

The Mollusca collected by the "Huxley" from the North Side of the Bay of Biscay, in August, 1906.

By

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THIS paper deals with the Mollusca collected on the cruise of the s.s. *Huxley* to the north side of the Bay of Biscay in August, 1906, with the exception of the Cephalopoda, which are being worked out by Dr. W. E. Hoyle.

The collection, though small, taking into account the area over which dredgings were taken, contains a fair number of interesting species. Though there is nothing new, there are several species represented which one would not expect to find in such high latitudes, and their discovery adds somewhat to our, as yet, slight knowledge of the fauna of the deeper seas and its distribution.

Seventy-five species were identified, divided as follows:—

Amphineura	.	.	1
Pelecypoda	.	.	34
Scaphopoda	.	.	2
Gastropoda	.	.	37
Nudibranchia	.	.	1
			75

Of these seventy-five species, sixty-two have been recorded from the British Area, and of the remaining thirteen three are Pelecypods.

Pecten bruéi, Payraudeau.—Mostly known as a Mediterranean species, but has been confounded with *P. sulcata* (Müll.), which is a northern species. They meet in the Bay of Biscay, as both are represented in this collection.

Lima marioni, Fischer.—With reference to this species, Mr. E. A. Smith tells me it is the same as *L. lata*, found by the *Challenger* Expedition and described by him as new in his work dealing with the Lamellibranchs brought home by that expedition. Though an addition

to the fauna of the actual Bay of Biscay, it had been previously found and recorded from off the coast of Portugal by the *Travailleur*.

Lima excavata (Fabricius).—Fragments and odd valves of this northern species have been found south of the Bay of Biscay, by the *Porcupine* off Cape St. Vincent, and by the *Talisman* off the west coast of the Soudan. The single specimen found during the *Huxley* cruise, though smaller than the northern specimens I have seen, contained the animal, and thus proves its extended habitat, which was suggested by the discovery of the above-mentioned fragments.

The two species of Scaphopoda are both recorded as British.

Of the non-British Gastropods, two cannot be identified on account of their condition, but the remaining eight species are of interest.

Emarginula multistriata, Jeffreys. — A Mediterranean species recorded from off the coast of Portugal.

Calliostoma obesulum (P. Fischer) and *C. cleopatra* (P. Fischer) have only been recorded from off the Atlantic coasts of Northern Africa, and the fact of their having been found living, the former in large numbers, so far north, is a valuable indication of the possible very wide distribution of deep-water species.

Natica operculata, Jeffreys.—Jeffreys records the species as having been found by the *Porcupine* off the Spanish coast.

Ranella gigantea (Lamarck).—The most northerly habitat of this species so far recorded.

Scala richardi (Dautzenberg and de Boury).—This species has not been found living, the type being described from a dead shell dredged off the Azores. The remarks applied to the two species of *Calliostoma* apply to this species as well.

Pseudomurex richardi (P. Fischer).—Previously recorded from the Bay of Biscay.

Cavolina trispinosa (Lesueur).—Has an almost world-wide distribution, but is probably killed by coming into cold areas.

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MOLLUSCA.
AMPHINEURA.

APLACOPHORA.

NEOMENIIDÆ.

RHOPALOMENIA, Simroth.

Rhopalomenia aglaopheniæ, Kovalevsky and Marion.

- Rhopalomenia aglaopheniæ*.—Kovalevsky and Marion, 1887. Ann. Mus. Hist. Nat., Marseille, iii.
" " Garstang, 1896. Proc. Malac. Soc., Lond. Vol. ii, No. 3, p. 124, pl. x, fig. 3.

Distribution. Plymouth (Garstang) [Banyuls, Marseille].

- Station I, 75 fathoms. One coiled round stem of *Aglaophenia myriophyllum*.
" XIII, 412 " One coiled but free.

PELECYPODA.

PROTOBRANCHIA.

NUCULIDÆ.

NUCULA, Lamarck.

(1) **Nucula sulcata**, Bronn.

Nucula sulcata, Bronn, 1831. Italiens Tertiärgelbild, p. 109.

" *polii*, Philippi, 1836. Enum. Moll. Sicil., p. 63, pl. v, fig. 10.

Generally distributed in the North Atlantic and throughout the Mediterranean, and as far south as the coast of Guinea. Found in both shallow and deep water.

Station IX. 240 fathoms. One fragment of a broken valve.

(2) **Nucula nitida**, G. B. Sowerby.

Nucula nitida. G. B. Sowerby, 1833. Conch. Ill. (Nucula), p. 5, fig. 20.

Generally distributed in the North Atlantic from Scandinavia to Gibraltar and throughout the Mediterranean.

Station XII. 246 fathoms. One odd valve.

FILIBRANCHIA.

ANOMIACEA.

ANOMIIDÆ.

ANOMIA, Linné.

Anomia ephippium, Linné.*Anomia ephippium*, Linné, 1758. Syst. Nat., édit. x, p. 701.

This well-known species has many synonyms and is very variable. All the specimens under consideration are or have been attached to the spines of Echini.

This is a very widely distributed species, and is found on both sides of the Atlantic, "Iceland to Egypt and Madeira, Labrador to Long Island Sound" (Jeffreys). Found by the *Challenger* off Pernambuco, the Nightingale Islands, and Tristan d'Acunha.

Station IV.	109 fathoms.	One living, young.
"	IX. 240 fathoms.	Many living, all young.
"	XI. 146 fathoms.	Two living, both young.
"	XII. 246 fathoms.	Five living, all young.

ARCACEA.

ARCIDÆ.

LIMOPSIS, Sassi.

(1) **Limopsis aurita** (Brocchi).

Arca aurita, Brocchi, 1815. Conch. Foss. Subapp., ii, p. 485, pl. xi, fig. 9.

Pectunculus auritus, Philippi, 1836. Enum. Moll. Sicil., i, p. 63.

Limopsis aurita, Jeffreys, 1863-69. Brit. Conch., ii, p. 161, pl. iv, fig. 3; v, p. 174, pl. xxx, fig. 1.

A very widely distributed species. Seas of Europe from Norway to the Mediterranean. It has also been recorded from the Azores, New Jersey, Virginia, Cape Hatteras, Georgia, Florida, West Indies. Jeffreys (*Porcupine*, etc.) records it from Japan.

Station IX.	240 fathoms.	One living, four odd valves.
"	XII. 246 fathoms.	One living, three odd valves.

(2) **Limopsis minuta** (Philippi).

Pectunculus minutus, Philippi, 1836. Enum. Moll. Sicil., i, p. 63, pl. v, fig. 3.

Limopsis borealis, Woodward, 1865. In Jeff. Brit. Conch., v, p. 174, pl. 100, fig. 3.

Limopsis minuta, Jeffreys, 1879. Proc. Zool. Soc., p. 585, pl. xlvi, fig. 9.

This species has a very wide distribution. It has been recorded from the North Atlantic, on the east side, from the Loffodens to the Canary Islands, on the west from New Jersey to the Gulf of Mexico, also from Barbados and in the Mediterranean.

Station XII. 246 fathoms. Five odd valves.

GLYCYMERIS, da Costa.

Glycymeris glycymeris (Linné).

Arca glycymeris, Linné, 1758. Syst. Nat., édit. x, p. 695.

Glycymeris orbiculata, da Costa, 1778, p. 168, pl. xi, fig. 2.

Pectunculus pilosus, etc., Turton, 1822. Conch. Insul. Brit., pp. 172-4, pl. xii, figs. 2-6 (non Linné).

Generally distributed in the European seas, though rare in the Mediterranean; also found on the Senegal coast, Madeira, and the Canary Islands. Jeffreys records it from the north of Japan.

Station I. 75 fathoms. Two living, one very young.

„ V. 109 fathoms. One odd valve.

ARCA, Linné.

(1) **Arca nodulosa**, Müller.

Arca nodulosa, Müller, 1766. Zool. Danicæ Prodr., p. 247.

„ *scabra*, Poli, 1795. Test. utr. Siciliae, ii, pl. xxv, fig. 22.

Barbatia scabra, Brusina, 1886. Contr. Fauna Dalmat., p. 101.

Arca (*Barbatia*) *scabra*, Dautzenberg et H. Fischer, 1897. In Mém. Soc. Zool. France, x, p. 199.

Appears to be a widely distributed species in the Atlantic Ocean, north of the equator, and is recorded from the Hebrides, Faroe Islands, British coasts, Bay of Biscay, Portugal coast, Senegal, Canary Islands, Gulf of Mexico, and the Florida coast; it is also found throughout the Mediterranean Sea.

