

TAXONOMIC REVIEW OF SELECTED INVERTEBRATE GROUPS COLLECTED DURING THE CAMPAIGNS OF THE PRINCE ALBERT I OF MONACO IN THE AZOREAN WATERS

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In the late 19th and early 20th centuries Prince Albert I of Monaco promoted 13 cruises that sampled the Azorean waters. During those cruises a total of 2624 nominal marine species were reported in the area. This work assembles the biological data provided by these expeditions to the Azores in a geo-referenced database. Faunal lists for seven invertebrate groups (Echiura, Sipuncula, Cephalopoda, Annelida, Brachiopoda, Chaetognatha and Echinodermata) are compiled. The checklist includes 331 nominal species, of which 310 are valid names: 1 echiurid; 11 sipunculids; 32 cephalopods; 130 annelids; 4 brachiopods; 14 chaetognaths; and 118 echinoderms. Eighteen percent are synonyms, 29% of the species were allocated to a different genus, 2.8% were misspellings and corrections due to gender or concordance rules, 0.8% were specific epithets allocated to sub-specific level or vice-versa, the rest were validated directly (without any modification in their nomenclature).

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INTRODUCTION

From 1885 to 1914 HRH Prince Albert I of Monaco (PAM) promoted 13 cruises which sampled the Azorean waters. During those cruises many biological samples were collected. About 50 types of collecting gear were used to prospect the marine life from coastal waters to the open ocean, as well as from the surface down to 5000 m depth. Eight hundred forty-three sampling locations were completed and 2624 nominal marine species reported across this region.

The results of these activities were published by an international bureau of more than 70 scientists in 110 volumes (*Résultats des Campagnes Scientifiques Accomplies sur son Yacht par Albert Ier Prince Souverain du Monaco*) between 1889 and 1950.

The scientific heritage from these works

comprises the most comprehensive inventories of benthic and pelagic fauna living in the Azorean waters. The investigations covered from bacteria and phytoplankton to marine mammals, including the most important groups of invertebrates. However, only a few of the high level taxonomic groups reported in the Prince's expeditions have been subsequently reviewed. The records of fish caught during those campaigns have been critically studied, synonymised and assembled in a checklist of the fishes from the Azores (SANTOS et al. 1997). Available information for some other groups have also been updated (e.g. gastropods, AVILA 2000; octopods, GONÇALVES 1991; barnacles, SOUTHWARD 1998, and YOUNG 1998, 2001). However, the majority of the recent inventories of Azorean marine fauna deal with specific collections and normally do not provide reviews of historical records. This is the case of

works such as CHAPMAN & DALES (1954) and BELLAN (1978), who listed 27 and 156 species of annelid worms from the coastal waters of the Azores, respectively; and CHAPMAN (1955), who collected three sipunculids in the Azores. Beyond that we only find other references in general field guides (i.e. SALDANHA 1995; WIRTZ 1995; WIRTZ & DEBELIUS 2003). A checklist of echinoderms (41 species) was compiled by PEREIRA (1997) but it covers only the littoral zone. In groups such as chaetognaths, echiurids and brachiopods the situation is even worse as there are no lists of the species inhabiting the region.

The compilation of species records of different origins and times poses several challenges. Revisiting of the samples kept in different museums is not always possible in the short-term and requires expensive and time-consuming work by experts. An alternative based on the use of literature, web resources and e-mail consultation of specialists was investigated. This paper resumes a tentative assessment of the work involved to try establishing the synonymy of historical records by using the database of the results of Prince Albert I of Monaco expeditions as an example. Works like this are expected to become more and more required as individual datasets need to be integrated into broader consolidated databases such as the ones informing assessments of long-term, large-scale patterns of the distribution of marine organisms. This has already been initiated in European waters through project Biomare and is currently under the scope of the MARBEF network (more info: <http://www.pml.ac.uk/biomare>; <http://www.marbef.org/>). A series of Azorean marine areas were selected as reference sites for the network. An *All Taxon Biodiversity Inventory* (ATBI) is expected for sites in which catalogues are already available for a large number of components of the biota.

In order to compile everything that is known about the biodiversity of these sites (e.g., the channel between the Azorean islands of Faial and Pico), some data-mining still needs to be done regarding the many species that have been recorded since they started to be visited by historical scientific expeditions. The major achievement so far consisted of building a database with all the species recorded in Azorean waters by the Prince Albert of Monaco

expeditions and published along the range of 110 volumes. The PAM database includes species occurrences, meta-information about the location, the sampling strategy and some basic characterization of the place where the collections were done.

The extensive collections performed by these campaigns in the waters surrounding the archipelago are still a valuable source of information for many taxonomic groups. However, the fact that this information was only in paper format has made it quite cryptic to modern scientific search engines and prevented an overall assessment of what is known for the region and for particular locations.

We present faunal lists for seven invertebrate groups: Echiura, Sipuncula, Cephalopoda, Annelida, Brachiopoda, Chaetognatha and Echinodermata. These particular groups were selected because they are poorly known in the area, especially their deep-sea forms.

In the absence of historical sample revisiting by taxonomy experts, interim synonymy is assumed as a temporary solution preventing overestimations of biodiversity.

MATERIAL AND METHODS

A database was created to assemble and store the information collected by the PAM cruises in the Azorean waters, by including biological data (species occurrences), meta-data on the stations (e.g. cruise, vessel, date, latitude, longitude, depth, gear operated) and bibliographic reference. The Azores region was defined as the area confined by a rectangle involving the 200 miles Economic Exclusive Zone (33° 46'N - 42° 57'N, 035° 45'W - 021° 5'W; Fig.1). The data used in this contribution were retrieved from the database. The sampling locations that produce the material treated in this checklist are plotted in Figure 1 and summarised in Annex 1.

Although more than 90% of the sampling locations were defined by their geographical position (RICHARD 1934), some are referred only by local names (e.g. Baía de Porto Pim, Faial; Santa Cruz, Flores). In those cases the probable latitude and longitude of the sample sites have been estimated from official nautical charts

[Instituto Hidrográfico: 113 (1987), 46401 (2002), 46403 (1999), 46405 (2001), 46406 (2001); 46407 (2000)] in a GIS environment.

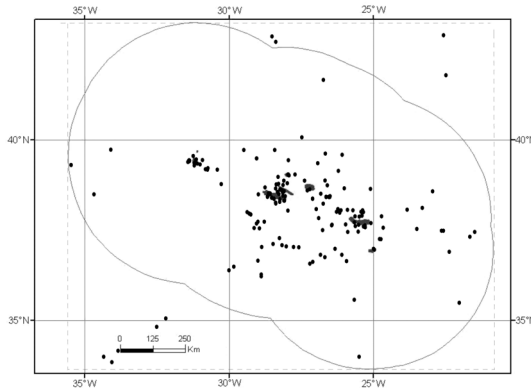


Fig 1. Area selected: rectangle involving the 200 miles Economic Exclusive Zone (ZEE). Sampling locations around the Azores region.

The species occurrences were compiled from the summary tables (by sampling location) presented at the end of the species accounts in the *Résultats des Campagnes Scientifiques Accomplies sur son Yacht par Albert Ier Prince Souverain du Monaco*. All the 110 volumes have been reviewed. However, the data compiled in this paper was originally treated in 15 volumes of the above mentioned publications (Sipuncula and Echiura [SLUITER 1900, 1912], Mollusca-Cephalopods [JOUBIN 1895, 1900, 1920, 1924], Annelida [FAUVEL 1914, 1916, 1932], Brachiopoda [FISCHER & OEHLERT 1892], Chaetognatha [GERMAIN & JOUBIN 1916] and Echinodermata [HÉROUARD 1902; KOEHLER 1898, 1909; PERRIER 1896]).

The checklist is organised by phylum, and then by infra-phylum taxa to species (e.g. superclass, class, subclass, superorder, order, suborder, family and genus). The nomenclature adopted follows the NEAT initiative (North East Atlantic Taxa; www.tmbi.gu.se/libdb/taxon/taxa.html; HANSSON 1997, 1998). To highlight the taxa level the following code was adopted: **PHYLUM**, **SUPERCLASS**, **Class**, Subclass, **SUPERORDER**, **Order**, **SUBORDER**, FAMILY, *Genus* & *species*.

Under each species entry there is the reference number(s) of the PAM sampling **station(s)** location(s) that produced the record(s). Those numbers linked to Annex 1, where sampling location data are available.

The following method was used to validate or synonymised a nominal name presented in the PAM faunal lists. If a species name is considered valid in most of the inventories used for reference (see above), then it was accepted as valid species for the area.

If a nominal species name listed in the database is not considered valid at present, a bibliographic and a web based search was made to find the valid name; then the scientific names used in PAM were relegated to synonyms. Synonyms were found in CUTLER (1994) and HANSSON (1997) for Sipuncula; CLARKE (1996), GONÇALVES (1991) and www.cephbase.dal.ca for Cephalopoda; COSTELLO et al. (2001), HANSSON (1998), BELLAN (2001) and KATO & PLEIJEL (2002) for Annelida; LOGAN (1998) and HOWSON (2001) for Brachiopoda; VAN DER LAND & KAPP (2001) and HANSSON (1997) for Chaetognatha; and HANSSON (1998, 2001), MÜLLER (1999) and PEREIRA (1997) for Echinodermata. Those contributions which are part of the European Register of Marine Species (ERMS, COSTELLO et al. 2001) were also searched on the world wide web. Other web faunal inventories and resources were also consulted such as: *La Fauna Ibérica* for Annelida and Brachiopoda (ALVAREZ 2004); *The Echinoid Directory* for Echinodermata (SMITH 2003); and the website of the Muséum National d'Histoire Naturelle, Paris for Echinodermata (AMEZIANE 1999).

Synonyms and misspelling of nominal names are preceded by = and are compiled under each species entry.

Biological material that was identified to genus or species in PAM reports, which could not be found in the taxonomic resources used, are listed in a section at the end of each **group** as “uncertain species”.

The following checklist includes 310 current valid names: 1 echiurid; 11 sipunculids; 32 cephalopods; 130 annelids; 4 brachiopods; 14 chaetognaths; and 118 echinoderms.

