PROCEEDINGS

OF

THE ROYAL IRISH ACADEMY

PAPERS READ BEFORE THE ACADEMY

I.

REPORT ON THE SPONGES COLLECTED OFF THE COAST OF IRELAND BY THE DREDGING EXPEDITIONS OF THE ROYAL IRISH ACADEMY AND THE ROYAL DUBLIN SOCIETY.

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PLATE I.

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A SHORT account is given in the following paper of collections of sponges obtained a good many years ago by the Royal Irish Academy and by the Royal Dublin Society off the west and south-west coasts of Ireland. These sponges were deposited in the National Museum, Dublin, where they have since remained unnamed, with the exception of two or three, which were referred to in the report on the marine sponges of the Clare Island Survey (**12**), as they were the sole representatives of their species known within the area of that survey.

Excepting the first cruise of the "Porcupine" in the year 1869, the earliest attempts at deep-sea dredging off the west and south-west coasts of Ireland were carried out by the Royal Irish Academy, which equipped three dredging expeditions in the years 1885, 1886, and 1888. Accounts of the invertebrates then obtained, with the exception of the sponges, were published in the Proceedings of the Academy (**4** and **5**).

Later on, in the years 1890 and 1891, the Royal Dublin Society organized a survey of the fishing grounds off the west coast of Ireland. In the course of this survey large collections of invertebrates were made. A preliminary list of the species was published in the report on the Survey (**8**), in which mention was made of about half a dozen of the commonest sponges.

Several of the groups have since been worked out in considerable detail, but again the sponges were left untouched.

The number of sponges in these united collections is not great. In fact, as always happened in the earlier dredging expeditions, the only sponges that were collected as such were the larger and more conspicuous kinds. Shells, corals, stones, and other material dredged up were not examined and retained, as they would be to-day, for small, encrusting sponges, which are now known to exist in extraordinary numbers and in great variety of species. However, a search through other groups in the Royal Irish Academy and Royal Dublin Society collections in the National Museum, such as the mollusca, the hydroids, and particularly the corals, resulted in the discovery of a number of small, for the most part encrusting, sponges of considerable interest.

The number of species in all is only thirty-eight. Of these two, *Mycale* (*Paresperella*) *atlantica* and *Forcepia fragilis*, are described as new. The former is interesting on account of the fact that it is the first representative of the sub-genus Paresperella found in the Atlantic Ocean.

The following five species are noted for the first time within the Irish area :—

Laxosuberites ectyoninus *Topsent.*
Desmacidon fruticosum (*Montagu*).
Hymenancora conjungens *Lundbeck.*
Microciona laevis *Bowerbank.*
Tragosia polypoides (*Schmidt*).

Two of these species, *Laxosuberites ectyoninus* and *Hymenancora conjungens*, have not been taken previously off any part of the British Isles; each, in fact, has only been recorded once up to the present, the first-mentioned in the Mediterranean, the second off the south coast of Iceland.

CALCAREA.

The five calcareous sponges represented in the collection are among the commonest species found round our coast, and call for no special remark. They are as follows :—

Clathrina coriacea (Montagu).

R.D.S. Survey. Blacksod Bay.

Leucosolenia complicata (Montagu).

R.D.S. Survey. Station 238, Lough Swilly, 8–12 fathoms.

Sycon ciliatum (Fabricius).

R.I.A. Exp., 1886. Log 41, Crookhaven, 3½ fathoms.

R.D.S. Survey. Blacksod Bay; Kilkieran Bay; Clare Island; Station 23, rock pools, west shore of Killeany Bay; Station 158, Greatman's Bay, Co. Galway; Station 238, Lough Swilly, 8–12 fathoms.

Grantia compressa (Fabricius).

R.D.S. Survey. Kilkieran Bay; Clare Island; Smerwick Harbour; Station 167, Blacksod Bay, 3–4 fathoms; Station 238, Lough Swilly, 8–12 fathoms.

Leucandra nivea (Grant).

R.D.S. Survey. Blacksod Bay, 5 fathoms.

NON-CALCAREA.

Order MYXOSPONGIDA.

Halisarca Dujardini Johnston.

R.D.S. Survey. Station 240, Lough Swilly, 6–8½ fathoms.

