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First Report on the Marine Fauna of the South-West of Ireland

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XXXVI.—FIRST REPORT ON THE MARINE FAUNA OF THE SOUTH-WEST OF IRELAND.

[Read, February 22, 1886.]

INTRODUCTION.

TO DR. E. PERCEVAL WRIGHT is due the credit of forming a Committee to investigate the Fauna of the hundred fathom line off the south-west coast of Ireland. Professor Wright brought the matter before the Royal Irish Academy, and obtained a grant for that purpose.

A preliminary list of names of naturalists who might constitute the Committee was then presented. From various circumstances this list was subsequently considerably modified, and, unfortunately, the Committee was also deprived of the active services of the Convener.

Most fortunately the Committee was able to secure the services of the Rev. W. S. Green, whose enthusiasm in dredging operations is unbounded. His practical and topical knowledge justified the Committee in leaving him to make all local arrangements, which the members of the expedition found to be satisfactory in every respect.

Mr. Green further enlisted the hearty co-operation of Mr. T. E. Weekes, the Chairman of the Queenstown Towing Company, who accompanied the expedition. Thanks are also due to Mr. W. H. W. Perrott, who undertook the mapping of the course of the vessel, and the plotting of the stations, and whose unfailing energy was always at the disposal of his colleagues.

The Committee was able to hire the well-known steamer, "Lord Bandon," of the Queenstown Towing Company, and it would here express its appreciation of the liberality with which that Company treated the Committee. The crew also entered heartily into the operations.

The *Lord Bandon* is a powerful tug steamer, with double, independent reversible engines. She is a very sea-worthy boat, and though some rough weather was experienced, scarcely a drop of water was shipped, and not a single bottle was upset. The ease with which she is handled render her peculiarly fitted for this class of work.

The party consisted of Professor A. C. Haddon, M.A., M.R.I.A., and H. W. Jacob, Esq., of Dublin; Joseph Wright, Esq., F. G. S., S. M. Malcomson, M.D., and W. Swanston, F. G. S., of Belfast; the Rev. W. S. Green, M.A., F.R.G.S., of Carrigaline; W. H. W. Perrott, Esq., B.A., now of the Royal Artillery, of Monkstown, Co. Cork. Professor Darcy, W. Thompson of Dundee, and J. Marsh, Esq., of Belfast, also accompanied the expedition for the first two days.

The "Lord Bandon" started from Queenstown at 3'30, p.m., on Monday, August 3rd, 1885, and the dredging commenced at 5 o'clock

the next morning, forty-nine miles west of Cape Clear, in ninety fathoms. Various hauls of the dredge were made, but though the ground appeared to be rich, the roughness of the weather and the temporary disablement of the scientific staff prevented the results from being as satisfactory as could be wished. After dredging for about twenty-two miles (Station I.), active operations ceased about two o'clock, p.m., and an anchorage was made in Dursey Sound.

Next day, the mouth of Kenmare River and Ballinskellig Bay were dredged. The weather was calmer, and the members of the staff were able to prosecute their several duties.

On Thursday, August 5th, the anchorage in Ballinskellig Bay was left very early; breakfast was taken in the lee of the Skelligs, and soon after 10 o'clock the dredge was down at a depth of 120 fathoms, twenty-five miles W.N.W. (by compass) of Great Skellig. Several hauls of the dredges were made from 120–110 fathoms (Station V.). In the afternoon, dredging was conducted about twelve miles S.W. of the Skelligs in 79–70 fathoms. Anchorage was for a second time made in Dursey Sound.

Friday was devoted to dredging opposite the mouth of Bantry Bay and along Berehaven. The night was passed in Bantry Harbour, and Professor Haddon and Mr. Jacob were landed soon after daybreak the next morning.

The remainder of the party made four casts of the dredge along the south coast, and arrived at Queenstown on Saturday evening.

Professor Haddon and Mr. Jacob spent the following fortnight in Bantry Bay. The weather was at first very unsettled, and quite prevented any dredging. A week was spent at Castletown-Bere investigating the fauna of Berehaven.

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### **Dredging Stations, and General Results.**

STATION I.—Forty miles off south-west Ireland; lat.  $51^{\circ} 15' N.$ ; long.  $10^{\circ} 31' W.$

Log No. 1.—Forty miles W. (by compass) of Fastnet; depth 90 fathoms; sand.

Log No. 2.—About five miles N.E. of No. 1; depth 90 fathoms; sand.

Log No. 3.—Six miles N.E. of No. 2; depth 80 fathoms; sand, with broken and living shells.

Log No. 4.—About four miles N.E. of No. 3; depth about 30 fathoms; broken shells.

Log No. 5.—About four to six miles N.E. of No. 4; depth 75 fathoms.

This station presented us with the greatest number of interesting specimens, which, however, mainly came up in the dredge at Log No. 3. The bottom appears to be sandy, with broken and living shells, and patches of *Pinna rudis* in places, which latter were broken across the middle by the dredge passing over them, their rounded ends being mainly brought up. Unfortunately no fine material was obtained.

*Gephyra dornnii* on tubes of *Tubularia indivisa*, *Palythoa* sp., *Epi-zoanthus papillosus*, commensal with *Eupagurus excavatus* and *Spiropagurus lævis*, *Caryophyllia clavus*, var. *borealis*. *Ophiactis ballii*, *Ophioglypha lacertosa*, large. *Ophiothrix lütkeni*, large. *Echinus microstoma*, *Spatangus raschi*. *Lanice conchilega*, *Nothria conchilega*.

In addition to the two species of Paguridæ just mentioned, were *E. bernhardus* and an undetermined species of hermit crab living in a *Serpula*-tube. *Ebalia pennantii* also occurred.

STATION II.—Durseys Sound.

Log No. 6.—South entrance to Dursey Sound; depth 25 fathoms; sand.

Log No. 7.—Durseys Sound; depth 25 fathoms; sand.

Log No. 8.—Durseys Sound; depth 20 fathoms; sand and large quantities of sea-weed.

Foraminifera rare. *Textularia gramen* and *T. agglutinans*, common. *Ophiothrix pentaphyllum* (7 and 8). *Goniodoris castanea*, *G. nodosa*, *Triopa clavigera*, *Thecacera* sp., *Aplysia* egg-coils only. The following Crustacea were trawled:—

*Inachus dorsettensis*, *Portunus marmoreus*, *Corystes cassivelaunus*, *Atylus swammerdamii*, *Amathilla sabinii*, *Gammarus locusta*, *Aora gracilis*.

STATION III.—Mouth of Kenmare River.

Log No. 9.—In line between Dursey Sound and Lamb's Head, three miles from the Sound; depth 41 to 38 fathoms; mud.

Log No. 10.—Between Bull Rock and Skarriff, four miles from former; depth 47 to 44 fathoms; mud.

Log No. 11.—Two miles S. W. of Skarriff; depth 44 to 38 fathoms; muddy sand.

Log No. 12.—One mile S. of Skarriff; depth 40 fathoms; muddy sand and dead shells.

Log No. 21.—Between Bull Rock and Great Skellig, five miles from former; depth 48 fathoms; fine sand.

Foraminifera plentiful: *Cornuspira foliacea*, *Thurammina papillata*, *Gaudryina filiformis*, *Sphæroidina bulloides*, *Pullenia quinqueloba*, *Pulvinulina micheliniana*, *Chilostomella ovoidea*; *Halcampa arenacea*, sp. n. (11), *Caryophyllia clavus*, vars. *borealis* and *smithii*; *C. cylindrica*, *Virgularia mirabilis* (11); *Astropecten irregularis*, *Luidia sarsii*, *Amphiura filiformis*, *Ophioglypha lacertosa*, *O. albida*, *Cucumaria pentactes* (10); *Amphitene auricoma* (21), *Owenia filiformis* (21). *Terebratulina caput-serpentis*, rare; *Crania anomala*, common; *Inachus dorsettensis*, *Ebalia cranchii*, *Spiropagurus lævis*, *Steiracरणon allmanni*.

STATION IV.—Ballinskellig Bay.

Log No 13.—About one and a-half mile N.E. of Skarriff; depth 27 fathoms; bottom, stones and rocks. (Beam-trawl with two attached tow nets carried away, also two dredges fouled, and came up with only a few rounded stones.)

Log No. 14.—South end of Ballinskellig Bay; one mile N. E. of Hog's Head; depth 17 to 12 fathoms; stones.

Log No. 15.—North end of Ballinskellig Bay, about half a mile from shore; depth 5 fathoms; fine sand, with *Zostera*.

Foraminifera rare. *Campanularia angulata*. Usual common Echinoderms. *Dentalium entalis*, *Loligo media*.

STATION V.—About twenty-five miles W. N. W. of Great Skellig; lat  $51^{\circ} 46' N.$ ; long.  $11^{\circ} 13' W.$

Log No. 16.—Twenty-six miles W.N.W. (by compass) of Great Skellig; depth 120 fathoms; sand.

Log No. 17.—Three and a-half miles S. of No. 16; depth 110 fathoms; sand.

Foraminifera.—Most abundant, and of exceptional interest. A large quantity of the sea-bottom was brought up at Log. No. 17, in which one hundred and forty-three species and varieties were afterwards found—sixteen of these are new to Britain—besides many others which have been rarely met with off our coast. Echinodermata.—*Ophioglypha affinis*, not unfrequent, of small size; *Echinus microstoma*, common; *Spatangus raschi*, fragments. Vermes.—*Niomache lumbricalis*, *Trophonia plumosa* (?); *Hyalinœcia tubicola*, *Owenia filiformis*, and *Lanice conchylega*. Ostracoda.—Very scarce, many consisting of only a single valve; the most interesting are *Cythere globulifera*, *Cytheropteron alatum*, *Loxoconcha fragilis*, and *Cytheridea sorbyana*. It is somewhat remarkable that *Cytheridea punctilata* is here common, while the really much commoner *C. papillosa* is

very rare. These closely allied species are often found together. Malacostraca.—*Nyctiphanes norvegica*, *Anonyx gulosus*, *Proto ventricosa*, *Triphosa longipes*, and *Eupagurus excavatus*.

STATION VI.—About twelve miles S. W. of Great Skellig.

Log No. 18.—Twelve miles S.W. of Great Skellig; depth 79 fathoms; sand.

Log No. 19.—Two miles N. W. of No. 18; same depth and bottom.

Log No. 20.—One mile or so E. S. E. of No. 19; depth 70 fathoms; muddy sand.

Foraminifera most abundant; the species very similar to those of Station V., *Techinitella legumen* was obtained only here; *Antennularia antennina*, *Aglaophenia pluma*, and *A. myriophyllum*; *Amphiura filiformis*, *Brissopsis lyrifer*, *Echinocardium flavescens*, *Thyone raphanus* (20); *Cerebratulus angulosus*, *Amphicteis gunneri* (19). *Galathea andrewsii*, *Corophium tenuicorne*.

