ionian coast of Calabria the species was observed on sand with a similar granulometry to that observed in Sicily and Apulia, in the Tyrrhenian Sea the species was observed on coarser sand. These observations suggest that *O. cursor* is able to adapt to a habitat with suboptimal conditions were digging holes can be harder than on thinner sand. Further studies are necessary in order to better understand the expanding dynamics of this semi-terrestrial species in the Mediterranean Sea. However, considering its colonization success, it is probable that in a few years this species will expands in several new Mediterranean areas.

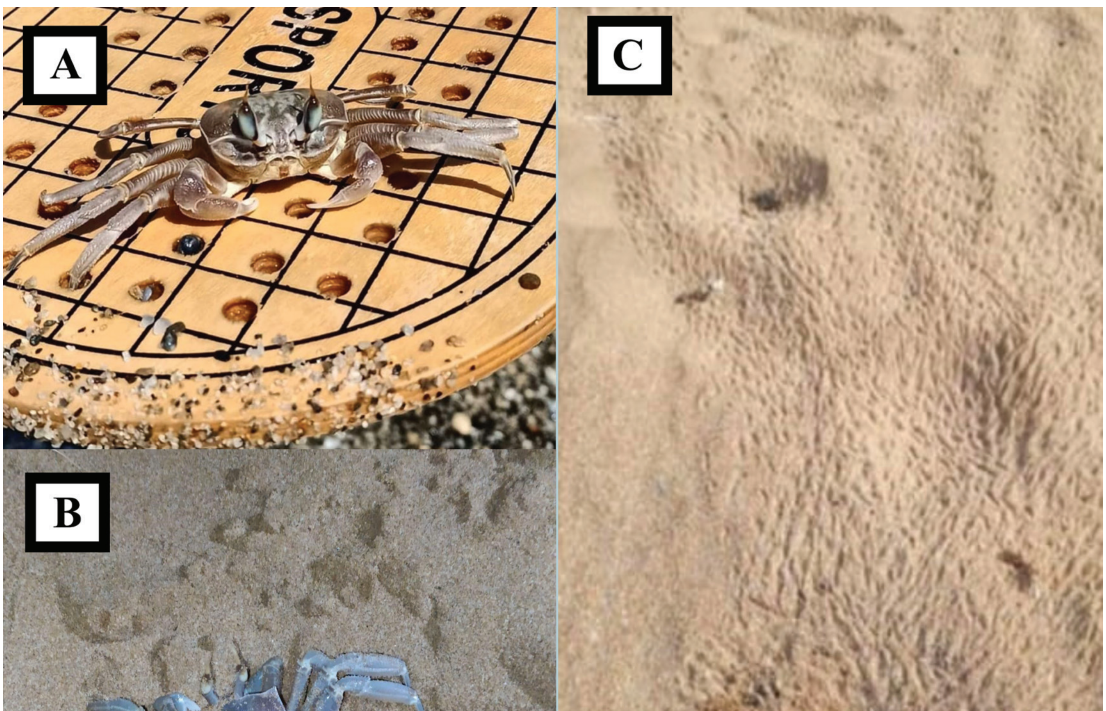

Fig. 6: A) The specimen of *Ocypode cursor* observed at Palmi, southern Tyrrhenian Sea. A specimen (B) and holes (C) of *O. cursor* observed at Pizzo Greco, northern Ionian Sea.

1.6. First documented record of *Petromyzon marinus* Linnaeus, 1758 in Calabria (Central Mediterranean, Southern Italy)

Gianni GIGLIO and Emilio SPERONE

The sea lamprey *Petromyzon marinus* Linnaeus 1758 belongs to the Order Petromyzontiformes. Usually, sea lampreys are anadromous, migrating to the sea during their parasitic phase. Their life cycle contains microphagic filter-feeding larvae (ammocoete) in a freshwater habitat. After four to six years, the ammocoetes suffer a radical metamorphosis into post-metamorphic juvenile, which migrate downstream to the sea (Silva *et al*., 2013). In Italy the species is considered “Critically Endangered” according to Italian Red Book of endangered species (Rondinini *et al*., 2013): the reduction of suitable habitat because of the construction of impassable dams represents the major threat to the survival of the sea lampreys in Italian river basins.