This common species is represented by one specimen growing on the leg of a crab (*Hyas araneus*), which is thickly covered with Polyzoa and Hydroids.

Order TETRAXONIDA.

Family THENEIDAE.

Thenea muricata Bowerbank.

R.I.A. Exp., 1888. Log 69, 51° 1′ N., 11° 50′ W., 750 fathoms.

The only specimen in the collection is 45 mm. by 38 mm. in diameter. It has one large osculum placed almost centrally on the upper surface of the sponge.

A large number of specimens of this species have been obtained within recent years by the Irish Fisheries Branch off the south-west coast of Ireland at depths varying between 625 and 982 fathoms (**13**).

Family PACHASTRELLIDAE.

Poecillastra compressa (Bowerbank).

R.I.A. Exp., 1886. Log 53 (or ? log 20). Off the Skelligs, 70–80 fathoms.

This species is represented by one small fragment. Like *Thenea muricata*, numerous specimens of this species have been dredged within recent years off the south-west coast of Ireland at depths of 468–728 fathoms (**13**). These depths are considerably greater than that at which the present specimen was

obtained; but the species is known to occur in shallower water, for example off the north-west coast of France at about 28 fathoms, and off Rockall at 60 fathoms.

Family GEODIIDAE.

Pachymatisma johnstonia (Bowerbank).

R.D.S. Survey. Station 86, off Inishmaan, 20–7 fathoms.

This species is doubtfully recorded by Mr. Holt (8). There is no specimen from this station in the Museum, so that the identification cannot be verified. The species is, however, well known round the Irish coast between tide-marks at extreme low water, as well as in rather shallow water-dredgings.

Family CLIONIDAE.

Cliona celata Grant.

R.D.S. Survey. Station 32, Birturbuy Bay; Station 196, Davalaun Sound, 16–13 fathoms; s.s. "Harlequin," neighbourhood of Cork Harbour.

All the specimens in the collection are the massive form of this common boring sponge. The specimens from station 196 are recorded by Mr. Holt (8) as "great masses of sponge (*Rhaphyras Griffithsii*)," a broken piece of which measured 20 inches by 17 inches by 8 inches.

Cliona vastifica Hancock.

R.I.A. Exp., 1886. Log 49, 51° 20′ N., 11° 26′ W., 42 miles from Great Skellig, 160 fathoms.

R.D.S. Survey. Station 124, 50 miles W. of Bolus Head, 220 fathoms.

Both the specimens are boring in coral. The sponge from the first-mentioned station is boring extensively in a specimen of *Caryophyllia clavus*, that from the second locality is in *Lophohelia prolifera*. Only a very small piece of the sponge was found in the Lophohelia.

Alectona Millari Carter.

R.D.S. Survey. Station 124, 50 miles W. of Bolus Head, 220 fathoms.

This sponge was found boring in coral (*Lophohelia prolifera*). Both this and the preceding species have recently been recorded for the Irish area (13), having been obtained in the course of the dredgings carried on by the Irish Fisheries Branch.

Family SUBERITIDAE.

Laxosuberites incrustans Stephens.

R.I.A. Exp., 1886. Log 49, 51° 20′ N., 11° 26′ W., 42 miles from Great Skellig, 160 fathoms.

The single small specimen in the collection is growing on a coral (*Caryophyllia clavus*). This species was recently described (13) from specimens dredged by the Irish Fisheries Branch off the west and south-west coasts of Ireland, all of which, with two exceptions, are also growing on *Caryophyllia clavus*.

Laxosuberites ectyoninus Topsent.

R.D.S. Survey. Station 124, 50 miles W. of Bolus Head, 220 fathoms.

The two specimens form small thin encrustations on coral (*Lophohelia prolifera*). The spicules agree exactly in shape and size with those of the type, of which a detailed description and figures are given by Professor Topsent (16). The species has been obtained only once previously, namely off Banyuls, at a depth of 500–600 metres.

Suberites carnosus (Johnston).

R.I.A. Exp., 1888. Log 70, Berehaven, 5 fathoms, one specimen.

R.D.S. Survey. Blacksod Bay, two specimens: Station 33, Clifden Harbour, 6 fathoms, two specimens; Station 133, Dingle Bay, 40 fathoms, two specimens.

This species is widely distributed round the Irish coast, but is not very common.