CHECKLIST

ECHIURA

Echiuroidea

Bonelliida

BONELLIIDAE

Bonellia viridis Rolando, 1821

Station: 866

SIPUNCULA

Phascolosomatidea

Aspidosiphonida

ASPIDOSIPHONIDAE

Aspidosiphon muelleri Diesing, 1851

Stations: 196, 198, 216, 594, 882, 2214

Phascolosomatida

PHASCOLOSOMATIDAE

Apionsoma (Edmonsus) *pectinatum*
(Keferstein, 1867) = *Physcosoma*
pectinatum Keferstein

Station: 882

Apionsoma reconditum (Sluiter, 1900) =
Phascolosoma reconditum Sluiter, 1900

Stations: 198, 602

Phascolosoma granulatum (Leuckart, 1828) =
Physcosoma granulatum Leuckart

Stations: 216, 236

Sipunculidea

Sipunculida

SIPUNCULIDAE

Sipunculus norvegicus Danielssen, 1868

Station: 553

= *Sipunculus nitidus* Sluiter, 1900

Station: 650

Golfingida

GOLFINGIIDAE

Golfingia vulgaris vulgaris (Blainville, 1827)
= *Phascolosoma vulgare* Blainville, 1827

Station: 198

Golfingia (*Golfingiella*) *innoxia* Sluiter (in
Stephen & Edmonds, 1972), 1912 =
Phascolosoma innoxium Sluiter, 1900

Station: 2210

Nephasoma diaphanes diaphanes (Gerould,
1913) = *Phascolosoma minutum* Théel,
1911

Station: 663

Thysanocardia catharinae (Grube, 1868) =
Phascolosoma catharinae Grube, 1868

Station: 226

PHASCOLIONIDAE

Phascolion strombus strombus (Montagu,
1804) = *Phascolion strombi* Montagu, 1804

Station: 858

Phascolion tuberculorum Théel, 1875 =
Phascolion hirondellei Sluiter, 1900

Stations: 112, 184, 203, 211, 233, 244, 575,
624, 683, 684, 703, 719, 743, 832, 1311,
1334, 2214

MOLLUSCA

Cephalopoda

Coleoidea

Spirulida

SPIRULIDAE

Spirula spirula (Linnaeus, 1758) = *Spirula*
peroni Lamarck, 1822

Station: 603

Sepiolida

SEPIOLIDAE

Rossia macrosoma (Chiaie, 1830) = *Rossia*
sp.

Station: 211

Heteroteuthis dispar (Rüppell, 1844)

Stations: 554, 3256

Teuthida

ANCISTROCHEIRIDAE

Ancistrocheirus lesueuri (Orbigny, 1842)

Station: 588

ARCHITEUTHIDAE

Architeuthis sp. Steenstrup, 1857 =
Dubiotheuthis physeteris (Joubin, 1900)

Stations: 244, 588

- BATHYTEUTHIDAE
Bathyteuthis abyssicola Hoyle, 1885 =
Benthoteuthis megalops Verrill, 1885
Station: 3131
- BRACHIOTEUTHIDAE
Brachioteuthis beani Verrill, 1881
Station: 3147
- CHIROTEUTHIDAE
Grimalditeuthis bonplandi (Verany, 1839) =
Grimalditeuthis richardi Joubin, 1898
Station: 750
- CRANCHIIDAE
Cranchia scabra Leach, 1817
Station: 2153
- Liocranchia reinhardti* (Steenstrup, 1856) =
Fusocranchia alpha Joubin, 1920
Stations: 1856, 1872
- Galiteuthis armata* Joubin, 1898
Station: 3147
- Teuthowenia megalops* (Prosch, 1847)
Stations: 1849, 1874, 2187
- ENOPLOTEUTHIDAE
Abraliopsis lineata (Goodrich, 1896) =
Abralia morisii (Verany, 1839)
Station: 3131
- HISTIOTEUTHIDAE
Histioteuthis bonnellii (Férussac, 1834) =
Histioteuthis bonelliana (Férussac, 1834) =
Histioteuthis ruppelli Vérany, 1835
Stations: 588, 3279
- Histioteuthis meleagroteuthis* (Chun, 1910) =
Meleagroteuthis hoylei (Goodrich, 1896)
Station: 3285
- Histioteuthis reversa* (Verrill, 1880) =
Calliteuthis meneghinii Pfeffer, 1912
Station: 3279
- LEPIDOTEUTHIDAE
Lepidoteuthis grimaldii Joubin, 1895
Stations: 588, 849
- MASTIGOTEUTHIDAE
Mastigoteuthis grimaldii (Joubin, 1895) =
Chiroteuthis grimaldii Joubin, 1895
Stations: 220, 3131, 3526
- OCTOPOTEUTHIDAE
Octopoteuthis sicula Rüppell, 1844 =
Octopodoteuthis sicula Krohn, 1845
Station: 2172
- Taningia danae* Joubin, 1931 = *Cuciooteuthis unguiculata* Joubin, 1898
Station: 588
- OMMASTREPHIDAE
Todarodes sagittatus (Lamarck, 1798) =
Ommastrephes sagittatus Pfeffer, 1908
Station: 3279
- Ommastrephes bartrami* (Lesueur, 1821) =
Stenoteuthis bratrani Lesueur, 1821
Station: 2184
- ONYCHOTEUTHIDAE
Onychoteuthis banksii (Leach, 1817)
Stations: 576, 1874
- PYROTEUTHIDAE
Pyroteuthis margaritifera (Rüppell, 1844)
Stations: 3147, 3150, 3279
- Octopoda**
- OPISTHOTEUTHIDAE
Opistoteuthis grimaldii (Joubin, 1903) =
Cirroteuthis grimaldii Joubin, 1903
Station: 1339
- BOLITAENIDAE
Japetella diaphana Hoyle, 1885 = *Eledonella diaphana* Verrill, 1884 = *Bolitaena diaphana* (Verrill, 1884)
Station: 2168, 3131
- OCTOPODIDAE
Octopus vulgaris Cuvier, 1797 = *Octopus granulatus* Lamarck, 1799
Station: 882
- Octopus macropus* Risso, 1826
Station: 225

Pteroctopus tetracirrhus (Delle Chiaie, 1830)
= *Scaergus tetracirrhus* Tiberi, 1830
Station: 866

Benthoctopus levis (Hoyle, 1885) = *Octopus levis* Houyle, 1885
Station: 719

VITRELEDONELLIDAE
Vitreledonella richardi Joubin, 1918 =
Vitreledonella alberti Joubin, 1924
Station: 3131

Vampyromorphida
VAMPYROTEUTHIDAE
Vampyroteuthis infernalis Chun, 1903 =
Melanoteuthis lucens
Station: 2168

Uncertain species (cephalopods)

Abraliopsis sp.
Stations: 1834, 3526

Architeutis sp.
Stations: 244, 588

Mastigoteuthis sp.
Stations: 1334, 1408, 2148

ANNELIDA

POLYCHAETA

Palpata

Aciculata

Phyllodoce

PHYLLODOCIDAE

Nereiphylla rubiginosa (Saint-Joseph, 1888) =
Phyllodoce rubiginosa Saint-Joseph
Station: 226

Notophyllum foliosum (Sars, 1835)
Station: 1373

Phyllodoce madeirensis Langerhans, 1880
Stations: 234, 584, 594, 866, 2214

Eulalia viridis (Linnaeus, 1767)
Station: 216

ALCIOPIDAE

Vanadis formosa Claparède, 1870

Station: 2194

Rhynchonereella angelini (Kinberg, 1866) =
Callizona angelini Kinberg
Stations: 1851, 1874, 2153, 2185, 2187, 2194,
2200, 2212, 3526

Rhynchonereella petersii (Langerhans, 1880)
= *Callizona setosa* Apstein, 1900
Stations: 1872, 3132

TOMOPTERIDAE

Tomopteris elegans Chun, 1888
Stations: 1849, 1851, 2187, 2194, 2212

Tomopteris (Johnstonella) apsteini Rosa,
1908
Station: 1844

Tomopteris (Tomopteris) ligulata Rosa, 1908
Stations: 1849, 2168, 2194

Tomopteris (Tomopteris) nissenii Rosa, 1908
Station: 1849

Tomopteris (Tomopteris) planktonis Apstein,
1900
Stations: 2185, 2187, 2212

Tomopteris (Tomopteris) septentrionalis
Quatrefages, 1866
Station: 1805

LOPADORHYNCHIDAE

Lopadorhynchus appendiculatus Southern,
1909
Station: 2159

Lopadorhynchus uncinatus Fauvel, 1915
Station: 1856

Pelagobia longicirrata Greeff, 1879
Stations: 17, 1849, 2185, 2244

Pelagobia serrata Southern, 1909
Station: 2212

Pedinosoma curtum Reibich, 1895
Station: 1839

IOSPILIDAE

Phalacrophorus pictus pictus Greeff, 1879 =
Phalacrophorus pictus Greeff
Station: 1805

Phalacrophorus uniformis Reibich, 1875
Station: 2218

TYPHLOSCOLECIDAE

Typhloscolex phylloides Reibich, 1895 =
Typhloscolex phyllodes Reibich, 1895
Stations: 2212, 2244

Sagitella kowalewskii Wagner, 1872
Stations: 1805, 2168, 2187, 2194, 2200, 2212

Travisiopsis lanceolata Southern, 1910
Stations: 1851, 1874, 2168, 2187, 2200, 3526,
3608

Travisiopsis levinseni Southern, 1910
Stations: 2185, 2244

Travisiopsis lobifera Levinsen, 1885
Station: 2244

GLYCERIDAE

Glycera lapidum Quatrefages, 1866
Stations: 112, 832, 874

Glycera tessellata Grube, 1863
Stations: 226, 234, 616, 702, 866, 1344, 1349,
1373, 2210, 2214

Glycerella magellanica (McIntosh, 1885)
Stations: 229, 234, 584, 2211

HESIONIDAE

Leocrates atlanticus (McIntosh, 1885)
Station: 198, 578, 587, 597, 616, 837, 1344,
2214

Dalhousiella carpenteri McIntosh, 1901 =
Dalhousiella carpenteri McIntosh, 1901
Station: 838

Nereimyra punctata (Müller, 1776) = *Castalia*
puncatata Müller, 1776
Stations: 184, 213, 832, 1311, 2214

