

Bathyal Benthos Export Through the Mediterranean Outflow Water: A Sponge Case Study from the Gulf of Cádiz Mud Volcanoes

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List of supplemental materials

Supplemental Table S1

Legend to Supplemental Data Files S1

List of References for Table S1

Supplemental Table S1. List of the Mediterranean and Atlantic deep-sea biogeographical areas considered in the presence/absence matrix of sponge species for the study of the biogeographic affinities across an Atlantic-Mediterranean gradient. It details the names of area, the area codes used to present results in graphs (with Mediterranean codes area ending with ‘-M’ and Atlantic those ending with ‘-A’) and the bibliographic references from which the sponge species records were extracted. References called OCEANA-2011/2013/2015/2016 indicate records from sponge samples retrieved during oceanographic campaigns performed by NGO OCEANA in 2011, 2013, 2015 and 2016 ([Sitjà et al., in prep.](#)).

Area	Code	References
Azores	A-A	(Ridley and Dendy, 1887; Topsent, 1890, 1892, 1896, 1901, 1904b, 1913; Stephens, 1915; Topsent, 1924, 1928; Lévi and Vacelet, 1958; Tabachnick and Menshenina, 2007; Van Soest et al., 2010; Cárdenas et al., 2018; Carvalho and Pisera, 2019)
South Azores Banks	AB-A	(Cárdenas et al., 2018; Carvalho et al., 2020)
Cape Verde	CV-A	(Ridley and Dendy, 1887; Schulze, 1887; Sollas, 1888; Topsent, 1904a, 1928; Van Soest et al., 2012, 2013, 2014; Boury-Esnault et al., 2017; Hestetun et al., 2017)
Canary Islands	C-A	(Topsent, 1928, 1929; Burton, 1954; Weerd and Van Soest, 1986; Samaai et al., 2006; Van Soest et al., 2013; Carvalho et al., 2015; Hestetun et al., 2017; Carvalho and Pisera, 2019; Carvalho et al., 2020)

Madeira	Ma-A	(Topsent, 1928; Weerdts and Van Soest, 1986; Samaai et al., 2006; Carvalho et al., 2015; Hestetun et al., 2017; Carvalho and Pisera, 2019)
Morocco	Mo-A	(Topsent, 1928; Barthel et al., 1996)
Lusitanian Banks	LB-A	(Kent, 1870; Poléjaeff, 1884; Topsent, 1928; Boury-Esnault et al., 2015; Cristobo et al., 2015; Carvalho et al., 2020)
Gulf of Cadiz	GC-A	(Thomson, 1873; Carter, 1876; Schulze, 1887; Sollas, 1888; Topsent, 1895; Arnesen, 1920; Topsent, 1928; Boury-Esnault et al., 1994; Van Soest et al., 2013, 2014)
Mud volcanoes	MV-A	(Díaz del Río et al., 2014; Chevaldonné et al., 2015; Sitjà et al., 2019; González-García et al., 2020)
Alboran Sea	Al-M	(Topsent, 1928; Vacelet, 1961; Templado et al., 1986; Boury-Esnault et al., 1994; Aguilar et al., 2011; Pardo et al., 2011; de la Torre et al., 2014; Sitjà and Maldonado, 2014; Boury-Esnault et al., 2015) OCEANA-2011
Balearic Sea	B-M	(Uriz and Rosell, 1990; Maldonado et al., 2015; Boury-Esnault et al., 2017; Santín et al., 2018) OCEANA-2013
Gulf of Lion	GL-M	(Topsent, 1900, 1928; Vacelet, 1960, 1969, 1976; Uriz, 1981, 1982, 1983, 1984; Lent et al., 1987; Lastras et al., 2016; Boury-Esnault et al., 2017; Fourn et al., 2017; Hestetun et al., 2017)
Ligurian Sea	L-M	(Topsent, 1928, 1934, 1936; Vacelet, 1960, 1969; Pulitzer-Finali, 1983; Pansini and Musso, 1991; Bakran-Petricioli et al., 2007; Boury-Esnault et al., 2017; Fourn et al., 2017)
West Corsica	C-M	(Vacelet, 1969; Pansini, 1987a; Chevaldonné et al., 2015; Boury-Esnault et al., 2017; Fourn et al., 2017)
East Tyrrhenian Sea	T-M	(Vosmaer, 1894; Topsent, 1928; Magnino et al., 1999; Bakran-Petricioli et al., 2007; Aguilar et al., 2011; Pisera and Vacelet, 2011; Bertolino et al., 2019; Cardone et al., 2019)
Sicily Strait	S-M	(Topsent, 1928; Vacelet, 1961; Zibrowius and Taviani, 2005; Aguilar et al., 2011; Bo et al., 2012; Calcinai et al., 2013; Taviani et al., 2015; Taviani et al., 2017; Bertolino et al., 2019). OCEANA-2015, 2016
Gulf of Taranto	GT-M	(Pulitzer-Finali, 1983; Tursi et al., 2004; Longo et al., 2005; Schönberg and Beuck, 2007; Beuck et al., 2010; Mastrototaro et al., 2010; Vertino et al., 2010; Boury-Esnault et al., 2017)
Adriatic Sea	A-M	(Babiç, 1922; Pansini, 1987b; D'Onghia et al., 2015; Taviani et al., 2015).