STATION VII.—Mouth of Bantry Bay.

Log No. 22.—Seven miles S. S. W. of Dursey Head; depth 40 fathoms; coarse sand.

Log No. 23.—Two and a-half miles E. of No. 22; depth 37 to 35 fathoms; coarse sand.

Foraminifera plentiful. *Chitonactis* (?) *expansa* sp. n. (22), *Caryophyllia clavus*, var. *smithii*; *Virgularia mirabilis* (23); *Astropecten irregularis*, *Luidia savignii*, *L. sarsii*, *Ophioglypha lacertosa*, large, *O. affinis*, *Spatangus purpureus*, *Echinocardium flavescens*; *Phyllodoce lamelligera*, *Nereis dumerilii*, *Hyalinocœcia tubicola*, *Amphictene lauricoma*, *Pectinaria belgica*, *Lanice conchylega*.

Remarkably fine specimens of the Ostracod *Bythocythere constricta* were abundant; the other Crustacea being *Ebalia cranchii*, *Eupagurus lævis*, *Steiracrangon allmanni*, *Anonyx gulosus*, *Hippomedon hölbolli*, *Callisoma crenata*, *Astacilla longicornis*.

*Ascidia aspersa*, *A. virginea*, pedunculated; *Styela grossularia*, on first; *Molgula occulta* (?) common; *Eugyra glutinans*; *Polycarpa comata*.

STATION VIII.—Berehaven.

Log No 24.—West entrance to Berehaven, close to Bere Island; depth 25 to 8 fathoms; coarse sand and broken shells.

Log No. 25.—Berehaven, from Volage Rock to Hornet Rock; depth about 5 fathoms; mud, sand, and stones.

Log No. 26.—Berehaven, S. of Beal Lough to George Rock; depth 7 fathoms; fine, dense mud.

The following is a summary of the results obtained by Professor Haddon and Mr. Jacob, after a more detailed examination of a portion of Berehaven :—

West entrance (log No. 24). The otter-trawl brought up thirty-two specimens of *Echinus esculentus*, mostly of large size, *Echinocardium flavescens*, *Lineus marinus*.

From Na-glas Point to Fort Point; depth 6 to 4 fathoms; bottom sand, mud and a few broken shells; dredges came up nearly empty, contained only a few common Hermit crabs and shells.

From Fort Point to Long Point; depth 7 to  $3\frac{1}{2}$  fathoms; bottom, broken shells, various Nemertean and other worms, *Eolis coronata* on seaweed, &c.

From Colt Rocks to a little N. of Drum Point; depth about 8 fathoms; bottom mud, with seaweed. Not much except a few crustacea and scallops.

All the bottom to landward of the 5 fathom-line on the north side between Dinish Island and Hornet Rock is extremely poor dredging ground, consisting chiefly of rolled stones, with or without a coating of seaweed.

The channel included between the two 5-fathom lines has a uniform bottom of a dense adhesive mud, containing a few worms and echinoderms. In certain spots life is more abundant, this being notably the case in the 10-fathom depression, just off the White buoy at Volage Rock, where, especially a trifle to the east, is a collection of dead and broken shells which are often encrusted with *Palythoa*.

The following list will give some idea of the Fauna of this region of Berehaven :—

**Cœlenterata**—Several common Hydroids. *Palythoa arenacea* (?) and *P.* sp. **Echinodermata**, *Antedon rosaceus*, *Asterias glacialis*, *A. rubens*, *A. violacea*, *Amphiura chiajii*, *A. filiformis*, *Ophiocoma nigra*, *O. lacertosa*, large size; *O. albida*, *O. affinis*, *Ophiotrix pentaphyllum*, *Brissopsis lyrifer*, large size; *Echinocardium flavescens*, *Thyone fusus*, *T. raphanus*, *Ocnus lacteus*, *Synapta inhærens*. **Vermes**—*Eurylepta vittata*, *Amphiporus pulcher* (?), *Lineus marinus*, *Carinella annulata*.

The only crustacea of any note were a small male of *Nephrops norvegicus*, *Lysianassa spiniornis*, and a few Amphipods.

**Tunicata**—*Molgula occulta* (?), *Ascidia aspersa*, *A. mentula*, *Styela grossularia*, *S. rustica* (?), *Clavelina lepadiformis*, *Leptoclinum maculatum*, *Morchellium argus*, *Diplasoma* sp.

Volage Rock to Hornet Rock (log. No. 25), depth about 5 fathoms; bottom sand and mud. The otter-trawl brought up large numbers of *Antedon rosaceus* and its stalked larvæ. The two species of *Amphiura* were common round Hornet Rock. *Sphenotrochus wrightii*. *Foraminifera* plentiful, of species which usually occur in shallow water.

Common shallow water Ostracoda with *Argillœcia cylindrica*, *Paradoxostoma orcadense*, &c.

*Ascidia mentula*, *A. aspersa*, *A. plebia*, *Styela grossularia*, *Morchellium argus*, *Botryllus* sp.

Dredgings within the 5 fathom line on the south side of Berehaven, W. of Browra Rocks, gave no noteworthy results.

South of Beal Lough to George Rock (log. No. 26), depth about 7 fathoms; bottom dense mud. Only a few worms, common Molluscs, and Echinoderms, and numerous large common Ascidiæ, *Ascidia aspersa*, also *Molgula occulta* (?), *Styela rustica* (?) *Clavelina lepadiformis*, *Morchellium argus*, &c., were obtained.

Shore-collecting was undertaken when the tide permitted, but the results were not specially encouraging. By far the best collecting ground is the shore of the small promontory close by Dunboy House.

STATION IX.—Bantry Harbour.

Log. No. 32.—Bantry Harbour; depth 4 to 6 fathoms; mud.

The weather at Bantry Harbour was very unfavourable; and the muddy nature of the bottom—owing to the rocks of the coast being shales—prevents the fauna from being particularly rich or interesting. Various mud-burrowing worms, scallops, *Bulla*, and common ascidiæ (*A. aspersa*) were locally plentiful.

A day was devoted to visiting the caves on the north shore of the Bay between Sheelane Island and Shot Head, which have been so graphically described by Dr. E. P. Wright in Gosse's "Actinologia Britannica," pp. 64, 65. Unfortunately the tide was not particularly favourable, and a long day was only rewarded with the sight of a few specimens of the commonest European sea-anemones.

STATION X.—Long Island Bay.

Log. No. 27.—About three miles S. of Alderman Rocks; depth 30 fathoms; rocks.

No fine material brought up; dredge fouled frequently, and came up comparatively empty. A few pieces of rolled coral, living *Caryophyllia*, and dead *Arca*. One haul of the dredge (which fouled) contained only a few starfishes; one specimen of *Luidia savignii* measured 20 inches across.

STATION XI.—Off Baltimore.

Log. No. 28.—Two and a-half miles S. of the chapel on Sherkin Island; depth 30 fathoms; mud.

Foraminifera most abundant, especially the genera *Polymorphina*, *Lagena*, and *Bulimina*. *Cucumaria pentactes*.

STATION XII.—Nine miles S. of Glandore.

Log. No. 29.—Nine miles S. of Glandore; depth 40 fathoms; broken shells.

The dredge brought up no fine material. *Gephyra dornhii* on tubes of *Tubularia indivisa*; *Cucumaria pentactes*; various worms, *Terebratulina caput serpentis*, rare; *Crania anomala* very common.

STATION XIII.—Twelve miles off Clonakilty Bay.

Log. No. 30.—About ten miles S. of Galley Head light; depth 54 fathoms; mud, sand and dead shells.

A number of rare Foraminifera were found at this station, viz., *Planispirina celata*, *P. contraria*, *Trochammina trullisata*, *Textularia concava*, *Bigenerina digitata*, *B. nodosaria*, *Bulimina pyrula*, *B. buchiana*, *Cassidulina bradyi*, *Chilostomella ovoidea*, *Lagena crenata*, *Sphæroidina bulloides*, etc. *Craniaa momala*, common. *Dentalium entalis*.

The Committee desire in this Report merely to give the actual results obtained, and designedly refrain from expressing any opinion concerning the nature and affinities of the marine fauna of the south-west of Ireland.

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#### SPECIAL REPORTS.

The various groups have been distributed as follows:—

<b>Foraminifera,</b>	. . . . .	Joseph Wright, F.G.S.
<b>Hydrozoa,</b>	. . . . .	A. R. Nichols, B.A. (Hydroids), and Professor Haddon (Medusæ).
<b>Malacozoa,</b>	. . . . .	Professor A. C. Haddon, M.A., M.R.I.A., and S. O. Ridley (Zoanthidæ).
<b>Hexacoralla,</b>	. . . . .	S. O. Ridley, M.A., &c.
<b>Echinodermata (part),</b>	. . . . .	Professor A. C. Haddon.
<b>Holothuroidea,</b>	. . . . .	Professor F. Jeffry Bell, M.A., &c.
<b>Vermes,</b>	. . . . .	Professor A. C. Haddon.
<b>Polyzoa,</b>	. . . . .	A. R. Nichols.
<b>Brachiopoda,</b>	. . . . .	W. Swanston, F.G.S.
<b>Mollusca,</b>	. . . . .	W. Swanston and Professor Haddon (Nudibranchiata).
<b>Ostracoda,</b>	. . . . .	S. M. Malcomson, M.D.
<b>Copepoda,</b>	. . . . .	S. M. Malcomson.
<b>Amphipoda &amp; Schizopoda,</b>	. . . . .	Rev. Canon A. M. Norman, LL.D., &c.
<b>Decapoda,</b>	. . . . .	H. W. Jacob.
<b>Tunicata,</b>	. . . . .	Professor Herdman, D.Sc., F.R.S.E., &c.

## Rhizopoda.

### FORAMINIFERA.

Most of the seventeen gatherings taken off the south-west of Ireland have already been microscopically examined for Foraminifera. Only one of them, however, (Station V., log No. 17, depth 110 fathoms) has been thoroughly exhausted, the others having been gone over in a somewhat superficial manner, but a sufficient quantity of the material has been glanced through to give a good general idea of the Foraminifera of this part of our coast. One hundred and sixty-nine species and varieties have already been identified; but as much of the examination remains to be done, it is probable that other forms will be added to the list. Station V., log. 17, yielded material of exceptional interest. One hundred and forty-three species and varieties were obtained at this place alone, the specimens being for the most part larger in size than those usually met with around our coasts: sixteen of them are additions to the British Fauna, and a number of the others have been rarely met with in Britain. No additional new British forms were found in any of the other gatherings. With the exception of *Webbina clavata* and *Globigerina rubra*, all the species found at log 17, new to Britain, were also met with at Station VI., log 18; 79 fathoms, a few miles nearer shore; many of them also occurred in the shallow water gatherings. Rev. W.S. Green, F.R.G.S., Carrigaline; Daniel O'Connell, Esq., Derrynane Abbey; and Rev. Alexander Delop, Valencia Island, kindly contributed shore gatherings from various localities.