Regarding presence of the species in the Mediterranean, the sea lamprey occurs along the coast of France, Corsica, Sicily, Malta, Morocco, Algeria, Tunisia, and Italy; it has been also reported for the Adriatic, while only few records are known from the Eastern Mediterranean (Thessalou-Legaki *et al*., 2012).

In June 2020, an adult female *Petromyzon marinus* [756 mm total length (TL)] was caught by spinning from the shore by an artisanal fisherman close to the mouth of the Lao river in the South Tyrrhenian Sea (39.7713° N, 15.7952° E; Calabria, Southern Italy). Immediately after capture, the animal was photographed and released still alive into the sea (Fig. 7).

Fig. 7: *Petromyzon marinus* from Calabria, Southern Italy.

This capture represents the first report for the species in Calabrian waters and, given the proximity to the mouth of the Lao river, it could be hypothesized that this basin could be used for reproduction. The Lao river has already proved to be a highly natural site, hosting other species of lamprey (Sperone *et al*., 2019), but also other species of high conservation interest (Talarico *et al*., 2004; Bonacci *et al*., 2008).

2. ADRIATIC SEA

2.1. On the record of the yellowmouth barracuda, *Sphyraena viridensis* (Pisces: Sphyraenidae) in the Northern Adriatic Sea

Jakov DULČIĆ and Branko DRAGIČEVIĆ

The yellowmouth barracuda, *Sphyraena viridensis* Cuvier, 1829 is distributed in the Eastern Central Atlantic including Azores Islands and the Mediterranean Sea. Its historical presence and exact distribution in the Mediterranean is poorly known mostly due to confusion with a similar species, *Sphyraena sphyraena* (Linnaeus, 1758) (Relini & Orsi-Relini, 1997). First record of yellowmouth barracuda in the Adriatic Sea was in 1997, when a specimen was caught in the vicinity of Rijeka (Dulčić & Dragičević, 2011). In recent years it experienced an expansion in the Adriatic Sea (Sbragaglia *et al.*, 2020) and is now considered a common species in the southern and middle Adriatic, however records from the northern Adriatic are scarce.

On 25th January 2020, a fishing operation for scientific purposes took place in an embayment of North Adriatic (Tar Cove, Mirna estuary, 45.3124°N, 13.6091°E). This fishing operation was performed by enclosing the whole bay area of the estuary and gradually narrowing the space by pulling the nets toward the shallow part in the bottom of the bay where the fish was afterwards collected using both beach and purse seines. Only a sample of the catch was retained for the study, while the rest of the fish was released. The temperature at 1.5 m depth was 12.5°C. This fishing method was traditionally used for catching mullet species, but in recent years more thermophilic species started to appear in the catch, especially the bluefish, *Pomatomus saltatrix* (Linnaeus, 1766) (Dulčić *et al.*, 2019).

In this particular catch, among other captured species, a surprising catch of 53 individuals of the yellowmouth barracuda *S. viridensis* was recorded (Fig. 8). Total lengths of specimens were in the range 37.2 - 48.1 cm (43.6 ± 2.25) while total weights in the range 184-391 g

Fig. 8: Specimens of *Sphyraena viridensis* caught in Tarska Cove in Northern Adriatic on 25th January 2020. Photo credit: Antonio Baras.

Fig. 9: Specimens of *S. viridensis* (numbers 1 and 2) and *S. sphyraena* caught in Tarska Cove.