Ficulina ficus (Linn.).

R.I.A. Exp., 1885. Log 3, 40 miles off south-west Ireland, 51° 15′ N., 10° 31′ W., 80 fathoms, one specimen.

R.I.A. Exp., 1888. Log 70, Berehaven, 5 fathoms, one specimen; log 73, probably off south of Ireland, 50 fathoms, one specimen.

R.D.S. Survey. Blacksod Bay, eight specimens; station 33, Clifden Harbour, 6 fathoms, one specimen and fragments; station 73, Killary Bay, 15–9 fathoms, three specimens; Kenmare River, three specimens; station 114, off the Skelligs, 80 fathoms, one specimen.

The usual forms assumed by this polymorphic sponge are represented in the collection, namely, encrusting, massive, and "suberea" forms. The last-named, which covers shells inhabited by hermit crabs, is very common off the coast. Mr. Holt (8) records the species, under the name *Suberites domunculus*, for station 38, Blacksod Bay.

Family HAPLOSCLERIDAE.

Sub-family GELLIINAE.

Gellius flagellifer Ridley and Dendy.

R.D.S. Survey. Station 124, 50 miles W. of Bolus Head, 220 fathoms.

One small specimen belonging to this species is growing on coral

(*Lophohelia prolifera*). *Gellius flagellifer* has already been recorded for the Irish area (**14**). It was obtained by the Irish Fisheries Branch, and was growing on Lophohelia.

Gellius ravus Stephens.

R.D.S. Survey. Blacksod Bay.

The specimen, which is growing on an oyster shell, has been already referred to in the course of the description of the species given in the report on the sponges of the Clare Island Survey (**12**). It differs from the type in having shorter and more slender oxea. The species is evidently widely distributed round our shores, as it has been found at several places off the west, north-west, and east coasts.

Oceanapia robusta (Bowerbank).

R.D.S. Survey. Station 80, off Slyne Head, 55 fathoms.

The merest fragment of a fistula of this well-characterized species is in the collection. The species has been recorded previously for the Irish area (**14**).

Sub-family RENIERINAE.

Reniera simulans (Johnston).

R.D.S. Survey. Neighbourhood of Cork Harbour; west coast of Ireland.

Two specimens of this common Reniera are in the collection.

Reniera *sp.*

R.D.S. Survey. Station 124, 50 miles W. of Bolus Head, 220 fathoms.

A number of small specimens of a Reniera are growing on a piece of coral (*Lophohelia prolifera*). They are oval in outline, with a single osculum at the summit. They are soft and fragile in texture, and measure only 3 or 4 mm. in height. Their skeleton consists of a unispicular network of oxea cemented together at the ends by a little spongin. The oxea measure 0·18 - 0·22 mm. by 0·009 mm.

The sponge seems very similar in appearance and structure to *Reniera spongiosa* Topsent (**17**), but the oxea are much smaller than those of Professor Topsent's species.

Halichondria panicea (Pallas).

R.I.A. Exp., 1886. Log 41, Crookhaven, 3½ fathoms.

R.D.S. Survey. Neighbourhood of Cork Harbour; west coast of Ireland.

This, the commonest sponge round our coasts, is represented in the collection by a few fragments.

Family DESMACIDONIDAE.

Sub-family MYCALINAE.

Mycale macilenta (Bowerbank).

R.D.S. Survey. Blacksod Bay. Two specimens.

The sponges are covering the valves of two living Pectens (*P. opercularis*).

Mycale placoides (Carter) Lundbeck.

R.I.A. Exp., 1886. Log 53, 5-8 miles west of Great Skellig, 70-80 fathoms. Three small fragments.

R.D.S. Survey. ? Blacksod Bay, fragments; station 72, 20 miles off Achill Head, 127 fathoms, two specimens.

This species is taken in the sense in which it is understood by Lundbeck (11), who carefully distinguishes Carter's species from its near ally, *Mycale lingua* (Bowerbank).

The largest specimen obtained measures 130 mm. by 90 mm. by 43 mm. in thickness.

The specimens which are labelled Blacksod Bay have already been referred to (12, p. 34). It is probable that the locality is wrongly given on the label, as *Mycale placoides* has never been taken in such shallow water as obtains in Blacksod Bay, where the soundings are, for the most part, 6 to 8 fathoms, a depth of 10 fathoms occurring towards the mouth of the Bay.

