

Rare Atlantic Epitoniidae S.S. Berry, 1910 (1812) (Gastropoda) from the Mediterranean Sea with notes of their biocoenosis

Carlo Smriglio^{*1}, Jakov Prkić² & Paolo Mariottini¹

¹Department of Science, University Roma Tre, Rome, Italy; e-mail: csmriglio@alice.it; paolo.mariottini@uniroma3.it

²Getaldićeva 11, 21000 Split, Croatia; e-mail: jakov.prkic0@ainet.hr

*Corresponding author

ABSTRACT

Three rare species of Epitoniidae S.S. Berry, 1910 (1812) (Gastropoda) with a predominant Atlantic distribution are reported from the Mediterranean Sea: *Epitonium nanum* (Jeffreys, 1884), collected from the coralligenous bottoms of the Alboran Sea; *Claviscala richardi* (Dautzenberg et de Boury, 1897) dredged on a white coral biocoenosis located off the coast of Lazio, Central Tyrrhenian Sea; *Cylindriscala mirifica* (P. Fischer, 1886) from the bathyal water off Dubrovnik, Croatia, Southern Adriatic Sea. Updated data on the distribution of these epitoniids are provided together with the description of their biocoenosis.

KEY WORDS

Mediterranean Sea; *Epitonium nanum*; *Claviscala richardi*; *Cylindriscala mirifica*.

Received 1.11.2024; accepted 06.12.2024; published online 30.12.2024

INTRODUCTION

According to literature, in the bathyal water of the Mediterranean Sea, occasionally, specimens of Atlantic species can be found alive and/or subfossil (Bouchet & Taviani, 1989, 1990, 1992; Romani et al., 2016). In the case of alive specimens, these records can be explained by the transport of larvae with planktotrophic development driven by marine currents entering the Strait of Gibraltar (Bouchet & Taviani, 1989). Even if metamorphosed in the Mediterranean basin, those Atlantic species do not necessarily give rise to stably reproductive populations and therefore they must be considered exclusively occasional cold-water migrants (Bouchet & Taviani, 1989). In the case of fossil records, the shells of the deep-sea mollusc fauna can be derived from late glacial thanatocoenosis and are currently no longer present in a living state in the Mediterranean Sea (Taviani & Colantoni, 1979; Romani et al., 2016). These records are of great interest be-

cause they contribute to increase the knowledge of the malacofauna that populated the deep waters of the Mediterranean during the last glaciation. With this note, three rare Atlantic epitoniids are reported from the Mediterranean Sea: one specimen of *Epitonium nanum* (Jeffreys, 1884) from the Alboran Sea; two juvenile specimens of *Claviscala richardi* (Dautzenberg et de Boury, 1897) from the Central Tyrrhenian Sea; one specimen of *Cylindriscala mirifica* (P. Fischer, 1886) from the Southern Adriatic Sea.

MATERIAL AND METHODS

The three species of Epitoniidae have been collected as follows:

Epitonium nanum. SPAIN • 1 sh; Alboran Sea; 80/150 m depth; dredged on coralligenous debris; CS-PMC.

Claviscala richardi. ITALY • 2 juvenile shs;

Lazio, Central Tyrrhenian Sea; 540 m depth; sorted in sediments collected at in bathyal water; CS-PMC.

Cylindriscala mirifica. CROATIA • 1 sh; off Dubrovnik, Southern Adriatic Sea; 450/500 m depth; screened in bathyal sediments; RSC.

Photographs have been taken with a Nikon D3300 digital camera mounted on a Carl Zeiss 475052 stereomicroscope and with an Olympus OM-D E-M5 Mark III digital camera and M. Zuiko ED 30mm f/3.5 macro lens. Current systematics is based on the World Register of Marine Species (WoRMS, 2024).

ACRONYMS AND ABBREVIATIONS. CS-PMC, Carlo Smriglio & Paolo Mariottini collection (Rome, Italy); RSC, Rino Stanić collection (Split, Croatia); other acronyms: H = height; D = diameter; Sh/s = shell/shells; USNM = United States National Museum.

RESULTS

Systematics

Classis GASTROPODA Cuvier, 1795

Subclassis CAENOGASTROPODA L.R. Cox, 1960

Ordo CAENOGASTROPODA *incertae sedis*

Superfamilia EPITONIOIDEA S.S. Berry, 1910 (1812)

Familia EPITONIIDAE S.S. Berry, 1910 (1812)

Genus *Epitonium* Röding, 1798

TYPE SPECIES. *Epitonium scalare* (Linnaeus, 1758) (type by subsequent designation).

