

Mediterranean Marine Science

Vol 13, No 1 (2012)



New Mediterranean Biodiversity Records (June 2012)

A. NICOLAIDOU, G. ALONGI, O. AYDOGAN, M. CATRA, L. CAVAS, C. CEVIK, A. DOSI, V. CIRCOSTA, S. GIAKOUMI, F. GIMENEZ-CASALDUERO, H. FILIZ, A. IZQUIERDO-MUNOZ, S. KALOGIROU, E. KONSTANTINIDIS, V. KOUSTENI, J. KOUT, A. LEGAKI, P. MEGALOFONOU, P. OVALIS, G. PAOLILLO, I. PASCHOS, C. PERDIKARIS, D. POURSANIDIS, A.A. RAMOS-ESPLA, S. REIZOPOULOU, E. SPERONE, E. TASKIN, S. TRIPEPI, M. VAZQUEZ-LUIS

doi: [10.12681/mms.33](https://doi.org/10.12681/mms.33)

To cite this article:

NICOLAIDOU, A., ALONGI, G., AYDOGAN, O., CATRA, M., CAVAS, L., CEVIK, C., DOSI, A., CIRCOSTA, V., GIAKOUMI, S., GIMENEZ-CASALDUERO, F., FILIZ, H., IZQUIERDO-MUNOZ, A., KALOGIROU, S., KONSTANTINIDIS, E., KOUSTENI, V., KOUT, J., LEGAKI, A., MEGALOFONOU, P., OVALIS, P., PAOLILLO, G., PASCHOS, I., PERDIKARIS, C., POURSANIDIS, D., RAMOS-ESPLA, A., REIZOPOULOU, S., SPERONE, E., TASKIN, E., TRIPEPI, S., & VAZQUEZ-LUIS, M. (2012). New Mediterranean Biodiversity Records (June 2012). *Mediterranean Marine Science*, 13(1), 162. <https://doi.org/10.12681/mms.33>

New Mediterranean Biodiversity Records (June 2012)

A. NICOLAIDOU¹, G. ALONGI², O. AYDOGAN³, M. CATRA², L. CAVAS⁴, C. CEVIK⁵, A. DOSI¹,
 V. CIRCOSTA⁶, S. GIAKOUMI^{7,20}, F. GIMÉNEZ-CASALDUERO⁸, H. FILIZ⁹, A. IZQUIERDO-MUÑOZ¹⁰,
 S. KALOGIROU¹¹, E. KONSTANTINIDIS¹², V. KOUSTENI¹, J. KOUT¹³, A. LEGAKI¹, P. MEGALOFONOU¹,
 P. OVALIS¹⁴, G. PAOLILLO¹⁵, I. PASCHOS¹⁶, C. PERDIKARIS¹², D. POURSANIDIS^{17,18},
 A. A. RAMOS-ESPLÁ¹⁰, S. REIZOPOULOU¹⁹, E. SPERONE⁶, E. TASKIN³, S. TRIPEPI⁶ and M. VÁZQUEZ-LUIS⁹

¹ Department of Zoology-Marine Biology, School of Biology, University of Athens, Panepistimiopolis,
 15784 Athens, Greece

² Laboratorio di Algologia, Dipartimento di Scienze Biologiche, Geologiche e Ambientali, Università degli studi di Catania,
 Via A. Longo, 19 95125 Catania, Italy

³ Department of Biology, Faculty of Arts and Sciences, Celal Bayar University, Muradiye Manisa 45140, Turkey

⁴ Dokuz Eylül University, Faculty of Science, Department of Chemistry, Biochemistry Division, 35160, Kaynaklar Campus,
 İzmir, Turkey

⁵ Cukurova University, Faculty of Fisheries, Balcali Campus, 01330, Adana, Turkey

⁶ Department of Ecology, University of Calabria, via P. Bucci 4B, 87036 Rende, Italy

⁷ Department of Marine Sciences, University of the Aegean, 81 100 Lesvos Island, Greece

⁸ Departamento de Ciencias del Mar y Biología Aplicada, Universidad de Alicante, 03080 Alicante, Spain

⁹ Mugla University, Faculty of Fisheries, Dept. of Hydrobiology, 48000, Kotekli, Mugla, Turkey

¹⁰ Centro de Investigación Marina de Santa Pola (CIMAR), Ayto. Santa Pola - Universidad de Alicante. Torre d'Enmig s/n,
 Cabo de Santa Pola, Alicante, Spain

¹¹ Hydrobiological Station of Rhodes, Hellenic Centre for Marine Research, Cos street, 85100, Rhodes, Greece

¹² Department of Fisheries, Region of Epirus, P. Tsaldari 18, 46100 Igoumenitsa, Greece

¹³ Department of Biology, Faculty of Education, University of West Bohemia, Klatovská 51, Pilsen, 306 19,
 Czech Republic

¹⁴ Agisilaou 37-39, Tzitzifies/Kallithea, 17674 Athens, Greece

¹⁵ WWF-Calabria, via Popilia 42, 89900 Vibo Valentia, Italy

¹⁶ Department of Aquaculture & Fisheries, Technological Educational Institute of Epirus, Irinis & Filias 1,
 46100 Igoumenitsa, Greece

¹⁷ WWF Hellas, Ethnikis Antistaseos 82, Heraklion, Crete, Greece, P.O. 71601

¹⁸ Department of Marine Sciences, University of the Aegean, 81100, Mytilene, Greece

¹⁹ Institute of Oceanography, Hellenic Centre for Marine Research, PO Box 712, 190 13 Anavissos, Attiki, Greece

²⁰ Institute of Marine Biological Resources, Hellenic Centre for Marine Research, Ag. Kosmas, Attiki, Greece

Abstract

The present work reports on the extended distribution of nineteen species in the Mediterranean. These are: *Upeneus pori* (Fish: Turkey), *Bursatella leachii* (Mollusca, Opisthobranchia: eastern coast of Spain), *Sparisoma cretense* (Fish: Ionian coast of Greece), *Pseudobryopsis myura* (Chlorophyta: Turkey), *Aplysia dactylomela* (Mollusca, Opisthobranchia: Karpathos island, and Kyklades Archipelago, Greece), *Asparagopsis armata* and *Botryocladia madagascariensis* (Rhodophyta: South Peloponnese, Greece), *Oxynotus centrina* (Fish: Greece), *Caulerpa racemosa* var. *cylindracea* (Chlorophyta), *Stypopodium schimperi* (Phaeophyta), *Siganus luridus* and *Stephanolepis diaspros* (Fish) *Percnon gibbesi* (Decapoda, Brachyura) (Kyklades Archipelago, Greece), *Cerithium scabridum* (Mollusca, Prosobranchia: Anavissos: Greece) and *Cerithium renovatum* (Mollusca, Prosobranchia: N. Kriti), *Cassiopea andromeda* (Scyphomedusa: Rhodos Island, Greece), *Abra tenuis* (Mollusca Bivalvia: Vouliagmeni Lake, Greece) *Lagocephalus lagocephalus* (Fish: Calabrian coast, Italy) and *Plocamopherus ocellatus* (Mollusca, Opisthobranchia: Iskenderun Bay, Turkey).

Introduction

As part of its policy, the Journal publishes in each issue a collective article with new records of marine species in the Mediterranean and/or information on the spatial distribution of already established species of particular

interest. All contributors are co-authors in this collective article, their names appearing in alphabetical order. The new findings are presented in the order of submission. The authors responsible for each record are listed at the beginning of each section.

