Annotated checklist of Recent marine Bryozoa from continental Portugal

Inventario comentado de los Briozoos marinos actuales del Portugal continental

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Abstract

We present here a checklist of recent marine bryozoans collected from continental Portugal, compiled from the literature, together with unpublished data. The total number of species recorded is 237, 75 of those are from deep waters and 171 from shallow waters. The most diverse group is the order Cheilostomata with 186 species, followed by the order Ctenostomata, with 26 species, and the order Cyclostomata, with 25 species. The bryozoan species richness known currently represents between 57% and 68% of the total estimated. The 135 localities studied were grouped in five areas from North to South along the Portuguese coast, and divided into shallow water and deep water. The best known localities nowadays in Portugal are Armaçao de Pêra, with 82 species, and the Coast of Arrábida, with 71 species, while the Southwest coast is nearly unstudied. Most of the deep water species are considered endemic to the Lusitanian region, while in shallow waters most of them are widely distributed in the Atlantic-Mediterranean region. Both in deep and shallow waters there is a reduction of the proportion of boreal species from the north to the south, while with regards to Mediterranean species it is just upside down. Macaronesian species are present only in the south of Portugal.

Keywords: marine fauna, species richness, biogeography, Iberian Peninsula, NE Atlantic

Resumen

Presentamos un inventario de los Briozoos marinos actuales presentes en el Portugal continental, recopilados de la literatura previa así como de datos inéditos. El número total de especies se eleva a 237, 75 de aguas profundas y 171 de aguas superficiales. El grupo más diverso es el Orden Cheilostomata, con 186 especies, seguido del Orden Ctenostomata, con 26 especies, y el Orden Cyclostomata, con 25. La riqueza específica conocida hoy día representa entre el 57% y el 68% del número total de especies estimado. Las 135 localidades estudiadas fueron agrupadas en cinco áreas de norte a sur a lo largo de la costa portuguesa, y divididas a su vez en aguas profundas y superficiales. Las localidades mejor conocidas hoy día son Armaçao de Pêra, con 82 especies, y la Costa da Arrábida, con 71 especies, mientras que todo el suroeste es prácticamente desconocido. La mayor parte de las especies de aguas profundas son consideradas endémicas de la provincia lusitánica, mientras que en aguas superficiales la mayoría de las especies se distribuyen en la región atlanto-mediterránea. Tanto en aguas profundas como superficiales hay una reducción del porcentaje de especies boreales desde el norte hacia el sur, mientras que en el caso de las especies mediterráneas es justo al contrario. Las especies macaronesianas están presentes solamente en el sur de Portugal.

Palabras clave: fauna marina, riqueza específica, biogeografía, Península ibérica, Atlántico nororiental
INTRODUCTION

While the Bryozoan fauna in the Iberian Peninsula as a whole is relatively well known, the knowledge of the Portuguese fauna is still scarce and fragmentary, and not well documented. We are now carrying out a research project on the Iberian Bryozoan fauna; among other works, we have compiled the previous data referring to the Bryozoan species reported in continental Portugal. A plot showing the cumulative numbers of species newly recorded from Portugal in previous works (Fig. 1) indicates that the list of known species is far from reflecting the true bryozoan species richness.

The first known Bryozoan in Portuguese waters, in fact one of the first records in the Iberian Peninsula as a whole, was collected by the Challenger expedition at nearly 3000 m depth off southwest of Cape St. Vincent. This colony, the type specimen of *Kinetoskias cyathus*, was reported by Wyville Thomson (1877) and by Busk (1884), and is today conserved in the Natural History Museum of London.

Soon after, the Travailleur expedition collected material mainly in deep waters in the north of Portugal and in some southern localities. The results of this work were published by Jullien (1882, 1883). These data were compiled and completed with the results of the Talisman sampling survey in the south of Portugal, and published by Calvet (1907).

In the meanwhile, the first records of littoral species were made by the Portuguese naturalist Nobre (1903 a, b, 1904) at the turn of the twentieth century, from several localities in the northern coast of Portugal.

Later on, the sampling survey by Prince Albert Ier of Monaco on board of the Princess Alice, made some sampling in Portuguese waters, whose results were published by Calvet (1931).

Again Nobre (1937, 1942), made important contributions to the knowledge of the Portuguese fauna, but perhaps the most important work at that time was the compilation made by Rosas (1944), of the previous littoral data; this author also added many species to the Portuguese check-list.

In the following decade, the French sampling survey Faial collected samples on the southwest of Portugal. The results were published by Péres (1959), although few species of Bryozoans were reported.

The study of deep water species was taken up again during the Thalassa expedition to the Bay of Biscay and the north of Portugal. These results were published by d’Hondt (1974) and by Hayward (1979).

At that time Saldanha (1974, 1980) made important contributions to the knowledge of the coastal fauna but from a small number of localities.

The deep waters near Portugal were again studied during the Balgim expedition to the area of the Strait of Gibraltar and the Gulf of Cádiz. These results were published by Harmelin & d’Hondt (1992 a, b).

In the last twenty years several authors have made important contributions in number of species, but from relatively few localities. Among them we must point out those by Reverter-Gil & Fernández-Pulpeiro (1999 a), Boury-Esnault et al. (2001), Marchini et al. (2007), Souto et al. (2010 b, 2011 b) and Souto (2011).

Recently, we have published a large compilation of Bryozoan records from several localities all along the Portuguese coast, together with a revision of material conserved in different museum (Souto et al., 2014). This work yields 21 new records for Portuguese waters, besides 12 other species that were previously recorded only once.

In general, studies in Portugal have been irregular and somewhat vague, as few areas have...
been uniformly studied. Most works, especially in the littoral zone, are old and lack descriptions or figures, and reference material does not seem to exist. On the contrary, works on deep species do have descriptions, figures, and reference material is held in different museums.

In the present work we have compiled records of marine Bryozoa only from continental Portugal. Additionally, unpublished data of 56 species collected in localities along the Portuguese coast are included here, but none of them corresponds to newly cited species. The fauna of the two Portuguese archipelagos, Azores and Madeira, deserves a separate treatment, due to their geographical situation in a different region, and their specific richness (see e.g. Berning, 2012).

MATERIAL AND METHODS

The available literature citing bryozoan species collected in Portuguese waters has been revised. The longitudes of the sampling stations of the Talisman and Travailleur cruises, published by Jullien (1882, 1883) and Calvet (1907) were initially measured with reference to the Paris meridian. They have been here corrected to the Greenwich meridian (see Ryland, 1969: 238).

Some material collected in Portugal, and held in different institutions, was revised: Muséum National d’Histoire Naturelle, Paris (MNHN), the Museu Nacional de História Natural e da Ciência, Lisbon (MB), and the Natural History Museum, London (NHMUK). Most of it was already cited by us in different previous works; a small part was unpublished to date and will be referred in the text as “present work” together with the registration number of the sample revised. It must be stated, however, that the search of material was not exhaustive, and there may be more preserved specimens in different collections (e.g. MNHN, NHMUK, Musée Océanographique de Monaco). On the other hand, the material cited by Portuguese authors (Bethencourt Ferreira, Nobre, Rosas and Saldanha) seems to have been lost, but this assumption must still be confirmed definitively. Finally, in the remarks of some species we have also included some registration numbers of material referred by other authors in different papers.

<table>
<thead>
<tr>
<th>Locality N W Depth (m) Date Collector</th>
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<tbody>
<tr>
<td>Beach Carreço, Viana do Castelo 11º44’36” 08º52’38” Intertidal 20/09/1982 MB</td>
</tr>
<tr>
<td>Beach Areosa, Viana do Castelo 11º43’00” 08º51’53” Intertidal 21/09/1982 MB</td>
</tr>
<tr>
<td>Leça de Palmeira 11º12’33” 08º42’53” Intertidal 11/06/2010 JS</td>
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<tr>
<td>Buarcos 10º10’43” 08º54’20” Intertidal 11/06/2010 JS/MB</td>
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<tr>
<td>Vale Furado 39º41’06” 09º03’26” Intertidal 14/06/2010 JS</td>
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<td>Beach of Baleal 39º43’19” 09º19’57” Intertidal 14/06/2010 JS</td>
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<td>Beach of Galé 39º43’29” 09º28’33” Intertidal 13/06/2010 JS</td>
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<tr>
<td>Boca do Inferno 39º41’34” 09º26’02” 0-7 13/06/2010 JS</td>
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<tr>
<td>Beach Avencas, Parede 39º41’00” 09º21’30” Intertidal 09/02/1982 MB</td>
</tr>
<tr>
<td>Beach El-Rei, Caravelos 39º41’00” 09º20’30” Intertidal 08/02/1982 MB</td>
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<tr>
<td>Beach of São Torpes, Sines 37º55’06” 08º48’15” Intertidal 21/08/1978 15/10/1981 MB</td>
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<td>Beach da Ilha, Sines 37º50’00” 08º47’30” Intertidal 14/10/1981 MB</td>
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<td>Sagres 37º00’23” 08º56’21” Intertidal 22/03/2004 HDB</td>
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<tr>
<td>Armação de Pêra 37º06’00” 08º21’24” 0-? 00/03/2004 JS/HDB</td>
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<tr>
<td>Beach Olhos d’Agua, Albufeira 37º05’00” 08º11’00” Intertidal 27/03/1979 MB</td>
</tr>
<tr>
<td>Marina of Olhao 37º01’22” 07º50’23” Intertidal 20/03/2004 HDB</td>
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<tr>
<td>“Poseidon” st. 2 41º09.3’ 09º20’ 800-900 20/11/1984 MB</td>
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<tr>
<td>“Poseidon” st. 13 40º09.1’ 09º49.9’ 35-930 21/11/1984 MB</td>
</tr>
<tr>
<td>C.E. Charcot St. 1 40º01’ 09º44’ 130 3/12/1968 MNHN</td>
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<tr>
<td>Off Sado River No data No data No data No data NHMUK</td>
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<tr>
<td>Balgim DR06 36º42.2’ 09º26.8’ 1114 05/1984 MNHN</td>
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</tbody>
</table>
Unpublished data of material collected by us, as well as by H. De Blauwe (who has sent us material and unpublished data), were also compiled in the present work (see Table I). Samples were collected in different localities along the Portuguese coast mainly in the intertidal, but also by SCUBA diving. In the Algarve samples were taken also in the intertidal as well as in fishing nets; anyway, although the depths are not known, the boats were small enough as to assure that material was collected in shallow waters near the coastline. All these unpublished records are referred in the text as “present paper” or “H. De Blauwe”. Reference material, now in our collection, will be sent in the future to the Museo Nacional de Ciencias Naturales, Madrid (MNCN).

Altogether, we have studied or compiled data from 135 localities. A complete list can be found in the Appendix at the end of this paper. To make easier the management and interpretation of data, the localities have been ordered, to the possible extent, from North to South along the Portuguese coast. They were also grouped in five geographic areas (Fig. 2); such divisions are, however, entirely arbitrary and bear no relation to ecology or oceanography. In each one we have considered two groups depending on depth: shallow waters localities, between the coastline and the limit of the continental shelf, about 200 m depth; and deep waters localities, those that are below this depth.

A complete matrix of presence/absence of species per localities was prepared. The Sobs, representing the number of species observed in all pooled samples, and Chaol, first-order Jackknife (Jack1) and second-order Jackknife (Jack2) were used to estimate the theoretical number of expected species in Portuguese waters. The software PRIMER 6 (Clarke & Gorley, 2006) was used to these analyses.

RESULTS

Phylum BRYOZOA Ehrenberg, 1831
Class STENOLAEMATA Borg, 1926
Order CYCLOSTOMATA Busk, 1852
Suborder TUBULIPORINA Milne Edwards, 1838

Family STOMATOPORIDAE Pergens & Meunier, 1886
Genus Stomatopora Bronn, 1825

Stomatopora gingrina Jullien, 1882
41°43’00”N, 09°19’26”W: Travailleur 1881, D.2 (1st ser.), some colonies collected at 1068 m depth on bottoms of pebbles, sand and a little mud (Jullien, 1882, 1883; Calvet, 1907; Harmelin, 1974, 1976).

Reference material: According to Tricart & d’Hondt (2009), the holotype of this species is the sample MNHN 7711, coming from north Portugal.

Genus Jullienipora Reverter-Gil & Fernández-Pulpeiro, 2005

Jullienipora calypsoides (Jullien, 1882)
41°43’00”N, 09°19’26”W: Travailleur 1881, D.2 (1st ser.), some colonies collected at 1068 m depth on bottoms of pebbles, sand and a little mud (Jullien, 1882, 1883, as Stomatopora calypsoides; Calvet, 1907, as Stomatopora calypsoides; Reverter-Gil & Fernández-Pulpeiro, 2001, as “Stomatopora” calypsoides; 2005: MNHN 2799, MNHN 3749, MNHN 3752, MNHN 3900).

Reference material revised: MNHN 2799: Travailleur, 1881, D.2 (1st ser.) 1068 m, 14/6/1881, holotype. MNHN 3749 (with more species), MNHN 3752 (with more species), MNHN 3900 (with more species): same locality as holotype.

Genus Oncousoecia Canu, 1918

Oncousoecia dilatans (Johnston, 1847)
Cascais and Portinho da Arrábida, on shells (Rosas, 1944, as Stomatopora dilatans).

Genus Microeciella Taylor & Sequeiros, 1982

Microeciella suborbicularis (Hincks, 1880)
41°22.8’N, 09°08.2’W: Thalassa Y390, at 140 m depth (d’Hondt, 1974, as Diastopora suborbicularis).
Family TUBULIPORIDAE Johnston, 1838
Genus *Tubulipora* Lamarck, 1816

*Tubulipora cf. plumosa* Harmer, 1898
Costa da Arrábida (*Saldanha, 1974*)

*Tubulipora flabellaris* (Fabricius, 1780)
Cascais and Portinho da Arrábida, intertidal on seaweeds (*Rosas, 1944*). Estoril (*Nobre, 1904*). Faro (*Nobre, 1937*).

*Tubulipora phalangea* Couch, 1844
36°31’N 11°33’45”W: *Princesse Alice* st. 467, some colonies on seaweed at 60 m depth on bottoms of sand, shells and stones (*Calvet, 1931*).

Genus *Exidmonea* David, Mongereau & Pouyet, 1972

*Exidmonea atlantica* (Forbes in Johnston, 1847)
Povoa de Varzim, on corals in fishing nets from deep waters (*Nobre, 1903 a, 1904*, as *Idmonea atlantica*). West Magoita (between Cape Carvoeiro and Raso), at 120 m depth (*Nobre, 1942*, as *Idmonea atlantica*). Unrecorded locality (*Bethencourt Ferreira, 1923*, as *Idmonea atlantica*).

**Remarks**: *Bethencourt Ferreira* (1923) reported *Idmonea atlantica* Hincks var. *lusitanica* n. var., and said that descriptions of new species would be published in a future work, but it was not possible to find further data.

Genus *Plagioecia* Canu, 1918

*Plagioecia patina* (Lamarck, 1816)
Póvoa de Varzim (*Nobre, 1904*, as *Diastopora patina*). 40°45.8’N, 09°17.5’W: *Thalassa* Y399, at 330 m depth (d’*Hondt, 1974*). Cape Carvoeiro (Costa de Peniche) intertidal (*Marques et al., 1982*, as *Plagioecia patina*?). Portinho da Arrábida, on seaweeds washed upon the beach (*Rosas, 1944*, as *Diastopora patina*).

*Plagioecia sarniensis* (Norman, 1864)
Armação de Pêra: several colonies on *Myriopora truncata* (Pallas, 1766) and stones collected in fishing boats on the beach (*Souto et al., 2014*).

*Plagioecia inoedificata* (Jullien, 1882)
41°43’00”N, 09°19’26”W: *Travailleur* 1881, D.2 (1st ser.), two colonies collected at 1068 m depth on bottoms of pebbles, sand and a little mud (Jullien, 1882, 1883, as *Diastopora inoedificata*; *Calvet*, 1907, as *Diastopora inoedificata*; *Harmelin, 1976*).

**Reference material**: According to *Tricart & d’Hondt* (2009), the types of this species are samples MNHN 82 and MNHN 2465, coming from north Portugal.

*Plagioecia deflexa* (Couch, 1842)
36°31’N 11°33’45”W: *Princesse Alice* st. 467, some colonies on seaweed at 60 m depth on bottoms of sand, shells and stones (*Calvet, 1931*). 36°32’N, 11°38’30”W: *Princesse Alice* st. 2731, one sample at 65-90 m depth (*Calvet, 1931*, as *Entalophora deflexa* (*Heller); *Harmelin, 1976*).

**Remarks**: The records made by *Calvet* (1931), which have been revised by *Harmelin* (1976), correspond without any doubt to *E. deflexa*. The material reported by d’*Hondt* (1974) must be revised, while the records by *Nobre* (1903 a, 1904) and *Rosas* (1944) could not been checked as the original material is presumably lost.

*Entalophoroecia gracilis* Harmelin, 1976

*Entalophoroecia deflexa* (Couch, 1842)
41°18.6’N, 09°13.8’W: *Thalassa* Y394, at 410 m depth; 40°34.4’N, 09°22.1’W: *Thalassa* Y410, at 360 m depth (d’*Hondt, 1974*, as *Stomatopora granulata* (Milne-Edwards, 1838)). Povoa de Varzim, on corals from deep waters (*Nobre, 1903 a, as *Entalophora clavata* (*Busk); *Nobre, 1904*, as *Entalophora clavata* (*Busk)). Foz do Douro, on a coral (*Rosas, 1944*, as *Entalophora clavata* (*Busk) and as *Stomatopora johnsoni* (*Heller)). 36°36.5’N, 07°24.0’W: *Balgim* CP21, at 485 m depth (d’*Hondt & Calvet, 1992* b).
Genus *Diplosolen* Canu, 1918

*Diplosolen obelia* (Johnston, 1838)

Póvoa de Varzim, on corals, in fishing nets (NOBRE, 1903 a, as *Diastopora obelia*). Armação de Pêra: several colonies on stones collected in fishing boats on the beach (SOUTO et al., 2014).

Family TERVIIDAE Canu & Bassler, 1920

Genus *Tervia* Jullien, 1882

*Tervia irregularis* (Meneghini, 1844)

Armação de Pêra: several colonies on stones collected in fishing boats on the beach (SOUTO et al., 2014).

Family FRONDIPORIDAE Busk, 1875

Genus *Frondipora* Link, 1807

*Frondipora verrucosa* (Lamouroux, 1821)

Armação de Pêra: one colonie with gonozooids, collected in fishing boats on the beach (SOUTO et al., 2014).

Suborder ARTICULATA Busk, 1859

Family CRISIIDAE Johnston, 1838

Genus *Crisia* Lamouroux, 1812

*Crisia eburnea* (Linnaeus, 1758)

Foz do Douro (NOBRE, 1903 a, 1904, as *Crisia cornuta*). Foz de Douro, Cascais and Portinho da Arrábida, on seaweeds and Porifera in the intertidal zone (ROSAS, 1944, as *Crisia cornuta*). Berlengas (NOBRE, 1937, as *Crisia cornuta*).

Suborder RECTANGULATA Waters, 1887

Family LICHENOPORIDAE Smitt, 1867

Genus *Disporella* Gray, 1848

*Disporella hispida* (Fleming, 1828)

Povoa de Varzim, on corals in deep waters (NOBRE, 1903 a, 1904, 1942, as *Lichenopora hispida*). Foz do Douro, on a coral (ROSAS, 1944, as *Lichenopora hispida*). West Magoita (between Cape Carvoeiro and Raso), at 120 m depth; Northwest Facho (between Cape Carvoeiro and Raso), at 82 m depth (NOBRE, 1942, as *Lichenophora hispida*). Armação de Pêra, on stones collected in fishing boats on the beach (H. DE BLAWE).

Remarks: Some species of the genus *Disporella* were described by ÁLVAREZ (1992). For instance, *D. zurigneae* is present in the northwest of the Iberian Peninsula, and *D. alboranensis* in the southeast. It is not possible to judge, without 1942). Cascais, intertidal on seaweeds (ROSAS, 1944).

*Crisia tenella* Calvet, 1906

36°35.9’N, 07º24.5’W: Balgim DW20, at 452 m depth; 36º19.8’N, 07º40.6’W: Balgim CP155, at 903 m depth (HARMELIN & D’HONDT, 1992 b).

*Crisia cf. ramosa* Harmer, 1891

Costa da Arrábida (SALDANHA 1974).

Genus *Filicrisia* d’Orbigny, 1853

*Filicrisia goniculata* (Milne Edwards, 1838)

Beach of Baleal: abundant, with gonozooids; Boca do Inferno (intertidal): several colonies (SOUTO et al., 2014). Costa da Arrábida (SALDANHA, 1974). Unrecorded locality, on seaweeds in the intertidal zone (SALDANHA, 1980).

Genus *Crisidia* Milne Edwards, 1838

*Crisidia cornuta* (Linnaeus, 1758)

Foz do Douro (NOBRE, 1903 a, 1904, as *Crisia cornuta*). Foz de Douro, Cascais and Portinho da Arrábida, on seaweeds and Porifera in the intertidal zone (ROSAS, 1944, as *Crisia cornuta*). Berlengas (NOBRE, 1937, as *Crisia cornuta*).

Suborder RECTANGULATA Waters, 1887

Family LICHENOPORIDAE Smitt, 1867

Genus *Disporella* Gray, 1848

*Disporella hispida* (Fleming, 1828)

Povoa de Varzim, on corals in deep waters (NOBRE, 1903 a, 1904, 1942, as *Lichenopora hispida*). Foz do Douro, on a coral (ROSAS, 1944, as *Lichenopora hispida*). West Magoita (between Cape Carvoeiro and Raso), at 120 m depth; Northwest Facho (between Cape Carvoeiro and Raso), at 82 m depth (NOBRE, 1942, as *Lichenophora hispida*). Armação de Pêra, on stones collected in fishing boats on the beach (H. DE BLAWE).

Remarks: Some species of the genus *Disporella* were described by ÁLVAREZ (1992). For instance, *D. zurigneae* is present in the northwest of the Iberian Peninsula, and *D. alboranensis* in the southeast. It is not possible to judge, without
seeing the original material, if the previous records of *D. hispida* in Portugal really correspond to this or to other related species.

Genus *Patinella* Gray, 1848

*Patinella* spp.

36°36.5’N, 07°24.0’W: Balgim CP21, at 485 m depth (HARMELIN & d’HONDT, 1992 b, as *Lichenopora* spp.)