Epitonium nanum (Jeffreys, 1884)

A specimen without soft parts was sorted in the

debris dredged from the coralligenous bottoms of the Alboran Sea, Mediterranean sector characterized by particular faunal endemisms (Smriglio et al., 1996; Peñas et al., 2016). This little species, initially confused with *Epitonium pseudonanum* Bouchet & Waren, 1986, and currently considered junior synonym of *Epitonium finitimum* (Monterosato, 1890) (Appolloni et al., 2018), was discussed and illustrated by Bouchet & Waren (1986), who also designated the lectotype (USNM 182462, PORCUPINE station 9, 48°06N, 09°18W, 985 m depth; North of Bay of Biscay). The first report for the Mediterranean Sea is most likely a subfossil belonging to the last glacial period.

Genus *Claviscala* de Boury, 1909

TYPE SPECIES. *Claviscala richardi* (Dautzenberg et de Boury, 1897) (type by original designation).

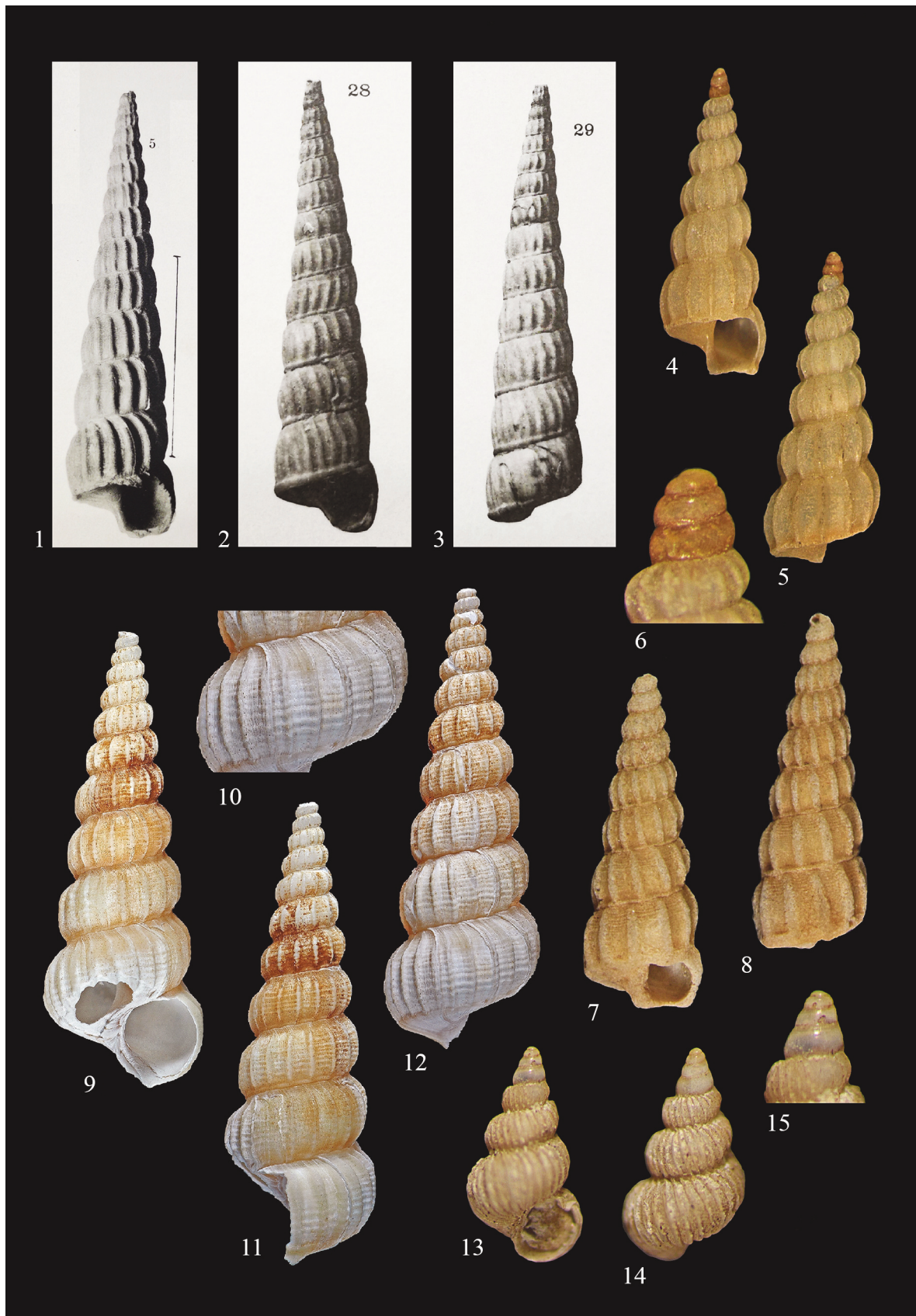
Claviscala richardi (Dautzenberg et de Boury, 1897)