A. Northernmost occurrence of *Upeneus pori* (Mulidae) in the Aegean Sea

By H. Filiz

Eight specimens of *Upeneus pori* (10.6 - 16.4 cm TL, 11.52 - 43.06 g) (Fig. 1) were caught on 27th December 2009 in Kusadasi Bay (with sandy bottom) at depth of 47 m, by a commercial trawl ship (F/V Akyarlar, 22.6 m length, 485 HP) equipped with a conventional bottom trawl net of 24 mm cod-end mesh size. Trawl route was 37° 43' 305"N-27° 13' 544"E / 37° 45' 496"N-27° 14' 293"E and haul durations fixed to 1 h. The specimen, fixed in 96% alcohol, is deposited in the Mugla University, Faculty of Fisheries Museum Collection. The scientific name of the species was checked against FishBase (Froese & Pauly, 2011).

The Por's goatfish, *Upeneus pori* Ben-Tuvia & Golani, 1989, was first recorded in Iskenderun Bay (Turkey) by Kosswig (1950) as *Upenoides* (= *Upeneus*) *tragula*. Since its initial detection, *U. pori* is considered to be successfully established in the Mediterranean Sea, especially off the coast of Israel (Golani, 1994), Egypt (El Sayed, 1994), Lebanon (George & Athanasiou, 1996) and the Levantine Coast of Turkey (Gucu *et al.*, 1994). Westwards, *U. pori* is reported from the Tunisian waters (Ben Souissi *et al.*, 2005; Azzouz *et al.*, 2010) and Libya (Ben Abdallah *et al.*, 2004;). To the north, the species was reported in Gokova Bay (Ogretmen *et al.*, 2005;) and the SE coast of Rhodes Island (Corsini *et al.*, 2005) in the Aegean Sea. By this paper, *U. pori* has extended its northern distribution range to Kusadasi Bay in the Aegean Sea. Its occurrence here is very recent, and the observation of eight individuals suggests an established population.

B. Occurrence of the exotic gastropod *Bursatella leachii* (Opisthobranchia: Aplysiidae) off the east coast of Spain (Mediterranean Sea)

By A. Izquierdo-Muñoz, M. Vázquez-Luis, F. Giménez-Casalduero and A. A. Ramos-Esplá

Bursatella leachii Blainville, 1817 has a circum-tropical global distribution, with its northernmost geographic limitation reported as the east coast of the United States, off North Carolina (Kruczynski & Porter, 1969). Additionally, it is found in warm temperate and tropical waters throughout the world (Rudman, 1998). Although first reported in the Mediterranean Sea off Israel (O' Donoghue & White, 1940), the species is presently very common in the eastern Mediterranean having been introduced through the Suez Canal (see reviews: Zenetos *et al.*, 2004; Olivier & Terrasa, 2004). In the western Medi-



Fig. 1: A specimen of *Upeneus pori*, 10.6 cm TL, captured in Kusadasi Bay (south Aegean Sea).

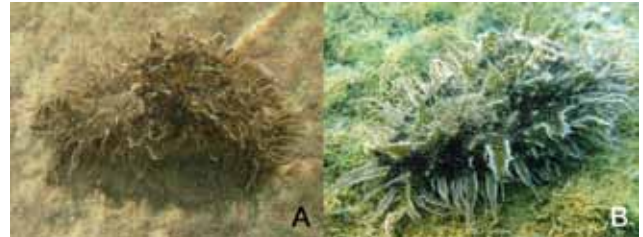


Fig. 2: *Bursatella leachii* from Porto Senso harbor (A) and Villajoyosa harbor (B).

terranean, it was first reported from the Tyrrhenian Sea (Fasulo *et al.*, 1984; Zenetos *et al.*, 2004), while the first citation of *B. leachii* off the Spanish coast was in 1996 in Palma Bay at Balearic Island (Olivier & Terrasa, 2004). After, its discovery in *Delta del Ebro* in 2007 (Weitzmann *et al.*, 2007), the species was also observed in the fishing port of *Aguilas Bay* (southeast of Spain) that same year (Cervera, pers. comm.).

In September 2008, 100 individuals of *Bursatella leachii* were found in the *Mar Menor* coastal lagoon, specifically within the inner channel connection between the lagoon and the Mediterranean Sea (*Las Encañizadas*, N 37° 45' 00", W 00° 46' 00"), an area with an average salinity of 42 psu. Many of the specimens were mating. The animals were collected and exhibited at the Aquarium of Research at the University of Murcia. One year later the opisthobranch had colonized much of the northern basin of the coastal lagoon, where salinities may be greater than 47 psu in some locations and average temperatures range from 12-30 °C.

In January 2010, five specimens of *B. leachii* (length 8-10 cm) (Fig. 2A) were observed in a small recreational harbor of *Altea Bay* (*Porto Senso Harbor*, N 38° 37' 26", W 00° 01' 09") on concrete substrate, very close to the surface in water temperature as low as 14.5°C. Inside the harbour, the bottom was muddy covered by the chlorophyte *Caulerpa prolifera* (Forsskål) Lamouroux. On February 2010, two individuals (length 8 and 15 cm) were found at the *Villajoyosa* fishing harbor (N 38° 30' 29", W 00° 13' 05") (Fig. 2B) The bottom was muddy, almost devoid of macrophytes, and the water temperature was 12°C.

C. *Sparisoma cretense* (L. 1758) from the NW Ionian coast of Greece

By C. Perdikaris, E. Konstantinidis and I. Paschos

The Mediterranean parrotfish (*Sparisoma cretense* L. 1758) is more common in the south and eastern parts of the Mediterranean Sea and its typical distribution range has been historically dictated by the February 15°C surface isotherm barrier. In Greece, it is incidentally caught in rocky shores up to 50 m depth mainly in the Dodecanese (Petrakis & Papaconstantinou, 1990; Kalogirou *et al.*, 2010; Kalogirou *et al.*, 2012), in the Kyklades islands (Stergiou *et al.*, 2002) and in Kriti (Katsanevakis & Thessalou-Legaki, 2009). Up to now there has been no record of it from the Ionian Sea.

A single adult male specimen (Fig. 3) was caught on October 17, 2011 with gillnets (mesh size: 34 mm, 1.6m deep and 500m long) placed overnight close to the small rocky islet of Prasoudi (north-western Greece) (39°30'33"N, 20°09'30"E) at 10 m depth. The specimen was identified according to the criteria presented in Fischer *et al.* (1987), sexed by its colour morph (De Girolamo *et al.*, 1999) and verified by visual examination of the gonads. The body weight was 90.23 g and the standard length was 173.39 mm.

The shift of the February 15°C surface isotherm barrier northwards (approximately 140 km) during the last two decades, to just beneath the island of Corfu and very close to our study area (see relevant map in Coll *et al.*, 2010) may have facilitated the westward and northward spreading of the species.

Within the on-going “tropicalization” process of the region, *S. cretense* is expected to further expand its range to the north, exploiting primarily the ‘warm corridor’ on the Ionian-Adriatic axis, with the aid of the east Adriatic current and the increased communication between the Ionian and the Aegean basins due to the Eastern Mediterranean Transient.



Fig. 3: Adult male *Sparisoma cretense* caught near-shore the Prasoudi islet (off the Igoumenitsa Bay, NW Ionian coast of Greece).

D. First report of green alga *Pseudobryopsis myura* (J. Agardh) Berthold from Turkey

By O. Aydogan and E. Taskin

The green alga *Pseudobryopsis myura* (J. Agardh) Berthold (Bryopsidophyceae, Chlorophyta) (Fig. 4) is reported for the first time from Turkey. It was found growing as an epilithic in Iskenderun Bay in the midlittoral zone (-1 m) in November 2011. It was preserved in 4% formaldehyde in seawater and deposited at the Biology Department of Celal Bayar University, Manisa, Turkey. The genus *Pseudobryopsis* was established by Berthold in Oltmanns (1904) and *Pseudobryopsis myura* (J. Agardh) Berthold is the type species of the genus, which was based on *Bryopsis myura* J. Agardh. This species is widely distributed in the Mediterranean Sea [France, Spain, Italy, Adriatic Sea, Tunisia, Algeria, Corsica, Greece, Levant states, (Gallardo *et al.*, 1993); Libya (Nizamuddin, 1991)], the Canary Islands (John *et al.*, 2004), Oman (Wynne, 2001) and Australia (Bostock & Holland, 2010).