Since the foregoing specimens were collected, numbers of large specimens have been obtained off the west and south-west coasts of Ireland by the Irish Fisheries Branch (14).

Mycale (Paresperella) atlantica, n. sp. Plate I, fig. 1.

R.D.S. Survey. Station 124, 50 miles W. of Bolus Head, 220 fathoms.

The sponge is growing on *Lophohelia prolifera*, and it formed apparently a thick encrustation or cushion on the coral. Its longer diameter is about 18 mm., but the sponge is greatly damaged, so that its exact shape and limits cannot be made out. It is well characterized, however, by its distinctive and beautiful spiculation. The texture of the sponge is soft and fragile, and the surface, seen under the lens, is very slightly hispid.

A second specimen of the species, merely a small fragment, was growing on another branch of the coral.

Skeleton.—As far as can be seen from the scanty material available the main skeleton is composed of fibres, up to about 0·05 mm. in thickness, which consist of closely packed subtylostyli. These fibres run upwards through the sponge, branching here and there. At a short distance below the surface they

divide into finer divergent strands. The terminal spicules of these strands spread out in a fan-like manner, and their tips, at least in the preserved sponge, pierce the dermis and project for a short distance above it. The dermal skeleton is an irregular net-work of fibres. These fibres are much more slender than those of the skeleton, consisting sometimes of only two or three rows of spicules. The pores are seen in the meshes of the dermal net-work; they vary in diameter from about 0·05–0·25 mm.

Spicules.—(1) The megascleres are subtylostyli; they measure 0·35–0·45 mm. in length, and have a maximum thickness of 0·008 mm. Their shaft is slightly fusiform, and usually slightly crooked. The rounded end is sometimes fairly well marked off by a constriction beneath it; the other end tapers to a short point.

(2) Anisochelae of two sizes are present; the larger form rosettes, which are present in great numbers both in the dermal membrane and throughout the sponge. The smaller anisochelae are also scattered both in the dermis and in the choanosome. The first-mentioned anisochelae have a rather egg-shaped larger end, as the lower angles of the alae are rounded off, the lower margin of the tooth being rounded off in the same way. The free portion of the shaft is extremely short. The smaller alae also have rounded corners. The length of the rosette anisochelae is very constant, being 0·027–0·03 mm. The breadth of the larger alae is about 0·012 mm. The smaller anisochelae are similar in shape to the foregoing, but only reach a length of 0·019 mm.

(3) Sigmata.—These are contort; the ends of the spicule are very slender, and sharply pointed; one is bent in abruptly, while the other has a wider curve. The outer margin of the spicule is serrated towards both ends, the character which distinguishes the species assigned to the sub-genus Paresperella. The longer axis of the sigmata is from 0·1–0·165 mm., and the maximum thickness is 0·005 mm. The sigmata, which are often in bundles, occur in enormous numbers through the whole sponge.

(4) Toxa.—These spicules are rather scarce. They occur in small bundles in the interior of the sponge. They were not seen in those portions of the dermis which were examined. The toxa are extremely slender, and are 0·08 mm. in length; the curve in the centre of the spicule is very wide.

The foregoing sponge is closely allied in spiculation to Carter's species, *Mycale* (*Paresperella*) *serratohamata* (**2**), the type species of Paresperella Dendy (**3**), but differs from it in the greater length of the various kinds of spicules, as well as in the shape of the megascleres, as can be seen from a comparison of the figure (Plate I, fig. 1*a*, *b*) with that of the subtylostylus of the older species given by Professor Dendy (**3**, Pl. XI, fig. 2*a*). The toxa, too, differ in shape in the two species.

The Irish species approaches even more closely a sponge found on the beach at Vancouver Island, and assigned by Lambe (**9**) to Carter's species, but which, as Professor Dendy has already pointed out (**3**, p. 162), is no doubt a distinct species. The same kinds of spicules are present in this sponge as in the Irish specimen, but here again the measurements are different. The subtylostyli in the Vancouver sponge are shorter and thicker, the anisochelae longer, while the toxa, differing in shape, are only half the length of the corresponding spicules in the new species.