Two juvenile specimens without soft parts were screened during the examination of sandy-muddy sediments coming from the bathyal bottoms located off the Latium coast hosting white coral associations (Pérès & Picard, 1964). Despite the juvenile stage, the two specimens were easily identified because of their shell morphology and sculpture, as well as the characteristic brownish protoconch (Dautzenberg & De Boury, 1897; Hoffman et al, 2011). A chalky and fragmented subfossil adult shell of this species, from the late glacial thanatocoenosis of the Balearic basin, was previously reported by Bouchet & Taviani (1989).

Genus *Cylindriscala* de Boury, 1909

TYPE SPECIES. *Cylindriscala acus* (R. B. Watson, 1883) (type by original designation).

Figure 1. *Scalaria richardi* Dautzenberg et de Boury, 1897. Original figure from Dautzenberg & de Boury, (1897: tome X, plate II, fig. 5). Figures 2, 3. *Scala richardi* Dautzenberg et de Boury, 1897. Original figures from Dautzenberg (1927: Fascicule LXXII, planche IV, figs. 28–29). Figures 4–6. *Claviscala richardi* (Dautzenberg et de Boury, 1897): frontal, dorsal and apical views, H 5.2 x D 2.2 mm, Central Tyrrhenian Sea, off Latial coast, (41°44'N 11°33'E), 500 m depth, CS-PMC. Figures 7, 8. *Claviscala richardi* (Dautzenberg et de Boury, 1897): frontal and dorsal views, H 7.0 x D 2.5 mm, Central Tyrrhenian Sea, off Latial coast, (41°44'N 11°33'E), 500 m depth, CS-PMC. Figures 9–12. *Cylindriscala mirifica* (P. Dautzenberg, 1886): frontal, dorsal and lateral views with detail of the spiral sculpture H 13.7 x D 4.43 mm, bathyal bottoms off Dubrovnik, 450/500 m depth, RSC. Figures 13–15. *Epitonium nanum* (Jeffreys, 1884): frontal, dorsal and apical views, H 2,1 x D 1,1 mm, Alboran Sea, red coral bottoms, 80–150 m depth, CS-PMC.



Cylindriscala mirifica (P. Fischer in Filhol, 1886)

The genus *Cylindriscala* de Boury, 1909 includes species of epitoniids restricted to deep waters (Bouchet & Waren, 1986). A single subfossil and subadult specimen of this very interesting species was sorted during the screening of bathyal sediments dredged off the coast of Dubrovnik (450–500 m depth), Southern Adriatic Sea. This Atlantic epitoniid is very rare and the few records are known from the bathyal bottoms (2075–2950 m depth) of the Canary and Azores Islands. This taxon presents a very recognizable morphology: “*easily identified by its sculpture of numerous broad axial ribs, spiral threads, and its large (30 mm) adult size. The protoconch is unknown*” (Bouchet & Waren, 1986; Weil et al., 1999). This note reports the first record of this taxon in the Mediterranean Sea, although this shell, due to the fauna associated, is most likely to be attributed to the last glacial period. In fact, in the same dredged material, were found several subfossil valves of *Panomya norvegica* (Spengler, 1793) (Rino Stanić unpublished data), a typical Atlantic deep-sea species currently no longer living in the Mediterranean Sea.