(281.4 ± 46.8). The identification of *S. viridensis* was ascertained by checking preopercle scale pattern where the absence of scales on its front and rear edge indicated *S. viridensis*, while completely scaled preopercle indicated *S. sphyraena* (Relini & Orsi-Relini, 1997) which was also present in the catch. These species also differed in flank coloration, namely *S. viridensis* specimens had darker dorsal part of the body and featured dark vertical bars. Conversely, *S. sphyraena* specimens had paler, yellowish dorsal part without visible vertical bars (Fig. 9). The observed occurrence of *S. viridensis* is probably a consequence of northward spreading of thermophilic taxa, a process known as "meridionalization". Similar process was already observed for *S. viridensis* for the north-western Mediterranean (Merciai *et al.*, 2020).

3. EASTERN MEDITERRANEAN SEA

3.1. *Bursa scrobilator scrobilator* (Linnaeus, 1758) (Mollusca: Gastropoda: Littorinimorpha) in the eastern Mediterranean Sea

Dimitris POURSANIDIS and Fabio CROCETTA

The tonnoidean gastropod *Bursa scrobilator scrobilator* (Linnaeus, 1758) is a species of the family Bursidae Thiele, 1925 with a large shell (up to ~10 cm in length) and living in a relatively easy-to-access bathymetric range (usually not deeper than ~20 m) (Beu, 2010; Smriglio *et al.*, 2019; Crocetta *et al.,* 2020). It is widespread in the Eastern Atlantic Ocean, from where wide populations have been reported from Cape Verde, Azores and Canary Islands, and is rare in the Mediterranean Sea, from where it was usually recorded as single specimens or empty shells (Smriglio *et al.*, 2019; Crocetta *et al.*, 2020). This led Mediterranean malacologists and shell collectors to

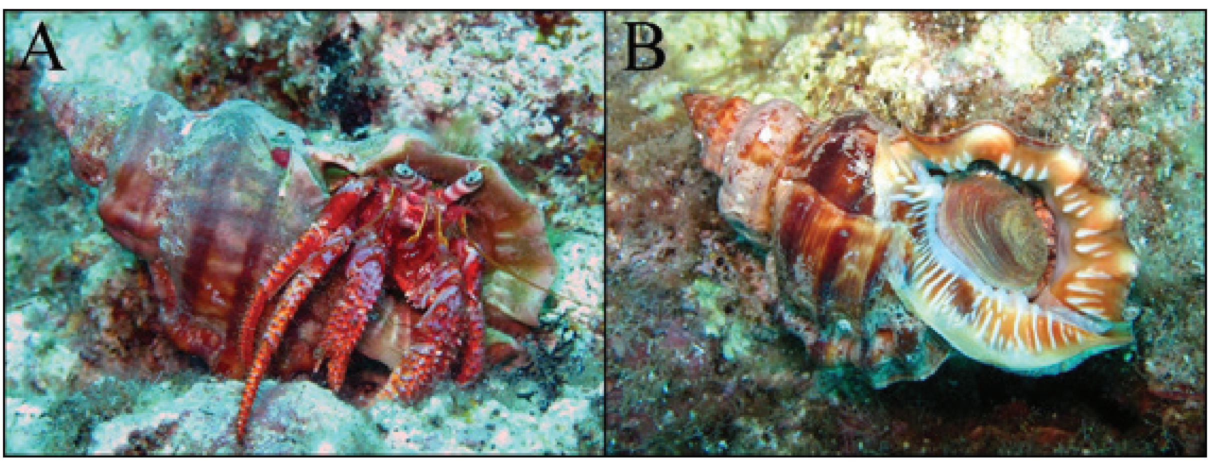

Fig. 10: *Bursa scrobilator scrobilator* from South Rethymno, Crete (shell height ~5-7 cm). A) Crabbed shell. B) Living specimen. Photo credit: Stelios Mantadakis.

consider it as an iconic species since centuries, whose findings often deserved species-specific communications (list of records in Beu, 2010). Moreover, with the sole exception of few scattered records from the central Mediterranean and the Adriatic Sea, *B. scrobilator scrobilator* is mostly known from the western parts of the basin, being considered as absent in the easternmost part of the Mediterranean Sea. In fact, it was only listed from Greece (Koukouras, 2010: implemented in MolluscaBase) on the basis of a reference dating back more than a century ago (Carus, 1893: see http://greek-biodiversity.web.auth.gr/en/node/1003961/extra/75). However, Koukouras (2010) included it from Greece based on the fact that the species was reported from adjacent countries/marine regions (a rationale used in the above-mentioned checklist), but no Greek localities were truly included by Carus (1893).