SYLLIDAE

Eusyllis monilicornis Malmgren, 1867
Station: 226

Myrianida brachycephala (Marenzeller, 1874)
= *Autolytus brachycephala* Marenzeller,
1874
Station: 227

Opisthosyllis brunnea Langerhans, 1879
Station: 216

Pionosyllis weismanni Langerhans, 1879 =
Pionosyllis weissmanni Langerhans, 1879
Station: 226

Pseudosyllis brevipennis (Grube, 1863) =
Syllis bervipennis Grube, 1863
Station: 226

Typosyllis armillaris (Müller, 1776) = *Syllis*
alternosetosa Saint-Joseph, 1887
Station: 226

Syllis gracilis Grube, 1840
Station: 226

Syllis cornuta Rathke, 1843
Stations: 184, 238, 244, 743, 2214

Syllis krohnii Ehlers, 1864
Station: 191

Syllis prolifera Krohn, 1852
Station: 1412

Syllis variegata Grube, 1860
Station: 226

Syllis vittata (Grube, 1840)
Stations: 195, 202, 622

Trypanosyllis coeliaca Claparède, 1868
Station: 226

Trypanosyllis gigantea McIntosh, 1885
Station: 584

NEREIDIDAE

Neanthes kerguelensis (McIntosh, 1885) =
Nereis kerguelensis McIntosh, 1885
Stations: 226, 234, 597, 749

Neanthes irrorata (Malmgren, 1867) = *Nereis*
irrorata Malmgren, 1867
Stations: 193, 842

Nereis pelagica Linnaeus, 1758
Station: 226

Nereis rava Ehlers, 1868
Stations: 226, 234, 866, 1373, 3293

Perinereis cultrifera (Grube, 1840)
Station: 216

Platynereis coccinea (Delle Chiaje, 1841)
Station: 216

Platynereis dumerilli (Audouin & H. Milne-
Edwards, 1834)
Stations: 226, 1311, 1373

NEPHTYIDAE

Nephtys hystricis McIntosh, 1900 = *Nephtys*
hystricis McIntosh, 1900
Station: 673

APHRODITIDAE

Aphrodita aculeata Linnaeus, 1758 =
Aphrodite aculeata Linnaeus, 1758
Stations: 3150, 576, 866

Pontogenia sericoma Ehlers, 1867
Station: 594

POLYNOIDAE

Polynoe antillicola (Augener, 1906)
Station: 738

Acanthicolepis asperrima (Sars, 1861)
Stations: 616, 618, 702, 838, 869, 1349

Adyte assimilis (McIntosh, 1876) =
Scalisetosus assimilis McIntosh, 1876
Station: 2214

Malmgrenia andreapolis McIntosh, 1874 =
Harmothoe lunulata Delle Chiaje, 1841
Stations: 193, 196, 218

Malmgrenia glabra (Malmgren, 1865) =
Nereis longisetis McIntosh, 1885
Station: 683

Subadyte pellucida (Ehlers, 1864) =
Scalisetosus pellucidus Ehlers, 1864
Station: 614

Harmothoe echinopustulata Fauvel, 1913
Station: 889

Harmothoe imbricata (Linnaeus, 1767)
Station: 594

Harmothoe impar (Johnston, 1839)
Stations: 226, 578, 584, 702, 866, 2210, 2214

Harmothoe johnstoni (McIntosh, 1876)
Stations: 213, 837, 874, 1412, 1849, 1851

Harmothoe spinifera (Ehlers, 1864) = *Scione*
spinifera Ehlers, 1864
Station: 1344, 1349

Lagisca talismani (Roule, 1898)
Stations: 105, 244, 584, 587, 597, 837, 838,
874, 1344

Lepidasthenia maculata Potts, 1910
Station: 616, 873

Lepidonotus clava (Montagu, 1808)
Station: 225

Macellicephala incerta Fauvel, 1914
Station: 2185

Macellicephala mirabilis (McIntosh, 1885)
Station: 1344

Nectochaeta grimaldii Marenzeller, 1892
Station: 2194

Robertianella synophthalma McIntosh, 1885
Stations: 198, 1344, 2214

PHOLOIDAE

Pholoe synophthalmica Claparède, 1868
Station: 838

Pholoides dorsipapillata (Marenzeller, 1893)
= *Pholoe dorsipapillata* Marenzeller, 1893
Stations: 226, 1349

SIGALIONIDAE

Neoleanira tetragona (Örsted, 1845) =
Leanira tetragona Örsted, 1845
Station: 581

Eunicida

AMPHINOMINA

AMPHINOMIDAE

Amphinome rostrata (Pallas, 1776) =
Amphinome pallasii Quatrefages, 1865
Stations: 699, 2215

Hermodice carunculata (Pallas, 1766)
Stations: 103, 225, 238, 243, 1355

Hipponoe gaudichaudi Audouin & Milne-
Edwards, 1830
Stations: 181, 182, 536, 545, 699

EUPHROSINIDAE

Euphrosine foliosa Audouin & Milne-
Edwards, 1834 = *Euphrosyne foliosa*
Audouin & Milne-Edwards, 1834
Station: 594

Palmyreuphrosyne paradoxa Fauvel, 1914
Station: 2210

EUNICINA

ONUPHIDAE

Rhaphobrachium agassizii Ehlers, 1887
Stations: 203, 553

Paradiopatra quadricuspis (Sars, 1872) =
Onuphis quadricuspis Sars, 1872
Stations: 553, 703

Hyalinoecia tubicola (Müller, 1776)
Stations: 226, 889

Nothria conchylega (Sars, 1835) = *Onuphis*

conchylega Sars, 1835

Stations: 198, 234, 527, 536, 553, 575, 602,
614, 616, 618, 673, 719, 738, 863, 866,
1334, 1349

EUNICIDAE

Eunice norvegica (Linnaeus, 1767) = *Eunice*
floridana (Pourtalès, 1867)
Stations: 227, 584, 837, 838, 1349

Eunice oerstedii Stimpson, 1854
Stations: 584, 587, 838, 2210

Eunice pennata (Müller, 1776)

Stations: 112, 198, 213, 226, 227, 616, 663,
673, 683, 684, 698, 702, 719, 738, 743, 866,
873, 889, 1331, 1334, 1344, 1349, 3293

Eunice vittata (Delle Chiaje, 1829)
Stations: 112, 244, 553, 702, 1349

Lysidice ninetta Audouin & Milne-Edwards,
1833
Stations: 198, 226, 234, 738, 882

LUMBRINERIDAE

Lumbrineriopsis paradoxa (Saint-Joseph,
1888) = *Lumbriconereis paradoxa* Saint-
Joseph, 1888
Station: 226

Lumbrineris coccinea (Renieri, 1804) =
Lumbriconereis coccinea Renieri, 1804
Station: 236

Lumbrineris funchalensis (Kinberg, 1865) =
Lumbriconereis funchalensis Kinberg, 1865
Station: 594

Scoletoma fragilis (Müller, 1776) =
Lumbriconereis fragilis Müller, 1776
Station: 553

OENONIDAE

Arabella iricolor (Montagu, 1804) = *Maclovia*
iricolor Montagu, 1804
Station: 594

Canalipalpata

Spionida

SPIONIDAE

Prionospio steenstrupi Malmgren, 1867

Stations: 1834, 1872

POECILOCHAETIDAE

Poecilochaetus serpens Allen, 1904

Stations: 1834, 1860

CHAETOPTERIDAE

Spiochaetopterus typicus Sars, 1856

Stations: 226, 882

Magelonidae

Magelona mirabilis (Johnston, 1865) =

Magelona papillicornis Müller, 1858

Stations: 244, 553

Terebellida

PECTINARIIDAE

Petta pusilla Malmgren, 1866

Station: 198

TEREBELLIDAE

Amphitrite alcicornis Fauvel, 1909

Stations: 112, 616, 873, 874, 1349

Amphitrite cirrata Müller, 1771

Stations: 112, 190, 612, 1344

Thelepus cincinnatus (Fabricius, 1780)

Stations: 226, 587

Sabellida

SABELLARIIDAE

Phalacrostemma cidariophilum Marenzeller, 1895

Stations: 232, 703, 838, 1311, 3144

SABELLIDAE

Amphiglena mediterranea (Leydig, 1851)

Station: 226

Jasmineira candela (Grube, 1863)

Station: 837

Megalomma vesiculosum (Montagu, 1815) =

Branchiomma vesiculosum Montagu, 1815

Station: 226

Potamis spathiferus Ehlers, 1887

Stations: 702, 874, 2210

SERPULIDAE

Hyalopomatus marenzelleri (Langerhans, 1884) = *Hyalopomatopsis marenzelleri* Langerhans, 1884

Stations: 184, 584, 703, 1311, 1349, 3144

Filograna implexa Berkeley, in M. Sars, 1851

Station: 226

Serpula vermicularis Linnaeus, 1767

Stations: 703, 882

Serpula concharum Langerhans, 1880

Station: 226

Spirodiscus grimaldii Fauvel, 1909

Stations: 698, 1334

Hydroides norvegica Gunnerus, 1768

Stations: 226, 584

Protis arctica (Hansen, 1878)

Station: 213

Filogranula calyculata (Costa, 1861) =

Omphalopoma aculeata Fauvel, 1909

Station: 866

Placostegus tridentatus (Fabricius, 1779)

Stations: 105, 234, 2214

Pomatostegus polytrema (Philippi, 1844)

Stations: 112, 226, 703, 861, 882, 1349

Ditrupa arietina (Müller, 1776)

Stations: 112, 743, 1334, 1349

Protula alberti Fauvel, 1909

Stations: 198, 587, 866, 2214

Protula tubularia (Montagu, 1803)

Station: 234

Metavermilia multicristata (Philippi, 1844) =

Vermiliopsis multicristata Philippi, 1844

Station: 226

Vermiliopsis striaticeps (Grube, 1862) =
Vermiliopsis langerhansi Fauvel, 1903
Station: 527

Vermiliopsis infundibulum (Linnaeus, 1788)
Station: 600

Circeis spirillum (Linnaeus, 1758) = *Spirorbis*
spirillum Linnaeus, 1758
Station: 2211

SPIROBIDAE

Dexiospira corrugata (Montagu, 1803) =
Spirorbis corrugatus Montagu, 1803
Station: 236

Scolecida

CAPITELLIDAE

Notomastus latericeus Sars, 1850
Station: 553

MALDANIDAE

Maldane sarsi Malmgren, 1865
Station: 2199

SCALIBREGMATIDAE

Asclerocheilus intermedius (Saint-Joseph,
1894) = *Lipobranchius intermedius* Saint-
Joseph, 1894
Station: 553

Uncertain species (Annelida)

Harmothoe benthophila bimucronata Fauvel,
1914 = *Harmothoe benthophila* Ehlers
Station: 1856, 2244

Note: the validity of the species needs further
evaluation.