Remarks: Living species previously included in *Lichenopora* DeFrance, 1823 has been transferred to the genus *Patinella* (see Gordon & Taylor, 2001).

**Incertae sedis**

*“Idmonea” insolita* Jullien, 1882

41°43’00’’N, 09°19’26’’W: Travailleur 1881, D.2 (1st ser.), some colonies collected at 1068 m depth on bottoms of pebbles, sand and a little mud (Jullien, 1882, 1883; Calvet, 1907).

Remarks: According to Tricart & d’Hondt (2009), the type specimen of this species is the sample MNHN 1308. “Idmonea” insolita needs to be redescribed.

Class GYMNOLAEMATA Allman, 1856
Order CTENOSTOMATA Busk, 1852
Superfamily ALCYONIDIOIDEA Johnston, 1838
Family ALCYONIDIIDAE Johnston, 1838
Genus *Alcyonidium* Lamouroux, 1813

*Alcyonidium* spp.

Leixões, intertidal on stones (Rosas, 1944, as *Alcyonidium mytili* Dalyell, 1848). Olhaô [Nobre, 1937, as *Alcyonidium gelatinosum* (Linnaeus)].

Remarks: The identity and distribution of *A. gelatinosum* (Linnaeus, 1761) has been subject of discussion until its recent redescription by Ryland & Porter (2003). Many of the previous records of this species have been made as *A. mytili*, but not all the records of the later species really correspond to *A. gelatinosum*. Therefore, as the original papers by Nobre (1937) and Rosas (1944) do not include figures or descriptions and the original material no longer exist, it is not possible to check the real identity of those records.

Family PACHYZOONTIDAE d’Hondt, 1983
Genus *Pachyzoon* d’Hondt, 1983

*Pachyzoon atlanticum* d’Hondt, 1983

40°33.1’N, 09°26.5’W: Thalassa Y405, at 1170 m depth (d’Hondt & Hayward, 1981, as *Pachyzoon atlanticum* d’Hondt, in press). 36°21.0’N, 07°55.8’W: Balgim DW157, at 1108 m depth (Souto et al., 2014: MNHN 15895).

Reference material revised: MNHN 15895: Balgim DW157, 1108 m.

Family CLAVOPORIDAE Soule in Osburn & Soule, 1953
Genus *Ascorhiza* fewkes, 1889

*Ascorhiza mawatarii* d’Hondt, 1983

36°35.4’N, 07°23.6’W: Balgim DR22, at 466 m depth (Harmelin & d’Hondt, 1992 b).

Genus *Metalcyonidium* d’Hondt, 1975

*Metalcyonidium gautieri* d’Hondt, 1975

41°30.7’N, 09°21.5’W: Thalassa Y407, at 740 m depth on muddy and sandy bottom; 40°33.5’N, 09°24’’W: Thalassa Y401, at 1040 m depth on muddy bottom; 40°33.5’N, 09°24’’W: Thalassa Y407, at 740 m depth on muddy and sandy bottom; 40°33.1’N, 09°26.5’W: Thalassa Y405, at 1170 m depth on muddy bottom (Hayward, 1979: NHMUK 1984.2.19.1, MNHN 8415). 36°30.4’N, 09°14.9’W: Balgim CP03, at 681 m depth; 36°46.1’N, 09°27.0’W: Balgim DW07, at 1141 m depth; 36°45.8’N, 09°29.4’W: Balgim DW16, at 1283 m depth; 36°19.8’N, 07°40.6’W: Balgim DW155, at 903 m depth (marked with “?”); 36°35.9’N, 07°24.5’W: Balgim DW20, at 452 m depth (Harmelin & d’Hondt, 1992 b: MNHN 14935, MNHN 15495).

MNHN 15495: Balgim 1984, DW20, 31/V/72, 454-450 m.

Genus *Pseudalcyonidium* d’Hondt, 1975

*Pseudalcyonidium bobinae* d’Hondt, 1975

36º45.8’N, 09º29.4’W: Balgim DW16, at 1283 m depth; 36º46.1’N, 09º27.0’W: Balgim DW07, at 1141 m depth; 36º10.8’N, 08º06.2’W: Balgim CP108, at 1527 m depth; 36º14.9’N, 08º02.5’W: Balgim DW159, at 1360 m depth (Harmelin & d’Hondt, 1992 b: MNHN 14935).

*Reference material revised*: MNHN 14935 (with more species): Balgim 1984, DW16, 30/V/72, 1280-1285 m.

Family PHERUSELLIDAE Soule in Osburn & Soule, 1953

Genus *Pherusella* Soule, 1951

*Pherusella tubulosa* (Ellis & Solander, 1786)

Estoril (Nobre, 1903 b, 1904, as *Pherusa tubulosa*). Costa da Arrábida (Saldanha, 1974).

Superfamily ARACHNIDIOIDEA Hincks, 1880

Family NOLELLIDAE Harmer, 1915

Genus *Nolella* Gosse, 1851

*Nollela gigantea* (Busk, 1856)

Beach of Baleal: abundant (Souto et al., 2014). Costa da Arrábida (Saldanha, 1974). Unrecorded locality, on seaweeds at circalitoral (Saldanha, 1980).

*Nollella dilatata* (Hincks, 1860)

Costa da Arrábida (Saldanha, 1974). Armaçao de Pêra, at 19-21 m depth, on maërl beds (Souto et al., 2010 b).

Genus *Anguinella* van Beneden, 1845

*Anguinella palmata* van Beneden, 1845

Beach of Baleal: several small colonies in a rocky exposed shore (Souto et al., 2014).

Superfamily WALKERIOIDEA Hincks, 1880

Family WALKERIIDAE Hincks, 1880

Genus *Walkeria* Fleming, 1823

*Walkeria uva* (Linnaeus, 1758)

Leixões and Foz do Douro, intertidal on *Chartella papyracea* (Ellis & Solander, 1786) (Rosas, 1944, as *Valkea uva*). Costa da Arrábida (Saldanha, 1974).

Family MIMOSELLIDAE Hincks, 1877

Genus *Mimosella* Hincks, 1851

*Mimosella gracilis* (Hincks, 1851)

Foz do Douro, on *Laminaria* (Nobre, 1903 a, 1904).

Prenant & Bobin (1956) reported that this species is “largement répandue” in British, Spanish and Portuguese waters.

Genus *Bantariella* Jebram, 1973

*Bantariella verticillata* (Heller, 1867)

Beach of Baleal: several colonies on different substrates (Souto et al., 2014). Costa da Arrábida (Saldanha, 1974, as *Mimosella verticillata*).

Family FARRELLIDAE d’Hondt, 1983

Genus *Farrella* Ehrenberg, 1838

*Farrella repens* (Farre, 1837)

Costa da Arrábida (Saldanha, 1974).

*Farrella repens* (Farre, 1837)

Off Cape Sagres, 82 m depth, on the crab *Gonoplax rhomboide L. (= Gonoplax angulata Fabricius)* (Harmer, 1915, as *Triticella boeckii*). Unrecorded locality (Prenant & Bobin, 1956, as *Triticella korenii*).
Genus *Triticellopsis* Gautier, 1961

*Triticellopsis tissieri* Gautier, 1961
36°42.7’N–36°41.0’N, 07°39.1’W–07°31.3’W: two colonies collected SE Faro, at 580-630 m depth (Gautier, 1961; d’Hondt, 1983).

Superfamily VESICULARIOIDEA Johnston, 1838
Family VESICULARIIDAE Johnston, 1838
Genus *Amathia* Lamouroux, 1812

*Amathia lendigera* (Linnaeus, 1758)


*Amathia semiconvoluta* Lamouroux, 1824
Arrábida and Algarve (d’Hondt, 1983; Souto et al., 2010 a: MNHN 8164: Algarve. NHMUK 1872.2.3.147 & 150).


Genus *Bowerbankia* Farre, 1837

*Bowerbankia imbricata* (Adams, 1798)
Foz do Douro, intertidal on seaweeds (Rosas, 1944).

*Bowerbankia gracilis* Leidy, 1855
Ria de Aveiro (Marchini et al., 2007). Costa da Arrábida (Saldanha, 1974).

*Bowerbankia gracillima* (Hincks, 1877)
Ria de Aveiro (Marchini et al., 2007). Leça de Palmeira: some colonies on Balanus; Buarcos: several colonies; beach of Baleal: several colonies; Boca do Inferno (7 m depth): abundant on Serpulid and Chantella papyracea (Ellis & Solander, 1786) (present paper). Costa da Arrábida (Saldanha, 1974). Beach dos Olhos d’Água, Albufeira (present paper: MB37-000024).


*Bowerbankia pustulosa* (Ellis & Solander, 1786)

*Bowerbankia citrina* (Hincks, 1877)
Ria de Aveiro (Marchini et al., 2007). Peniche, intertidal, two colonies (Souto et al., 2011 a).

Genus *Zoobotryon* Ehrenberg, 1829

*Zoobotryon verticillatum* (Della Chiaje, 1822)
Berlengas and Olhão (Nobre, 1937, as Zoobotryon pellucidum). Berlengas and Faro, common (Nobre & Braga, 1942).

Family BUSKIIDAE Hincks, 1880

Genus *Buskia* Alder, 1857

*Buskia nitens* Alder, 1857
Ria de Aveiro (Marchini et al., 2007).

*Buskia socialis* Hincks, 1887
Ria de Aveiro (Marchini et al., 2007).

Superfamily PENETRANTIOIDEA Silén, 1946
Family PENETRANTIIDAE Silén, 1946
Genus *Penetrantia* Silén, 1946

Penetrantia sp.
Armação de Pêra, at 19 m depth, on maërl beds with stones (Souto et al., 2010 b).

Order CHEILOSTOMATA Busk, 1852
Suborder INOVICELLINA Jullien, 1888
Superfamily AETEOIDEA Smitt, 1868
Family AETEIDAE Smitt, 1868
Genus *Aetea* Lamouroux, 1812

*Aetea anguina* (Linnaeus, 1758)
Molêdo do Minho, Foz do Douro and Estoril, common on seaweeds (Nobre, 1903, a, b, 1904).
Beach of Areosa (Viana do Castelo) (present paper: MB37-000026). Berlengas and Balieira, very common on seaweeds (Nobre, 1937). Foz do Douro, Cascais and Portinho da Arrábida, on seaweeds in the intertidal zone (Rosas, 1944). Berlengas (Nobre & Braga, 1942). Ponta do Baleal (Costa de Peniche) intertidal (Marques et al., 1982). Leça de Palmeira, intertidal on seaweeds; Vale Furado, intertidal; beach of Baleal, intertidal, on different substrates; beach of Galé, intertidal, on different substrates; Boca do Inferno, 0-7 m depth, on Porifera and Hydroids (present paper). Costa da Arrábida (Saldanha, 1974). Unrecorded localities, intertidal and infralitoral, on seaweeds (Saldanha, 1980).


Aetea sica (Couch, 1844)

Berlengas (Nobre, 1937, as Aetea recta; Nobre & Braga, 1942, as Aetea recta). Costa da Arrábida (Saldanha, 1974). Armaçao de Pêra, at 19-21 m depth (Souto et al., 2010 b). Armaçao de Pêra: on Turbicellepora spp. collected in fishing boats (H. de Blauwe).

Aetea truncata (Landsborough, 1852)

Costa da Arrábida (Saldanha, 1974). Armaçao de Pêra, at 19 m depth, on maërl beds with stones (Souto et al., 2010 b). Armaçao de Pêra: on a stone collected in fishing boats (H. de Blauwe).

Suborder SCRUPARIINA Silén, 1941
Superfamily SCRUPARIOIDEA Gray, 1848
Family SCRUPARIIDAE Gray, 1848
Genus Scruparia Oken, 1815

Scruparia chelata (Linnaeus, 1758)

Foz do Douro, Cascais and Portinho da Arrábida, on seaweeds and Bryozoans in the Laminaria zone (Rosas, 1944, as Eucratea chelata). Foz do Douro, on Laminaria (Nobre, 1903 a, 1904, as Eucratea chelata). Ria de Aveiro (Marchini et al., 2007). Berlengas, Sines and Faro (Nobre, 1937, as Eucratea chelata). Vale Furado, some colonies; beach of Baleal, abundant on different substrates; Boca do Inferno, on Porifera at tide pools and at 7 m depth on different substrates (present paper). Costa da Arrábida (Saldanha, 1974). Unrecorded localities, intertidal and infralitoral, on seaweeds and Mytilus (Saldanha, 1980).

Remarks: Scruparia ambigua and Scruparia chelata (Linnaeus, 1758) were frequently mistaken until their redescription by Hastings (1941). Previous records of S. chelata in Portugal, made by Nobre (1903 a, 1904, 1937, as Eucratea chelata) and even by Rosas (1944, as Eucratea chelata) may actually correspond to any of both species.

Scruparia ambigua (d’Orbigny, 1841)

Ria de Aveiro (Marchini et al., 2007). Beach of Baleal: several colonies on red algae; Boca do Inferno, at 7 m depth: some colonies on algae (present paper). Costa da Arrábida (Saldanha, 1974).

Suborder MALACOSTEGINA Levinsen, 1902
Superfamily MEMBRANIPOROIDAE Busk, 1852
Family MEMBRANIPORIDAE Busk, 1852
Genus Membranipora de Blainville, 1830

Membranipora membranacea (Linnaeus, 1767)


Genus Biflustra d’Orbigny, 1852

Biflustra arborescens (Canu & Bassler, 1928)

Several colonies and fragments collected in the harbour of Ferragudo (Portimão) (Souto et al., 2014).
Family ELECTRIDAE Stach, 1937
Genus *Electra* Lamouroux, 1816

*Electra verticillata* (Ellis & Solander, 1786)


Remarks: *Electra verticillata* and the erect form of *E. pilosa* have been frequently mistaken, as the former was considered by many authors as a growth form of the later species. Recently, Nikulina et al. (2013) have demonstrated that both are different species, although it is not impossible to confuse them in a superficial examination. Therefore, we cannot assure that all the ancient records included here and in *E. pilosa* were correct, although it seems clear that both species are frequent all along the coast.

Genus *Conopeum* Gray, 1848

*Conopeum reticulum* (Linnaeus, 1767)

Leixões, intertidal under stones (Rosas, 1944, as *Membranipora Lacroixii*). Ria de Aveiro (Marchini et al., 2007). Leça de Palmeira: some colonies on *Sabellaria*; Buarcos: many colonies on *Mytilus* and *Balanus* (present paper).

*Conopeum seurati* (Canu, 1928)

Ria de Aveiro (Marchini et al., 2007).

Suborder NEOCHEILOSTOMINA d’Hondt, 1985

Infraorder FLUSTRINA Smitt, 1868

Superfamily CALLPOROIDEA Norman, 1903

Family CALLPORIDAE Norman, 1903

Genus *Calllopora* Gray, 1848

*Calllopora lineata* (Linnaeus, 1767)

Mindelo, on *Laminaria* in the intertidal zone (Rosas, 1944, as *Membranipora lineata*).
**Callopora dumerilii** (Audouin, 1826)

Vale Furado, one colony (with embryos) (present paper). Costa da Arrábida (SALDANHA, 1974). Armação de Pêra at 19-21 m depth, on maërl beds (SOUTO et al., 2010 b). Armação de Pêra: on a stone collected in fishing boats (H. DE BLAUWE).

Genus *Crassimarginatella* Canu, 1900

**Crassimarginatella crassimarginata** (Hincks, 1880)

Caves at Sagres (BOURY-ESNAULT et al., 2001).

Genus *Corbulella* Gordon, 1984

**Corbulella maderensis** (Waters, 1898)

Caves at Sagres (BOURY-ESNAULT et al., 2001, as *Crassimarginatella maderensis*).

Genus *Alderina* Norman, 1903

**Alderina imbellis** (Hincks, 1860)

40°08.2’N, 09°50.5’W: Poseidon st. 12, at 1050 m, one ovicellate colony on a stone (SOUTO et al., 2014: MB37-000032).

Reference material revised: MB37-000032: “Poseidon” st. 12, 40°08.2’N, 09°50.5’W, 1050 m, 21/11/1984.

Genus *Ellisina* Norman, 1903

**Ellisina gautieri** Fernández Pulpeiro & Reverter Gil, 1993

Caves at Sagres (BOURY-ESNAULT et al., 2001).

Genus *Copidozoum* Harmer, 1926

**Copidozoum planum** (Hincks, 1880)

Armação de Pêra, one ovicellate colony on a stone collected in fishing boats on the beach (SOUTO et al., 2014).

**Copidozoum tenuirostre** (Hincks, 1880)

Armação de Pêra at 19 m depth, on maërl beds with stones (SOUTO et al., 2010 b).

**Copidozoum exiguum** (Barroso, 1920)

36°36.5’N, 07°24.0’W: Balgim CP21, at 485 m depth (HARMELIN & D’HONDT, 1992 a).

Genus *Clavodesia* Harmelin & d’Hondt, 1992

**Clavodesia clavula** (Hayward, 1978)

36°44.2’N, 09°31.4’W: Balgim DW11, at 1523 m depth; 36°10.8’N, 8°06.2’W: Balgim CP108, at 1527 m depth; 35°30.5’N, 07°46.1’W: Balgim DW64, at 1530 m depth (HARMELIN & D’HONDT, 1992 a, as *Clavodesia biradiculata*; REVERTER-GIL et al., 2012: MNHN 15493).

Reference material revised: MNHN 15493 (with more species): Balgim DW11, 1505-1540 m, 29/5/19, lectotype of *Clavodesia biradiculata*.

Family CYMULOPORIDAE Winston & Vieira, 2013

Genus *Crepis* Jullien, 1882

**Crepis longipes** Jullien, 1882

41°43’00”N, 09°19’26”W: Travailleur, Dr. 2 (1st ser.), at 1068 m depth on bottoms of pebbles, sand and a little mud (JULLIEN, 1882, 1883; CALVET, 1907; REVERTER-GIL & FERNÁNDEZ-PULPEIRO, 2001; REVERTER-GIL et al., 2011: MNHN 1995, MNHN 3783, MNHN 3900). 41°09.3’N, 09°20’W: Poseidon st. 2, at 800-900 m (SOUTO et al., 2014: MB37-000033).

Reference material revised: MNHN 1995: Travailleur D. 2 (1st ser.), 1068 m, lectotype. MNHN 3783 (with more species), MNHN 3900 (with more species), same locality as lectotype. MB37-000033: “Poseidon” st. 2, 41°09.3’N, 09°20’W, 800-900 m, 20/11/1984.

Family ANTROPORIDAE Vigneaux, 1949

Genus *Rosseliana* Jullien, 1888

**Rosseliana rosselii** (Audouin, 1826)

Costa da Arrábida (SALDANHA, 1974).

Family HELIODOMIDAE Vigneaux, 1906

Genus *Setosellina* Calvet, 1906

**Setosellina roulei** Calvet, 1906

36°10.8’N, 08°06.2’W: Balgim CP108, at 1527 m depth; 35°11.9’N, 07°52.6’W: Balgim CP68, at 2035 m depth; 35°30.5’N, 07°46.1’W: Balgim
Reverter-Gil, O. et al.: Checklist of Recent marine Bryozoa from Portugal

Family CUPULADRIIDAE Lagaaij, 1952
Genus Cupuladria Canu & Bassler, 1919

Cupuladria canariensis (Busk, 1859)
Cape Sagres (Prenant & Bobin, 1966).

Genus Reussirella Baluk & Radwanski, 1984

Reussirella multispinata (Canu & Bassler, 1923)
Cape Sagres (Prenant & Bobin, 1966, as Cupuladria multispinata).

Superfamily FLUSTROIDEA Fleming, 1828
Family FLUSTRIDAE Fleming, 1828
Genus Flustra Linnaeus, 1761

Flustra foliacea (Linnaeus, 1758)
41°28’N, 09°16.7’W: Thalassa Y379, at 1150 m depth on muddy bottom (Hayward, 1979: MNHN 8381).

Reference material revised: MNHN 8381: Thalassa 1972, Y379, 1150 m.

Genus Chartella Gray, 1848

Chartella papyracea (Ellis & Solander, 1786)
Foz do Douro and Porto de Leixões, on rocks (Nobre, 1903 a, 1904, as Flustra papyracea). Foz do Douro, Cascais and Portinho da Arrábida, under stones in the intertidal zone (Rosas, 1944, as Flustra papyracea). Buarcos, a small ovicellate colony; beach of Baleal, abundant; Boca do Inferno, at 7 m depth, abundant, with ovicells and embryos (present paper). Estoril, on stones (Nobre, 1903 b, 1904, as Flustra papyracea). Costa da Arrábida (Saldanha, 1974, as Carbacea papyracea). Dense populations in vertical walls in caves of Sagres (Boury-Esnault et al., 2001).


Genus Securiflustra Silén, 1941

Securiflustra securifrons (Pallas, 1766)
Berlengas (Nobre, 1937, as Flustra securifrons; Nobre & Braga, 1942, as Flustra securifrons).

Genus Hincksina Norman, 1903

Hincksina sp.
Armação de Pêra: several ovicellate colonies on stones collected in fishing boats on the beach (Souto et al., 2014).

Superfamily BUGULOIDEA Gray, 1848
Family BUGULIDAE Gray, 1848
Genus Bugula Oken, 1815

Bugula neritina (Linnaeus, 1758)
Ria de Aveiro (Marchini et al., 2007). Vila Praia de Âncora, Nazaré Marina, Peniche Marina, Cascais, Oeiras Marina, Sines Marina, Albufeira Marina and unrecorded locality in Algarve (Ryland et al., 2011). Off Sado River: two colonies on seaweed (present paper: NHMUK 1872.2.3.137 C). Armação de Pêra: many colonies on fish traps (present paper).

Reference material revised: NHMUK 1872.2.3.137 C: Off Sado River, Portugal, S. Kent Coll.

Bugula calathus Ryland, 1962
Off coast of Portugal (no additional data, NHMUK 1899.7.1.4595); Armação de Pêra: on Celleporina caminata (Waters, 1879) collected from fishing nets (Souto et al., 2014).

Reference material revised: NHMUK 1899.7.1.4595: off coast of Portugal, HMS Porcupine, Busk Coll.
**Bugula fulva** Ryland, 1960

Beach of Baleal: several ovicellate colonies; Boca do Inferno (intertidal and 7 m depth): abundant on different substrates (with embryos) (present paper). Costa da Arrábida (Saldanha, 1974). Armação de Pêra at 19 m depth, on maërl beds with stones (Souto et al., 2010 b). Armação de Pêra: in fishing nets, on Celleporina caminata (Waters, 1879); Marina of Olhao (H. De Blauwe). Unrecorded localities, infra and circalittoral (Ryland, 1960; Prenant & Bobin, 1966; Saldanha, 1980).