Station VII. 444 fathoms. Twelve of various ages and all living.

„ XIII. 412 fathoms. Twenty-five of various ages, all living with the exception of a couple of odd valves.

(2) **Arca obliqua**, Philippi.

Arca obliqua, Philippi, 1844. Enum. Moll. Sicil., vol. ii, p. 43, pl. 15, fig. 2.

„ „ Jeffreys, 1863. Brit. Conch., vol. ii, p. 175; vol. v, p. 175, pl. xxx, fig. 4.

Distribution, Bergen and Shetland to the Ægean, Azores (Jeffreys). Not recorded as being found during either the *Caudan* or *Travailleur* and *Talisman* expeditions.

Station V. 109 fathoms. One, living.

MYTILACEA.

MYTILIDÆ.

VOLSELLA, Scopoli.

Volsella phaseolina (Philippi).

Modiola phaseolina, Philippi, 1844. Enum. Moll. Sicil., ii, p. 51, pl. xv, fig. 14.

Widely distributed from Iceland and Finmark to the Straits of Gibraltar and throughout the Mediterranean. Not recorded as having been found during the *Travailleur* and *Talisman* expeditions, nor that of the *Caudan*.

Station II. 75 fathoms. Two, living.

PSEUDOLAMELLIBRANCHIA.

PECTENIDÆ.

PECTEN, Müller.

Pecten bruei, Payraudeau.

Pecten bruei, Payraudeau, 1826. Moll. Corse, p. 78, pl. ii, figs. 10-14.

„ *leptogaster*. Brusina, 1866. Contr. Fauna Dalmat., p. 45.

This species appears to me to be easily separable from *P. sulcata*, being much more regularly and definitely costulated, and our solitary specimen is quite typical of the species with the exception of its being without colour. Its geographical range seems limited to the Mediterranean and Atlantic coasts of Europe from the Bay of Biscay to the south of Cape Verde. Our specimen was dredged further to the north than any previously recorded.

Station IX. 240 fathoms. One living.

CHLAMYS, Bolten.

Chlamys sulcatus (Müller).

Pecten sulcatus, Müller, 1776. Zool. Daniæ Prodr., p. 248.

Ostrea arata, Gmelin, 1789. Systema Naturæ, édit. xiii, p. 3326.

Pecten aratus, G. O. Sars, 1878. Moll. Reg. Arct. Norveg., p. 17, pl. 11, fig. 3.

Locard's reference, in his *Travailleur* and *Talisman* mollusca,

to the synonymy of this species in Forbes and Hanley's "History of British Mollusca," 1855, vol. ii, p. 281, is a mistake, for this refers to *P. striatus*, Müller, and it is not surprising he found the synonymy very complex and doubtful. I have not been able to find any mention of *P. sulcatus* in Forbes and Hanley's work except J. Sowerby's fossil variety of *P. opercularis*.

The only identified specimens of this species I have been able to inspect are in the National Collection, and with the exception that they are richly coloured and somewhat larger and more solid than the specimens under consideration, I can see no difference.

The range of this species is considerable, and if we omit the Mediterranean locality given by Jeffreys as doubtful, it has been recorded in the Atlantic from Norway and the Faroe Islands to the seas west of the coast of the Soudan.

Station XIII. 412 fathoms. One living, young; three dead valves of various ages.

ÆQUIPECTEN, Fischer.

Æquipecten opercularis (Linné).

Ostrea opercularis, Linné, 1758. Syst. Nat., édit. x, p. 698.

Pecten opercularis, Montagu, 1803. Test. Brit., p. 145.

Chlamys (*Æquipecten*) *opercularis*, P. Fischer, 1886. Man. Conch., p. 944.

Generally distributed in the European seas and Asiatic and African coasts of the Mediterranean and off the Azores. From 5 fathoms to 600 or more. Locard remarks that the shells dredged by the *Caudan* were much smaller than usual, and the same can be stated of the living shells under consideration, the largest of which measures only 21 mm. by 20 mm. in breadth. The dead shells and fragments show that the species attains a much larger growth in the same locality.

Station I. 75 fathoms. One living (small). Three odd valves of various sizes.

Station II. 75 fathoms. One living, one dead, and an odd valve.

„ IV. 109 fathoms. Four fragments.

„ V. 109 fathoms. Many small living and dead and broken fragments of larger shells.

Station XI. 146 fathoms. One living (small), and two odd valves.

PALLIOLUM, Monterosato.

(1) **Palliolum similis** (Laskey).

Pecten similis, Laskey, 1811. In Mem. Werner Soc., i, p. 387, pl. viii, fig. 8.

Pecten tumidus, Turton, 1822. Conch. Insul. Brit., p. 212, pl. xvii, fig. 3.

Found generally in the seas of Europe and on the African coast of the Mediterranean.

Station V. 109 fathoms. Two living.

(2) **Palliolum vitreus** (Chemnitz).

Pallium vitreum, Chemnitz, 1782. Conch. Cab., vii, p. 335, pl. lxvii, fig. 637a.

Chlamys vitrea, Dautzenberg, 1889. Contr. Faune Mala. Açores, p. 76.

A very widely distributed species in the North Atlantic, found on both the American and European coasts.

Station VII. $\overline{444}$ fathoms. Seventeen living, of various sizes, and one odd valve.

Station XIII. 411 fathoms. Two living.

LIMIDÆ.

LIMA, Brugière.

(1) **Lima excavata** (Fabricius).

Ostrea excavata, Fabricius, 1780. In Schroter's Naturg., ii, p. 117.

Excavata fabricii, Chemnitz, 1784. Conch. Cab., vii, p. 355, pl. lxviii, fig. 654.

Lima excavata, Loven, 1846. Index. Moll. Scand., p. 32.

Radula (Acesta) excavata, Dautzenberg et H. Fischer, 1897. In Mém. Soc. Zool., France, x, p. 186.

This species must be much more generally distributed than was at one time supposed, for in 1883 the *Talisman* dredged it off the west coast of the Soudan. The *Lightning* and *Porcupine* only found fragments, though Jeffreys remarks in one case (*Lightning*, 1868, north of Hebrides, St. 5) the pieces were quite fresh and united by the cartilage.* *Lima excavata* has usually been considered to be confined to almost Arctic seas.

Station VII. $\overline{444}$ fathoms. One living.

(2) **Lima marioni**, P. Fischer.

Lima marioni, P. Fischer, 1882. In Journ. Conch., xxx, p. 52.

,, *lata*, Smith, 1885. Voy. *Challenger*, xiii, p. 257, pl. xxiv, fig. 3.

* Those found by the *Porcupine* (1870) off St. Vincent were semi-fossil.

Radula lata, Dautzenberg et H. Fischer, 1897. In Mém. Soc. Zool., France, x, p. 186.

Apparently a very widely distributed deep-water species.

Challenger, N.E. of Brazil, Philippine Islands.

Hirondelle and *Princess Alice*. Off the Azores.

Travailleur. West of Portugal.

Talisman. West coasts of Morocco and the Soudan.

Station VII. 444 fathoms. Eight living, of various sizes.

„ XIII. 412 fathoms. Seven living, of various sizes, one curiously malformed.

(3) *Lima subauriculata* (Mont.).

Pecten subauriculatus, Montagu, 1808. Test. Brit. Suppl., p. 63, pl. xxix, fig. 2.

Lima subauriculata, Turton, 1822. Conch. Insul. Brit., p. 218.

„ *sulcata*, Brown, 1827. Ill. Conch. Gt. Britain, pl. xxxi, fig. 4-5.

„ *nivea*, Philippi, 1836. Enum. Moll. Sicily, vol. i, p. 78.

Found on both sides of the Atlantic, in the Mediterranean, and off the Canary Isles.

Station V. 109 fathoms. One valve.

EULAMELLIBRANCHIA.

SUBMYTILACEA.

ASTARTIDÆ.

ASTARTE, J. Sowerby.

Astarte sulcata (da Costa).

Pectunculus sulcatus, da Costa, 1778. Brit. Conch., p. 192.

Venus danmonana, Montagu, 1808. Test. Brit. Suppl., p. 45, pl. xxix, fig. 4.

Astarte sulcata, Fleming, 1828. Hist. of Brit. Anim., p. 439.