The remaining species assigned to this sub-genus are—*penicillium* Lendenfeld, see Hallmann (**6**), *macrosigma* Lindgren (**10**), *moluccensis* Thiele (**15**), *bidentata* Dendy (**3**), *repens* Whitelegge (**19**), *dichela* Hentschel (**7**). None of these possesses toxa, and all are further marked off from the new species by differences in the form and measurements of the spicules. The new species is the first representative of the sub-genus which has been found in the Atlantic Ocean, those previously described having been taken off Ceylon, or in various parts of the Pacific Ocean.

Desmacidon fruticosum (Montagu).

R.D.S. Survey. Station 133, Dingle Bay, 40 fathoms.

Several pieces of this sponge, now recorded for the first time within the Irish area, are in the collection. The largest piece is 80 mm. in height and 105 mm. in its greatest breadth. It is very similar in shape to the specimen figured by Bowerbank (**1**, vol. iii, Pl. LXI).

Forcepia fragilis, n. sp. Plate I, fig. 2.

R.I.A. Exp., 1888. Log 69, 51° 1′ N., 11° 50′ W., 750 fathoms.

The sponge is not attached to any support. It is somewhat oval in outline, and measures 25 mm. by 18 mm. by 15 mm. It is very fragile in texture, and its surface is damaged.

Skeleton.—The main skeleton consists of a loose, irregular network of styli. Sometimes only two or three spicules lie side by side to form the meshes, but usually the styli are multiserially arranged. The arrangement of the dermal skeleton cannot be made out, as the surface of the sponge is rubbed away.

Spicules.—(1) The styli are slightly and somewhat irregularly curved. At one end they taper to a short point; the other end is rounded. They measure 0·6–0·77 mm. in length by 0·018–0·021 mm.

(2) The dermal spicules are tylota, measuring 0·4–0·45 mm. in length by 0·005–0·008 mm. One end of these spicules is sometimes rather more rounded than the other, but the difference is slight.

(3) The isochelae arcuatae have a slightly curved shaft; they are 0·024–0·033 mm. in length. The tooth is rather narrow, and is about the same length as the alae.

(4) Forcipes.—These are all of one kind, and, measured from the curve to the end of the longer leg, they are 0·038–0·043 mm. in length, and at the most are about 0·002 mm. in thickness at the curve. The legs are slightly divergent; one is a little longer than the other, and each terminates in a small button-like knob. Sometimes the spicule is twisted so that the legs cross each other. The forcipes are very minutely spined. Under a high power of the microscope it can be seen that the spines are arranged in rows, and that the points are directed towards the curve of the spicule.

(5) The sigmata are plane, and have a longer axis measuring 0·13–0·16 mm. in length. Their thickness is 0·006 mm.

All the forms of the microscleres are present in great abundance throughout the sponge.

Forcepia fragilis n. sp. may be compared with the sponge assigned by Professor Topsent (17) to *Forcepia bulbosa* (Carter), which Lundbeck has decided is a distinct species, and to which he has given the name *Forcepia azorica* (11, Part II, p. 210). Judging from the description given by Professor Topsent, the forcipes in his sponge are a different shape and size from those in the new species, and, what is more important, more than one kind of forceps appears to be present in the specimen from the Azores. In addition, the styli of *Forcepia azorica* are sometimes slightly spined, while the styli of the Irish species are quite smooth.

The spiculation of *Forcepia fragilis* is very similar to that of *Forcepia Thielei* Lundbeck (11), in which species only one kind of forceps is present, but this spicule differs in shape from, as well as being longer than, the forceps of the new species.

Grayella sp.

R.D.S. Station 124, 50 miles W. of Bolus Head, 220 fathoms.

There are about half a dozen small encrusting specimens of a species of Grayella growing on a piece of *Lophohelia prolifera*. They are much contracted, and their pore-bearing areas appear like small papillae on the surface of the sponge. Their spicules measure as follows:—(1) Tornota, 0·25 – 0·325 mm. in length; (2) Acanthostyli, 0·1 – 0·18 mm. in length; (3) Isochelae arcuatae, 0·019 – 0·021 mm. in length.