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### LIST OF SPECIES.

*Species marked (\*) are new to the British Fauna.*

*Biloculina sphaera*, d'Orb. Large typical specimens occur plentifully at Station VI., 79 fathoms; and Station V., 110 fathoms. Typical examples of this species are rarely met with off the British coast.

— *ringens*, Lamk. Frequent.

— *depressa*, d'Orb. Frequent.

*Spiroloculina limbata*, d'Orb. Frequent.

— *planulata*, Lamk. Rare.

*Miliolina trigonula*, Lamk. Rare.

— *tricarinata*, d'Orb. Rare.

— *oblonga*, Mont. Rare.

- Miliolina seminulum*, Linn. Common. Most of the specimens found in the deep water gatherings approach in contour *M. auberiana*.
- *secans*, d'Orb. Common in shore gatherings at Derrynane Harbour and Ballinskellig Bay.
- *tenuis*, Czjzek. Rare.
- *subrotunda*, Mont. Frequent, especially in the shallow water and shore gatherings.
- *bicornis*, W. & J. Rare.
- *ferussacii*, d'Orb. Rare.
- *ferussacii*, d'Orb., var. approaching in contour *M. sclerotica*, Karrer. Rare.
- *agglutinans*, d'Orb. Rare.
- *fusca*, Brady. Rare in shore sand, Derrynane Harbour.
- Ophthalmidium carinatum*, Balkwill & Wright. Common at Station XI., off Baltimore; 26 fathoms.
- Planispirina contraria*, d'Orb. A few examples of this rare species were found at Station V., 110 to 120 fathoms; Station VI., 79 fathoms; and Station XIII., 54 fathoms.
- \**Planispirina celata*, Costa. Rather rare at the following stations: Station V., 110 to 120 fathoms; Station XIII., 54 fathoms; Station VI., 79 fathoms; and Station III., 48 fathoms.
- Cornuspira foliacea*, Phil. Rare.
- *involvens*, Reuss. Rare.
- \*— *carinata*, Costa. Rare at Station V.; 110 to 120 fathoms; and Station VI., 79 fathoms.
- \**Bathysiphon filiformis*, Sars. A few small specimens were found at Station V., 110 fathoms; and Station VI., 79 fathoms.
- Psammosphæra fusca*, Schultze. Good typical specimens. Frequent at the following stations: Station V., 110 fathoms; Station VI., 79 fathoms; and Station III., 48 fathoms. This species has been rarely met with off the British coast.
- Technitella legumen*, Norman. Rare at Station VI., 79 fathoms.
- Hyperammina elongata*, Brady. Rare at Station V., 110 fathoms; and Station VI., 79 fathoms.
- Reophax fusiformis*, Will. Frequent.
- *scorpiurus*, Mont. Frequent.
- Haplophragmium glomeratum*, Brady. Rare.
- *globigeriniforme*, P. & J. Rare.
- *pseudospirale*, Will. Rare.
- *canariense*, d'Orb. Rare.

*Placopsilina cenomana*, d'Orb. Small specimens, parasitic on shells, &c., were found at Station V., 110 to 120 fathoms. Only one recent example of this rare species has hitherto been recorded from Britain. It was found by Dr. Malcomson in a shore gathering, Belfast Lough.

*Thurammina papillata*, Brady. Rare at Station V., 110 fathoms; Station VI., 79 fathoms; and Station III., 38 to 41 fathoms. Only one recent example of this species has been hitherto met with in Britain. It was found off Loch Seavaig, on the west coast of Scotland, 45 to 60 fathoms.

*Ammodiscus incertus*, d'Orb. Rare.

— *gordialis*, J. & P. Rare.

— *charoides*, J. & P. Rare.

*Trochammina squamata*, J. & P. Rare.

— *macrescens*, Brady. Rare at Derrynane Harbour, between tides.

— *inflata*, Mont. Rare at Derrynane Harbour, between tides.

\*— *nitida*, Brady. Rather rare at Station V., 110 fathoms; Station VI., 79 fathoms; Station VII., 40 to 45 fathoms; and Station II., 48 fathoms.

\*— *trullisata*, Brady. Small specimens. Very common at Station V., 110 fathoms; Station VI., 79 fathoms; and Station XIII., 54 fathoms. "This beautiful little shell has been noted at twenty-five localities, pretty evenly scattered over the North and South Atlantic, the Southern Ocean, and North and South Pacific. Of these, only five have depths of less than 1500 fathoms, and fifteen are above 2000 fathoms."<sup>1</sup>

\**Webbina clavata*, J. & P. Rare at Station V., 110 to 120 fathoms.

\**Textularia concava*, Karrer. Large specimens. Found at six of the Stations; very common at Station V., 110 fathoms, and Station VI., 79 fathoms.

*Textularia sagittula*, DeFrance. Frequent.

— *gramen*, d'Orb. Common.

— *agglutinans*, d'Orb. Frequent.

*Bigenerina nodosaria*, d'Orb. Very common at Station III., Station V., and Station VI.; very rare at Station XIII.

— *digitata*, d'Orb. Very common at Station III., Station V., Station VI., and Station XIII.

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<sup>1</sup> Brady's *Rep. Challenger, Foraminifera*, p. 343.

*Gaudryina filiformis*, Berthelin. Rare.

*Verneuilina polystropha*, Reuss. Rare.

*Valvulina fusca*, Will. Found at five Stations. Common at Station V., 110 fathoms; and Station VI., 79 fathoms.

*Bulimina elegans*, d'Orb. Frequent at several of the Stations.

\*— *pyrula*, d'Orb. Found in nearly all the gatherings; very common at Station V., 110 fathoms.

— *pupoides*, d'Orb. Common.

— *ovata*, d'Orb. (*Will. Rec. For.*, pl. v., figs. 129, 130). Common.

— *elegantissima*, d'Orb. Very rare.

— *subteres*, Brady. Found in nearly all the gatherings; large typical specimens are common at Station V., 110 fathoms.

— *marginata*, d'Orb. Common.

\*— *buchiana*, d'Orb. Frequent at Station V., 110 to 120 fathoms; rare at Station III., 48 fathoms; Station VI., 79 fathoms; and Station XIII., 54 fathoms.

*Virgulina schreibersiana*, Czjzek. Frequent.

*Bolivina punctata*, d'Orb. Rare.

— *dilatata*, Reuss. Common.

— *textilarioides*, Reuss. Frequent.

— *plicata*, d'Orb. Rare.

— *difformis*, Will. Frequent.

*Cassidulina lævigata*, d'Orb. Very common.

— *crassa*, d'Orb. Rare.

— *bradyi*, Norman. Rare in the shallow-water gatherings; common at Station V., 110 to 120 fathoms; Station VI., 79 fathoms; and Station XIII., 54 fathoms.

*Chilostomella ovoidea*, Reuss. Common at Station V., 110 fathoms; Station VI., 79 fathoms; and Station XIII., 54 fathoms; rare at Station III., 48 fathoms.

*Lagena globosa*, Mont. Very rare.

— *apiculata*, Reuss. Rare at Station V., 110 fathoms; and Station VI., 79 fathoms.

— *lineata*, Will. Rare.

— *lævis*, Mont. Rare.

— —, var. *clavata*, d'Orb. Frequent.

— *gracillima*, Seg. Rare. Fine typical specimens were found at Station V., 110 fathoms.

- Lagena hispida*, Reuss. Found in most of the gatherings. Common at Station V., 110 fathoms; and Station XIII., off Clonakilty Bay, 54 fathoms.
- *striata*, d'Orb. Common.
  - *curvilineata*, Balkwill and Wright. One specimen at Station XIII., 54 fathoms.
  - *gracilis*, Will. Rare.
  - *distoma*, P. & J. Fine typical specimens were found at Station V., 110 fathoms.
  - *sulcata*, W. & J. Frequent.
  - *costata*, Will. One specimen at Station XI., 26 fathoms.
  - *williamsoni*, Alcock. Frequent.
  - *semistriata*, Will. Frequent.
  - *semilineata*, Wright.<sup>1</sup> Very rare at Station V., 110 fathoms.
  - *crenata*, P. & J. Frequent at Station V., 110 fathoms; and Station VI., 79 fathoms; rare at Station XIII., 54 fathoms.
  - *squamosa*, Mont. Rare.
  - *hexagona*, Will. Rare.
  - *lævigata*, Reuss. Rare.
  - —, var. *quadrata*, Will. Very rare.
  - *marginata*, W. & J. Rare.
  - *lagenoides*, Will. Rare.
  - —, var. *tenuistriata*, Brady. Very rare at Station XI., off Baltimore, 26 fathoms.
  - *orbignyana*, Seg. Common.
- \* — —, var. *walleriana*. Nov. var. A variety having the centre of the convex faces ornamented with a prominent boss. Found in several of the gatherings. Common at Station V., 110 fathoms; and Station VI., 79 fathoms.
- Lagena bicarinata*, Terquem. Rare.
- *fimbriata*, Brady. Found at four of the Stations; very common at Station V., 110 fathoms. Mr. Brady,<sup>2</sup> speaking of the geographical distribution of this species, says:—" *L. fimbriata* is a rare variety, and affects very deep water; it has been noticed at three Stations in the North Atlantic, at one in the Southern Ocean, at three in the South Pacific, and at one in the North Pacific. Of these, two are respectively 580 fathoms, and 620 fathoms; the remaining six at depths 2300 fathoms, or more." It is also recorded by Messrs. Balkwill and Millett,<sup>3</sup> three specimens having been found by them in shore-sand on the coast of Galway.

<sup>1</sup> *Proc. Belfast Nat. Field Club*, 1844-5; App. p. 320, pl. xxvi. fig. 7.

<sup>2</sup> *Rep. Challenger, Foraminifera*, p. 486.

<sup>3</sup> *Journal of Microscopy and Natural Science*, iii. 1884.

*Nodosaria* (*Glandulina*) *lævigata*, d'Orb. Rare at Station V., 110 to 120 fathoms.

\*— (*Glandulina*) *rotundata*, Reuss. Common at Station V., 110 to 120 fathoms; and Station VI., 79 fathoms.

— *radicula*, Linn. One specimen at Station V., 120 fathoms.

— *pyrula*, d'Orb. Rare.

— (*D.*) *pauperata*, d'Orb. One specimen at Station V., 110 fathoms.

— (*D.*) *consobrina*, d'Orb. Very rare.

— (*D.*) *communis*, d'Orb. Frequent.

— *raphanus*, Linn. Rare at Station V., 110 to 120 fathoms.

— *scalaris*, Batsch. Frequent.