„ „ Forbes and Hanley, 1853, Hist. Brit. Moll., i, p. 452, pl. xxx, fig. 6 (as *A. danmoniensis*).

A difficult species, very variable, and provided with many synonyms. Generally distributed in European seas, Siberia, East Greenland, North-east America, Gulf of Mexico, Canaries.

Station I. 75 fathoms. One odd valve.

„ II. 75 fathoms. One living.

„ IX. 240 fathoms. One living, and several odd valves.

„ XII. 246 fathoms. One living, and several odd valves (small).

TELLINACEA.

SCROBICULARIDÆ.

SYNDOSMYA, Récluz.

Syndosmya prismatica (Mont.).

Ligula prismatica, Montagu, 1808. Test. Brit. Suppl., p. 23, pl. xxvi, fig. 3.

Scrobicularia prismatica, Jeffreys, 1863-69. Brit. Conch., vol. ii, p. 435; vol. v, p. 189, pl. xlv, fig. 1.

Generally distributed throughout the seas of Europe.

Station II. 75 fathoms. Three odd valves.

„ XI. 146 fathoms. Three odd valves.

MACTRIDÆ.

SPISULA, Gray.

Spisula elliptica (Brown).

Mactra elliptica, Brown, 1827. Ill. Conch. Gt. Brit., pl. xv, fig. 6.

„ *gracilis*, Locard, 1890. In Bull. Soc. Maloc. France, vii, p. 4, pl. i, fig. 1.

With Mr. E. A. Smith's help I carefully compared these specimens with those dredged by the *Porcupine* expedition, but still felt very doubtful as to their true specific position. I submitted them to Mons. Dautzenberg, whose works on the North Atlantic mollusca are well known, and he confirms my opinion, and says, "it is the true *M. elliptica* of Brown, but not of the greater number of authors, and the *M. gracilis* of Locard is a synonym."

This species is probably widely distributed in the North Atlantic. The Gulf of Cadiz is the locality given by Mons. Locard for the single valve found by the *Talisman* expedition.

Station I. 75 fathoms. Eight odd valves.

„ II. 75 fathoms. One living, and ten odd valves.

„ V. 109 fathoms. Two living.

„ XI. 146 fathoms. Three living, and two odd valves.

VENERACEA.

VENERIDÆ.

LUCINOPSIS, Forbes and Hanley.

Lucinopsis undata (Pennant).

Venus undata, Pennant, 1777. British Zoology, ed. 4, vol. iv, p. 95, pl. lv, fig. 51.

Lucinopsis undata, Forbes and Hanley, 1853. Hist. Brit. Moll., vol. i, p. 435, pl. xxviii, figs. 1 and 2, pl. M, figs. 1 and 2.

This species is widely distributed in the seas of Europe, from Norway and the Loffoden Isles to Spain and Portugal, and in the Mediterranean as far east as the Adriatic.

Station V. 109 fathoms. One odd valve.

VENUS, Linné.

(1) **Venus (Ventricola) casina** (Linné).

Venus casina, Linné, 1758. Syst. Nat., édit. x, p. 685.

This species is known under a dozen or more synonyms, which appear to me to be unnecessary to repeat, as the shell is well known, and they can be found in many standard works.

Generally distributed in European seas, and also off the Canary Islands and Madeira.

Station I. 75 fathoms. One living and one odd valve.

„ IV. 109 fathoms. Five living and many odd valves.

„ V. Two living ; young shells.

(2) **Venus (Timoclea) ovata** (Pennant).

Venus ovata, Pennant, 1767. Brit. Zool., iv, p. 97, pl. lvi, fig. 56.

Cytherea radiata, Stossich, 1866. Enum. Moll. Trieste, p. 31.

This species has many other synonyms.

Generally distributed in European seas and the Mediterranean coast of Africa.

Station I. 75 fathoms. Several odd valves.

„ II. 75 fathoms. One odd valve.

„ V. 109 fathoms. One living and several odd valves.

„ XI. 146 fathoms. Four living and several odd valves.

„ XII. 246 fathoms. Two odd valves.

GOULDIA, C. B. Adams.

Gouldia minima (Montagu).

Venus minima, Montagu, 1803. Test. Brit., p. 121, pl. iii, fig. 3.

Cyprina minima, Turton, 1822. Conch. Insul. Brit., p. 137.

Cytherea minima, Brown, 1827. Ill. Conch., Gt. Britain, pl. xix, fig. 3.

Circe minima, Forbes and Hanley, 1853. Hist. Brit. Moll., l, p. 446, pl. xxvi, figs. 4, 5, 6, 8.

Circe (Gouldia) minima, P. Fischer, 1887. Man. Conch., p. 1081.

This species has a very extended synonymy. Locard gives twenty-three, but in a paper of this sort such an extension seems needless, the shell being common enough and well-known. Its distribution is general in the North Atlantic, from Great Britain to the Azores, and throughout the Mediterranean.

Station V. 109 fathoms. Two odd valves.

CARDIACEA.

CARDIUM, Linné.

(1) *Cardium minimum*, Philippi.

- Cardium minimum*, Philippi, 1836. Enum. Moll. Sicil., i, p. 51.
 " " " 1844. Loc. cit., ii, p. 38, pl. xiv, fig. 18.
 " *saldiense*, Reeve, 1845. Conch. Icon., pl. xxii, fig. 132.
 " *loveni*, Thompson, 1845. In Ann. Mag. Nat. Hist., xv,
 p. 317, pl. xix, fig. 7.
 " *suecicum*, Lovén, 1846. Index. Moll. Scand., p. 189.

Very widely distributed in European seas, from the Loffoden Isles and Norway as far east as Siberia in Asia, British, French, Spanish, and Portuguese coasts, and, though rarer, throughout the Mediterranean. In shallow and very deep water.

Station IX. 240 fathoms. One specimen, perfect though dead.

(2) *Cardium (Lævicardium) norvegicum* (Spengler).

- Cardium lævigatum*, da Costa, 1778. Brit. Conch., p. 178, pl. xiii,
 fig. 6.
 " *norvegicum*, Spengler, 1790. Skrift. Natur. Selsk., i, p. 42.
 " *crassum*, Gmelin., 1790. Syst. Nat., éd. xiii, p. 3354.
 " *serratum*, de Lamarck, 1819. Anim. sans Vert., vi, i, p. 11.
 " *vitellinum*, Reeve, 1844. Conch. Icon., pl. vii, fig. 77.

Lævicardium norvegicum, H. and A. Adams, 1858. Gen. Rec. Moll., ii, p. 457, pl. cxii, fig. 2.

Cardium (Lævicardium) norvegicum, Issel, 1878. Croc. del "Violante," p. 37.

Generally distributed in the European seas, off Madeira, the Canary Isles, and coast of Senegal.

Station IV. 109 fathoms. One broken valve.

MYACEA.

GARIDÆ.

GARI, Schumacher.

Gari costulata (Turton).

- Psammobia costulata*, Turton, 1822. Conch. Insul. Brit., p. 87,
 pl. vi, fig. 8.
 " *discors*, Philippi, 1836. Enum. Moll. Siciliae, i, p. 23
 pl. iii, fig. 8.

Distributed in the Atlantic Ocean, from Norway to Madeira and the Canary Islands, and throughout the Mediterranean.

Station V. 109 fathoms. One specimen, dead, but the valves attached

SAXICAVIDÆ.

SAXICAVA, Fleuryau Bellevue.

Saxicava arctica (Linné).*Mya arctica*, Linné, 1766. Systema Naturæ, édit. xii, p. 1113.

The synonymy of this genus or species is very much involved, the number of species still being a very open question. Mr. E. A. Smith's opinion is that *rugosa* is the only species, the other so-called ones being varieties. The shells under consideration are undoubtedly the *rugosa* var. *arctica* figured by Jeffreys in his "British Conchology," v, pl. li, fig. 4. Generally distributed in the North Atlantic, from Greenland and Norway to Cadiz Bay, and in the Mediterranean.

Station I. 75 fathoms. Six living.

,, II. 75 fathoms. Two living.

ANATINACEA.

PANDORIDÆ.

PANDORA, Brugière.

Pandora inæquivalvis (Linné).*Tellina inæquivalvis*, Linné, 1766. Systema Naturæ, édit. xii, p. 1118.

Pandora rostrata, Forbes and Hanley, 1853. Hist. Brit. Moll., vol. i, p. 207, pl. viii, figs. 1-4.

