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Checklist of the marine Bryozoa from Uruguay (Southwest Atlantic)

Laís V. RAMALHO[1], Juan LÓPEZ-GAPPA[2] & Fabrizio SCARABINO[3]

[1] Museu Nacional, Laboratório Biologia de Porifera, Quinta da Boa Vista, s.n. São Cristóvão, Rio de Janeiro, RJ, Brazil. 20940-040. Corresponding author: laisvr10@yahoo.com. [2] Museo Argentino de Ciencias Naturales, Ángel Gallardo 470, Ciudad Autónoma de Buenos Aires C1405DJR, Argentina. lgappa@macn.gov.ar. [3] Centro Universitario Regional del Este (Universidad de la República), Ruta 9 intersección Ruta 15, Rocha, Uruguay; Museo Nacional de Historia Natural, C. C 399, CP 11000, Montevideo, Uruguay. fscarabino@cure.edu.uy

Abstract: Knowledge of the marine bryozoan fauna of Uruguay is mostly based on scattered records found in local faunistic surveys and the taxonomic results of two oceanographic cruises to the Southwest Atlantic, but a comprehensive study has not yet been published for this area. This paper aims to compile an updated checklist, bringing together all the published information about the Uruguayan bryozoan fauna. Of the 73 recorded taxa, 30 (41%) are known only from deep waters off the Río de la Plata. Even considering undetermined species, these results show the high degree of endemism as it was already shown for several other benthic groups such as Bivalvia, Ascidiacea and Pycnogonida. The absence of local taxonomists on bryozoans has resulted in the unprecedented situation that the deep-sea bryozoan fauna of Uruguay is better known than the coastal and shelf representatives of the phylum. The main conclusion of this faunal compilation is that efforts should be made to coordinate the gathering and taxonomic study of shallow and shelf bryozoan collections to bridge the present knowledge gap about the biodiversity of this important group of marine benthic invertebrates.

Key words: Bryozoans, Uruguayan Exclusive Economic Zone, geographical distribution, bathymetric distribution, taxonomy.

Resumen: El conocimiento de la fauna marina de briozoos de Uruguay se basa principalmente en registros dispersos que se encuentran en estudios faunísticos locales y en los resultados taxonómicos de dos cruceros oceanográficos en el Atlántico sudoccidental, pero aún no se ha publicado un estudio exhaustivo para esta área. Este trabajo tiene como objetivo compilar una lista actualizada, que reúna toda la información publicada sobre la fauna de briozoos uruguayos. De los 73 taxones registrados, 30 (41%) solo se conocen de aguas profundas frente al Río de la Plata. Incluso considerando las especies que no han sido determinadas, el resultado muestra un alto grado de endemismo, como el ya demostrado para varios grupos bentónicos como Bivalvia, Ascidiacea y Pycnogonida. La ausencia de taxónomos locales de briozoos ha resultado en una situación sin precedentes, donde la fauna de briozoos de aguas profundas de Uruguay es más conocida que la de ambientes costeros y de plataforma. La principal conclusión de esta recopilación de la fauna de briozoos es que se deben realizar esfuerzos para coordinar la recolección y el estudio taxonómico de las colecciones de briozoos de zonas someras y de plataforma, para cerrar la brecha de conocimiento actual sobre la biodiversidad de este importante grupo de invertebrados marinos bentónicos.

Palabras clave: Briozoos, Zona Económica Exclusiva Uruguaya, distribución geográfica, distribución batimétrica, taxonomía.

INTRODUCTION

Bryozoans are sessile, aquatic, filter feeding invertebrates that form colonies of different shapes, colors, and size. Their distribution can be influenced by substrate complexity, temperature, depth, currents, and salinity (Ryland, 1970). Bryozoans contribute to the food web of different marine ecosystems, they are important bioconstructors of habitats (Ryland, 1970; Bastos *et al*., 2018; Ramalho *et al*., 2018; Ramalho *et al*., 2021), and some species are being studied for the development of new drugs (Figuerola & Avila, 2019). The calcareous structures produced by most bryozoans generate rich fossil records, thus being also useful as palaeoindicators (e.g. Smith, 1995; Taylor, 2005; Berning, 2007; Ramalho *et al*., 2017; Bastos *et al*., 2018). Furthermore, bryozoans are an important group of fouling organisms encrusting ship hulls, pipes, cables, buoys, nets and almost any submerged hard substrate; fouling causes financial loss and is a potential

mechanism of invasive species dispersal (Gordon *et al*., 2006; Bressy & Lejars, 2014).

The bryozoan fauna of Uruguay (Southwest Atlantic) has been poorly studied (López-Gappa & Lichtschein, 1988). The existing information is scattered among taxonomic and ecological publications, particularly scarce and fragmentary for coastal ecosystems and shallow sublittoral. The first records of bryozoans in Uruguayan waters were made by Busk (1881b, 1884, 1886), who described the species collected during the HMS *Challenger* expedition (February 1876). Almost one century after that pioneering contribution, the material collected by the RV *Atlantis II* cruise 60 (March 1971) provided the basis for the new information published by d'Hondt (1981, 1982, 1983), d'Hondt & Hayward (1981), Harmelin & d'Hondt (1982) and d'Hondt & Schopf (1984). Several ecological or general faunistic studies also mentioned bryozoans in shallow and coastal environments (Barattini & Ureta, 1961; Juanicó & Rodríguez-Moyano, 1976; Milstein *et al*., 1976; Riestra *et al*., 1992; Obenat *et al*., 2001; Giménez *et al*., 2005). In a compilation of the bryozoan fauna of the continental shelf and slope off Argentina, López-Gappa (2000) mapped most of the deep-water bryozoans from Uruguay. Another bibliographic compilation by Scarabino (2006) mentioned 13 taxa from marine and estuarine Uruguayan waters (inner shelf). More recently López-Gappa *et al*. (2020) described a new species, *Hippomonavella charrua*, from Argentina and the continental shelf off Uruguay.

The aim of this study is to compile an updated checklist, bringing together all the published information on the Uruguayan marine fauna of bryozoans.

MATERIAL AND METHODS

Study area

The area considered is the Uruguayan coastline influenced by marine waters (Fig. 1), the adjacent territorial waters in the Río de la Plata and inner continental shelf, as well as the Uruguayan Economic Exclusive Zone (URY EEZ), which extends 200 nautical miles off the Uruguayan coastline. Only one sampling site (station 242 of the cruise 60 of the RV *Atlantis II*) falling some miles off this zone is here included considering the forthcoming definitive enlargement of the URY EEZ.

Criteria for the construction of this checklist

The included species have been recorded from the area specified above. Scientific papers and book chapters taken into account are indicated as "References for the area". Full data of the stations of the HMS *Challenger* and RV *Atlantis II* cruises are provided in Appendix 1.

The bathymetric zonation regarding the distribution of species was defined as follows: shelf (0–200 m), upper slope (200–1500 m), lower slope (1500–3000 m) and abyssal plain (3000–5500 m).

The synonymy includes the original description and, when it existed: a) references which re-describe the type material from Uruguay (e.g. *Turritigera stellata* Busk, 1884), and b) species described from Uruguay that have been later synonymized to other species (e.g. *Formosocellaria abyssicola* d'Hondt, 1981). For species having a long or relatively complex taxonomic history (which we do not fully detail here) we also list at least one reference detailing its synonymy.

References to the geographic distribution of littoral species include: a) general/major revisions containing comprehensive treatment of these, or b) works extending considerably (i.e. thousands of kilometers) the range of a given species. In the case of deep-sea species we have considered all available references.

It must be noted that the station 320 of the HMS *Challenger* falls exactly on the maritime limit between Argentina and Uruguay and therefore the species recorded there are considered as part of the faunistic inventory of both countries.

RESULTS

Class GYMNOLAEMATA Allman, 1856
Order CHEILOSTOMATIDA Busk, 1852a
Suborder MEMBRANIPORINA Ortmann, 1890
Superfamily MEMBRANIPOROIDEA Busk, 1854
Family ELECTRIDAE Stach, 1937
Genus *Electra* Lamouroux, 1816
Electra monostachys (Busk, 1854)

*Membranipora monostachy*s Busk, 1854: 61.
For synonymy see: Hayward & Ryland (1998); Occhipinti Ambrogi & d'Hondt (1981).

Geographic distribution: Britain (Busk, 1854); Netherlands, North Sea, Wadden Sea (De Blauwe, 2009), North Atlantic Ocean (Hayward, 2001). South Atlantic: Brazil (Rio de Janeiro, São Paulo) (Marcus, 1938; Ramalho, 2006); Argentina (Calvet, 1904; López-Gappa, 2000); Uruguay: 35°31'S, 55°36' – 55°48'W (Obenat *et al.*, 2001).