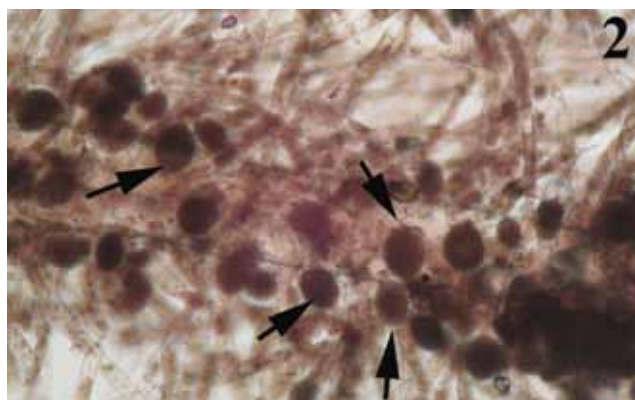


Fig. 4: *Pseudobryopsis myura*. (1). Habit, and (2). Gametocysts.



Fig. 5: *Aplysia dactylomela* from Karpathos.

E. Another record of the lessepsian immigrant *Aplysia dactylomela* Rang 1828 in the Mediterranean Sea

By J. Kout

Two specimens of the opisthobranch mollusc *Aplysia dactylomela* (Fig. 5) were observed in Amooopi, a site on the east coast of Karpathos island (35°35'N 27°8'E) in August 2010. The bottom in the area is rocky with sponges and algae but no sea grasses. The two specimens were found about 30 m apart, moving on the bottom at 0.5 m depth and at a distance of approximately 2 m from the shore. They were photographed by underwater camera but not preserved. Although the species has been mentioned from Crete and Rhodes (Pasternak & Galil, 2010) there was no reference to it from the island of Karpathos.

Apart from *A. dactylomela* three other immigrants were observed, namely the teleost fish *Fistularia commersonii*, the remarkably abundant crab *Percnon gibbesi* and the bivalve mollusk *Pinctada radiata*.

F. *Asparagopsis armata* and *Botryocladia madagascariensis* in South Peloponnesos, Greek Ionian Sea

By M. Catra and G. Alongi

In the course of a research campaign on macroalgae of the South Peloponnesos (Greece) carried out in July 2010, the following two alien species new to that area were found: *Asparagopsis armata* Harvey (Rhodophyta, Bonnemaisoniaceae) and *Botryocladia madagascariensis* Feldmann-Mazoyer (Rhodophyta, Rhodymeniaceae). Specimens of both species preserved in 5% formaldehyde

are held in the Herbarium of the Department of Biological, Geological and Environmental Sciences, University of Catania (CAT).

***Asparagopsis armata* (Figs 6A, B)**

Both gametophytic and sporophytic thalli of this species were collected at two localities of the Messiniakos Gulf: Trachila (36° 46.089 N, 22° 18.819 E) and Gerolimenas (36° 28.729 N, 22° 24.085 E) from 0.5 to 10 m and at 8 m depth, respectively. *A. armata* is a cosmopolitan species first recorded in the Mediterranean Sea by Sauvageau (1925) from Algeria. Since then, it has spread widely throughout that Sea in well lit environments of the infralittoral zone (Cormaci *et al.*, 2004).

***Botryocladia madagascariensis* (Fig. 7)**

Some sterile specimens of this species (Fig. 7) were collected at Trachila (36° 46.089 N, 22° 18.819 E) and Gerolimenas (36° 28.729 N, 22° 24.085 E) (Messinian Gulf) and at Porto Ageranos (36° 41.969 N, 22° 31.540 E) (Lakonic Gulf) between 8 and 10 m depth. *B. madagascariensis*, described from Madagascar, is widely distributed along the Indian Ocean coast of South Africa. Outside that Ocean, it was recorded only from the Canary Islands (Wilkes *et al.*, 2006) and the Mediterranean Sea. The first record of this species in the Mediterranean Sea was by Cormaci *et al.* (1992) from Lampedusa Island (Pelagean Islands) and Castelluccio (Syracuse, Eastern coast of Sicily). Later, it was reported from the Maltese Islands by Cormaci *et al.* (1997), the Tremiti Islands by Cormaci *et al.* (2000), the Gargano promontory (Adriatic Sea) by Cecere *et al.* (2000), Turkey by Turna *et al.* (2000), Karpathos Island by Catra & Giardina (2009) and Korinthiakos Gulf (Greek Ionian Sea) by Tsiamis & Verlaque (2011).



Fig. 6: *Asparagopsis armata* Habit A. Gametophytic thalli (Photo: Mario Cormaci) B. Detail showing branches provided with spine-like branchlets.

G. New records of the shark *Oxynotus centrina* (Chondrichthyes: Oxynotidae) in the Greek seas

By V. Kousteni and P. Megalofonou

The angular rough shark, *Oxynotus centrina* (Linnaeus, 1758), (Fig. 8) is an uncommon, little-known, ovoviviparous species, which produces litters of 10 to 12 embryos once a year (Capapé *et al.*, 1999, 2001). It is distributed throughout the Mediterranean Sea and the Eastern Atlantic from the British Isles to the north, down to South Africa to the south (Compagno, 1984). Records of the angular rough shark in the Greek Seas exist since 1878 (Papakonstantinou, 1988). However, due to the rarity of the species little is known about its distribution and biology within this region.



Fig. 7: *Botryocladia madagascariensis*. Habit (Photo: Mario Cormaci).

During the period 2006-2011, four angular rough sharks were caught in various areas of the Greek Seas (Table 1). The species identification was confirmed and morphometric measurements were taken based on Compagno (1984).

Other areas in the Mediterranean, where *Oxynotus centrina* has been caught, include the Gulf of Lions and the Tunisian coast (Capapé *et al.*, 1999), the Italian coast (Tortonese, 1956), the Eastern Adriatic Sea (Dragičević *et al.*, 2009; Županovic & Jardas, 1989) and the Sea of Marmara (Turkey), Kabasakal (2009). In Greece, according to the “Check-list of marine fishes of Greece”, earlier records of *Oxynotus centrina* are in the North Aegean Sea, Thermaikos Gulf, Pagassitikos Gulf, Saronikos Gulf and Patraikos Gulf (Papakonstantinou, 1988), while this study reports for the first time the species occurrence in the Korinthiakos Gulf. More recently, the species has been found in the Central Aegean Sea near the island of Kea (Megalofonou & Damalas, 2004) and in the South Eastern Aegean Sea, in the Dodecanese waters (Corsini-Foka, 2009).



Fig. 8: *Oxynotus centrina* from Korinthiakos Gulf.

Table 1. Sampling data of the angular rough sharks reported in the present study.