One valve only in poor condition, and this circumstance makes an examination of Mons. Locard's remarks, when dealing with *P. pinnooides* (Moll. Test. Trav. et Tal.) of doubtful utility, though he appears to have had only one specimen to base his conclusions on.

Station V. 109 fathoms. One left valve.

LYONSIIDÆ.

LYONSIA, Turton.

Lyonsia norvegica (Chemnitz).

Mya norvegica, Chemnitz, 1788. Conch. Cab., vol. x, p. 345, pl. 170, f. 1647.

Lyonsia striata, Turton, 1822. Conch. Insul. Brit., p. 35, pl. 3, figs. 6, 7.

Hyatella striata, Brown, 1827. Ill. Conch. Gt. Brit., pl. xvi, figs. 26, 27.

Generally distributed throughout the European seas and Mediterranean.

Locard splits this species into two, *norvegica* (Chem.) and *striata* (Mont.). Not having sufficient material at hand, I am content to let the generally accepted name stand for the present.

Station I. 75 fathoms. One living.

ANATINIDÆ.

THRACIA, Leach in Blainville.

Thracia papyracea (Poli).

Tellina papyracea, Poli, 1795. Test. Utr. Sic., vol. i, p. 43, pl. xv, figs. 14, 18.

Thracia phaseolina, Forbes and Hanley, 1853. Hist. Brit. Conch., vol. i, p. 221, pl. xviii, figs. 5, 6.

Ranges from Iceland and Loffoden Isles to throughout the Mediterranean, Madeira, the Canary Isles. Locard does not mention this species at all as having been found by the *Talisman* and *Travailleur* expeditions, or the *Caudan* expedition. Jeffreys reports it from the *Porcupine* expeditions of 1869-70.

Station V. 109 fathoms. One valve and three fragments.

SEPTIBRANCHIA.

CUSPIDARIIDÆ.

CUSPIDARIA, Nardo.

(1) **Cuspidaria abbreviata** (Forbes).

Neera abbreviata, Forbes, 1843. In Proc. Zool. Soc., Lond., p. 75.

Neera vitrea, Lovén, 1846. Ind. Moll. Scand., p. 48.

Cuspidaria (Tropidomya) abbreviata, Dautzenberg, 1881. Mem. Soc. Zool., Fr., iv., p. 612.

Atlantic and Mediterranean: from Norway and the West of Ireland to Algiers and the Ægean Sea.

Station XII. 246 fathoms. Two odd valves.

(2) **Cuspidaria cuspidata** (Olivi).

Tellina cuspidata, Olivi, 1792. Zool. Adriat., p. 101, pl. iv, fig. 3.

Corbula cuspidata, Philippi, 1836. Enum. Moll. Sicil., i, p. 17, pl. i, fig. 19.

Appears to have the same geographical distribution as the last species. Locard doubts if the Mediterranean form is the same as the Atlantic, and proposes Brown's name *brevirostris* for the latter. I have carefully compared, with Mr. E. A. Smith's kind assistance, our specimens with those from the *Porcupine* expedition, in the British Museum.

Station XI. 146 fathoms. One odd valve.

„ XII. 246 fathoms. One odd valve.

(3) **Cuspidaria curta** (Jeffreys).

Nœera curta, Jeffreys, 1876. In Ann. and Mag. Nat. Hist., 4th Ser. xviii, p. 495.

” ” ” 1881. Proc. Zool. Soc., Lond., p. 943, pl. lxxi, fig. 10.

Cuspidaria curta, Dautzenberg, 1883. Contr. Faune Malac., Açores, p. 88.

Known only from the Atlantic, in which it is widely distributed on both sides, from the Behring Straits to the Bermudas and from the Bay of Biscay to Morocco.

Station XII. 246 fathoms. Two odd valves.

SCAPHOPODA.

DENTALIIDÆ.

DENTALIUM, Linné.

(1) **Dentalium entalis**, Linné.

Dentalium entalis, Linné, 1758. Syst. Nat., éd. x, p. 785.

” ” Forbes and Hanley, 1853. Hist. Brit. Moll., vol. ii., p. 449, pl. lvii, fig. 11.

According to Jeffreys this species is much more common in the north than in the south of England. He remarks also that he has not been able to identify this species as Mediterranean or Adriatic, though the name occurs in nearly all the accounts of the shells of those seas. Locard, on the contrary, gives various localities in those seas for this species, on the coasts of Spain, France, Italy, Corsica, Malta, African coast, Gulf of Gabes, and also mentions Vigo, the Azores, and Cape Bonne Esperance as Atlantic localities. It has also been recorded from Iceland, Loffoden Isles, Northern Russia, Maine, and Vancouver Island in North America.

Station I. 75 fathoms. Several; living and dead.

” V. 109 fathoms. Three living.

” IX. 240 fathoms. Two, one living, one large fragment much corroded.

” XI. 146 fathoms. Five, all dead, some fragmentary.

(2) **Dentalium panormitanum (panormum)** (Chenu).

Dentalium panormum, Chenu, 1842-47. Ill. Conch., pl. vi, fig. 13.

Dentalium lessoni, Sowerby, 1842-83. Thesaur. Conch., pl. xv, fig. 18.

A rather difficult species, and I can find only one specimen in the British Museum (Nat. Hist.), and this appears to be similar to the solitary specimen under consideration, which is in rather a bad state. Jeffreys (Moll. of *Lightning-Porcupine* Expds., 1868-70, part v, P. Z. S., 1882, p. 657) decides in favour of its validity. It is a rare shell, which has been recorded only from the Bay of Biscay, Portuguese and Spanish coasts, and in the Adriatic. The *Talisman* dredged it off Senegal and in the tropical seas, in 1883, from four stations.

Station IX. 240 fathoms. One dead, corroded shell.

GASTROPODA.

PROSOBRANCHIA.

ASPIDOBANCHIA.

RHIPIDOGLOSSA.

FISSURELLIDÆ.

PUNCTURELLA, R. T. Lowe.

Puncturella noachina (Linné).

Patella noachina, Linné, 1767. *Mantissa plantarum*, p. 551.

„ *fissura*, Müller, 1788-1806. *Zool. Daniæ*, pl. xxiv, figs. 5, 6.

Syphostriata noachina, T. Brown, 1827. *Ill. Conch. Gt. Brit.*, etc., pl. xxxvi, figs. 14-16.

Cemoria noachina, Gould, 1841. *Invert. Mass.*, p. 156, fig. 18.

Rimula Flemingii, Macgillivray, 1843. *Hist. Moll. Anim. Aberdeen*, etc., pp. 65 and 178.

This species is very widely distributed in the seas of the sub-polar and temperate regions of the world.

Station XII. 246 fathoms. One dead.

EMARGINULA, Lamarek.

(1) *Emarginula fissura* (Linné).

Patella fissura, Linné, 1758. *Syst. Nat. édit. x*, p. 784.

Emarginula reticulata, Forbes and Hanley, 1853. *Hist. Brit. Moll.*, ii, p. 477; figured as *Mülleri*, iv, pl. 63, fig. 1.

Generally distributed in the European seas and off the Canary Isles.

Station I. 75 fathoms. One dead

(2) **Emarginula multistriata**, Jeffreys.

Emarginula multistriata, Jeffreys, 1882. In Ann. Mag. Nat. Hist.,
p. 30.

„ „ „ „ Proc. Zool. Soc., p. 680,
pl. 1, fig. 12.

Recorded from the Atlantic, off the coast of Portugal, and from the Mediterranean.

Station VII. $\overline{444}$ fathoms. One dead shell.

TROCHIDÆ.

CALLIOSTOMA, Swainson.

(1) **Calliostoma obesulum** (P. Fischer).

Zizyphinus obesulus, P. Fischer, 1883, in Collect.

Gibbula obesula, Locard, 1898. Exp. Sci. Trav. et Talis., ii, p. 47,
pl. iii, figs. 1-4.

This is another species that seems to have been previously recorded only from the coast of Morocco and the Soudan coast of the North Atlantic. Locard's figures above-mentioned are not particularly good, and I am indebted to Mons. Dautzenberg for its correct identification, the species not being represented in our National Collection.

Station VII. $\overline{444}$ fathoms. Twenty-four living, one fragment.

„ XIII. 412 fathoms. One living, two dead.

(2) **Calliostoma cleopatra** (P. Fischer).

Trochus cleopatra, P. Fischer, 1883, in Collect.

Zizyphinus cleopatra, Locard, 1898. Exp. Sci. Trav. et du Tal.,
vol. ii, pl. ii, figs. 20-23.