Tharyx sp.
Station: 232

Onuphis sp.
Note: Probably *Nothria conchylega* (Fauvel,
1914).
Station: 527

Nereis sp.
Station: 3150

Spirorbis cornuarietis Philippi
Station: 236

Note: The species could not be found in recent
references

Chone acustica Claparède, 1870
Station: 236

Note: The validity of the specie needs further
clarification.

BRACHIOPODA

Rhynchonellata

Terebratulida

TEREBRATULIDAE

Stenosarina sphenoidea (Jeffreys, 1878) =
Terebratula sphenoidea Philippi, 1844
Station: 233, 242

Note: the status of the species needs further
investigation; LOGAN (1998) described
Stenosarina davidsoni from the “species
misidentified by Jeffreys (1878) as
Terebratula vitrea var. *sphenoidea* [non
Philippi, 1844]”.

DYSCOLIIDAE

Dyscolia wyvillei (Davidson, 1878)
Stations: 203, 213, 227

PLATIDIIDAE

Platidia davidsoni (Deslongchamp, 1885)
Station: 234

DALLINIDAE

Dallina septigeria (Lovén, 1846) =
Magellania septigeria Lovén, 1846
Station: 242

CHAETOGNATHA

Sagittoidea

Phragmophora

SPAPELLIDAE

Spadella cephaloptera (Busch, 1851)
Station: 185

EUKROHNIIDAE

Eukrohnia hamata (Mobius, 1875)
Stations: 1834, 1844, 1849, 1851, 1856, 1876,
2153, 2168, 2185, 2187, 2194, 2200, 2244

Aphragmophora

PTEROSAGITTIDAE

Pterosagitta draco (Krohn, 1853)
Stations: 1851, 2149

SAGITTIDAE

Sagitta bipunctata Quoy & Gaimard, 1828
Stations: 15, 17, 21, 208, 1844, 1847, 1849, 1851, 1856, 1872, 2149, 2150, 2151, 2153, 2159, 2162, 2168, 2170, 2185, 2187, 2191, 2194, 2198, 2200, 2212, 2241, 2244, 2245, 2249, 2252, 2263, 2267

Sagitta elegans (Verrill, 1873)
Stations: 1322, 2159, 2168, 2185, 2194, 2200, 2244

Sagitta hexaptera (d'Orbigny, 1836)
Stations: 215, 246, 1333, 1844, 1849, 1851, 1856, 1874, 2149, 2153, 2159, 2162, 2168, 2185, 2187, 2194, 2200, 2212, 2244, 2264
= *Sagitta hexaptera magna* d'Orbigny, 1836
Stations: 2149, 2185, 2187, 2194, 2200, 2244

Sagitta enflata (Grassi, 1881) = *Sagitta inflata* Grassi, 1881
Stations: 21, 246, 2149

Sagitta lyra (Krohn, 1853)
Stations: 16, 115, 1358, 1844, 1849, 1851, 1856, 1874, 2149, 2153, 2159, 2168, 2185, 2187, 2194, 2200, 2212, 2244, 2264

Sagitta serratodentata Krohn, 1853 = *Sagitta serratodenta* Krohn, 1853
Stations: 16, 1844, 1851, 1860, 2168, 2185, 2187, 2191, 2194, 2195, 2200, 2212, 2242, 2244, 2266

Sagitta macrocephala (Fowler, 1904)
Stations: 1849, 1851, 1856, 1874, 2159, 2168, 2185, 2187, 2200, 2212
= *Spadella macrocephala* Fowler, 1904
Station: 2244

Sagitta minima (Grassi, 1881)
Station: 2187

Sagitta planctonis (Steinhaus, 1896)
Stations: 740, 2153, 2185, 2187, 2194, 2200, 2212

Sagitta tenuis Conant, 1896
Station: 2172

Flabellodontina

KROHNITTIDAE
Krohnitta subtilis (Grassi, 1881)
Stations: 1872, 2187, 2200, 2244

Uncertain species (Chaetognatha)

Sagitta sp.
Stations: 18, 115, 116, 125, 1851, 1860, 2143, 2151, 2161, 2171, 2196, 2204, 2266

ECHINODERMATA

Crinoidea

Bourgueticrinida

BOURGUETICRINIDAE

Democrinus rawsonii (Pourtalès, 1874) =
Rhizocrinus rawsoni Pourtalès, 1874
Stations: 683, 738

BATHYCRINIDAE

Comatulida

PENTAMETROCRINIDAE

Pentametrocrinus atlanticus (Perrier, 1883) =
Eudiocrinus atlanticus Perrier, 1883
Station: 578

Asteroidea

Paxillosida

ASTROPECTINIDAE

Dytaster grandis grandis (Verrill, 1884) =
Dytaster agassizi Perrier, 1894
Station: 527

Dytaster intermedius Perrier, 1891
Station: 248

Persephonaster patagiatus (Sladen, 1889) =
Psilasteropsis patagiatus Sladen, 1889
Stations: 575, 684, 719, 858, 1311, 1331, 1334, 1344, 1349, 553

Persephonaster sphenoplax (Bell, 1892) =
Psilasteropsis humilis Koehler, 1907
Stations: 582, 584
= *Astropecten sphenoplax* Bell, 1892
Station: 1311

Plutonaster agassizi notatus Sladen, 1889 =
Plutonaster granulosus Perrier, 1891

Stations: 203, 213
= *Plutonaster inermis* Perrier, 1885
Station: 213
= *Plutonaster notatus* Sladen, 1889
Stations: 244, 536, 624, 698, 703, 719, 743,
858, 863, 1331, 1334
= *Plutonaster rigidus* Sladen, 1889
Stations: 575, 602, 654, 683, 684, 832, 858,
1311, 1331, 1334, 1349

Psilaster andromeda andromeda (J. Müller &
Troschel, 1842) = *Psilaster andromeda* J.
Müller & Troschel, 1842
Stations: 211, 213, 233

Luidiidae
Luidia sarsii sarsii Düben & Koren, in Düben,
1845 = *Luidia sarsi* Düben & Koren, 1845
Station: 899

Ctenodiscidae
Ctenodiscus crispatus (Retzius, 1805) =
Asterias polaris Sabine, 1824
Station: 104

Porcellanasteridae
Styracaster armatus Sladen, 1883 =
Styracaster spinosus Perrier, 1885
Stations: 527, 745

Styracaster elongatus Koehler, 1907
Station: 527

Notomyotida

BENTHOPECTINIDAE
Cheiraster sepius (Verrill, 1885) = *Pontaster*
venustus Sladen, 1889
Stations: 112, 203, 213, 233, 244, 575, 663,
683, 684, 703, 719, 724, 743, 833, 858, 874,
1311, 1331, 1348

VALVATIDA

GONIASTERIDAE
Ceramaster granularis granularis (Müller,
1776) = *Pentagonaster granularis* Müller,
1776
Station: 213

Ceramaster grenadensis grenadensis
(Perrier, 1881) = *Pentagonaster gosselini*
Perrier, 1884
Stations: 203, 213, 244, 575, 684, 703, 1344

Paragonaster subtilis (Perrier, 1881)
Stations: 527, 652

Plinthaster dentatus (Perrier, 1884) =
Pentagonaster perrieri Sladen, 1889
Stations: 663, 683, 684, 703, 1311, 1344

Pseudarchaster gracilis gracilis (Sladen,
1889) = *Astrogonium necator* Perrier, 1894
Station: 1334
= *Astrogonium marginatum* Koehler, 1909
Station: 1331
= *Astrogonium aequabile* Koehler, 1907
Station: 1334
= *Astrogonium eminens* Koehler, 1907
Stations: 698, 863, 1344

Pseudarchaster parelii (Düben & Koren,
1846) = *Astrogonium fallax* Perrier, 1885
Stations: 553, 575
= *Astrogonium annectens* Perrier, 1894
Stations: 213, 683, 743, 1331, 1334

OPHIDIASTERIDAE

Hazelia attenuata Gray, 1840 = *Hacelia*
attenuata Gray, 1840
Station: 882

Ophidiaster ophidianus (Lamarck, 1816)
Station: 550

Spinulosida

ECHINASTERIDAE

Henricia cylindrella (Sladen, 1883) =
Cribrella abyssalis Perrier, 1894
Stations: 683, 858, 1331

Henricia oculata (Pennant, 1777) = *Cribrella*
oculata (Linck) Forbes, 1841
Stations: 203, 213, 244

Velatida

PTERASTERIDAE

Hymenaster giboryi Perrier, 1894
Stations: 527, 652, 738

Hymenaster pellucidus Thompson, 1873
Station: 248

Hymenaster roseus Koehler, 1907
Stations: 624, 698, 1334

Pteraster personatus Sladen, 1891 = *Pteraster reductus* Koehler, 1907
Stations: 184, 248, 698, 738, 863

Brisingida

BRISINGIDAE

Brisingella coronata (Sars, 1871) = *Brisinga coronata* Sars, 1871
Stations: 248, 575, 578, 624, 673, 719, 858, 861

FREYELLIDAE

Freyastera sexradiata (Perrier, 1885) = *Freyella sexradiata* Perrier, 1885
Station: 527

Forcipulatida

ASTERIIDAE

Marthasterias glacialis (Linnaeus, 1758) = *Stolasterias madeirensis* (Stimpson, 1862)
Station: 216
= *Asterias glacialis* Linnaeus, 1758
Station: 550

PEDICELLASTERIDAE

Hydrasterias sexradiata (Perrier, in Milne-Edwards, 1882) = *Pedicellaster sexradiatus* Perrier in Milne Edwards, 1882
Stations: 248, 536, 624, 663, 673, 698, 724, 738, 745, 847, 861, 863, 866, 1318, 1331, 1334, 1407