Location	Coordinates	Date	Fishing method	Depth (m)	TL	RW
Psara	38° 44' 71" N 25° 23' 94" E	Oct-07	Trawling	130	533	1649
Psara	38° 44' 71" N 25° 23' 94" E	Oct-07	Trawling	130	565	1703
Korinthiakos Gulf	38° 20' 50" N 22° 25' 33" E	Jun-10	Longline	180	790	5020
Evia	38° 27' 122" N 24° 46' 678" E	May-11	Trawling	366-458	674	3250

TL: total length in mm; RW: round weight in g

H. Records of alien species in the Kyklades Archipelago

By S. Giakoumi

In situ underwater surveys were conducted in July-August 2007 and June-July 2008 to explore the shallow sublittoral of the Kyklades Archipelago, Greece (Giakoumi *et al.*, 2011). 233 sites were surveyed by snorkeling at depths between 2 and 5 meters. During these surveys six alien species were recorded: *Caulerpa racemosa* var. *cylindracea*, *Siganus luridus*, *Percnon gibbesi*, *Stephanolepis diaspros*, *Aplysia dactylomela* and *Stypopodium schimperi*. The two first species, i.e. the macrophyte *Caulerpa racemosa* var. *cylindracea* and the Lessepsian rabbitfish *Siganus luridus*, were present in most sites. Their wide distribution in the South Aegean is well documented (Katsanevakis, 2011; ELNAIS, 2012), therefore the locations where those species were encountered will

not be referred to herein. The crab *Percnon gibbesi* (H. Milne Edwards, 1853) (Fig. 9), which is established in most Mediterranean coasts (Katsanevakis *et al.*, 2011), was recorded for the first time on rocky substrate in the south of Sikinos Island (N 36 42 58.93 E 36 42 58.93, date: 17-6-2008). The fish *Stephanolepis diaspros* Fraser-Brunner, 1940 (Fig. 10), known to be well established in the South Aegean (Zenetos *et al.*, 2011) was recorded on sandy bottoms on the east of Sikinos Island (N 36 40 26 E 25 08 35, date: 29-6-2008). The black spotted seahare, *Aplysia dactylomela* Rang, 1928 (Fig. 11), was encountered north of Schinoussa Island, on rocky bottoms with patches of the seagrass *Posidonia oceanica*, (N 36 51 78 E 25 16 22, date: 24/7/2007). The macrophyte *Stypopodium schimperi* (Buchinger ex Kützing) Verlaque & Boudouresque, 1991 (Fig. 12) was recorded in rocky sites of several Kyklades islands, which are presented in Table 2. This alien macrophyte has been found off Santorini Island before (Tsiamis *et al.*, 2010).



Fig. 9: *Percnon gibbesi* (H. Milne Edwards, 1853), Sikinos.



Fig. 10: *Stephanolepis diaspros* Fraser-Brunner 1940, Sikinos.



Fig. 11: *Aplysia dactylomela* Rang, 1828, Schinoussa.

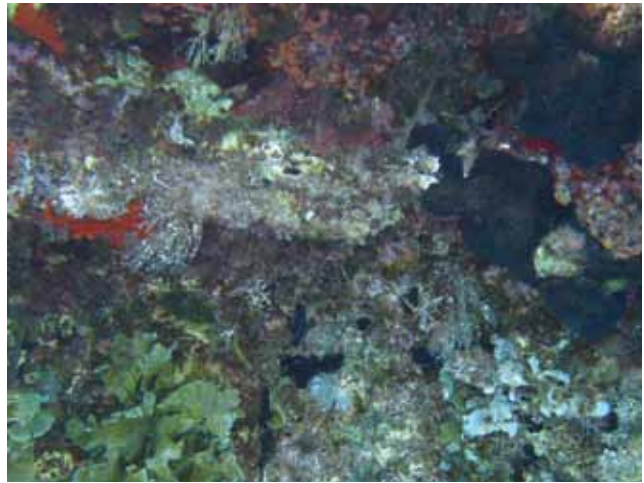


Fig. 12: *Stypopodium schimperi* (Buchinger ex Kützing) Amorgos.

Table 2. Records of the macrophyte *Stypopodium schimperi* in the Kyklades.

Location	Coordinates (N, E)		Date
Amorgos (north-west)	36 55 70	25 04 18	11-7-2007
Amorgos (north-west)	36 55 35	25 00 95	5-7-2007
Amorgos (west)	36 51 51	25 04 50	12-7-2007
Amorgos (west)	36 51 11	25 05 32	12-7-2007
Ano Koufonisi (north)	36 56 85	25 12 55	21-7-2007
Donoussa (north-east)	37 87 65	25 25 33	29-7-2007
Folegandros (north-west)	36 38 5	24 50 59.1	16-6-2008
Makares (north-west)	37 05 29	25 41 70	10-8-2007
Kato Koufonisi (north)	36 55 44	25 14 05	19-7-2007
Kato Koufonisi (south-west)	36 54 14	25 12 88	18-7-2007
Kea (south-east)	37 31 50	24 18 32	8-7-2008
Naxos (north-east)	37 09 81	25 34 43	8-8-2007
Naxos (north)	37 12 17	25 32 07	8-8-2007
Santorini (north-west)	36 26 48	25 25 29.02	26-6-2008

I. Findings of *Cerithium scabridum* and *Cerithium renovatum* in the Aegean Sea

By P. Ovalis and D. Poursanidis

Cerithium scabridum Philippi, 1848 is an Indo-Pacific species that has entered the Mediterranean Sea via the Suez Canal. It can be found in shallow waters, on rocky bottoms covered with low or no vegetation, but it mainly prefers pebbles, where it forms dense populations. It has been found at several locations in the Mediterranean Sea. In the Aegean it was first noticed on the east coast of Rhodes in 2007 and 2009 (Zenetos, 2009). Recently, in 2011, several specimens were located in a shallow salt water pond, at Agios Nikolaos, Anavissos in Saronikos Gulf (Fig. 13).

Cerithium renovatum Monterosato, 1844 is a replacement name for *C. vulgatum* var. *pulchella* Philippi, 1836 (Gofas *et al.*, 2004). The species has not hitherto been reported from the Greek Aegean Sea. In 2009 a lot of specimens (Fig. 14) were found at two locations on the north coast of Crete (Agia Pelagia and Lygaria). All the specimens were in shallow waters (1-3 meters depth), on pebbles with no vegetation.



Fig. 13: *Cerithium scabridum*. Photo: P. Ovalis



Fig. 14: *Cerithium renovatum*. Photo: D. Poursanidis.

J. Occurrence of the non-indigenous scyphomedusa *Cassiopea andromeda* (Forsskål, 1775) in Rhodes island (SE Aegean Sea)

By S. Kalogirou

Schäfer (1955) was the first to report the presence of *Cassiopea andromeda* in the Aegean Sea. He found young specimens of *C. andromeda* in Neokameni, a small volcanic island near Santorini, where they flourished in rocky pools with water temperatures reaching 36°C (attributed to volcanic activity). After a time gap of 55 years, the species was recorded in Paros, in S. Evvoikos and at two sites off Paros where it reached densities greater than 20 individuals/m² (Zenetos *et al.*, 2011). *C. andromeda* was considered invasive (Katsanevakis, 2011).

The present work reports on the finding, in September 2011, of approximately 300 live individuals of *C. andromeda* trapped in rock-pools (0-1m in depth) on a rocky islet off the north-eastern coast of Rhodes Island, SE Aegean Sea (Fig. 15). The absence of *C. andromeda* from the nearby waters may indicate that entrapment together with increased water temperatures, due to isolation from the main water body, may have favoured its flourishing. All individuals were found upside-down swimming downwards justifying its common name, “upside-down jellyfish”.



Fig. 15: *Cassiopea andromeda*.

K. On the presence of the bivalve *Abra tenuis* (Montagu, 1803) in Vouliagmeni Lake, Greece

By A. Legaki, A. Dosi, S. Reizopoulou and A. Nicolaidou

The bivalve mollusc *Abra tenuis* occurs in the Eastern Atlantic from Scotland (Tebble, 1966) to Mauritania (Wolff *et al.*, 1993). In the Mediterranean it has been mentioned only from two sites, the brackish Lake Ichkeul in Tunisia (Casagrande & Boudouresque, 2005) and the brackish Messologhi Lagoon in Greece (Bogdanos & Diapoulis, 1984; Nicolaidou *et al.*, 1988). Its fragmentary distribution is probably due to the fact that it is an applanic (directly developing) species (Holmes *et al.*, 2004).

