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Papers from Dr. Th. Mortensen's Pacific Expedition 1914—16.

XV.

Sponges from the Auckland and Campbell Islands.

By
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Introduction.

This paper is an account of the sponges collected by Dr. Th. Mortensen at the Auckland and Campbell Islands during his Pacific Expedition 1914—16. All herein described forms are rather shallow-water sponges; the more astonishing is the number of species found, this fact apparently being due to the collector's energy and practise.

I am much obliged to Dr. Mortensen for his kindness in handing me over this interesting material. As might be expected there are several new forms in the collection. Among the Silicea only the Monaxonida are represented, the other groups mainly being deep water forms.

The colour given is that of the sponges preserved in alcohol.

MONAXONIDA.

Family **Homorrhaphida**.

Genus **Halichondria**, Flem.

Halichondria incrustans nov. sp.

Port Ross. The coast. 26/XI.1914.

Incrusting. 2 specimens, only fragments. Greatest extension 27 mm, thickness 2—3 mm. Surface even, smooth; only in a few places the spicules pierce the dermal membrane, which is particularly delicate and transparent, so that the numerous small sub-

dermal cavities are easily seen. The ostia very small, for the main part shut up; only in a few places it may be seen that 3—4 ostia lead into one subdermal cavity. On the biggest specimen oscula are found in a number of three, the two of them rather close by one another; the shape tolerably crescent, diameter 1,5—2 mm. Consistence rather soft, fragile, very little elastic. Colour grayish red.

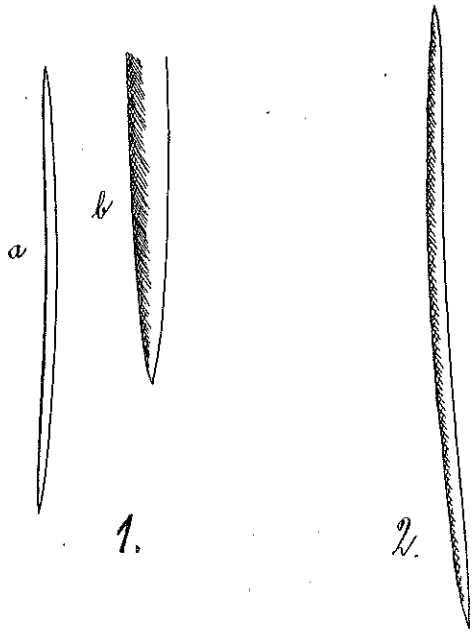


Fig. 1. *Halichondria incrustans* nov. sp. *a*, oxea, *b*, apex of oxea. — Fig. 2. *Halichondria intermedia*, nov. sp. oxea.

The skeleton shows a distinct tendency towards fibre-building, although such ones are far from being well developed, in so far as innumerable spicules are breaking out from the fibres in all directions. Such very indistinct fibres are found partly parallel with, partly radiating in an almost right angle towards the surface, where they often form conical bundles of diverging spicules; it is, however, rather impossible to distinctly discern primary and secondary fibres, as the picture has no clear outlines, on account of the numerous spicules scattered disorderly about.

Spicules: (fig. 1 a—b), oxea, slightly bent at the middle, of moderate thickness for the greater part, only the extreme $^1/_4$—$^1/_5$ tapering to a fine apex; length varying from 312—380 μ, length about 350 most common; thickness ca. 9 μ. Numerous developmental forms are found.

It has not been possible in the literature to find a description of any *Halichondria*-species which will suit this form. The nearest ally seems to be *H. tenuiderma* Ldbck., but in the first place the length of the oxea in H. t. is stated to vary up to as much as

430 μ, and secondly the thickness is 13—15,7 μ. It is therefore necessary to create a new species for the specimens in hand.

Halichondria intermedia nov. sp.

Carnley Harbour. 45 f. Sandy clay. 6/XII.1914.

3 specimens. Erect, cylindrical, somewhat compressed at the top, however, and a little thicker at the base; one specimen dendrical. Greatest length 50 mm, greatest thickness 6 mm. A few oscula are found, measuring from a fraction of one mm to 1,2 mm in diameter. Many ostia lead to the very numerous subdermal-cavities. Surface with a great deal of irregular, very shallow furrows or the like; plenty of spicules pierce the dermal-membrane, making the surface finely hispid. The dermal-membrane thin and tolerably transparent, but rather tough, supported by numerous spicules lying pell-mell parallelly with the surface. Consistence softly elastic. Colour grayish-white.

It is with some hesitation that I refer this sponge to the genus *Halichondria*, for in fact the construction of the skeleton approaches rather much to that of the *Axinella*-type.

Skeleton. The main part of spicules are collected in indefinite fibres extending slightly arched, diverging, towards the surface. The number of spicules lying side by side in the fibres is very much varying, from a few ones to half a score or more. The fibres are every now and then connected with one another by intercalating bridges, which generally are separated from the fibres at a very acute angle. This whole picture, however, is veiled by the numerous spicules, which partly project from the fibres in an Axinellioid manner, partly are lying scattered disorderly in every direction; many intercross the fibres in a true Halichondrioid manner. But notwithstanding this, the fibres are unmistakable, and perhaps the species some time will have to be referred to the Axinellida. The sponge in hand is very interesting in taking up a median position between the *Halichondriae* and the *Axinellidae*; other species do the same, e. g. *Axinella paradoxa* R. and D.

Spicules: (fig. 2) oxea, nearly straight, a straight line from apex to apex will just hit the middle of the concave side of the

spicule; thickest in the middle, from here rather imperceivably growing more slender towards the apices, which are very finely acute. Length varying from 410—550 μ, 480 μ most common. Thickness rather constantly 12—13 μ. Many developmental forms are found.

Genus **Reniera**, Nardo.

Reniera cinerea Grant.

Port Ross. Under stones at the shore by low-water. 26/XI.1914.
Masked Isl. Carnley Harbour. The coast. 30/XI.1914.

Several specimens. The fundamental form is the characteristic Renieroid: barrelshaped; but we have irregular cylindershaped to quite incrusting specimens. The biggest specimen of the erect form is 40 mm in length, 15 mm in width; of the incrusting forms, the edges of which nowhere are intact, the greatest dimension is 55 mm, by a thickness of 1—3 mm. Oscula, few in the erect forms, numerous in the incrusting ones are 1—1,5 mm in diameter; the edges are a little prominent, like a little crater. Everywhere on the surface are seen the numerous subdermal cavities as fine pricks from a needle, lying close by one another, only covered by the exceedingly delicate dermal membrane through which several ostia are leading into one cavity. Surface finely hispid. Consistency softly elastic in the erect forms, like felt in the incrusting ones. Colour yellowish-gray to brownish.