Legend to Supplemental Data File S1

List of bibliographic sponge records from 1870 to present day. It comprises 18 studied areas from Macaronesia, southern Lusitanian, Gulf of Cadiz, Western and Central Mediterranean regions. Rows comprise the sponge species ordered by families. Within each family, genera and species names are alphabetically ordered. Columns represent locations of each record, depth range (m) and source data. The symbol “*” next to a depth range indicates approximate depth data. Sites for records are organized by ocean areas, from West to East, and within each area, references are order by publication year of the record, then by author last name.

References

- Aguilar, R., López Correa, M., Calcinai, B., Pastor, X., García, S., 2011. First records of *Asbestopluma hypogea* Vacelet and Boury-Esnault, 1996 (Porifera, Demospongiae Cladorhizidae) on seamounts and in bathyal settings of the Mediterranean Sea. *Zootaxa* 2925, 33-40.
- Arnesen, E., 1920. Spongia. Report on the Scientific Results of the "Michael Sars" North Atlantic Deep-Sea Expedition, 1910. 3 (II), 1-29.
- Babič, K., 1922. Monactinellida und Tetractinellida des Adriatischen Meeres. *Zool. Jarhrb. Abt. Systematik*, 46, 217-302.
- Bakran-Petricioli, T., Vacelet, J., Zibrowius, H., Petricioli, D., Chevaldonné, P., Rađa, T., 2007. New data on the distribution of the ‘deep-sea’ sponges *Asbestopluma hypogea* and *Oopsacas minuta* in the Mediterranean Sea. *Mar. Ecol.* 28 (suppl.1), 10-23.
- Barthel, D., Tendal, O.S., Thiel, H., 1996. A wandering population of the Hexactinellid sponge *Pheronema carpenteri* on the continental slope off Morocco, Northwest Africa. *P.S.Z.N. Mar. Ecol.* 17 (4), 603-616.
- Bertolino, M., Ricci, S., Canese, S., Cau, A., Bavestrello, G., Pansini, M., Bo, M., 2019. Diversity of the sponge fauna associated with white coral banks from two Sardinian canyons (Mediterranean Sea). *J. Mar. Biol. Assoc. U.K.* 99 (8), 1735-1751.
- Beuck, L., Freiwald, A., Taviani, M., 2010. Spatiotemporal bioerosion patterns in deep-water scleractinians from off Santa Maria di Leuca (Apulia, Ionian Sea). *Deep-Sea Res. Pt. II* 57, 458-470.