— —, var. *separans*, Brady. Found at three stations; common at Station V., 110 to 120 fathoms.

— (*D.*) *obliqua*, Linn. Rare.

*Marginulina* *glabra*, d'Orb. Rare.

— *costata*, Batsch. Rather rare at Station V., 110 fathoms; and Station VI., 79 fathoms.

\**Cristellaria* *variabilis*, Reuss. Rather rare at Station V., 110 fathoms.

— *crepidula*, F. & M. Rare.

— *rotulata*, Lamk. Rare.

— *cultrata*, Montf. Rare at Station V., 110 to 120 fathoms.

*Polymorphina* *lactea*, W. & J. Frequent.

— *gibba*, d'Orb. Frequent.

— *sororia*, Reuss, var. *cuspidata*, Brady. Rather rare at Station V., 110 fathoms; Station VI., 79 fathoms; and Station XIII., 54 fathoms.

— *lanceolata*, Reuss. Rare.

— *oblonga*, Will. Rare.

— *compressa*, d'Orb. Frequent.

— *concava*, Will. Rare at Station V., 110 fathoms.

— *rotundata*, Bornemann. Frequent at Station VI., 79 fathoms.

— —, fistulose form. Found at three of the Stations. Common at Station VI., 79 fathoms, the specimens being very fine.

— *myristiformis*, Will. Frequent.

*Uvigerina* *pygmæa*, d'Orb. Large typical specimens. Common at Station V., 110 to 120 fathoms; Station VI., 79 fathoms; and Station XIII., 54 fathoms; rather rare at Station III., 38 to 48 fathoms.

— *angulosa*, Will. Frequent.

— *canariensis*, d'Orb. Very rare.

*Globigerina bulloides*, d'Orb. Common.

— *inflata*, d'Orb. Found in nearly all the gatherings; large typical specimens abundant at Station V., 110 to 120 fathoms; and Station VI., 79 fathoms.

\*— *rubra*, d'Orb. Small specimens; very rare at Station V., 110 fathoms.

\*— *æquilateralis*, Brady. Rare at Station V., 110 to 120 fathoms; and Station VI., 79 fathoms; very rare at Station III.; mouth of Kenmare River, 48 fathoms.

*Orbulina universa*, d'Orb. Found in many of the gatherings; large specimens common at Stations V., 110 to 120 fathoms; and Station VI., 79 fathoms.

*Pullenia quinqueloba*, Reuss. Frequent at Station V., 110 to 120 fathoms; and Station VI., 79 fathoms; very rare at Station III.; mouth of Kenmare River, 48 fathoms. Only one specimen of this species has hitherto been recorded from Britain; it was found off Dublin, 45 fathoms.

*Sphæroidina bulloides*, d'Orb. Large typical specimens. Common at Station V., 110 to 120 fathoms; and Station VI., 79 fathoms; very rare at Station III., 48 fathoms; and Station XIII., 54 fathoms. This species has been rarely met with off the British coast.

*Spirillina vivipara*, Ehr. Rare at Station XI., 26 fathoms.

*Patellina corrugata*, Will. Rare.

*Discorbina globularis*, d'Orb. Frequent.

— *rosacea*, d'Orb. Rare.

— *bertheloti*, d'Orb. Found in most of the gatherings; common at Station V., 110 to 120 fathoms; and Stations VI., 79 fathoms.

*Planorbulina mediterraneensis*, d'Orb. Frequent.

*Truncatulina refulgens*, Montf. Rare at Station V., 110 fathoms; and Station III., 40 to 48 fathoms.

— *lobatula*, W. & J. Frequent.

— *ungeriana*, d'Orb. Frequent at Station V., 110 to 120 fathoms and Station VI., 79 fathoms; very rare at Station III. mouth of Kenmare River, 48 fathoms.

*Pulvinulina repanda*, F. & M. Rare at Station III.; mouth of Kenmare River, 40 to 48 fathoms.

— *auricula*, F. & M. Common.

- Pulvinulina canariensis*, d'Orb. Rare at Station V., 110 fathoms.
- *patagonica*, d'Orb. Rare at Station V., 110 to 120 fathoms; and Station XIII., 54 fathoms.
- *karsteni*, Reuss. Large typical specimens. Rather rare at Station V., 110 to 120 fathoms; and Station VI., 79 fathoms.
- \*— *miceliniana*, d'Orb. Frequent at Station V., 110 to 120 fathoms; and Station VI., 79 fathoms; very rare at Station III.; mouth of Kenmare River, 48 fathoms.
- *elegans*, d'Orb. Large specimens. Frequent at Station V., 110 to 120 fathoms; and Station VI., 79 fathoms; rare at Station II., 15 to 25 fathoms; and Station III., 48 fathoms.
- Rotalia beccarii*, Linn. Frequent.
- *orbicularis*, d'Orb. Rare at Station V., 120 fathoms.
- *nitida*, Will. Rare.
- Gypsina globulus*, Reuss. One large specimen at Station V., 110 fathoms.
- *vesicularis*, P. & J. One specimen.
- *inhærens*, Schultze. Rather rare.
- Nonionina depressula*, W. & J. Common between tides and in the shallow water gatherings.
- *umbilicatula*, Montf. Large typical specimens occur in most of the gatherings; very common at Station V., 110 to 120 fathoms; and Station VI., 79 fathoms.
- *orbicularis*, Brady. Frequent at Station V., 110 to 120 fathoms; and Station VI., 79 fathoms.
- *stelligera*, d'Orb. Rare.
- *scapha*, F. & M. Large specimens very common at Station V., 110 to 120 fathoms; and Station VI., 79 fathoms; very rare at Station III.; mouth of Kenmare River, 40 fathoms.
- *pauperata*, Balkwill and Wright. Rare at Station XI., off Baltimore, 26 fathoms.
- *turgida*, Will. Common.
- Polystomella crispa*, Linn. Rare.
- \*— *subnodosa*, Munster. Frequent at Station V., 110 and 120 fathoms. Mr. Brady, in his Report on "Challenger" *Foraminifera*, p. 735, says: "As a living Foraminifer, *Polystomella subnodosa* has only been identified at two points, amongst the islands south-west of Papua, Station 187, off Booby Island; depth 6 to 8 fathoms; and Station 188, depth 28 fathoms."
- *striato-punctata*, F. & M. Frequent.
- Operculina ammonoides*, Gron. Found in nearly all the gatherings; very common at Station V., 110 to 120 fathoms; and Station VI., 79 fathoms.

## Hydrozoa.

The Hydroids are, for the most part, common and widely distributed forms. The following only were obtained:—*Hydractinia echinata*, Flem., Berehaven; *Tubularia indivisa*, Linn, Stations I. and XII.; *Clytia johnstoni*, Ald.; *Obelia geniculata*, Linn.; *O. dichotoma*, Linn.; and *Campanularia flexuosa*, Hincks; all from Berehaven. *C. angulata*, Hincks, Station IV., a comparatively local form; *Halecium halecinum*, Linn.; *H. beanii*, Johnst.; *Sertularella polyzonias*, Linn.; *Sertularia pumila*, Linn.; and *S. operculata*, Linn.; all from Berehaven. *Antennularia antennina*, Linn., Station VI. and Berehaven; *Aglaophenia pluma*, Linn., Berehaven; *A. myriophyllum*, Linn., Station VI.; a rather rare and deep water form.

Several kinds of Hydromedusæ were obtained, but not in the abundance or variety that was expected. The only interesting species was *Laodice cruciata*, Forsk (*Cosmetira pilosella*, Forb.), this being the first time it has been recorded from Irish waters. The only Scyphomedusæ seen were a mutilated specimen of *Chrysaora hysoscella*, Linn, in Berehaven, and numerous specimens of the violet variety of *Aurelia aurita*, Linn., at Station VI., where also the only example of the Siphonophora was met with, which was, however, too imperfect to identify.

Of the Ctenophora, *Pleurobrachia (Cydippe) pileus* (?) and *Beroe ovata* were exceedingly common. Numerous specimens, *Mnemia norvegica*, Sars. (= *Bolina hibernica*, Patt.).

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## Actinozoa.

### MALACOOZA.

The following sea-anemones were found to be common in Bantry Bay:—*Actinia equina*, Linn., var. *hepatica*; vars. *rubra*, *umbrina*, and *prasina* were common on Bere Island, as were also the vars. *sindonea* and *rubida* (pink), of *Actinoloba dianthus*, Ellis. *Tealia crassicornis*, O. F. Müll., was everywhere distributed, and *Anthea cereus* was very common all along the Bay, growing especially on *Zostera*, etc., the flesh-coloured variety of *smaragdina* being especially abundant. *Heliactis bellis*, Ellis, is also very common, and is subject to considerable variation in colour. Careful notes were made of a translucent white sea-anemone from Dursey Sound, which may be a variety of *Sagartia pallida*, Holdsw. The chief difference between our form and *S. pallida* consists in the acontia being “emitted from the mouth in some abundance, but not very readily” in the latter, whereas in the former the acontia are emitted freely when irritated through lateral apertures (cinclides), a distinction which is of some importance.

Three additions have been made to the British Fauna, viz:—*Halcampa arenacea*, sp. n., from the mouth of Kenmare River (log No. 11), about seven and a-half miles N. E. of Dursey Head; depth 44 to 38 fathoms; bottom muddy sand. Column divided into physa, scapus, and capitulum; physa small, apparently without suckers, completely retractile; scapus cylindrical, even when extended, very contractile, sprinkled with imbedded grains of sand; capitulum elongated when fully extended; completely retractile. Tentacles, 12, marginal, monocyclic, cylindrical, obtuse, about as long as diameter of disc. Disc flat. Mouth linear. Colour—physa transparent, almost colourless; scapus pale, dull, madder brown; capitulum translucent, dirty flesh-colour. Tentacles of same colour as capitulum, with 4 imperfect pale brown bands and a basal M-mark. Disc pale, flesh-colour, with 12 pale mesenterial lines; at the base of each tentacle is a pair of narrow wedge-shaped pale-brown marks, the apices of which point towards the mouth, and between each of these and the latter is a lenticular pale-brown spot, which with its fellows form a ring round the mouth, and separated from it by a short interval. Mouth brownish. Length about 35 mm. in the ordinary condition: can contract to about 18 mm. Diameter variable; average about 7 mm. This species differs in a most marked manner from the only other known British, or, indeed, North European species of *Halcampa* (*cf.* Note on *Halcampa chrysanthellum*, Peach, *Proc. Roy. Dub. Soc.*, 1886 (N. S.), v. p. 1, figs. 1 to 4). It is also distinct from the North-east American forms. The number and arrangement of the mesenteries of this species agree perfectly with that which I have recently demonstrated for *H. chrysanthellum* (*l.c.* fig 4).