During 2014-2019, multiple (few less than 20) observations of *B. scrobilator scrobilator* were done by a local amateur diver (Stelios Mantadakis) in Greece (Damnoni bay, South Rethymno, Crete: 35.1662° N, 24.4202° E), and in particular in a rocky area at ~10 m depth, close to a cavern (Fig. 10). However, as no specimens were ever sampled by him, some of these observations may be based on the same individual/s, and thus we have no precise data on population sizes.

No certainties also occur on whether the species was overlooked in the eastern Mediterranean until now due to its rarity, or it has only recently expanded its distribution. Crocetta *et al.* (2020) reported an increase in the number of records from western Mediterranean sites in the last few years presumably due to an increase in temperatures and more generally to climate change, and the present sightings may lend support to this statement. Whatever is true, the present record first documents the presence of this species in Greece and generally in the easternmost Mediterranean Sea, thus considerably extending the known distribution range of the species.

3.2. Occurrence of a large female kifetin shark *Dalatias licha* (Bonnaterre, 1788) in the North Aegean Sea

Vasiliki KOUSTENI

The kifetin shark *Dalatias licha* (Bonnaterre, 1788) is a moderate-sized shark, globally distributed across warm, tropical and temperate oceans of the outer continental and insular shelves and slopes from 37 to at least 1800 m of depth (Compagno, 1984). This squalid shark is a generalist predator that feeds on a variety of marine organisms, including also smaller sharks, a diet representing the bottom and midwater habitats where it occurs, and reproduces through aplacental viviparity with litters reaching up to 16 young (Compagno, 1984). In the Mediterranean Sea, the species has been mostly reported in the western basin with some biological notes (e.g. Capapé *et al*., 2008), while sporadic records come from the eastern marine waters (Navaro *et al*., 2014; Papaconstantinou, 2014). Overall, there is significant lack of knowledge regarding its biological features and based on the IUCN Red List of Threatened Species, the kitefin shark is considered as vulnerable in the Mediterranean Sea (Finucci *et al*., 2018). Thus, special attention should be given in any historical or future records of this vulnerable species.

On 12th November of 2008, a large female of kifetin shark was caught incidentally by a commercial bottom trawler in the North Aegean Sea at 450 m of depth (Fig. 11). The trawl route included the following geographical positions: 38.851° N - 24.408° E, 38.790° N - 24.403° E, 38.754° N - 24.621° E and 38.838° N - 24.649° E. The specimen weighed 7125 g and reached 1024 mm in total length. Based on the available scientific literature, this is the largest specimen recorded till that time in the eastern Mediterranean Sea. The main diagnostic features of the species were recognized and included short-and blunt-snout, two almost equal-sized spineless dorsal fins, no anal fin, papillose thick lips, small slender-cusped upper teeth and very large lower teeth with erect triangular serrated cusps and distal blades, first dorsal fin originating behind the pectoral rear tips with its base is closer to the pectoral base than the pelvics, caudal fin with the ventral lobe not expanded, and tail with a well-developed upper half with a large terminal lobe (Compagno, 1984). The female specimen caught in the North Aegean Sea was dissected at the landing site and found to have mature gonads and enlarged uteri with no embryos, mirroring probably a recent litter. Adult female kifetin sharks are rarely recorded in the Mediterranean Sea. One of these records is reported off Algeria by Capapé *et al*. (2008) and refers to one pregnant female specimen reaching 1170 mm in total length and carrying six developing embryos in both uteri.