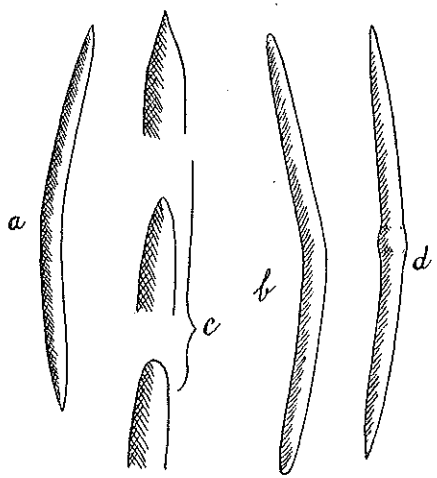


Fig. 3. *Reniera cinerea*, Grant. *a*, oxea; *b*, oxea with blunt apices; *c*, apices of spicules; *d*, centrotylote oxea.

Skeleton of irregular Renieroid structure. Meshes often very irregular; in some places it is even hardly possible to recognize the mesh-shaped structure of the skeleton. Main fibres stouter and more distinct than the secondary ones; main fibres often contain three spicules lying side by side. Spongin very scarce. From the intersecting points of meshes just beneath the dermal membrane bundles of spicules are radiating through this latter.

Spicules: (fig. 3a—d), oxea, slightly bent at the middle, the outmost third tapering to a very often sharp-pointed apex. A few sponge-fragments contain several oxea besides the common oxea, which are so blunt that they may most properly be called strongylote. A few oxea are centrotylote. Length about 130—135 μ, thickness about 6,6—8 μ.

Of the known *Reniera*-species *R. cinerea* comes nearest to the species in hand; the spicules in R. c. are most commonly about 140 μ by 8 μ, thus a little larger than here; but this difference is hardly sufficient for creating a new species.

Reniera heterofibrosa Ldbck.

1902, *Reniera heterofibrosa*, Lundbeck. — Porifera in 'The Danish Ingolf Exped.' Vol. VI, Part 1.
Perseverance Harbour. Campbell Island. Sandy mud. 10—20 f. 9/XII.1914.

A few somewhat damaged specimens. Irregularly lumpshaped, a little flattened. Greatest extension of biggest specimen ca. 70 mm. Dermal membrane is wanting nearly everywhere; in places where it is found, it seems to be exceedingly thin and transparent. Oscula tolerably frequent, ca. 2 mm in diameter. Ostia are seen very nicely in places where the dermal membrane is intact; very numerous, in this contraction-state 0,75 mm in diameter. Consistence tolerably elastic. Colour dirty grayish.

In the *skeleton* distinct spiculo-fibres are found, with comparatively much spongin, which, however, is difficult to see. It is the main fibres, which are well developed, with 5—6 or even more spicules side by side in a row; the mutual distance between the main fibres equals the length of ca. two spicules; the secondary fibres, which connect the main ones in about right angles, and which are not so distinct, contain only 2—4 parallel spicules; besides, numerous spicules are distributed disorderly in the choanosome, particularly where the spiculo-fibres intersect one another. No separate dermal skeleton is to be made out.

Spicules: (fig. 4) oxea, 130—170 μ by 8 μ. Slightly bent in the middle; thickness almost the same over the greatest part; spicule tapering to an apex, not always very sharp; some spicules

thickest in the middle, from where they are tapering to both sides. Many developmental forms are found. A great many foreign spicules are incorporated in the skeleton.

The nearest allied of known Reniera-forms is *R. heterofibrosa*; perhaps the specimen in hand is not quite identical with that species; the great distance from the places, where the species has hitherto been found (North Atlantic Ocean—Auckland Islands) might make the identity of the species questionable, and suggest the supposition that they are independant but converging species. But this argument is not strong enough for creating a new species. *Reniera heterofibrosa* Ldbck. somewhat resembles *Reniera proxima* Dendy, but the spicules are here somewhat more slender (8 μ as against 12 μ) by the same length.

Reniera implexa Schm.

1868. *Reniera implexa,* Schmidt, Spong. d. Küste v. Algier.
1887. „ „ Ridley and Dendy, Monaxonida. Chall. Rep. Vol. XX.

Carnley Harbour. Adams Isl. The coast. 29/XI.1914.
Masked Isl. Carnley Harbour. Under stones on the shore by low-water. 3/XII.1914.
Port Ross. Ca. 10 f. Sand, algæ. 25/XI.1914.
Port Ross. 9 f. Sand. 27/XI.1914.

Of this sponge we have several specimens, most of them are incrusting, some lump-shaped; in these latter we are able to recognize the characteristic Renieroid type: the barrel; but in consequence of an irregular budding process the lump-shape has appeared. Biggest specimen measures up to ca. 50 mm, the incrusting forms are 3—4 mm thick; of these latter we only have fragments. In the erect forms the oscula are mostly found at the summit of the individuals, ca. 4 mm in diameter; they are openings for cloacal cavities of just the same width; in the incrusting forms oscula are lying at the top of low vulcano-shaped prominences; diameter 1—1,5 mm. Surface very finely hispid. Dermal-membrane very delicate, covers innumerable subdermal-cavities, which are of almost the same extension, ca. 0,6 mm; every cover of a subdermal-cavity is like a sieve, on account of several ostia opening into the cavity. Consistence rather fragile. Colour grayish, shading off through yellow and orange to reddish.

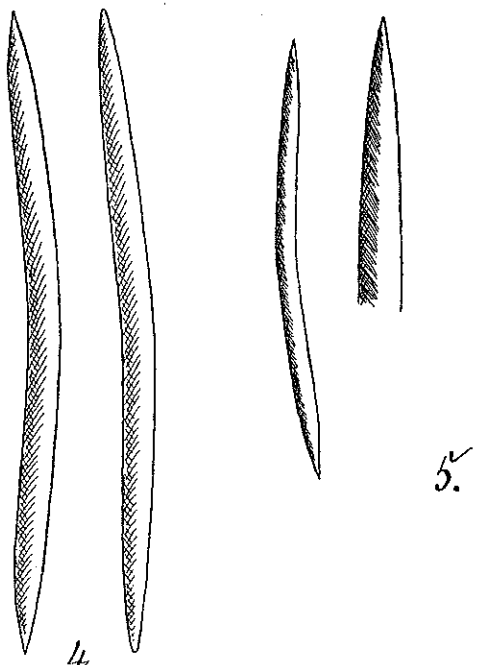


Fig. 4. *Reniera heterofibrosa,* Ldbck. Oxea. — Fig. 5. *Reniera implexa,* Schm. Oxea and apex of same.