This note reports the presence of *A. tenuis* in a second site in Greece, Vouliagmeni Lake (Fig. 16). It is a brackish water lagoon which communicates with the adjacent sea not directly but through an underwater network of flooded caves (Chintiroglou *et al.*, 1996). *Abra tenuis* has been collected regularly from October 2004 to July 2005 at densities which varied from 1000 m² in May to 10680 m² in July. During the study period water temperature remained relatively constant ranging between 19.8°C in January to 27.8°C in June, while salinity varied from 14.3 in May to 20.2 in February.

L. On the presence of *Lagocephalus lagocephalus* (Linnaeus, 1758) (Osteichthyes, Tetraodontidae) along the Calabrian coast (Central Mediterranean, Southern Italy)

By E. Sperone, G. Paolillo, V. Circosta and S. Tripepi

The presence of the oceanic puffer *Lagocephalus lagocephalus* (Linnaeus, 1758) in the Mediterranean has long been known (Dulčić & Pallaoro, 2006).

However, the species is rarely sighted and biological information is quite scarce (Laskaridis, 1948; Tortonese,

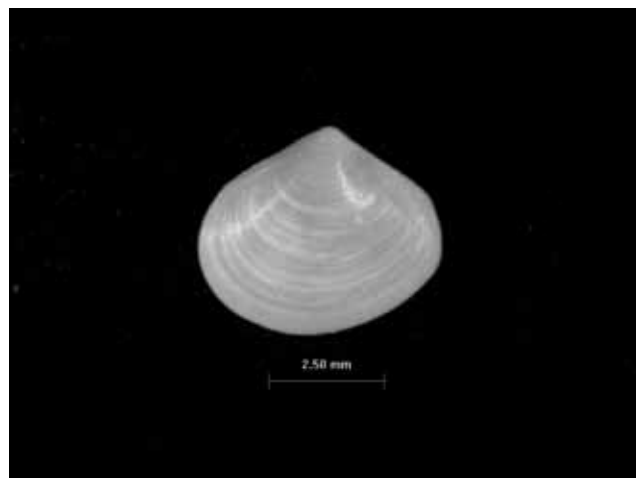
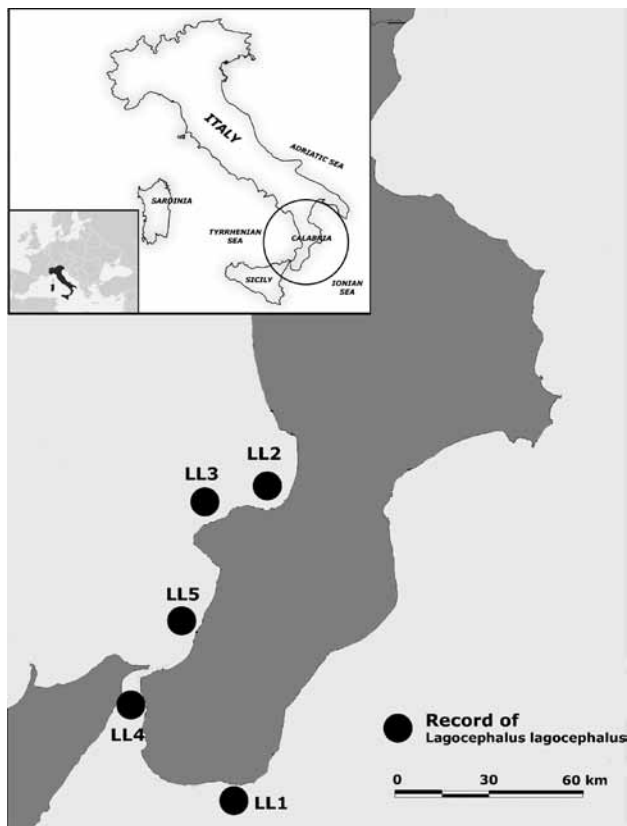


Fig. 16: *Abra tenuis* (Montagu, 1803) from Vouliagmeni Lake.



Map 1: Distribution of records of *Lagocephalus lagocephalus* around Calabria.

1975; Smith & Heemstra, 1986).

In recent years reports of this species have increased especially for Sicily (Zava *et al.*, 2005). This note reports the presence of *Lagocephalus lagocephalus* along the coast of Calabria from 2007 to 2012, expanding its known distribution to the Central Mediterranean Sea.

Five records were made by the authors, by fishermen and by local press. For each record the date, the location and the type of observation are provided in Table 3. *Lagocephalus lagocephalus* was found in five sites along the Calabrian coastline (Table 3, Map 1, Fig. 17). Three records (LL2, LL3 and LL5) were located in the Tyrrhenian Sea, one (LL4) in the Messina Strait and one (LL1)

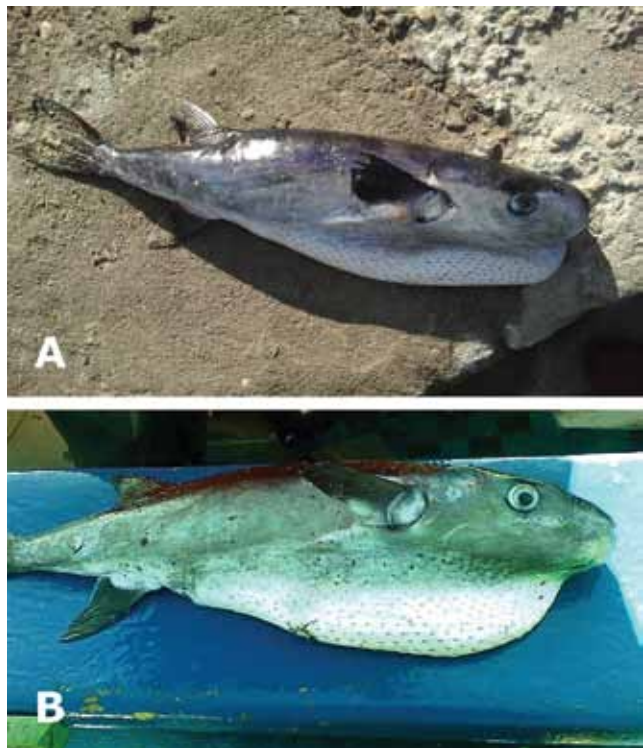


Fig. 17: Specimens of *Lagocephalus lagocephalus* from Calabria. A. Record n. LL2. B. Record n. LL4 (for further details see Table 3).

in the Ionian Sea. The reports are due to strandings and catches by rod fishing at a distance from the shore up to about 150 m. They were all made in the period between October and early March.

These observations confirm the hypothesis, advanced by Zava *et al.* (2005), that the adults of this species approach the coast between autumn and winter. In the rest of the year, probably, they lead a pelagic life.

The number of dorsal and anal finrays, counted on two of the specimens, were 14 and 12, respectively, for both animals. This is in accordance with the observations of Tortonese (1975). Zava *et al.* (2005) observed a higher number of dorsal and anal finrays for specimens from Sicily.

Table 3. Records of *Lagocephalus lagocephalus* around Calabria.