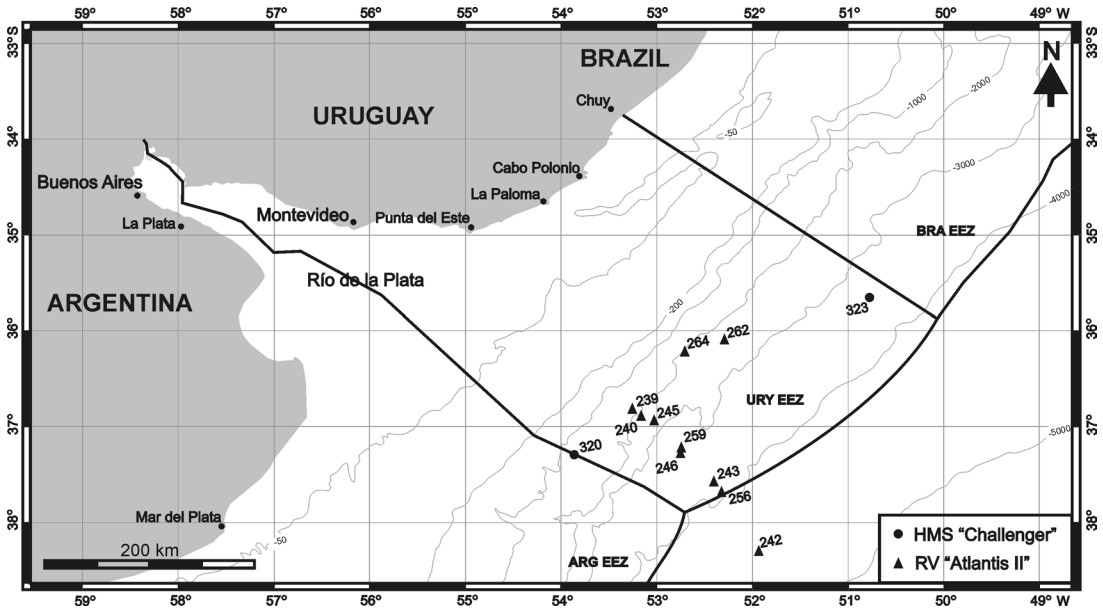

Fig- 1. Uruguayan Exclusive Economic Zone (URY EEZ), with the location of the HMS *Challenger* and RV *Atlantis II* stations. BRA EEZ: Brazilian Exclusive Economic Zone, ARG EEZ: Argentine Exclusive Economic Zone.

Bathymetric distribution in Uruguayan waters: Intertidal-shallow subtidal.
References for the area: Obenat *et al*. (2001); Scarabino (2006).
Remarks: Encrusting species occurring on stones or shells in estuarine (under high and fluctuating salinity conditions) and lagoonal coast or offshore environments (Marcus, 1938; Hayward & Ryland, 1998). In Uruguay it was found at outer Río de la Plata with salinity varying 26.7 – 29.9 ppt. This species, identified by one of us (JLG), was found growing on the tubes of *Phyllochaetopterus socialis* (Polychaeta) (Obenat *et al*., 2001). Considered as cryptogenic in Uruguay-Argentina by Schwindt *et al*. (2020).

Genus *Conopeum* Gray, 1848
Conopeum reticulum (Linnaeus, 1767)

Millepora reticulum Linnaeus, 1767: 1284.
For synonymy see: Harmer (1926: 211); Osburn (1940: 350); Osburn (1950: 31); Marcus (1941: 15).

Geographic distribution: widely distributed. Pacific: from Alaska to Southern California (Osburn, 1950). Atlantic: Brazil (Espírito Santo, São Paulo, Paraná, and Santa Catarina States) (Ridley, 1881; Marcus, 1938, 1939, 1941); Argentina (López-Gappa, 2000; Orensanz *et al*., 2002; Figuerola *et al*., 2014); Uruguay (Obenat *et al*., 2001; Scarabino, 2006).
Bathymetric distribution in Uruguayan waters: Intertidal-shallow subtidal.
References for the area: Riestra *et al*. (1992), Obenat *et al*. (2001), Orensanz *et al*. (2002), Giménez *et al*. (2005), and Scarabino (2006), also see below.
Remarks: This species was initially listed by Obenat *et al*., 2001 on the basis of material collected alive on tubes of the polychaete *Phyllochaetopterus socialis* and identified by one of us (JLG). Frequently found in brackish environments, in the lower intertidal zone, and up to shallow subtidal waters; its most common substrates are oyster valves, stones, and other hard substrates (Hayward & Ryland, 1998). Orensanz *et al*. (2002) and Schwindt *et* al. (2020) considered this species as cryptogenic, but its presence in the area since the mid-Holocene has been recently confirmed (López-Gappa & Pereyra, 2020). Recent observations made by us indicate that the references made by Barattini & Ureta (1961) (as *Membranipora tehuelcha*, partim), Riestra *et al*. (1992) and Giménez *et al*. (2005) (all as *Membranipora* sp.) belong to this species, which is very abundant and widely distributed in the Uruguayan coast. Since we have found another yet unidentified species of Membraniporidae in Uruguayan ports, it is not possible to assign with certainty the record by Calvo (1984) as *Membranipora* sp. to *C. reticulum*.

Family MEMBRANIPORIDAE Busk, 1852b
Genus *Jellyella* Taylor & Monks, 1997
Jellyella tuberculata (Bosc, 1802)

Flustra tuberculata Bosc, 1802: 118.
For synonymy see: Tilbrook *et al*. (2001); Florence *et al*. (2007).

Geographic distribution: Widespread, subtropical (Taylor & Monks, 1997; Tilbrook *et al*., 2001; Florence *et al*., 2007). Atlantic: West coast of South Africa (Florence *et al*., 2007); Brazil (Pernambuco, Rocas Atoll, Espírito Santo, Rio de Janeiro, São Paulo and Rio Grande do Sul – d'Orbigny, 1842; Gliesch, 1925; Marcus, 1937, 1939 and 1955); Uruguay (see below).
Bathymetric distribution in Uruguayan waters: Intertidal-shallow subtidal.
References for the area: Barattini & Ureta (1961) as *Membranipora tehuelcha*, partim; Scarabino (2006).
Remarks: This species mainly encrusts fronds of algae, crustaceans and hydroids (Marcus, 1937; Tilbrook *et al*., 2001; Florence *et al*., 2007). The Membraniporidae studied by Barattini & Ureta (1961) include both materials collected on shells (herein referred to *C. reticulum*) and on algae, referred by Scarabino (2006) and also here to *J. tuberculata*.

Suborder AETEINA Gordon & Bock in Cook *et al*., 2018
Superfamily AETEOIDEA Smitt, 1868
Family AETEIDAE Smitt, 1868
Genus *Aetea* Lamouroux, 1812
Aetea anguina (Linnaeus, 1758)

Sertularia anguina Linnaeus, 1758: 816.
For synonymy see: Osburn (1950); Marcus (1955); Hayward & Ryland (1998).

Geographic distribution: Widely distributed, including records from Brazil (Marcus, 1937, 1955; Braga, 1968; Ramalho, 2006), Uruguay (Obenat *et al*., 2001; Scarabino, 2006) and Argentina (e.g. Hastings, 1943; Amor & Pallares, 1965; López-Gappa & Lichtschein, 1988; López-Gappa, 2000; Figuerola *et al*., 2014) (also see Remarks below).
Bathymetric distribution in Uruguayan waters: 11–12 m.
References for the area: Obenat *et al*. (2001); Scarabino (2006).
Remarks: This species was listed by Obenat *et al*. (2001) based on material identified by one of us (JLG). The Southwest Atlantic material identified as *A. anguina* should be critically re-examined, as Vieira *et al*. (2016) stated that the Brazilian records of *A. anguina* by Vieira *et al*. (2008) and Almeida *et al*. (2015) belonged instead to *A. arcuata* Winston & Hayward, 2012. This bryozoan grows on tubes of the polychaete *Phyllochaetopterus socialis* (Obenat *et al*., 2001; Scarabino, 2006). It was considered as cryptogenic in Uruguay-Argentina by Schwindt *et al*. (2020).

Suborder FLUSTRINA Smitt, 1868
Superfamily CALLOPOROIDEA Norman, 1903
Family CHAPERIIDAE Jullien, 1888
Genus *Chaperiopsis* Uttley, 1949
Chaperiopsis erecta (Busk, 1884)

Membranipora galeata var. *erecta* Busk, 1884: 65.
For synonymy see: Hayward & Thorpe (1988).

Geographic distribution: Only known from Argentine Basin, Argentina-Uruguay (Busk, 1884; Hayward & Thorpe, 1988; López-Gappa, 2000; Figuerola *et al*., 2014).
Bathymetric distribution in Uruguayan waters: 1097 m (=600 ft, Busk, 1884).
References for the area: Busk (1884); López-Gappa (2000).
Remarks: Colonies collected during the HMS *Challenger* expedition at station (stn.) 320. The bathymetric range of this species is striking, as it was also found by the *Discovery* expedition at a depth of 199 m (stn. 474, South Georgia).

Family FARCIMINARIIDAE Busk, 1852b
Genus *Farciminaria* Busk, 1852b
Farciminaria cribraria Busk, 1884

Farciminaria cribraria Busk, 1884: 49, pl. 5, fig. 2.

Geographic distribution: Abyssal plain of Argentine Basin (Uruguay) (Busk, 1884). Also recorded for the North Atlantic (39°19.5'N, 33°47'W, 3360 m) by d'Hondt (1975, 1982).
Bathymetric distribution in Uruguayan waters: 3475 m.
References for the area: Busk (1884); López-Gappa (2000, as *Columnella cribraria*).
Remarks: Collected at HMS *Challenger* stn. 323, which is the type-locality of this species (Busk, 1884). Recorded as *Columnella cribraria* by d'Hondt (1975, 1982).

Genus *Columnella* Levinsen, 1914
Columnella magna (Busk, 1884)

Farciminaria magna Busk, 1884: 49, pl. 5, fig. 1.
Farciminaria magna var. *armata* Busk, 1884: 50, pl. 31, fig. 1.
For synonymy see: Hayward (1981).

Geographic distribution: This species was recorded from the North and South Atlantic, western Indian Ocean (Hayward & Cook, 1979; Hayward, 1981; d'Hondt, 1982; Figuerola *et al*., 2014) and Argentine Basin: 35°39'S, 50°47'W (Busk, 1884; Hayward, 1981; d'Hondt, 1983; Figuerola *et al*., 2014).
Bathymetric distribution in Uruguayan waters: 3475 m.
References for the area: Busk (1884); López-Gappa (2000, as *Columnella magna* var. *armata*).
Remarks: collected at HMS *Challenger* stn. 323, which is its type-locality (Busk, 1884). This species is recorded from deep waters.