*Gephyra dornii*, Von Koch. This pretty pink anemone was first described and figured in the *Morphologische Jahrbuch*, IV., Suppl., 1878 (p. 74, pl. v.), from the Bay of Naples. The "Travailleur" expedition dredged it from the Bay of Biscay in 1881. Marion says it is more brilliant in colour than the Mediterranean individuals, and also a little larger in size (*Comptes rendus*, 1882, p. 458, and *Ann. Mag. N.H.* (5) IX., 1882, p. 334). We obtained several specimens on *Tubularia indivisa* from Stations I. and XII., at a depth of 80 fathoms; sand and broken shells. The colour was brighter than the Mediterranean species, but they were rather smaller in size. In the Gulf of Naples it grows upon *Gorgonia*, *Isis*, &c, and Andres states that a spotted variety is found in deeper water (150 mtr.) attached to *Antipathes*. (*Fauna und Flora, Golfes von Neapel.*, 1883, p. 166). In the Bay of Biscay it was also found on *Isis*; in the south of Ireland it has to content itself with the stems of *Tubularia indivisa*. The Rev. W. S. Green states that he has several times met with this form between Cork and Youghal.

*Chitonactis* (?) *expansa*, sp. n., from the mouth of Bantry Bay (Log No. 22, about four miles S. of Dursey Island), 40 fathoms; coarse sand. Column; scapus usually very depressed and turban-shaped, but when weakly or dead, obtusely conical, corrugated; base

flattened out and much and variably extended in all directions, the edges crenulated by the insertion of the mesenteries, of which there are about 100; when dead the base is withdrawn. Capitulum short, crenulated, invisible when the animal is fully extended; when retracted it almost completely covers over the tentacles. Tentacles short, conical, tetracyclic, 48 in number (6 + 6 + 12 + 24). Disc perfectly flat. Mouth, with fairly prominent lips, round. The body was entirely covered with grains of sand and broken shells. Colour—base translucent buff; scapus flesh-coloured; capitulum translucent pink; the mesenteries of the primary cycle of tentacles marked by a pair of dead-madder triangular spots; the three intervening lobes having a pale yellow spot. Tentacles pale, with two rows of pale-brown spots. Disc dark sepia, with six pairs of radial cream-coloured lines, and six shorter pairs for the secondary tentacles, and with similarly-coloured spots in rows between the lines. Mouth deep madder-brown; lips paler. Diameter of base 21–25 mm.; diameter of scapus 12 mm.; diameter of disc 7 mm. Only one specimen of this remarkable anemone was dredged. It has some resemblance to *Chitonaetis coronata*, Gosse (cf. *Actinolog. Brit.*, p. 202, pl. vii., fig. 4, and Fischer, *Nouv. Arch. Mus.*, x., 1875, p. 193), but differs in the absence of tubercles, and in many other characters. Marion, in the Paper alluded to above, records, but not describes, *C. richardi*, sp. n., var. A., on branches of *Mopsea elongata*, and var. B. free on mud, from the Bay of Biscay; and it is unsatisfactorily figured on pl. vii. of Filhol's *La Vie au Fond des Mers*, but no mention of it is made in the text. It is with considerable doubt that our species is relegated to the genus *Chitonaetis*.

The family Zoanthidæ was represented by a few forms, but our knowledge of these creeping colonial Actiniæ is at present in such an unsatisfactory condition, that it is almost impossible to identify them with any degree of certainty. *Palythoa arenacea* (?) D. Ch., Stations I. to XII. and Berehaven, 10 fathoms. *P.* sp., a squat button-like form from last locality and Station I. *Epizoanthus papillosus*, Johnst., an erect species entirely encrusting shells inhabited by *Spiropagurus lævis*, Thomps., and *Eupagurus excavatus*, Herbst, three specimens from Station I.

#### HEXACORALLA.

The very few corals obtained mostly belong to the genus *Caryophyllia*, *C. clavus*, Scacchi, var. *borealis*, Dunc, Stations I. and III. *C. clavus*, var. *smithii*, Stokes and Brod., Stations III., VII., XII. A worn and broken colony of *C. cylindrica*, Reuss, occurred at Station III. in 40 fathoms. Three specimens of *Sphenotrochus wrightii*, Gosse, were found in Berehaven; these are, undoubtedly, fresh specimens (cf. Gosse, *Actinologia Britannica*, p. 326).

## OCTACTINÆ.

The only Octactinian dredged was *Virgularia mirabilis*, Lam; one young specimen was obtained from the mouth of Kenmare River, in 40 fathoms, and two from the mouth of Bantry Bay, in 36 fathoms.

**Echinodermata.**

In addition to Forbes' *Monograph*, the following Papers have been consulted:—The Rev. A. M. Norman's valuable Paper "On the Genera and Species of British Echinodermata," part i., Crinoidea, Ophiuroidea, Asteroidea; *Ann. Mag. Nat. Hist.* (3) xv., pp. 98–129, and a useful List by W. E. Hoyle; "A Revised List of British Ophiuroidea," *Proc. R. Phys. Soc. Edin.* viii., pp. 135–155.

## CRINOIDEA.

*Antedon rosaceus* is very common in Berhaven on the 5-fathom slope between Volage Rock and Hornet Rock. The specimens were large in size and brilliant in colour. In size they resemble the Mediterranean specimens rather than those ordinarily found in British waters. A couple of specimens were sent to Dr. P. H. Carpenter, F.R.S., who found on them malformed pinnules, though without definite cysts (*Nature*, xxxiii., 1885, p. 8), which are due to a new encysting *Myzostoma* (*cf.* P. H. Carpenter, *Nature*, xxxii., 1885, p. 391).

The stalked larvæ, more especially the later stages, were very abundant on sea-weed (August 6th).

## ASTEROIDEA.

*Astropecten irregularis*, Penn., very few specimens, Stations III., VII., IX.; *Luidia savignii*, Aud. (= *L. fragillissima*, Forbes, two specimens, Station VII.); *L. sarsii*, Düb. and Kor. (= *L. fragillissima*, Forbes, 5-armed var.), fairly abundant, Stations III. and IV., of large size—one specimen is 6½ inches, and another 7¼ inches in diameter; *Asterina gibbosa*, Penn., Station IX.; *Asterias glacialis*, Linn., one specimen, Berhaven, 10 fathoms; *A. rubens*, Linn., generally distributed; greatest depth, 48 fathoms (Log No. 21); *A. violacea*, O. F. Müll., Dursey Sound and Berhaven.

## OPHIUROIDEA.

*Amphiura chiajii*, Forbes (= *Ophiocoma punctata*, Forbes), Berhaven; mud, 5 to 12 fathoms; common, but not quite so abundant as the

following:—*A. filiformis*, O. F. Müll., Station III., 44 fathoms; VI., 75 fathoms; Berehaven, abundant, 5 to 12 fathoms; Bantry Harbour, rare; XII., 40 fathoms; *A. elegans*, Leech (= *Ophiocoma neglecta*, Forbes), between tides, Berehaven; *Ophiactis ballii*, Thomps. (+ *Ophiocoma goodsiri*, F.), Station I., 80 fathoms; *Ophiocoma nigra*, O. F. Müll., Berehaven, 5 to 12 fathoms, common; *Ophioglypha lacertosa*, Penn, Stations I., III., IV., VIII. The specimens from the first locality from 80 fathoms were of large size, the disc of the two largest measuring 29 and 33 mm. in diameter; two from Berehaven, 24 and 27 mm.; one from Station VII., 27 mm.; that of the largest specimen seen by Forbes was  $\frac{1}{16}$  of an inch (23 mm.) in diameter. Wyville Thomson (*Depths of the Sea*, p. 100) also remarked on the large size this species attains off the S.W. coast; *O. albida*, Forbes, Stations III., VIII., IX.; *O. affinis*, Lütke, Station V., 120 to 110 fathoms; sand not unfrequent; of small size; VII., 40 fathoms; coarse sand, Berehaven. These are the first recorded Irish localities for this species. *Ophiothrix pentaphyllum*, Penn, Station II.; 25 to 20 fathoms; sand; a few young forms; VIII., 5 to 12 fathoms; not abundant. *O. lütkeni*, Wyv. Thoms., Station I., 80 fathoms. This beautiful species was first mentioned and named in Wyville Thomson's *Depths of the Sea*, p. 100, but it has never been described nor figured. It occurred off S. W. Ireland, lat  $51^{\circ} 1' N.$ , long  $11^{\circ} 21' W.$ , at 180 fathoms (Station 45a; second cruise of the "Porcupine," July 30, 1869). In the *Proc. Roy. Soc. Edin.*, 1883-84, xii., p. 710, Hoyle states that five specimens were obtained by the "Porcupine." The "Challenger" expedition dredged a young example from 450 fathoms; near the Azores, Station 75, lat,  $38^{\circ} 37' N.$ , long.  $28^{\circ} 30' W.$ , July 2, 1873. (Lyman, Report on the "Challenger" *Ophiuroidea*). The following are the only published descriptions of this species:—"A large species of *Ophiothrix*, coming near *O. fragilis*, but of much larger size; the disk in the larger specimens 25 mm. in diameter, and the span from tip to tip of the rays 275 mm. The colours of the disk are very vivid, purple and rose; and all the plates of the disk, and the dorsal plates of the arms, are studded with delicate spines" (*Depths of the Sea*, p. 100). "Large and similar to *Ophiothrix fragilis*, but with short, thin arm spines, high arched arms, and minute spines on upper arm-plates" ("Challenger" Report, p. 215). Hoyle, in his "Revised List of British *Ophiuroidea*" (*Proc. Roy. Phys. Soc. Edinb.*, VIII., p. 154), merely repeats the foregoing localities. Two specimens were dredged by the expedition; the disk of the larger specimen is 29 mm. in diameter; the length of the arms is 250 mm., thus making the span from tip to tip of the arms 525 mm.; the diameter of the disk of the smaller is 25 mm. As this species has never been figured nor fully described, it is proposed to supplement this deficiency in the final report. We may claim this fine species as being a characteristic inhabitant of the deeper water off the south-west coast of Ireland.