DISCUSSION

The Mediterranean sectors where the three species of Epitoniidae have been recorded are areas of particular interest due to their geographical position, hydrodynamic characteristics and the malacofaunas associated with them. The Alboran Sea is considered a biogeographical sector (Bianchi & Morri, 2000) and a selfstanding ecoregion (Spalding et al., 2007). Indeed, for this geographic area the current vortices that pass through it are well described (Robinson et al., 2001) and the many morphological reliefs of the bottoms (Palomino et al., 2015). This bottom conformation favoured the occurrence of a particular malacofauna (Rueda et al., 2009, 2010; Gofas, 2014; Urra et al., 2016), rich in endemic species (Smriglio et al., 1997; Smriglio et al., 2001b; Smriglio & Spada, 2003; Peñas et al., 2016; Caballero-Herrera et al., 2022) and with a contribution of African species that enrich the biodiversity of marine communities of this geographical area (Rueda et al., 2010).

The bathyal bottoms located off the coast of Lazio, Central Tyrrhenian Sea, can be considered biodiversity hot spots, especially the hard bottom communities are amongst the most interesting of the whole Mediterranean (Cognetti et al., 2000), since the many species discovered and described over time for this geographical area (Smriglio & Mariottini, 1996a, 1996b, 1999, 2000, 2001; Mariottini et al., 2000; Smriglio et al., 2007) and for the many uncommon deep-sea species recorded in the past (Smriglio et al., 1987a, 1987b, 1988a, 1988b, 1988c). Among these, there is the report of another epitoniid, *Gregorioiscula sarsii* (Kobelt, 1903) by Smriglio et al. (1996), with a specimen, probably from a subfossil deposit of the last glacial period. Furthermore, there are also the records of *Lurifax vitreus* Warèn et Bouchet, 2001 by Smriglio & Mariottini (2002), *Lucinoma kazani* Salas et Woodside, 2002 and *Myrtea amorpha* (Sturany, 1896) by Smriglio & Mariottini (2006) together with large fragments of authigenic carbonate crusts. This material strongly smells of hydrocarbons, indicating the presence of volcanism phenomena on these deep bottoms with the presence of cold seeps communities (Aloisi et al., 2000, 2002; Salas & Woodside, 2002; Smriglio & Mariottini, 2002; Olu-Le Roy et al., 2004; Gontharet et al., 2007; Smriglio & Mariottini, 2012; Basso et al., 2020).

The marine bottoms of the southern Adriatic at considerable depths are colonized by scleractinian-spongy communities (Cognetti et al., 2000). Among these, *Madrepora oculata* Linnaeus, 1758, *Lophelia pertusa* (Linnaeus, 1758), *Dendrophyllia cornigera* (Lamarck, 1816), *Desmophyllum dianthus* (Esper, 1794), *Poecillastra compressa* (Bowerbank, 1866), and *Pachastrella monilifera* Schmidt, 1868 reported for the Bari Canyon, GONDOLA Slide, and Dauno Seamount, Southeastern Adriatic (Freiwald et al., 2009; Bo et al., 2012; Sanfilippo et al., 2013; D’Onghia et al., 2015; Nasto et al., 2018)). The benthic malacofauna associated with scleractinians includes byssate bivalves such as *Asperarca nodulosa* (Müller, 1776), *Bathyarca philippiana* (Nyst, 1848), *Spondylus gussonii* Costa, 1829, *Delectopecten vitreus* (Gmelin, 1791), while the infaunal bivalve *Ennucula aegeensis* (Forbes, 1844) and the brachiopod *Novocrania anomala* (Müller, 1776) (Angeletti et al., 2014) occur in the muddy bottom. A Würmian thanatocenosis is present in the same area (Colan-

toni et al., 1975; Taviani, 1978; Panetta et al., 2013) as in other areas of the Mediterranean Sea hosting white coral communities (Taviani & Colantoni, 1979; Nasto et al., 2018). The occurrence of sub-fossil valves of *Panomya norvegica* (Spengler, 1793) found with *C. mirifica* confirms the presence of this Würmian thanatocenosis.

ACKNOWLEDGEMENTS

We are very grateful to John M. Woodside (Lyngby Marine Geophysical Research, Amstelveen, Netherlands) for the bibliographic help, and to Rino Stanić (Split, Croatia) for the photos of *C. mirifica* and information about findings of *P. norvegica*.