**Bugula turbinata** Alder, 1857

Cascais, on seaweeds in the intertidal zone (Rosas, 1944). Costa da Arrábida (Saldanha, 1974). Armação de Pêra at 19-20 m depth, on maërl beds with stones (Souto et al., 2010 b). Unrecorded locality in the Algarve (H. de Blauwe). Unrecorded localities, intertidal and infralittoral (Saldanha, 1980).

**Bugula plumosa** (Pallas, 1766)


**Bugula stolonifera** Ryland, 1960

Ria de Aveiro (Marchini et al., 2007).

**Bugula flabellata** (Thompson in Gray, 1848)

Costa da Arrábida (Saldanha, 1974). Off Sado River; west coast Spain & Portugal (no additional data); Armação de Pêra, on Pentapora foliacea (Ellis & Solander, 1786) from fishing nets (Souto et al., 2014: NHMUK 1872.2.3.137 B, NHMUK 1872.2.3.146 B). Unrecorded localities (Rosas, 1944; Ryland, 1960).

Reference material revised: NNMUK 1872.2.3.137 B: Off Sado River Portugal, Saville-Kent Coll. NNMUK 1872.2.3.146 B: Norna Exp. 1870, west coast Spain and Portugal, S. Kent Coll.

*Bugula purpurotincta* Norman, 1868

Cape Santa Maria (Nobre, 1937).

Remarks: According to Hayward & Ryland (1998) *B. purpurotincta* is a boreal-artic species, found in northern coast of the North Sea. As the work by Nobre (1937) does not include figures or descriptions, and the original material seems to be lost, we consider the present record as doubtful.

Genus **Kinetoskias** Danielsen, 1868

**Kinetoskias cyathus** (Wyville Thomson, 1877)

36°23′N, 11°18′W: Challenger st. VI, at 2789 m depth (Wyville Thomson, 1877, as *Naresia cyathus*; Busk, 1884; NNMUK 1897.5.1.380, NNMUK 1899.7.1.1, NNMUK 1899.7.1.1289, NNMUK 1899.7.1.1289a, NNMUK 1919.6.24.10, NNMUK 1944.1.8.114, NNMUK 1963.8.18.19-21).

Reference material revised: NNMUK 1897.5.1.380, NNMUK 1899.7.1.1, NNMUK 1899.7.1.1289, NNMUK 1899.7.1.1289a, NNMUK 1919.6.24.10, NNMUK 1944.1.8.114, NNMUK 1963.8.18.19-21. All material from the type locality.

Genus **Bicellariella** Levinsen, 1909

**Bicellariella ciliata** (Linnaeus, 1758)

Molêdo do Minho on algae washed upon the beach, and in Leixões (Nobre, 1903 a, 1904, as *Bicellaria ciliata*). Foz do Douro, on seaweeds in the intertidal zone (Rosas, 1944, as *Bicellaria ciliata*). Vale Furado: some colonies mixed up with Scrupocellaria scrubosa (Linnaeus, 1758); beach of Baleal: some ovicellate colonies (with embryos); beach of Galé: a small colony on seaweed (present paper). Armação de Pêra: in fishing nets (H. De Blauwe).

Genus **Bugulella** Verrill, 1879

**Bugulella elegans** Hayward, 1978

36°05′.0″N, 08°05′.6″W: Balgim DW107, at 1917 m depth (Harmelin & d’Hondt, 1992 a: MNHN 14925).

Reference material revised: MNHN 14925 (with more species): Balgim 84, DW107, 1909-1926 m, 10/VI/1984, a single zooid.

Genus **Dendrobeania** Levinsen, 1909

**Dendrobeania sessilis** (d’Hondt, 1974)

41°22′.2″N, 09°09′.8″W: Thalassa Y425, at 430 m depth (d’Hondt, 1974, as *Bugula neritina* subsp. *sessilis* n. subsp.: MNHN 7213).
Reference material revised: MNHN 7213: Thalassa Y425, 430 m, Paratype.

Genus **Bugulopsis** Verrill, 1880

**Bugulopsis peachi** (Busk, 1851)
Portinho da Arrábida, washed upon the beach (Rosas, 1944, as *Cellularia Peachii*).

Genus **Sessibugula** Osburn, 1950

**Sessibugula barrosoi** López de la Cuadra & García-Gómez, 1994
Armaçao de Pêra, on a stone collected from fishing nets (Souto et al., 2014).

Family BEANIIDAE Canu & Bassler, 1927

Genus **Beania** Johnston, 1840

**Beania mirabilis** (Johnston, 1840)
Costa da Arrábida (Saldanha, 1974). Armaçao de Pêra at 19-21 m depth, on maàrl beds (Souto et al., 2010 b). Unrecorded localities, intertidal and infralittoral (Saldanha, 1980).

**Beania hirtissima** (Heller, 1867)
Costa da Arrábida (Saldanha, 1974, as *Beania robusta* (Hincks, 1881) and *Beania hirtissima* (Heller, 1867)). Armaçao de Pêra at 19 m depth, on maàrl beds with stones (Souto et al., 2010 b).


Family CANDIDAE d’Orbigny, 1851

Genus **Canda** Lamouroux, 1816

**Canda ligata** (Jullien, 1882)
40°34.4’N, 09°22.6’W: Thalassa Y415, at 450 m depth (d’Hondt, 1974, as *Caberea ligata*; Souto et al., 2011 b: MNHN 7200, 7207).

Reference material revised: MNHN 7200, 7207: Thalassa Y415, 450 m.

Genus **Caberea** Lamouroux, 1816

**Caberea boryi** (Audouin, 1826)
Costa da Arrábida (Saldanha, 1974). Cape Espichel (38°24.3’N 09°13.9’W) at 27-36 m depth (Pères, 1959). Armaçao de Pêra at 19-20 m depth, on maàrl beds with stones (Souto et al., 2010 b).

Genus **Notoplites** Harmer, 1923

**Notoplites evocatus** (Jullien, 1882)
41°43’00”N, 09°19’26”W: Travailleur 1881, Dr. 2 (1ª ser.) at 1068 m depth on bottom of pebbles, sand and a little mud (Calvet, 1907, as *Bicellaria evocata*; Souto et al., 2011 b: MNHN 18323).

Reference material revised: MNHN 18323: Travailleur Dr. 2, 1068 m, 14/6/1881.

Genus **Scrupocellaria** van Beneden, 1845

Remarks: This genus is currently under revision (L.M. Vieira, pers. comm.). Previous records from Portuguese waters are pending on future revision.

**Scrupocellaria scruposa** (Linnaeus, 1758)
Foz do Douro and Cascais, on seaweeds and bryozoans in the intertidal zone (Rosas, 1944). Buarcos, on Mytilus; Vale Furado, some ovicellate colonies; beach of Baleal, many ovicellate colonies; Boca do Inferno (0-7 m depth), some colonies on *Chartella papyracea* (present paper). Ponta do Baleal (Costa de Peniche) intertidal (Marques et al., 1982). Costa da Arrábida (Saldanha, 1974). 36°53’00”N, 08°31’46”W: Talisman 1883, D. 2, some branches collected at 99 m depth (Calvet, 1907). Albufeira, some colonies (present paper).

**Scrupocellaria scrupea** Busk, 1852
Cascais, intertidal on seaweeds (Rosas, 1944). Costa da Arrábida (Saldanha, 1974). Cape Roca (38°46.5’N 09°34.4’W) at 80 m depth (Pères, 1959). Armaçao de Pêra at 19 m depth, on maàrl bottom with stones (Souto et al., 2010 b).

**Scrupocellaria incurvata** Waters, 1896
41°18.6’N, 09°13.8’W: Thalassa Y394, at 410 m depth, on sandy bottom; 40°45.6’N, 09°19’W: Thalassa Y400, at 800 m depth on muddy bottom (Hayward, 1979: MNHN 18363). 40°34.2’N, 09°22.4’W: Thalassa Y409, at 405 m depth (d’Hondt, 1974). 35°30.5’N, 07°46.1’W: Balgim
Scrupocellaria delili (Audouin, 1826)  
Costa da Arrábida (Saldanha, 1974).

Genus Cradoscrupocellaria Vieira, Spencer Jones & Winston, 2013

*Cradoscrupocellaria reptans* (Linnaeus, 1758)  
Mindelo, Foz do Douro, Cascais and Portinho da Arrábida, on seaweeds in the intertidal zone (Rosas, 1944, as *Scrupocellaria reptans*). Foz do Douro, on *Laminaria* (Nobre, 1903 a, 1904, as *Scrupocellaria reptans*). Berlengas, Sesimbra and Lagos (Nobre, 1937, as *Scrupocellaria reptans*). Costa da Arrábida (Saldanha, 1974, as *Scrupocellaria reptans*). Cape Espichel (38°24.3′N 09°13.9′W) at 27-36 m depth (Pères, 1959, as *Scrupocellaria reptans*). Unrecorded localities, infralittoral, on seaweeds and *Mytilus* (Saldanha, 1980, as *Scrupocellaria reptans*).

Remarks: *Sertularia reptans* has been recently redescribed by Vieira & Spencer Jones (2012) and many of its previous records have been transferred to other, newly described species (see Vieira et al., 2013). Records of *C. reptans* in Portugal are then uncertain, but as original material no longer exists, it will be necessary to collect new material to confirm or not the presence of this species in Portuguese waters.

Genus Tricellaria Fleming, 1828

Tricellaria inopinata d’Hondt & Occhipinti Ambrogi, 1985  
Ria de Aveiro (Marchini et al., 2007).

Superfamily MICROPOROIDEA Gray, 1848  
Family MICROPORIDAE Gray, 1848  
Genus Micropora Gray, 1848

*Micropora coriacea* (Johnston, 1847)  
Foz do Douro, on corals (Rosas, 1944, as *Micropora coriacea* Esper).

Remarks: Micropora coriacea and Micropora normani Levinsen, 1909 have been frequently mistaken, so we cannot be sure about the present identification.

Genus Mollia Lamouroux, 1821

Mollia patellaria (Moll, 1803)  
Costa da Arrábida (Saldanha, 1974).

Mollia cristinae Souto, Reverter-Gil & Fernández-Pulpeiro, 2010  
Armação de Pêra at 19 m depth, on maërl beds with stones (Souto et al., 2010 b: MNHN 25.03/3775, MNHN 25.03/3776-3777). Armação de Peras on stones collected in fishing boats (present paper).

Reference material revised: MNHN 25.03/3775: 37°01′14.8″N, 08°11′11.6″W, 19 m, holotype. MNHN 25.03/3776-3777: paratypes, same locality as holotype.

Family SETOSELLIDAE Levinsen, 1909

Genus Setosella Hincks, 1877

Setosella vulnerata (Busk, 1860)  
41°43′00″N, 09°19′26″W: Travailleur 1881 Dr. 2 (1ª sér.) at 1068 m depth on bottoms of pebbles, sand and a little mud (Julien, 1882, 1883; Calvet, 1907; Reverter-Gil & Fernández-Pulpeiro, 2001; Reverter-Gil et al., 2012: MNHN 1982). 40°45.6′N, 09°19′W: Thalassa Y400, at 800 m depth on muddy bottom; 40°33.1′N, 09°26.5′W: Thalassa Y405, at 1170 m depth on muddy bottom (Hayward, 1979; Reverter-Gil et al., 2012: MNHN 1982). 36°35.9′N, 07°24.5′W: Balgim DW20, at 452 m depth (Harmelin & d’Hondt, 1992 a). 36°46.2′N 09°26.8′W: Balgim DR06, at 1114 m depth on shells bottom (present paper: MNHN 19806).

Reference material revised: MNHN 1982: Travailleur, 1881, D. 2 (1ª sér.), 1068 m, Coll. Calvet. MNHN 8414, MNHN 8415. 36°35.9′N, 07°24.5′W: Balgim DW20, at 452 m depth (Harmelin & d’Hondt, 1992 a). 36°46.2′N 09°26.8′W: Balgim DR06, at 1114 m depth on shells bottom (present paper: MNHN 19806).

Setosella sp.  
36°46.1′N 09°27.0′W: Balgim DW07, one colony on grain of sand at 1139-1144 m depth.
Reverter-Gil, O. et al.: Checklist of Recent marine Bryozoa from Portugal

Reference material revised: MNHN 15487: Balgim 84. DW07, 29/5, 1139-1144 m.

Setosella folini Jullien, 1882

38°06’00”’N, 09°10’46”’W: Travailleur Dr. 25, three zooids collected at 460 m depth (SOUTO et al., 2011 b: MNHN 484). 36°46.1’N 09°27.0’W: Balgim DW07, at 1139-1144 m depth; 36°46.4’N 09°30.1’W: Balgim KR15, at 1305 m depth (HARME LIN & D’HOND T, 1992 a; SOUTO et al., 2011 b: MNHN 15487, MNHN 15492). 36°44.2’N, 09°31.4’W: Balgim DW11, at 1523 m depth; 36°45.8’N, 09°29.4’W: Balgim DW16, at 1283 m depth (HARME LIN & D’HOND T, 1992 a).

Reference material revised: MNHN 484: Travailleur Dr. 25, 460 m. MNHN 15487 (with more species): Balgim DW07, 1139-1144 m. MNHN 15492: Balgim KR15, 1305 m.

Superfamily CELLARIOIDEA Fleming, 1828
Family CELLARIIDAE Fleming, 1828
Genus Cellaria Ellis & Solander, 1786

Cellaria sinuosa (Hassall, 1841)

41°30.7’N, 09°19.9’W: Thalassa Y374, at 1250 m depth on muddy bottom (HAYWARD, 1979). Costa da Arrábida (SALDANHA, 1974).

Cellaria fistulosa (Linnaeus, 1758)

Peniche (NOBRE, 1937). Berlenga (NOBRE & BRAGA, 1942). Estoril and Setúbal, washed upon the beach (NOBRE, 1903 b, 1904). Costa da Arrábida (SALDANHA, 1974, as Cellaria salicornia (Pallas 1766)). Unrecorded localities, infralittoral and circalittoral (BETHENCOURT-FERREIRA, 1923, as Salicornia farciminoidea Johnston; SALDANHA, 1980, as Cellaria salicornia (Pallas, 1766)).

Cellaria salicornioides Lamouroux, 1816

36°32’N, 11°38’30”’W: Princesse Alice st. 2731, some colonies collected at 65-90 m depth; 36°31’30”’N, 11°34’W: Princesse Alice st. 1664, some colonies collected at 116 m depth, on pebbles bottom (CALVET, 1931).

Cellaria cf. salicornioides Lamouroux, 1816


Genus Euginoma Jullien, 1882

Euginoma vermiformis Jullien, 1882

41°30.7’N, 09°19.9’W: Thalassa Y374, at 1250 m depth on muddy bottom; 40°36.8’N, 09°24’W: Thalassa Y407, at 740 m depth on muddy and sandy bottom (HAYWARD, 1979). 40°33.1’N, 09°26.5’W: Thalassa Y405, at 1170 m depth on muddy bottom (HAYWARD, 1979; SOUTO et al. 2011 b: MNHN 8415). 36°44.2’N, 09°31.4’W: Balgim DW11, at 1523 m depth; 36°46.1’N, 09°27.0’W: Balgim DW07, at 1141 m depth; 36°05.0’N, 08°05.6’W: Balgim DW107, at 1917 m depth (HARME LIN & D’HOND T, 1992 a).

Reference material revised: MNHN 484: Travailleur Dr. 25, 460 m. MNHN 15487 (with more species): Balgim DW07, 1139-1144 m. MNHN 15492: Balgim KR15, 1305 m.

Euginoma reticulata d’Hondt, 1981

36°44.2’N, 09°31.4’W: Balgim DW11, at 1523 m depth (HARME LIN & D’HOND T, 1992 a: MNHN 15493).

Reference material revised: MNHN 15493 (with more species): Balgim DW11, 1505-1540 m.

Euginoma reticulata d’Hondt, 1981

36°44.2’N, 09°31.4’W: Balgim DW11, at 1523 m depth (HARME LIN & D’HOND T, 1992 a: MNHN 15493).
Superfamily Incertae Sedis  
Family JUBELLIDAE Reverter-Gil & Fernández-Pulpeiro, 2001  
Genus Jubella Jullien, 1882

**Jubella enucleata** Jullien, 1882  
41º18.6’N, 09º13.8’W: Thalassa Y394, at 410 m depth on pebbles and muddy bottom (Hayward, 1979; Souto et al., 2011 b: MNHN 8453).  
40º34.3’N, 09º22.6’W: Thalassa Y415, at 450 m depth (d’Hondt, 1974; Souto et al., 2011 b: MNHN 7204).

*Reference material revised*: MNHN 7204: Thalassa Y415, 450 m. MNHN 8453: Thalassa Y394, 410 m.

Infraorder ASCOPHORA Levinsen, 1909  
“Grade” ACANTHOSTEGA Levinsen, 1902  
Superfamily CRIBRILINOIDEA Hincks, 1879  
Family CRIBRILINIDAE Hincks, 1879  
Genus Membraniporella Smitt, 1873

**Membraniporella nitida** (Johnston, 1838)  
Foz do Douro, on stones in the intertidal zone (Rosas, 1944). Boca do Inferno at 7 m depth, several ovicellate colonies on Balanus, seaweeds and Porifera (present paper). Costa da Arrábida (Saldanha, 1974). Cave at Sagres (Harmelin, 2001). Armação de Pêra at 19-21 m depth (Souto et al., 2010 b). Armação de Pêra, several colonies on stones collected in fishing boats (H. De Blauwe).  

Genus Distansescharella d’Orbigny, 1853

**Distansescharella alcicornis** (Jullien, 1882)  
41º43’00”’N, 09º19’26”W: Travailleur 1881, Dr. 2 (1ª ser.) at 1068 m depth on bottoms of pebbles, sand and a little mud (Jullien, 1882, 1883, as Cibrilina alcicornis; Calvet, 1907, as Cibrilina alcicornis; Reverter-Gil & Fernández-Pulpeiro, 2001, as Cibrilina alcicornis: MNHN 418).  
41º19.4’N, 09º14.4’W: Thalassa Y390, at 140 m depth (d’Hondt, 1974, as Cibrilina radiata (Moll); Reverter-Gil & Fernández-Pulpeiro, 2001; MNHN 7184).  
38º16.8’N 08º56.4’W: Faial 1957, at 250-300 m depth, on Coenocyathus; 37º14.7’N 09º01.5’W: at 114-117 m depth, on Dendrophyllia (Harmelin, 1978, as Cibrilina venusta). Armação de Pêra: several ovicellate colonies on stones collected from fishing nets (Souto et al., 2014).

*Reference material revised*: MNHN 6769 (with more species): 40°01’N 9°44’W, C.E. Charcot, 3-12-1968, St.1, dét. d’Hondt, 1970. MNHN 7184: St. Y390, Bry-The2-Y390, 140 m, 41º22.8’N et 09º08.2’W.

*Remarks*. Rosas (1944) reported Cibrilina radiata (Moll, 1803) from Foz do Douro, on stones and shells in the intertidal. However, Puellina radiata is considered a Mediterranean species, and its previous records from the Atlantic may belong to different species (see Bishop & Househam, 1987, Reverter & Fernández, 1996). Therefore, it is impossible to know the validity of that record without revising the original material.

Genus Collarina Jullien, 1886

**Collarina balzaci** (Audouin, 1826)  
Armação de Pêra at 21 m depth, on maërl beds (Souto et al., 2010 b).

Genus Puellina Jullien, 1886

**Puellina (Puellina) setosa** (Waters, 1899)  
Abundant in dark zones in caves at Sagres (Boury-Esnault et al., 2001; Harmelin, 2001).

**Puellina (Cribrilaria) venusta** Canu & Bassler, 1925  
41º22.8’N, 09º08.2’W: Thalassa Y390, at 140 m depth (d’Hondt, 1974, as Cribrilaria radiata (Moll); Reverter-Gil & Fernández-Pulpeiro, 2001; MNHN 7184).  
38º16.8’N 08º56.4’W: Faial 1957, at 250-300 m depth, on Coenocyathus; 37º14.7’N 09º01.5’W: at 114-117 m depth, on Dendrophyllia (Harmelin, 1978, as Cibrilina venusta). Armação de Pêra: several ovicellate colonies on stones collected from fishing nets (Souto et al., 2014).

*Reference material revised*: MNHN 6769 (with more species): 40°01’N 9°44’W, C.E. Charcot, 3-12-1968, St.1, dét. d’Hondt, 1970. MNHN 7184: St. Y390, Bry-The2-Y390, 140 m, 41º22.8’N et 09º08.2’W.

*Remarks*. Rosas (1944) reported Cibrilina radiata (Moll, 1803) from Foz do Douro, on stones and shells in the intertidal. However, Puellina radiata is considered a Mediterranean species, and its previous records from the Atlantic may belong to different species (see Bishop & Househam, 1987, Reverter & Fernández, 1996). Therefore, it is impossible to know the validity of that record without revising the original material.

**Puellina (Cribrilaria) scripta** (Reuss, 1848)  
36º36.5’N, 07º24.0’W: Balgim CP21, at 485 m depth (Harmelin & Aristegui, 1988; Harmelin & d’Hondt, 1992 a).
**Puellina** (*Cribrilaria*) *innominata* (Couch, 1844)  
Armação de Pêra, at 19-21 m depth, on maërl beds (SOUTO et al., 2010 b).

**Puellina** (*Cribrilaria*) *hincksi* (Friedl, 1917)  
Cave at Sagres (HARMELIN, 2001). Armação de Pêra: one large ovicellate colony from fishing nets, on a stone (SOUTO et al., 2014).

**Puellina** (*Cribrilaria*) *arrecta* Bishop & Househam, 1987  
Armação de Pêra, at 21 m depth on maërl beds (SOUTO et al., 2010 b).

**Puellina** (*Glabrilaria*) *orientalis lusitanica* Harmelin, 1988  
38°16.8’N 08°56.4’W: Faial 1957, st. SME 1192, at 250-300 m depth (HARMELIN, 1988).

**Puellina** (*Glabrilaria*) *pedunculata* Gautier, 1956  
38°16.8’N 08°56.4’W: Faial 1957, at 250-300 m depth, on *Coenocyathus* (HARMELIN, 1978, as *Cribrilaria pedunculata*).