## ECHINOIDEA.

*Echinus esculentus*, Penn. Very abundant at the west entrance to Berehaven. *E. microstoma*, WYV. Thoms. Common at Stations I. and V.; from 80 to 120 fathoms. This species was found in great numbers by the "Porcupine" all round this region. *E. miliaris*, Linn., Stations VIII. and IX. *Echinocyamus angulosus*, Leske; extremely abundant in Bantry Bay. *Spatangus purpureus*, Leske; several young specimens at Station VII., and fragments from a few other places. *S. raschi*, Lov.; two or three specimens from Station I., and fragments from Station V. Wyville Thomson dredged this species in the first cruise of the "Porcupine" 40 miles W. of Valencia, in 110 fathoms (*l.c.* p. 86). There is a specimen in the Science and Art Museum, Dublin, from Valencia, Co. Kerry, presented by Mr. E. Waller, and another from 30 miles off Shetland. *Brissopsis lyrifer*, Forbes; several ordinary sized specimens were obtained from Station VI.; of two specimens from Berehaven, 10 fathoms, one is 63 mm. ( $2\frac{1}{2}$  inches)  $\times$  56 mm. ( $2\frac{2}{5}$  inches,  $\times$  35 mm. ( $1\frac{3}{8}$  inch). Forbes had a specimen  $1\frac{3}{8}$  inch  $\times$   $1\frac{3}{5}$  inch  $\times$  1 inch, but found fragments indicating larger dimensions; all his specimens were from the estuary of the Clyde; mud 10 to 15 fathoms. So far as I can discover, this species has only been obtained from the W. coast in Ireland. *Echinocardium flavescens*, O. F. Müll., Stations VI., VII., and VIII. This species occurs sparingly at different points round the British coasts.

## HOLOTHUROIDEA.

*Cucumaria pentactes*, O. F. Müll. Stations III. (No. 10), XI. and XII.

— sp. juv., Station III.

*Thyone fusus*, O. F. Müll. Berehaven.

— raphanus, Düb. et Kor. Stations VI. (No. 20), and VIII.

*Ocnus lacteus*, Forbes. Berehaven, 10 fathoms. The only point of interest lies in the specimens of *Ocnus*. As is well known, Professor Edward Forbes recognised two species, which he called *Ocnus brunneus* and *O. lacteus*; but a comparison of his description shows that these two species differ in nothing but colour. M. Th. Barrois, in his *Catalogue des Crustacés podophthalmaires et des Echinodermes recueillis à Concarneau* (8vo., Lille, 1882, p. 51), remarks that *O. brunneus* has never been recorded since the time of Forbes, and that it seems but to be a colour variety of *O. lacteus*. Dr. Lampert, in his lately published Monograph of the Holothurians, inclines to M. Barrois's view.

It is quite certain that in Berehaven specimens of *Ocnus*, coloured brown or white, are found living together. I, at any rate, am unable to detect any difference between them: it appears to me, therefore, that *O. brunneus* may well be regarded as a synonym of *O. lacteus*.

Also from Berehaven was found an *Ocnus* of elongated form: as it is represented by a single specimen, it is as well to suspend judgment as to its exact affinities.

*Synapta inhærens*, O. F. Müll. Berehaven, 10 fathoms.

## Vermes.

### TURBELLARIA.

*Eurylepta cornuta*, O. F. Müll. Shore, Dunboy, Berehaven. *E. vittata*, Mont. Berehaven, 10 fathoms; one large specimen; and other unnamed "Planarians."

### NEMERTEA.

*Amphiporus pulcher* (?) Johnst. Berehaven; 10 fathoms. *Nemertes neesii*, Erst. Shore, Dunboy; numerous. *Lineus marinus*, Mont. Berehaven and Bantry Harbour. A large, very brittle, whitish Nemertean, with a pinkish head, was dredged at Stations III. and VI.; it is probably *Cerebratulus angulatus*, O. F. Müll. The anterior portion of a Nemertean was dredged in Berehaven; it probably belongs to the genus *Micrura*. It was 35 mm. long, and 2 mm. broad; flattened, head slightly swollen, gradually tapering anteriorly; trunk of body produced on the sides into a thin band, really forming a continuous lateral fin; no eyes were detected; a large lateral cephalic groove, distinctly red at the wide posterior end; colour dull pale, creamy orange, irregularly sprinkled with burnt sienna spots, which are more numerous at the anterior end; cephalic ganglia shine through with a marked rosy colour. If this species should prove to be new, the specific name of *Pardalis* would be appropriate for it. *Carinella annulata*, Mont., Berehaven.

### CHÆTOPODA.

The following Chætopods have been identified up to the time of going to Press:—

*Aphrodite aculeata*, Linn. Station XI.

*Amphiteis gunneri*, M. Sars. Station VI. (19).

*Amphitene auricomma*, Müll. Stations III. (21), VII. (22), VIII.

*Cirratulus tentaculatus*, Mont. Bantry Harbour.  
*Hyalinœcia tubicola*, Müll. Stations V. (17), VII. (22).  
*Lanice conchilega*, Pall. Bantry Bay, Stations I., V.  
*Nereis dumerilii*, Aud. et M. Edw. Bantry Bay.  
 — *lobulata* Rathke. Bantry Harbour.  
 — *pelagica*, Linn. Berehaven.  
*Niomache lumbricalis*, Fabr. Station V.  
*Nothria conchylega*, Sars. Station I.  
*Owenia filiformis*, D. Ch. Stations III., V., IX.  
*Pectinaria belgica*, Pall. Bantry Bay.  
*Pista cristata*, Müll. Berehaven.  
*Phyllodoce lamelligera*, Turt. Bantry Bay.  
*Sabella pavonina*, Sav. Station III. (21).  
*Syllis cornuta*, Rathke. Berehaven.  
*Terebellides strœmi*, Sars. Bantry Bay.  
*Tomopteris scolopendra*, Quoy et Gaim. Station VI. (surface).  
*Trophonina plumosa* (?), Müll. Station V.

#### GEPHYREA.

Several examples of the typical form of *Phascolion strombi*, Mont., occurred at Station I. in dead shells of *Apporhais pes-pelecani*, also a single specimen of the variety *S. dentalii*, Grey, in the shell of *Dentalium striata*. This is the *Sipunculus bernhardus* of Forbes.

#### POLYZOA.

*Eucratea chelata*, Linn.; *Scrupocellaria reptans*, Linn, Berehaven; *Cellaria sinuosa*, Hass., Station VI.; *Membranipora catenularia*, Jameson, Station I.; *M. pilosa*, Linn; and *M. membranacea*, Linn., Berehaven; *Microporella malusii*, Aud.; and *Schizoporella linearis*, Hass., Station I.; *Porella compressa*, Sow., Berehaven; *Mucronella coccinea*, Abildg., Station I.; *Cellepora ramulosa*, Linn., Station XII.; *Crisia cornuta*, Linn.; *C. eburnea*, Linn.; and *Pedicellina cernua*, Pall., Berehaven.

#### BRACHIOPODA.

*Terebratulina caput-serpentis*, Linn. Station III., very rare; Station XII., rare.  
*Crania anomala*, Müll. Station III., very common; Station XII., very common; Station XIII., common.

### **Mollusca.**

During the cruise the larger shells brought up were carefully collected; the results were, however, disappointing, considering the number of hauls taken by both dredges and trawls. This was, perhaps, due to the nature of the bottom examined being principally sand or mud, or, as frequently happened, rocky, in which latter case the dredges fouled badly and came up empty. The sand and mud brought home for microscopic examination proved to be rich in the smaller forms, and advantage was taken of the necessary washing and sifting of this material to secure them. Mr. Joseph Wright—on whom this great labour falls—handed over to me the result of these washings, twenty-one packets of the coarse material. The material from Station V.—the deepest water dredged on the cruise—has yielded a number of very minute shells, which have been forwarded to Rev. A. M. Norman, M.A., who has kindly consented to verify them.

A tabulated list is appended, representing in all 133 species, a smaller number than might have been expected. In addition, there still remains some material from several of the stations not yet fully examined; also several critical species which remain for more satisfactory identification.

[*For Tabulated List, see over.*]

## LIST OF TESTACEOUS MOLLUSCA.

LAMELLIBRANCHIATA.	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII.	XIII.
LAMELLIBRANCHIATA.													
<i>Anomia ephippium</i> , Linn., . . .	r.	r.	c.	..	..	..	..	..	..	..	..	..	..
” <i>patelliformis</i> , Linn., . . .	..	..	..	..	..	..	..	r.	..	..	..	c.	..
<i>Pecten maximus</i> , Linn., . . .	..	..	c.	..	..	..	..	r.	..	..	..	..	..
” <i>opercularis</i> , Linn., . . .	c.	..	..	..	..	..	..	r.	..	..	c.	..	c.
” <i>pusio</i> , Linn., . . .	c.	..	..	..	..	f.	f.	c.	..	..	..	..	f.
” <i>similis</i> , Lask., . . .	..	..	..	..	..	c.	r.	..	..	..	..	..	..
” <i>tigrinus</i> , MüLL., . . .	..	..	r.	..	..	..	r.	..	..	..	..	..	..
<i>Lima subauriculata</i> , Mont., . . .	..	v. r.	..	..	..	..	v. r.	..	..	..	..	..	..
” <i>loscombii</i> , G. B. Sow., . . .	..	..	..	..	..	..	..	..	..	..	v. r.	..	..
<i>Mytilus edulis</i> , Linn., . . .	..	..	..	..	..	..	r.	..	..	..	..	..	..
<i>Pinna rudis</i> , Linn., . . .	c.	..	..	..	..	..	..	..	..	..	..	..	..
<i>Nucula nucleus</i> , Linn., . . .	..	..	c.	f.	..	..	..	f.	..	..	r.	..	f.
<i>Pectunculus glycymeris</i> , Linn., . . .	..	..	..	..	..	..	..	r.	..	..	..	..	r.
<i>Arca tetragona</i> , Pol., . . .	..	..	..	..	..	..	..	v. r.	..	..	r.	..	c.
<i>Lucina spinifera</i> , Mont., . . .	..	..	..	r.	..	..	r.	f.	..	..	..	..	..



	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII.	XIII.
<i>Tellina pusilla</i> , Phil., . . . . .	..	..	..	..	..	..	F.	f.	..	..	..	..	..
<i>Psammobia tellinella</i> , Lam., . . . . .	..	..	..	..	..	..	F.	c.	..	..	..	..	..
” <i>ferröensis</i> , Chann., . . . . .	..	..	..	..	..	..	f.	c.	..	..	..	..	..
<i>Donax vittatus</i> , De Costa, . . . . .	..	..	..	..	..	..	..	c.	..	..	..	..	..
<i>Mactra solida</i> , Linn., . . . . .	..	..	..	..	..	..	..	F.	..	..	..	..	..
” ” <i>var. elliptica</i> , . . . . .	..	..	..	..	..	..	f.	c.	..	..	..	..	..
<i>Lutraria elliptica</i> , Lam., . . . . .	..	..	..	..	..	..	..	c.	..	..	..	..	..
<i>Scrobicularia prismatica</i> , Mont., . . . . .	..	F.	..	..	..	F.	F.	F.	..	..	..	..	..
” <i>nitida</i> , Müll., . . . . .	..	F.	..	..	..	F.	..	F.	..	..	..	..	..
<i>Solen pellucidus</i> , Penn., . . . . .	..	..	..	..	..	..	F.	F.	..	..	..	..	..
” <i>ensis</i> , Linn., . . . . .	..	..	..	..	..	..	..	C.	..	..	..	..	..
” <i>siliqua</i> , Linn., . . . . .	..	..	..	..	..	..	..	c.	..	..	..	..	..
<i>Pandora inaequalis</i> , Linn., . . . . .	..	..	F.	..	..	F.	..	..	..	..	..	..	..
<i>Thracia papyracea</i> , Poli., . . . . .	..	..	..	..	..	..	..	C.	..	..	..	..	..
<i>Nera abbreviata</i> , Forbes, . . . . .	..	..	..	..	..	V.F.	..	..	..	..	..	..	..
<i>Corbula gibba</i> , Oliva, . . . . .	..	..	..	..	..	F.	F.	F.	..	..	..	..	e.
” <i>var. rosea</i> , . . . . .	..	..	..	..	..	F.	..	..	..	..	..	..	..