Skeleton of typically Renieroid structure in the erect forms: from the base rise primary fibres with 1—3 spicules side by side; they are radiating rather perpendiculary towards the surface; the distance between them is ca. one spicula-length; hence there are more and more primary fibres towards the surface; new ones come up through intercalation or by fission of already existing ones. Secondary fibres are not to be made out, they are only represented by single spicules connecting the primary fibres, but not in continuation of one another, or at least only in a few places and rather rarely; most of these spicules are connecting the primary fibres in pretty right angles. Around bigger cross-canals this fairly regular picture is disturbed.

In the incrusting forms the skeleton is very irregular; only in a few places we recognize the above description of the structure in the erect forms; the spicules are lying much more closely, the tissue contains more of them pr. cm^3 than in the erect forms; the irregular distribution is surely in the first place due to the fact that the canal system in the delicate incrusting sponge-body does not permit the regular formation of longitudinal diverging primary fibres.

Spicules: (fig. 5) oxea of common regular form: slightly bent in the middle in a rather sharp curve, tapering at the last $^1/_3$ into fine points. Length rather constant, 156 μ, thickness 7,5 μ. In a few specimens lengths down to 120 μ are not quite uncommon.

The specimen in hand I refer to *Reniera implexa* Schmidt, although the oxea here are decidedly bigger than in Schmidt's original specimen, and the primary fibres in this latter are unispicular, while here there are 1—3 spicules side by side. My specimens do, however, agree tolerably well with the description of *R. impl.* var., as given by Ridley and Dendy, although the oxea there only measure 6,8 μ in thickness (here 7,5; Schmidt has 7,0); perhaps Ridley and Dendy (and I too accordingly) have given too wide an expansion to the boundary of the variation of the species *R. implexa*; but until a monographic dealing with the genus *Reniera* has cleared up the relation of the more or less well founded species, surely it is the safest not to break up the old species where it is not nescessarily required.

Reniera laxa Ldbck.

1902. *Reniera laxa*, Lundbeck. — Porifera in 'The Danish Ingolf Exp.' Vol. VI, Part 1.

Perseverance Harbour. Campbell Isl. 20 f. Sandy mud. 10/XII.1914.
Port Ross. Ca. 10 f. Sand, Algae. 25/XI.1914.

Only fragments at hand. Almost barrelshaped. Greatest length 135 mm, thickness about 7—8 mm. Surface finely hispid. Dermal-membrane very delicate, covers numerous small dermal cavities. Osculum at the end of a barrel, only a few at the sides, ca. 1,5 mm in diameter. Ostia could not be seen. Cloac-cavities perforate the body as perfectly cylindrical tubes, diameter the same as that of the osculum. Consistence rather elastic, soft. Colour very light, yellowish-gray.

Skeleton very dense on account of the innumerable, irregularly scattered spicules; structure just the same as that of the Reniera: primary fibres radiate perpendicularly towards the surface, connected by loosely lying spicules in every direction; distance between the fibres the same as the length of one spicule; number of the spicules in the fibre side by side 2—6.

Spicules: (fig. 6) oxea, slightly bent in the middle, from here the spicule is tapering a little towards both ends; the real sharpening to the fine point, however, takes place only at the extreme 1/4. Dimensions rather constant: length about 182 μ, thickness 10,5 μ. Many developmental forms.

Reniera clathrata Dendy.

1895. *Reniera clathrata*, Dendy. — Catalogue of Non-Calcareous Sponges etc. Proc. Roy. Soc. Victoria (N. S.) VII.

Perseverance Harbour, Campbell Isl. Under stones, at low water. 9.XII.1914.

Irregularly lumpshaped; oscula on small conic or almost funnel-shaped elongations, diameter 0,6 mm. Greatest extension of specimens in hand 12 mm. Surface finely hispid. Dermal-membrane very thin, covers several subdermal-cavities, into which very small ostia lead. Consistence soft, elastic. Colour pale gray.

Skeleton very beautifully regular; main fibres radiate perpendicularly towards the surface, by connecting spicules intersected into rather regular squares, the sides of which are ca. one spicule long; in the main fibres 1—3, most often 2, spicules are lying side by side.

Spicules: oxea; of typically Renieroid structure; slightly curved in the middle, of even thickness for the greater part, then tapering to the rather sharp-pointed end. Many developmental forms are found. Length from ca. 85 μ—115 μ, by a thickness of ca. 5 μ.

Although Dendy gives the length of oxea to about 83 μ, and although the fibres in the specimens in hand seemingly are more pronounced, it is without much hesitation that I identify my specimen with *Reniera clathratra* Dendy.

Reniera sp.

Port Ross. Ca. 10 f. Sand, algae. 25/XI.1914.

A very macerated specimen, devoid of dermal-membrane and most organic matter; lump-shaped. Skeleton typically Renieroid, without special fibres; meshes marked off by single oxea; these latter rather stout, slightly curved; length ca. 220 μ, by a thickness of ca. 13 μ.

Genus **Pachychalina**, O. Schm.

Pachychalina densa nov. sp.

Carnley Harbour. 45 f. Sandy clay. 6/XII.1914.
Fig. 8 Isl. Carnley Harbour. Beneath stones at the coast by low water. 2/XII.1914.

2 specimens. Irregularly cylindriform, for on the sides are located a few outgrowths, apparently a beginning budding-process.

Length ca. 40 mm, thickness about 10 mm. Surface very uneven, because spicule-bundles raise the dermal-membrane to many very small conical prominences; spicula pierce the membrane in several places, making the surface hispid. Dermal-membrane very thin and transparent, so that the numerous subdermal-cavities can be seen. Consistence very soft, elastic. Colour grayish-white.