Columnella gracilis (Busk, 1884)

Farciminaria gracilis Busk, 1884: 50, pl. V, fig. 3.
For synonymy see: d'Hondt (1981: 13).

Geographic distribution: Brazil (Alagoas) (Busk, 1884); Argentine Basin, Argentina-Uruguay (d'Hondt, 1981, 1983; López-Gappa, 2000; Figuerola *et al*., 2014); North Atlantic (d'Hondt, 1983).
Bathymetric distribution in Uruguayan waters: 3815–3822 m.
References for the area: d'Hondt (1981); López-Gappa (2000).
Remarks: Collected at RV *Atlantis II*, cruise 60, stn. 243 (d'Hondt, 1981; López-Gappa, 2000). This is a deep-water species.

Family FOVEOLARIIDAE Gordon & Winston in Winston, 2005
Genus *Foveolaria* Busk, 1884
Foveolaria elliptica Busk, 1884

Foveolaria elliptica Busk, 1884: 68, pl. 23, fig. 5.
For synonymy see: Gordon (1986) and López-Gappa & Lichtschein (1990).

Geographic distribution: Australia, New Zealand, Southern Chile (Moyano, 1974; Gordon, 1986; Figuerola *et al*., 2014). Atlantic: Uruguay and Argentina (Busk, 1884; López-Gappa, 2000; Figuerola *et al*., 2014).
Bathymetric distribution in Uruguayan waters: 1097 m.
References for the area: Busk (1884); López-Gappa (2000).
Remarks: Collected by the HMS *Challenger* at Bass Strait (Australia) and the continental slope off Argentina and Uruguay (stn. 320) (Busk, 1884). This genus is recorded only for the Southern Hemisphere (South America to New Zealand) (Winston, 2005). Busk (1884) identified these specimens (from Australia and the Argentine basin) as belonging to the same species, without designating a holotype. The present identification therefore depends on the confirmation that all specimens examined by Busk (1884) belong to the same taxon. A lectotype was not designated by subsequent authors who studied or mentioned this species (Canu, 1900; Gordon, 1986).

Foveolaria terrifica (Hincks, 1881)

Membranipora terrifica Hincks, 1881: 147, pl. 8, fig. 5.
Foveolaria falcifera, Busk, 1884: 69, pl. 15, fig. 6.
For synonymy see: López-Gappa & Lichtschein (1990).

Geographic distribution: Chile, Magellan Strait, Burdwood Bank, Patagonian shelf; Uruguay (Busk, 1884; López-Gappa & Lichtschein, 1990; López-Gappa, 2000; Figuerola *et al*., 2014).
Bathymetric distribution in Uruguayan waters: 1097 m.
References for the area: Busk (1884); López-Gappa (2000).
Remarks: collected at HMS *Challenger* stn. 320, which is the type-locality of *F. falcifera* Busk, 1884, a species synonymized with *F. terrifica* by López-Gappa & Lichtschein (1990). Frequently found encrusting bilaminar erect bryozoans (López-Gappa & Lichtschein, 1990).

Superfamily FLUSTROIDEA Fleming, 1828
Family FLUSTRIDAE Fleming, 1828
Genus *Securiflustra* Silén, 1941
Securiflustra bifoliata (d'Hondt, 1981)

Nematoflustra bifoliata d'Hondt, 1981: 11, pl. III, 5-6, Text fig. 2.
For synonymy see: López-Gappa (1982).

Geographic distribution: Argentine Basin; Burdwood Bank; Malvinas Islands (d'Hondt,

1981; López-Gappa, 2000; Moyano, 2005; Figuerola *et al*., 2014).
Bathymetric distribution in Uruguayan waters: 2707 m.
References for the area: d'Hondt (1981); López-Gappa (2000).
Remarks: Collected at RV *Atlantis II*, cruise 60, stn. 245, which is the type-locality of this species (d'Hondt, 1981). López-Gappa (1982) transferred it to the genus *Securiflustra*.

Family SINOFLUSTRIDAE Gordon, 2009
Genus *Membraniporopsis* Liu in Liu *et al*., 1999
Membraniporopsis tubigera (Osburn, 1940)

Conopeum tubigerum Osburn, 1940: 352, pl. 2, figs 12, 13.
Membraniporopsis tubigera, Gordon *et al*., 2006: 336, figs 1, 3–6.

Geographic distribution: Japan Sea, Australia, New Zealand, Puerto Rico, Texas, Florida, Brazil (Espírito Santo, São Paulo, Paraná and Santa Catarina), Uruguay (33°54'S, 53°30'W) (Osburn, 1940; Allen, 1953; Kubanin, 1977; Gordon *et al*., 2006; López-Gappa *et al*., 2010).
Bathymetric distribution in Uruguayan waters: Inner shelf (recorded during stranding events).
References for the area: López-Gappa *et al*. (2010).
Remarks: This invasive species develops small and foliaceous colonies that spread from an encrusting base. In Brazil, Uruguay and New Zealand the colonies accumulate as beach-drift during short periods (Gordon *et al*., 2006; López-Gappa *et al*., 2010).

Superfamily BUGULOIDEA Gray, 1848
Family BUGULIDAE Gray, 1848
Genus *Camptoplites* Harmer, 1923
Camptoplites reticulatus (Busk, 1881a)

Bugula reticulata Busk, 1881a: 12, pl. 1, fig. 7 (partim).
For synonymy see: d'Hondt (1981).

Geographic distribution: Southern Indian and Pacific Oceans; South West Atlantic (off Argentina and Uruguay) (Busk, 1881a; d'Hondt, 1981; López-Gappa, 2000; Figuerola *et al*., 2014).
Bathymetric distribution in Uruguayan waters: 1097–2480 m.
References for the area: Busk (1881a); d'Hondt (1981); López-Gappa (2000).
Remarks: collected by HMS *Challenger* near Crozet Island, off Chile and in stn. 320 (Busk, 1884) and by RV *Atlantis II*, cruise 60, stns. 242, 245, 259 and 262 (d'Hondt, 1981). Species recorded from deep waters.

Camptoplites asymmetricus Hastings, 1943

Camptoplites asymmetricus Hastings, 1943: 466, figs 53D, 54C, D, 55C–F.

Geographic distribution: New Zealand, Chile, South Georgia, Patagonian shelf, Argentine Basin (Hastings, 1943; López-Gappa, 2000; Figuerola *et al*., 2014).
Bathymetric distribution in Uruguayan waters: 1097 m.
References for the area: Hastings (1943); López-Gappa (2000).
Remarks: Colonies collected by the HMS *Challenger* at stn. 320 (holotype and paratypes). Hastings (1943: 466) stated that a part of the material assigned by Busk (1881a, 1884) to *Bugula reticulata* Busk, 1884 actually belongs to *C. asymmetricus*.

Camptoplites unicornis (Busk, 1884)

Bugula reticulata var. unicornis Busk, 1884: 40, pl. 9, fig. 2.
For synonymy see: d'Hondt (1981); Gordon (1986).

Geographic distribution: Pacific Ocean (Gordon, 1986); Atlantic Ocean: European continental slope (Hayward, 1978), Uruguay-Argentina, Argentine Basin (Busk, 1884).
Bathymetric distribution in Uruguayan waters: 1097–3917 m.
References for the area: Busk (1884); d'Hondt (1981).
Remarks: Collected at HMS *Challenger*, stn. 320 and RV *Atlantis II*, cruise 60, stns. 256 and 264 (d'Hondt, 1981).

Camptoplites lutaudae d'Hondt, 1975

Camptoplites lutaudae d'Hondt, 1975: 572.
For synonymy see: d'Hondt (1981).

Geographic distribution: North and South Atlantic, off Uruguay (d'Hondt, 1981).
Bathymetric distribution in Uruguayan waters: 3906–3917 m.

References for the area: d'Hondt (1981).
Remarks: Collected by RV *Atlantis II*, cruise 60, stn. 256, off Uruguay.

Camptoplites bicornis (Busk, 1884)

Bugula bicornis Busk, 1884: 40, pl 9, fig. 1.
For synonymy see: d'Hondt (1981).

Geographic distribution: New Zealand, Uruguay, Argentina, and Antarctica (Busk, 1884; Moyano, 1974; d'Hondt, 1981; Figuerola *et al*., 2014).
Bathymetric distribution in Uruguayan waters: 3305–3822 m.
References for the area: d'Hondt (1981, 1983); López-Gappa (2000).
Remarks: Colonies collected by RV *Atlantis II*, cruise 60, stns. 243 and 259 (d'Hondt, 1981, 1983).

Genus *Kinetoskias* Danielssen, 1868
Kinetoskias smitti Danielssen, 1868

Kinetoskias smitti Danielssen, 1868: 24.

Geographic distribution: Arctic Ocean (Kluge, 1975); North Atlantic (Ryland & Hayward, 1991); Argentine Basin, Uruguay (d'Hondt, 1981, 1983; López-Gappa, 2000).
Bathymetric distribution in Uruguayan waters: 2195–3343 m.
References for the area: d'Hondt (1981, 1983).
Remarks: Collected by the RV *Atlantis II*, cruise 60, stns. 240, 245, and 246 (d'Hondt, 1981, 1983; López-Gappa, 2000).

Genus *Himantozoum* Harmer, 1923
Himantozoum (*Himantozoum*) *margaritiferum* (Busk, 1884)

Bugula margaritifera Busk, 1884: 41, pl. 8, fig. 4.