NEOMORPHASTERIDAE

Neomorphaster margaritaceus (Perrier, 1882) = *Calycaster monoecus* Perrier, 1891
Station: 203
= *Neomorphaster talismani* (Perrier, 1885)
Stations: 213, 244, 575, 624, 663, 683, 684, 698, 702, 719, 724, 738, 858, 1331, 1334

Ophiuroidea

Phrynophiurida

OPHIOMYXINA

OPHIOMYXIDAE

Astrogeron supinus (Lyman, 1883)
Station: 1349

Ophiomyxia serpentaria Lyman, 1883 = *Ophiodera serpentina* Lyman, 1883
Stations: 866, 1344

EURYALINA

ASTEROSCHEMATIDAE

Asteroschema inornatum Koehler, 1906 = *Astrochema inornatum* Koehler, 1906
Station: 2248

Ophiurida

GNATHOPHIURINA

OPHIOTRICHIDAE

Ophiothrix fragilis (Abildgard, in Müller 1789)
Stations: 226, 882

Ophiothrix luetkeni Wyville Thomson, 1873 = *Ophiothrix lutkeni* Wyville Thomson, 1873
Station: 594

OPHIACTIDAE

Histampica duplicata (Lyman, 1875) = *Ophiactis duplicata* (Lyman, 1875)
Stations: 536, 684, 719, 832, 833, 1334, 1344, 1349
= *Amphiura duplicata* Lyman, 1875
Station: 184, 233

Ophiactis abyssicola (Sars, 1861)

Stations: 233, 602
= *Ophiactis corallicola* Koehler, 1896
Stations: 112, 203, 213, 233, 242, 552, 553, 575, 584, 602, 616, 698, 719, 832, 837, 838, 861, 1311, 1344, 1349, 1412, 1420, 2183
= *Ophiactis echinata* Koehler, 1898
Station: 198

Ophiactis profundus Lütken & Mortensen, 1829
Station: 2214

AMPHIURIDAE

Amphipholis squamata (Delle Chiaje, 1829) = *Amphiura squamata* Delle Chiaje, 1829
Station: 226
= *Amphiura tenuispina* Ljungman, 1872
Stations: 198, 2210

Amphiura grandisquama Lyman, 1869
Stations: 838, 866
= *Amphiura longispina* Koehler, 1???
Station: 242

Amphiura otteri Ljungman, 1872 = *Amphiura grandis* Koehler, 1896

Station: 1334

Amphiura richardi Koehler, 1906

Stations: 578, 602, 743

LAEMOPHIURINA

OPHIACANTHIDAE

Ophiacantha abyssicola Sars, 1871

Station: 837

Ophiacantha aristata Koehler, 1896

Stations: 233, 874, 1344, 1349

Ophiacantha bidentata (Retzius, 1805)

Station: 112

Ophiacantha composita Koehler, 1907

Stations: 738, 1318

Ophiacantha crassidens Verrill, 1885

Stations: 703, 1344

Ophiacantha cuspidata Lyman, 1882

Station: 1420

Ophiacantha enopla veterna (Koehler, 1907)

= *Ophiacantha veterna* Koehler, 1907

Stations: 1412, 1420

Ophiacantha lineata Koehler, 1909

Station: 578

Ophiacantha valenciennesi Lyman, 1879

Station: 584

Ophiochondrus armatus (Koehler, 1909) =

Ophioplus armatus Koehler, 1909

Station: 1349

Ophiomitrella clavigera (Ljungman, 1865) =

Ophiomitrella cordifera Koehler, 1909

Station: 618

Ophiotoma barletti (Lyman, 1883) =

Ophiopora bartletti Lyman, 1883

Station: 745

Ophiotrema alberti Koehler, 1896

Station: 527

CHILOPHIURINA

OPHIURIDAE

Amphiophiura bullata convexa (Lyman, 1878)

= *Ophioglypha convexa* Lyman, 1878

Station: 652

Aspidophiura minuta (Lyman, 1878) =

Ophioglypha minuta Lyman, 1878

Station: 527

Homophiura tessellata (Verrill, 1894) =

Ophioglypha tessellata Verrill, 1894

Stations: 248, 738

Ophiocten hastatum Lyman, 1878

Stations: 184, 738, 863, 1334

Ophiophycis mirabilis Koehler, 1901

Station: 578

Ophiosphalma planum (Lyman, 1878) =

Ophiomusium planum Lyman, 1878

Stations: 527, 652, 749

Ophiura carnea (Lutken, 1858) =

Ophioglypha carnea Lutken, 1858

Station: 866

Ophiura ljungmani (Lyman, 1878) =

Ophioglypha thouleti Koehler, 1896

Stations: 663, 719, 723, 858

= *Ophioglypha ljungmanni* Lyman, 1878

Station: 1334

Ophiura mundata Koehler, 1906 =

Ophioglypha mundata Koehler, 1906

Station: 738

Ophiomusium lymani Wyville Thomson, 1873

Stations: 184, 213, 623, 624, 663, 673, 698, 719, 724, 738, 847, 858, 1331, 1334

OPHIOLUCIDAE

Ophiernus vallincola Lyman, 1878 =

Ophiernus abyssalis Koehler, 1896

Stations: 663, 738, 1334

OPHIONEREIDIDAE

Ophionereis reticulata (Say, 1825)

Station: 882

OPHIODERMATIDAE

Ophioconis forbesi (Heller, 1863)

Stations: 226, 698, 882

Echinoidea

Perischoechinoidea

Cidaroida

CIDARIDAE

Cidaris cidaris (Linnaeus, 1758) =
Dorocidaris papillata (Leske, 1778)

Stations: 112, 198, 227, 233, 234, 242, 553,
578, 584, 587, 602, 616, 618, 838, 866,
1311, 1344, 1367, 2210, 2214

Cidaris tribuloides Lamarck, 1816

Station: 226

Euechinoidea

DIADEMATOIDEA

Echinothuroidea

ECHINOTHURIDAE

Calveriosoma hystrix (Wyville Thomson,
1872) = *Asthenosoma hystrix* (Wyville
Thomson, 1872)

Stations: 112, 198, 242, 244

= *Araeosoma hystrix* (Wyville Thomson,
1872)

Stations: 1311, 1338, 1344, 1349, 1384

Hygrosoma petersii (Agassiz, 1880)

Stations: 575, 578, 1334

= *Phormosoma uranus* Wyville Thomson,
1898

Stations: 184, 203, 213, 233, 248

Sperosoma grimaldii Koehler, 1897

Stations: 184, 224, 698, 863, 1331

Pedinoida

PEDINIDAE

Caenopedina cubensis Agassiz, 1869 =
Hemipedina cubensis Agassiz, 1869

Station: 1311

ECHINOIDEA

Salenoida

SALENIIDAE

Salenocidaris profundus profundus (Duncan,
1877) = *Salenia hastigera* Agassiz, 1869

Stations: 105, 203, 233, 244, 575, 578, 584,
587, 602, 616, 624, 654, 663, 683, 698, 702,
703, 738, 743, 833, 838, 858, 863, 874,
1334, 1344, 1349

Arbacioida

ARBACIIDAE

Arbacia lixula (Linnaeus, 1758) = *Arbacia*
pustulosa Leske, 1778

Stations: 104, 195, 202

Temnopleuroidea

TEMNOPLURIDAE

Genocidaris maculata Agassiz, 1869

Station: 882

= *Temnechinus maculatus* Agassiz, 1869

Station: 226

Trigonocidaris albida Agassiz, 1869

Stations: 234, 570, 597, 600

TOXOPNEUSTIDAE

Sphaerechinus granularis (Lamarck, 1816)

Station: 236

Echinoida

ECHINIDAE

Echinus acutus Lamarck, 1816

Stations: 184, 211

Echinus affinis Mortensen, 1903

Stations: 536, 738, 853, 858, 861, 863, 1331,
1334

Echinus alexandri Danielssen & Koren, 1883

Stations: 575, 743, 858, 863, 1331

Echinus melo Lamarck, 1816

Station: 899

Paracentrotus lividus (Lamarck, 1816) =
Strongylocentrotus lividus (Lamarck, 1816)

Station: 236

GNATHOSTOMATA

Clypeasteroidea

FIBULARIIDAE

Echinocyamus grandiporus Mortensen, 1907
Stations: 553, 584, 587, 597, 614, 616, 618,
866, 1349, 2210, 2214

Echinocyamus macrostomus Mortensen, 1907
Stations: 536, 581, 719

Echinocyamus pusillus (Müller, 1776)
Stations: 198, 233, 234, 1349, 2214

ATELESTOMATA

Spatangoida

BRISSIDAE

Brissopsis lyrifera (Forbes, 1841)
Station: 226

AEROPSIDAE

Aceste bellidifera Wyville Thomson, 1877
Station: 703

PALAEOPNEUSTIDAE

Palaeotropus josephinae Lovén, 1898 =
Palaeotropus hironellei Koehler, 1???
Stations: 105, 553, 575, 578, 584, 602, 616,
703, 719, 743, 833, 838, 1344, 1349

Peripatagus cinctus Koehler, 1895
Stations: 616, 743, 838

Holothuroidea

Dendrochirotida

CUCUMARIIDAE

Abyssocucumis abyssorum (Théel, 1886) =
Cucumaria abyssorum Théel, 1886
Station: 248

Pawsonia saxicola (Brady & Robertson,
1871) = *Cucumaria montagui* Fleming,
1828
Station: 226

Thyone inermis Heller, 1868
Stations: 226, 553, 575

Aspidochirotida

SYNALLACTIDAE

Mesothuria lactea (Théel, 1886)
Stations: 575, 624, 663, 698, 703, 719, 863,
1334, 3150

Mesothuria murrayi Théel, 1886

Note: The species *M. murrayi* was described
by Théel, 1886; *M. murrayi* var. *grandipes*
is referred to Hérouard (see also HANSSON
2001)

Stations: 536, 719, 3150

Mesothuria verrilli (Théel, 1886)

Stations: 1311, 1318, 1334, 3150, 3293
= *Allantis intestinalis verrilli* Théel, 1886
Stations: 553, 575, 683, 684, 743, 858, 874
= *Holothuria verrilli* Théel, 1886
Stations: 233, 244

Paelopatides atlantica Hérouard, 1902 =
Poelopatides atlantica Hérouard, 1902
Station: 527