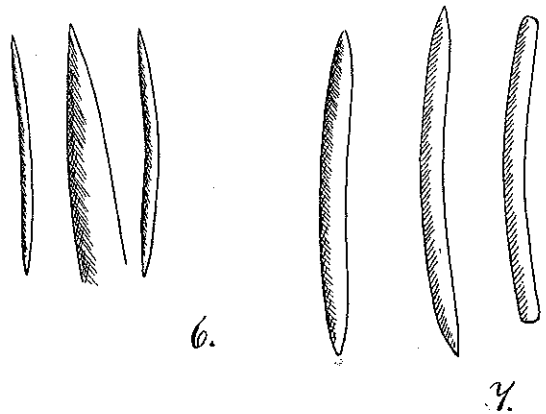


Fig. 6. *Reniera laxa*, Ldbck., oxea and apex of same. — Fig. 7. *Pachychalina densa* nov. sp., oxea and strongyla.

Skeleton consists of particularly thick fibres containing numerous spicules side by side; often the thickness of the fibre is stouter than the length of a spicule, and the spicules are very closely pressed together; spongin rather slightly developed, very difficult to observe. The fibres are connected with one another so as to form a very irregular meshwork with often very big meshes (up to 1 mm in width); in the tissues between the fibres are lying several spicules, a great percentage of which are developmental forms.

Spicules: (fig. 7) oxea to tornota, the overwhelming number of spicules however oxea; often the points are blunt, in cases so as to form strongyla; slightly bent at the middle in a soft curve; thickness over the greater part of the spicule even. Length varying from 104—145 μ, thickness ca. 10—11 μ.

Size of spicules about the same as in *P. caulifera* Vosm.; Lundbeck gives $0{,}_{118—148}$ mm by $0{,}_{008—014}$ mm; only they are here generally somewhat shorter and thicker and are nearer to the tornota than to the oxea. But the structure is much more regular, and the fibres very much thinner than in the species in hand.

Family **Heterorrhaphidae.**

Genus **Gellius** Gray.

Gellius irregularis nov. sp.

Perseverance Harbour. 10—20 f. Sandy mud. 9/XII.1914.

Colonies formed by irregular and anastomosing funnels, therefore rather often irregularly lumpformed. All specimens more or less damaged; it therefore has no great interest to know the real sizes of specimens in hand; only to give an idea of the dimensions, it may be stated, that the greatest extension of the biggest specimen is ca. 60 mm; diameter of the funnels ca. 10 mm, interior diameter of the funnels ca. 4 mm, thickness of walls ca. 3 mm; diameter of the oscula also ca. 4 mm, as they are only the simple openings outwards from the interior of the funnel. Ostia, not very common, ca. $0{,}_5$ mm in diameter. Surface very finely hispid. A dermal membrane or ectosome could not be made out. Consistence very brittle, a little elastic; sponge pellucid, very pale grayish-yellow.

Skeleton an irregular plexus; one can hardly recognize fibres running vertically towards the surface; these fibres contain 2—4 spicules side by side, connected by irregularly placed secondary fibres; the distance between main fibres about the length of one spicule. Only very little spongin.

Spicules: (fig. 8a—b) 1. oxea of the common *Gellius*-type: slightly bent in the middle, tapering from the last $^1/_4$ to very fine points; length 142 μ by 8 μ. 2. sigmata, common form, varying much; length 15—65 μ by $0{,}_{8—}2{,}_7$ μ; very numerous. A few sigmata of extraordinary thickness occur; I think they are pathological or foreign to the sponge, because they are very rare, and because no intermediate stages between these and the other normal sigmata are found.

Gellius intermedia nov. sp.

Carnley Harbour. Ca. 45 f. Sandy clay. 6/XII.1914.

Two specimens; conical, rounded base, osculum at the end of the conus; oscula 2—3 mm in diameter; the one specimen is

three-lobed, three coni radiating from one common base; the other smaller specimen is ca. 20 mm high, 15 mm in diameter; the bigger 42 mm in greatest extension. Surface even. Subdermal cavities are seen through the covering dermal membrane, ca. 0,5 mm in diameter. Colour reddish-gray; superficial layers of sponge filled up with foreign bodies (sand grains etc.).

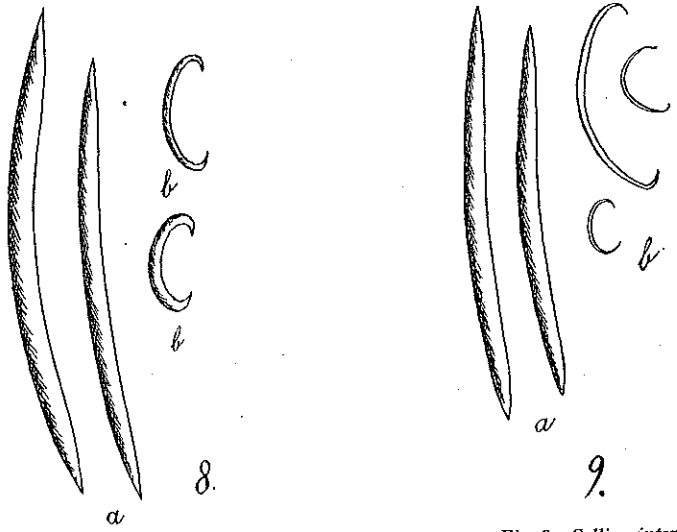


Fig. 8. *Gellius irregularis* nov. sp. *a*, oxea; *b*, sigmata. — Fig. 9. *Gellius intermedia*, nov. sp. *a*, oxea; *b*, sigmata.

Skeleton: takes a middle position between *Gellius* and *Gelliodes*, on account of the fact, that the majority of the spicules are lying disorderly, while a good deal, however, are placed in more or less distinct fibres, which still are not modelled in the characteristic way as in the typical *Gelliodes* species. I therefore think it safest to refer the species in hand to the genus *Gellius*. There is a tendency to a ringformed arrangement of oxea about the canal-system.