**Puellina saldanhai** Harmelin, 2001  
Caves at Sagres (HARMELIN, 2001).  
*Reference material*: According to TRICART & D’HONDT (2009), the sample MNHN 20209 is the holotype of the species, and MNHN 20210 is the paratype, both coming from Sagres.

Genus **Figularia** Jullien, 1886

**Figularia figularis** (Johnston, 1847)  
Armação de Pêra: one ovicellate colony on a stone collected from fishing nets (SOUTO et al., 2014).

Superfamily **CATENICELLOIDEA** Busk, 1852  
Family **SAVIGNYEILLIDAE** Vigneaux, 1949  
Genus **Savignyella** Levinsen, 1909

**Savignyella lafontii** (Audouin, 1826)  
Costa da Arrábida (SALDANHA, 1974).

“Grade” **HIPPOTHOOMORPHA** Gordon, 1989  
Superfamily **HIPPOTHOIDEOIDEA** Busk, 1859  
Family **HIPPOTHOIDEA** Busk, 1859  
Genus **Hippothoa** Lamouroux, 1821

**Hippothoa divaricata** Lamouroux, 1821  
Costa da Arrábida (SALDANHA, 1974, as **Hippothoa divaricata**). Portinho da Arrábida, on shells (ROSAS, 1944). Armação de Pêra, at 19-21 m depth, on maërl beds (SOUTO et al., 2010 b).

**Hippothoa flagellum** Manzoni, 1870  

Genus **Plesiothoa** Gordon & Hastings, 1979

**Plesiothoa gigerium** (Ryland & Gordon, 1977)  
Ponta do Baleal (Costa de Peniche) intertidal (MARQUES et al., 1982).

Genus **Celleporella** Gray, 1848

**Celleporella hyalina** (Linnaeus, 1767)  
Foz do Douro, on *Laminaria* and red algae (NOBRE, 1903 a, 1904, as *Schizoporella hyalina*). Foz do Douro, Cascais and Portinho da Arrábida (ROSAS, 1944, as *Schizoporella hyalina*). Ponta do Surdão (Costa de Peniche) intertidal (MARQUES et al., 1982). Leça de Palmeira, some small colonies on seaweed, with embryos; Buarcos, some ovicellate colonies on *Mytilus*, with embryos; Vale Furado, some ovicellate colonies on *Mytilus*; beach of Baleal, on seaweeds, with embryos; Boca do Inferno (0-7 m), several ovicellate colonies on seaweeds, with embryos (SOUTO et al., 2014). Estoril, on seaweeds (NOBRE, 1903 b, 1904, as *Schizoporella hyalina*). Costa da Arrábida (SALDANHA, 1974). Unrecorded locality, infralittoral (SALDANHA, 1980).

*Remarks*: **Celleporella hyalina** and **Celleporella angusta** Álvarez are two closely related species with overlapping distributions. As the later species was described some 20 years ago, previous records of *C. hyalina* from Portugal, made by NOBRE (1903 a, b, 1904), ROSAS (1944), SALDANHA (1974) and MARQUES et al. (1982), may actually correspond to any of both species.
Celleporella angusta Álvarez, 1991
Vale Furado: several ovicellate colonies (with embryos) on the alga Hypnea sp. (SOUTO et al., 2014).

Family HAPLOPOMIDAE Gordon in De Blauwe, 2009
Genus Haplopoma Levinsen, 1909

Haplopoma impressum (Audouin, 1826)
Cape Papoa (Costa de Peniche) intertidal (MARQUES et al., 1982). Estoril, on seaweeds (NOBRE, 1903 b, 1904, as Microporella impressa). Cascais and Portinho da Arrábida, on seaweeds in the intertidal zone (ROSA, 1944, as Microporella impressa). Costa da Arrábida (SALDANHA, 1974). Balieira (NOBRE, 1937, as Microporella impressa).

Haplopoma graniferum (Johnston, 1847)
Ria de Aveiro (MARCHINI et al., 2007). Ponta doSurdão and Cape Papoa (Costa de Peniche) intertidal (MARQUES et al., 1982). Leça de Palmeira: some ovicellate colonies on Mytilus and Balanus; Buarcos: abundant on Mytilus (with embryos); Vale Furado: some ovicellate colonies; beach of Baleal: abundant on Mytilus (with embryos); beach of Galé: on Mytilus and Balanus (with embryos) (present paper). Sagres, intertidal (H. DE BLAUWE).

Haplopoma bimucronatum (Moll, 1803)

Haplopoma sciaphilum Silén & Harmelin, 1976
Caves at Sagres (BOURy-ESNAULT et al., 2001).

Family CHORIZOPORIDAE Vigneaux, 1949
Genus Chorizopora Hincks, 1879

Chorizopora brongniartii (Audouin, 1826)

Family TRYPOSTEGIDAE Gordon, Tilbrook & Winston in Winston, 2005
Genus Trypostega Levinsen, 1909

Trypostega venusta (Norman, 1864)
Armação de Pêra at 19 m depth, on maërl beds with stones (SOUTO et al., 2010 b).

Family PASYTHEIDAE Davis, 1934
Genus Gemellipora Smitt, 1873

Gemellipora eburnea Smitt, 1873
40°05’N, 09°54’W: Princesse Alice st. 2743, at 1241 m depth (CALVET, 1931, as Pasythaea eburnea). 36°21.0’N, 07°55.8’W: Balgin DW157, at 1108 m depth (HARMELIN & D’HONDT, 1992 a).

“Grade” UMBONULOMORPHA Gordon, 1989
Superfamily ADEONOIDEA Busk, 1884
Family ADEONIDAE Busk, 1884
Genus Adeonellopsis MacGillivray, 1886

Adeonellopsis distoma (Busk, 1858)
36°31’30”N, 11°34’W: Princesse Alice st. 1664, a fragment collected at 116 m depth, on pebbles bottom; 36°08’N, 08°02’45”W: Princesse Alice st. 1248, several branches collected at 1500 m depth on muddy bottom (CALVET, 1931).

Genus Reptadeonella Busk, 1884

Reptadeonella violacea (Johnston, 1847)
Portinho da Arrábida, on a shell washed upon the beach (ROSA, 1944, as Microporella violacea).
Superfamily LEPRALIELLOIDEA Vigneaux, 1949
Family LEPRALIELLIDAE Vigneaux, 1949
Genus Celleporaria Lamouroux, 1821

*Celleporaria brunnea* (Hincks, 1884)
Cascais, on PVC plates (Canning-Clode et al., in press).

Family BRYOCRYPTELLIDAE Vigneaux, 1949
Genus *Porella* Gray, 1848

*Porella compressa* (J. Sowerby, 1805)
Parade, on *Haliotis tuberculata*, and Setúbal, on *Murex trunculus* (Nobre, 1903 b, 1904). Cape Roca (38°46.3'N 09º32'W) at 52 m depth; Malhada (38°16'N 08º49.2'W) at 43 m depth; Cape Saint Vincent (37°01.3'N 09º00.8'W) at 49 m depth; Sagres (36°58'N 08º55.6'W) at 65 m depth (Perès, 1959).

Genus *Porelloides* Hayward, 1979

*Porelloides laevis* (Fleming, 1828)
41°34.6'N, 09º15.2'W: Thalassa Y375, at 460 m depth; 41º22.8’N, 09º08.2’W: Thalassa Y390 at 140 m depth; 41º22.2’N, 09º09.8’W: Thalassa Y425, at 430 m depth; 41º21.9’N, 09º10.3’W: Thalassa Y389, at 570 m depth; 40º45.8’N, 09º17.5’W: Thalassa Y399, at 330 m depth; 40º34.3’N, 09º22.6’W: Thalassa Y415, at 450 m depth (d’Hondt, 1974, as *Porella laevis*). Unrecorded locality (Bethencourt Ferreira, 1923, as *Porella laevis*).

Genus *Palmiskenea* Bishop & Hayward, 1989

*Palmiskenea skenei* (Ellis & Solander, 1786)
41°20.6’N, 09º10.8’W: Thalassa Y393, at 820 m depth on muddy bottom (Hayward, 1979, as *Palmicellaria skenei*). *Palmiskenea tenuis* (Calvet, 1906)
41°21.5’N, 09º10.7’W: Thalassa Y422, at 520 m depth (d’Hondt, 1974, as *Palmicellaria tenuis*).

Genus *Marguetta* Jullien in Jullien & Calvet, 1903

*Marguetta lorea* (Alder, 1864)
40º45.6’N, 9º19’W: Thalassa Y400, at 800 m depth on muddy bottom (Hayward, 1979, as *Palmicellaria lorea*).

Family ROMANCHEINIDAE Jullien, 1888
Genus *Escharoides* Edwards, 1836

*Escharoides coccinea* (Abildgaard, 1806)
Cascais, on seaweeds in the intertidal zone (Rosas, 1944, as *Mucronella coccinea*). Costa da Arrábida (Saldanha, 1974). Caves at Sagres (Boury-Esnault et al., 2001). Armação de Pêra at 19 m depth, on maërl beds with stones (Souto et al., 2010 b). Armação de Pêra, several colonies on stones collected in fishing boats (H. de Blauwe).

Genus *Escharella* Gray, 1848

*Escharella immersa* (Fleming, 1828)
Buarcoes and Sagres (Nobre, 1937, as *Mucronella Peachii*). 36°53’00”N, 08º31’46”W: Talisman Dr. 2, at 99 m depth, on sandy and shells bottom (Calvet, 1907, as *Smittia Peachii* (Johnston)).

*Escharella ventricosa* (Hassall, 1842)
Foz do Douro, on a coral (Rosas, 1944, as *Mucronella ventricosa*). Armação de Pêra: one colony on a stone collected in fishing boats on the beach (Souto et al., 2014).
**Escharella variolosa** (Johnston, 1838)

Costa da Arrábida (Saldanha, 1974 marked with “?”). Armação de Pêra: several ovicellate colonies on stones, collected in fishing boats on the beach (Souto et al., 2014).

**Escharella longicollis** (Jullien, 1882)

41°43′00″N, 09°19′26″W: Travailleur Dr. 2 (1ª ser.) at 1068 m depth on bottoms of pebbles, sand and a little mud (Jullien, 1882, 1883, as *Mucronella longicollis*; Calvet, 1907, as *Smittia longicollis*; Reverter-Gil & Fernández-Pulpeiro, 1999 b, 2001: MNHN 261, MNHN 1676, MNHN 3749, MNHN 3750, MNHN 3752, MNHN 4096). 41°09.3′N, 09°20′W: Poseidon st. 2, at 800-900 m depth (present paper: MB37-000036). 40°34.4′N, 09°22.1′W: Thalassa Y410, at 360 m depth (d’Hondt, 1974, as *Escharella microstoma* (Osburn); Reverter-Gil & Fernández-Pulpeiro, 1999 b, 2001: MNHN 7199). 36°21.0′N, 07°55.8′W: Balgim DW157 at 1108 m depth (Harmelin & d’Hondt, 1992 a).

*Reference material revised*: MNHN 261, MNHN 1676 (type), MNHN 3749 (with more species), MNHN 3750 (type), MNHN 3752 (with more species; type), MNHN 4096 (type): Travailleur D.2, 1068 m, 14/6/1881, lectotype. MNHN 2799 (paralectotype): same locality as lectotype.

**Escharella abyssicola** (Norman, 1868)

41°43′00″N, 09°19′26″W: Travailleur Dr. 2 (1ª ser.) at 1068 m depth on bottoms of pebbles, sand and a little mud (Calvet, 1907, as *Mucronella abyssicola*).

**Remarks**: Calvet (1907) stated that this species was reported at this station by Milne-Edwards, but the original material no longer existed and was not revised. *Escharella abyssicola* is a boreal-arctic species that reaches the Bay of Biscay in deep, cold water (Hayward & Ryland, 1999). A previous record of this species made by d’Hondt (1973) from the NW of the Iberian Peninsula really corresponds to *E. longicollis* (see Reverter-Gil & Fernández-Pulpeiro, 1999 b), a species also present in the same locality where *E. abyssicola* was reported (see above). Therefore, although the presence of *E. abyssicola* in Iberian deep waters is not impossible, we consider the present record as doubtful.

**Genus Temachia** Jullien, 1882

**Temachia opalenta** Jullien, 1882

41°43′00″N, 09°19′26″W: Travailleur Dr. 2 (1ª ser.) at 1068 m depth on bottoms of pebbles, sand and a little mud (Jullien, 1882, 1883; Calvet, 1907; Reverter-Gil & Fernández-Pulpeiro, 1999 a, 2001: MNHN 1065, MNHN 2799, MNHN 2979).

*Reference material revised*: MNHN 1065: Travailleur D.2, 1068 m, 14/6/1881, lectotype. MNHN 2799 (with more species), MNHN 2979 (paralectotype): same locality as lectotype.

**Genus Hemicyclopora** Norman, 1894

**Hemicyclopora sp.**

41°09.3′N, 09°20′W: Poseidon st. 2, at 800-900 m depth, two ovicellate colonies and a young colony with ancestrula; Ferragudo (Portimão): two colonies on stone and shell, collected from fishing nets (Souto et al., 2014: MB37-000035).


**Family UMBONULIDAE** Canu, 1904

**Genus Umbonula** Hincks, 1880

**Umbonula ovicellata** Hastings, 1944

Cascais, on PVC plates (Canning-Cloë et al., in press). Armação de Pêra, a small colony on a stone collected in fishing boats (Souto et al., 2014).

*Remarks*: In Portugal there may have been a single previous record from Portinho da Arrábida, reported as *Umbonula verrucosa* by Rosas (1944) but we cannot comment on the true identity of that material.
Family TESSARADOMIDAE Jullien & Calvet, 1903

Genus **Tessaradoma** Norman, 1869

**Tessaradoma boreale** (Busk, 1860)
40°45.6’N, 09°19’W: *Thalassa* Y400, at 800 m depth on muddy bottom (Hayward, 1979: MNHN 8414).

*Reference material revised*: MNHN 8414 (with more species): *Thalassa* 1972, Y400.

**Tessaradoma gracile** (Sars, 1850)
40°45.8’N, 09°17.5’W: *Thalassa* Y399, at 330 m depth (*d’hondt*, 1974).

“Grade” LEPRALIOMORPHA Gordon, 1989

Superfamily SMITTINOIDEA Levinsen, 1909

Family SMITTINIDAE Levinsen, 1909

Genus **Smittina** Norman, 1903

**Smittina landsborovii** (Johnston, 1847)
Foz do Douro and Cascais, on stones in the intertidal zone, and on corals (*rosas*, 1944, as *Smittia Landsborovii*). Armação de Pêra at 19-20 m depth, on maërl beds (*souto* et al., 2010 b). Armação de Pêra: several colonies on coralline red algae collected in fishing boats (H. De Blauwe).

**Smittina crystallina** (Norman, 1867)
40°45.6’N, 9°19’W: *Thalassa* Y400 at 800 m depth on muddy bottom (Hayward, 1979). 36°36.5’N, 07°24.0’W: *Balgim* CP21, at 485 m depth (*harmelin* & *d’hondt*, 1992 a).

**Smittina cervicornis** (Pallas, 1766)
37°40.8’N, 08°50.7’W: at 54 m depth (*pères*, 1959, as *Porella cervicornis*). Ferragudo (Portimão): in fishing boats (*souto* et al., 2014).

**Smittina affinis** (Hincks, 1862)
Armação de Pêra: some ovicellate colonies on stones collected in fishing nets (*souto* et al., 2014).

Genus **Prenantia** Gautier, 1962

**Prenantia cheilostoma** (Manzoni, 1869)
Armação de Pêra, at 20 m depth (*souto* et al., 2010 b).

**Prenantia spectrum** (Jullien, 1882)
41°43’00’’N, 09°19’26’’W: *Travailleur* Dr. 2 (1ª ser.) at 1068 m depth on bottoms of pebbles, sand and a little mud (Reverter-Gil & Fernández-Pulpeiro, 1999 a, 2001: MNHN 3900).

*Reference material revised*: MNHN 3900 (with more species): *Travailleur* 1883, D.2, 1068 m, 14/6/1881.

Genus **Smittoidea** Osburn, 1952

**Smittoidea reticulata** (MacGillivray, 1842)
Foz do Douro, on a coral (*rosas*, 1944, as *Smittia reticulata*). Armação de Pêra at 21 m depth, on maërl beds (*souto* et al., 2010 b). Armação de Pêra, on *Pentapora* collected in fishing boats (H. De Blauwe).

Genus **Pseudoflustra** Bidenkap, 1897

**Pseudoflustra perrieri** (Jullien, 1882)
40°45.6’N, 09°19’W: *Thalassa* Y400, at 800 m depth on muddy bottom (Hayward, 1979, as *Smittoidea perrieri*; Kuklinski et al., 2013; MNHN 8414).

*Reference material revised*: MNHN 8414 (with more species): *Thalassa* 1972, stn. Y400, 800 m.

**Pseudoflustra radeki** Kuklinski et al., 2013
40°34.3’N, 09°22.6’W: *Thalassa* Y415, at 450 m depth (*d’hondt*, 1974, as *Pseudoflustra aviculata* (Calvet, 1906); Kuklinski et al., 2013).
Reference material: According to Kuklinski et al. (2013), MNHN 7206 is the holotype of the species, and MNHN 7209 is the paratype, both coming from Thalassa Y415.

Family BITECTIPORIDAE MacGillivray, 1895

Genus Hippoporina Neviani, 1895

Hippoporina polygonia (Jullien, 1882)

41°43’00”N, 09°19’26”W: Traveilleur Dr. 2 (1ª ser.) at 1068 m depth on bottoms of pebbles, sand and a little mud (Jullien, 1882, 1883, as Lepralia polygonia; Calvet, 1907, as Lepralia polygonia; Reverter-Gil & Fernández-Pulpeiro, 1999 a; 2001: MNHN 2417, MNHN 2424, MNHN 3900). 41º22.4’N, 09º11.4’W: Thalassa Y426, at 600 m depth (d’Hondt, 1974, as Dakaria polygonia).

Reference material revised: MNHN 2417: Traveilleur Dr. 2, 1068 m, 14/6/1881, lectotype. MNHN 2424, 3900 (with more species): same locality as lectotype.

Hippoporina teresae Souto, Reverter-Gil & Fernández-Pulpeiro, 2010

Armaçao de Pêra, at 19-21 m depth, on maërl beds (Souto et al., 2010 b). Armaçao de Pêra: several colonies on stones collected in fishing boats (H. De Blauwe). Unrecorded locality, circalitoral (Saldanha, 1980, as Pentapora foliacea).

Pérès (1959) has also cited, as Hippodiplosia, material coming from several stations: Cape Espichel (38º24.1’ N 09º14.1’W) at 50 m depth; Malhada (38º16’N 08º49.2’W) at 43 m depth; Cape S. Vicente (37º01.3’N 09º00.8’W) at 49 m depth; Sagres (36º59’N 08º56’W) at 38 m depth.

Pentapora ottonuelleriana (Moll, 1803)

Costa da Arrábida (Saldanha, 1974). Armaçao de Pêra: a small colony on Myriapora truncata collected in fishing boats (Souto et al., 2014).

Genus Schizomavella Canu & Bassler, 1917

Schizomavella auriculata (Hassall, 1842)

40º01’N, 09º44’W: C.E. Charcot St. 1, at 130 m depth (Reverter-Gil & Fernández-Pulpeiro, 1996: MNHN 6710). Armaçao de Pêra, at 20 m depth (Souto et al., 2010 b). Armaçao de Pêra, on coralline red algae collected in fishing boats (present paper).

Remarks: Schizomavella auriculata was reported by Rosas (1944, as Schizoporella auriculata) from Foz do Douro and by Pérès (1959, as Schizoporella auriculata (?)) at Cape Roca at 52 m depth. However, the identity of this species was unclear until its redescription by Hayward & Thorpe (1995). Its previous records frequently belongs to Schizomavella cornuta (Heller, 1867), but also sometimes to S. auriculata or even to other species of the genus (see Reverter-Gil & Fernández-Pulpeiro, 1996). Therefore, whi-
tout seeing the original material is impossible to check those records.

**Schizomavella cornuta** (Heller, 1867)

Armaçao de Pêra at 20 m depth (SOUTO et al., 2010 b). Unrecorded localities, intertidal and infralittoral (SALDANHA, 1980, as *Schizomavella auriculata* (Hassall)).

**Schizomavella sarniensis** Hayward & Thorpe, 1995

Armaçao de Pêra, at 19-21 m depth (SOUTO et al., 2010 b, 2013).

**Schizomavella grandiporosa** Canu & Bassler, 1925

Vale Furado: some ovicellate colonies; beach of Baleal: some young colonies on *Sabellaria* (SOUTO et al., 2014).

**Schizomavella hastata** (Hincks, 1862)

Boca do Inferno (at 7 m depth): some ovicellate colonies on Serpulids (present paper). Cascais, on stones in the intertidal zone (ROSAS, 1944, as *Schizoporella linearis* var. *hastata* Hincks). Costa da Arrábida (SALDANHA, 1974). Armaçao de Pêra at 19-20 m depth, on maërl beds with stones (SOUTO et al., 2010 b). Unrecorded locality in the Algarve (H. DE BLAUWE).

Remarks: The identity of *S. hastata* was uncertain until its redescriptions by HAYWARD & THORPE (1995). Therefore, records previous to that work (ROSAS, 1944 and SALDANHA, 1974) must be considered cautiously due to frequent mistakes with other species of the genus.

**Schizomavella linearis** (Hassall, 1841)

Foz do Douro, on a coral (ROSAS, 1944, as *Schizoporella linearis*). 41°32.8′N, 09°08.2′W: Thalassa Y390, at 140 m depth (d’HONDUT, 1974, as *Schizoporella linearis*; REVERTER-GIL & FERNÁNDEZ-PULPEIRO, 1996: MNHN 7182). Vale Furado, some ovicellate colonies on *Sabellaria*; beach of Baleal, on *Sabellaria*; beach of Galé, ovicellate colonies on *Balanus*; Boca do Inferno, at 7 m depth, some ovicellate colonies (present paper). Costa da Arrábida (SALDANHA, 1974). 36°32′N, 11°38′30″W: Princesse Alice st. 2731, one colony collected at 65-90 m depth (CALVET, 1931). Sagres, intertidal on stones (H. DE BLAUWE). Armaçao de Pêra, at 19-21 m depth (SOUTO et al., 2010 b). Armaçao de Pêra: several colonies on stones collected in fishing boats (H. DE BLAUWE). Unrecorded localities, infra and circalittoral (SALDANHA, 1980).