Pseudostichopus lapidus Hérouard, 1902
Station: 527

Pseudostichopus occultatus Marenzeller, 1893
Station: 527

Pseudostichopus villosus Théel, 1886
Station: 652

HOLOTHURIIDAE

Holothuria lentiginosa Marenzeller, 1892
Station: 226

Holothuria mexicana Ludwig, 1875
Station: 882

Elasipodida

ELPIDIIDAE

Amperima furcata (Hérouard, 1899) = *Kolga*
furcata Hérouard, 1899
Station: 698

Ellipinion delagei (Hérouard, 1896)
Station: 3293
= *Scotoplanes delagei* Hérouard
Station: 553, 578, 743

Peniagone azorica Marenzeller, 1893
Stations: 248, 527

LAETMOGONIDAE

Benthogone rosea Koehler, 1896
Station: 1334

Laetmogone violacea Théel, 1879 =
Laetmogone wyville-thomsoni Théel
Station: 683

Pannychia glutinosa Hérouard, 1902
Station: 624

PSYCHROPOTIDAE
Benthodytes janthina Marenzeller, 1893
Stations: 248, 673

Benthodytes typica Théel, 1882
Station: 248

Psychropotes depressa (Théel, 1882) =
Euphronides talismani Perrier, 1896
Station: 673

Psychropotes grimaldii Hérouard, 1896
Station: 527

Apodida

SYNAPTIDAE
Synaptula hydriformis (Lesueur, 1824)
Station: 1349

CHIRIDOTIDAE
Chiridota abyssicola Marenzeller, 1893
Station: 248

Uncertain species (echinoderms)

Pannychia sp. Théel, 1882
Note: according to Hansson (1998; European Echinodermata Checklist) the record is a synonym of *Laetmophasma* sp.
Station: 624

Prognaster grimaldii Perrier, 1896
Note: It was impossible to determine the validity of this species name, even considering its description by Perrier (1896). The author included it in the family Zoroasteridae.
Station: 248

Ophiacantha pentagona var *armata* Koehler
Note: Possibly a synonym of *Ophiochondrus armatus* (Koehler, 1909) (Hansson, 2001). Both genera *Ophiacantha* and *Ophiochondrus* belong to the family Ophiacanthidae.
Station: 248

Ophiactis hirta Lyman
Note: the validity of this nominal species could not be verified. The genus exists (family Ophiactidae) but the species could not be found.
Station: 1344

Zoroaster trispinosus Koehler
Note: Included in the family Zoroasteridae. Might be *Zoroaster fulgens* Thompson, 1873 (Hansson, 1998, 2001).
Station: 745

Stellosphaera mirabilis Koehler & Vaney
Note: As Koehler (1909) refers this is a larva of asteroid, probably belonging to an abyssal form. The author included the larvae in Forcipulida.
Stations: 1874, 2159, 2168, 2194, 2242, 2264

CONCLUSIONS

The main objective in compiling this checklist was to find the currently valid names of the species reported by Prince Albert's campaigns, as the systematics of most groups evolved since his pioneering programme.

The 331 nominal species associated to the seven phyla selected represent about 13% of the total nominal species (2624) assembled in the PAM Azores database. Since 15 species have 2 or more synonyms (all echinoderms and 1 cephalopod) a list of 310 species names was considered to relate to valid species. About 50% of those were validated directly (e.g. without any modification in their nomenclature), but the systematics and/or nomenclature of the remaining species names were modified. Those major changes are summarised in the table 1. Annelids, chaetognaths and brachiopods were the phyla that showed fewer modifications.

Since it lacks a critical observation of the original specimens sampled, the method adopted to review and validate the original species names is obviously prone to potential flaws which cannot be easily assessed with the available knowledge. Working directly with the specimens would potentially provide additional information and accuracy about the actual species systematics. However, and at least for several groups of invertebrates, this is impracticable because the

original collections are in very poor condition and will require systematics expertise in many disparate groups and consequently the involvement of a vast group of taxonomists. In the absence of the sustained and co-ordinated

effort required to evaluate the original collections, the present review (which took approximately 500 hours work), based on the published bibliography and electronic documentation, is justified.

Table 1

Systematics modifications made in the original lists of species reported in the results of the Prince Albert I of Monaco for the Azores waters (by phylum). Nom. sp: species included in the original lists; Val. sp: species considered valid, included those synonymised; Gen %: species that were allocated to different genus; Syn %: nominal species relegated to synonyms; Mssp %: misspellings and corrections due to gender or concordance rules; Sub-sp: specific epithets allocated to sub-specific level or vice-versa.

Phylum	Nom. sp	Val. sp	Gen %	Syn %	Mssp %	Sub-sp %
Echiura	1	1	0	0	0	0
Sipuncula	11	11	54,5	27,3	0	0
Mollusca (Cephalopoda)	37	32	45,9	64,8	0	0
Annelida	130	130	20,0	7,7	3,1	0
Brachiopoda	4	4	50,0	0	0	0
Chaetognatha	14	14	7,1	0	14,3	0
Echinodermata	134	118	25,4	31,4	2,5	5,9
Total	331	310	28,9	18,7	2,8	0,8

The historical aspect of this biodiversity assessment is also particularly relevant in the view of the study of global changes in biodiversity patterns and species distributions. These data will provide a baseline for future inventories of the Azorean fauna. Data processing is an important scientific activity because it gives the baseline for future research. This contribution provides historical data, which were not readily available, in a useful format that can be used in the present by the scientific community in general. Moreover, the data may contribute to some international initiatives which aims to improve their databases to include e.g. geographical information (e.g. ERMS, COSTELLO et al. 2001; NEAT, HANSSON 1997, 1998).

At the regional level, the knowledge obtained by the critical analysis of the PAM results is crucial for an appropriate assessment of the biodiversity of the Azores region. The inventories of biodiversity for the region are limited and the several faunistic lists published do not include systematic reviews of historical data. As the data presented here are geo-referenced, distribution maps can be generated to support efforts of biodiversity conservation.

The availability of an on-line database assembling sampling locations and biological

data produced by the immense work done under the auspicious of the Prince Albert I of Monaco is expected to contribute to improve the dissemination of the knowledge about the marine fauna of the Northeast Atlantic.

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APPENDIX 1

Sampling location data from the campaigns of Prince Albert I of Monaco (PAM) in the Azores waters (1885-1914). Only sampling locations with positive catches of species of the phyla Echiura, Sipuncula, Mollusca, Annelida, Brachiopoda, Chaetognatha and Echinodermata are presented. Data from Richard (1934). The sampling location numbers follows the PAM registration; * denotes locations which latitude and longitude were estimated (see material and methods).

PAM Stat	Lat N	Long W	Depth	Date	Vessel	Gear
15	38° 15' 20"	28° 22' 45"	Surface	02-08-1885	Hirondelle	Plankton net
16	38° 6' 0"	26° 57' 45"	Surface	03-08-1885	Hirondelle	Plankton net
17	37° 31' 0"	26° 44' 45"	Surface	05-08-1885	Hirondelle	Plankton net
18	37° 40' 0"	25° 29' 45"	Surface	20-08-1885	Hirondelle	Plankton net
21	42° 55' 0"	22° 34' 45"	Surface	23-08-1885	Hirondelle	Plankton net
103	38° 32' 5"	28° 37' 30"	15	21-06-1887	Hirondelle	Trap