Only recorded by Locard from one station (*Talisman*, 1883, Station 83) off the Sahara coast, and the fact of this scarce shell turning up living, in the north of the Bay of Biscay is very interesting.

Station VII. $\overline{444}$ fathoms. One living.

(3) **Calliostoma miliaris** (Brocchi).

Trochus miliaris, Brocchi, 1814. Conch. Foss. Subappen., p. 253,
pl. iv, fig. 1.

Trochus millegranus, Philippi, 1836. Enum. Moll. Sicil., I, p. 183,
pl. x, fig. 25.

Zizyphinus miliaris, Locard, 1886. Prodro. Conch., Franc., p. 309.

Calliostoma miliaris, Pilsbry, 1889. Man. Conch., part xliva, p. 387,
pl. xviii, figs. 10, 11.

Generally distributed in the North Atlantic and throughout the Mediterranean in shallow and deep water.

Station I. 75 fathoms. One young, dead.

(4) **Calliostoma granulatum** (Born.).

Trochus granulatus, Born, 1778. Ind. Rerum Nat. Mus. Vindobon, p. 343.

Trochus papillosus, da Costa, 1778. Brit. Conch., p. 38, pl. iii, figs. 5 and 6.

Trochus fragilis, Pultney, 1799. Cat. Dorset Shells, p. 48, pl. xvi, fig. 6.

Trochus tenuis, Montagu, 1803. Test. Brit., i, p. 275, pl. x, fig. 3.

Fairly distributed in European seas, Britain, France, Spain, and Portugal. In the Mediterranean and Adriatic, Morocco, Madeira, Canaries, etc.

Station V. 109 fathoms. Five living, including one *var. lactea* (Jeff.) and one young shell.

Station VI. 87 fathoms. One living.

PECTINIBRANCHIA.

TÆNIOGLOSSA PLATYPODA.

CAPULIDÆ.

CAPULUS, de Montfort.

Capulus hungaricus (Linné).

Patella ungarica, Linné, 1758. Syst. Nat. édit. x, p. 782.

Pileopsis hungaricus, Forbes and Hanley, 1853. Hist. Brit. Moll., vol. ii, p. 459, pl. lx, figs. 1 and 2 (as *C. hungaricus*).

A widely distributed species, ranging from Iceland, Norway, and the Eastern coasts of Europe to the Azores, and throughout the Mediterranean to the south-east coasts of the United States. It was not found by either the *Caudan* or *Travailleur* and *Talisman* expeditions.

Station IV. 109 fathoms. One living on *Venus verrucosa*.

NATICIDÆ.

NATICA, Scopoli.

(1) **Natica (Lunatia) sordida** (Philippi).

Natica sordida, Philippi, 1844. Enum. Moll. Siciliæ, ii, p. 139, pl. xxiv, fig. 15.

British seas, and very generally distributed in the European seas, including the Mediterranean, and off Madeira.

The synonymy of this species is not very clear. Locard considers it to be the *N. fusca* of Blainville, 1821. (Dict. des Sciences Nat.)

The specimens under consideration are all young, but compare very well with those in the British Museum (Nat. Hist.) from the *Lightning* and *Porcupine* expeditions.

Station IX. 240 fathoms. Three dead.

„ XII. 246 fathoms. Three dead.

(2) ***Natica (Lunatia) catena*** (da Costa).

Cochlea catena, da Costa, 1778. Brit. Conch., p. 83, pl. v, fig. 7.

Natica monilifera, Lamarck, 1822. Anim. s. Vert., vi, ii, p. 199.

Natica catenata, Locard, 1886. Prodr., p. 274. 1892. Conch. Franc., p. 182, fig. 157.

Generally distributed in the European seas.

Jeffreys does not appear to have recorded this species in his mollusca of the *Lightning* and *Porcupine* expeditions, nor is it mentioned by Locard as having been found during the *Travailleur* and *Talisman* expeditions, but he records it as commonly found in the Gulf of Gascogne cruise of the *Caudan*.

Station II. 75 fathoms. One dead.

(3) ***Natica (Lunatia) alderi*** (Forbes).

Natica alderi, Forbes, 1838. Malac. Monensis, p. 31, pl. ii, figs. 6, 7.

„ *nitida*, Forbes and Hanley, 1853. Hist. Brit. Moll., iii, p. 330, pl. C (100), figs. 2-4.

Jeffreys (P.Z.S., Jan. 20th, 1885, p. 30) considered this species to be identical with Linné's *N. glaucina* (Fauna Suecica, ed. 2, p. 533, No. 2197), while Locard ("Travailleur et Talisman") decides that he described under this name several European *Naticas*. The latter also removes *Natica poliana*, Delle Chiaje, from the synonymy of this species, thus making it more an oceanic species by excluding it from the Mediterranean list, and giving *Natica poliana* specific rank.

British seas and the oceanic coasts of Europe and the Sahara coast of Africa.

Station V. 109 fathoms. Eight dead, of various sizes.

Station XI. 146 fathoms. One dead, small, broken.

(4) ***Natica (Lunatia) montagui*** (Forbes).

Natica montagui, Forbes, 1838, Malac. Monensis, p. 172, pl. ii, figs. 3, 4.

Lunatia montagui, G. O. Sars, 1878. Moll. Reg. Arch. Norvegiæ, p. 157.

Natica montacuti, Jeffreys, 1885. In P.Z.S., Lond., p. 31.
British and European seas, including the Mediterranean.

Station V. 109 fathoms. Three dead.
,, XI. 146 fathoms. Three, one living, two dead.
,, XII. 246 fathoms. One dead, which appears to be *var. conica* of
Jeffreys.

(5) ***Natica (Lunatia) operculata*** (Jeffreys).

Natica operculata, Jeffreys, 1885. Proc. Zool. Soc., p. 34, pl. iv,
fig. 7.

Distributed in the North Atlantic. Jeffreys' localities are from the
neighbourhood of Cape St. Vincent to south-west of Cadiz, and in
the Mediterranean, Adventure Bank. He also gives North Japan
(St. John) as a habitat.

I am indebted to Mons. Dautzenberg for the identification of the
one small specimen.

Station I. 75 fathoms. One, small, dead.

LAMELLARIIDÆ.

LAMELLARIA, Montagu.

Lamellaria perspicua (Linné).

Helix perspicua, Linné, 1758. Syst. Nat., édit. x, p. 775.

According to Jeffreys, the distribution of this species is Norway,
Farøe Islands, Great Britain, Ireland, Brest (Daniel), Atlantic coasts
of France and Spain (Hildago), throughout the Mediterranean and
Adriatic, Canaries (McAndrew), Labrador, Canada, and the United
States.

This species is not recorded by either the *Caudan* or *Travailleur*
and *Talisman* expeditions.

Mons. Dautzenberg records it from San Miguel and Pico in the
Azores, remarking that all the examples were young, the shell hyaline
white, marked with three opaque bands.

Station VI. 87 fathoms. Five living, two male, three female.

TRITONIIDÆ.

RANELLA, Lamarck.

Ranella gigantea (Lamarck).

Murex reticularis, Born, 1780. Test. Mus. Cæsar, Vindobon, pl. xi,
fig. 51, non Linné.

Argobuccinum (Gyrina) gigantea, Dautzenberg, 1892. In Mem. Soc.
Zool., France, iv, p. 605.

Locard considers that the shell found in the Atlantic differs from that found in the Mediterranean, and calls them *var. atlantica* and *var. mediterranea*, the sculpture of the latter being stronger than in the former. Not having had the opportunity of examining a large series from both localities, I do not care to offer an opinion, as Locard also remarks that the Atlantic variety was not always confined to this habitat, as he has found it in the Post-pliocene of Italy.

Station IV. 109 fathoms. Four living, two male, two female, the latter being the largest. This appears to be the most northerly record for this species.

SCALIDÆ.

SCALA, Humphrey.

(1) *Scala clathrus* (Linné).

Turbo clathrus, Linné. Syst. Nat., 1758, éd. x, p. 765 (partly).

Scalaria communis, Lamarek. An. s. Vert. 1822, vi. (2), p. 228.

” ” Forbes and Hanley, 1853, Hist. Brit. Moll.
pl. lxx, figs. 9 and 10.

Dredged by the *Porcupine*, 1869, in Donegal Bay, 1870, off Cape Sagres, and in the Mediterranean at Algeciras Bay and on the Adventure Bank.