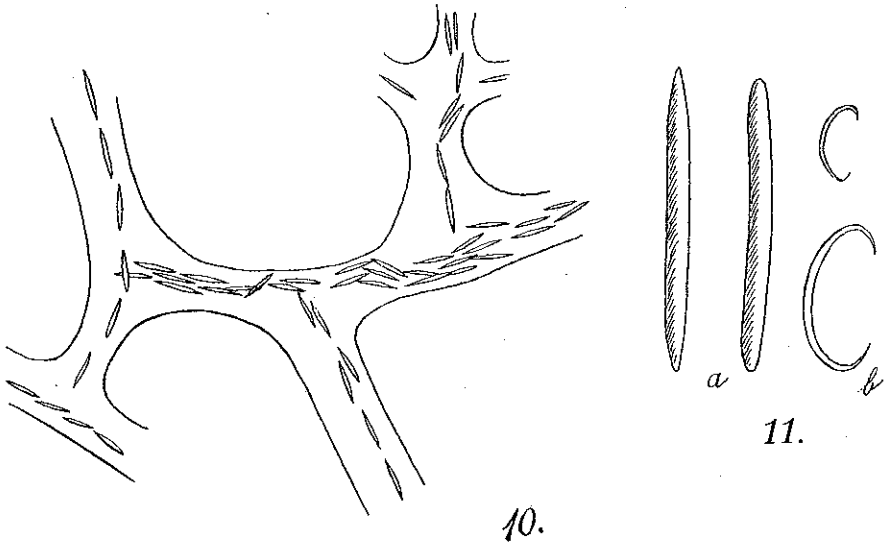
Spicules: (fig. 9a—b) 1. oxea; slightly curved, evenly tapering towards both ends, most often ending in a very sharp point. Length 115 μ by 5,5 μ, which is the most common size, rather constantly found. 2. sigmata seem to be of two kinds; the one size varying from ca. 12—25 μ by 0,7—1,0 μ; the other 35—70

μ by 2—3 μ. At least I have not been able to detect sigmata of intermediate sizes. Both forms are not very common; they are evenly curved, sometimes contorted.

Genus **Gelliodes** Ridley.

Gelliodes flagelliformis nov. sp.

Carnley Harbur. 45 f. Sandy mud. 6/XII.1914.



Figs. 10 & 11. *Gelliodes flagelliformis*, nov. spec. — 10. Skeletal fibres. — 11. *a*, oxea; *b*, sigmata.

3 specimens. Long cylindrical forms. Length of biggest specimen 215 mm, but as one end is broken off it has been bigger; thickness 3—7 mm. One specimen attached to a shell. Surface extremely finely hispid, spicules are very short as will be seen later on. Some oscula are found distributed on the surface, ca. 1,8 mm in diameter. Dermal membrane distinct, supported by the spongin fibres. Consistence very elastic: if the sponge is squeezed between the fingers, it will at once assume its former appearance, when it is released. Colour varying on account of the many foreign bodies the sponge is filled up with; in places where comparatively few

sand-grains etc. are present, the colour seems to be rather pellucid light gray.

Skeleton (fig. 10) composed of a rather irregular netlike tissue of spongin-fibres, which can attain a thickness of up to ca. 150 μ; the most common thickness ca. 65 μ; spicules as a rule in one-spiculated rows; there may, however, be unto three spicules side by side in the row.

Spicules: (fig. 11 a—b) 1. oxea, small, smooth, cylindrical, slightly bent in the middle, rather abruptly pointed to a not very sharp point; they are often rather blunt; length ca. 72 μ by 6,2 μ. 2. strongyla, of very seldom occurrence, straight, length 117 μ by 17 μ; I am rather inclined to regard these as foreign bodies, as they are not strongylated forms of the common oxea. 3. sigmata rather regularly curved, varying from 13—60 μ in length by a thickness up to 2,7 μ; sizes about 30—35 μ the most common.

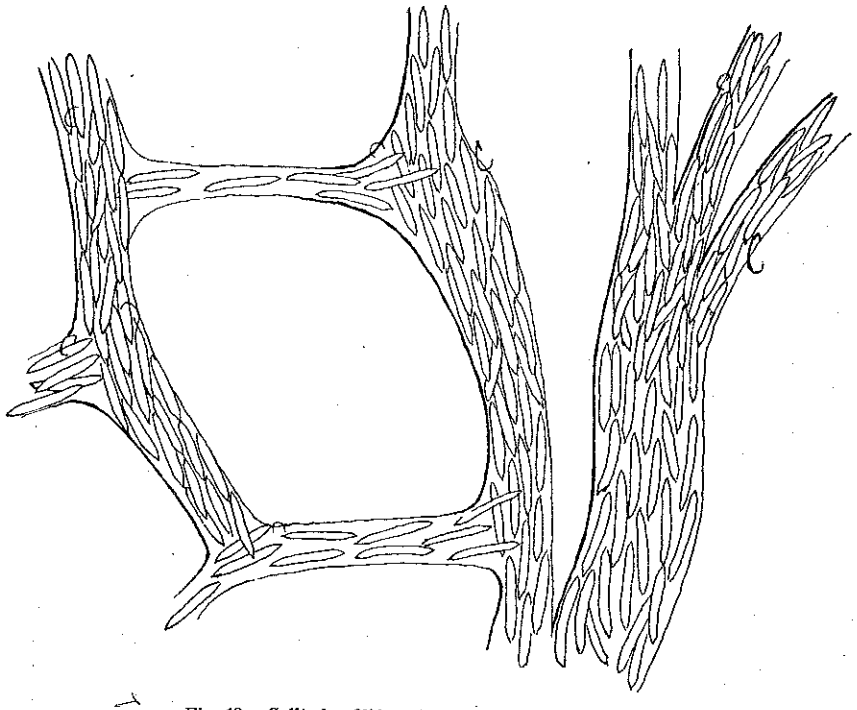


Fig. 12. *Gelliodes filiformis*, nov. sp. Skeletal fibres.

Gelliodes filiformis nov. sp.

Perseverance Harbour. 10—20 f. Campbell Island. Sandy mud. 9.XI.1914.

Sponge long, cylindrical, quite cordshaped. Length 150 mm, greatest thickness 6 mm, tapering somewhat towards the distal end, where it only attains a thickness of ca. 2,5 mm. Specimen in hand macerated, only skeleton retained. Oscula are found here and there, diameter ca. 1 mm. Consistence very elastic, soft. Colour light gray. Very finely hispid, from which it is, however, not to be concluded that the sponge also would have been hispid, if the dermal membrane had been intact.

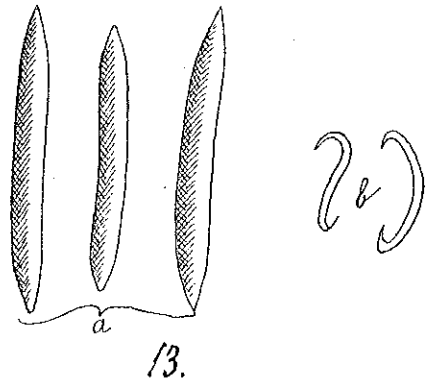


Fig. 13. *Gelliodes filiformis*, nov. sp. *a*, oxea. *b*, sigmata.