REFERENCES

- Aloisi G., Pierre C., Rouchy J.-M., Foucher J.-P., Woodside J. & the MEDINAUT Scientific Party, 2000. Mediterranean Sea mud volcanoes and their possible relation to gas hydrate destabilisation. *Earth and Planetary Science Letters*, 184: 321–338.
- Aloisi G., Bouloubassi I., Heijs S.K., Pancost R.D., Pierre C., Sinninghe Damsté J.S., Gottschal J.C., Forney L.J. & Rouchy J.-M., 2002. CH₄-consuming microorganisms and the formation of carbonate crusts at cold seeps. *Earth and Planetary Science Letters*, 203: 195–203.
- Appolloni A., Smriglio C., Amati B., Lugliè L., Nofroni I., Tringali L. P., Mariottini P. & Oliverio M. 2018. Catalogue of the primary types of marine molluscan taxa described by Tommaso Allery Di Maria, Marquis of Monterosato, deposited in the Museo Civico di Zoologia, Roma. *Zootaxa* 4477: 1–138. <https://doi.org/10.11646/zootaxa.4477.1.1>
- Basso D., Beccari V., Almogi-Labin A., Hyams-Kaphzan O., Weissman A., Makovsky Y., Rüggeberg A. & Spezzaferri S., 2020. Macro- and micro-fauna from cold seeps in the Palmahim Disturbance (Israeli offshore), with description of *Waisiuconcha corsellii* n. sp. (Bivalvia, Vesicomidae). *Deep Sea Research Part II: Topical Studies in Oceanography*, 171: 1–14. <https://doi.org/10.1016/j.dsr2.2019.104723>
- Bianchi C.N. & Morri, C., 2000. Marine biodiversity of the mediterranean sea: Situation, problems and prospects for future research. *Marine Pollution Bulletin*, 40: 367–376. [http://dx.doi.org/10.1016/S0025-326X\(00\)00027-8](http://dx.doi.org/10.1016/S0025-326X(00)00027-8).
- Bo M., Bertolino M., Bavestrello G., Canese S., Giusti M., Angiolillo M., Pansini M. & Taviani M., 2012. Role of deep sponge grounds in the Mediterranean Sea: a case study in southern Italy. *Hydrobiologia*, 687: 163–177. <http://dx.org/10.1007/s10750-011-0964-1>.
- Bouchet P. & Marco Taviani M., 1989. Atlantic Deep-Sea Gastropods in the Mediterranean: New Findings. *Bollettino Malacologico*, 25: 137–148.
- Bouchet P. & Marco Taviani M., 1990. La colonizzazione dei bacini a soglia. Il caso del Mar Mediterraneo. *Lavori S.I.M. Atti del Congresso di Parma 11–13 ottobre 1990*. Parma 1992, 24: 31–35.
- Bouchet P. & Marco Taviani M., 1992. The Mediterranean Deep-sea fauna: pseudopopulations of Atlantic species? *Deep Sea Research Part A. Oceanographic Research Papers*, 39: 169–184.
- Bouchet P. & Warén A., 1986. Revision. of the Northeast Atlantic bathyal and abyssal Aclididae, Eulimidae, Epitoniidae (Mollusca, Gastropoda). *Bollettino Malacologico, Suppl. 2*: 298–576.
- Caballero-Herrera J.A., Gofas S. & Rueda J.L., 2022. *Episcomitra angelesae* (Mollusca: Gastropoda: Mitridae), a new species from an exceptional deep habitat in the Alboran Sea. *Mediterranean Marine Science*, 23: 14–24. <https://doi.org/10.12681/mms.27880>.
- Cognetti G., Lardicci C., Abbiati M. & Castelli A., 2000. The Adriatic Sea and the Tyrrhenian Sea, in Sheppard C.R.C. (Ed.), 2000. *Seas at the millennium: an environmental evaluation: 1. Regional chapters: Europe, The Americas and West Africa*. Pergamon: Amsterdam, XXI, 934 pp.
- Colantoni P., Noto P. & Taviani M., 1975. Prime datazioni assolute di una fauna fossile a *Pseudamussium septemradiatum* dragata nel basso Adriatico. *Giornale di Geologia*, 40: 133–140.
- Dautzenberg P., 1927. Mollusques provenant des campagnes scientifiques du Prince Albert I^{er} de Monaco dans l’Océan Atlantique et dans le Golfe de Gascogne. Résultats des Campagnes Scientifiques accomplies sur son yacht par Albert I^{er} Prince Souverain de Monaco, Fascicule LXXII, 400 pp, 9 pl.
- Dautzenberg P. & De Boury E. 1897. Campagnes scientifiques du Prince de Monaco. Diagnoses d’espèces nouvelles appartenant aux genres *Scalaria* et *Mathildia*. *Bulletin de la Société Zoologique de France*, 22: 31–33.
- Dautzenberg P. & de Boury E., 1897. Mollusques appartenant a la famille des Scalidae et au genre *Mathildia*. *Mémoires de la Société zoologique de France*, 10: 62–74.
- D’Onghia G., Capezzuto F., Cardona F., Carlucci R., Carluccio A., Chimienti G., Corriero G., Longo C., Maiorano P., Mastrototaro F., Panetta P., Rosso A., Sanfilippo R., Sion L. & Tursi A., 2015. Macro and megafauna recorded in the submarine Bari Canyon