Fig. 11: Female individual of *Dalatias licha* caught incidentally in the North Aegean Sea. Photo credit: Vasiliki Kousteni.

3.3. First verified occurrence of the slender sunfish *Ranzania laevis* (Pennant, 1776) in Crete

Sotiris KIPARISSIS and Panagiota PERISTERAKI

Molidae is a family of epipelagic cosmopolitan oceanic fishes with unique morphology. They feed on jellyfishes, small crustaceans and small fish. The family includes three genera (*Mola*, *Mastura* and *Ranzania*), two of which are found in the Mediterranean with one species each (*Mola mola* (Linnaeus, 1758) and *Ranzania laevis* (Pennant, 1776)). Both are typical off-shore species rarely encountered, particularly *R. laevis* which is generally regarded as a solitary species, but occasionally encountered in large aggregations (e.g., Smith *et al.*, 2010). Due to its rarity, there is a substantial paucity of information regarding its biology and ecology, thus, any scientific information, as well as the preservation of specimens, is very important.

Fig. 12: The *Ranzania laevis* specimen found stranded on the Kokkini Hani beach in Crete (TL = 63 cm).

On 3/11/2016, a specimen of *R. laevis* (Fig. 12) was found stranded in Kokkini Hani, Heraklion, Crete (35.334° N, 25.273° E). The fish was delivered to the laboratory of the Institute of Marine Biological Resources and Inland Waters (IMBRIW-HCMR) in Crete, where it was identified, measured and dissected. To our knowledge, this is the first verified record in Crete. The species identification was in accord with the description of Matsuura (2016). The specimen's total length was 63 cm and weighed 8.520 kg. Fin examination showed no spines. The ray counts were: D 18, A 19 and P 13. Macroscopic gonad examination showed that it was a mature male near spawning. The gonads extended to about half of the visceral cavity length and weighed 220.9 g. The stomach content examination showed only digested material and an amorphous green substance. After examined, the voucher was deposited in the Natural History Museum of Crete (NHMC), accredited with the collection number: NHMC80.1.102.1.

Curiously, of the 44 recorded encounters of *R. laevis* in the Mediterranean, except one from Calabria (Zenetos *et al.*, 2015), all come from the eastern part despite the 140 years of verified presence of this species in the basin. Furthermore, the main bulk of these encounters (36), come from the Adriatic, while the rest are sparsely distributed with no spatial or temporal pattern. The present record adds further information on the distribution of *R. laevis* in the Mediterranean, supporting the assumption that the species expands all over the eastern part of the basin. The late maturity stage of the gonads of our specimen indicates that the species possibly spawns in the vicinity of Crete. The only similar evidence so far comes from Adriatic (Jardas & Knežević, 1983), where the authors suggested that the species spawns during the winter months.

3.4. Record of the rare *Distolambrus maltzami* (Miers, 1881) (Decapoda: Brachyura: Parthenopidae) from the Aegean Sea

Onur GÖNÜLAL

The systematic of the family Parthenopidae is complex and has received attention in recent years. The parthenopid crab, *Heterocrypta maltzami* Miers, 1881 has been relocated by Tan & Ng (2007) in the new genus, *Distolambrus*, which is distinct from *Heterocrypta* due to the presence of a V-shaped ridge on the gastric region (vs U-shape); the branchial ridge not being continuous with the gastric ridge (vs continuous); third maxilliped merus subtriangular (vs subquadrate); and the posterior margin not produced beyond the base of the abdomen (vs produced).

Although *D. maltzami* is seen as a rare species because it is usually found as a single individual among benthic samples, it is widespread from the East Atlantic to throughout the Mediterranean Sea, the Aegean Sea included (Manning & Holthuis, 1981; Voultsiadou *et al*., 2011).

In November 2018, one male specimen of *D. maltzami* was caught on the Johnston Bank about 30 miles northwest of Lesvos island (39.28902° N, 25.37603° E). Sampling was conducted by dredging on the bank at 41 m depth surrounded by depths of 200-500 m. The main habitat of the Johnston Bank was coralligenous.