Skeleton (fig. 12) consists of spongin-fibres, which do not display a distinction between primary and secondary fibres, since both thick and thin fibres may go in every direction and may connect with other fibres, thick or thin ad libitum; thickness very varying from ca. 20—130 μ. Width and shape of meshes also very varying, so that no distinct plan of structure can be recognized. From 0 to 6 spicules are lying side by side in the rows, completely enveloped in spongin.

Spicules: (fig. 13 a—b) 1. oxea, rather clumsy, abruptly and often sharply pointed; length ca. 75 μ by ca. 10 μ. 2. sigmata, often contorted; rather scarce; length ca. 25—50 μ by ca. 2 μ.

Many other spicula-forms (tylostyli, oxea etc.) are found in quite as great a number as the proper oxea enveloped in the spongin-fibres; but as they often occur isolated outside the fibres, or only partly enveloped by spongin and then directed rather by chance in relation to the direction of the fibre, it is easy enough to declare these spicula-forms as foreign; then the megascleres proper are always directed parallel with the fibre and completely enveloped by spongin.

This species differs from the foregoing species, 1. in a denser

spongin-net; 2. by having most often more spicules in the row in the fibres; 3. by the spongin not being so dominating; 4. by the much thicker and stouter megascleres.

Genus **Toxochalina**, Ridley.

Toxochalina difficilis nov. sp.

Carnley Harbour. 45 f. Sandy clay. 6/XII.1914.

Several specimens; attached to shells; long cylindrical bodies, a little ramified; length of a specimen ca. 135 mm, thickness ca. 5 mm. Surface a little rough on account of protruding spicules and small granules. Dermal membrane very delicate, pellucid. Oscula ca. 1,5 mm in diameter, ostia ca. 0,10 mm. Consistence very soft, elastic. Colour gray.

Skeleton consists of very well developed spongin-fibres wherein the spicules are completely enveloped. Main fibres contain 2—3 rows of oxea, secondary fibres only one row. In the main fibres the spicules are always so situated that the distal end of a spicule touches or overhangs the proximal end of the following, while in the secondary fibres the spicule may be separated by a spiculeless interspace up to the length of one spicule. From the spongin-network which is parallel with and supporting the dermal-membrane, spicules are projecting perpendicularly through the surface of the sponge, making it finely shaggy; thus these spicules are not imbedded in spongin, in contradistinction to all other spicules in the sponge.

Spicules: (fig. 14a—b) 1. oxea, rather stout, about 80 μ by 8,5—9 μ, slightly curved, sharply and rather abruptly pointed; there are however found all transitory stages between these sharppointed oxea (which are by far the most numerous) and the well formed strongyla; length of these latter a little smaller than of the oxea, on account of the missing points; thickness the same. 2. toxa, much varying, both in shape and in size; a few are almost formed as sigmata; length 20—40 μ by 0,5—1 μ.

Here we have one of the many cases, where the difficulties in classifying amongst the *Monaxonida* are clearly seen. The structure of the skeleton as well as the shape of the oxea are exactly as in *Chalina;* while the sponge, if the microscleres are to be decisive for classification is to be included amongst the *Gelliinae.*

Although it is most natural, in my opinion, to place *Toxochalina* amongst the *Chalininae,* I here still refer it to the *Gelliinae* which I find most practical. As well known, it is impossible to find a usable limit between 'greater' or 'lesser' amount of spongin, while the diagnosis "microscleres present" and "microscleres absent" is an absolute distinction, and therefore practical. Sooner or later the genus, however, will be included among the *Chalininae;* we often see that microscleres appear in separate groups independent of one another, groups in which the primordial forms all are devoid of microscleres. But as yet it would be to break up the well defined Chalinine-group, if we include in it the genus *Toxochalina.*

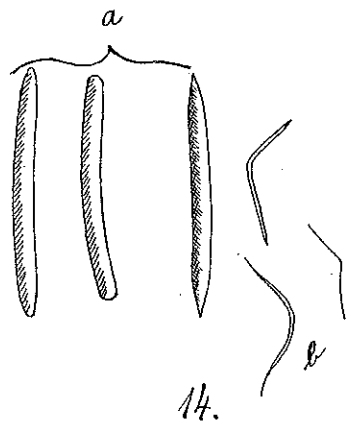


Fig. 14. *Toxochalina difficilis*, nov. sp. *a*, oxea and strongyla; *b*, Toxa.

Genus **Tedania**, Gray.

Tedania diversirhaphidiophora nov. sp.

Carnley Harbour, 45 f. Sandy clay. 6/XII.1914.

Specimens in hand are incrusting, lump- or cakeshaped; body of attachment shells. Biggest specimen ca. 45 mm. Appearance very characteristic: surface undulating; from the base of the sponge outwards runs a row of low (fraction of a mm) and narrow (ca. one mm) mounds, separated from one another by valleys of corresponding dimensions; in some places they are running nicely parallel, so as to form a system resembling ripplemarks; in other places their course is quite irregular; in such places very low warty prominences are built up, ca. 2—3 mm in diameter. The above mentioned external structure is due to the contracted state of the sponge (preserved in alcohol), so that the valleys are formed by the dermal-membrane sunk down into the underlying subdermal-canals. Oscula (and ostia?) very numerous, 1/4—1 mm in diameter. Dermal-membrane thin and pellucid. Surface even, in some places however hispid, when the spicula-tufts have pierced the

dermal-membrane. Consistence resembles that of soft india rubber; choanosome nearly slimy to the touch. Colour fleshy, the mounds of the liveliest colours.

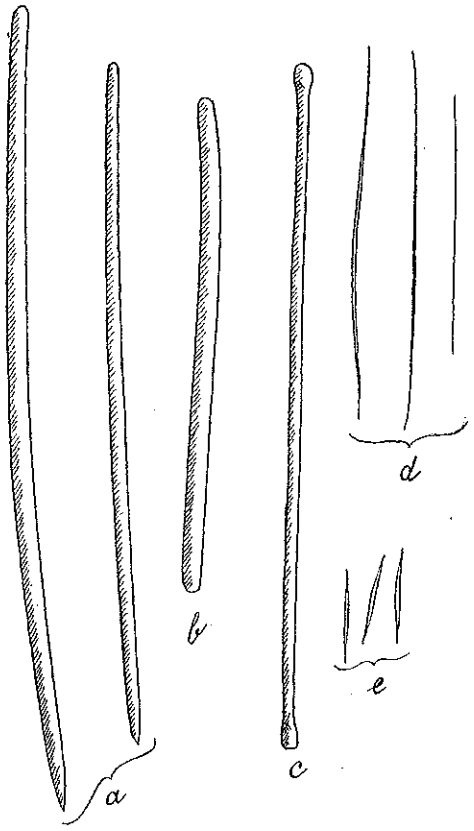


Fig. 15. *Tedania diversi-rhaphidiophora*, nov. sp. *a*, styli; *b*, strongyla; *c*, tylota; *d*, longer rhaphides; *e*, shorter rhaphides.