Date	Site	GPS location		Record type	Code	Dorsal finrays	Anal finrays
		N	E				
20/10/2007	Palizzi	37° 58'	15° 59'	fishing rod	LL1	-	-
08/02/2012	Pizzo	38° 44'	16° 09'	stranded	LL2	14	12
08/03/2012	Tropea	38° 40'	15° 53'	fishing rod	LL3	-	-
09/03/2012	Messina Strait	38° 06'	15° 39'	fishing rod	LL4	14	12
11/03/2012	Palmi	38° 21'	15° 51'	stranded	LL5	-	-

M. On the observation of *Plocamopherus ocellatus* Rüppell & Leuckart, 1828 from İskenderun Bay (Eastern Mediterranean), Turkey

By C. Cevik and L. Cavas

The nudibranch *Plocamopherus ocellatus* Rüppell and Leuckart, 1830 has so far been observed from three different locations in the Mediterranean (Israel: Barash & Danin, 1982; Lebanon: Valdés & Templado, 2002; Turkey: Rudman, 2002). The present note reports the second observation in the Turkish coastline since the only other reference is a web page and a summary in conference proceedings (Rudman, 2002; Yokes and Rudman, 2004, respectively). *Plocamopherus ocellatus*, was incidentally observed on December 15, 2011, in İskenderun bay during the *Caulerpa taxifolia* monitoring project. The geographic location of the sampling area is 36° 49.82' N and 35° 52.95' E. The depth, temperature, oxygen saturation, salinity and pH values of the sampling area were -4m, 16.53 °C, 7.44 mg/L, 38.35 ppt and 8.10, respectively. The substrate was rocky covered by macroalgae such as *Cystoseria* sp., *Jania rubens*, *Padina pavonia* and Bryozoans. One sample was deposited in the Museum of Cukurova University, Faculty of Fisheries. Voucher number was CSFM-GAS/11-09.

The species was brick colored with yellow circular spots (Fig. 18). However, in Zenetos *et al* (2004), the color of *P. ocellatus* is reported as black body with several large reddish ocellatus-like margins. In our samples we also observed a caudal fin. Many egg ribbons were found on the macroalgae meadows (Fig. 19). It is very interesting to note that *P. ocellatus* was observed under the water to emit luminescent flashes when disturbed as reported by Zenetos *et al.*, (2004).

Its introduction into the İskenderun bay might be due to spreading via the Suez Canal or ship ballasts transfer. Since inasmuch as 8 specimens and many egg ribbons were observed in our diving, it may be concluded that this species has settled successfully in the area.



Fig. 18: Dorsal view of *Plocamopherus ocellatus*. Photo: Cem ÇEVİK.

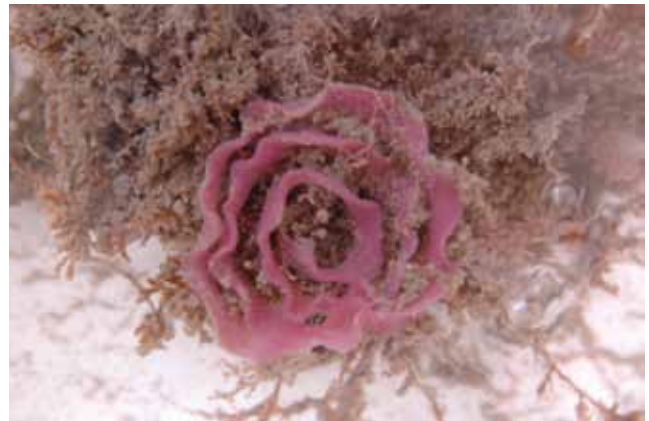


Fig. 19: An egg ribbon View of *Plocamopherus ocellatus*. Photo: Cem ÇEVİK.

Acknowledgements

The specimens of *Upeneus pori* were collected as part of a survey carried out in the south-eastern Aegean Sea, supported by “Mugla University, Scientific Research Projects Unit (BAP 09/31)”. Thanks are due to the “Republic of Turkey, Ministry of Agriculture and Rural Affairs, General Directorate of Protection and Control” and “Turkish Coast Guard Command (TCGC)” and “TCG Aegean Sea Area Command” for giving trawl permission in prohibited areas during the survey. Mr H. Filiz likes to thanks Akin Akyar and his crew, and project assistants for their help during the field works.

The authors (A. Izquierdo-Muñoz, M. Vázquez-Luis, F. Giménez-Casalduero and A. A. Ramos-Esplá) acknowledge Lucas Cervera and Emilio Cortés Melendreras for their information about the presence of *Bursatella leachii* in the Mar Menor area.

The study on *Pseudobryopsis myura* is a part of the PhD thesis of O. Aydoğan and it has been supported by Celal Bayar University.

The sampling for *Oxynotus centrina* has been co-financed by the Operational Programme for Education and Initial Vocational Training (O.P. “Education”) in the framework of the project Pythagoras II - Support of University Research Groups with 75% from European Social Funds and 25% from National Funds and by the European Union (European Social Fund – ESF) and Greek national funds through the Operational Program “Education and Lifelong Learning” of the National Strategic Reference Framework (NSRF) - Research Funding Program: Heracleitus II. Investing in knowledge society through the European Social Fund.

The authors (E. Sperone, G. Paolillo, V. Circosta & S. Tripepi) thank Mr. Stranges and Mrs. Marra for their collaboration.

C. Cevik and L. Cavas are thankful to the scientific and technological research council of Turkey (TÜBİTAK) for financial support of project (Grant number: 109Y284).