Our specimen measured 4.2 mm in carapace length and 4.09 mm in carapace width, and weighed 0.29 g (Fig. 13). Description in accordance to Tan & Ng (2007): carapace pentagonal, almost equal width and length, with postero-lateral wing-shaped expansions; lateral margins expanded, partially covering the ambulatory legs; not pro-

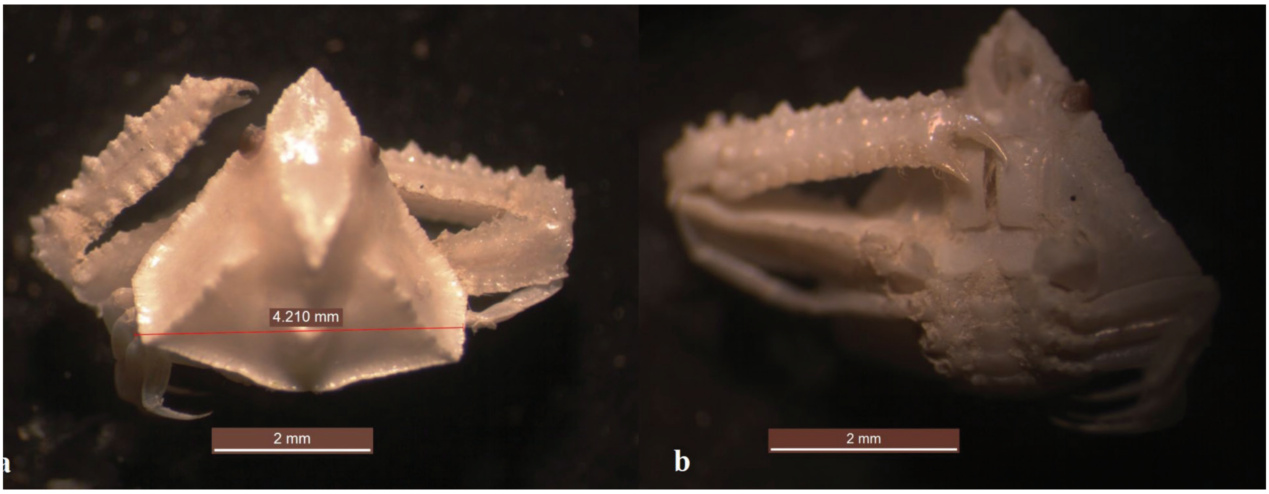

Fig. 13: *Distolambrus maltzami* (Miers, 1881), male, North Aegean Sea, units shown in mm. a) dorsal side of the carapace; b) ventral side of the carapace.

duced beyond the abdomen base. Proto, meso and metagastric regions fused, with a strong V-shaped ridge in the gastric region and two oblique ones in the branchial regions. The lateral margins of the carapace are denticulate. Hepatic region flat, sloping posteriorly. The epibranchial region with a strong diagonal ridge. Cheliped margins dentate, teeth short, broadly circular, edges denticulate; merus upper surface smooth. In our sample, the carapace was not broader than long as generally described (Garcia & Gracia, 1996; Tan & Ng 2007; Massi *et al*., 2010), therefore eventual morphological variability within the population or during growth are to be considered.

3.5. Documentation of a juvenile specimen of *Hygophum hygomii* (Myctophidae) in the North Aegean Sea

Cem DALYAN and Nur Bikem KESICI

The genus *Hygophum* is represented by two species in the Mediterranean Sea: *H. benoiti* (Cocco, 1838) and *H. hygomii* (Lütken, 1892) (Quignard & Tomasini, 2000). *Hygophum hygomii* has a circum-global distribution and it is found in almost all seas between 20° N and 50° S parallels (Froese & Pauly, 2020), living at a depth range of 0-1485 m. The species is well known in most Mediterranean regions, but not in the Aegean Sea. The presence of the species has been recorded only in the South Aegean while only larval records are reported from the North Aegean Sea (Papaconstantinou, 2014; Çoker & Akyol, 2018).