Skeleton consists of long spiculo-fibres often connected and intercrossed by other fibres at acute angles; the main fibres are running obliquely towards the surface; their ends are often dissolved into spiculo-tufts, whereupon the dermal-membrane is resting; but special spicule-tufts are also met with under the dermal-membrane, independent of the main fibres; many isolated spicules are lying between the fibres, quite disorderly; these latter are more frequently tylota than styli, while these latter for the main part are building up the fibres; rhaphides are lying in trichodragmata and here and there isolated.

Spicules: (fig. 15 a—d) 1. styli; a little curved, sometimes evenly over the greater part, sometimes more abruptly and then most often in the first $^1/_3$; thickness of greater part of spicule even, only in the last smaller part, tapering to the apex, which is moderately sharp and often very abruptly marked, sometimes so as to form strongyla. Length varying about 360 μ, thickness about 9—10 μ. 2. tylota; nearly straight, heads only a little marked, shaft cylindrical, perhaps a very little thicker in the middle; length about 280 μ, thickness about 8 μ of the shaft. 3. rhaphides; of two sorts: bigger ones, length ca. 190 μ; smaller

ones, length ca. 50 μ; both forms are straight or slightly curved, very thin, thickest in the middle (the bigger ones 1—2 μ).

Tedania placentaeformis nov. sp.

Carnley Harbour. 45 f. Sandy clay. 6/XII.1914.

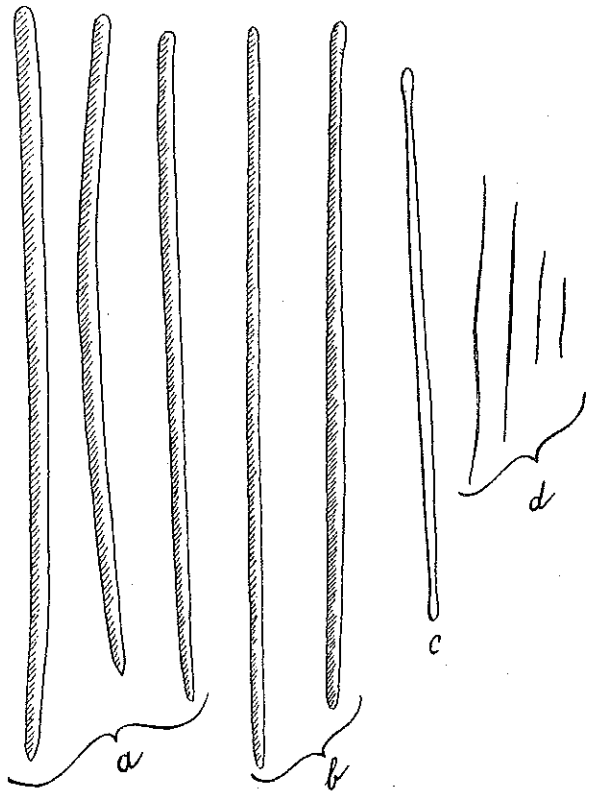


Fig. 16. *Tedania placentaeformis*, nov. sp. *a*, styli; *b*, strongyla; *c*, tylota; *d*, rhaphides.

Two specimens; flattened roundish shape, greatest extension ca. 35 mm, thickness ca. 10 mm. Surface even, spicules do not pierce the dermal-membrane, which is pellucid rather tough and thick; the subdermal-cavities are seen through it; they have the form of streams with irregular courses, and as the dermal-membrane is sunk a little into them, the surface of the sponge appears very characteristically furrowed. Oscula? ostia? Colour whitish-gray.

Skeleton is made up of very strong (up to 200 μ thick) spicula-fibres running mainly towards the surface at various angles; they are composed of styli and strongyla; the fibres are now and then running into one another at very acute angles, and now and then again spreading in two or three fibres; a special dermal skeleton is made up of spicule-tufts with the spicules arranged more or less perpendicularly towards the surface; these spicule-tufts are in some places apparently the continuation of the fibres coming from the interior of the sponge; sometimes the tufts are placed so close to one another that a continuous layer of spicules, forming a veritable cortex, appears.

Spicules: (fig. 16 a—d) 1. styli, straight or only a little curved, thickest about the middle, from here a little tapering towards both base and apex, the latter is marked off very abruptly by a not always sharp point; length varying about 400 μ, thickness up to 12 μ. By transitory stages the styli are connected with 2. the strongyla, which apear as the styli without points; strongyla and styli have the same length and thickness; of both several developmental-forms are found; sometimes 3. tylota are found, by intermediate stages connected with the strongyla. 4. rhaphides, very slender, a little thicker in the middle; all sizes from ca. 300 μ down to 50 μ may occur.

Genus **Biemma** Gray.

Biemma rhaphidiophora nov. sp.

Carnley Harbour. 45 f. Sandy clay. 6/XII.1914.

Irregularly lumpshaped, tending towards a short club-shape, as far as the base is narrower than the free end of the sponge. Biggest specimen ca. 45 mm in greatest extension, attached to shells. Surface smooth, only here and there spicules are piercing the dermal-membrane; this latter covers the choanosome as a thin and smooth coating, though completely connected therewith, so that it cannot be peeled off with a pair of tweezers from the underlying tissues. Oscula ca. 0,5 mm in diameter, surrounded by a very low crater wall; there are only a very few of them on every specimen. Ostia quite shut up on specimen in hand. Consistence rather firm, not at all elastic, somewhat mouldering. Colour red. Reminds one of a *Suberites*.

Skeleton composed of tylostyli, which are lying in all directions; towards the surface is seen an increasing tendency towards the building of only little distinct spicula-fibres or rather spicula-tracts, which are partly parallel with, partly almost in a right angle to the surface; the spicules are very much denser in the outer layers, which gives origin to the forming of a rather thin ectosome, not sharply distinct from the choanosome. Big and small tylostyli are lying pell-mell, not as for instance in the Suberitidae, where the small spicules most often are forming a separate bark-layer.