- (southern Adriatic, Mediterranean Sea) using different tools. *Mediterranean Marine Science*, 16: 180–196.
- Freiwald A., Beuk L., Rüggeberg A., Taviani M. & Hebbeln D., 2009. The White Coral Community in the Central Mediterranean Sea Revealed by ROV Surveys. *Oceanography*, 22: 58–74.
- Gofas S., Moreno D. & Salas C., 2011. *Moluscos marinos de Andalucía*. Vol. I, II, 798 pp. Servicio de Publicaciones e Intercambio Científico. Universidad de Málaga, Málaga.
- Gofas S., Salas C., Rueda J.L., Canoura J., Farias C. & Gil J., 2014. Mollusca from a species-rich deep-water *Leptometra* community in the Alboran Sea. *Scientia Marina*, 78: 537–553.
<http://dx.org/10.3989/scimar.04097.27A>
- Gontharet S., Pierre C., Blanc-Valleron M.-M., Rouchy J.M., Fouquet Y., Bayon G., Foucher J.P., Woodside J., Mascle J., The Nautinil Scientific Party, 2007. Nature and origin of diagenetic carbonate crusts and concretions from mud volcanoes and pockmarks of the Nile deep-sea fan (eastern Mediterranean Sea). *Deep Sea Research Part II Topical Studies in Oceanography*, 54: 1292–1311.
- Hoffman L., Heugten B. van & Lavaleye M.S.S., 2011. Gastropoda (Mollusca) from the Rockall and Hatton Banks, northeastern Atlantic Ocean. 3. *Miscellanea Malacologica*, 5: 23–52.
- Mariottini P., Smriglio C. & Oliverio M., 2000 - The *Ringicula leptocheila* complex, with the description of a new species (Opisthobranchia, Ringiculidae). *Bollettino Malacologico*, 36: 71–82.
- Moya-Urbano E., Urra J., Gofas S., Gallardo-Núñez M., Mateo-Ramírez Á., Farias C., Ordinas X., Caballero-Herrera J.A., Bárcenas P., García-Ruiz C. & Rueda J.L., 2023. Molluscan assemblages in shelf and slope sedimentary habitats of the Northern Alboran Sea and their linkage to environmental variables. *Regional Studies in Marine Science*, 65: 1–17.
<https://doi.org/10.1016/j.rsma.2023.103077>
- Nasto I., Cardone F., Mastrototaro F., Panetta P., Rosso A., Sanfilippo R., Taviani M. & Tursi A., 2018. Benthic invertebrates associated with subfossil cold-water coral frames and hardgrounds in the Albanian deep waters (Adriatic Sea). *Turkish Journal of Zoology*, 42: 360–371.
<https://doi.org/10.3906/zoo-1708-44>
- Olu-Le Roy K., Sibuet M., Fiala-Médioni A., Gofas S., Salas C., Mariotti A., Jean-Paul Foucher J.-P. & Woodside J., 2004. Cold seeps community in the deep eastern Mediterranean Sea: composition, symbiosis and spatial distribution on mud volcanoes. *Deep Sea Research Part I: Oceanographic Research Papers*, 51: 1915–1936.
<https://doi.org/10.1016/j.dsr.2004.07.004>