References

- Azzouz, K., Mansour, S. & Boumaiza, M., 2010. Occurrence of the Por's goatfish *Upeneus pori* (Osteichthyes: Mullidae) in the Lagoon of Bizerte (northern Tunisia, central Mediterranean). *Annales Series Historia Naturalis*, 2 (1): 29-32.
- Barash, A. & Danin, Z., 1982. Mediterranean mollusca of Israel and Sinai: composition and distribution. *Israel Journal of Zoology*, 31: 86-118.
- Ben Souissi, J., Mejri, H., Zauali, J. & Capapé, C., 2005. On the occurrence of the Por's goatfish, *Upeneus pori* (Mullidae) in southern Tunisia (central Mediterranean). *Cybium*, 29 (4): 410-412.
- Ben-Abdallah, R., Alturky, A.A. & Fitury, A.A., 2004. Commercially exploited fishes in Libya. In: *Actes des 6e Journées tunisiennes des sciences de la Mer* (ATSMer), Novembre 2003, Tunis. *Bulletin de l'Institut National des Sciences et Technologies de la Mer, Salammbô*, 52-55.
- Ben-Tuvia, A., 1953. Mediterranean fishes of Israel. *Bulletin of the Sea Fisheries Research Station*, 8: 1-40.
- Bogdanos, C. & Diapoulis, A., 1984. Contribution in the knowledge of the zoobenthos and phytobenthos of the Messolonghi lagoon. *Thalassographica*, 7: 39-52. (In Greek)
- Bostock, P.D. & Holland, A.E., 2010. *Census of the Queensland Flora*. Queensland Herbarium Biodiversity & Ecosystem Sciences, Department of Environment & Resource Management, Brisbane, 320 pp.
- Capapé, C., Gueye-Ndiaye, A., Diatta, Y., Diop, M. & Seck, A.A., 2001. Observations on six elasmobranch species recorded from off the coast of Senegal (eastern tropical Atlantic). *Acta Adriatica*, 42 (1): 89-102.
- Capapé, C., Seck, A.A. & Quignard, J.P., 1999. Observations on the reproductive biology of the angular rough shark, *Oxynotus centrina* (Oxynotidae). *Cybium*, 23 (3): 259-271.
- Casagrande, C. & Boudouresque, C.F., 2005. Abundance, Population Structure and Production of *Scrobicularia plana* and *Abra tenuis* (Bivalvia: Scrobicularidae) in a Mediterranean Brackish Lagoon, Lake Ichkeul, Tunisia. *International Review of Hydrobiology*, 90 (4): 376-391.
- Catra, M. & Giardina, S., 2009. A survey of the marine macroalgae of Karpathos Island (the Aegean Sea, Greece). *Plant Biosystems*, 143: 509-515.
- Cecere, E., Petrocelli, A., Alongi, G., Saracino, O.D., Cormaci, M., & Furnari, G., 2000. Marine benthic flora of the Gargano promontory (Adriatic Sea, southern Italy). *Flora Mediterranea*, 10: 325-347.
- Chintiroglou, C.C., Valkouma, T. & Culley, M., 1996. Biological studies in Athens Lake Vouliagmeni. I. The allometry of feeding and body size in a population of the sea anemone *Paranemonia vouliagmeniensis* Doumenc *et al.*, 1987 (Actiniaria: Anthozoa). *Journal of the Marine Biological Association of the United Kingdom*, 76: 465-479.
- Coll, M., Piroddi, C., Steenbeek, J., Kaschner, K., Ben Rais Lasram F. *et al.*, 2010. The Biodiversity of the Mediterranean Sea: Estimates, patterns, and threats. *PLoS ONE*, 5: e11842. DOI: 10.1371/journal.pone.0011842 (Published online)
- Cormaci, M., Furnari, G., Alongi, G., Dinaro, R. & Pizzuto, F., 1992. On the occurrence in Sicily of three Florideophyceae new to the Mediterranean Sea. *Botanica Marina*, 35: 447-450.
- Cormaci, M., Furnari, G., Giaccone, G. & Serio, D., 2004. Alien macrophytes in the Mediterranean Sea: a review. *Recent Research Developments in Environmental Biology*, 1: 153-202.
- Cormaci, M., Lanfranco, E., Borg, J.A., Buttigieg, S., Furnari, G. *et al.*, 1997. Contribution to the knowledge of benthic marine algae on rocky substrata of the Maltese Islands (Mediterranean sea). *Botanica Marina*, 40: 203-215.
- Corsini, M., Margies, P., Kondilatos, G. & Economidis, P.S., 2005. Lessepsian migration of fishes to the Aegean Sea: first record of *Tylerius spinosissimus* (Tetraodontidae) from the Mediterranean, and six more fish records from Rhodes. *Cybium*, 29 (4): 347-354.
- Compagno, L.J.V., 1984. *FAO species catalogue. Vol. 4. Sharks of the World. An annotated and illustrated catalogue of the shark species known to date. Part 1: Hexanchiformes to Lamniformes*. *FAO Fisheries Synopsis*. No. 125, 249 pp.
- Corsini-Foka, M., 2009. Uncommon fishes from Rhodes and nearby marine region (SE Aegean Sea, Greece). *Journal of Biological Research-Thessaloniki*, 12: 125-133.
- De Girolamo, M., Scaggiante, M. & Rasotto, M.B., 1999. Social organization and sexual pattern in the Mediterranean parrotfish *Sparisoma cretense* (Teleostei: Scaridae). *Marine Biology*, 135: 353-360.
- Dragičević, B., Dulčić, J. & Capapé, C., 2009. Capture of a rare shark, *Oxynotus centrina* (Chondrichthyes: Oxynotidae) in the eastern Adriatic Sea. *Journal of Applied Ichthyology*, 25 (Suppl. 1): 56-59.
- Dulčić, J. & Pallaoro, A., 2006. First record of the oceanic puffer (*Lagocephalus lagocephalus lagocephalus* Linnaeus, 1758), for the Adriatic Sea. *Journal of Applied Ichthyology*, 22: 94-95.
- El Sayed, R.S., 1994. *Check-list of Egyptian Mediterranean fishes*. Alexandria, Egypt, National Institute of Oceanography & Fisheries, 77 pp.
- ELNAIS, 2012. *Ellenic Network of Aquatic Invasive Species*. <https://services.ath.hcmr.gr> (Accessed 7 February 2012)
- Fischer, W., Bauchot, M.-L., Schneider, M., 1987. *Fiches FAO d'identification des espèces pour les besoins de la pêche. (Révision 1). Méditerranée et mer Noire. Zone de pêche 37. Volume II. Vertébrés*. Rome, FAO, 761- 1530.
- Froese, R. & Pauly, D., 2011. *FishBase*. World Wide Web electronic publication. www.fishbase.org, version (03/2011).
- Gallardo, T., Gómez Garreta, A., Ribera, M.A., Cormaci, M., Furnari, G. *et al.*, 1993. Check-list of Mediterranean Seaweeds. II. Chlorophyceae Wille *s.l.* *Botanica Marina*, 36: 399-421.
- George, C.J. & Athanassiou, V.A., 1966. Observations on *Upeneus asymmetricus* Lachner, 1954 in St. George bay, Lebanon. *Annali del Museo Civico di Storia Naturale di Genova*, 76: 68-74.
- Giakoumi, S., Cebrian, E., Kokkoris, G.D., Ballesteros, E. & Sala E., *in press*. Relationships between fish, sea urchins and macroalgae: The structure of shallow sublittoral communities in the Cyclades, Eastern Mediterranean. *Estuarine, Coastal & Shelf Science*, doi:10.1016/j.ecss.2011.06.004.
- Gofas S., Garilli V. & Boisselier-Dubayle M.C., 2004. Nomenclature of the smaller Mediterranean Cerithium species. *Bollettino Malacologico*, 39 (5-8): 95-104.
- Golani, D., 1994. Niche separation between colonizing and indigenous goatfishes (Mullidae) of the Mediterranean coast of Israel. *Journal of Fish Biology*, 45 (3): 503-513.