Geographic distribution: Indian, North and South Atlantic oceans; Argentine Basin (Busk, 1884; d'Hondt & Schopf, 1984; d'Hondt, 1985b; David & Pouyet, 1986; Figuerola *et al*., 2014).
Bathymetric distribution in Uruguayan waters: 3475 m.
References for the area: Busk (1884); López-Gappa (2000).
Remarks: collected by HMS *Challenger* at stn. 323 (Busk, 1884).

Himantozoum (*Himantozoum*) *variabile* (Kluge, 1914)

Dendrobeania variabilis Kluge, 1914: 632, pl. 28, fig. 6, text-fig. 19b.

Geographic distribution: North Atlantic (d'Hondt, 1983; d'Hondt & Schopf, 1984); Southern Ocean (Kluge, 1914), Argentine Basin (Uruguay) (d'Hondt, 1983; López-Gappa, 2000).
Bathymetric distribution in Uruguayan waters: 3343–3822 m.
References for the area: d'Hondt (1983).
Remarks: Colonies collected by RV *Atlantis II*, cruise 60, at stns. 243 and 246 (d'Hondt, 1983).

Family CANDIDAE d'Orbigny, 1851
Genus *Amastigia* Busk, 1852b
Amastigia crassimarginata (Busk, 1884)

Caberea crassimarginata Busk, 1884: 28, pl. 11, fig. 1.

Geographic distribution: Argentine Basin (Busk, 1884; Hastings, 1943; d'Hondt, 1981; López-Gappa, 2000; Figuerola *et al*., 2014).
Bathymetric distribution in Uruguayan waters: 1097–2707 m.
References for the area: Busk (1884); d'Hondt (1981); López-Gappa (2000).
Remarks: Collected by the HMS *Challenger* at stn. 320, which is its type-locality (Busk, 1884). Referred with doubts by d'Hondt (1981), due to poor state of his material, for the RV *Atlantis II*, cruise 60, at stn. 245.

Genus *Notoplites* Harmer, 1923
Notoplites atlanticus d'Hondt, 1981

Notoplites atlanticus d'Hondt, 1981: 25, pl. II, figs 5–6.

Geographic distribution: Argentine Basin off Uruguay (d'Hondt, 1981).
Bathymetric distribution in Uruguayan waters: 3906–3917 m.
References for the area: d'Hondt (1981).
Remarks: Colonies collected by the RV *Atlantis II* expedition, cruise 60, stn. 256 (d'Hondt, 1981).

Notoplites crateriformis (Busk, 1884)

Cellularia crateriformis Busk, 1884: 16, pl. 3, fig. 1.

Geographic distribution: South Indian Ocean; Argentine Basin (Busk, 1884; d'Hondt, 1984; López-Gappa, 2000; Figuerola *et al*., 2014).

Bathymetric distribution in Uruguayan waters: 3475 m.
References for the area: Busk (1884); López-Gappa (2000).
Remarks: Collected by the HMS *Challenger* at stn. 323 (Busk, 1884).

Notoplites paradoxus d'Hondt, 1981

Notoplites paradoxus d'Hondt, 1981: 25, pl. 4, figs 5–6.

Geographic distribution: Argentine Basin off Uruguay (d'Hondt, 1981).
Bathymetric distribution in Uruguayan waters: 2707 m.
References for the area: d'Hondt (1981).
Remarks: Lower bathyal species, collected during the RV *Atlantis II* cruise 60 at stn. 245, off Uruguay, which is its type-locality (d'Hondt, 1981).

Notoplites cymbalicus d'Hondt, 1981

Notoplites cymbalicus d'Hondt, 1981: 26, pl. 4, figs 3–4.

Geographic distribution: Argentine Basin off Uruguay (d'Hondt, 1981, 1983).
Bathymetric distribution in Uruguayan waters: 3815–4402 m.
References for the area: d'Hondt (1981, 1983).
Remarks: Colonies collected during the RV *Atlantis II*, cruise 60 at stns. 242 and 243 off Uruguay (d'Hondt, 1981, 1983).

Superfamily CELLARIOIDEA Fleming, 1828
Family MEMBRANICELLARIIDAE Levinsen, 1909
Genus *Membranicellaria* Levinsen, 1909
Membranicellaria dubia (Busk, 1884)

Melicerita dubia Busk, 1884: 97, pl. 23, fig. 10.

Geographic distribution: Argentine basin (Busk, 1884; López-Gappa, 2000; Figuerola *et al*., 2014) and Antarctica (Ross Sea) (Hayward & Winston, 2011).
Bathymetric distribution in Uruguayan waters: 1097 m.
References for the area: Busk (1884); López-Gappa (2000).
Remarks: Collected during the HMS *Challenger* expedition at stn. 320, which is the type-locality of this species (Busk, 1884).

Genus *Cookinella* d'Hondt, 1981
Cookinella flustroides d'Hondt, 1981

Cookinella flustroides d'Hondt, 1981: 14, pl. 3, fig. 1; text fig. 3.

Geographic distribution: Argentine Basin (d'Hondt, 1981, 1983; López-Gappa, 2000; Figuerola *et al*., 2014).
Bathymetric distribution in Uruguayan waters: 4382–4402 m.
References for the area: d'Hondt (1981).
Remarks: Abyssal species collected by the RV *Atlantis II*, cruise 60, at stn. 242, which is its type locality (d'Hondt, 1981). It was also recorded at greater depths (5208–5223 m) at stn. 247 during the same cruise, i.e. off Patagonia (d'Hondt, 1983).

Family CELLARIIDAE Fleming, 1828
Genus *Cellaria* Ellis & Solander, 1786
Cellaria dubia (Busk, 1884)

Salicornaria dubia Busk, 1884: 91, pl. 12, fig. 2, text-fig. 10.

Geographic distribution: Argentine basin (Busk, 1884; López-Gappa, 2000).
Bathymetric distribution in Uruguayan waters: 1097 m.
References for the area: Busk (1884), López-Gappa (2000).
Remarks: Collected during the HMS *Challenger* expedition at stn. 320. Colonies of another species were collected at 13–40 m depth near Uruguay (Parcel do Carpinteiro, off Rio Grande and São José cities and Santa Vitória do Palmar city – Rio Grande do Sul State, Brazil) and identified as *Cellaria riograndensis* Ramalho & Calliari, 2015.

Genus *Euginoma* Jullien, 1882
Euginoma biseriata d'Hondt, 1981

Euginoma biseriata d'Hondt, 1981: 16, pl. 1, figs 5–6.

Geographic distribution: North Atlantic; South West Atlantic (Brazilian and Argentine basins) (d'Hondt, 1981, 1983; d'Hondt & Schopf, 1984; López-Gappa, 2000; Figuerola *et al*., 2014).
Bathymetric distribution in Uruguayan waters: 2707 m.
References for the area: d'Hondt (1981);

López-Gappa (2000).
Remarks: Abyssal species. Colonies collected by the RV *Atlantis II* cruise 60 at stn. 245, which is its type-locality (d'Hondt, 1981).

Euginoma crispa d'Hondt, 1981

Euginoma crispa d'Hondt, 1981: 17, pl. 1, figs 1–2.

Geographic distribution: Argentine Basin (off Uruguay) (d'Hondt, 1981).
Bathymetric distribution in Uruguayan waters: 2707 m.
References for the area: d'Hondt (1981).
Remarks: Collected during the RV *Atlantis II* cruise 60 at stn. 245, which is its type-locality (d'Hondt, 1981).

Euginoma cylindrica d'Hondt, 1981

Euginoma cylindrica d'Hondt, 1981: 18, fig. 4.

Geographic distribution: South Atlantic, Argentine Basin: Uruguay (d'Hondt, 1981).
Bathymetric distribution in Uruguayan waters: 2707 m.
References for the area: d'Hondt (1981).
Remarks: Collected during the RV *Atlantis II* cruise 60 at stn. 245, which is its type-locality.

Euginoma cavalieri Lagaaij, 1963

Euginoma cavalieri Lagaaij, 1963: 179, pl. 2, fig. 6.
For synonymy see: d'Hondt (1981).

Geographic distribution: North Atlantic; Brazil (off Pernambuco) and Argentine Basin (off Uruguay) (Lagaaij, 1963; d'Hondt, 1981, 1983; d'Hondt & Schopf, 1984; López-Gappa, 2000; Figuerola *et al*., 2014).
Bathymetric distribution in Uruguayan waters: 2041–2048 m.
References for the area: d'Hondt (1981), López-Gappa (2000).
Remarks: Species from deep water (365–2480 m), originally described from the Gulf of Mexico (Lagaaij, 1963).

Genus *Formosocellaria* d'Hondt, 1981
Formosocellaria magnifica (Busk, 1884)

Salicornaria magnifica Busk, 1884: 93, pl. 12, figs 4 and 6.
Formosocellaria abyssicola d'Hondt, 1981: 20, pl. 2, figs 3–4; pl. 3, fig. 2; text-fig. 5.

Geographic distribution: North Atlantic; South Indian Ocean; South Western Pacific; Argentine Basin (off Uruguay and Argentina); Brazil Basin (off Pernambuco and Alagoas) (Busk, 1884; d'Hondt, 1981, 1983, 1984; d'Hondt & Schopf, 1984; López-Gappa, 2000; Figuerola *et al*., 2014).
Bathymetric distribution in Uruguayan waters: 3305–3917 m.
References for the area: Busk (1884); López-Gappa (2000).
Remarks: Colonies collected by the HMS *Challenger* at stn. 323, and by the RV *Atlantis II* cruise 60, at stns. 243, 246, 256 (type locality of *F. abyssicola*) and 259. d'Hondt & Schopf (1984) synonymized *F. abyssicola* with *F. magnifica*.