- Palomino D., Alonso B., Iacono C.L., Casas D., d'Acremont E., Ercilla G., Gorini C. & Vazquez J.T., 2015. Seamounts and seamount-like structures of the Alborán Sea. In: Würtz M. & Rovere M. (Eds.), *Atlas of the Mediterranean Seamounts and Seamount-Like Structures*. IUCN, Gland, Switzerland and Málaga, pp. 21–57.
- Panetta P., Mastrototaro F., Chimienti G., Angeletti L. & D'Onghia G., 2013. Tanatocenosi wurmiana nel canyon di Bari (Mar Adriatico) *Biologia Marina Mediterranea*, 20: 148–149.
- Peñas A., Rolán E., Luque Á.A., José Templado J., Moreno D., Federico Rubio F., Salas C., Sierra A. & Gofas S., 2016. Moluscos marinos de la isla de Alborán. *Iberus*, 24: 23–151.
- Péres J.M. & Picard J., 1964. *Nouveau Manuel De Biologie Benthique De La Mer Méditerranée*. Recueil des Travaux de la Station marine d'Endoume, 31 (47), 5–137.
- Robinson A.R., Leslie W.G., Theocharis A. & Lascaratos A., 2001. *Mediterranean Sea Circulation*. *Encyclopedia of Oceanic Sciences*, Indira, Academic Press, pp. 1–19.
- Romani L., Giusti F. & Bogi C., 2016. Nuove segnalazioni di Molluschi batiali per l'Arcipelago Toscano ed aree adiacenti. *Bollettino Malacologico*, 52: 60–69.
- Rueda J.L., Gofas S., Urra J. & Salas C., 2009. A highly diverse molluscan assemblage associated with eelgrass beds (*Zostera marina* L.) in the Alboran Sea: micro-habitat preference, feeding guilds and biogeographical distribution. *Scientia Marina*, 73: 679–700.
<https://doi.org/10.3989/scimar.2009.73n4679>
- Rueda J.L., Urra J., Marina P., Ramírez Á.M. & Reina J., 2010. Especies africanas en la costas de Andalucía. *Quercus*, 293: 24–31.
- Salas C. & Woodside J., 2002. *Lucinoma kazani* n. sp. (Mollusca: Bivalvia): evidence of a living benthic community associated with a cold seep in the Eastern Mediterranean Sea. *Deep Sea Research Part I: Oceanographic Research Papers*, 49: 991–1005.
[https://doi.org/10.1016/S0967-0637\(02\)00010-9](https://doi.org/10.1016/S0967-0637(02)00010-9)
- Smriglio C., Mariottini P. & Bonfitto A., 1997. Description of *Houartiella* n. gen., Trophoninae Cossmann, 1903, and *Houartiella alboranensis* n. sp. from the Mediterranean Sea. *Bollettino Malacologico*, 32: 27–34.
- Smriglio C., Prkić J., Di Giulio A. & Mariottini P., 2007. Two new mathildids from the Mediterranean Sea (Gastropoda, Heterobranchia, Mathildidae). *Basteria*, 71: 177–188.
- Smriglio C., Mariottini P. & Gravina F., 1987a. Molluschi del Mar Tirreno Centrale: ritrovamento di *Typhlomangelia nivalis* (Loven, 1846). *Contributo primo*. *Bollettino Malacologico*, 23: 47–52.