- Gucu, A.C., Bingel, F., Avsar, D. & Uysal, N., 1994. Distribution and occurrence of Red Sea fish at the Turkish Mediterranean coast – northern Cilician basin. *Acta Adriatica*, 34: 103-113.
- Holmes, P., Dekker, R. & Williams, I.D., 2004. Population dynamics and genetic differentiation in *Abra tenuis*. *Marine Ecology Progress Series*, 268: 131-140.
- John, D.M., Prud'homme van Reine, W.F., Lawson, G.W., Kostermans, T.B. & Price, J.H., 2004. A taxonomic and geographical catalogue of the seaweeds of the western coast of Africa and adjacent islands. *Nova Hedwigia, Beiheft*, 127: 1-139.
- Kabasakal, H., 2009. Observations on a rare shark, *Oxynotus centrina* (Chondrichthyes: Oxynotidae), in the Sea of Marmara (north-western Turkey). *Pan-American Journal of Aquatic Sciences*, 4 (4): 609-612.
- Kalogirou, S., Corsini Foka, M., Sioulas, A., Wennhage, H. & Pihl, L., 2010. Diversity, structure and function of fish assemblages associated with *Posidonia oceanica* beds in an area of the eastern Mediterranean Sea and the role of non-indigenous species. *Journal of fish biology* 77, 2338-2357.
- Kalogirou, S., Wennhage, H. & Pihl, L., 2012. Non-indigenous species in Mediterranean fish assemblages: Contrasting feeding guilds of *Posidonia oceanica* meadows and sandy habitats. *Estuarine, Coastal and Shelf Science* 96, 209-218.
- Katsanevakis, S., 2011. Rapid assessment of the marine alien megabiota in the shallow coastal waters of the Greek islands, Paros and Antiparos, Aegean Sea. *Aquatic Invasions*, 6 (Suppl. 1): 133-137.
- Katsanevakis S., Poursanidis D., Yokes B., Mačić V., Beqiraj S. et al., 2011. Twelve years after the first report of the crab *Percnon gibbesi* (H. Milne Edwards, 1853) in the Mediterranean: current distribution and invasion rates. *Journal of Biological Research-Thessaloniki*, 16: 224-236.
- Katsanevakis, S. & Thessalou-Legaki, M., 2009. Documenting the presence of protected species in Souda Bay. p. 745-750. In: *9th Hellenic Symposium on Oceanography and Fisheries, 13-16 May 2009, Patra (Greece), HCMR*.
- Kosswig, C., 1950. Erythräische Fische im Mittelmeer und an der Grenze der Ägais. p. 203-212. In: *Syllogomena Biologica*. Festschrift Kleinschmidt. Leipzig, Akademie Verlag.
- Kruczynski, W.L & Porter, H.J., 1969. A new northern record for *Bursatella leachii pleii* Rang (Opisthobranchia), with notes on its biology. *The Nautilus*, 83, 40-43.
- Laskaridis, K., 1948. *Holocentrum rubrum* (Forssk.) and *Lagocephalus lagocephalus* (L.), two nearly reported members of the Greek fish fauna (Dodecanesian Islands). *Praktika of the Hellenic Hydrobiological Institute*, 2 (1): 127-129.
- Megalofonou, P. & Damalas, D., 2004. Morphological and biological characteristics of a gravid angular rough shark (*Oxynotus centrina*) and its embryos from the eastern Mediterranean Sea. *Cybiurn*, 28 (2): 105-110.
- Nicolaidou, A., Bourgooutzani, F., Zenetos, A., Guelorget, O. & Perthuisot, J.-M., 1988. Distribution of Molluscs and Polychaetes in coastal lagoons in Greece. *Estuarine, Coastal & Shelf Science*, 26: 337-350.
- Nizamuddin, M., 1991. *The Green Marine Algae of Libya*. Bern, Elga Publ., 227 pp.
- O'Donoghue, C.H. & White, K.M., 1940. A collection of marine molluscs, mainly opisthobranchs, from Palestina. *Proceedings of the Malacological Society of London*, 24, 92-96.
- Öğretmen, F., Yilmaz, F. & Torcu Koç, H., 2005. An investigation on fishes of Gökova Bay (Southern Aegean Sea). *Journal of Science & Technology of Balıkesir University*, 7 (2): 19-36.
- Oliver, J.A. & Terrassa, J., 2004. Primera cita de *Bursatella leachi* (de Blainville, 1817) (Mollusca, Opisthobranchia) a Mallorca. *Bolletí de la Societat d'Història Natural de les Balears*, 47: 37-42.
- Oltmanns, F., 1904. *Morphologie und biologie der algen*. Jena, Verlag von Gustav Fischer, 733 pp.
- Papakonstantinou, C., 1988. Check-list of marine fishes of Greece. *Fauna Graeciae*. Vol. IV, 257 pp.
- Pasternak, G., & Galil, B.S., 2010. Occurrence of the alien sea hare *Aplysia dactylomela* Rang, 1828 (Opisthobranchia, Aplysiidae) in Israel. *Aquatic Invasions*, 5 (4): 437-440.
- Petrakis, G. & Papaconstantinou, C., 1990. Biology of *Sparrisoma cretense* in the Dodecanese (Greece). *Journal of Applied Ichthyology*, 6 (1): 14-23.
- Rudman, W.B., 1998. *Bursatella leachii* (de Blainville, 1817). *Sea Slug Forum*. Australian Museum, Sydney. Available from: <http://www.seaslugforum.net/factsheet/bursleac>
- Rudman, W.B., 2002. *Comment on Plocamopherus ocellatus from Turkey by Erwin Koehler*. *Sea Slug Forum*. Australian Museum, Sydney. Available from <http://www.seaslugforum.net/find/8516> Retrieval date: 06.01.2012.
- Sauvageau, C., 1925. Sur quelques algues Floridiées renfermant de l'iode a l'état libre. *Bulletin de la Station Biologique d'Arcachon*, 22: 5-45.
- Schäfer, W., 1955. Eine Qualle aus dem Indischen Ozean in der Ägais. *Natur und Volk*, 85: 241-245.
- Smith, M.M. & Heemstra, P.C., 1986. *Smiths' Sea Fishes*. Berlin, Springer-Verlag, 1047 pp.
- Stergiou, K.I., Moutopoulos, D.K. & Erzini, K., 2002. Gill net and longlines fisheries in Cyclades waters (Aegean Sea): species composition and gear competition. *Fisheries Research*, 57 (1): 25-37.
- Tebble, N., 1966. *British Bivalve Seashells: A Handbook for Identification*. London, Trustees of the British Museum (Natural History), 212 pp.
- Tortonese, E., 1956. *Fauna d'Italia. Vol. II. Leptocardia, Ciclostomata, Selachii*. Bologna, Edizioni Calderini, 334 pp.
- Tortonese, E., 1975. *Fauna d'Italia. Vol. XI. Osteichthyes*. Bologna, Edizioni Calderini, 636 pp.
- Tsiamis, K., Montesanto, B., Panayotidis, P., Katsaros, C. & Verlaque, M., 2010. Updated records and range expansion of alien marine macrophytes in Greece (2009). *Mediterranean Marine Science*, 11 (1): 61-79.
- Tsiamis, K. & Verlaque, M., 2011. A new contribution to the alien red macroalgal flora of Greece (Eastern Mediterranean) with emphasis on *Hypnea* species. *Cryptogamie, Algologie*, 32 (4): 393-410.
- Turna, I., Cormaci, M. & Furnari, G., 2000. First record of *Botryocladia madagascariensis* G. Feldmann (Rhodymeniaceae, Rhodophyceae) from the Gulf of Antalya (Mediterranean coast of Turkey). *Plant Biosystems*, 134 (1): 111-115.
- Valdés, A. & Templado, J., 2002. Indo-Pacific dorid nudibranchs collected in Lebanon (eastern Mediterranean). *Iberus*, 20: 23-30.
- Weitzmann, B., Garcia, M. & Ballesteros, E. 2007. Primera cita de la llebre de mar *Bursatella leachi* (de Blainville, 1817) a la costa mediterrània peninsular. *Butlletí de la Institució Catalana d'Història Natural*, 75: 153-158.

- Wilkes, R.J., Mcivor, L. & Guiry M.D., 2006. Vegetative morphology and rbcL phylogeny of some members of the genera *Botryocladia* and *Irvinea* (Rhodymeniaceae, Rhodophyta). *Phycologia*, 45 (5): 481-494.
- Wolff, W.J., Duiven, A.G., Duiven, P., Esselink, P., Gueye, A. *et al.*, 1993. Biomass of macrobenthic tidal flat fauna of the Banc d'Arguin, Mauritania. *Hydrobiologia*, 258 (1-3): 151-163.
- Wynne, M.J., 2001. New records of benthic marine algae from the Sultanate of Oman, northern Arabian sea. III. *Contributions from the University of Michigan Herbarium*, 23: 389-406.
- Yokeş, M.B. & Rudman, W.B., 2004. Lessepsian opisthobranchs from southwestern coast of Turkey; five new records for Mediterranean. *Rapport du 37e Congrès de la Commission Internationale pour l'Exploration Scientifique de la Mer Méditerranée*, 37: 557.
- Zava, B., D'Anna, G., Giordano, D., Giusto, G.B., Monteverde, G. *et al.*, 2005. Note biologiche su *Lagocephalus lagocephalus* (L. 1758) (Osteichthyes – Tetraodontidae) delle acque siciliane. *Biologia Marina Mediterranea*, 12 (1): 614-617.
- Zenetos, A., Katsanevakis S., Poursanidis D., Crocetta F., Dimalas D. *et al.*, 2011. Marine alien species in Greek Seas: additions and amendments by 2010. *Mediterranean Marine Science*, 12 (1): 95-120.
- Zenetos, A., Gofas, S., Russo, G. & Templado, J., 2004. *CIESM atlas of exotic species in the Mediterranean. Vol.3. Molluscs*. Monaco, CIESM Publishers, 376 pp.
- Zenetos, A., Ovalis, P. & Kalogirou, S., 2009. Closing the gap: *Cerithium scabridum* Philippi, 1848 found in the South Aegean (Greece, Mediterranean Sea). *Journal of Biological Research-Thessaloniki*, 11: 107-110.
- Županovic, S. & Jardas, I., 1989. *Fauna i flora Jadrana: Jabucka kotlina*. Vol. 2. Logos, Split, 52 pp.