The foregoing measurements agree very well with those given by Professor Topsent (18, p. 46) for several encrusting specimens of Grayella obtained off the coast of Belgium, the north of France, and in the Gulf of Lions, which

specimens Professor Topsent is inclined to think may have to be assigned to *Grayella pyrula* (Carter), a species which is typically pedunculate, and which has, typically, considerably longer megasclera than these sponges possess. Professor Topsent states that he has tried to establish a distinct species for these specimens, but found there was too little difference in the size of their spicules and those of a globular Grayella which he had referred (17) to *Grayella pertusa* (Topsent), and which Lundbeck later regarded as identical with *Grayella pyrula* (11). It may be stated here that encrusting specimens of *Grayella pyrula* are known.

As Professor Topsent says, the species of Grayella must be increased in number to a large extent or a great variability must be admitted in *Grayella pyrula*. It would be necessary to study a large series of specimens before these questions could be decided, so that the only course is to leave the Irish specimens unnamed for the present.

The species *Grayella pyrula* (Carter) has been taken off the Irish coast (14).

Sub-family ECTYONINAE.

Hymedesmia paupertas (Bowerbank).

R.D.S. Survey. Station 124, 50 miles W. of Bolus Head, 220 fathoms.

The sponge is growing in a small patch on coral (*Lophohelia prolifera*). The species was first obtained off the Irish coast in the course of the Clare Island Survey (12), and it has since been taken at other stations by the Irish Fisheries Branch.

Hymedesmia pansa Bowerbank.

R.D.S. Survey. Blacksod Bay.

The sponge is growing in a thin encrustation on an oyster shell. A description of it has been published in the report of the sponges of the Clare Island Survey (12).

Hymedesmia Dujardini (Bowerbank).

R.D.S. Survey. Station 124, 50 miles W. of Bolus Head, 220 fathoms.

Several small specimens are growing on *Lophohelia prolifera*. The species has previously been obtained on several occasions within the Irish area.

Hymenancora conjungens Lundbeck.

R.D.S. Survey. Station 124, 50 miles W. of Bolus Head, 220 fathoms.

The sponge is growing in two patches on *Lophohelia prolifera*.

This species was taken only once previously, namely, to the south of Iceland in 296 fathoms (11). The spicules of the Irish specimen agree

exactly with those of the type, except that the large acanthostyli are rather shorter, their maximum length being 0·31 mm. as against 0·41 mm. of the first found specimen.

This is the first time that a sponge belonging to the genus Hymenancora has been found within the Irish area.

Microciona laevis Bowerbank. Plate I, fig. 3.

R.D.S. Survey. Station 124, 50 miles W. of Bolus Head, 220 fathoms.

The sponge is growing in two small patches on pieces of coral (*Lophohelia prolifera*). Its surface is very hispid. As far as can be seen from the scanty material available for examination, the dermal spicules are collected together in vertical brushes, their ends projecting above the surface of the sponge. The skeletal fibres are very short and plumose, the smaller styli being placed towards the exterior of the fibre. The long styli project far above the surface of the sponge. There is a considerable quantity of spongin round the bases of the styli.

Spicules—(1). The skeletal styli vary very much in size. The largest reach a length of about 1·4 mm., and are 0·024 mm. in diameter above the head. The shaft is slightly curved and tapers towards one end to a rather short point, and at the other end the rounded head is slightly constricted off from the shaft, and is smooth or is set with a few minute spines. The smallest styli are about 0·14 mm. in length, with a diameter of 0·007 mm. above the head. They are of the same shape as the largest styli, but are furnished with minute spines along the shaft, as well as having the head well spined. These two extremes are united by styli of intermediate sizes and degrees of spination.

(2) The dermal styli have a very slender, sometimes rather crooked, shaft, and the head is microspined. Their length varies from about 0·5 to 0·78 mm., and the maximum diameter is 0·006 mm.

(3) The toxa are scattered in great abundance throughout the sponge. Their shape is very constant, but they vary greatly in size, from extremely minute to about 0·16 mm. in length, with a thickness of 0·004 mm. The curve in the middle of the spicule is even, and not very abrupt, and the ends are slightly re-curved, and sharply pointed.

This species has been taken only once previously, namely, off the Shetlands (1).

Plocamia microcionides (Carter).

R.D.S. Survey. Station 124, 50 miles W. of Bolus Head, 220 fathoms.