- 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 (1), 163-177.
- Boury-Esnault, N., Pansini, M., Uriz, M.J., 1994. Spongiaires bathyaux de la mer d'Alboran et du golfe ibéro-marocain. *Mém. Mus. Natl. Hist. Nat.* 160, 1-174.
- Boury-Esnault, N., Vacelet, J., Dubois, M., Goujard, A., Fourt, M., Pérez, T., Chevaldonné, P., 2017. New hexactinellid sponges from deep Mediterranean canyons. *Zootaxa* 4236, 118-134.
- Boury-Esnault, N., Vacelet, J., Reiswig, H.M., Fourt, M., Aguilar, R., Chevaldonné, P., 2015. Mediterranean hexactinellid sponges, with the description of a new *Sympagella* species (Porifera, Hexactinellida). *J. Mar. Biol. Assoc. U.K.* 95 (Special Issue 07), 1353-1364.
- Burton, M., 1954. Sponges. The "Rosaura" Expedition. *Br. Mus. (Nat. Hist.) Zoology*, 2 (6), 215-239.
- Calcinai, B., Moratti, V., Martinelli, M., Bavestrello, G., Taviani, M., 2013. Uncommon sponges associated with deep coral bank and maerl habitats in the Strait of Sicily (Mediterranean Sea). *Ital. J. Zool.* 80 (3), 412-423.
- Cárdenas, P., Vacelet, J., Chevaldonné, P., Pérez, T., Xavier, J.R., 2018. From marine caves to the deep sea, a new look at *Caminella* (Demospongiae, Geodiidae) in the Atlanto-Mediterranean region. *Zootaxa* 4466 (1), 23.
- Cardone, F., Pansini, M., Corriero, G., Bertolino, M., 2019. Two new species of deep-sea sponges (Porifera, Demospongiae) from submarine canyons of the Sardinian continental margin (western Mediterranean Sea). *Zootaxa* 4688 (3), 407-419.
- Carter, H.J., 1876. Descriptions and figures of deep-sea sponges and their spicules, from the Atlantic Ocean, dredged up on board H.M.S. "Porcupine", chiefly in 1869 (concluded). *Ann. Mag. Nat. Hist.* 4 (18), 225-479.
- Carvalho, F.C., Cardenas, P., Rios, P., Cristobo, J., Rapp, H.T., Xavier, J.R., 2020. Rock sponges (lithistid Demospongiae) of the Northeast Atlantic seamounts, with description of ten new species. *PeerJ* 8: e8703.
- Carvalho, F.C., Pisera, A., 2019. Revision of the genus *Exsuperantia* Ozdikmen, 2009 (Tetractinellida: Phymaraphiniidae) with description of a new species from the Atlantic Ocean. *Zootaxa* 4613 (1), 135-151.

- Carvalho, F.C., Pomponi, S.A., Xavier, J.R., 2015. Lithistid sponges of the upper bathyal of Madeira, Selvagens and Canary Islands, with description of a new species of *Isabella*. *J. Mar. Biol. Assoc. U.K.* 95 (7), 1287-1296.
- Chevaldonné, P., Pérez, T., Crouzet, J.-M., Bay-Nouailhat, W., Bay-Nouailhat, A., Fourt, M., Almón, B., Pérez, J., Aguilar, R., Vacelet, J., 2015. Unexpected records of 'deep-sea' carnivorous sponges *Asbestopluma hypogea* in the shallow NE Atlantic shed light on new conservation issues. *Mar. Ecol.* 36 (3), 475-484.
- Cristobo, J., Rios, P., Pomponi, S.A., Xavier, J., 2015. A new carnivorous sponge, *Chondrocladia robertballardi* sp. nov. (Porifera: Cladorhizidae) from two north-east Atlantic seamounts. *J. Mar. Biol. Assoc. U.K.* 95 (7), 1345-1352.
- D'Onghia, G., Capezzuto, F., Cardone, 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. *Mediterr. Mar. Sci.* 16 (1), 17.
- de la Torriente, A., Aguilar, R., Serrano, A., García, S., Fernández, L.M., García-Muñoz, M., Punzón, A., Arcos, J.M., Sagarminaga, R., 2014. Sur de Almería - Seco de los Olivos. Proyecto LIFE+ INDEMARES. Fundación Biodiversidad del Ministerio de Agricultura, Alimentación y Medio Ambiente, pp. 1-102.
- Díaz del Río, V., Bruque, G., Fernández-Salas, L.M., Rueda, J.L., González, E., López, N., Palomino, D., López, F.J., Farias, C., Sánchez, R., Vázquez, J.T., Rittierott, C.C., Fernández, A., Marina, P., Luque, V., Oporto, T., Sánchez, O., García, M., Urra, J., Bárcenas, P., Jiménez, M.P., Sagarminaga, R., Arcos, J.M., 2014. Volcanes de fango del golfo de Cádiz, Proyecto LIFE + INDEMARES. Madrid, pp. 1-128.
- Fourt, M., Goujard, A., Pérez, T., Chevaldonné, P., 2017. Guide de la faune profonde de la mer Méditerranée. Explorations des roches et des canyons sous-marins des côtes françaises. *Patrim. Nat.* (75), 1-184.
- González-García, E., Mateo-Ramírez, Á., Urra, J., Farias, C., Marina, P., Lozano, P., López-González, P.J., Megina, C., Raso, J.E.G., Gofas, S., López, E., Moreira, J., López-González, N., Sánchez-Leal, R.F., Fernández-Salas, L.M., Rueda, J.L., 2020. Composition, structure and distribution of epibenthic communities within a mud volcano field of the northern Gulf of Cádiz in relation to environmental variables and trawling activity. *J. Sea Res.*, 101892.