GASTEROPODA.	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII.	XIII.
<i>Rissoa albella</i> , Loven., .	.	.	.	.	.	.	.	c.	.	.	.	.	.
" <i>lactea</i> , Mich., .	.	.	.	.	.	.	.	v. r.	.	.	.	.	.
" <i>reticulata</i> , Mont., .	.	r.	c.	.	.	c.	.	.	.	.	r.	.	r.
" <i>costata</i> , Ad., .	.	.	.	.	.	.	.	r.	.	.	.	.	.
" <i>parva</i> , Da Costa, .	.	r.	.	r.	.	r.	c.	.	.	.	.	.	.
" <i>violacea</i> , Desm., .	.	.	.	.	.	.	.	v. r.	.	.	.	.	.
" <i>costulata</i> , Ald., .	.	r.	.	.	.	.	.	.	.	.	.	.	.
" <i>striata</i> , Ad., .	.	v. c.	.	.	.	.	v. c.	v. c.	.	.	c.	.	.
" <i>vitrea</i> , Mont., .	.	.	c.	.	.	.	v. r.	.	.	.	c.	.	.
" <i>pulcherrima</i> , Jeffr., .	.	r.	.	.	.	.	v. r.	.	.	.	.	.	.
<i>Phasianella pulla</i> , Linn., .	.	.	.	.	.	.	.	r.	.	.	.	.	.
<i>Lacuna divaricata</i> , Fabr., .	.	.	.	c.	.	.	.	c.	.	.	.	.	.
<i>Littorina obtusata</i> , Linn., .	.	.	.	.	.	.	.	f.	.	.	.	.	.
<i>Cœcum trachea</i> , Mont., .	.	.	.	.	.	.	r.	v. c.	.	.	.	.	.
" <i>glabrum</i> , Mont., .	.	.	.	.	.	.	.	v. r.	.	.	.	.	.
<i>Turritella terebra</i> , Linn., .	.	.	f.	.	.	c.	.	c.	.	.	c.	.	.
<i>Scalaria communis</i> , Lam., .	.	.	.	.	.	.	.	r.	.	.	.	.	.



	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII.	XIII.
<i>Cerithium reticulatum</i> , Da Costa, .	..	..	..	..	..	..	c.	c.	..	..	c.	..	..
” <i>perversum</i> , Linn., .	..	..	..	..	..	..	f.	c.	..	..	..	..	f.
<i>Cerithiopsis tubercularis</i> , Mont., .	..	f.	..	..	..	..	..	..	..	..	..	..	..
” <i>costulata</i> , Möller, .	..	f.	..	..	..	..	..	..	..	..	..	..	..
<i>Purpura lapillus</i> , Linn., .	..	..	..	..	..	..	v. r.	f.	..	..	..	..	..
<i>Buccinum undatum</i> , Linn., .	..	..	c. young	..	..	..	..	c.	..	..	..	..	..
<i>Trophon muricatus</i> , Mont., .	..	..	..	..	..	f.	..	..	..	..	..	..	..
” <i>truncatus</i> , Ström., .	..	..	f.	..	..	..	..	..	f.	..	..	..	..
<i>Fusus antiquus</i> , Linn., .	..	..	..	..	..	..	..	c.	..	..	..	..	..
” <i>gracilis</i> , Da Costa, .	..	..	..	..	..	..	..	..	..	..	..	f.	..
” <i>propinquus</i> , Ald., .	..	..	..	..	..	f.	..	f.	..	..	..	..	..
<i>Nassa reticulata</i> , Linn., .	..	..	..	..	..	..	..	f.	..	..	..	..	..
” <i>incrasata</i> , Ström., .	..	..	c.	..	..	..	..	f.	..	..	..	..	f.
<i>Defrancia gracilis</i> , Mont., .	..	..	..	..	..	..	..	f.	..	..	..	..	..
” <i>teres</i> , Forbes, .	..	..	..	..	..	..	..	f.	..	..	..	..	..
” <i>reticulata</i> , Ren., .	..	..	v. r.	..	..	..	..	..	..	..	..	..	..
<i>Pleurotoma brachystoma</i> , Phil., .	..	..	..	..	..	..	..	f.	..	..	..	..	..



## NUDIBRANCHIATA.

*Goniodoris castanea*, Ald. and Han. Dursey Sound. This rare species has previously occurred only at Salcombe Estuary, Devonshire, and Saltcoats, Ayrshire. *G. nodosa*, Mont. Dursey Sound; *Triopa claviger*, O. F. Müll. Dursey Sound; *Thecacera*, sp., Dursey Sound. A full description of this form will be given: it appears to be intermediate between *T. capitata*, A. & H., and *T. pennigera*; *Doto coronata*, Gmel., Bantry Bay, *Eolis exigua*, A. & H., Berehaven. The only other recorded Irish locality is from Dublin Bay (*Proc. Roy. Irish Acad.* (2) iv. Science, p. 529); but it is probably widely distributed, having been overlooked on account of its small size and inconspicuous colouration. *Eolis coronata*, Forbes, Berehaven. Two varieties of this species were obtained, both more or less orange in colour.

## CEPHALOPODA.

*Loligo media*, Linn. Station IV., one specimen; Station VII., two specimens.

**Crustacea.**

## OSTRACODA.

As all the dredgings have not yet been thoroughly examined for Ostracoda, the present list of species and details of distribution must be considered as very incomplete. Already sixty-seven species have been found, one of which, *Kirthe glacialis*, has not been previously recorded as occurring in the recent state; and, in addition to these, there have been four species discovered, which are believed to be new to science; but as only one example of each kind has been obtained, it is not desirable to speak with certainty until more specimens have been found.

Many of the species mentioned in this Report are found more or less abundantly all round the British Isles,<sup>1</sup> and, in this case, their distribution is not given. When, however, a species is not recorded from a particular district, but occurs round the rest of the coast, its absence from that district is noted. The great majority of the species occur as Post-tertiary fossils, but only two of them, *Cythere jonesii* and *Cytheridea papillosa*, have been found in Tertiary deposits.

I have to thank Dr. Brady for the trouble he has taken in determining some doubtful specimens for me, more especially as several of them were only single valves, and consequently more troublesome than perfect ones usually are.

<sup>1</sup> I have taken most of the facts of distribution from a Paper "On the Distribution of British Ostracoda," by Messrs. Brady and Robertson, published in the *Annals and Magazine of Natural History*; but have also made use of Dr. Brady's *Monograph of the British Ostracoda*, and other works on the subject.

LIST OF SPECIES.

- Argillœcia*, G. O. Sars.  
*cylindrica*, G. O. Sars. Frequent in Berehaven, 4 fathoms; extremely rare in deeper water at mouth of Bantry Bay; not found in the deepest gatherings. Recorded from Irish Sea, Belfast Lough, Norway.
- Pontocypris*, G. O. Sars.  
*mytiloides*, Norman. In most of the gatherings, but not common.
- Bairdia*, M'Coy.  
*inflata*, Norman. Rare; in Berehaven, 4 fathoms; common on the western, but rare on the eastern coasts of the British Isles.
- Cythere*, Müller.  
*pellucida*, Baird. A few specimens in Berehaven, but none from deeper gatherings; extends from Norway and the Gulf of St. Lawrence to Mediterranean; very common in Britain.  
*tenera*, Brady. Common in all the gatherings.  
*crispata*, Brady. Rare; in Berehaven, 4 fathoms; common in Britain. It has been found in Hong Kong Harbour, Booby Island, and Port Jackson.<sup>1</sup>  
*viridis*, Müller. Rare; in Berehaven, 4 fathoms.  
*albomaculata*, Baird. Common in Berehaven, 4 fathoms; very common in Britain; extends from Norway to Mediterranean and Cape Verd.  
*convexa*, Baird. Very common in Berehaven, 4 fathoms.  
*finmarchica*, G. O. Sars. Only one valve found at Station VI., 79 fathoms; not very abundant in Britain; extends from Davis's Straits to Cape Verd and St Vincent.  
*limicola*, Norman. Rare at Station V., 110 fathoms; it has not been found in any other gathering; rare, and not very generally distributed in Britain; found also in Baffin's Bay and Norway.  
*globulifera*, Brady. A few specimens of this rare species have been found in some of the deeper gatherings, Stations V. and VI. Recorded from west of Ireland, south-east of England, Spitzbergen.  
*pulchella*, Brady. A great many somewhat dwarfed specimens, apparently belonging to this species, were found in Berehaven, 4 fathoms; not found on the east and south of England, but recorded from Baffin's Bay and Holland.  
*robertsoni*, Brady. Very common in Berehaven, 4 fathoms; frequent at the mouth of Bantry Bay, 40 fathoms; not yet found in any of the deeper gatherings; a common shallow-water species. It does not appear to extend to the northern parts of Scotland, though it has been found in Norway.

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<sup>1</sup> Report on "Ostracoda of 'Challenger' Expedition."

## Cythere, Müller.

*villosa*, G. O. Sars. Very common in Berehaven, 4 fathoms.

*concinna*, Jones. Found in nearly all the deeper gatherings.

*emaciata*, Brady. Common in Berehaven, less so in deeper gatherings; not found on the east coasts of England and Scotland.

*quadridentata*, Baird. Common in Station V.; rare in Stations VI. and VII.

*tuberculata*, G. O. Sars. A few specimens in Stations V. and VI.

*dunelmensis*, Norman. Frequent, Station V.; an Arctic and north European species.

*whiteii*, Baird. Only one specimen from Station V. A somewhat rare species found in S.W. of England, Irish Sea, Belfast Lough, Gulf of St. Lawrence, Levant.

*antiquata*, Baird. Common.

*jonesii*, Baird. Frequent, except from shallow water.

*fidicula*, Brady and Robertson. A large number of somewhat immature specimens, apparently belonging to this species, were found in Berehaven. Recorded from Shetland and S.E. of England.

?*semipunctata* Brady. Very rare, Stations VII. and VIII. Although a rare species, it extends all round Britain, except towards the northern parts of Scotland.