Genus *Cryptostomaria* Canu & Bassler, 1927
Cryptostomaria cylindrica (Harmer, 1926)

Aspidostoma cylindricum Harmer, 1926: 323, pl. 22, figs 1–4.

Geographic distribution: Indonesia (Harmer, 1926), Brazil and Argentine basins (off Uruguay) (d'Hondt, 1983; d'Hondt & Schopf, 1984; López-Gappa, 2000).
Bathymetric distribution in Uruguayan waters: 3815–3822 m.
References for the area: d'Hondt (1983); López-Gappa (2000).
Remarks: Colonies collected by the RV *Atlantis II* cruise 60 at stn. 243 off Uruguay.

Genus *Melicerita* Milne-Edwards, 1836
Melicerita atlantica Busk, 1884

Melicerita atlantica Busk, 1884: 96, pl. 14, fig. 1.

Geographic distribution: Argentine Basin, Argentina-Uruguay (Busk, 1884; López-Gappa, 2000; Figuerola *et al*., 2014).
Bathymetric distribution in Uruguayan waters: 1097 m.
References for the area: Busk (1884); López-Gappa (2000).
Remarks: Collected during the HMS *Challenger* expedition at stn. 320, which is the type and only known locality for this species.

Superfamily CATENICELLOIDEA Busk, 1852b
Family CATENICELLIDAE Busk, 1852b

Genus *Talivittaticella* Gordon & d'Hondt, 1985
Talivittaticella problematica (d'Hondt, 1981)

Orthoscuticella (?) problematicum d'Hondt, 1981: 42, pl. VII, fig. 5; text fig. 11.

Geographic distribution: New Zealand; Brazilian (off Pernambuco) and Argentine basins (Uruguay) (d'Hondt, 1981, 1983; d'Hondt & Schopf, 1984; Gordon & d'Hondt, 1985; López-Gappa, 2000; Figuerola *et al*., 2014).
Bathymetric distribution in Uruguayan waters: 2707–3822 m.
References for the area: d'Hondt (1981, 1983); López-Gappa (2000).
Remarks: Collected by the RV *Atlantis II*, cruise 60, at stns. 243 and 245, the latter being the type locality of this species (d'Hondt, 1981, 1983).

Superfamily CRIBRILINOIDEA Hincks, 1879
Family CRIBRILINIDAE Hincks, 1879
Genus *Jolietina* Jullien, 1886
Jolietina latimarginata (Busk, 1884)

Cribrilina latimarginata Busk, 1884: 131, pl. 22, fig. 10.
For synonymy see: López-Gappa *et al*., 2021: 3, figs 2.1, 2.2.

Geographic distribution: Southeast Pacific (Chile); Southwest Atlantic (Argentine Basin and Patagonian shelf, including Malvinas Islands) (Busk, 1884; Moyano, 1984; López-Gappa & Lichtschein, 1988; López-Gappa, 2000; Figuerola *et al*., 2014).
Bathymetric distribution in Uruguayan waters: 1097 m.
References for the area: Busk (1884); López-Gappa (2000).
Remarks: Collected during the HMS *Challenger* expedition at stn. 320, which is its type-locality (Busk, 1884). At the Patagonian shelf these colonies are usually found on the cyclostome bryozoan *Hornera* (López-Gappa *et al*., 2021). At the type-locality it was reported as growing on dead coral (Busk, 1884).

Superfamily BIFAXARIOIDEA Busk, 1884
Family BIFAXARIIDAE Busk, 1884
Genus *Domosclerus* Gordon, 1988
Domosclerus corrugatus (Busk, 1884)

Bifaxaria corrugata Busk, 1884: 80, pl. 13, fig. 3; pl. 24, fig. 6.
Sclerodomus sp. *aff*. *D. corrugatus* d'Hondt, 1981: 46.

Geographic distribution: *D. corrugatus* has been recorded for the Indo-Pacific, New Zealand, South Africa, Brazil (off Pernambuco), Uruguay and Argentina (Busk, 1884; Harmer, 1957; d'Hondt, 1981, 1983; López-Gappa, 2000; Figuerola *et al*., 2014).
Bathymetric distribution in Uruguayan waters: 3815–4402 m.
References for the area: d'Hondt (1981, 1983); López-Gappa (2000).
Remarks: Four fragments of *Sclerodomus* sp. and colonies of *Domosclerus corrugatus* were collected during the RV *Atlantis II* expedition, at stns. 242 and 243, respectively, off Uruguay. *Sclerodomus* sp. specimens do not have oral avicularia, a fact that did not allow to confirm its identification as *D. corrugatus*.

Superfamily HIPPOTHOOIDEA Busk, 1859
Family HIPPOTHOIDAE Busk, 1859
Genus *Celleporella* Gray, 1848
Celleporella hyalina (Linnaeus, 1767)

Cellepora hyalina Linnaeus, 1767: 1286.
For synonymy see: Soule *et al*., 1995: 183, fig. 66A–D.

Geographic distribution: this species complex (Waeschenbach *et al*., 2012) is distributed worldwide, including Brazil, Argentina, and Uruguay (Marcus, 1937, 1955; López-Gappa & Lichtschein, 1988; Obenat *et al*., 2001; Scarabino, 2006; Figuerola *et al*., 2014).
Bathymetric distribution in Uruguayan waters: 11–12 m.
References for the area: Obenat *et al*. (2001); Scarabino (2006).
Remarks: At Uruguay the colonies were fixed on tubes of the polychaete *Phyllochaetopterus socialis* (Obenat *et al*., 2001).

Superfamily LEPRALIELLOIDEA Vigneaux, 1949
Family LEPRALIELLIDAE Vigneaux, 1949
Genus *Celleporaria* Lamouroux, 1821
Celleporaria (?) sp.

Celleporaria sp. d'Hondt, 1981: 40.

Geographic distribution: Argentine Basin: Uruguay (d'Hondt, 1981).
Bathymetric distribution in Uruguayan waters: 1661–1679 m.

References for the area: d'Hondt (1981).
Remarks: Colonies were collected during the RV *Atlantis II* cruise 60 at stn. 239. These specimens lacked ovicell, an important character to identify the colonies at the species level.

Family SCLERODOMIDAE Levinsen, 1909
Genus *Sclerodomus* Levinsen, 1909
Sclerodomus denticulatus (Busk, 1884)

Bifaxaria denticulata Busk, 1884: 82, pl. 24, fig. 3.

Geographic distribution: Magellanic region and Argentine Basin (Busk, 1884; López-Gappa, 2000; Figuerola *et al*., 2014).
Bathymetric distribution in Uruguayan waters: 1097 m.
References for the area: Busk (1884); López-Gappa (2000).
Remarks: Colonies were collected during the HMS *Challenger* expedition at stn. 320, which is its type-locality.

Superfamily SMITTINOIDEA Levinsen, 1909
Family SMITTINIDAE Levinsen, 1909
Genus *Smittina* Norman, 1903
Smittina uruguayensis d'Hondt, 1981

Smittina uruguayensis d'Hondt, 1981: 37, text fig. 8.

Geographic distribution: only known from the lower slope of the Argentine Basin (Uruguay) (d'Hondt, 1981; Figuerola *et al*., 2014).
Bathymetric distribution in Uruguayan waters: 1661–1679 m.
References for the area: d'Hondt (1981); López-Gappa (2000).
Remarks: Colonies were collected during the RV *Atlantis II*, cruise 60, at stn. 239, off Uruguay, which is its type and sole locality at which it has been recorded (d'Hondt, 1981).

Smittina smittiana (Busk, 1884)

Smittia smittiana Busk, 1884: 151, pl. 17, fig. 3.

Geographic distribution: Magellanic region and Argentine Basin (Busk, 1884; López-Gappa, 2000; Figuerola *et al*., 2014).
Bathymetric distribution in Uruguayan waters: 1097 m.
References for the area: Busk (1884); López-Gappa (2000).
Remarks: Colonies were collected during the HMS *Challenger* expedition at stn. 320, which is its type-locality (Busk, 1884).

Smittina sp. (aff. *S. exclusa* Harmer, 1957)

Smittina sp. d'Hondt, 1981: 39, text fig. 10.

Geographic distribution: Uruguay (d'Hondt, 1981).
Bathymetric distribution in Uruguayan waters: 2707 m.
References for the area: d'Hondt (1981).
Remarks: Colonies white, erect, dichotomously branched; collected at stn. 245 during the RV *Atlantis II* cruise 60.

Genus *Pseudoflustra* Bidenkap, 1897
Pseudoflustra sp. (aff. *P. aviculata* (Calvet, 1906))

Pseudoflustra sp.: d'Hondt, 1981: 44.

Geographic distribution: Argentine Basin: Uruguay (d'Hondt, 1981).
Bathymetric distribution in Uruguayan waters: 2707 m.
References for the area: d'Hondt (1981).
Remarks: Two tiny fragments were collected during RV *Atlantis II* cruise 60 at stn. 245.

Family BITECTIPORIDAE MacGillivray, 1895
Genus *Hippomonavella* Canu & Bassler in Bassler, 1934
Hippomonavella charrua López-Gappa *et al*., 2020

Hippomonavella charrua López-Gappa *et al*., 2020: 145, fig. 2; table 1.

Geographic distribution: Continental shelf off Uruguay and off Buenos Aires Province, and Canal de las Escobas Formation (mid-Holocene deposits) – Argentina (López-Gappa *et al*., 2020).
Bathymetric distribution in Uruguayan waters: 119–128 m.
References for the area: López-Gappa *et al*. (2020).
Remarks: Bilaminar colonies on hydrozoan stems were collected by the vessel *Undine* off the Uruguayan coast, at 34°38' S, 52°15' W, 119–128 m depth, which is the type-locality of this species. Another species, *H. brasiliensis* Ramalho *et al*., 2008 was identified near Uruguay: Rio Grande do Sul state, Brazil (Parcel do Carpinteiro, off

Rio Grande and São José cities). The loose bilaminar fragments of the Brazilian species were collected at 24–25 m depth (Ramalho & Calliari, 2015).