One specimen of *H. hygomii* (Fig. 14) was collected on 20 January 2016, north of Gökçeada Island (40.2852° N, 25.7652° E), at a depth of 640 m during a ring net survey. The individual is stored in the Istanbul University, Science Faculty, Hydrobiology Museum, Istanbul (IUSHM 2018-1386).

The species is distinguished from its congeneric *H. benoiti* by the position of photophores (Hulley, 1984); SAO_1 located in front or below of VO_2 in *H. hygomii* while in *H. benoiti* it is located behind the VO_2. Besides, Prc_2 is present on or by the side of the lateral line in *H. hygomii* whereas it is situated in the midway of the lateral line and ventral contour in *H. benoiti*. Both above-mentioned characters indicate that the juvenile specimen belongs to the *H. hygomii*. The meristic and morphometric characters of our specimen are as follows: dorsal fin rays 14; anal fin rays 22; pectoral fin rays 17. Total length 21 mm; standard length 17.2 mm; body depth 4.4 times, head length 2.6 times, dorsal fin base length 5.8 times and anal fin base length 3.8 times in standard length; eye diameter 3 times and snout length 8.5 times in head length.

The family Myctophidae plays a significant role in energy transportation from primary consumers to higher marine predators, between the surface layers and the

Fig. 14: The obtained specimen of *H. hygomii* (TL = 21 mm) from the Aegean Sea.

mesopelagic depths up to 1000 m (Saunders *et al*., 2019). Therefore, the study of the distribution and ecology of the myctophids could significantly contribute to the understanding of marine ecosystems. *Hygophum hygomii* is one of the dominant species among myctophids in the Mediterranean Sea and the present paper provides the first documented record of this species in the North Aegean Sea and the first record from Turkish waters.

3.6. On the capture of *Katsuwonus pelamis* (Scombridae) in the eastern Mediterranean Sea

Okan AKYOL

The Skipjack Tuna, *Katsuwonus pelamis* (Linnaeus, 1758) is a pelagic and highly migratory scombrid species that swims in large schools in open waters; moreover, it exhibits a strong tendency to school in surface waters with birds, drifting objects, sharks, whales and may show a characteristic behaviour like jumping, feeding, foaming, etc. (Golani *et al*., 2006; Froese & Pauly, 2020). It has a maximum reported fork length (FL) of 110 cm and maximum weight of 34.5 kg; however, its common length is 80 cm FL (Froese & Pauly, 2020). The main characteristics of this species are: dark purplish blue colour of back, silvery lower sides and belly, and 4-6 very conspicuous longitudinal dark bands (Froese & Pauly, 2020).

The Skipjack Tuna is cosmopolitan in tropical and warm-temperate seas, but uncommon in the Mediterranean Sea (Golani *et al*., 2006; Froese & Pauly, 2020). The fish occasionally occurs in the western Mediterranean. Alemany *et al*. (2010) reported its larvae from the Balearic Islands, and recently, Tiralongo *et al*. (2019) recorded *K. pelamis* from the central Tyrrhenian Sea.

Fig. 15: Specimens of *Katsuwonus pelamis*, captured off Cape Kurtoğlu, Fethiye, southern Aegean Sea (horizontal bar: 100 mm). Photo credit: E. Öçal.