- Hestetun, J.T., Tompkins-Macdonald, G., Rapp, H.T., 2017. A review of carnivorous sponges (Porifera: Cladorhizidae) from the Boreal North Atlantic and Arctic. *Zool. J. Linn. Soc.* 181 (1), 1-69.
- Kent, S., 1870. On two new Siliceous Sponges taken in the late Dredging-Expedition of the Yacht 'Norma' off the Coasts of Spain and Portugal. *Ann. Mag. Nat. Hist.* (4) 6(33), 217-224.
- Lastras, G., Canals, M., Ballesteros, E., Gili, J.-M., Sanchez-Vidal, A., 2016. Cold-Water Corals and Anthropogenic Impacts in La Fonera Submarine Canyon Head, Northwestern Mediterranean Sea. *PLOS ONE* 11 (5), e0155729.
- Lent, F.v., de Weerdt, W.H., Vacelet, J., Boury-Esnault, N., 1987. The Haplosclerid sponge fauna of Banyuls-sur-Mer (Mediterranean), with a description of a new species. *Taxonomy of Porifera*. Springer Verlag, Berlin, Heidelberg, pp. 125-148.
- Lévi, C., Vacelet, J., 1958. Eponges récoltées dans l'Atlantique Oriental par le "President Theodore Tissier" (1955-1956). *Rev. Trav. Inst. Pêch. Mar.* 22 (2), 225-246.
- Longo, C., Mastrototaro, F., Corriero, G., 2005. Sponge fauna associated with a Mediterranean deep-sea coral bank. *J. Mar. Biol. Assoc. U.K.* 85 (06), 1341-1352.
- Magnino, G., Gravina, M.F., Righini, P., Serena, F., Pansini, M., 1999. Due demosponge Lithistidi nuove per i mari italiani. *Biol. Mar. Mediterr.* 6 (1), 391-393.
- Maldonado, M., Aguilar, R., Blanco, J., García, S., Serrano, A., Punzón, A., 2015. Aggregated clumps of Lithistid sponges: A singular, reef-Like bathyal habitat with relevant paleontological connections. *PLoS ONE* 10 (5), e0125378.
- Mastrototaro, F., D'Onghia, G., Corriero, G., Matarrese, A., Maiorano, P., Panetta, P., Gherardi, M., Longo, C., Rosso, A., Sciuto, F., Sanfilippo, R., Gravili, C., Boero, F., Taviani, M., Tursi, A., 2010. Biodiversity of the white coral bank off Cape Santa Maria di Leuca (Mediterranean Sea): An update. *Deep-Sea Res. Pt. II* 57 (5-6), 412-430.
- Pansini, M., 1987a. Littoral demosponges from the banks of the straits of Sicily and the Alboran Sea. In: Vacelet, J., Boury-Esnault, N. (Eds.), *Taxonomy of Porifera*. Springer Verlag, Berlin, Heidelberg, pp. 149-186.
- Pansini, M., 1987b. Report on a collection of Demospongiae from soft bottoms of the Eastern Adriatic Sea. In: C., J.W. (Ed.), *European contributions to the taxonomy of sponges*. Publications of the Sherkin Island Marine Station, pp. 41-53.
- Pansini, M., Musso, B., 1991. Sponges from trawl-exploitable bottoms of Ligurian and Thyrrenian seas: distribution and ecology. *P.S.Z.N. Mar. Ecol.* 12 (4), 317-329.