Superfamily SCHIZOPORELLOIDEA Jullien, 1883
Family MARGARETTIDAEHarmer, 1957
Species incertae sedis aff. *Margaretta* Gray, 1843

Species incertae sedis aff. g. *Margaretta* d'Hondt, 1983: 87, pl. 4, figs 5–6; text fig. 2.

Geographic distribution: Argentine Basin (d'Hondt, 1983).
Bathymetric distribution in Uruguayan waters: 2707 m.
References for the area: d'Hondt (1983).
Remarks: Two small fragments were collected during the RV *Atlantis II* cruise 60 at stn. 245 (d'Hondt, 1983).

Family CRYPTOSULIDAE Vigneaux, 1949
Genus *Cryptosula* Canu & Bassler, 1925
Cryptosula pallasiana (Moll, 1803)

Eschara pallasiana Moll, 1803: 64, pl. 3, fig. 13. For synonymy see: Hayward & Ryland, 1999.

Geographic distribution: This species has a worldwide distribution, including Argentina, Uruguay and Brazil (Marcus, 1942; Lichtschein de Bastida & Bastida, 1980; Hayward & Ryland, 1999; López-Gappa, 2000; Scarabino, 2006; Figuerola *et al*., 2014).
Bathymetric distribution in Uruguayan waters: Shallow subtidal.
References for the area: Calvo (1984) as *Cryptosula* sp.; Scarabino (2006).
Remarks: This species is a frequent member of the fouling community (Orensanz *et al*., 2002). It is typically and commonly found in intertidal habitats, but it can also be found in the sublittoral, growing on stones, shells, and other hard or soft substrates such as polychaete tubes, algae and hydroids. It can be found from the upper littoral down to 200 m depth (Marcus, 1942), and it is considered as introduced in Uruguay-Argentina (Schwindt *et al*., 2020).

Family CALWELLIIDAE MacGillivray, 1887
Genus *Ichthyaria* Busk, 1884
Ichthyaria profunda d'Hondt, 1981

Ichthyaria profunda d'Hondt, 1981: 49, fig. 13.

Geographic distribution: Argentine Basin off Uruguay (d'Hondt, 1981).
Bathymetric distribution in Uruguayan waters: 2707 m.
References for the area: d'Hondt (1981); López-Gappa (2000).
Remarks: Flexible and delicate colonies of this species were collected off Uruguay by the RV *Atlantis II* cruise 60 at stn. 245 (type-locality).

Ichthyaria oculata Busk, 1884

Ichthyaria oculata Busk, 1884: 46, pl. 13, fig. 7.

Geographic distribution: South Indian Ocean (Crozet shelf and Prince Edward Islands); Magellanic region, Patagonian shelf and Argentine Basin (Busk, 1884; d'Hondt, 1984; López-Gappa & Lichtschein, 1988; López-Gappa, 2000; Figuerola *et al*., 2014).
Bathymetric distribution in Uruguayan waters: 1097 m.
References for the area: Busk (1884); López-Gappa (2000).
Remarks: Colonies were collected during the HMS *Challenger* expedition at stn. 320 (Busk, 1884).

Family MYRIAPORIDAE Gray, 1841
Genus *Myriapora* de Blainville, 1830
Myriapora simplex (Busk, 1884)

Myriozoum simplex Busk, 1884: 170, pl. 25, fig. 1.

Geographic distribution: Argentine Basin, Argentina-Uruguay (Busk, 1884; López-Gappa, 2000).
Bathymetric distribution in Uruguayan waters: 1097 m.
References for the area: Busk (1884); López-Gappa (2000).
Remarks: Collected during the HMS *Challenger* expedition at stn. 320, which is its type and unique known locality for this species.

Superfamily CELLEPOROIDEA Johnston, 1838
Family PHIDOLOPORIDAE Gabb & Horn, 1862
Genus *Reteporellina* Harmer, 1933
Reteporellina moyanoi d'Hondt, 1981

Reteporellina moyanoi d'Hondt, 1981: 45, fig. 12.

Geographic distribution: Only known from

the lower slope of Argentine Basin (Uruguay) (d'Hondt, 1981; López-Gappa, 2000; Figuerola *et al*., 2014).
Bathymetric distribution in Uruguayan waters: 2707 m.
References for the area: d'Hondt (1981); López-Gappa (2000).
Remarks: Colonies erect, dichotomously branched, collected by the RV *Atlantis II* cruise 60 at stn. 245, which is its type-locality and the unique site in which this species has been recorded (d'Hondt, 1981).

Reteporellina sp. 2 d'Hondt, 1981

Reteporellina sp. 2 d'Hondt, 1981: 46.

Geographic distribution: Only known from the lower slope of the Argentine Basin (Uruguay) (d'Hondt, 1981).
Bathymetric distribution in Uruguayan waters: 4382–4402 m.
References for the area: d'Hondt (1981).
Remarks: Colonies erect, dichotomously branched, collected by the RV *Atlantis II* expedition, at stn. 242 (d'Hondt, 1981).

Genus *Reteporella* Busk, 1884
Reteporella magellensis (Busk, 1884)

Retepora magellensis Busk, 1884: 126, pl. 26, fig. 20.
Reteporella magellensis: Hayward & Winston, 2011: 2320, fig. 29A.
For synonymy see: López-Gappa & Lichtschein (1990).

Geographic distribution: Southern Chile, Magellanic region, Patagonian shelf, Argentine Basin (Busk, 1884; Waters, 1905; López-Gappa & Lichtschein, 1990; Hayward & Winston, 2011; Figuerola *et al*., 2014) and Antarctic Peninsula (Hayward & Winston, 2011).
Bathymetric distribution in Uruguayan waters: 1097 m.
References for the area: Busk (1884).
Remarks: Colonies infundibuliform or cupped, rising from a short and thick peduncle. They were collected during the HMS *Challenger* expedition at stn. 320, which is its type-locality (Busk, 1884; Hayward & Winston, 2011).

Family CELLEPORIDAE Johnston, 1838
Genus *Buskea* Heller, 1867
Buskea sp.

Buskea sp. d'Hondt, 1983: 89, pl. 2, fig. 6.

Geographic distribution: Only known from the lower slope of the Argentine Basin (Uruguay) (d'Hondt, 1983).
Bathymetric distribution in Uruguayan waters: 2195–2323 m.
References for the area: d'Hondt (1983).
Remarks: Erect single fragment collected by the RV *Atlantis II* cruise 60, at stn. 240 (d'Hondt, 1983).

Genus Orthroporidroides Moyano, 1974
Orthroporidroides erectus (Waters, 1888)

Cellepora armata var. *erecta* Waters, 1888: 36, pl. 3, figs 4, 41, 43
For synonymy see: Cook & Hayward (1983)

Geographic distribution: Uruguay (Cook & Hayward, 1983); Magellan Strait up to Madre de Dios Archipelago (Chile - Pacific Ocean) (Moyano, 1974).
Bathymetric distribution in Uruguayan waters: 1097 m.
References for the area: Cook & Hayward (1983).
Remarks: Colony erect, branching, arising from encrusting bases. Colonies were collected during the HMS *Challenger* expedition at stn. 320, which is the type-locality (Cook & Hayward, 1983).

Genus *Osthimosia* Jullien, 1888
Osthimosia rudis (Busk, 1881b)

Cellepora rudis Busk, 1884: 199, pl. 28, fig. 7, pl. 36, fig. 7.

Geographic distribution: Argentine Basin, Argentina-Uruguay (Busk, 1881b, 1884; Hayward, 1992; López-Gappa, 2000).
Bathymetric distribution in Uruguayan waters: 1097 m.
References for the area: Busk (1881b, 1884); Hayward (1992); López-Gappa (2000).
Remarks: Colony with a short, cylindrical, thick stem rising from a broad base, and dividing into two rounded lobes, collected during the HMS *Challenger* expedition at stn. 320, which is the type and only known locality (Busk, 1884; Hayward, 1992).

Superfamily CONESCHARELLINOIDEA Levinsen, 1909

Family ORBITULIPORIDAE Canu & Bassler, 1923
Genus *Sphaerulobryozoon* d'Hondt, 1981
Sphaerulobryozoon pedunculatum d'Hondt, 1981

Sphaerulobryozoon pedunculatum d'Hondt, 1981: 47, pl. VI, figs 5–6, pl. VII, fig. 1–4, pl. VIII.

Geographic distribution: North Atlantic (d'Hondt, 1981), Brazil (off Pernambuco), and Argentine Basin (d'Hondt, 1981, 1983; d'Hondt & Schopf, 1984; López-Gappa, 2000; Figuerola *et al*., 2014).
Bathymetric distribution in Uruguayan waters: 2041–2480 m.
References for the area: d'Hondt (1981, 1983); López-Gappa (2000).
Remarks: Conescharelliniform colonies collected at lower bathyal depths by the RV *Atlantis II* cruise 60, at stns. 240, 262 and 264. Station 262 is the type-locality of this species (d'Hondt, 1981, 1983).

Family LEKYTHOPORIDAE Levinsen, 1909
Genus *Turritigera* Busk, 1884
Turritigera stellata Busk, 1884

Turritigera stellata Busk, 1884: 130, pl. 24, fig. 1. For synonymy see: Cook & Hayward (1983); Hayward & Winston (2011).