Reference material revised: MNHN 7182: 41°22′8″N 09°08′2″W, 140 m, Thalassa Y390, 29/8/1972.

**Schizomavella linearis profunda** Harmelin & d’Hondt, 1992

40°09.1′N, 09°49.9′W: Poseidon st. 13, at 35-930 m depth, one colony on Reteporella sp. (SOUTO et al., 2014: MB37-000028).

Reference material revised: MB37-000028: “Poseidon” st. 13, 40°09.1′N, 09°49.9′W, 35-930 m, 21/11/1984.

**Schizomavella fischeri** (Jullien, 1882)

41°43′00″N, 09°19′26″W: Travailleur Dr. 2 (1ª ser.) at 1068 m depth on bottoms of pebbles, sand and a little mud (JULLIEN, 1882, 1883, as *Schizoporella Fischeri*; CALVET, 1907, as *Schizoporella Fischeri*; REVERTER-GIL & FERNÁNDEZ-PULPEIRO, 2001; MNHN 2966, MNHN 3783). 41°18.6′N, 09°13.8′W: Thalassa Y394, at 410 m depth (d’HONDUT, 1974). 41°09.3′N, 09°20′W: Poseidon st. 2, at 800-900 m depth (present paper: MB37-000038). 36°36.5′N, 07°24.0′W: Balgim CP21, at 485 m depth on *Lophelia pertusa* (HARMELIN & d’HONDUT, 1992 a).


**Schizomavella neptuni** (Jullien, 1882)

41°43′00″N, 09°19′26″W: Travailleur Dr. 2 (1ª ser.) at 1068 m depth on bottoms of pebbles, sand and a little mud (JULLIEN, 1882, 1883, as *Schizoporella Neptuni*; CALVET, 1907, as *Schizoporella Neptuni*; REVERTER-GIL & FERNÁNDEZ-PULPEIRO, 2001; MNHN 2342). 41°22′2″N, 09°09.8′W: Thalassa Y425, at 430 m depth; 41°18.6′N, 09°13.8′W: Thalassa Y394, at 410
m depth (d’Hondt, 1974, as Schizoporella nep- tuni). 40°09.1’N, 09°49.9’W: Poseidon st. 13, at 35-930 m depth; 41°09.3’N, 09°20’W: Poseidon st. 2, at 800-900 m depth (present paper: MB37-000030, MB37-000037).


Schizomavella mammillata (Hincks, 1880)

Foz do Douro, on stones in the intertidal zone (Rosas, 1944, as Schizoporella linearis var. mammillata Hincks). Armaçao de Pêra, at 20-21 m depth, on maërl beds (Souto et al., 2010 b). Armaçao de Pêra, on stones collected in fishing boats (present paper).

Family WATERSIPORIDAE Vigneaux, 1949
Genus Watersipora Neviani, 1895

Watersipora subtorquata (d’Orbigny, 1852)

Cascais, on PVC plates (Canning-Clode et al., in press). Cascais: on a hull; Ferragudo (Portimão); Marina of Portimão: on Mytilus; Laguna of Faro: on a bivalve shell (Souto et al., 2014).

Watersipora complanata (Norman, 1864)

Portinho da Arrábida, on shells (Rosas, 1944, as Micropora complanata). Unrecorded locality (Bethencourt Ferreira, 1923, as Micropora complanata).

Superfamily SCHIZOPORELLOIDEA Jullien, 1882
Family SCHIZOPORELLIDAE Jullien, 1882
Genus Schizoporella Hincks, 1877

Schizoporella unicornis (Johnston in Wood, 1847)


Schizoporella cornualis Hayward & Ryland, 1995

Armação de Pêra at 19 m depth, on maërl beds with stones (Souto et al., 2010 b). Armação de Pêra, on stones collected in fishing boats (present paper).

Remarks: Saldanha (1974) reported Schizoporella longirostris Hincks, 1886 from the Costa da Arrábida. According to Hayward & Ryland (1995), two different species (Schizoporella dunkeri (Reuss) and S. cornualis) have been cited under that name. Without seeing the original material, it is not possible to judge to which of both species corresponds that record.

*Schizoporella mutabilis* Calvet, 1927

Costa da Arrábida (Saldanha, 1974).

Remarks: Schizoporella mutabilis has been reported only in a few localities in the northwestern Mediterranean. As the original material of the present record no longer exists, and taking into account the presence in Portugal of other similar species, we consider the present citation as uncertain.

Genus Schizobrachiella Canu & Bassler, 1920

Schizobrachiella sanguinea (Norman, 1868)

Costa da Arrábida (Saldanha, 1974). Armação de Pêra at 19-20 m depth, on maërl beds with stones (Souto et al., 2010 b). Unrecorded localities, infra and circalittoral (Saldanha, 1980).
Family MYRIAPORIDAE Gray, 1841
Genus *Myriapora* Donati, 1750

*Myriapora truncata* (Pallas, 1766)
Costa da Arrábida (Saldanha, 1974). Cape Espichel (38°24.3’N 09°13.9’W) at 27-36 m depth; 38°23.7’N–38°23.9’N 09°12.9’W–9°12.7’W at 70-90 m depth, many dead fragments (Pères, 1959, as *Myriozoum truncatum*). Armação de Pêra, at 20 m depth (Souto et al., 2010 b). Armação de Pêra: several colonies collected in fishing boats (H. De Blauwe). Unrecorded locality, rocky circalittoral (Saldanha, 1980).

Family CHEILOPORINIDAE Bassler, 1936
Genus *Hagiosynodos* Bishop & Hayward, 1989

*Hagiosynodos latus* (Busk, 1856)
Armaçao de Pêra, at 20 m depth (Souto et al., 2010 b).

Family CRYPTOSULIDAE Vigneaux, 1949
Genus *Cryptosula* Canu & Bassler, 1925

*Cryptosula pallasiana* (Moll, 1803)
Foz do Douro, very abundant on stones in the intertidal zone (Rosas, 1944, as *Lepralia Pallasiana*). Ria de Aveiro (Marchini et al., 2007). Leça de Palmeira: some colonies on Sabellaria; Buarços: some colonies on Sabellaria; beach of Baleal: some colonies on stone; Boca do Inferno (7 m depth): some colonies on stones and Sabellaria; beach Azarujinha, São João do Estoril, on stones; beach de São Torpes, Sines; Laguna of Faro: on bivalve shells; beach of Fuseta: on bivalve shells; Santa Luzia (Tavira): on bivalve shells (Souto et al., 2014: MB37-000001, MB37-000002).


Family TEUCHOPORIDAE Neviani, 1895
Genus *Teuchopora* Neviani, 1895

*Teuchopora edwardsi* (Jullien, 1882)
41°43’00”N, 09°19’26”W: Travailleur 1881 Dr. 2 (1ª ser.) at 1068 m depth on bottoms of pebbles, sand and a little mud (Jullien, 1882, 1883, as *Lagenipora Edwarsdi*; Calvet, 1907 as *Lagenipora Edwarsdi*; Reverter-Gil & Fernández-Pulpeiro, 2001: MNHN 3749, MNHN 3752, MNHN 3900). 41°09.3’N, 09°20’W: Poseidon st. 2, at 800-900 m depth (present paper: MB37-000039).

Reference material revised: MNHN 3749 (with more species): Travailleur, 1881, D.2 (1ª ser.) 1068 m, 14/6/1881, type. MNHN 3752 (with more species): Travailleur, 1881, D.2 (1ª ser.) 1068 m, 14/6/1881, type. MNHN 3900 (with more species): Travailleur 1883, D.2, 1068 m, 14/6/1881. MB37-000039: “Poseidon” Estação 2, 41°09.3’N, 09°20’W, 800-900 m, 20/11/1984, rede arrasto.

Family PHOCEANIDAE Vigneaux, 1949
Genus *Sertulipora* Harmelin & d’Hondt, 1992

*Sertulipora guttata* Harmelin & d’Hondt, 1992
36°36.5’N, 07°24.0’W: Balgim CP21, at 485 m depth (Harmelin & d’Hondt, 1992 a: MNHN 19790, MNHN 19791).

Reference material revised: MNHN 19790: MNHN 19791: Balgim CP21, 478-491 m, holotype. MNHN 19790: Paratype 1, same locality as holotype.

Family MICROPORELLIDAE Hincks, 1879
Genus *Microporella* Hincks, 1877

*Microporella ciliata* (Pallas, 1766)
Boca do Inferno, at 7 m depth, a young colony on seaweed (present paper). Cascais and Portinho da Arrábida on seaweeds in the intertidal zone (Rosas, 1944). Costa da Arrábida (Saldanha, 1974). Setúbal (Nobre, 1903 b, 1904). Armação de Pêra at 19-21 m depth (Souto et al., 2010 b). Armação de Pêra: several colonies on stones and algae collected in fishing boats (H. De Blauwe).
Unrecorded localities, infra and circalittoral (Bethencourt Ferreira, 1923; Saldanha, 1980).

**Microporella appendiculata** (Heller, 1867)
Armação de Pêra at 19 m depth, on maërl beds with stones (Souto et al., 2010 b). Armação de Pêra, on stones collected in fishing boats (present paper).

*Incerta sedis*

“*Microporella*” insperata Jullien, 1882
41º43′00″N, 09º19′26″W: Travailleur 1881, Dr. 2 (1ª serie) at 1068 m depth on bottoms of pebbles, sand and a little mud (Jullien, 1882, 1883; Calvet, 1907: MNHN 2552).

Reference material revised: MNHN 2552: Travailleur 1881, Dr. 2, 1068 m, holotype.

Remarks: The small original sample, entirely figured by Jullien (1882, 1883), does not correspond to the genus *Microporella*. A redescription of the species is needed.

**Genus Fenestrulina** Jullien, 1888

**Fenestrulina malusii** (Audouin, 1826)
Foz do Douro and Portinho da Arrábida on seaweeds in the intertidal zone (Rosas, 1944, as *Microporella Malusii*). Costa da Arrábida (Saldanha, 1974). Unrecorded localities, infra and circalittoral (Saldanha, 1980).

**Fenestrulina inesae** Souto, Reverter-Gil & Fernández-Pulpeiro, 2010
Armação de Pêra at 19-20 m depth, en maërl beds with stones (Souto et al., 2010 b: MNCN 25.03/3796, MNCN 25.03/3772, 3774, 3780, 3792, 3797, 3798). Armação de Pêra: several colonies on stones collected in fishing boats (present paper).

Reference material revised: MNCN 25.03/3796: 37°01′27.2″N, 08°11′44.7″W, 20 m, holotype. MNCN 25.03/3772, 3774, 3780, 3792, 3797, 3798: 37°01′14.8″N, 08°11′11.6″W, 19 m, paratypes.

**Family LACERNIDAE** Jullien, 1888

**Genus Arthropoma** Levensen, 1909

**Arthropoma cecilii** (Audouin, 1826)
Armação de Pêra at 21 m depth, on maërl beds (Souto et al., 2010 b). Armação de Pêra: on a stone collected in fishing nets (H. De Blauwe).

**Family ESCHARINIDAE** Tilbrook, 2006

**Genus Escharina** Edwards, 1836

**Escharina vulgaris** (Moll, 1803)
40º01′N, 09º44′W: C.E. Charcot, st. 1, at 130 m depth (present paper: MNHN 6769). Caves at Sagres (Boury-Esnault et al., 2001). Armação de Pêra at 19 m depth, on maërl beds with stones (Souto et al., 2010 b). Armação de Pêra: on a stone collected in fishing nets (H. De Blauwe).

Reference material revised: MNHN 6769 (with more species): C.E. Charcot, 3-12-1968, St.1. 130 m, 03/12/1968

**Escharina dutertrei protecta** Zabala et al., 1993
Caves at Sagres (Boury-Esnault et al., 2001).

**Genus Herentia** Gray, 1848

**Herentia hyndmanni** (Johnston, 1847)
41°22.2′N, 09°09.8′W: Thalassa Y425, at 430 m depth; 40°45.8′N, 09°17.5′W: Thalassa Y399, at 330 m depth; 40°34.4′N, 09°22.1′W: Thalassa Y410, at 360 m depth (d’Hondt, 1974). Caves at Sagres (Boury-Esnault et al., 2001, as Escharina hyndmanni). 36°34.99′N, 11°38.29′W: “Jean Charcot” Stn 076, 600 m depth, two colonies on shell (d’Hondt, 1973, in part, see Berning et al., 2008). 36°36.5′N, 07°24.0′W: Balgim CP21, at 485 m depth (Harmelin & d’Hondt, 1992 a, as Escharina hyndmanni).

Reference material: MNHN 6764 (with more species): “Jean Charcot” cruise 1969, Stn 076, 36°34.99′N, 11°38.29′W, 600 m, off southern Portugal, two colonies on shell.

Remarks: According to Berning et al. (2008), *H. thalassae* had only been recorded with certainty off northwestern Spain, at 480-520 m depth. Some other material collected from the southern...
Portuguese outer shelf presents a similar morphology, but with smaller zooids. *Herentia hyndmanni* has been reported in Portugal from several localities by d’Hondt (1974), BOURY-ESNAULT et al. (2001) and HARMELIN & d’HOND’T (1992 a), but as descriptions and illustrations are not given in these articles, it is not possible to judge, without seeing the original material, if these records really correspond to *H. hyndmanni*.

*Herentia thalassae* David & Pouyet, 1978

41°09.3”N, 09°20’W: at 800-900 m depth, two ovicellate colonies and one young colony, on a stone (SOUTO et al., 2014: MB37-000007).

**Reference material revised:** MB37-000007: 41°09.3’N, 09°20’W, 800-900 m. 20/11/1984.

Superfamily MAMILLOPOROIDEA Canu & Bassler, 1927

Family CLEIDOCHASMATIDAE Cheetham & Sandberg, 1964

Genus *Characodoma* Mapleston, 1900

*Characodoma strangulatum* (Calvet, 1906)

36°46.1’N, 09°27.0’W: Balgim DW07, at 1141 m depth (HARMELIN & d’HOND’T 1992 a, as *Cleidochasma strangulatum*; BERNING, 2013; MNHN 15487).

**Reference material:** MNHN 15487: Balgim DW07, 1139-1144 m.

Family ASCOSIIDAE Jullien, 1882

Genus *Ascosia* Jullien, 1882

*Ascosia pandora* Jullien, 1882

36°44.2’N, 09°31.4’W: Balgim DW11, at 1523 m depth; 36°45.8’N, 09°29.4’W: Balgim DW16, at 1283 m depth; 36°46.1’N, 09°27.0’W: Balgim DW07, at 1141 m depth; 36°10.8’N, 08°06.2’W: Balgim CP108, at 1527 m depth; 35°31.3’N, 07°25.6’W: Balgim DW61, at 1222 m depth (HARMELIN & d’HOND’T, 1992 a: MNHN 19803).

**Reference material revised:** MNHN 19803: Balgim DW61, 1222 m.

Genus *Fedora* Jullien, 1882

*Fedora edwardsi* Jullien, 1882

40°36.8’N, 09°21.5’W: Thalassa Y401, at 1040 m depth on muddy bottom; 40°33.1’N, 09°26.5’W: Thalassa Y405, at 1170 m depth on muddy bottom (HAYWARD, 1979; REVERTER-GIL & FERNANDEZ-PULPEIRO, 2001: MNHN 9335). 36°46.2’N 09°26.8’W: Balgim DR06, at 1114 m depth on shells bottom (present paper: MNHN 19806).

36°45.3’N, 09°30.8’W: Balgim CP17, at 1470 m depth; 36°14.5’N, 07°56.4’W: Balgim CP109 at 1200 m depth; 35°30.5’N, 07°46.1’W: Balgim DW64, at 1530 m depth; 35°31.3’N, 07°26.2’W: Balgim CP62, at 1250 m depth (HARMELIN & d’HOND’T, 1992 a: MNHN 19954).

**Reference material revised:** MNHN 9335: Thalassa 1972, Y401, 1040 m. MNHN 19806 (with more species): Balgim DR06, 1112-1114 m. MNHN 19954: Balgim DW64, 1530 m.

Superfamily CELLEPOROIDEA Johnston, 1838

Family CELLEPORIDAE Johnston, 1838

Genus *Cellepora* Linnaeus, 1767

*Cellepora pumicosa* (Pallas, 1766)

Foz do Douro, on stones in the intertidal zone (ROSAS, 1944). Vale Furado, several colonies; Boca do Inferno, at 7 m depth, several colonies with ovicells and embryos, on Sabellaria (present paper). Costa da Arrábida (SALDANHA, 1974). Beach São Torpes, Sines (present paper: MB37-000025). Armação de Pêra at 19-21 m depth (SOUTO et al., 2010 b). Armação de Pêra, on stone collected in fishing nets (H. DE BLAWE).

**Reference material revised:** MB37-000025: Praia de São Torpes, Sines. 15/10/1981. Explorações Museu Bocage.

Genus *Celleporina* Gray, 1848

*Celleporina hassallii* (Johnston, 1847)

Boca do Inferno, at 7 m depth, some young colonies on seaweed, and abundant on Balanus, with ovicells (present paper). Cascais and Portinho da Arrábida, on seaweeds in the intertidal zone (ROSAS, 1944, as *Cellepora Costazii* (Aud.)).
Costa da Arrábida (Saldanha, 1974). 36°31′N 11°33′45″W: Princesse Alice st. 467, some colonies on seaweed, collected at 60 m depth (Calvet, 1931, as Costazzia Costazzii). Armação de Pêra, at 19-21 m depth (Souto et al., 2010, as Celleporina caliciformis (Lamarek)). Unrecorded localities, infra and circalittoral (Saldanha, 1980).

**Celleporina decipiens** Hayward, 1976
Armação de Pêra at 19 m depth, on maërl beds with stones (Souto et al., 2010 b). Armação de Pêra: on *Myriapora truncata* collected in fishing boats (H. De Blauwe).

**Celleporina caminata** (Waters, 1879)
Costa da Arrábida (Saldanha, 1974). In dark walls in caves at Sagres (Boury-Esnault et al., 2001). Armação de Pêra: several colonies on stones collected in fishing boats (H. De Blauwe).

**Celleporina derungsi** Souto, Reverter-Gil & Fernández-Pulpeiro, 2010
Armação de Pêra at 19-20 m depth, on maërl beds with stones (Souto et al., 2010 b, as T. incrassata (Lamarck)). Unrecorded locality in Algarve (Souto et al., 2014: MB37-000004, MB37-000009).

*Reference material revised:* MB37-000004: Beach Maria Luisa, Albufeira. Infralittoral.

**Turbicellepora** Ryland, 1963

**Turbicellepora avicularis** (Hincks, 1860)
Sagres (36°58′N 08°55.6′W) at 65 m depth (Perès, 1959, as *Schismopora avicularis* (Hincks)). Armação de Pêra at 19 m depth, on maërl beds with stones (Souto et al., 2010 b, as *Turbicellepora incrassata* (Lamarck, 1816)). Unrecorded locality in Algarve (H. De Blauwe).

**Turbicellepora magnicostata** (Barroso, 1919)
Beach of Baleal: several colonies on *Sabellaria* (with embryos); beach São Torpes, Sines; beach Maria Luisa, Albufeira, infralittoral; unrecorded locality in the Algarve (Souto et al., 2014: MB37-000004, MB37-000009).

*Reference material revised:* MB37-000004: Beach Maria Luisa, Albufeira. Infralittoral.

**Buskea** Heller, 1867

**Buskea billardi** (Calvet, 1906)
41°43′00″N, 09°19′26″W: Travailleur 1881, Dr. 2 (1ª ser.) at 1068 m depth on bottoms of pebbles, sand and a little mud (Reverter-Gil & Fernández-Pulpeiro, 2001: MNHN 59). 41°32′N, 09°13.7′W: *Thalassa* Y377, at 320 m depth, on pebbles and muddy bottom; 41°19.7′N, 09°11.6′W: *Thalassa* Y392, at 550 m depth on muddy and sandy bottom; 40°45.6′N, 09°19′W: *Thalassa* Y400, at 800 m depth on muddy bottom (Haward, 1979). 40°45.8′N, 09°17.5′W: *Thalassa* Y399, at 330 m depth (d’Hondt, 1974, as *Escharoides (?) billardi*). 36°10.8′N, 08°06.2′W: Balgim CP108, at 1527 m depth (Harmelin & d’Hondt, 1992 a).

*Reference material revised:* MNHN 59: Travailleur 1881, Dr. 1, 1068 m depth.

**Buskea dichotoma** (Hincks, 1862)
Sagres (36°58′N 08°55.6′W) at 65 m depth (Perès, 1959, as *Schismopora dichotoma*). 36°53′00″N, 08°27′46″W: Talisman Dr. 3, at 106 m depth, on sandy and shells bottom (Calvet, 1907, as *Reteporella dichotoma*).

Family PHIDOLOPORIDAE Gabb & Horn, 1862

**Reteporella** Busk, 1884

**Remarks:** Perès (1959) has reported, as *Reteporella*, material coming from ten sampling stations.
in the southwest of Portugal, between 32 and 350 m depth. It will be necessary to revise the original material, if it still exists, to check the identifications.

**Reteporella couchii** (Hincks, 1878)
Armação de Pêra, one small colony on a stone collected in fishing boats (SOUTO et al., 2014).

**Reteporella beaniana** (King, 1846)
41°22.8’N, 09°08.2’W: *Thalassa* Y390, at 140 m depth (d’HONDT, 1974, as *Sertella beaniana*).

**Reteporella aquitanica** (Jullien in Jullien & Calvet, 1903)
41°18.6’N, 09°13.8’W: *Thalassa* Y394, at 410 m depth (HAYWARD, 1979, as *Sertella aquitanica*); 40°45.6’N, 09°19’W: *Thalassa* Y400, at 800 m depth on muddy bottom (HAYWARD, 1979, as *Sertella aquitanica*; d’HONDT, 1974, as *Sertella aquitanica*). 40°34.3’N, 09°22.6’W: *Thalassa* Y415, at 450 m depth (d’HONDT, 1974, as *Sertella aquitanica*).

**Reteporella jullieni** (Calvet, 1907)
40°34.3’N, 09°22.6’W: *Thalassa* Y415, at 450 m depth (d’HONDT, 1974, as *Sertella Jullieni*).

**Schizotheca fissa** (Busk, 1856)
Armação de Pêra at 19-21 m depth, on maërl beds (SOUTO et al., 2010 b). Armação de Pêra, on stones collected in fishing boats (H. DE BLAUWE).