Station I. 75 fathoms. One dead shell.

(2) *Scala trevelyana* (Leach in Johnston).

Scalaria trevelyana (Leach MS.), 1853. In Forbes and Hanley, Hist. Brit. Moll., iii, p. 213, pl. lxx, figs. 7 and 8; pl. FF, figs. 1-3.

Distribution, North Atlantic, from Norway to the Sahara coast.

Station XI. 146 fathoms. One dead shell.

(3) *Scala richardi* (Dautzenberg et de Boury).

Scalaria richardi, Dautzenberg and de Boury, 1897. Mem. Soc. Zool. de France, x, p. 68, pl. ii, fig. 5.

Dredged by the *Hirondelle*, 1888, off the Azores; and *Princess Alice*, 1895, also off the Azores.

None but dead shells seem to have been found, and the species was described from imperfect specimens.

Station IX. 240 fathoms. One dead shell with the mouth imperfect.

TURRITELLIDÆ.

TURRITELLA, Lamarek.

Turritella communis, Risso.

Turritella communis, Risso, 1826. Hist. Nat. Europe Mérid., iv, p. 106, fig. 37.

This well-known species has an extensive habitat in the seas of Europe, living as far north as the Faroe Islands. It is found throughout the Mediterranean and off the coast of Morocco.

Locard splits this species into two on the strength of distinctions pointed out by de Monterosato, but I do not know how far this distinction has been adopted, nor have I been able to inspect a series of each. Our solitary specimen is both young and damaged, but can be without doubt referred to the *var. gracilis* of Jeffreys.

Station XI. 146 fathoms. One dead, young and broken.

TRICHOTROPIDÆ.

TORELLIA, Jeffreys.

Torellia vestita, Jeffreys.

Recluzia aperta, Jeffreys, 1859. Ann. Mag. Nat. Hist., 3rd ser., iii, p. 114, pl. iii, fig. 22 a-c.

Torellia vestita, Jeffreys, 1867. Brit. Conch., iv, p. 244, pl. iv, fig. 1; v, pl. lxxix, fig. 5.

Little seems to be known as to the distribution of this species. Jeffreys mentions Loffoden Isles southwards on the authority of Lovén and others, Shetland (Barlee) and New England coasts of the United States (Verrill). It is not recorded from either the *Travailleur*, *Talisman*, or *Caudan* expeditions, which makes this an interesting Bay of Biscay record.

Station XIII. 412 fathoms. One living.

STENOGLOSSA.

RHACHIGLOSSA.

BUCCINIDÆ.

BUCCINUM, Linné.

(1) *Buccinum undatum* (Linné).

Buccinum undatum, Forbes and Hanley, 1853. Hist. Brit. Moll., iii, p. 401, pl. cix, figs. 3 and 5.

This species seems to be confined to the North Atlantic, its habitat extending from the North Cape (Sars, Friele), and Iceland (Steenstrup), to the north, Massachusetts (Gould), Cape Hatteras (Dall.), New York State (De Kay, Smith, Prime, Tryon, Man. Conch.), to the west, and Rochelle (D'Orbigny père and Aucapitaine) to the south.

It is not recorded by Locard as having been found in either the *Travailleur*, *Talisman*, or *Caudan* expeditions.

- Station I. 75 fathoms. One living.
 „ II. 75 fathoms. One dead and one fragment.
 „ V. 109 fathoms. One living and two young shells dead.
 „ VI. 87 fathoms. One living and one dead.

Remarks.—The shells are much thinner than those usually found in the English Channel and southern part of the North Sea, and might be considered as approaching the variety *striata*, Pennant.

(2) **Buccinum**, Sp.

Two young living specimens of some species; without further material it is not much use attempting to give them a specific position. Mons. Dautzenberg suggests they may be the young of *B. schneideri*, Verkrüzen.

- Station V. 109 fathoms. Two living, young.

LIOMESUS, Stimpson.

Liomesus dalei (J. Sowerby).

- Buccinum dalei*, J. Sowerby, 1825. Min. Conch., p. 139, pl. 486, figs. 1, 2.
 „ „ Forbes and Hanley, 1853. Hist. Brit. Moll., iii, p. 408, pl. cix, figs. 1, 2.
Buccinopsis „ Jeffreys, 1867. Brit. Conch., iv, p. 298, pl. v, fig. 3; v, pl. lxxxiii.

Jeffreys gives several localities on the authority of others; for instance, west coast of Ireland, 100 fathoms; soft ground beyond the Doggerbank, Aberdeenshire; places between the Loffenden Isles, the North Cape, 40–50 fathoms, while he dredged it himself from a bottom of fine sand and mud in 72–87 fathoms off the northern and eastern coasts of Shetland.

Not recorded by Locard in either the *Travailleur*, *Talisman*, or *Caudan* expeditions.

- Station V. 109 fathoms. One living and two dead, the latter young shells.
 Station IX. 240 fathoms. Three young shells dead.
 „ XI. 146 fathoms. Two young shells, one living, one dead.
 „ XII. 246 fathoms. One young shell dead.

TRITONOFUSUS, Beck.

(1) **Tritonofusus gracilis** (da Costa).

- Buccinum gracile*, da Costa, 1778. Brit. Conch., p. 124, pl. vi, fig. 5.
Fusus gracilis, Alder, 1848. Cat. Moll. North. and Dur., p. 63.
Neptunea gracilis, P. Fischer, 1878. In Act. Soc. Lin., Bord., xxxii, p. 190.

Distribution, Norway, Sweden, the seas of Northern Europe pretty generally. Locard is of the opinion that its reputed discovery in the Mediterranean requires confirmation.

I am, to some extent, doubtful as to the identification of all the specimens I have referred as belonging to this species, their condition not being good in most cases.

Station I. 75 fathoms. One of average size but long dead, one smaller, dead and broken.

Station II. 75 fathoms. Two, both dead, one with remnants of epidermis.

Station V. 109 fathoms. Two, both dead, and young shells.

„ IX. 240 fathoms. One of average size but long dead, and one fragment.

(2) **Tritonofusus (Siphonorbis) propinquus** (Alder).

Fusus (Siphonorbis) propinquus, Alder, 1848. Cat. Moll. North. and Dur., p. 63.

„ „ „ Forbes and Hanley, 1853. Hist. Brit. Moll., vol. iii, p. 419, pl. 103, fig. 2.

I cannot find much recorded relating to the distribution of this species, and the *Porcupine* material has not yet been worked out. Jeffreys' localities, given in his *British Conchology*, are all Northern or Irish Sea, and Dautzenberg records it from the coast of Loire-Inférieur. I do not find it mentioned as having been found by the *Caudan*, *Travailleur et Talisman*, or the Prince of Monaco's expeditions.

Station V. 109 fathoms. One young, dead.

„ IX. 240 fathoms. One living.

„ XI. 146 fathoms. One dead embryonic, one dead but covered with epidermis.

(3) **Tritonofusus turritus** (Sars).

Tritonium turritum, Sars, 1858. Arct. Moll. Norg. in Vet. Forh. Christ., p. 39.

Fusus propinquus, var. *turrita*, Jeffreys, 1867. Brit. Conch., iv, p. 339.

Distribution, Norway, etc., and according to Jeffreys, in 78 fathoms off the coast of Shetland. Locard does not record this species from either the *Travailleur* and *Talisman* or *Caudan* expeditions.

Station XIII. 246 fathoms. One living and one dead.

(4) **Tritonofusus (Siphonorbis) jeffreysianus** (Fischer).

Fusus jeffreysianus, P. Fischer, 1868. In Journ. Conch., xvi, p. 37.

Neptunia jeffreysiana, P. Fischer, 1878. In Act. Soc. Lin., Bordeaux, xxxii, p. 198.

Sipho Jeffreysiana, Tryon, 1881. Man. Conch., part x, p. 126, pl. 41, fig. 308.

Neptunia Jeffreysiana, Locard, 1896. Campagne du *Caudan*, facie. i, pl. v., fig. 6.

Locard remarks that this species is very local in its distribution, it being more or less confined to the Bay of Biscay, the commonest form of the French coast.

It was dredged in the *Porcupine*, *Travailleur*, 1882, *Hirondelle*, 1886, *Caudan*, 1895, expeditions in the Bay of Biscay.

Station V. 109 fathoms. Two living, both males. One dead, young and broken.

„ IX. 240 fathoms. One dead.

(5) ***Tritonofusus fusiformis*** (Broderip).