The specimen is spreading over several branches of a coral (*Lophohelia prolifera*), and it is easily picked out from among the numerous encrusting

sponges with which it is growing by its long styli, which project for about 3 mm. above the surface of the sponge. *Plocamia microcionides* is distinguished from *Plocamia ambigua* (Bowerbank) chiefly by its very long, perfectly smooth styli instead of acanthostyli, and by its acanthostrongyla, which have stout, blunt spines, with microspined summits, instead of the sharply pointed spines of the corresponding spicules of *Plocamia ambigua*.

Plocamia microcionides has been found on Lophohelia dredged by the Irish Fisheries Branch (14), and it is hoped to publish a description and figures of the species in a forthcoming paper.

Family AXINELLIDAE.

Phakellia ventilabrum (Johnston).

R.I.A. Exp. Log 20 (or ? log 53), off the Skelligs, 70 to 80 fathoms. Eight specimens.

R.I.A. Exp. 1886. Log 53, 5–8 miles W. of Great Skellig, 70 to 80 fathoms. Twelve specimens.

R.D.S. Survey. Station 12, off Dingle Bay, 53 fathoms, one specimen; Station 80, off Slyne Head, 55 fathoms, two specimens; Station 85, Galway Bay, 19–15 fathoms, one specimen; Station 225, Rosses Bay, 32–25 fathoms. Fourteen small specimens.

The specimens obtained at Station 225 are small cup-shaped sponges, varying in diameter from 25 to 60 mm., while those dredged off the Skelligs are much larger, the largest having a diameter of 185 mm. The specimens from the latter locality are fan- or cup-shaped sponges, most of them having the margin deeply cut into a number of lobes, the indentations sometimes reaching nearly to the base of the sponge. These specimens are referred to by Professor Haddon (5, p. 38). Mr. Holt (8) records the species from Station 115, off the Skelligs, 62–52 fathoms. As may be judged from the foregoing list of stations, the species is fairly common off the west and south-west coasts, at depths of about 18 to 100 fathoms.

Phakellia rugosa (Bowerbank).

R.D.S. Survey. Station 80, off Slyne Head, 55 fathoms.

The species is represented by one small, stalked, club-shaped specimen, only 9 mm. in height. *Phakellia rugosa* has been recorded once previously for the Irish area (14).

Tragosia infundibuliformis (Johnston).

R.I.A. Exp. Log 53 (or ? log 20), off the Skelligs, 70–80 fathoms. One specimen.

R.I.A. Exp. 1886. Station unknown. One specimen.

R.D.S. Survey. Station 225, Rosses Bay, 32–35 fathoms. Three specimens.

This sponge, which has been obtained fairly often in recent years off the west and south-west coasts of Ireland, is evidently not as common as *Phakellia ventilabrum*, small cup-shaped specimens of which it resembles superficially. The two species can, with practice, be distinguished without microscopical examination owing to a difference in texture and in the margin of the cup, which is rather thick and rounded in Tragosia, and which is thinned to a rather sharp edge in Phakellia.

Tragosia polypoides (Schmidt).

R.D.S. Survey. West coast of Ireland.

The sponge is branching in one plane, and has a fan-shaped outline. It is 46 mm. in height by 51 mm. in its greatest breadth. This is the first time the species has been obtained within the Irish area.

Hymeniacidon caruncula Bowerbank.

R.D.S. Survey. Blacksod Bay.

The only fragment of this very common species in the collection was preserved owing to its being overgrown by a gymnoblastic hydroid.

Order EUCERATOSA.

Family SPONGELIIDAE.

Spongelia fragilis (Montagu).

R.D.S. Survey. Station 240, Lough Swilly, 6–8½ fathoms.

A specimen of this common species is growing on the back of a crab (*Hyas araneus*), which is thickly covered with Polyzoa and Hydroida, and which has on one leg a growth of *Halisarca Dujardini*.

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EXPLANATION OF PLATE I.

FIG.

1. *Mycale* (*Paresperella*) *atlantica* n. sp.