Geographic distribution: Southeast Pacific (Chile), Cape Horn, Magellanic region, Argentine Basin (Busk, 1884; Moyano, 1974; Cook & Hayward, 1983; López-Gappa & Lichtschein, 1988; López-Gappa, 2000; Ramalho *et al*., 2011; Figuerola *et al*., 2014).
Bathymetric distribution in Uruguayan waters: 1097 m. *Turritigera spectabilis* was collected at 1661−4402 m (see Remarks below).
References for the area: Busk (1884); López-Gappa (2000).
Remarks: Erect and well calcified colonies were collected by the HMS *Challenger* expedition at stn. 320 (Busk, 1884). The original description was also based on material from South Africa. A colony from stn. 320 was selected by Hayward & Winston (2011) as the lectotype, that stn. thus becoming its type locality.
Turritigera spectabilis d'Hondt, 1981 was described from material obtained at similar depths at very close (stns. 239, 242 and 245 of the RV *Atlantis II* cruise 60) to the type locality of *T. stellata*. As a formal revision of type materials is needed to conclude that *T. spectabilis* is a junior synonym of *T. stellata*, in this compilation we have preferred to cite *T. spectabilis* as a separate species.

Turritigera spectabilis d'Hondt, 1981

Turritigera spectabilis d'Hondt, 1981: 41, pl. 5, figs 1–3.

Geographic distribution: Argentine Basin off Uruguay (d'Hondt, 1981).
Bathymetric distribution in Uruguayan waters: 1661–4402 m.
References for the area: d'Hondt (1981).
Remarks: bathyal-abyssal specimens collected by the RV *Atlantis II*, cruise 60, at stns. 239, 242, and 245, the former being the type locality of this species (d'Hondt, 1981).

Genus *Catadysis* Canu and Bassler, 1927
Catadysis immersum (Busk, 1884)

Myriozoum immersum Busk, 1884: 170, pl. 25, fig. 4.

Geographic distribution: Magellanic region and Argentine basin (Busk, 1884; Cook & Hayward, 1983; López-Gappa, 2000; Figuerola *et al*., 2014).
Bathymetric distribution in Uruguayan waters: 1097 m.
References for the area: Busk (1884), Cook & Hayward (1983); López-Gappa (2000).
Remarks: Erect colonies with divergent and bifurcating branches were collected during the HMS *Challenger* expedition at stn. 320.

CHEILOSTOMATIDA INCERTAE SEDIS
Genus *Acanthodesiomorpha* d'Hondt, 1981
Acanthodesiomorpha problematica d'Hondt, 1981

Acanthodesiomorpha problematica d'Hondt, 1981: 9, pl. 4, figs 1–2, text fig. 1.

Geographic distribution: Argentine Basin (d'Hondt, 1981), New Zealand (Gordon, 1987).
Bathymetric distribution in Uruguayan waters: 2707 m.
References for the area: d'Hondt (1981).
Remarks: Collected by the RV *Atlantis II* cruise 60 at stn. 245 (d'Hondt, 1981). Gordon (1987) recorded this species for New Zealand, at 3999 m depth.

Genus *Ogivalia* Jullien, 1882
Ogivalia elegans (d'Orbigny, 1842)

*Vincularia elegan*s d'Orbigny, 1842: 21, pl. 9, figs 25–28.
Vincularia labiata Busk, 1884: 73, text fig. 3.
For synonymy see: Moyano (1974).

Geographic distribution: Magellanic region and Argentine Basin (d'Orbigny, 1847; Moyano, 1974; López-Gappa & Lichtschein, 1988; López-Gappa, 2000).
Bathymetric distribution in Uruguayan waters: 1097 m.
References for the area: Busk (1884) as *Vincularia labiata*; Moyano (1974); López-Gappa (2000).
Remarks: Colonies were collected during the HMS *Challenger* expedition at stn. 320, described as *Vincularia labiata*. Waters (1905) synonymized *Vincularia labiata* with *Vincularia elegans*.

Order CTENOSTOMATIDA (Busk, 1852a)
Suborder ALCYONIDIINA d'Hondt, 1985a
Superfamily ALCYONIDIOIDEA Johnston, 1838
Family ALCYONIDIIDAE Johnston, 1837
Genus *Alcyonidium* Lamouroux, 1813
Alcyonidium sp.

Geographic distribution: Uruguay: 35°23' – 35°31'S, 55°36' – 55°48'W.
Bathymetric distribution in Uruguayan waters: 11–12 m.
References for the area: Obenat *et al*. (2001); Scarabino (2006).
Remarks: Colonies were found on polychaete tubes (*Phyllochaetopterus socialis*) near the mouth of Río de la Plata estuary (Obenat *et al*., 2001).

Superfamily HAYWARDOZOONOIDEA d'Hondt, 1983
Family HAYWARDOZOIDAE d'Hondt, 1983
Genus *Haywardozoon* d'Hondt, 1983
Haywardozoon atlantae d'Hondt in d'Hondt & Hayward, 1981

Haywardozoon atlantae d'Hondt & Hayward, 1981: 279, fig. 4.

Geographic distribution: Argentine Basin off Uruguay (d'Hondt & Hayward, 1981).
Bathymetric distribution in Uruguayan waters: 2440–2480 m.
References for the area: d'Hondt and Hayward (1981); López-Gappa (2000).
Remarks: Lower bathyal uniserial colonies collected during the RV *Atlantis II* cruise 60 at stn. 262, which is its type-locality (d'Hondt and Hayward, 1981).

Suborder VESICULARIINA Johnston, 1838
Superfamily VESICULARIOIDEA Hincks, 1880
Family VESICULARIIDAE Hincks, 1880
Genus *Amathia* Lamouroux, 1812
Amathia sp.

Geographic distribution: Uruguay (Calvo, 1984; Scarabino, 2006).
Bathymetric distribution in Uruguayan waters: Shallow subtidal.
References for the area: Calvo (1984).
Remarks: Small and transparent colonies were found on wood (experimental panels) in Uruguayan ports (Calvo, 1984). This species was identified as *Bowerbankia* sp. by Calvo (1984), but this genus was later regarded as a junior synonym of *Amathia* (see Waeschenbach *et al*., 2015).

Class STENOLAEMATA
Order CYCLOSTOMATIDA Busk, 1852a
Suborder ARTICULINA Busk, 1859
Family CRISIIDAE Johnston, 1838
Genus *Crisia* Lamouroux, 1812
Crisia acuminata Busk, 1886

Crisia acuminata Busk, 1886: 5, pl. 3, fig. 1.

Geographic distribution: Argentine Basin, Argentina-Uruguay (Busk, 1886; López-Gappa, 2000).
Bathymetric distribution in Uruguayan waters: 1097 m.
References for the area: Busk (1886); López-Gappa (2000).
Remarks: Erect and delicate white colonies were collected during the HMS *Challenger* expedition at stn. 320, the type and only locality known for this species.

Suborder TUBULIPORINA Milne-Edwards, 1838

Remarks: An Oncousoeciidae, *Filisparsa calypso* Buge, 1979 has its type and only locality close to the area here considered, i.e. 37°36´S, 54°56´W, 740 m depth (stn. 171 of the RV *Calypso*, cruise

1961–1962 to South America) (Buge, 1979). Moreover, Buge (1979) stated that the record of *Idmonea marionensis* Busk, 1875 (a species currently considered a *taxon inquirendum*) collected at stn. 320 of the HMS *Challenger* expedition may be the same as *F. calypso*. However, no further research has been done on this subject.

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

Remarks: *Stomatopora eburnea* **(**d'Orbigny, 1847), known from the Magellanic region and Argentine Basin (d'Orbigny, 1847; Buge, 1979; López-Gappa, 2000), has been cited from a locality close to the area considered here, i.e. 37°36´S, 54°56´W, 740 m depth (stn. 171 of the RV *Calypso*, cruise 1961–1962 to South America) (Buge, 1979).

Stomatopora sp.

Stomatopora sp. Harmelin & d'Hondt, 1982: 6.

Geographic distribution: Argentine Basin off Uruguay (Harmelin & d'Hondt, 1982).
Bathymetric distribution in Uruguayan waters: 2707 m.
References for the area: Harmelin & d'Hondt (1982).
Remarks: Two very damaged fragments fixed on rocks were collected during the RV *Atlantis II* cruise at stn. 245 off Uruguay.

Family DIASTOPORIDAE, Gregory, 1899
Diastoporidae n.d., Harmelin & d'Hondt, 1982: 10, pl. 3, fig. 5.

Geographic distribution: Argentine Basin off Uruguay (Harmelin & d'Hondt, 1982).
Bathymetric distribution in Uruguayan waters: 2707 m.
References for the area: Harmelin & d'Hondt (1982).
Remarks: Only one specimen was collected by the RV *Atlantis II* expedition, cruise 60, stn. 245 (Harmelin & d'Hondt, 1982).

Suborder CANCELLATA Gregory, 1896
Family HORNERIDAE Smitt, 1867
Genus *Hornera* Lamouroux, 1821
Hornera sp.

Hornera lichenoides: Busk, 1886: 15

Geographic distribution: Argentine basin, Argentina-Uruguay (Busk, 1884).
Bathymetric distribution in Uruguayan waters: 1097 m.
References for the area: Busk (1884), Buge (1979).
Remarks: Collected during the HMS *Challenger* expedition at stn. 320. According to Buge (1979), the specimen found in the Southwest Atlantic should not be regarded as conspecific with *H. lichenoides* (Linnaeus, 1758), a boreal-arctic species.

Family PSEUDIDMONEIDAE Borg, 1944
Genus *Pseudidmonea* Borg, 1944
Pseudidmonea fissurata (Busk, 1886)

Idmonea fissurata Busk, 1886: 14, pl. 3, fig. 5.
For synonymy see: Buge (1979).