Buccinum fusiforme, Broderip, 1829. In Zool. Journ., v, p. 45, pl. iii, fig. 3.

Fusus fenestratus, Turton, 1832. In Ann. Mag. Nat. Hist., vii, p. 351.

Neptunea fenestrata, Kobelt, 1875. In Martini und Chemnitz, Conch. Cab., 2^e édit., p. 97, pl. xxvi, fig. 6.

Sipho fusiformis, G. O. Sars, 1878. Moll. reg. arct. Norvegiæ, p. 377, pl. xiv., fig. 1.

Neptunea (Siphonorbis) fusiformis, Friele, 1879. Norsk. Nordh. Exped., Buccin, p. 18.

Sipho (Siphonorbis) fusiformis, Ed. Smith, 1889. In Ann. Mag. Nat. Hist., 6^e sér., p. 424.

This species seems to be widely distributed in the North Atlantic, from Scandinavia and Finmark to the coasts of Morocco. Mons. Locard points out that in the north it inhabits comparatively shallow water, living at greater and greater depths as its most southern recorded habitat is reached.

Station V. 109 fathoms. One dead.

„ IX. 240 fathoms. One young, living.

„ XII. 246 fathoms. One dead.

NOTE.—At first I concluded that specimens from Stations 9 and 12 were referable to *Neptunea peregra*, Locard (*Exped. du Trav. et du Talis.*, vol. i, p. 371, pl. xviii, figs. 8 to 11). I submitted them to Mons. Dautzenberg, who decided they were the young of the above species. Is *Neptunea peregra*, Locard, a distinct species?

FASCIOLARIIDÆ.

BUCCINOFUSIS (Conrad).

Buccinofusus berniciensis (King).

Fusus berniciensis, King, 1846. In Ann. and Mag. Nat. Hist. xviii, p. 246.

Boreofusus berniciensis, G. O. Sars, 1878. Moll. Reg. Arct. Norvegiæ, p. 278.

Troschelia berniciensis, Friele, 1882. Norske Nord. Exped. i, p. 26.

Neptunia berniciensis, Locard, 1886. Prodr. Conch. Franc., p. 176.

Dredged at various stations, in deep water, from the North of Spain to Cape Verde, also by Mr. Holt of the Irish Board of Agriculture, in 337 fathoms, 48 miles to the N.W. of Tearaght, Co. Kerry, 1904. It has been recorded from several localities in the British area, Norway, Farøe Islands, North Russia and Davis Straits.

Station IX. 240 fathoms. One dead, in very poor condition.

PSEUDOMUREX, Monterosato.

Pseudomurex richardi (P. Fischer).

Murex richardi, P. Fischer, 1882. In Journ. Conch., xxx, p. 49.

Pseudomurex richardi, Monterosato, 1890. Coq. Prof. Palermo, p. 23.

Distribution: In deep water from the Bay of Biscay to the west coast of Morocco and in the Mediterranean.

Station XIII. 412 fathoms. Two living.

MURICIDÆ.

TROPHON, Montfort.

Trophon muricatus (Montagu).

Murex muricatus, Montagu, 1803. Test. Brit., p. 262, pl. ix, fig. 2.

Fusus echinatus, Philippi, 1836. Enum. Moll. Sicil., I, p. 206, pl. xi, fig. 10.

Trophon muricatus, Forbes and Hanley, 1853. Hist. Brit. Moll., iii, p. 439, pl. cxi, figs. 3, 4.

Trophon (Trophonopsis) muricatus, Buquoy and Dautzenberg, 1882. Moll. Rous., I, p. 39, pl. vi, fig. 7.

Generally distributed in European seas as far north as Belgium and south to the Mediterranean and Ægean seas. The single specimen found falls in with Locard's remarks as to the small size of the dredged examples, it being only 10·5 millimetres in height.

Station V. 109 fathoms. One (young) dead.

„ XI. 146 fathoms. One dead.

COLUMBELLIDÆ.

ANACHIS, H. and A. Adams.

Anachis costulata (Cantraine) auct.

Fusus costulatus, Cantraine, 1835 (?). Diagn. Esp. Nouv. in Bull. Acad., Bruxelles, p. 20.

* *Columbella haliæti*, v. *albula*, Jeffreys, 1867. Brit. Conch., iv, p. 356, pl. vi, fig. 5.; 1869, v, p. 219, pl. lxxxviii, fig. 3.

Bela grimaldi, Dautzenberg, 1889. Contrib. Faune Malac., Açores, p. 26, pl. ii, figs. 2a, 2b, 2c, 2d.

Bela limatula, Locard, 1896. Résultats Scient. de la Camp. du Caudan, Mollusques, p. 141, pl. v, fig. 3.

I submitted the two specimens to Mons. Dautzenberg, having in vain endeavoured to trace them in the National Collection or figured and described in the above-mentioned works, neither Locard's or Dautzenberg's figures showing the teeth on the outer lip, both having been drawn from young shells.

This species must be widely distributed in the North Atlantic, though the records are few.

Station XII. 146 fathoms. Two dead shells.

OPISTHOBRANCHIA.

TECTIBRANCHIA.

BULLACEA.

SCAPHANDRIDÆ.

SCAPHANDER, de Montfort.

Scaphander lignarius (de Montfort).

Bulla lignaria, Linné, 1758. Sys. Nat., édit. x, p. 727.

Scaphander lignarius, de Montfort, 1810. Conch. Syst., ii, p. 334.

Bulla lignaria, Gray, 1815. In Ann. Phil., p. 408.

Very widely distributed on the coasts of Europe, from Norway to throughout the Mediterranean, in shallow and deep water.

Station V. 109 fathoms. One large living and one smaller, dead.

„ XI. 146 fathoms. One fragmentary, dead.

„ XII. 246 fathoms. One small and broken.

CAVOLINIIDÆ.

CLIO, Linné.

Clio pyramidata, Linné.

Clio pyramidata, Linné, 1767. Syst. Nat., 12th Ed., p. 1094.

Hyalæa lanceolata, Lesueur, 1813. Nouv. Bull. Soc. Philom. de Paris, iii, p. 284, pl. v, fig. 3.

This species has many synonyms, whose repetition is hardly necessary.

It is cosmopolitan in its distribution throughout the oceanic world.

Station XII. 246 fathoms. Thirteen specimens, more or less fragmentary, though two or three contained the animal in a much contracted state.

CAVOLINIA, Abildgard.

(1) **Cavolinia trispinosa** (Lesueur).

Hyalæa trispinosa, Lesueur, 1821. In de Blainville, Dict. Hist. Nat., xii, p. 82.

Hyalæa mucronata, Quoy and Gaymard, 1827. In Ann. Sci. Nat., x, p. 231, pl. viii, B.

Hyalæa depressa, Bivona, 1832. Ejemer. Scient. Sicil., pl. ii, figs. 4, 5.

Cavolinia trispinosa, Locard, 1886. Prodrom. Conch. Franc., p. 22.

Cavolinia (Diacria) trispinosa, Dall, 1889. In Bull. United States Nat. Mus., xxxvii, p. 82, pl. lxvi, fig. 115.

I have compared our solitary, nearly perfect specimen with those from the Atlantic in the British Museum (Nat. Hist.).

This species is widely distributed, and is recorded from the east and west coasts of the Atlantic, the Mediterranean, West Indies, Madeira and Canary Isles, and Pacific Ocean.

Station XII. 246 fathoms. One dead and one fragment.

(2) **Cavolinia inflexa** (Lesueur).

Hyalæa inflexa, Lesueur, 1813. Nouv. Bull. Soc. Philom., vol. iii, p. 285, pl. v, fig. 4, A—D.

Hyalæa labiata, d'Orbigny, 1836. Voyage dans l'Amérique Meridionale, vol. v, p. 104, pl. vi, figs. 21—25.

Cavolinia inflexa, Tesch., 1904. The *Thecosomata* and *Gymnosomata* of the Siboga Expedition, p. 43, pl. ii, figs. 54—63.

This is a very variable species and has extensive synonymy: our two shells seem to be referable to *v. labiata* from an examination of those so named in the British Museum (Nat. Hist.).

Station XII. 246 fathoms. Two empty shells.

PLEUROBRANCHACEA.

PLEUROBRANCHIÆ.

PLEUROBRANCHUS, Cuvier.

Pleurobranchus, Sp.

I have submitted this specimen to Sir Charles Eliot, who remarks, "an immature *Pleurobranchus*, very likely *P. plumula*, Montagu; but the dorsal skin has been torn off. The species cannot be identified."