**Schizotheca carmenae** Reverter-Gil & Fernández-Pulpeiro, 2007
Caves at Sagres (REVERTER-GIL & FERNÁNDEZ-PULPEIRO, 2007).

**Rhynchozoon celestinoi** Souto, Reverter-Gil & Fernández-Pulpeiro, 2010
Armação de Pêra at 20 m depth (SOUTO et al., 2010 b: MNCN 25.03/3769, MNCN 25.03/3770, 3771).

**Rhynchozoon rosae** Souto, Reverter-Gil & Fernández-Pulpeiro, 2010
Armação de Pêra at 19 m depth, on maërl beds with stones (SOUTO et al., 2010 b: MNCN 25.03/3758, MNCN 25.03/3759-3768).

**Dentiporella saldanhai** Souto, Reverter-Gil & Fernández-Pulpeiro, 2010
Armação de Pêra at 19-20 m depth, on maërl beds (SOUTO et al., 2010 b: MNCN 25.03/3772, MNCN 25.03/3773, 3774).

**Stephanollona armata** (Hincks, 1862)
Armação de Pêra (Algarve) at 19-20 m depth, on maërl beds with stones (SOUTO et al., 2010 b: MNCN 25.03/3791, 3792, 3793, 3794, 3780-3803). Armação de Pêra, on stones collected in fishing boats (H. DE BLAUWE).

**Remarks**: There are two previous records which may correspond or not to the present species: from Foz do Douro, on a coral (ROSAS, 1944, as *Schizoporella armata*) and from Costa...
da Arrábida (Saldanha, 1974, as Rhyncozoon armatum (Hincks, 1861) marked with “?”). As the authors did not include descriptions or figures, and original material no longer exists, it is not possible to check their identifications.

**Stephanollona contracta** (Waters, 1899)
Armaçao de Pêra at 21 m depth, on maërl beds (Souto et al., 2010 b: MNCN 25.03/3799).
Reference material revised: MNCN 25.03/3799: 37º00’59.3”N, 08º11’25.4”W, 21 m, one colony on a Serpulidae.

**Other uncertain species**

**Entalophora proboscidea** (Milne-Edwards)
36º31’30”N, 11º34’W: Princesse Alice st. 1664, three branches at 116 m depth; 36º32’N, 11º38’30”W: Princesse Alice st. 2731, two fragments at 65-90 m depth (Calvet, 1931).
Remarks: According to Harmelin (1976) these records may correspond to Entalophoroeicia deflexa, Entalophoroeicia robusta or Annectocyma major. Revision of original material, if it still exists, is necessary to confirm its real identity.

**Filisparsa pourtalesi** Smitt
Unrecorded locality (Bethencourt Ferreira, 1923).
Remarks: As the author did not include any further information and original material does not longer exist, the identity of the present record is uncertain.

**Petralia souleri**
Cape Espichel (38º24.3’N 09º13.9’W) at 27-36 m depth (Péres, 1959).
Remarks: We have not found any further information about this species. As the author did not include any further information and original material does not longer exist, the identity of the present record is uncertain.

**Retepora celulosa**
Povoa de Varzim, on corals in fishing nets (Nobre, 1903 a, 1904). Between Cape Carvoeiro and Raso, at 9-100 m depth; SW Sines, at 87 m depth; W Pontal (between Cape Sines and Cape S. Vincent), at 564 m depth (Nobre, 1942). Unrecorded locality (Bethencourt-Ferreira, 1923).
Remarks: As the authors did not include any further information and original material does not longer exist, the identity of these records are uncertain.

**Retepora decollata**
SW Sines, at 87 m depth (Nobre, 1942).
Remarks: We have not found any further information about this species. As the author did not include any further information and original material does not longer exist, the identity of the present record is uncertain.

**Schismopora armata** (Hincks, 1880)
Costa da Arrábida (Saldanha, 1974). 36º31’N, 11º33’45”W: Princesse Alice, st. 467, at 60 m depth (Calvet, 1931).
Remarks: According to Hayward (1978) previous records of “S. armata” may correspond to several different species of Turbicellepora, and records should be reassigned only in those cases where the original material is available, which is not the case.

**Smittia vaciva** Jullien, 1882
41º43’00”N, 09º19’26”W: Travailleur 1881, D.2 (1st ser.), some colonies collected at 1068 m depth on bottoms of pebbles, sand and a little mud (Jullien, 1882, 1883; Calvet, 1907).
Remarks: The identity of this species is uncertain, as the single original colony no longer exists, according to Calvet (1907).

**Tubulipora (?) reticulata** (Calvet, 1902)
36º31’N 11º33’45”W: Princesse Alice st. 467, one colony at 60 m depth on bottoms of sand, shells and stones (Calvet, 1931).
Remarks: Calvet (1931) himself doubts about the identification of the present record, so its identity is uncertain.

**Tubulipora tubulifera** (Lamouroux)
Berlenga (Girard in Nobre & Braga, 1942).
Remarks: As the authors did not include any further information and original material does not longer exist, the identity of the present record is uncertain.
**Turritigera stellata** (Busk)

Unrecorded locality (Bethencourt Ferreira, 1923).

**Remarks:** This species is present in the southern hemisphere (South America and South Africa). As the author did not include any further information and original material does not longer exist, the identity of the present record is uncertain.

**DISCUSSION**

**Species richness**

A total of 237 Bryozoan species are known in Portugal, 171 from shallow waters (0-140 m) and 75 from deep waters (250-2789 m) (Table II). About 78% of the species are Cheilostomata, while the Ctenostomata are 12% and the Cyclostomata represent about 10%. This proportion is similar to the other areas in the world, like Brazil (Vieira et al., 2008), but differs from proportions at New Zealand or Italy, for instance, where Ctenostomata are less abundant (Gordon et al., 2009; Rosso et al., 2010). The relative abundances of these three groups are similar regarding only shallow waters, but in deep waters the Cyclostomata species are slightly more frequent (about 13% of the total) while the Ctenostomata species are less abundant (about 7%). In both deep and shallow waters, Lepraliomorpha species are dominant, followed by Flustrina species, both groups together representing more than a half of the reported species in Portugal.

The knowledge of the species richness is quite variable along the Portuguese waters (Fig. 2).

In the northernmost area, between the Minho River and the Douro River, there are 35 species from deep waters (from 320 to 1250 m depth) and 43 species between 0 and 140 m depth, with a total of 76 species in 29 sampling stations.

In the second area, between the Douro River and the Tagus River, there are 31 species from deep waters (330 to 1241 m depth) and 71 species between 0 and 130 m depth, with a total of 101 species in 38 sampling stations.

In the third area, between the Tagus River and the Cape St. Vincent, only 4 species from deep waters (from 250 to 460 m depth) are known, while 78 species were collected between 0 and 117 m depth, with a total of 81 species from 15 sampling stations.

<table>
<thead>
<tr>
<th>Table II. Number of species of marine bryozoans reported from Portugal.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Species</td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td>Cheilostomata</td>
</tr>
<tr>
<td>Inovicellina</td>
</tr>
<tr>
<td>Scrupariina</td>
</tr>
<tr>
<td>Malacostegina</td>
</tr>
<tr>
<td>Flustrina</td>
</tr>
<tr>
<td>Acanthostega</td>
</tr>
<tr>
<td>Hippothoomorpha</td>
</tr>
<tr>
<td>Umbonulomorpha</td>
</tr>
<tr>
<td>Lepraliomorpha</td>
</tr>
<tr>
<td>Ctenostomata</td>
</tr>
<tr>
<td>Alcyonidioidea</td>
</tr>
<tr>
<td>Arachnidioidea</td>
</tr>
<tr>
<td>Walkerioidea</td>
</tr>
<tr>
<td>Vesicularioidea</td>
</tr>
<tr>
<td>Penetrantioidea</td>
</tr>
<tr>
<td>Cyclostomata</td>
</tr>
<tr>
<td>Tubuliporina</td>
</tr>
<tr>
<td>Articulata</td>
</tr>
<tr>
<td>Rectangulata</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>
The fourth area is the southwest, with a small portion of continental shelf and includes the Gorringe Bank. There are 13 species from deep waters (from 600 to 2789 m depth) and 11 species between 21 and 116 m depth, with a total of only 24 species from 16 sampling stations.

The last area corresponds to the Algarve, with 27 species from deep waters (from 452 to 2035 m depth) and 118 species between 0 and 106 m depth, with a total of 144 species from 36 sampling stations.

The area with a higher number of species in Portugal corresponds to the southern coast, i.e. the Algarve, especially with regards to the shallow water species. The areas 1 and 2 (from the Minho River to the Tagus River) seem to be also relatively well known. There are however important gaps; the seamounts in the south of the Galicia Bank are largely unknown, and data from the continental shelf are scarce. The best known localities nowadays in Portugal are Armaçao de Pêra (Algarve) with 82 species, and the Coast of Arrábida (south Lisbon) with 71 species (Fig. 2).

On the contrary, the areas 3 and 4 are evidently poorly studied. In the area 3, although the number of species seems to be relatively high (81) there are only two sampling stations in deep waters, while most of the littoral species were reported from the Coast of Arrábida and nearby localities, but the rest of the coast is nearly unstudied. The area 4, with a similar number of localities studied, only yields 24 species.

It is interesting to note that while the first record of a Bryozoan in Portugal was made 140 years ago, the 60% of the species newly recorded were reported in the last 40 years. Moreover, in the last 12 years 70 species were reported for the first time, representing more than a quarter of all the species known in Portugal today (see Fig. 1).

The species richness estimators Chao 2, Jack 1 and Jack 2 (Fig 3, Table III) also indicate that our knowledge of the bryozoan fauna in Portugal is far from the expected value. Only one of them, the Chao2, stabilized towards asymptotic values, giving a much higher value than the actual knowledge of species (Sobs) in Portugal. The other two estimators give different values, but they do not present stabilization. The plot showing the cumulative numbers of species newly recorded from Portugal (Fig. 1) and the species
richness estimators (Fig. 3) clearly indicate that our present knowledge of the species richness in Portugal is still rather low, representing between the 57% and the 68% of the real species richness.

**Distribution of species**

The Portuguese continental coast is included in the southern part of the Lusitanian region, and therefore it is also influenced by the Mediterranean, and also even by north-boreal and Macaronesian waters. For this reason, it is possible to find species with different biogeographical origins, including also species with a presumably widespread distribution, or even invasive species. However, our knowledge about the biogeography and distribution of bryozoan species is actually rather scarce. In recent years, the study of bryozoan material through SEM and gene sequencing has shown that some species considered to have a wide geographic distribution, even those presumably well-known, have been misidentified or/and belong to different cryptic species with more restricted distributions. Therefore, the general distributions of species must be considered with caution. The study of the material deposited in collections is especially revealing, as on not a few occasions prior identifications have proved to be incorrect, either because of simple mistakes, or more often because the concept of a single species was not the same for different authors. For instance, there was a general tendency to report British species from different, distant regions. Many of the previous records in Portugal (e.g. works by Nobre, Rosas or Saldanha) could not be checked, so the possibility that there have been misidentifications should not be dismissed. As a conclusion, biogeographic studies must be treated only as a provisional approximation.

When comparing the biogeographic character of deep and shallow waters species in Portugal, some important differences are found (Fig. 4, Table IV). In the deep region there is an

![Figure 4. Biogeographic character of deep and shallow waters species in Portugal.](image)

<table>
<thead>
<tr>
<th></th>
<th>Boreal</th>
<th>Lusitanian</th>
<th>Atlantic-Mediterranean</th>
<th>Widespread</th>
<th>Mediterranean</th>
<th>Macaronesian</th>
<th>California</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deep Waters</td>
<td>13,89%</td>
<td>47,22%</td>
<td>22,22%</td>
<td>6,94%</td>
<td>2,78%</td>
<td>5,56%</td>
<td>1,39%</td>
</tr>
<tr>
<td>Littoral</td>
<td>10,12%</td>
<td>10,71%</td>
<td>51,19%</td>
<td>19,05%</td>
<td>6,55%</td>
<td>5,56%</td>
<td>0,6%</td>
</tr>
</tbody>
</table>
important proportion of Lusitanian species (nearly 50% of species). This is probably due to the fact that many of these species were originally described from this area, and have not been re-discovered, perhaps because sampling in deep waters is scarce in other nearby regions. Many of these species were only recorded in one or two stations. There is also an important proportion of species present in the Atlantic-Mediterranean region. Just these species represent more than a half in the littoral area, with also a high proportion of widespread species. On the contrary, Lusitanian species are poorly represented in shallow waters. Boreal species are more frequent in deep waters, while Mediterranean species are more abundant in shallow waters, perhaps due to the difference in water temperature. The proportion of Macaronesian species is similar in both areas. Finally, in each region there is one single Californian species. In deep waters this species is *Ascorhiza mawatarii*, originally described from NE Pacific and reported in Portugal by Harmelin & d’Hondt (1992 b). In shallow waters the Californian species is *Celleporaria brunnea*, recently introduced in panels in Cascais (Canning-Cloë et al., in press).

The proportion of species in the different areas along the Portuguese coast (Fig. 2) is also variable. In deep waters (Fig. 5, Table V) we have only used data from areas 1, 2 and 5, as the...
number of species in areas 3 and 4 is quite reduced. There is a slight reduction in the presence of Lusitanian and boreal species from the north to the south. Mediterranean species are only present in the area 5, close to the Strait of Gibraltar and therefore influenced by the Mediterranean outflow. Macaronesian species are also present here, as well as in the area 4.

In shallow waters (Fig. 6, Table VI) we have excluded data from area 4 in the graphic, due to its low number of species. The proportion of Atlantic-Mediterranean species is similar in all areas, while the proportion of boreal species is slightly reduced from north to south. The high proportion of Lusitanian species in the area 5 is due to the recent description of a number of new species in recent years (e.g. Souto et al., 2010b). Mediterranean species are more abundant in the south, being absent in the area 2, while in the area 1 they are only represented by the species Schizomavella mamillata. Macaronesian species are only present in the area 5.

In short, both in deep and shallow waters there is a reduction of the proportion of boreal species from the north to the south, while with regards to Mediterranean species it is just upside down, as it
would be expected. Also, Macaronesian species are present only in the south of Portugal.

**FURTHER WORK**

As stated above, the number of Bryozoan species known nowadays in Portugal is surely far from the real species richness. Works published in the last few years (e.g. Boury-Esnault et al., 2001; Marchini et al., 2007; Souto et al., 2010a, 2014) have added a large number of species to the Portuguese check-list. Therefore, it is clear that a stronger sampling effort will produce new results. For instance, at least 50 species more must be present in Portuguese waters, as they have been found in adjacent waters of the Iberian Peninsula, in most cases to the north and to the south of Portugal at the same time.

Regarding the littoral area, the southwest coast of Portugal (from Sado River to Cape S. Vincent) is nearly unstudied, as only few species were reported from Sines. On the other hand, deep waters around Portugal are still poorly known, especially also the southwest (areas 3 and 4). Most of the deep waters localities studied are placed in the north continental slope and the abyssal plane in the Gulf of Cadiz, but the continental shelf itself, the rest of the continental slope and abyssal plane are nearly unstudied. On the other hand, several seamounts are placed near the Portuguese coast (e.g. Vigo Seamount, Porto Seamount, Tore seamount or the Gorringe Bank, formed by the Ormonde and Gettysburg Seamounts); our knowledge of these areas is really low, although they are especially interesting from a taxonomic and ecological point of view.

As stated above, search of material coming from Portugal in different collections was not exhaustive. It is possible that more samples, as for instance those collected by Calvet (1931), are kept in different institutions, as the “Musée Océanographique de Monaco”. On the other hand, although the material cited by Bethencourt Ferreira, Nobre, Rosas and Saldanha seems to have been lost, a definitive confirmation is still pending.

Many of the Lusitanian species present in deep waters were originally described from Portugal. Most of them are relatively little-known species that have only occasionally been reported or redescribed subsequently from non-type material; some later distributional records are in doubt and some aspects of the species have been misunderstood. Most of these species were originally described somewhat inadequately by modern standards. Correct characterization of species by the designation of types and their complete description according to current standards is therefore vital, a work that we have already started in several previous papers (Reverter-Gil & Fernández-Pulpeiro, 1999a, 2005; Reverter-Gil et al., 2011; Souto et al., 2011b).

**ACKNOWLEDGEMENTS**

This work is dedicated to Luiz Vieira Caldas Saldanha (1937-1997), Professor in the Department of Zoology and Anthropology of the Faculty of Science of the University of Lisbon and responsible for the Marine Laboratory ‘A Guia’, was a pioneer in the field of marine biology, having published several key papers in the development of this science in Portugal.

We tender special thanks to Hans De Blauwe for sending material and communicating unpublished data, and to Diana Carvalho (Museu Nacional de História Natural e da Ciência, Lisbon) for sending material. We are also grateful to P. Lozouet (MNHN) and M. Spencer Jones (NHMUK) for the assistance during our visits. We also thank the two anonymous referees for revision of the manuscript, which helped to improve the final version. This work was supported by the project “Fauna Ibérica: Bryozoos II (Family Cribrilinidae – Family Watersiporidae)” (CGL2010-22267-C07-02), co-financed by the Ministerio de Economía y Competitividad (Spanish Government) and FEDER. JS thanks the Austrian Science Fund (FWF, Lise Meitner Program, grant M1444-B25) for financial support.

**REFERENCES**

Works including records of bryozoans from Portuguese waters are marked with an asterisk (*).


*NIKULINA, E.A., DE BLAUWE, H. & REVERTER-GIL, O. (2013). Molecular Phylogenetic Analysis Confirms the Species Status of Electra verticillata (Ellis and Solander 1786). In: Ernst,


Appendix: List of localities, references and species in continental Portugal

(Area 1) North Coast: from Minho river to Douro river

Deep waters (320-1250 m)

Travailleur 1881, D. 2, 41°43′00″N, 09°19′26″W, 1068 m
(Jullien, 1882, 1883; Calvet, 1907; Harmelin, 1974, 1976; Reverter-Gil & Fernández-Pulpeiro, 1999 a, 1999 b, 2001, 2005; Reverter-Gil et al., 2011, 2012; Souto et al., 2011 b).
- Stomatopora gingrina Jullien, 1882
- Jullienipora calypsoides (Jullien, 1882)
- Plagioecia inoedificata (Jullien, 1882)
- “Idmonea” insolita Jullien, 1882
- Crepis longipes Jullien, 1882
- Notoplites evocatus (Jullien, 1882)
- Setosella vulnerata (Busk, 1860)
- Distansescharella alcicornis (Jullien, 1882)
- Escharella longicollis (Jullien, 1882)
- *Escharella abyssicola* (Norman, 1868)
- Temachia opulenta Jullien, 1882
- Prenantia spectrum (Jullien, 1882)
- Hippoporina polygonia (Jullien, 1882)
- Schizomavella fischeri (Jullien, 1882)
- Schizomavella neptuni (Jullien, 1882)
- Teuchopora edwardsi (Jullien, 1882)
- “Microporella” insperata Jullien, 1882
- Buskea billardi (Calvet, 1906)

Thalassa Y375, 41°34.6′N, 09°15.2′W, 460 m
(d’Hondt, 1974)
- Porelloides laevis (Fleming, 1828)

Thalassa Y377, 41°32′N, 09°13.7′W, 320 m
(Hayward, 1979)
- Buskea billardi (Calvet, 1906)

Thalassa Y374, 41°30.7′N, 09°19.9′W, 1250 m
(Hayward, 1979)
- Metalcyonidium gautieri d’Hondt, 1975
- Cellaria sinuosa (Hassall, 1841)
- Euginoma vermiformis Jullien, 1882

Thalassa Y379, 41°28′N, 09°16.7′W, 1150 m
(Hayward, 1979)
- Flustra foliacea (Linnaeus, 1758)

Thalassa Y426, 41°22.4′N, 09°11.4′W, 600 m
(d’Hondt, 1974)
- Hippoporina polygonia (Jullien, 1882)

Thalassa Y425, 41°22.2′N, 09°09.8′W, 430 m
(d’Hondt, 1974)
- Tervia irregularis (Meneghini, 1844)
- Dendrobeania sessilis (d’Hondt, 1974)
- Porelloides laevis (Fleming, 1828)
- Schizomavella neptuni (Jullien, 1882)
- Herentia hyndmanni (Johnston, 1847)

Thalassa Y389, 41°21.9′N, 09°10.3′W, 570 m
(d’Hondt, 1974)
- Porelloides laevis (Fleming, 1828)

Thalassa Y422, 41°21.5′N, 09°10.7′W, 520 m
(d’Hondt, 1974)
- Tervia irregularis (Meneghini, 1844)
- Palmiskenea tenuis (Calvet, 1906)

Thalassa Y393, 41°20.6′N, 09°10.8′W, 820 m
(Hayward, 1979)
- Palmiskenea skenei (Ellis & Solander, 1786)

Thalassa Y392, 41°19.7′N, 09°11.6′W, 550 m
(Hayward, 1979)
- Buskea billardi (Calvet, 1906)

Thalassa Y395, 41°19.4′N, 09°14.4′W, 810 m
(d’Hondt, 1974)
- Distansescharella alcicornis (Jullien, 1882)

Thalassa Y394, 41°18.6′N, 09°13.8′W, 410 m
(d’Hondt, 1974; Hayward, 1979; Souto et al., 2011 b)
- Entalophoroeca deflexa (Couch, 1842)
- Scrupocellaria incurvata Waters, 1896
- Jubella enucleata (Jullien, 1882)
**Schizomavella fischeri** (Jullien, 1882)
**Schizomavella neptuni** (Jullien, 1882)
**Reteporella aquitanica** (Jullien in Jullien & Calvet, 1903)

Poseidon st. 3, 41°12.2’N, 09°21.4’W, 850-1000 m
*(SOUTO et al., 2014)*
*Cellaria cf. salicornioides* Lamouroux, 1816

Poseidon st. 2, 41°09.3’N, 09°20’W, 800-900 m
*(SOUTO et al., 2014; present paper)*
*Crepis longipes* Jullien, 1882
*Distansescharella alcicornis* (Jullien, 1882)
*Escharella longicollis* (Jullien, 1882)
*Hemicyclopora* sp.
*Schizomavella fischeri* (Jullien, 1882)
*Schizomavella neptuni* (Jullien, 1882)
*Teuchopora edwardsi* (Jullien, 1882)
*Herentia thalassae* David & Pouyet, 1978