On 22 July 2020 a total of 12 specimens of *K. pelamis* (Fig. 15) were captured in the daily fishing activity of swordfish gillnet (90 cm mesh size) fishery during the operations 8 nm south of Cape Kurtoğlu in Fethiye region, southern Aegean Sea (36.45139° N, 29.06778° E) at a depth of 2500 m. The specimens were measured as FL, weighed (kg) and photographed. As distinctive characters (see Golani *et al*., 2006; Froese & Pauly, 2020), the 4-5 longitudinal dark bands below lateral line and 8 upper/7 lower finlets obviously point to *K. pelamis*. The FL and weight of 12 specimens ranged from 80 to 90 cm, and 8 to 14 kg, respectively, and were caught together with bullet tunas *Auxis rochei* (Risso, 1810), albacore *Thunnus alalunga* (Bonnaterre, 1788), and swordfish *Xiphias gladius*, Linnaeus 1758. During the last two years, *K. pelamis* has been sporadically observed to occur in fish schools of 5-15 individuals in the open sea between Fethiye and Gulf of Antalya, after mid-July (E. Öçal, *pers. comm*.). Recently, *K. pelamis* was reported from Egyptian albacore longline fishery (Gabr & El-Haweet, 2012). Thus, the recent findings indicate that the Skipjack Tuna is not so rare in the eastern Mediterranean Sea, anymore.

3.7. New record of the rare Mediterranean species *Taeniura grabata* (Geoffroy Saint-Hilaire, 1817) from Turkish waters

Turhan KEBAPCIOGLU and Cenkmen Ramazan BEGBURS

Six dasyatid species have been identified in the Mediterranean Sea: *Bathytoshia centroura* (Mitchill, 1815), *Dasyatis marmorata* (Steindachner, 1892), *Dasyatis pastinaca* (Linnaeus, 1758), *Himantura uarnak* (Forsskål, 1775), *Pteroplatytrygon violacea* (Bonaparte, 1832) and *Taeniura grabata* (Geoffroy Saint-Hilaire, 1817) (Serena, 2005). To the best of our knowledge, very few records of *Taeniura grabata* are available from the Turkish waters (Akyuz, 1957; Basusta *et al.*, 1998). On 17th November of 2012, one female specimen of *T. grabata* was captured during the bottom trawl survey in Finike Bay, southern part of Turkey (Fig. 16). The sampling depths ranged from 25 to 40 m on trawl routes between 36.2981° N, 30.2856° E and 36.2922° N, 30.3072° E.

The individual weighed about 11.44 kg and reached 111.7 cm in total length. The morphometric measurements of the characteristic features that were used to identify the species are presented in Table 3. The specimen had almost circular disc and a shorter tail than disc length. Dorsal surface and tail had a brownish color. The specimen was discarded back into the sea as it was still alive during measurements.

There is a significant lack of data that could be used for the assessment of the population status of this species

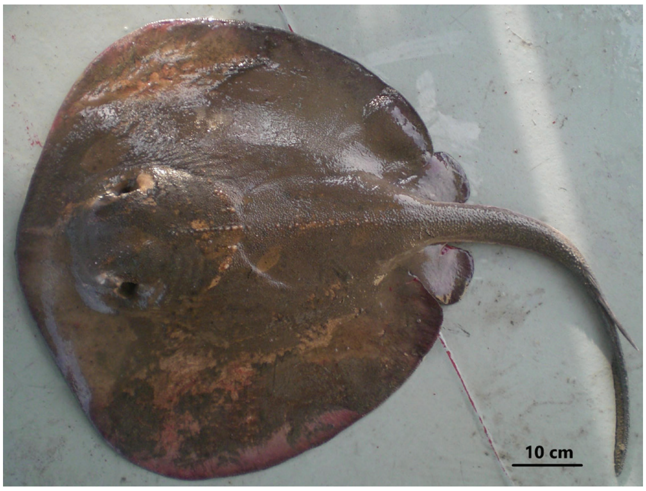

Fig. 16: *Taeniura grabata* from Finike Bay, southern coast of Turkey.

(Tiralongo *et al.*, 2020b). This record can contribute to future assessments of this rare species and in the description of its geographic distribution.

Table 3. Morphometric measurements expressed in cm of the *Taeniura grabata* specimen.

Measurement	cm
Total length	111.7
Disc width	66.7
Disc length	58.6
Interorbital space	10.6
Eye diameter	2.3
Tail length	53.1
Snout to tail spine length	84.4
First gill opening length	14.5
Fifth opening length	10.4

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