## Cytheridea, Bosquet.

*papillosa*, Bosquet. Rare; Station V.

*punctillata*, Brady. Common; Station V.

*sorbyana*, Jones. Very rare; Station V. Recorded from Irish Sea, Shetland, Gulf of St. Lawrence, Spitzbergen.

*elongata*, Brady. Common in Berehaven.

## Eucythere, Brady.

*declivis* Norman. Common in nearly all the gatherings.

## Kirthe, Brady, Crosskey, and Robertson.

*glacialis*, Brady, Crosskey, and Robertson. One or two specimens of this species have been found from 110 fathoms, Station V.

It does not appear to have been previously recorded as occurring in the recent state, but has been found as a post-tertiary fossil in the boulder clay of Scotland and Norway.

*bartonensis*, Jones. Rare; Stations V. and VI.

## Loxococoncha, G. O. Sars.

*impressa*, Baird. Common from Berehaven; an extremely common shallow water species.

*granulata*, G. O. Sars. Several specimens from Stations V. and VI.; not recorded from northern parts of Scotland, but found in Norway.

*guttata*, Norman. Common in all the gatherings.

*multifora*, Norman. Stations V., VI., VII.; more or less common.

*tamarindus*, Jones. Common in all the gatherings.

- Looxconcha**, G. O. Sars.  
*fragilis*, G. O. Sars. Stations V. and VI. ; a rare species in Britain and Norway.
- Xestoleberis**, G. O. Sars.  
*depressa*, G. O. Sars. In most of the gatherings, but rare.  
*aurantia*, Baird. Rare ; Station VIII.
- Cytherura**, G. O. Sars.  
*concentrica*, Brady, Crosskey, and Robertson. Two specimens in Station V. Only recorded from Shetlands and Gulf of St. Lawrence.  
*undata*, G. O. Sars. Rare ; Stations VII. and VIII.  
*striata*, G. O. Sars. Rare in nearly all the gatherings.  
*cuneata*, Brady. Common in Berehaven.  
*angulata*, Brady. Rare ; Station VII.  
*propinqua*, Brady and Robertson. Common ; Station VIII. Recorded from S.E. of England, and Belfast Lough.<sup>1</sup>  
*producta*, Brady. Rare in most of the gatherings.  
*cornuta*, Brady. One specimen ; Station VIII.  
*fulva*, Brady and Robertson. Very common ; Station VIII. Recorded from Scilly Islands,<sup>2</sup> Belfast Lough.<sup>1</sup>  
*acuticostata*, G. O. Sars. Rare in most of the gatherings.
- Cytheropteron**, G. O. Sars.  
*latissimum*, Norman. Very common at Station VII., 40 fathoms ; frequent in most of the other gatherings.  
*nodosum*, Brady. Common.  
*alatum*, G. O. Sars. Rare ; Stations V. and VI. Recorded from Shetlands, Irish Sea, and Norway.  
*montrosiense*, Brady, Crosskey, and Robertson. Rare ; Stations V. and VI. Recorded from West of Ireland and Baffin's Bay.  
*punctatum*, Brady. Stations V. and VI. ; fairly abundant.  
*subcircinatum*, G. O. Sars. Very common in Berehaven. Recorded from west of Ireland, south-west of England, and Belfast Lough.
- Bythocythere**, G. O. Sars.  
*constricta*, G. O. Sars. Stations VII. and VIII., very common.
- Pseudocythere**, G. O. Sars.  
*caudata*, G. O. Sars. One specimen at Station VI., 79 fathoms. Not very common, but widely distributed both in the northern and southern hemispheres.
- Sclerochilus**, G. O. Sars.  
*contortus*, Norman. Station VIII., very rare.

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<sup>1</sup> *Proc. Belfast Nat. Field Club* (Appendix), 1885.

<sup>2</sup> *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xiii.

**Paradoxostoma**, Fischer.

*variabile*, Baird. Station VII., rare.

*orcadense*, Brady and Robertson. Very common at Berehaven.

Previously recorded from the Shetlands.

*abbreviatum*, G. O. Sars. Rare at Berehaven.

*obliquum*, G. O. Sars. Two specimens only at Berehaven.

*hibernicum*, Brady. One specimen at Berehaven. **Not found in the northern parts of Scotland.**

*ensiforme*, Brady. Rare at Berehaven.

*flexuosum*, Brady. Rare at Berehaven.

**Polycope**, G. O. Sars.

*orbicularis*, G. O. Sars. Station V., frequent.

## COPEPODA.

The Copepoda did not receive much attention. The following species only have as yet been identified:—*Calanus finmarchicus*, Gunn., very common; *Metridia armata*, Boeck, few; *Dias longiremis*, Lillj, rare; *Centropages typicus*, Kröy, rare; *Anomalocera patersoni*, Templ., in a gathering by itself; *Peltidium interruptum*, Goods., one specimen at Station IV. The first four species occurred in all the tow-net gatherings.

## MALACOSTRACA.

Of the Malacostraca dredged by the Expedition, the following species have been so far determined; amongst the remainder will probably be found some interesting species. Those marked with an asterisk (\*) appear not to have been previously recorded from Ireland.

## AMPHIPODA.

\**Corophium tenuicorne*, Norman. Station VI.

\**Atylus swammerdamii*, Sp. Bate. Station II.

\**Hyale nilssonii*, Rathke. Berehaven.

*Amathilla sabini*, Sp. Bate. Station II.

*Urothoe elegans*, Sp. Bate. Berehaven.

*Mæra othonis*, Sp. Bate. Berehaven.

*Anonyx gulosus*, Kröyer. Stations V., VII., and VIII.

\**Hippomedon hölbolli*, Kroy. Station VII.

\**Lysianassa spinicornis*, Costa. Berehaven. This species is new to the British Isles.

*Dexamine spinosa*, Leach. Berehaven.

*Gammarus locusta*, Fabr. Stations II. and VIII.

*Proto ventricosa*, Müll. Stations V. and VIII.

\**Aora gracilis*, Sp. Bate. Station II.

*Hyperia galba*, Mont. On *Aurelia aurita*, Station VI.

*Amphithoe littorina*, Sp. Bate. Berehaven.

*Triphosa longipes*, Sp. Bate. Station V.

*Callisoma crenata*, Sp. Bate. Station VII.

ISOPODA.

- Næsa bidentata*, Leach. Berehaven.  
 \**Dynamene montagui*, Leach. Berehaven.  
 „ *rubra*, Leach. Berehaven.  
*Cymodocea truncata*, Leach. Berehaven.  
*Idotea tricuspidata*, Desm. Berehaven.  
 „ *linearis*, Latr. Station IV.  
*Ligia oceanica*, Linn. Bantry Harbour.  
*Astacilla longicornis*, Westw. Station VII.

SCHIZOPODA.

- Mysis chamæleon*, J. V. Thomps. Berehaven.  
*Nyctiphanes norvegica*, M. Sars. Station V., 120 fathoms.

DECAPODA.

- Stenorhynchus rostratus*, Linn. Berehaven.  
*Inachus dorsettensis*, Penn. Dursey Sound and Kenmare River.  
 „ *dorynchus*, Leach. Berehaven.  
*Hyas coarctatus*, Leach. Berehaven.  
*Eurynome aspera*, Leach. Berehaven; female, with eggs. This specimen had not deposited its eggs before August; Bell states June as the period for deposition.  
*Xantho florida*, Leach. Berehaven, Dunboy.  
 „ *rivulosa*, M. Edw. Berehaven, Dunboy; not so plentiful as *X. florida*.  
*Cancer pagurus*, Auct. Berehaven.  
*Pirimela denticulata*, Leach. Shallow water in Berehaven; rare.  
*Carcinus mœnas*, Leach. Berehaven.  
*Portunus puber*, Leach. Berehaven.  
 „ *arcuatus*, Leach. Berehaven; common.  
 „ *depurator*, Leach. Kenmare River and Berehaven.  
 „ *marmoreus*, Leach. Dursey Sound.  
 „ *pusillus*, Leach. Berehaven.  
*Ebalia cranchii*, Leach. Kenmare River and Bantry Bay.  
 „ *tuberosa*, Penn. Station I.  
*Corystes cassivelaunus*, Leach. Dursey Sound; part of a specimen.  
*Eupagurus bernhardus*, Fabr. Common everywhere.  
 „ *excavatus*, Herbst., var. *meticulosus*, Roux. Station I., 90 fathoms; and V., 110 to 120 fathoms. According to J. R. Henderson (*in litt.*), this is a deep-water species in this country, and was described from the Shetland Islands by Rev. A. M. Norman as *Pagurus tricarinatus*.  
*Spiropagurus lævis*, J. V. Thomps. Stations I., III., VII.  
 [Commensal with *Epizoanthus*.]  
 The specimens were dredged in 90 fathoms.

- Porcellana platycheles*, Lam. Bantry Harbour.  
 ,, *longicornis*, M. Edw. Berehaven.  
*Galathea squamifera*, Leach. Bantry Bay.  
 ,, *andrewsii*, Kinah. Station VI., 70 fathoms.  
*Nephrops norvegicus*, Leach. Berehaven (one small specimen ♂)  
*Crangon vulgaris*, Fabr. Berehaven.  
*Steiracrangon allmanni*, Kinah. Stations III., VI., VII.  
*Pandalus annulicornis*, Leach. Berehaven.  
*Hippolyte varians*, Leach. Berehaven.

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### **Tunicata.**

The Ascidians are all common forms, and call for no special mention.

- Ascidia mentula*, O. F. Müll. Berehaven.  
 ,, *aspersa*, O. F. Müll. Mouth of Bantry Bay, Berehaven, and Bantry Harbour; very common.  
 ,, *plebia*, Ald. Berehaven.  
 ,, *virginea*, O. F. Müll. Mouth of Bantry Bay; pedunculated.  
 ,, sp. Station I., log No. 3.  
*Molgula occulta* (?) Kupffer. Mouth of Bantry Bay and Berehaven, 10 fathoms.  
*Styela grossularia*, Van Ben. Mouth of Bantry Bay and Berehaven, 10 fathoms.  
 ,, *rustica* (?) Young. Berehaven, log No. 26.  
*Clavelina lepadiformis*. O. F. Müll., log No. 26.  
*Polycarpa cornuta*, Ald. Mouth of Bantry Bay; common.  
*Morchellium argus*, M. Edw. Berehaven, log Nos. 25 to 26.  
*Leptoclinum maculatum*, M. Edw. (?) Berehaven.  
*Eugyra glutinans*, Möeller. Mouth of Bantry Bay.  
*Diplasoma*, sp. Berehaven; common. This is the common British species, but it is not yet certain what that species is.  
*Botryllus*, sp. Berehaven. At present most of the species of *Botryllus* can only be determined by the aid of their natural colours, and these are usually unrecognisable in spirit specimens.
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