Geographic distribution: Argentine Basin, Magellanic region (Busk, 1886; Borg, 1944; Androsova, 1968; Buge, 1979).
Bathymetric distribution in Uruguayan waters: 1097 m.
References for the area: Busk (1886); Buge (1979); López-Gappa (2000).
Remarks: Some colonies and other fragments were collected during the HMS *Challenger* expedition, at stn. 320. Buge (1979) cited this species from 37°36´S, 54°56´W, 740 m depth (stn. 171 of the RV *Calypso*, cruise 1961–1962 to South America), i.e. from a locality close to the area considered here.

Cyclostomatida *incertae sedis* **n° 2**

Incertae sedis n° 2 Harmelin & d'Hondt, 1982: 12: pl. IV, fig. 6.

Geographic distribution: Argentine Basin off Uruguay (Harmelin & d'Hondt, 1982).
Bathymetric distribution in Uruguayan waters: 2707 m.
References for the area: Harmelin & d'Hondt (1982).
Remarks: One colony of an inverted umbrella shape and a fixation peduncle was collected by the RV *Atlantis II* expedition, cruise 60, stn. 245 (Harmelin & d'Hondt, 1982).

Cyclostomatida *incertae sedis* **n° 3**

Incertae sedis n° 3 Harmelin & d'Hondt, 1982: 13, pl. IV, fig. 3.

Geographic distribution: Argentine Basin off Uruguay (Harmelin & d'Hondt, 1982).
Bathymetric distribution in Uruguayan waters: 2707 m.
References for the area: Harmelin & d'Hondt (1982).
Remarks: Eleven small fragments of erect colonies were collected by the RV *Atlantis II* expedition, cruise 60, stn. 245 (Harmelin & d'Hondt, 1982).

DISCUSSION AND CONCLUSION

This study compiled 73 taxa recorded in Uruguayan waters, from all three orders of extant marine bryozoans (Cheilostomatida, Ctenostomatida and Cyclostomatida). The most diverse order was Cheilostomatida with 63 taxa, followed by Cyclostomatida (7 taxa) and Ctenostomatida (3 taxa).

With an estimated diversity of more than 4,900 species in 2013 (Bock & Gordon, 2013), the Cheilostomatida is the most successful group among the Recent bryozoans. Its high species-diversity seems to be related to their variability in the use of substrates and the acquisition of special features such as zooidal polymorphism and complex reproductive patterns (Ryland, 1970).

On the other hand, the Cyclostomatida usually show modest levels of biodiversity when compared with the Cheilostomatida, accounting globally for up to 11% of the species in modern bryozoan faunas (Rosso, 2003; Ramalho *et al*., 2009). Three out of the seven taxa of Cyclostomatida herein mentioned were found at between 200 and 1500 m depth, while another four between 1500 and 3000 m. Hayward & Ryland (1985) mentioned that Cyclostomatida species are usually found to occur in shallow waters less than 1000 m depth, but this statement is undergoing changes from the new studies that are being carried out in deep waters. Grischenko *et al*. (2018) studying the bryozoan fauna associated with nodules, collected in the Russian deep sea (4510 and 5280 m), showed that cyclostomes are much more diverse than previously thought, comprising 34% of the total bryozoan fauna identified.

The Ctenostomatida commonly exhibit low biodiversity levels, but usually are very common and abundant in shallow waters. Three ctenostomes were recorded in the present study, two of them from depths up to 200 m and one at deeper waters.

Thirty out of the 73 taxa (41%) are known only from deep waters off the Río de la Plata, with an additional species also known from a station in Patagonian deep waters. Even considering there are some undetermined species, this result shows a high degree of endemism, as it was already shown for several benthic groups such as Bivalvia, Ascidiacea and Pycnogonida (Scarabino *et al*., 2016, 2018, 2019, and references therein). Furthermore, also molecular analysis could identify even more endemic species amongst some of the more seemingly widely distributed species. The remaining recorded species could be classified in three groups: 1) deep-sea species widely distributed over other basins (15), 2) shelf and deep-sea species of Antarctic and Subantarctic distribution (17), and 3) shelf species, including shallow water cryptogenic or introduced taxa (10). A similar pattern exists concerning the proportion of species for Ascidiacea and Pycnogonida from Uruguayan waters (Scarabino *et al.,* 2018, 2019) and it represents a bias. In fact, most of the species compiled in this study were gathered during two oceanographic cruises that surveyed the continental slope and abyssal plain off Uruguay. This fact, together with the absence of local bryozoan taxonomists, has resulted in the unprecedented situation that the deep-sea bryozoan fauna of Uruguay is better known than the coastal and shelf representatives of the phylum. Therefore, future efforts should be directed to coordinate the sampling and taxonomic study of shallow and shelf specimens in order to bridge the present gap in the knowledge of the Uruguayan bryozoan fauna. The present study is designed to kick-start more detailed empirical taxonomic studies to fill the gap in the knowledge of bryozoan distribution patterns along the Atlantic coast of South America.

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Table 1. Summary of the species of Bryozoa recorded at Uruguayan waters. Taxa are arranged following their taxonomic order in the text. The depths detailed only refers to the records from Uruguay.

TAXA	Shelf	Upper slope (200-1500 m)	Lower slope (1500-3000 m)	Abyssal plain	Antarctic and Subantarctic shelf or deep-sea species	Only off Río de la Plata deep-sea species	Widely distributed deep sea species
Electra monostachys	×						
Conopeum reticulum	×						
Jellyella tuberculata	×						
Aetea anguina	×						
Chaperiopsis erecta		×				×	
Farciminaria cribraria				×			×
Columnella magna				×			×
Columnella gracilis				×			×
Fovelaria elliptica		×			×		
Foveolaria terrifica		×			×		
Securiflustra bifoliata			×		×		
Membraniporopsis tubigera	×						
Camptoplites reticulatus		×	×		×		
Camptoplites asymmetricus		×			×		
Camptoplites unicornis			×	×			×
Camptoplites lutaudae				×	×		
Camptoplites bicornis				×			
Kinetoskias smitii			×	×			×
Himantozoum (H.) margaritiferum				×			×
Himantozoum (H.) variabile				×			×
Amastigia crassimarginata		×	×			×	
Notoplites atlanticus				×		×	
Notoplites crateriformis				×	×		
Notoplites paradoxus			×			×	
Notoplites cymbalicus				×		×	
Membranicellaria dubia		×				×	
Cookinella flustroides				×		×, also known from off Patagonia	
Cellaria dubia		×				×	
Euginoma biseriata			×				×
Euginoma crispa			×			×	
Euginoma cylindrica			×			×	
Euginoma cavalieri			×				×
Formosocellaria magnifica				×			×
Cryptostomaria cylindrica				×			×
Melicerita atlantica		×				×	
Talivittaticella problematica			×	×			×
Jolietina latimarginata		×			×		
Domosclerus corrugatus				×			
Celleporella hyalina	×						
Celleporaria sp.			×			×	
Sclerodomus denticulatus		×				×	
Smittina uruguayensis			×			×	
Smittina smittiana		×			×		
Smittina sp.			×			×	

TAXA	Shelf	Upper slope (200-1500 m)	Lower slope (1500-3000 m)	Abyssal plain	Antarctic and Subantarctic shelf or deep-sea species	Only off Río de la Plata deep-sea species	Widely distributed deep sea species
Pseudoflustra sp.			×			×	
Hippomonavella charrua	×						
sp. incertae sedis aff. *Margaretta*			×			×	
Cryptosula pallasiana	×						
Ichthyaria profunda			×			×	
Ichthyaria oculata		×			×		
Myriapora simplex		×				×	
Reteporellina moyanoi			×			×	
Reteporellina sp. 2				×		×	
Reteporella magellensis		×			×		
Buskea sp.			×			×	
Orthoporidroides erectus		×			×		
Osthimosia rudis		×				×	
Sphaerulobryozoon pedunculatum			×				×
Turritigera stellata		×			×		
Turritigera spectabilis		×	×	×		×	
Catadysis immersum		×			×		
Acanthodesiomorpha problematica			×				×
Ogivalia elegans		×			×		
Alcyonidium sp.	×						
Haywardozoon atlantae			×			×	
Amathia sp.	×						
Crisia acuminata		×				×	
Stomatopora sp.			×			×	
Diastoporidae indet.			×			×	
Hornera sp.		×			×	×	
Pseudidmonea fissurata		×			×		
Cyclostomatida *incertae sedis* n°2			×			×	
Cyclostomatida *incertae sedis* n°3			×			×	

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Appendix 1. Stations of the HMS *Challenger* and RV *Atlantis II* mentioned in the text.

HMS *Challenger* (February 1876)
Station 320. 37°17´S, 53°52´W, 1097 m
Station 323. 35°39´S, 50°47´W, 3475 m,
RV *Atlantis II*, cruise 60 (March 1971)
Station 239. 36°49´S, 53°15.4´W, 1661–1679 m
Station 240. 36°53.4´S, 53°10.2´W, 2195–2323 m
Station 242. 38°16.9´S, 51°56.1´W, 4382 m
Station 243. 37°36.8´S, 52°23.6´W, 3815–3822 m
Station 245. 36°55.7´S, 53°01.4´W, 2707 m
Station 246. 37°15.1´S, 52°45´S, 3343 m
Station 256. 37°40.9´S, 52°19.3´W, 3906–3917 m
Station 259. 37°13.3´S, 52°45´W, 3305 m
Station 262. 36°05.2´S, 52°17.9´W, 2440 m
Station 264. 36°12.7´S, 52°42.7´W, 2041–2048 m