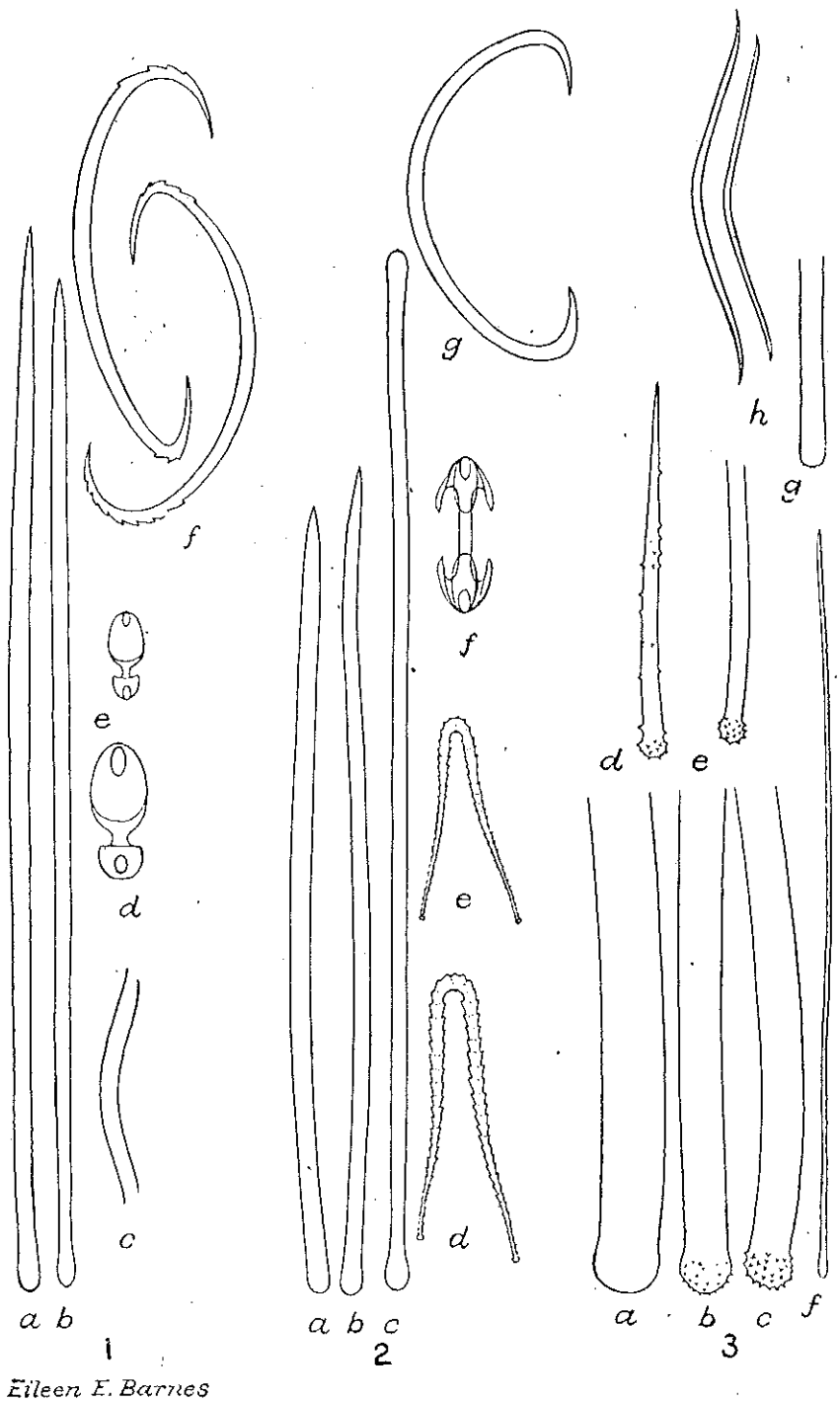
   a, *b*, styli, × 330; *c*, toxa, × 330; *d*, *e*, large and small anisochelae × 600; *f*, sigmata, × 330.

2. *Forcepia fragilis* n. sp.

   a, *b*, styli, × 140; *c*, tylotum, × 330; *d*, *e*, two forcipes, × 900 and × 600; *f*, isochela arcuata, × 600; *g*, sigma, × 330.

3. *Microciona laevis* Bowerbank.

   a, *b*, *c*, *e*, heads of styli of different sizes, × 330; *d*, small stylus, × 330; *f*, dermal stylus, × 140; *g*, head of dermal stylus, × 600; *h*, toxa × 330.



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