- Smriglio C., Mariottini P. & Gravina F., 1987b. Molluschi del Mar Tirreno Centrale: segnalazione di alcuni Turridi provenienti da una biocenosi a coralli bianchi. Contributo II. Bollettino Malacologico, 23: 381–390.
- Smriglio C., Mariottini P. & Gravina F., 1988a - Molluschi del Mar Tirreno Centrale: ritrovamento di *Adeuomphalus ammoniformis* G. Seguenza, 1876, *Fissurisepta granulosa* Jeffreys, 1883 e *Propilidium ancyloide* (Forbes, 1840). Contributo III. Bollettino Malacologico, 24: 1–6.
- Smriglio C., Mariottini P. & Gravina F., 1988b - Molluschi del Mar Tirreno Centrale: segnalazione di *Amygdalum luteum* (Jeffreys, 1880). Contributo IV. Bollettino Malacologico, 24: 145–147.
- Smriglio C., Mariottini P. & Gravina F., 1988c - Molluschi del Mar Tirreno Centrale: segnalazione di *Pleurotomella packardi* Verrill, 1872. Contributo V. Bollettino Malacologico, 24: 148–149.
- Smriglio C. & Mariottini P., 1996a. Descrizione di una nuova specie di Cystidae Stimpson, 1865 per il Mar Mediterraneo: *Granulina gofasi* n. sp. La Conchiglia, 28 (281): 54–56.
- Smriglio C. & Mariottini P., 1996b. Central Tyrrhenian sea Mollusca: XI. Description of *Callostracum tyrrhenicum* sp. nov. (Gastropoda, Acteonidae) and remarks on the other Mediterranean species of the family Acteonidae d'Orbigny, 1835. Basteria, 60: 183–193.
- Smriglio C. & Mariottini P., 1999. Descrizione di *Krachiopsis* n. gen. e *Krachiopsis giannuzzii* n. sp. (Cerithiopsidae Adams H. & A., 1853) per il Mar Mediterraneo. In: Giannuzzi-Savelli R., Pusateri F., Palmeri A. & Ebreo C. (1999), Atlante delle conchiglie marine del Mediterraneo, vol. 3: Caenogastropoda (parte 2: Ptenoglossa). Evolver, Roma, 127 pp.
- Smriglio C., Mariottini P. & Giusti F., 1996. Prima segnalazione di *Gregorioscala sarsi* (Kobelt, 1903) per il Mar Mediterraneo e ritrovamento di *Acirsa* cfr. *corsicana* Nordsieck, 1974 per il Mar Tirreno Settentrionale. La Conchiglia, 28 (279): 47–49.
- Smriglio C. & Mariottini P., 2000. *Onoba oliverioi* n. sp. (Prosobranchia, Rissoidae), a new gastropod from the Mediterranean. Iberus, 18: 15–19.
- Smriglio C. & Mariottini P., 2001. *Emarginula bonfittoi* spec. nov. (Gastropoda, Prosobranchia, Fissurellidae), a new bathyal species from the Mediterranean Sea. Basteria, 65: 139–143.
- Smriglio C., Rufini S. & Martin Pérez J.M., 2001. Rediscovery of the genus *Aphanitoma* in the Mediterranean Sea with description of *Aphanitoma mariottinii* nov. sp. La Conchiglia, 299: 39–43.
- Smriglio C. & Mariottini P., 2002. *Lurifax vitreus* Warèn & Bouchet, 2001 (Gastropoda, Orbitestellidae), first report from Mediterranean Sea. Bollettino Malacologico, 38: 45–47.
- Smriglio C. & Mariottini P., 2012. Molluschi di singoli ecosistemi. Scienzaonline. <https://www.scienzaonline.com/scienze-naturali/item/527-molluschi-di-singolari-ecosistemi.html>
- Smriglio C. & Spada G., 2003. New data on *Aphanitoma mariottinii* Smriglio, Rufini, Martin Perz, 2001 and *Aphanitoma locardi* (Bavay, 1906) (Turridae, Neogastropoda). La Conchiglia, 35 (309): 35–42.
- Spalding M., Fox H., Allen G., Davidson N., Ferdaña Z., Finlayson M., Halpern B., Jorge M., Lombana A., Lourie S., Martin K., McManus E., Molnar J., Recchia C. & Robertson J., 2007. Marine ecoregions of the world: A bioregionalization of coastal and shelf areas. Bioscience 57, 573–583. <http://dx.doi.org/10.1641/B570707>.
- Taviani M., 1978. Associazioni a Molluschi pleistocene-attuali dragate nell'Adriatico meridionale. Bollettino di Zoologia, 45: 297–306. <http://dx.doi.org/10.1080/11250007809440136>
- Taviani M. & Colantoni P., 1979. Thanatocoenoses wurmiennes associées aux coraux blancs. Rapports Commission internationale Mer Méditerranée, 25–26: 141–142.
- Urta J., Gofas S., Rueda J. L., Marina P., Mateo-Ramírez Á., Antit M. & Salas C., 2016. Biodiversity and biogeographical patterns of molluscan assemblages in vegetated and unvegetated habitats in the northern Alboran Sea (W Mediterranean Sea). Marine Biodiversity, 47: 187–201. <http://dx.doi.org/10.1007/s12526-016-0468-3>.
- Weil A., Brown L. & Neville B., 1999. The wentletrap book: a guide to the recent Epitoniidae of the world. Rome: Evolver, 244 pp.
- WoRMS, 2024. World Register of Marine Species. Available from <http://www.marine-species.org>. Accessed 10 November 2024.