104*	38° 32' 10"	28° 36' 52"	Intertidal	22-06-1887	Hirondelle	
105	38° 23' 45"	28° 31' 15"	927	25-06-1887	Hirondelle	Bottom trawl
112	38° 34' 30"	28° 06' 15"	1287	01-07-1887	Hirondelle	Bottom trawl
115	38° 38' 45"	28° 23' 0"	0-1	04-07-1887	Hirondelle	Plankton high speed net
116	38° 35' 55"	28° 10' 35"	0-1	04-07-1887	Hirondelle	Plankton high speed net
125	38° 23' 0"	27° 06' 15"		13-07-1887	Hirondelle	
182	41° 48' 22"	22° 28' 45"	Surface	11-07-1888	Hirondelle	Floating wreck
184	40° 5' 0"	27° 27' 45"	1850	14-07-1888	Hirondelle	Bottom trawl
185	39° 27' 0"	27° 55' 45"	Surface	15-07-1888	Hirondelle	Plankton net
190	38° 46' 30"	28° 20' 43"	696	19-07-1888	Hirondelle	Bottom trawl
191*	38° 32' 10"	28° 36' 52"		20-07-1888	Hirondelle	
193*	38° 32' 10"	28° 36' 52"	20	22-07-1888	Hirondelle	Dredge
195*	38° 31' 28"	28° 37' 43"	4	23-07-1888	Hirondelle	Dredge
196*	38° 32' 10"	28° 36' 52"	5-6	23-07-1888	Hirondelle	Dredge
198	38° 26' 25"	28° 38' 55"	800	25-07-1888	Hirondelle	Bottom trawl
202*	39° 28' 10"	31° 7' 44"	Intertidal	30-07-1888	Hirondelle	
203	39° 27' 5"	30° 55' 5"	1557	30-07-1888	Hirondelle	Bottom trawl
208	39° 22' 15"	31° 12' 0"	Surface	31-07-1888	Hirondelle	Plankton net
211	39° 18' 5"	31° 12' 0"	1372	01-08-1888	Hirondelle	Bottom trawl
213	39° 22' 48"	31° 25' 15"	1384	02-08-1888	Hirondelle	Bottom trawl
215	39° 34' 0"	31° 14' 15"	Surface	03-08-1888	Hirondelle	Midwater trawl
216	39° 26' 30"	31° 9' 0"	Intertidal	03-08-1888	Hirondelle	
218*	39° 28' 10"	31° 7' 44"	40	04-08-1888	Hirondelle	Dredge
220	39° 42' 59"	31° 1' 24"	1445	05-08-1888	Hirondelle	Bottom trawl
224	39° 44' 20"	34° 5' 7"	1213	07-08-1888	Hirondelle	Bottom trawl
225	38° 31' 0"	28° 35' 35"	129	13-08-1888	Hirondelle	Trap
226	38° 31' 19"	28° 34' 30"	130	14-08-1888	Hirondelle	Bottom trawl
227	38° 23' 0"	28° 26' 37"	1135	15-08-1888	Hirondelle	Bottom trawl
229	38° 22' 0"	28° 14' 24"	736	16-08-1888	Hirondelle	Bottom trawl
232	38° 33' 21"	28° 8' 39"	1300	17-08-1888	Hirondelle	Trap
233	38° 33' 21"	28° 8' 39"	1300	18-08-1888	Hirondelle	Bottom trawl
234	39° 1' 40"	27° 55' 25"	454	19-08-1888	Hirondelle	Bottom trawl
236	38° 3' 25"	27° 57' 45"	Intertidal	20-08-1888	Hirondelle	
238	39° 3' 0"	27° 56' 45"	95	21-08-1888	Hirondelle	Bottom long-line
242	38° 48' 30"	27° 58' 45"	861	22-08-1888	Hirondelle	Bottom trawl
243	38° 31' 55"	28° 35' 45"	120	25-08-1888	Hirondelle	Trap
244	38° 33' 57"	28° 19' 15"	1266	27-08-1888	Hirondelle	Bottom trawl
246	38° 27' 45"	28° 8' 0"	Surface	29-08-1888	Hirondelle	Midwater trawl
248	41° 40' 41"	26° 44' 8"	2870	02-09-1888	Hirondelle	Bottom trawl
527	38° 8' 0"	23° 18' 45"	4020	25-06-1895	Princesse-Alice	Bottom trawl
536	37° 54' 0"	24° 43' 15"	2178	27-06-1895	Princesse-Alice	Bottom trawl
545	37° 16' 0"	24° 44' 45"	Surface	01-07-1895	Princesse-Alice	By hand
550*	37° 16' 16"	24° 47' 17"	Intertidal	02-07-1895	Princesse-Alice	By hand
552	37° 42' 40"	25° 5' 15"	1385	03-07-1895	Princesse-Alice	Sounder
553	37° 42' 40"	25° 5' 15"	1385	03-07-1895	Princesse-Alice	Bottom trawl
554	37° 43' 00"	25° 5' 45"	1385	03-07-1895	Princesse-Alice	Trap
570	37° 54' 0"	25° 38' 15"	550	12-07-1895	Princesse-Alice	Swab bar
575	38° 27' 0"	26° 30' 15"	1165	13-07-1895	Princesse-Alice	Bottom trawl
576	38° 26' 0"	26° 32' 45"	Surface	13-07-1895	Princesse-Alice	Dip net
578	38° 26' 0"	26° 30' 45"	1165	14-07-1895	Princesse-Alice	Bottom trawl
581	38° 26' 0"	26° 38' 15"	2139	15-07-1895	Princesse-Alice	Bottom trawl
582	38° 31' 0"	26° 49' 15"	845	15-07-1895	Princesse-Alice	Buchanan bottle
584*	38° 31' 0"	26° 49' 15"	845	16-07-1895	Princesse-Alice	Swab bar
587	38° 36' 40"	27° 17' 15"	793	18-07-1895	Princesse-Alice	Swab bar
588	38° 34' 45"	27° 16' 45"	Surface	18-07-1895	Princesse-Alice	Dip net
594*	38° 38' 31"	27° 12' 28"	54	22-07-1895	Princesse-Alice	
597	38° 27' 0"	28° 3' 25"	523	23-07-1895	Princesse-Alice	Swab bar
600	38° 30' 35"	28° 16' 20"	349	24-07-1895	Princesse-Alice	Swab bar
602	38° 38' 30"	28° 13' 5"	1230	24-07-1895	Princesse-Alice	Bottom trawl

603	38° 31' 28"	28° 37' 43"	Intertidal	26-07-1895	Princesse-Alice	
612	38° 26' 40"	28° 40' 5"	778	29-07-1895	Princesse-Alice	Buchanan bottle
614	38° 27' 12"	28° 39' 15"	778	31-07-1895	Princesse-Alice	Swab bar
616	38° 47' 40"	28° 17' 5"	1022	01-08-1895	Princesse-Alice	Swab bar
618	38° 52' 45"	28° 6' 0"	1143	01-08-1895	Princesse-Alice	Bottom trawl
622*	39° 3' 10"	27° 57' 37"		05-08-1895	Princesse-Alice	Gill net
623	38° 59' 0"	28° 18' 5"	2102	04-08-1895	Princesse-Alice	Buchanan bottle
624	38° 59' 0"	28° 18' 5"	2102	04-08-1895	Princesse-Alice	Bottom trawl
652	36° 55' 0"	22° 22' 45"	4261	23-06-1896	Princesse-Alice	Bottom trawl
654	36° 58' 30"	24° 58' 15"	1495	24-06-1896	Princesse-Alice	Swab bar
663	37° 28' 30"	25° 31' 45"	1732	27-06-1896	Princesse-Alice	Bottom trawl
664	37° 37' 40"	25° 37' 45"	Surface	27-06-1896	Princesse-Alice	Dip net
673	37° 51' 0"	26° 53' 45"	2252	05-07-1896	Princesse-Alice	Bottom trawl
682	38° 20' 0"	28° 5' 45"	Surface	07-07-1896	Princesse-Alice	Harpoon
683	38° 20' 0"	28° 4' 45"	1550	07-07-1896	Princesse-Alice	Bottom trawl
684	38° 20' 0"	28° 4' 45"	1550	08-07-1896	Princesse-Alice	Bottom trawl
698	39° 11' 0"	30° 44' 40"	1846	18-07-1896	Princesse-Alice	Bottom trawl
699	39° 12' 0"	30° 48' 45"	Surface	18-07-1896	Princesse-Alice	
702	39° 21' 20"	31° 5' 53"	1360	19-07-1896	Princesse-Alice	Gill net
703	39° 21' 20"	31° 5' 45"	1360	19-07-1896	Princesse-Alice	Bottom trawl
709	39° 13' 40"	30° 43' 45"		22-07-1896	Princesse-Alice	By hand
719	39° 11' 0"	30° 24' 15"	1600	27-07-1896	Princesse-Alice	Bottom trawl
723	37° 17' 40"	28° 15' 10"	1692	31-07-1896	Princesse-Alice	Trap
724	38° 18' 0"	28° 14' 45"	1692	31-07-1896	Princesse-Alice	Gill net
726	38° 18' 0"	28° 14' 45"	Surface	01-08-1896	Princesse-Alice	Harpoon
738	37° 40' 0"	26° 26' 15"	1919	07-08-1896	Princesse-Alice	Bottom trawl
740	37° 39' 0"	26° 26' 45"	1000	07-08-1896	Princesse-Alice	Modified Giesbrecht net
743	37° 35' 45"	25° 17' 15"	1494	11-08-1896	Princesse-Alice	Bottom trawl
745	38° 5' 0"	23° 50' 15"	3465	15-08-1896	Princesse-Alice	Bottom trawl
750	38° 55' 00"	21° 18' 45"	Surface	17-08-1896	Princesse-Alice	Dip net
832	37° 39' 0"	25° 17' 45"	1230	21-07-1897	Princesse-Alice	Gill net
833	37° 39' 0"	25° 17' 45"	1230	21-07-1897	Princesse-Alice	Swab bar
837	37° 55' 0"	25° 24' 15"	880	22-07-1897	Princesse-Alice	Trap
838	37° 55' 0"	25° 23' 45"	880	22-07-1897	Princesse-Alice	Swab bar
842*	37° 53' 35"	25° 29' 41"	Surface	23-07-1897	Princesse-Alice	Dip net
844	37° 55' 0"	25° 24' 15"	Surface	24-07-1897	Princesse-Alice	Dip net
847	38° 1' 30"	25° 25' 45"	1638	24-07-1897	Princesse-Alice	Gill net
848	38° 4' 0"	25° 22' 45"	Surface	25-07-1897	Princesse-Alice	Dip net
849	38° 4' 0"	25° 42' 45"	Surface	25-07-1897	Princesse-Alice	Harpoon
853	38° 15' 0"	26° 44' 15"	1531	29-07-1897	Princesse-Alice	Gill net
858	38° 45' 0"	26° 35' 45"	1482	31-07-1897	Princesse-Alice	Midwater trawl
861	38° 53' 0"	26° 40' 45"	1935	31-07-1897	Princesse-Alice	Midwater trawl
863	39° 22' 0"	26° 55' 45"	1940	01-08-1897	Princesse-Alice	Bottom trawl
866	38° 52' 50"	27° 23' 5"	599	02-08-1897	Princesse-Alice	Bottom trawl
869	39° 3' 0"	27° 42' 45"	1240	03-08-1897	Princesse-Alice	Bottom trawl
873	38° 37' 45"	28° 14' 20"	1260	04-08-1897	Princesse-Alice	Trap
874	38° 37' 45"	28° 14' 20"	1260	04-08-1897	Princesse-Alice	Gill net
882	38° 30' 40"	28° 34' 45"	98	07-08-1897	Princesse-Alice	Bottom trawl
889	37° 57' 30"	29° 15' 10"	208	10-08-1897	Princesse-Alice	3 sinkers de sonda suiffée
896	38° 1' 0"	29° 22' 15"	1260	11-08-1897	Princesse-Alice	Trap
899	37° 57' 0"	29° 14' 45"	200	12-08-1897	Princesse-Alice	Bottom trawl
1311	37° 37' 0"	25° 20' 45"	1187	31-07-1902	Princesse-Alice II	Bottom trawl
1318	38° 6' 0"	26° 13' 45"	3018	05-08-1902	Princesse-Alice II	Bottom trawl
1322	38° 39' 0"	25° 6' 15"	3020	06-08-1902	Princesse-Alice II	Towed double trap
1331	38° 40' 0"	26° 0' 45"	1805	09-08-1902	Princesse-Alice II	Bottom trawl
1333	39° 30' 0"	29° 2' 45"	1900	13-08-1902	Princesse-Alice II	Towed double trap
1334	39° 30' 0"	29° 2' 15"	1900	13-08-1902	Princesse-Alice II	Bottom trawl
1338	38° 41' 30"	28° 45' 15"	950	14-08-1902	Princesse-Alice II	Bottom trawl
1339	38° 41' 30"	28° 45' 15"	Surface	14-08-1902	Princesse-Alice	Dip net