Station XIII. 412 fathoms.

NUDIBRANCHIA.

KLADOHEPATICA.

ÆOLIDIIDÆ.

Genus ?

Sir Charles Eliot remarks, "The body of an Æolid which has lost all but its papillæ and is otherwise in poor preservation. It is not possible to determine even the genus."

Station VII. 444 fathoms.

DOTONIDÆ.

Doto, Oken.

Doto, Sp.

Sir Charles Eliot remarks, "A *Doto*, probably *D. fragilis*, Forbes." It is common on the British coasts, and is very likely generally distributed in the Atlantic.

Station II. 75 fathoms.

BIBLIOGRAPHY.

- BERG, R. Opisthobranchs provenant des Campagnes du Yacht l'*Hirondelle*. Résultats des Campagnes Scientifique accomplies sur son yacht par Albert 1er, Prince de Monaco, Fasc. iv, 1893.
- BERG, R. Nudibranchs et Marsenia provenant des campagnes de la "Princesse Alice." Résultats des Campagnes Scientifique accomplies sur son yacht par Albert 1er, Prince de Monaco, Fasc. xiv, 1899.
- BROWN, CAPT. T. Illustrations of the Conchology of Great Britain and Ireland, 1827 (1st edit.).
- COSTA, C. M. DA. Historia Naturalis Testaceorum Britanniaë, 1778.
- DALL, W. H. Preliminary Catalogue of the Shell-bearing Marine Mollusks, etc., of the South-east Coast of the United States. Un. States Nat. Mus., Bul. No. 37, 1889.

- DAUTZENBERG, P. Contributions à la Faune Malacologique des Iles Açores. Résultats des Campagnes Scientifique accomplies sur son yacht par Albert 1er, Prince de Monaco, Fasc. I, 1889.
- DAUTZENBERG, P. Contribution à la Faune Malacologique du Golfe de Gascogne. Mém. Soc. Zool., France, 1891.
- DAUTZENBERG, P. Croisières du Yacht *Chazalic* dans l'Atlantique, Mollusques. Mém. Soc. Zool., France, 1900.
- DAUTZENBERG, Ph., and BOURY, E. DE. Mollusques appartenant à la famille des *Scalidae* et du genre *Mathildia*. Dragages effectués par l'*Hirondelle* et par la *Princesse Alice*, 1888-96. Mém. Soc. Zool., France, 1897.
- DAUTZENBERG, Ph., and FISCHER, H. Dragages effectués par l'*Hirondelle* et par la *Princesse Alice*, 1888-96. Mém. Soc. Zool., France, 1896-7.
- DAUTZENBERG, Ph., and FISCHER, H. Mollusques provenant des dragages effectués à l'ouest de l'Afrique. Résultats des Campagnes Scientifiques accomplies sur son yacht par Albert 1er, Prince de Monaco, Fasc. xxxii, 1906.
- FISCHER, Dr. P. Manuel de Conchyliologie, etc., 1887.
- FORBES, E., and HANLEY, S. British Mollusca, 1848-53.
- GARSTANG, W., M.A. British Aplacophora. Proc. Malac. Soc., Lond. No. 3, Vol. II. Oct., 1896.
- FRIELE, H. Den Norske Nordhaus-Expedition, 1876-78. Mollusca, 1882-6.
- JEFFREYS, J. GWYN. British Conchology, 1862-9.
- JEFFREYS, J. GWYN. On the Mollusca procured during the *Lightning* and *Porcupine* expeditions, 1868-70.
- | | | | |
|--|---------|--------------------------|---------|
| | Part 2. | Proc. Zool. Soc., Lond., | 1879. |
| | " 3. | " " | " 1881. |
| | " 4. | " " | " 1881. |
| | " 5. | " " | " 1882. |
| | " 6. | " " | " 1883. |
| | " 7. | " " | " 1884. |
| | " 8. | " " | " 1884. |
| | " 9. | " " | " 1885. |
- LOCARD, A., et VAYSSIÈRE, A. Résultats scientifiques de la Campagne du *Caudan* dans le Golfe de Gascogne, Août et Sept., 1895. Ann. Univer. de Lyon, 1896.
- LOCARD, A. Expéditions scientifiques du *Travailleur* et du *Talisman* pendant les années 1880, 1881, 1882, 1883. Mollusques Testacés, 1897-8.
- PAYRAUDEAU, B. C. Catalogue descriptif et Méthodique des Annelides et des Mollusques de L'île de Corse, 1826.
- PENNANT, T. British Zoology, Vol. IV, Mollusca, etc., 1777.
- PHILIPPI, R. A. Enumeratio Molluscorum Siciliae, etc., 1836-44.
- SAUSSAYE, PETIT DE LA. Catalogue des Mollusques Testacés des Mers d'Europe, 1869.
- SYKES, E. R., On the Mollusca procured during the *Porcupine* Expeditions, 1869-70. Supplemental Notes.
- | | | | |
|--|--------|---------------------------|----------------------------|
| | Pt. 1. | Proc. Malac. Soc., Lond., | vol. vi, No. 1, 1904. |
| | " 2. | " " | " " No. 6, 1905. |
| | " 3. | " " | " " vol. vii, No. 3, 1906. |
- TESCH, J. J. The *Thecosomata* and *Gymnosomata* of the Siboga Expedition, 1899-1900. April, 1904.
- TURTON, W. Conchylia Insularum Britannicarum, 1822.

NOTE.—The above bibliography includes only such books as I have had the opportunity of consulting.

LIST OF SPECIES, AND THE STATIONS AT WHICH THEY OCCUR.

STATION No.		I	II	IV	V	VI	VII	IX	XI	XII	XIII
Latitude, N.		48° 25'	48° 24'	47° 48'	47° 48'	47° 46'	47° 36'	48° 7'	48° 10'	43° 7'	48° 7'
Longitude, W.		6° 28'	6° 28'	7° 25'	7° 46'	7° 12'	7° 31'	8° 13'	8° 11'	8° 13'	8° 13'
Fathoms		75	75	109	109	87	444	240	146	246	412
	BRITISH SPECIES										
Amphineura.											
1. <i>Rhopalomenia aglaophenia</i> . . . . .	+	+	...	...	...	...	...	...	...	...	+
Pelecypoda.											
2. <i>Nucula sulcata</i> . . . . .	+	...	...	...	...	...	...	+	...	..	..
3. " <i>nitida</i> . . . . .	+	...	...	...	...	...	...	..	..	..	..
4. <i>Anomia ephippium</i> . . . . .	+	...	...	...	...	...	...	+	+	..	..
5. <i>Limopsis aurita</i> . . . . .	+	...	...	+	...	...	...	+	..	+	..
6. " <i>minuta</i> . . . . .	+	...	...	...	...	...	...	..	..	+	..
7. <i>Glycymeris glycymeris</i> . . . . .	+	+	...	...	+	...	...	..	..	..	..
8. <i>Arca nodulosa</i> . . . . .	+	...	...	...	...	...	+	..	..	..	+
9. " <i>obliqua</i> . . . . .	+	...	...	...	+	...	...	..	..	..	..
10. <i>Volsella phaseolina</i> . . . . .	+	...	+	...	...	...	...	..	..	..	..
11. <i>Pecten bruei</i> . . . . .	+	...	...	...	...	...	...	..	..	..	+
12. <i>Chlamys sulcatus</i> . . . . .	+	...	...	...	...	...	...	+	..	..	..
13. <i>Æquipecten opercularis</i> . . . . .	+	+	+	+	+	...	...	..	+	..	..
14. <i>Palliolium similis</i> . . . . .	+	...	...	...	+	...	...	..	..	..	..
15. " <i>vitreus</i> . . . . .	+	...	...	...	...	...	+	..	..	..	+
16. <i>Lima excavata</i> . . . . .	...	...	...	...	...	...	+	..	..	..	..
17. " <i>marioni</i> . . . . .	...	...	...	...	...	...	+	..	..	..	+
18. " <i>subauriculata</i> . . . . .	+	...	...	...	+	...	...	..	..	..	..
19. <i>Astarte sulcata</i> . . . . .	+	+	+	...	...	...	...	+	..	+	+
20. <i>Syndosmya prismatica</i> . . . . .	+	...	+	...	...	...	...	..	..	..	..
21. <i>Spisula elliptica</i> . . . . .	+	+	+	...	+	...	...	..	+	..	..