- Pardo, E., Aguilar, R., García, S., de la Torriente, A., Ubero, J., 2011. Documentación de arrecifes de corales de agua fría en el Mediterráneo occidental (Mar de Alborán). *Chronica Naturae* 1, 20-34.
- Pisera, A., Vacelet, J., 2011. Lithistid sponges from submarine caves in the Mediterranean: taxonomy and affinities. *Sci. Mar.* 75 (1), 17-40.
- Poléjaeff, N., 1884. Report on the Keratosa collected by H.M.S. "Challenger" during the years 1873-1876. *Rep. Sci. Res. Voy. Challenger Zool. Zoology*, 2, 1-88.
- Pulitzer-Finali, G., 1983. A collection of Mediterranean Demospongiae (Porifera) with, in appendix, a list of the Demospongiae hitherto recorded from the Mediterranean Sea. *Ann. Mus. Civ. Stor. Nat. Giacomo Doria* 84, 445-621.
- Ridley, S.O., Dendy, A., 1887. Report on the Monaxonida collected by H.M.S."Challenger" during the years 1873-1876. *Rep. Sci. Res. Voy. Challenger Zool. Zool.*, 20 (Part LIX), 1-275.
- Samaai, T., Gibbons, M.J., Kelly, M., 2006. Revision of the genus *Latrunculia* du Bocage, 1869 (Porifera: Demospongiae: Latrunculiidae) with descriptions of new species from New Caledonia and the Northeastern Pacific. *Zootaxa* 1127, 3-71.
- Santín, A., Grinyó, J., Ambroso, S., Uriz, M., Gori, A., Dominguez-Carrió, C., Gili, J.-M., 2018. Sponge assemblages on the deep Mediterranean continental shelf and slope (Menorca Channel, Western Mediterranean Sea). *Deep-Sea Res. Pt. I* 131, 75-86.
- Schönberg, C.H.L., Beuck, L., 2007. Where Topsent went wrong: *Aka infesta* a.k.a. *Aka labyrinthica* (Demospongiae: Phloeodictyidae) and implications for other *Aka* species. *J. Mar. Biol. Assoc. U.K.* 87, 1459–1476.
- Schulze, M.F.E., 1887. Report on the Hexactinellida collected by H.M.S. "Challenger" during the years 1873-1876. *Rep. Sci. Res. Voy. Challenger Zool. Zoology*, 21, 1-513.
- Sitjà, C., Maldonado, M., 2014. New and rare sponges from the deep shelf of the Alboran Island (Alboran Sea, Western Mediterranean). *Zootaxa* 3760 (2), 141-179.
- Sitjà, C., Maldonado, M., Farias, C., Rueda, J.L., 2019. Deep-water sponge fauna from the mud volcanoes of the Gulf of Cadiz (North Atlantic, Spain). *J. Mar. Biol. Assoc. U.K.* 99 (4), 807-831.
- Sollas, W.J., 1888. Report on the Tetractinellida collected by H.M.S."Challenger" during the years 1873-76. *Rep. Sci. Res. Voy. Challenger Zool.* 25, 1-458.