**Shallow waters (0-140 m)**

Vila Praia de Âncora
*(RYLAND et al., 2011)*
*Bugula neritina* (Linnaeus, 1758)

Oeiras Marina
*(RYLAND et al., 2011)*
*Bugula neritina* (Linnaeus, 1758)

Molêdo do Minho, 41°51’00”N, 08°52’00”W
*(NOBRE, 1903 a, b, 1904)*
*Aetea anguina* (Linnaeus, 1758)
*Bicellariella ciliata* (Linnaeus, 1758)

Praia do Carreço (Viana do Castelo), 41°44’36”N, 08°52’38”W
*(Present paper)*
*Electra pilosa* (Linnaeus, 1767)

Praia da Areosa (Viana do Castelo), 41°43’00”N, 08°51’53”W
*(Present paper)*
*Aetea anguina* (Linnaeus, 1758)
*Electra pilosa* (Linnaeus, 1767)
*Schizoporella unicornis* (Johnston in Wood, 1847)

Viana do Castelo, 41°40’18”N, 08°50’00”W
*(NOBRE, 1937)*
*Electra verticillata* (Ellis & Solander, 1786)
*Electra pilosa* (Linnaeus, 1767)

Thalassa Y390, 41°22.8’N, 09°08.2’W, 140 m
*(d’HONDT, 1974; REVERTER GIL, 1995; REVERTER-GIL & FERNÁNDEZ-PULPEIRO, 1996, 2001)*
*Microecella suborbicularis* (Hincks, 1880)
*Puellina (Cribrilaria) venusta* Canu & Bassler, 1925
*Porelloides laevis* (Fleming, 1828)
*Schizomavella linearis* (Hassall, 1841)
*Reteporella beaniana* (King, 1846)

Póvoa de Varzim, 41°22’30”N, 08°46’00”W, 0-? m
*(NOBRE, 1903 a, 1904, 1937, 1942)*
*Exidmonea atlantica* (Forbes in Johnston, 1847)
*Plagioecia patina* (Lamarck, 1816)
*Entalophoroecia deflexa* (Couch, 1842)
*Diplosolen obelia* (Johnston, 1838)
*Crisia eburnea* (Linnaeus, 1758)
*Disporella hispida* (Fleming, 1828)
*Electra pilosa* (Linnaeus, 1767)

Mindelo, 41°18’38”N, 08°44’30”W
*(ROSAS, 1944)*
*Callopora lineata* (Linnaeus, 1767)
*Cradosrupocellaria reptans* (Linnaeus, 1758)

Leixões
*(NOBRE, 1903 a, 1904; ROSAS, 1944)*
*Alcyonidium* spp.
*Walkeria uva* (Linnaeus, 1758)
*Membranipora membranacea* (Linnaeus, 1767)
*Conopeum reticulum* (Linnaeus, 1767)
*Chartella papyracea* (Ellis & Solander, 1786)
*Bicellariella ciliata* (Linnaeus, 1758)

Leça de Palmeira, 41°12’32.9”N, 08°42’52.8”W
*(NOBRE, 1904; SOUTO et al., 2014; present paper)*
*Bowerbankia gracillima* (Hincks, 1877)
*Aetea anguina* (Linnaeus, 1758)
*Electra verticillata* (Ellis & Solander, 1786)
**Electra pilosa** (Linnaeus, 1767)
**Conopeum reticulum** (Linnaeus, 1767)
**Celleporella hyalina** (Linnaeus, 1767)
**Haplopoma graniferum** (Johnston, 1847)
**Cryptosula pallasiana** (Moll, 1803)

Matosinhos, 41°10’00”N, 08°41’30”W
(Nikulina et al., 2012)
Electra verticillata (Ellis & Solander, 1786)

Oporto
(Nikulina et al., 2012)
Electra verticillata (Ellis & Solander, 1786)

Foz do Douro, 41°09’00”N 08°40’30”W
(Nobre, 1903 a, b, 1904; Rosas, 1944)
Entalophoroecia deflexa (Couch, 1842)
**Crisia eburnea** (Linnaeus, 1758)
**Crisidia cornuta** (Linnaeus, 1758)
**Disporella hispida** (Fleming, 1828)
**Walkeria uva** (Linnaeus, 1758)
**Mimosella gracilis** (Hincks, 1851)
**Amathia lendigera** (Linnaeus, 1758)
**Bowerbankia imbricata** (Adams, 1798)
**Aetea anguina** (Linnaeus, 1758)
**Scruparia chelata** (Linnaeus, 1758)
**Membranipora membranacea** (Linnaeus, 1767)
Electra verticillata (Ellis & Solander, 1786)
**Chartella papyracea** (Ellis & Solander, 1786)
**Bicellariella ciliata** (Linnaeus, 1758)
Scrupocellaria scruposa (Linnaeus, 1758)
*Cradosrupocellaria reptans* (Linnaeus, 1758)
*Micropora coriacea* (Johnston, 1847)
Membraniporea nitida (Johnston, 1838)
**Hipposotha flagellum** Manzoni, 1870
**Celleporella hyalina** (Linnaeus, 1767)
**Escharella ventricosa** (Hassall, 1842)
**Smittina landsborovii** (Johnston, 1847)
**Smittioidea reticulata** (J. MacGilliivray, 1842)
**Schizomavella linearis** (Hassall, 1841)
**Schizomavella mamillata** (Hincks, 1880)
**Schizoporella unicornis** (Johnston in Wood, 1847)
**Cryptosula pallasiana** (Moll, 1803)
**Fenestrulina malusi** (Audouin, 1826)
**Celleporella pumicosa** (Pallas, 1766)

**R E V E R T E R - G I L** et al.: Checklist of Recent marine Bryozoa from Portugal

(Area 2) Central Coast: from Douro river to Tagus river

Deep waters (35-1241 m)

Thalassa Y399, 40°45.8’N, 09°17.5’W, 330 m
(d’Hondt, 1974)
**Plagioecia patina** (Lamarck, 1816)
**Tertia irregularis** (Meneghini, 1844)
**Porveloides laevis** (Fleming, 1828)
**Tessaradoma gracile** (Sars, 1850)
**Herentia hyndmanni** (Johnston, 1847)
**Buskea billardi** (Calvet, 1906)

Thalassa Y400, 40°45.6’N, 09°19’W, 800 m
(d’Hondt, 1974; Hayward, 1979; Reverter-Gil et al., 2012; Kuklinski et al., 2013)
**Tertia irregularis** (Meneghini, 1844)
**Scrupocellaria incurvata** Waters, 1896
**Setosella vulnerata** (Busk, 1860)
“Palmicellaria” inermis Jullien, 1882
**Margueta lorea** (Alder, 1864)
**Tessaradoma boreale** (Busk, 1860)
**Smittina crystallina** (Norman, 1867)
**Pseudozistra perrieri** (Jullien, 1882)
**Buskea billardi** (Calvet, 1906)
**Reteporella aquitanica** (Jullien in Jullien & Calvet, 1903)

Thalassa Y401, 40°36.8’N, 09°21.5’W, 1040 m
(d’Hondt, 1974; Hayward, 1979; Reverter-Gil & Fernández-Pulpeiro, 2001)
**Metalcyonidium gautieri** d’Hondt, 1975
**Euginoma vermiformis** Jullien, 1882
**Hippoporina sp.**
**Fedora edwardsi** Jullien, 1882

Thalassa Y410, 40°34.4’N, 09°22.1’W, 360 m
(d’Hondt, 1974, Reverter-Gil & Fernández-Pulpeiro, 1999 b, 2001)
**Entalophoroecia deflexa** (Couch, 1842)
**Distansescharella alicornis** (Jullien, 1882)
**Escharella longicollis** (Jullien, 1882)
**Herentia hyndmanni** (Johnston, 1847)

Thalassa Y415, 40°34.3’N, 09°22.6’W, 450 m
(d’Hondt, 1974; Reverter-Gil & Fernández-Pulpeiro, 2001; Souto et al., 2011 b; Kuklinski et al., 2013)
Tervia irregularis (Meneghini, 1844)
Canda ligata (Jullien, 1882)
Jubiella enucleata Jullien, 1882
Porellioides laevis (Fleming, 1828)
"Palmicellaria" inermis Jullien, 1882
Pseudoflustra radeki Kuklinski et al., 2013
Reteporella aquitanica (Jullien in Jullien & Calvat, 1903)
Reteporella jullieni (Calvet, 1907)

Thalassa Y409, 40°34.2’N, 09°22.4’W, 405 m
(d’Hondt, 1974)
Scrupocellaria incurvata Waters, 1896

Thalassa Y407, 40°33.5’N, 09°24’W, 740 m
(Hayward, 1979)
Metalcyonidium gautieri d’Hondt, 1975
Euginoma vermiformis Jullien, 1882

Thalassa Y405, 40°33.1’N, 09°26.5’W, 1170 m
(Hayward, 1979; d’Hondt & Hayward, 1981; Reverter-Gil & Fernández-Pulpeiro, 2001; Souto et al., 2011b; Reverter-Gil et al., 2012)
Pachyzoon atlanticum d’Hondt, 1983
Metalcyonidium gautieri d’Hondt, 1975
Setosella vulnerata (Busk, 1860)
Euginoma vermiformis Jullien, 1882
Fedora edwardsi Jullien, 1882

Poseidon st. 15, 39°12.1’N, 10°09.2’W, 450-520 m
(Souto et al., 2014)
Smittina jordii Reverter-Gil & Fernández-Pulpeiro, 1999

Shallow waters (0-130 m)

Ria de Aveiro, 40°39’00”N, 08°39’00”W
(Marchini et al., 2007)
Bowerbankia gracilis Leidy, 1855
Bowerbankia gracillima (Hincks, 1877)
Bowerbankia citrina (Hincks, 1877)
Buskia nitens Alder, 1857
Buskia socialis Hincks, 1887
Scruparia chelata (Linnaeus, 1758)
Scruparia ambigua (d’Orbigny, 1841)
Electra pilosa (Linnaeus, 1767)
Electra monostachys (Busk, 1854)
Conopeum reticulum (Linnaeus, 1767)
Conopeum seurati (Canu, 1928)
Bugula neritina (Linnaeus, 1758)
Bugula stolonifera Ryland, 1960
Tricellaria inopinata d’Hondt & Occhipinti
Ambrogi, 1985
Haplopoma graniferum (Johnston, 1847)
Cryptosula pallasiana (Moll, 1803)

Buarco, 40°10’43.0”N, 08°54’20.1”W
(Nobre, 1937; Souto et al., 2014; present paper)
Bowerbankia gracillima (Hincks, 1877)
Electra verticillata (Ellis & Solander, 1786)
Electra pilosa (Linnaeus, 1767)
Conopeum reticulum (Linnaeus, 1767)
Chartella papyracea (Ellis & Solander, 1786)
Scrupocellaria scruposa (Linnaeus, 1758)
Celleporella hyalina (Linnaeus, 1767)
Haplopoma graniferum (Johnston, 1847)
Escharella immersa (Fleming, 1828)
Cryptosula pallasiana (Moll, 1803)

Figueira da Foz, 40°10’00”N, 08°53’00”W
(Nikulina et al., 2012)
Electra verticillata (Ellis & Solander, 1786)
C.E. Charcot St. 1, 40º01’N, 09º44’W, 130 m
(Reverter-Gil & Fernández-Pulpeiro, 1996; Souto et al., 2014; present paper)

-Puellina (Cribrilaria) venusta Canu & Bassler, 1925
-Schizomavella auriculata (Hassall, 1842)
-Escharina vulgaris (Moll, 1803)

S. Pedro de Moel, 39º45’25”N 09º02’00’’W
(Nobre, 1937)
-Electra verticillata (Ellis & Solander, 1786)

Vale Furado, 39º41’06.0’’N, 09º03’25.8’’W
(Souto et al., 2014; present paper)
-Aetea anguina (Linnaeus, 1758)
-Scruparia chelata (Linnaeus, 1758)
-Electra verticillata (Ellis & Solander, 1786)
-Electra pilosa (Linnaeus, 1767)
-Callopora dumerilii (Audouin, 1826)
-Bicellariella ciliata (Linnaeus, 1758)
-Scrupocellaria scruposa (Linnaeus, 1758)
-Celleporella hyalina (Linnaeus, 1767)
-Celleporella angustia Alvarez, 1991
-Haplopoma graniferum (Johnston, 1847)
-Schizomavella grandiporosa Canu & Bassler, 1925
-Schizomavella linearis (Hassall, 1841)
-Celleporella pumicosa (Pallas, 1766)

Nazaré, 39º36’10”N, 09º04’50’’W
(Ryland et al., 2011; Nikulina et al., 2012)
-Electra verticillata (Ellis & Solander, 1786)
-Bugula neritina (Linnaeus, 1758)

Ponta do Surdão, 39º28’20”N, 09º12’20”W
(Marques et al., 1982)
-Electra pilosa (Linnaeus, 1767)
-Celleporella hyalina (Linnaeus, 1767)
-Haplopoma graniferum (Johnston, 1847)

Farihhoes, 39º28’35”N, 09º32’45’’W, ? m
(Nobre, 1937; Nobre & Braga, 1942)
-Electra pilosa (Linnaeus, 1767)

Berlangas, 39º24’50”N, 09º30’30”W
(Nobre, 1937; Nobre & Braga, 1942; Rosas, 1944)
-Crisia eburnea (Linnaeus, 1758)
-Crisia denticulata (Lamarck, 1816)

-Crisidia cornuta (Linnaeus, 1758)
-Amathia lendigera (Linnaeus, 1758)
-Bowerbankia pustulosa (Ellis & Solander, 1786)
-Zoobotryon verticillatum (Della Chiaje, 1822)
-Aetea anguina (Linnaeus, 1758)
-Aetea sica (Couch, 1844)
-Scruparia chelata (Linnaeus, 1758)
-Membranipora membranacea (Linnaeus, 1767)
-Electra verticillata (Ellis & Solander, 1786)
-Electra pilosa (Linnaeus, 1767)
-Securiflustra securifrons (Pallas, 1766)
-*Cradosrupocellaria reptans (Linnaeus, 1758)
-Cellaria fistulosa (Linnaeus, 1758)

Beach of Baleal, 39º22’18.8’’N, 09º19’56.8’’W
(Souto et al., 2014; present paper)
-Filicrisia geniculata (Milne Edwards, 1838)
-Nolella gigantea (Busk, 1856)
-Anguinella palmae van Beneden, 1845
-Bantariella verticillata (Heller, 1867)
-Bowerbankia gracillima (Hincks, 1877)
-Aetea anguina (Linnaeus, 1758)
-Scruparia chelata (Linnaeus, 1758)
-Scruparia ambiguus (d’Orbigny, 1841)
-Chartella papyracea (Ellis & Solander, 1786)
-Bugula fulva Ryland, 1960
-Bicellariella ciliata (Linnaeus, 1758)
-Scrupocellaria scruposa (Linnaeus, 1758)
-Celleporella hyalina (Linnaeus, 1767)
-Haplopoma graniferum (Johnston, 1847)
-Schizomavella grandiporosa Canu & Bassler, 1925
-Schizomavella linearis (Hassall, 1841)
-Celleporella pumicosa (Pallas, 1766)

-Plesiothoa gigerium (Ryland & Gordon, 1977)
-Cryptosula pallasiana (Moll, 1803)
-Turbicellepora magnicostata (Barroso, 1919)

Ponta do Baleal, 39º22’45’’N, 09º20’30’’W
(Marques et al., 1982)
-Aetea anguina (Linnaeus, 1758)
-Scrupocellaria scruposa (Linnaeus, 1758)
-Haplopoma bimucronatum (Moll, 1803)
Cape Papoa, 39º22’34’’N, 09º22’44’’W (MARQUES et al., 1982)
- Haplopoma impressum (Audouin, 1826)
- Haplopoma graniferum (Johnston, 1847)

Cape Carvoeiro, 39º21’30’’N, 09º22’44’’W (MARQUES et al., 1982)
- Plagioecia patina (Lamarck, 1816)

Peniche, 39º19’30’’N, 09º21’30’’W (Nobre, 1937; Ryland et al., 2011; Souto et al., 2011 a)
- Bowerbankia citrina (Hincks, 1877)
- Bugula neritina (Linnaeus, 1758)
- Cellaria fistulosa (Linnaeus, 1758)

NW Facho (between Cabo Carvoeiro e Raso), 82 m (Nobre, 1942)
- Disporella hispida (Fleming, 1828)

W Magoita (between Cabo Carvoeiro e Raso), 120 m (Nobre, 1942)
- Exidmonea atlantica (Forbes in Johnston, 1847)
- Disporella hispida (Fleming, 1828)

Beach of Galé, 38º43’28.8’’N, 09º28’33.1’’W (Present paper)
- Aetea anguina (Linnaeus, 1758)
- Bicellariella ciliata (Linnaeus, 1758)
- Haplopoma graniferum (Johnston, 1847)
- Schizomavella linearis (Hassall, 1841)

Cape Roca, 38º46.5’N 09º34.4’’W, 80 m (Pérès, 1959)
- Scrupocellaria scruposa Busk, 1852

Cape Roca, 38º46.3’N 09º32’’W, 52 m (Pérès, 1959)
- Porella compressa (J. Sowerby, 1805)
- Pentapora fascialis (Pallas, 1766)

Boca do Inferno, 38º41’33.9’’N, 09º26’01.9’’W, 0-7 m (Souto et al., 2014; present paper)
- Filicrisia geniculata (Milne Edwards, 1838)
- Bowerbankia gracillima (Hincks, 1877)
Estoril, 38º42’00”N, 09º24’00”W
(Nobre, 1903 a, b, 1904)
  *Tubulipora flabellaris* (Fabricius, 1780)
  *Pherusella tubulosa* (Ellis & Solander, 1786)
  *Aetea anguina* (Linnaeus, 1758)
  *Electra verticillata* (Ellis & Solander, 1786)
  *Chartella papyracea* (Ellis & Solander, 1786)
  *Cradosrupocellaria reptans* (Linnaeus, 1758)
  *Cellaria fistulosa* (Linnaeus, 1758)
  *Celleporella hyalina* (Linnaeus, 1767)
  *Haplopoma impressum* (Audouin, 1826)

Beach Azarujinha (São João do Estoril), 38º42’00”N, 09º23’00”W
(Souto et al., 2014)
  *Cryptosula pallasiana* (Moll, 1803)

Beach Avencas (Parede), 38º41’00”N, 09º21’30”W
(Present paper)
  *Electra pilosa* (Linnaeus, 1767)

Parede, 38º41’00”N, 09º21’00”W
(Nobre, 1903 b, 1904)
  *Tubulipora flabellaris* (Fabricius, 1780)
  *Porella compressa* (J. Sowerby, 1805)

Beach El-Rei (Carcavelos), 38º41’00”N, 09º20’30”W
(Present paper)
  *Electra pilosa* (Linnaeus, 1767)

(Area 3) South Coast: from Tagus river to Cape St. Vincent

Deep waters (250-460 m)

Faial 1957, st. SME 1192, 38º16.8’N 08º56.4’W, 250-300 m
(Harmelin, 1978, 1988)
  *Puellina (Cribrilaria) venusta* Canu & Bassler, 1925
  *Puellina (Glabrilaria) orientalis lusitanica* Harmelin, 1988
  *Puellina (Glabrilaria) pedunculata* Gautier, 1956

Travailleur Dr. 25, 38º06’00”N, 09º10’46”W, 460 m
(Souto et al., 2011 b)
  *Setosella folini* Jullien, 1882

Shallow waters (0-117 m)

Cape Espichel, 38º24.3’N, 09º13.9’W, 27-36 m
(Pérès, 1959)
  *Caberea boryi* (Audouin, 1826)
  *Cradosrupocellaria reptans* (Linnaeus, 1758)
  *Pentapora fascialis* (Pallas, 1766)
  *Myriapora truncata* (Pallas, 1766)

Sesimbra, 38º26’30’’N, 09º06’00’’W
(Nobre, 1937)
  *Crisia denticulata* (Lamarck, 1816)
  *Membranipora membranacea* (Linnaeus, 1767)
  *Cradosrupocellaria reptans* (Linnaeus, 1758)

Costa da Arrábida, 38º27’30’’N, 09º00’00’’W
(Saldanha, 1974; d’Hondt, 1983; Souto et al., 2010 a)
  *Tubulipora cf. plumosa* Harmer, 1898
  *Crisis eburnea* (Linnaeus, 1758)
  *Crisis cf. ramosa* Harmer, 1891
  *Filicrisia geniculata* (Milne Edwards, 1838)
  *Pherusella tubulosa* (Ellis & Solander, 1786)
  *Nollela gigantea* (Busk, 1856)
  *Nolella dilatata* (Hincks, 1860)
  *Walkeria uva* (Linnaeus, 1758)
  *Bantariella verticillata* (Heller, 1867)
  *Farrella repens* (Farre, 1837)
  *Amathia lendigera* (Linnaeus, 1758)
  *Amathia semiconvoluta* Lamouroux, 1824
  *Bowerbankia gracilis* Leidy, 1855
  *Bowerbankia gracillima* (Hincks, 1877)
  *Aetea anguina* (Linnaeus, 1758)
  *Aetea sica* (Couch, 1844)
  *Aetea truncata* (Landsborough, 1852)
Scruparia ambigua (d’Orbigny, 1841)
Scruparia chelata (Linnaeus, 1758)
Membranipora membranacea (Linnaeus, 1767)
Electra pilosa (Linnaeus, 1767)
Electra monostachys (Busk, 1854)
Callopora dumerilii (Audouin, 1826)
Rosseliana rosselii (Audouin, 1826)
Chartella papyracea (Ellis & Solander, 1786)