1344	38° 45' 30"	28° 7' 45"	1095	18-08-1902	Princesse-Alice II	Bottom trawl
1348	38° 35' 40"	28° 8' 15"	1250	19-08-1902	Princesse-Alice II	Gill net
1349	38° 35' 30"	28° 5' 45"	1250	19-08-1902	Princesse-Alice II	Bottom trawl
1355	37° 58' 30"	29° 17' 45"	78	23-08-1902	Princesse-Alice II	Hand line
1358	37° 42' 0"	29° 2' 45"	403	24-08-1902	Princesse-Alice II	3 sinkers de sonda suiffée
1367	37° 34' 0"	28° 56' 45"	563	25-08-1902	Princesse-Alice II	Bottom trawl
1373	37° 34' 30"	29° 7' 45"	1685	25-08-1902	Princesse-Alice II	3 sinkers de sonda suiffée
1384	37° 45' 0"	28° 46' 45"	1528	26-08-1902	Princesse-Alice II	Bottom long-line
1407	38° 1' 30"	26° 16' 45"	2755	03-09-1902	Princesse-Alice II	Bottom long-line
1408	38° 01' 30"	26° 16' 45"	?	03-09-1902	Princesse-Alice	From the line de sonda
1412	42° 44' 0"	28° 22' 45"	2200	05-09-1902	Princesse-Alice II	Bottom long-line
1420	42° 53' 0"	28° 30' 45"	2460	06-09-1902	Princesse-Alice II	Bottom trawl
1805	34° 0' 0"	25° 30' 0"	Surface	27-08-1904	Princesse-Alice II	Plankton high-speed net
1834	37° 28' 0"	25° 53' 30"	0-1000	06-09-1904	Princesse-Alice II	Large Richard trawl
1839*	37° 43' 56"	25° 39' 40"	Surface	06-09-1904	Princesse-Alice II	Plankton high speed net
1844	37° 8' 0"	28° 28' 30"	0-1500	07-09-1904	Princesse-Alice II	Large Richard trawl
1847	37° 3' 0"	28° 52' 0"	Surface	07-09-1904	Princesse-Alice II	Plankton high speed net
1849	36° 14' 0"	28° 53' 0"	0-3000	08-09-1904	Princesse-Alice II	Large Richard trawl
1851	36° 17' 0"	28° 53' 0"	0-3000	08-09-1904	Princesse-Alice II	Large Richard trawl
1855	36° 46' 0"	26° 41' 0"	3620	09-09-1904	Princesse-Alice II	3 sinkers de sonda suiffée and bait
1856	36° 46' 0"	26° 41' 0"	0-3250	09-09-1904	Princesse-Alice II	Large Richard trawl
1860	37° 0' 0"	26° 20' 0"	Surface	09-09-1904	Princesse-Alice II	Plankton high speed net
1872	37° 35' 0"	24° 40' 0"	Surface	11-09-1904	Princesse-Alice II	Plankton high speed net
1874	37° 20' 0"	21° 40' 0"	0-2000	12-09-1904	Princesse-Alice II	Large Richard trawl
1875	37° 20' 0"	21° 40' 0"	Surface	12-09-1904	Princesse-Alice II	Dip net
2143	34° 0' 0"	34° 20' 0"	Surface	20-08-1905	Princesse-Alice II	Plankton high speed net
2148	33° 51' 0"	34° 3' 0"	?	20-08-1905	Princesse-Alice	By hand from the cable de sonda
2149	33° 51' 0"	34° 3' 0"	0-2000	20-08-1905	Princesse-Alice II	Large Richard trawl
2150	34° 10' 0"	33° 50' 0"	Surface	20-08-1905	Princesse-Alice II	Plankton high speed net
2151	34° 50' 0"	32° 30' 0"	Surface	21-08-1905	Princesse-Alice II	Plankton high speed net
2153	35° 4' 0"	32° 11' 0"	0-2000	21-08-1905	Princesse-Alice II	Large Richard trawl
2159	36° 24' 0"	30° 0' 0"	0-2500	22-08-1905	Princesse-Alice II	Large Richard trawl
2161	36° 30' 0"	29° 50' 0"	Surface	22-08-1905	Princesse-Alice II	Plankton high speed net
2162	36° 40' 0"	29° 0' 0"	Surface	22-08-1905	Princesse-Alice II	Plankton high speed net
2168	36° 35' 0"	27° 12' 0"	0-2000	23-08-1905	Princesse-Alice II	Large Richard trawl
2170	36° 38' 0"	27° 6' 0"	Surface	23-08-1905	Princesse-Alice II	Plankton high speed net
2171	36° 50' 0"	26° 50' 0"	Surface	23-08-1905	Princesse-Alice II	Dip net
2172	36° 50' 0"	26° 5' 50"	Surface	23-08-1905	Princesse-Alice II	Plankton high speed net
2183	38° 4' 45"	25° 54' 0"	1998	28-08-1905	Princesse-Alice II	Bottom long-line
2184	38° 04' 45"	25° 54' 0"	Surface	28-08-1905	Princesse-Alice	Dip net from the fanal électrique
2185	38° 4' 0"	26° 7' 30"	0-3000	29-08-1905	Princesse-Alice II	Large Richard trawl
2187	38° 4' 0"	26° 7' 30"	0-2500	29-08-1905	Princesse-Alice II	Large Richard trawl
2191	39° 9' 0"	26° 13' 0"	Surface	30-08-1905	Princesse-Alice II	Plankton high speed net
2194	39° 36' 0"	26° 5' 0"	0-2500	30-08-1905	Princesse-Alice II	Large Richard trawl
2195	39° 36' 0"	26° 5' 0"	Surface	30-08-1905	Princesse-Alice II	Dip net
2196	39° 38' 0"	26° 40' 0"	Surface	30-08-1905	Princesse-Alice II	Plankton high speed net
2198	39° 44' 0"	28° 25' 0"	Surface	31-08-1905	Princesse-Alice II	Plankton high speed net
2199	39° 44' 0"	28° 25' 0"	1943	31-08-1905	Princesse-Alice II	3 sinkers de sonda suiffée and bait
2200	39° 44' 0"	28° 25' 0"	0-1500	31-08-1905	Princesse-Alice II	Large Richard trawl
2204	39° 44' 0"	29° 29' 0"	Surface	31-08-1905	Princesse-Alice II	Plankton high speed net
2210	39° 25' 0"	31° 22' 30"	1229	01-09-1905	Princesse-Alice II	Bottom trawl
2211	39° 27' 0"	31° 22' 30"	1229	01-09-1905	Princesse-Alice II	Bottom long-line
2212	39° 26' 0"	31° 23' 30"	0-1200	02-09-1905	Princesse-Alice II	Large Richard trawl
2214	39° 26' 10"	31° 21' 30"	914-650	02-09-1905	Princesse-Alice II	Bottom trawl
2215	39° 26' 10"	31° 21' 30"	Surface	02-09-1905	Princesse-Alice II	Several
2218	39° 20' 0"	31° 0' 0"	Surface	02-09-1905	Princesse-Alice II	Plankton high speed net
2241	37° 45' 0"	29° 0' 0"	Surface	05-09-1905	Princesse-Alice II	Plankton high speed net
2242	37° 6' 0"	28° 10' 0"	Surface	06-09-1905	Princesse-Alice	Plankton high speed net
2244	37° 4' 0"	28° 1' 0"	0-3000	06-09-1905	Princesse-Alice II	Large Richard trawl

2245	37° 3' 0"	27° 46' 0"	Surface	06-09-1905	Princesse-Alice II	Plankton high speed net
2248	37° 2' 30"	27° 35' 0"	1478	06-09-1905	Princesse-Alice II	3 sinkers de sonda
2249	37° 2' 30"	27° 35' 0"	Surface	06-09-1905	Princesse-Alice II	Plankton high speed net
2252	38° 0' 0"	26° 10' 0"	Surface	07-09-1905	Princesse-Alice II	Plankton high speed net
2263	37° 33' 0"	23° 30' 0"	Surface	13-09-1905	Princesse-Alice II	Plankton high speed net
2264	37° 30' 0"	22° 39' 0"	0-3000	13-09-1905	Princesse-Alice II	Large Richard trawl
2266	37° 30' 0"	22° 35' 0"	Surface	13-09-1905	Princesse-Alice II	Plankton high speed net
2267	37° 28' 0"	21° 30' 0"	Surface	13-09-1905	Princesse-Alice II	Plankton high speed net
3131	35° 09' 00"	21° 21' 0"	0-3500	16-08-1911	Hirondelle II	High speed Bourée trawl
3132	35° 30' 0"	22° 2' 0"	Surface	16-08-1911	Hirondelle II	Plankton high speed net
3137	37° 0' 0"	25° 0' 0"	1330	17-08-1911	Hirondelle II	Swab bar
3144	37° 40' 30"	25° 58' 0"	919	25-08-1911	Hirondelle II	Swab bar
3147	38° 12' 00"	25° 49' 0"	0-550	26-08-1911	Hirondelle II	High speed Bourée line
3150	38° 1' 0"	25° 21' 0"	1740	27-08-1911	Hirondelle II	Midwater trawl
3231	35° 35' 0"	25° 40' 0"	0-100	11-08-1912	Hirondelle II	Plankton pump
3234	36° 39' 20"	25° 56' 0"	0-100	12-08-1912	Hirondelle II	Plankton pump
3256	38° 16' 40"	28° 23' 0"	0-1200	19-08-1912	Hirondelle II	High speed Bourée trawl
3257	38° 16' 40"	28° 23' 0"	0-100	19-08-1912	Hirondelle II	Plankton pump
3260	38° 30' 0"	28° 59' 0"	0-100	19-08-1912	Hirondelle II	Plankton pump
3279	38° 55' 00"	34° 07' 30"	0-3000	23-08-1912	Hirondelle II	High speed Bourée trawl
3282	39° 19' 0"	35° 27' 30"	0-100	24-08-1912	Hirondelle II	Plankton pump
3285	39° 23' 0"	35° 18' 30"	0-1000	24-08-1912	Hirondelle II	High speed Bourée trawl
3293	38° 47' 0"	30° 16' 0"	1331	26-08-1912	Hirondelle II	Bottom trawl
3526	38° 30' 0"	34° 40' 0"	0-2000	29-09-1913	Hirondelle II	Large Richard trawl
3608	38° 35' 0"	22° 57' 30"	0-2600	29-07-1914	Hirondelle II	High speed Bourée trawl