- Stephens, J., 1915. Atlantic sponges collected by the Scottish National Antarctic Expedition. *T. Roy. Soc. Edin.* 50 (2), 423-467.
- Tabachnick, K.R., Menshenina, L.L., 2007. Revision of the genus *Asconema* (Porifera: Hexactinellida: Rossellidae). *J. Mar. Biol. Assoc. U.K.* 87 (6), 1403-1429.
- Taviani, M., Angeletti, L., Beuck, L., Campiani, E., Canese, S., Foglini, F., Freiwald, A., Montagna, P., Trincardi, F., 2015. On and Off the Beaten Track: Megafaunal Sessile Life and Adriatic Cascading Processes. *Mar. Geol.* 369, 273-287.
- Taviani, M., Angeletti, L., Canese, S., Cannas, R., Cardone, F., Cau, A., Cau, A.B., Follesa, M.C., Marchese, F., Montagna, P., Tessarolo, C., 2017. The "Sardinian cold-water coral province" in the context of the Mediterranean coral ecosystems. *Deep-Sea Res. Pt. II* 145, 61-78.
- Templado, J., García-Carrascosa, M., Baratech, L., Capaccioni, R., Juan, A., López-Ibor, A., Silvestre, R., Massó, C., 1986. Estudio preliminar de la fauna asociada a los fondos coralígenos del mar de Alborán (SE de España). *Bol. Inst. Esp. Oceanogr.* 3 (4), 93-104.
- Thomson, C.W., 1873. *The depths of the sea.* Macmillan and Co., London 1-527.
- Topsent, E., 1890. Notice préliminaire sur les spongiaires recueillis durant les campagnes de l'Hirondelle. *Bull. Soc. Zool. Fr.* 15, 26-32, 65-71.
- Topsent, E., 1892. Contribution a l'étude des Spongiaires de l'Atlantique Nord. *Result. Camp. Sci. Prince Albert I Monaco* 2, 1-165.
- Topsent, E., 1895. Campagnes du Yacht "Princesse Alice". Notice sur les spongiaires recueillis en 1894 et 1895. *Bull. Soc. Zool. Fr.* 20, 213-216.
- Topsent, E., 1896. Campagnes du Yacht "Princess Alice". Sur deux curieuses espirellines des Açores. *Bull. Soc. Zool. Fr.* 21, 147-150.
- Topsent, E., 1900. Étude monographique des Spongiaires de France. III. Monaxonida (Hadromerina). *Arch. Zool. Exp. Gén.* (3) 8, 1-331.
- Topsent, E., 1901. Eponges nouvelles de Açores. *Mém. Soc. Zool. Fr.* 14, 448-466.
- Topsent, E., 1904a. Notes sur les Eponges du "Travailleur" et du "Talisman". III. *Bull. Mus. Natl. Hist. Nat. Paris* 3, 372.
- Topsent, E., 1904b. Spongiaires des Açores. *Result. Camp. Sci. Prince Albert I Monaco* 25, 1-279.
- Topsent, E., 1913. Spongiaires provenant des campagnes scientifiques de la "Princess Alice" dans les Mers du Nord (1898-1899, 1906-1907). *Result. Camp. Sci. Prince Albert I Monaco* 45, 3-67.