Bugula fulva Ryland, 1960
Bugula turbinata Alder, 1857
Bugula plumosa (Pallas, 1766)
Bugula flabellata (Thompson in Gray)
Beania mirabilis (Johnston, 1840)
Beania hirtissima (Heller, 1867)
Caberea boryi (Audouin, 1826)
Scrupocellaria scruposa (Linnaeus, 1758)
Scrupocellaria delilii (Audouin, 1826)
*Cradosrupocellaria reptans (Linnaeus, 1758)
Mollia patellaria (Moll, 1803)
Cellaria sinuosa (Hassall, 1841)
Cellaria fistulosa (Linnaeus, 1758)
Membranoporella nitida (Johnston, 1838)
Savignyella lafontii (Audouin, 1826)
Hippothoa divaricata Lamouroux, 1821
Celleporella hyalina (Linnaeus, 1767)
Haplopoma impressum (Audouin, 1826)
Haplopoma bimucronatum (Moll, 1803)
Chorizopora brongniartii (Audouin, 1826)
Escharoides coccinea (Abildgaard, 1806)
Escharrella variolosa (Johnston, 1838)
Smitinia landsborovii (Johnston, 1847)
Pentapora fascialis (Pallas, 1766)
Pentapora ottomulleriana (Moll, 1803)
Schizomavella hastata (Hincks, 1862)
Schizomavella linearis (Hassall, 1841)
Schizoporella unicorns (Johnston in Wood, 1847)
*Schizoporella mutabilis Calvet, 1927
Schizobrachiella sanguinea (Norman, 1868)
Myriapora truncata (Pallas, 1766)
Microporella ciliata (Pallas, 1766)
Fenestrulina malusii (Audouin, 1826)
Cellepora punicosa (Pallas, 1766)
Celleporina hassallii (Johnston, 1847)
Celleporina caminata (Waters, 1879)
Rhynchozoon bispinosum (Johnston, 1847)

Portinho da Arrábida, 38°28’00”N 08°59’00”W (ROSAS, 1944)
Oncousoecia dilatans (Johnston, 1847)
Tubulipora flabellaris (Fabricius, 1780)
Plagioecia patina (Lamarck, 1816)
Crisia eburnea (Linnaeus, 1758)
Crisia cornuta (Linnaeus, 1758)
Aetea anguina (Linnaeus, 1758)
Scruparia chelata (Linnaeus, 1758)
Chartella papyracea (Ellis & Solander, 1786)

Bugulopsis peachi (Busk, 1851)
*Cradosrupocellaria reptans (Linnaeus, 1758)

Setúbal, 38°30’00”N, 08°54’00”W (NOBRE, 1903 b, 1904, 1937)
Crisia denticulata (Lamarck, 1816)
Bugula plumosa (Pallas, 1766)
Cellaria fistulosa (Linnaeus, 1758)
Porella compressa (J. Sowerby, 1805)
Microporella ciliata (Pallas, 1766)

Off Sado River, 38°25’00”N, 08°55’00”W, ? m (SOUTO et al., 2014; present paper)
Bugula neritina (Linnaeus, 1758)
Bugula flabellata (Thompson in Gray)

Malhada, 38°16’N, 08°49.2’W, 43 m (PÉRES, 1959)
Porella compressa (J. Sowerby, 1805)

Sines, 37°57’30”N, 08°53’00”W (NOBRE, 1937; RYLAND et al., 2011)
Scruparia chelata (Linnaeus, 1758)
Membranipora membranacea (Linnaeus, 1767)
Electra verticillata (Ellis & Solander, 1786)
Bugula neritina (Linnaeus, 1758)
Praia de São Torpes (Sines), 37°55’00”N, 08°48’15”W
(SOUTO et al., 2014; present paper)
- *Electra pilosa* (Linnaeus, 1767)
- *Cryptosula pallasiana* (Moll, 1803)
- *Cellepora pumicosa* (Pallas, 1766)
- *Turbicellepora magnicostata* (Barroso, 1919)

Praia da Ilha (Sines), 37°50’00”N, 08°47’30”W
(Present paper)
- *Electra pilosa* (Linnaeus, 1767)

37°40.8’N, 08°50.7’W, 54 m
(PÉRES, 1959)
- *Smittina cervicornis* (Pallas, 1766)

37°14.7’N 09°01.5’W, 114-117 m
(HARMELIN, 1978)
- *Puellina (Cribrilaria) venusta* Canu & Bassler, 1925

**(Area 4) South West: Cape St. Vincent**

Deep waters (600-2789 m)

Challenger st. VI, 36°23’N, 11°18’W, 2789 m
(WYVILLE THOMSON, 1877; BUSK, 1884)
- *Kinetoskias cyathus* (Wyville Thomson, 1877)

Jean Charcot Stn 076, 36°34.99’N, 11°38.29’W, 600 m
(d’HONDT 1973, part, see BERNING et al. 2008)
- *Herentia hyndmanni* (Johnston, 1847)

Balgin DW11, 36°44.2’N, 09°31.4’W, 1523 m
(HARMELIN & d’HONDT, 1992 a; SOUTO et al., 2011 b; REVERTER-GIL et al., 2012)
- *Clavodesia clavula* (Hayward, 1978)
- *Setosella folini* Jullien, 1882
- *Euginoma vermiformis* Jullien, 1882
- *Euginoma reticulata* d’Hondt, 1981
- *Ascosia pandora* Jullien, 1882

Balgin KR15, 36°46.4’N 09°30.1’W, 1305 m
(HARMELIN & d’HONDT, 1992 a; SOUTO et al., 2011 b)
- *Setosella folini* Jullien, 1882

Balgin DW16, 36°45.8’N, 09°29.4’W, 1283 m
(HARMELIN & d’HONDT, 1992 a, b)
- *Metalcyonidium gautieri* d’Hondt, 1975
- *Pseudalcyonidium bobinae* d’Hondt, 1975
- *Setosella folini* Jullien, 1882
- *Euginoma vermiformis* Jullien, 1882
- *Ascosia pandora* Jullien, 1882

Balgin CP17, 36°45.3’N, 09°30.8’W, 1470 m
(HARMELIN & d’HONDT, 1992 a)
- *Fedora edwardsi* Jullien, 1882

Balgin CP14, 36°44.1’N, 09°27.6’W, 1318 m
(HARMELIN & d’HONDT, 1992 a)
- *Euginoma vermiformis* Jullien, 1882

Balgin DW07, 36°46.1’N, 09°27.0’W, 1141 m
(HARMELIN & d’HONDT, 1992 a, b; SOUTO et al., 2011 b; REVERTER-GIL et al., 2012; BERNING, 2013)
- *Metalcyonidium gautieri* d’Hondt, 1975
- *Pseudalcyonidium bobinae* d’Hondt, 1975
- *Setosella folini* Jullien, 1882
- *Setosella sp.*
- *Euginoma vermiformis* Jullien, 1882
- *Characodoma strangulatum* (Calvet, 1906)
- *Ascosia pandora* Jullien, 1882

Balgin DR06, 36°46.2’N 09°26.8’W, 1114 m
(Present paper)
- *Setosella vulnerata* (Busk, 1860)
- *Euginoma vermiformis* Jullien, 1882
- *Fedora edwardsi* Jullien, 1882

Balgin CP03, 36°50.4’N, 09°14.9’W, 681 m
(HARMELIN & d’HONDT, 1992 b)
- *Metalcyonidium gautieri* d’Hondt, 1975

Shallow waters (21-116 m)

Cape S. Vicente, 37°01.3’N, 09°00.8’W, 49 m
(PÉRES, 1959)
- *Porella compressa* (J. Sowerby, 1805)
- *Pentapora fascialis* (Pallas, 1766)

Cape S. Vicente, 37°01’N, 08°59.8’W, 21-23 m
(PÉRES, 1959)
- *Electra pilosa* (Linnaeus, 1767)
Princesse Alice st. 2731, 36°32’N, 11°38’30”W, 65-90 m
(Calvet, 1931, Harmelin, 1976)
   *Entalophoroecia deflexa* (Couch, 1842)
   *Cellaria salicornioides* Lamouroux, 1816
   *Schizomavella linearis* (Hassall, 1841)

Princesse Alice st. 1664, 36°31’30”N, 11°34’W, 116 m
(Calvet, 1931)
   *Cellaria salicornioides* Lamouroux, 1816

Princesse Alice st. 467, 36°31’N, 11°33’45”W, 60 m
(Calvet 1931, Harmelin, 1976)
   *Tubulipora phalangea* Couch, 1844
   *Entalophoroecia deflexa* (Couch, 1842)
   *Chorizopora brongniartii* (Audouin, 1826)
   *Celleporina hassallii* (Johnston, 1847)

(Area 5) Algarve: from Cape St. Vincent to Guadiana river

Deep waters (452-2035 m)

Balgim CP108, 36°10.8’N, 08°06.2’W, 1527 m
(Harmelin & d’Hondt, 1992 a, b; Reverter-Gil & Fernández-Pulpeiro, 2001; Reverter-Gil et al., 2012)
   *Pseudalcyonidium bobinae* d’Hondt, 1975
   *Clavodesia clavula* (Hayward, 1978)
   *Setosellina roulei* Calvet, 1906
   *Euginoma vermiciformis* Jullien, 1882
   *Ascosia pandora* Jullien, 1882
   *Buskea billardi* (Calvet, 1906)

Balgim DW107, 36°05.0’N, 08°05.6’W, 1917 m
(Harmelin & d’Hondt, 1992 a; Souto et al., 2011 b)
   *Bugulella elegans* Hayward, 1978
   *Euginoma vermiciformis* Jullien, 1882

Balgim DW159, 36°14.9’N, 08°02.5’W, 1360 m
(Harmelin & d’Hondt, 1992 b)
   *Pseudalcyonidium bobinae* d’Hondt, 1975

Balgim CP109, 36°14.5’N, 07°56.4’W, 1200 m
(Harmelin & d’Hondt, 1992 a)
   *Fedora edwardsi* Jullien, 1882

Balgim DW157, 36°21.0’N, 07°55.8’W, 1108 m
(Harmelin & d’Hondt, 1992 a; Souto et al., 2014)
   *Pachyzoa atlantica* d’Hondt, 1983
   *Hippothoa flagellum* Manzoni, 1870
   *Gemmellipora eburnea* Smitt, 1873
   *Escharella longicollis* (Jullien, 1882)

Balgim CP68, 35°11.9’N, 07°52.6’W, 2035 m
(Harmelin & d’Hondt, 1992 a; Reverter-Gil & Fernández-Pulpeiro, 2001)
   *Setosellina roulei* Calvet, 1906

Balgim DW64, 35°30.5’N, 07°46.1’W, 1530 m
(Harmelin & d’Hondt, 1992 a; Reverter-Gil & Fernández-Pulpeiro, 2001; Reverter-Gil et al., 2012)
   *Scrupocellaria incurvata* Waters, 1896
   *Clavodesia clavula* (Hayward, 1978)
   *Setosellina roulei* Calvet, 1906
   *Fedora edwardsi* Jullien, 1882

Balgim CP155, 36°19.8’N, 07°40.6’W, 903 m
(Harmelin & d’Hondt, 1992 a, b)
   *Crista tenella* Calvet, 1906
   *Metalcyonidium gautieri* d’Hondt, 1975
   *Euginoma vermiciformis* Jullien, 1882

SE Faro, 36°42.7’N, 07°39.1’W - 36°41.0’N, 07°31.3’W, 580-630 m
(Gautier, 1961; d’Hondt, 1983)
   *Triticellopsis tissieri* Gautier, 1961

Balgim CP62, 35°31.3’N, 07°26.2’W, 1250 m
(Harmelin & d’Hondt, 1992 a)
   *Fedora edwardsi* Jullien, 1882

Balgim DW61, 35°31.3’N, 07°25.6’W, 1222 m
(Harmelin & d’Hondt, 1992 a; Reverter-Gil & Fernández-Pulpeiro, 2001)
Setosellina roulei Calvet, 1906
Ascosia pandora Jullien, 1882

Balgim DW20, 36°35.9’N, 07°24.5’W, 452 m
(HARMELIN & D’HONDT, 1992 a, b)
Metalcyonidium gautieri d’Hondt, 1975
Crisia tenella Calvet, 1906
Setosella vulnerata (Busk, 1860)

Balgim CP21, 36°36.5’N, 07°24.0’W, 485 m
(HARMELIN & ARISTEGUI, 1988; HARMELIN & D’HONDT, 1992 a, b)
Entalophoroecia gracilis Harmelin, 1976
Patinella spp.
Copidozoum exiguum (Barroso, 1920)
Puellina (Cribrilaria) scripta (Reuss, 1848)
Smitina crystallina (Norman, 1867)
Schizomavella fischeri (Jullien, 1882)
Sertulipora guttata Harmelin & d’Hondt, 1992
Herentia hyndmanni (Johnston, 1847)

Balgim DR22, 36°35.4’N, 07°23.6’W, 466 m
(HARMELIN & D’HONDT, 1992 b)
Ascorhiza mawatarii d’Hondt, 1983

Shallow waters (0-106 m)

Punta de Sagres, 36°58’N, 08°55.6’W, 65 m
(PÉRES, 1959)
Porella compressa (J. Sowerby, 1805)
Turbicellepora avicularis (Hincks, 1860)
Buskea dichotoma (Hincks, 1862)

Off Cape Sagres, 82 m
(HARMER, 1915)
Triticella flava Dalyell, 1848

Caves at Sagres
(BOURY-ENSAULT et al., 2001; HARMELIN, 2001;
REVERTE-GIL & FERNÁNDEZ-PULPEIRO, 2007)
Crassimarginatella crassimarginata (Hincks, 1880)
Corbularella maderensis (Waters, 1898)
Ellisina gautieri Fernández Pulpeiro & Reverter Gil, 1993
Chartella papyracea (Ellis & Solander, 1786)

Membraniporella nitida (Johnston, 1838)
Puellina (Puellina) setosa (Waters, 1899)
Puellina (Cribrilaria) hincksi (Friedl, 1917)
Puellina saldanhai Harmelin, 2001
Haplopoma sciaphilum Silén & Harmelin, 1976
Chorizopora brongniartii (Audouin, 1826)
Escharoides coccinea (Abildgaard, 1806)
Pentapora fascialis (Pallas, 1766)
Escharina vulgaris (Moll, 1803)
Escharina dutertrei protecta Zabala et al., 1993

Cape Sagres
(PRENT & BOBIN, 1966)
Cupuladria canariensis (Busk, 1859)
Reussirella multispinata (Canu & Bassler, 1923)

Talisman 1883, D. 2, 36°53’00’’N, 08°31’46’’W, 99 m
(CALVET, 1907)
Scrupocellaria scruposa (Linnaeus, 1758)
Escharella immersa (Fleming, 1828)

Sagres
(NOBRE, 1937; present paper)
Haplopoma graniferum (Johnston, 1847)
Chorizopora brongniartii (Audouin, 1826)
Escharella immersa (Fleming, 1828)
Schizomavella linearis (Hassall, 1841)

Balieira
(NOBRE, 1937)
Aetea anguina (Linnaeus, 1758)
Haplopoma impressum (Audouin, 1826)

Algarve
(D’HONDT, 1983; SOUTO et al., 2010 a; RYLAND et al., 2011; SOUTO et al., 2014; present paper)
Amathia semiconvoluta Lamouroux, 1824
Electra verticillata (Ellis & Solander, 1786)
Electra pilosa (Linnaeus, 1767)
Chartella papyracea (Ellis & Solander, 1786)
Bugula neritina (Linnaeus, 1758)
Bugula turbinata Alder, 1857
Schizomavella hastata (Hincks, 1862)
Turbicellepora avicularis (Hincks, 1860)
Turbicellepora magnicostata (Barroso, 1919)

Lagos, 37º05’40”N, 08º40’00”W
(Nobre, 1937; Pérès, 1959)

*Cradosrupocellaria reptans* (Linnaeus, 1758)

Pentapora fascialis (Pallas, 1766)

Marina of Portimão, 37º07’00”N, 08º32’30”W
(Souto et al., 2014)

Watersipora subtorquata (d’Orbigny, 1852)

Ferragudo (Portimão), 37º07’00”N 08º31’20”W
(Souto et al., 2014)

Biflustra arborescens (Canu & Bassler, 1928)

Hemicyclopora sp.

Smittina cervicornis (Pallas, 1766)

Watersipora subtorquata (d’Orbigny, 1852)

Armaçao de Pêra, 37º01’14.8”N, 08º11’25.4”W, 19-21 m
(Souto et al., 2010 b, 2013, 2014; present paper)

Plagioecia sarniensis (Norman, 1864)

Diplosolen obelia (Johnston, 1838)

Frondipora verrucosa (Lamouroux, 1821)

Disporella hispida (Fleming, 1828)

Nolella dilatata (Hincks, 1860)

Penetrantia sp.

Aetea anguina (Linnaeus, 1758)

Aetea sica (Couch, 1844)

Aetea truncata (Landsborough, 1852)

Membranipora membranacea (Linnaeus, 1767)

Callopora dumerilii (Audouin, 1826)

Copidozoum planum (Hincks, 1880)

Copidozoum tenuirostre (Hincks, 1880)

Hincksina sp.

Bugula neritina (Linnaeus, 1758)

Bugula calathus Ryland, 1962

Bugula fulva Ryland, 1960

Bugula turbinata Alder, 1857

Bugula flabellata (Thompson in Gray)

Bicellariella ciliata (Linnaeus, 1758)

Sessibugula barrosoi López de la Cuadra & García-Gómez, 1994

Beania mirabilis (Johnston, 1840)

Beania hirtissima (Heller, 1867)

Caberea boryi (Audouin, 1826)

Scrupocellaria scrupea Busk, 1852

Mollia cristinae Souto, Reverter-Gil & Fernández-Pulpeiro, 2010

Membraniporella nitida (Johnston, 1838)

Collarina balzaci (Audouin, 1826)

Puellina (Cibrilariida) venusta Canu & Bassler, 1925

Puellina (Cibrilariida) innominata (Couch, 1844)

Puellina (Cibrilariida) hinchsi (Friedl, 1917)

Puellina (Cibrilariida) arrecta Bishop & Househam, 1887

Figularia figularis (Johnston, 1847)

Hippothoa divaricata Lamouroux, 1821

Chorizopora brongniartii (Audouin, 1826)

Trypostega venusta (Norman, 1864)

Escharoides coccinea (Abildgaard, 1806)

Escharella ventricosa (Hassall, 1842)

Escharella variolosa (Johnston, 1838)

Umbonula ovicellata Hastings, 1944

Smittina landshorovii (Johnston, 1847)

Smittina affinis (Hincks, 1862)

Prenantia cheilostoma (Manzoni, 1869)

Smittoidea reticulata (J. MacGillivray, 1842)

Hippoporina teresae Souto, Reverter-Gil & Fernández-Pulpeiro, 2010

Pentapora fascialis (Pallas, 1766)

Pentapora ottomulleriana (Moll, 1803)

Schizomavella auriculata (Hassall, 1842)

Schizomavella cornuta (Heller, 1867)

Schizomavella sarniensis Hayward & Thorpe, 1995

Schizomavella hastata (Hincks, 1862)

Schizomavella linearis (Hassall, 1841)

Schizomavella mamillata (Hincks, 1880)

Schizoporella unicornis (Johnston in Wood, 1847)

Schizoporella cornalisch Hayward & Ryland, 1995

Schizoporella spinosa Souto, Reverter-Gil & Fernández-Pulpeiro, 2010

Schizobrachiella sanguinea (Norman, 1868)

Myriapora truncata (Pallas, 1766)

Hagiosynodos latus (Busk, 1856)

Microporella ciliata (Pallas, 1766)

Microporella appendiculata (Heller, 1867)
**Fenestrulina inesae** Souto, Reverter-Gil & Fernández-Pulpeiro, 2010

**Arthropoma cecili** (Audouin, 1826)

**Escharina vulgaris** (Moll, 1803)

**Cellepora punicosa** (Pallas, 1766)

**Celleporina hassallii** (Johnston, 1847)

**Celleporina decipiens** Hayward, 1976

**Celleporina caminata** (Waters, 1879)

**Celleporina derungs** Souto, Reverter-Gil & Fernández-Pulpeiro, 2010

**Turbicellepora avicularis** (Hincks, 1860)

**Omalosecosa ramulosa** (Linnaeus, 1767)

**Reteporella couchii** (Hincks, 1878)

**Schizotheca fissa** (Busk, 1856)

**Rhychozoos bispinosus** (Johnston, 1847)

**Rhychozoos celestinoi** Souto, Reverter-Gil & Fernández-Pulpeiro, 2010

**Rhychozoos rosae** Souto, Reverter-Gil & Fernández-Pulpeiro, 2010

**Dentiporella saldanhae** Souto, Reverter-Gil & Fernández-Pulpeiro, 2010

**Stephanollona armata** (Hincks, 1862)

**Stephanollona contracta** (Waters, 1899)

**Talisman Dr. 3, 36°53’00”N, 08°27’46”W, 106 m** (Calvet, 1907)

**Buskea dichotoma** (Hincks, 1862)

**Albufeira, 37°05’00”N, 08°15’00”W** (Ryland et al., 2011; Nikulina et al., 2012; present paper)

**Electra verticillata** (Ellis & Solander, 1786)

**Bugula neritina** (Linnaeus, 1758)

**Haplopoma bimucronatum** (Moll, 1803)

**Scrupocellaria scruposa** (Linnaeus, 1758)

**Beach Maria Luísa (Albufeira), 37°05’20”N, 08°12’00”W** (Souto et al., 2014)

**Turbicellepora magnicostata** (Barroso, 1919)

**Beach Olhos d’Água (Albufeira), 37°05’00”N, 08°11’00”W** (Present paper)

**Amathia lendigera** (Linnaeus, 1758)

**Bowerbankia gracillima** (Hincks, 1877)

**Chartella papyracea** (Ellis & Solander, 1786)

**Cabo de Santa Maria, 37°57’30”N 07°53’18”N** (Nobre, 1937)

*Bugula purpurotincta* (Norman)

**Faro, 37°57’00”N, 07°53’00”W** (Nobre, 1937; Nobre & Braga, 1942; Souto et al., 2014)

**Tubulipora flabellaris** (Fabricius, 1780)

**Zoobotryon verticillatum** (Della Chiaje, 1822)

**Scruparia chelata** (Linnaeus, 1758)

**Watersipora subtorquata** (d’Orbigny, 1852)

**Cryptosula pallasiana** (Moll, 1803)

**Olhão, 37°01’22”N, 07°50’23”W** (Nobre, 1937; present paper)

*Alcyonidium spp.*

**Bowerbankia pustulosa** (Ellis & Solander, 1786)

**Zoobotryon verticillatum** (Della Chiaje, 1822)

**Bugula fulva** Ryland, 1960

**Beach of Fuseta, 37°02’43”N, 07°44’14”W** (Souto et al., 2014)

**Cryptosula pallasiana** (Moll, 1803)

**Santa Luzia (Tavira), 37°05’18”N, 07°39’21”W** (Souto et al., 2014)

**Cryptosula pallasiana** (Moll, 1803)

**Monde Gordo, 37°10’36”N, 07°27’00”W** (Nobre, 1937)

**Crisia denticulata** (Lamarck, 1816)