- Topsent, E., 1924. Révision des Mycales de l'Europe occidentale. *Ann. Inst. Oceanogr.* 1 (3), 77-118.
- Topsent, E., 1928. Spongiaires de l'Atlantique et de la Méditerranée, provenant des croisières de Prince Albert Ier de Monaco. *Result. Camp. Sci. Prince Albert I Monaco* 74, 1-376.
- Topsent, E., 1929. Notes sur *Helophloeina stylivarians* n. g., n. sp. Mycaline à desmes des Canaries. *Bull. Inst. Oceanogr. Monaco* 533, 1-8.
- Topsent, E., 1934. Eponges observées dans les parages de Monaco. Première Partie. *Bull. Inst. Oceanogr. Monaco* 650, 1-42.
- Topsent, E., 1936. Eponges observées dans les parages de Monaco. Deuxième Partie. *Bull. Inst. Oceanogr. Monaco* 686, 1-70.
- Tursi, A., Mastrototaro, F., Matarrese, A., Maiorano, P., D'Onghia, G., 2004. Biodiversity of the white coral reefs in the Ionian Sea (Central Mediterranean). *Chem. Ecol.* 20 (sup1), 107-116.
- Uriz, M.J., 1981. Estudio sistemático de las esponjas Astrophorida (Demospongia) de los fondos de pesca de arrastre, entre Tossa y Calella (Cataluña). *Bol. Inst. Esp. Oceanogr.* 6 (320), 7-58.
- Uriz, M.J., 1982. Estudio sistemático de las esponjas del orden Axinellida (Demospongia) de la Costa Brava (Cataluña). *Actas del II Simposio Ibérico del Estudio del Bentos Marino III*, 57-80.
- Uriz, M.J., 1983. Monografía I. Contribución a la fauna de esponjas (Demospongia) de Cataluña. *An. Secc. Cienc. Colg. Univ. Gerona* 7, 1-220.
- Uriz, M.J., 1984. Material para la fauna de esponjas ibéricas: Nuevas señalizaciones de Demospongias en nuestras costas. *Actas IV Simposio Ibérico Estudios do Bentos Marinho, Lisboa*, 131-140.
- Uriz, M.J., Rosell, D., 1990. Sponges from bathyal depths (1000-1750 m.) in the Western Mediterranean Sea. *J. Nat. Hist.* 24, 373-391.
- Vacelet, J., 1960. Eponges de la Méditerranée nord-occidentale récoltées par le "President Théodore Tissier" (1958). *Rev. Trav. Inst. Pêch. Mar.* 24 (2), 257-272.
- Vacelet, J., 1961. Quelques Eponges remarquables de Méditerranée. *Rev. Trav. Inst. Pêch. Mar.* 25 (3), 351-354.
- Vacelet, J., 1969. Eponges de la Roche du Large et de l'étage bathyal de Méditerranée (récoltées de la Soucoupe plongeante cousteau et dragages). *Mém. Mus. Natl. Hist. Nat. série A*, 59 (2), 145-219.

- Vacelet, J., 1976. Inventaire des Spongiaires du Parc National de Port-Cros (Var). *Trav. Sci. Parc Natl. Port-Cros* 2, 167-186.
- Van Soest, R.M.W., Beglinger, E.J., de Voogd, N.J., 2010. Skeletons in confusion: a review of astrophorid sponges with (dicho-)calthrops as structural megascleres (Porifera, Demospongiae, Astrophorida). *ZooKeys* 68, 1-88.
- Van Soest, R.M.W., Beglinger, E.J., de Voogd, N.J., 2012. Sponges of the family Esperiopsidae (Demospongiae, Poecilosclerida) from Northwest Africa, with the descriptions of four new species. *Eur J Taxon* (18), 1-21.
- Van Soest, R.M.W., Beglinger, E.J., de Voogd, N.J., 2013. Microcionid sponges from Northwest Africa and the Macaronesian Islands (Porifera, Demospongiae, Poecilosclerida). *Zool. Meded.* 87, 275-404.
- Van Soest, R.M.W., Beglinger, E.J., de Voogd, N.J., 2014. Mycale species (Porifera: Poecilosclerida) of Northwest Africa and the Macaronesian Islands. *Zool. Meded.* 88 (4), 59-109.
- Vertino, A., Savini, A., Rosso, A., Di Geronimo, I., Mastrototaro, F., Sanfilippo, R., Gay, G., Etiope, G., 2010. Benthic habitat characterization and distribution from two representative sites of the deep-water SML Coral Province (Mediterranean). *Deep-Sea Res. Pt. II* 57, 380-396.
- Vosmaer, G.C.J., 1894. Preliminary notes on some Tetractinellids of the Bay of Naples. *Tijdschr. Nederl. Dierk. Vereen.* 4 (2), 269-286.
- Weerdt, W.H.d., Van Soest, R.W.M., 1986. Marine shallow-water Haplosclerida (Porifera) from the South-Eastern part of the North Atlantic Ocean. *Zool. Verh.* 225, 1-49.
- Zibrowius, H., Taviani, M., 2005. Remarkable sessile fauna associated with deep coral and other calcareous substrates in the Strait of Sicily, Mediterranean Sea. In: Freiwald, A., Roberts, J.M. (Eds.), *Cold-Water Corals and Ecosystems*. Springer Berlin Heidelberg, Berlin, Heidelberg, pp. 807-819.