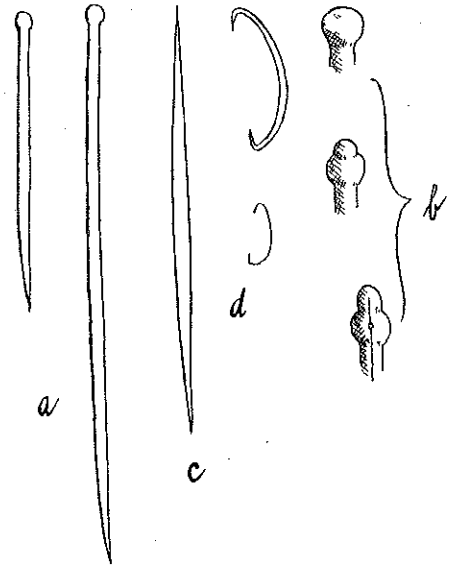


Fig.17. *Biemma rhaphidiophora*, nov. spec. *a*, styli; *b*, bases of styli; *c*, rhaphides; *d*, sigmata.

Spicules: (fig. 17 a—d) 1. tylostyli of two kinds; a) small ones, in lesser number than the bigger; slightly bent, of even thickness everywhere, except in the last $^1/_8$, where they are evenly pointed. Length 143—208 μ most often about 195 μ; thickness ca. 5,5—6 μ; head beautifully marked off. b) big ones, nearly straight, most often thickest a little beyond the middle, evenly and sharply pointed, pretty well marked head; sometimes the head is found a little outwards on the axis; such spicules are in fact distinct, they are a little longer than maximum of the other spicules, viz. so much longer as the short axis is long. Length 275—460 μ, commonest length 415 μ, thickness ca. 5,3 μ. 2. rhaphides; straight, thickest in the middle, from here evenly tapering towards both ends, may therefore rather be called microxa. Length 46—52 μ, thickness 1,5—2,5 μ; these spicules are very easily overlooked. 3. sigmata, regular or contorted, with very short and inwards bending points; length very varying, from 10—65 μ; sizes of 15—20 μ commonest; thickness 0,5—3 μ; rather unfrequent.

This species is very interesting in having rhaphides; so far as

I know, no species of the genus *Biemma* containing rhaphides was hitherto known.

Family **Desmacidonidae.**

Genus **Esperiopsis**, Carter.

Esperiopsis normani Bow.

1866. *Isodictya Normani*, Bowerbank. Mon. Brit. Spong. II, III.
1905. *Esperiopsis* „ , Lundbeck. Porifera in Danish 'Ingolf' Exp. Vol. VI, Part 2.

North arm of Carnley Harbour. 35 f. Mud. 30/XI.1914.

Several specimens, fragments, somewhat macerated. Long flabby cylinders; biggest specimen 80 mm in length, by a thickness of 6 mm. Neither a dermal-membrane nor ostia or osculum could be detected. Colour reddish brown. One of the specimens attached to a shell.

Skeleton a meshwork, formed by styli; meshes polygonal, most often tetragonal, length of side as a rule the same as that of a spicule (style). Spicules most often 2—3 together, both in primary and secondary fibres; these latter are in some places just as distinct as the primary ones; secondary fibres in most places connect the neighbouring primary fibres. Spongin only very slightly developed.

Spicules: (fig. 18) 1. styli, slender, smooth, slightly bent at about first third; varying in length from 200—290 μ, by a thickness of 7—7,6 μ. Many developmental forms. 2. isochelae, very small, slender, many developmental forms; length about 25 μ, breadth (of tooth) ca. 6,5 μ; middle portion (ca. one third of the shaft) straight, from here a little forwardly bent at both ends. Alae and tooth of about the same length, a little over the third of the length of a spicule.

I refer the species in hand to *Esperiopsis normani* Bow., although the spicules here are a little bigger than e. g. those of the specimens of Lundbeck (who states: styli 0,16—0,25 mm; chelae 0,020—0,021 mm by 0,005 mm); also here are 2—3 spicules lying side by side in the fibres, which as a rule only contain one spicule in the row; and lastly the shape is here erect, in contradistinction to the type, which seems to be of incrusting habit; yet

Levinsen has specimens, which appear to be branched; and it is well known that many sponges may assume both the erect and the incrusting form. I do not think, that the discrepancies are great

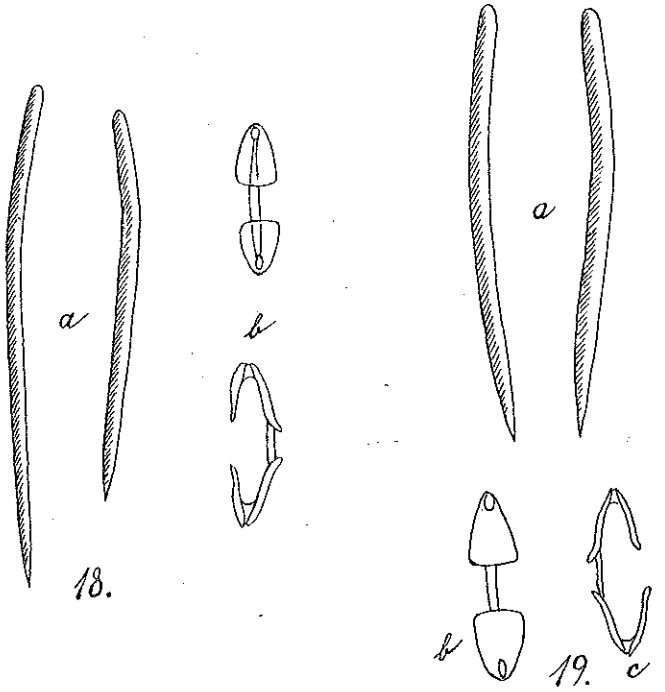


Fig. 18. *Esperous normani*, Bow. *a*, styli; *b*, chelae. Fig. 19. *Esperiopsis crasso-fibrosa*, nov. sp. *a*, styli; *b*, *c*, chelae.

enough to justify the creating of a new species or even a variety. The sponge is hitherto only known from the north part of the Atlantic ocean; it therefore is very interesting to encounter the species here — if it is not a converging type!

Esperiopsis crasso-fibrosa nov. spec.

Port Ross. Ca. 10 f. Sand, algae. 25/II.1914.

Incrusting on a shell. 3—4 mm thick. Dermal-membrane macerated off. Both subdermal-cavities as well as ostia have probably

been very small. Oscula rather numerous, 0,5—1 mm in diameter. Consistence rather soft, a little elastic, colour light grayish-red.

Sponge to a high degree filled up with spicules; a very great number are lying disorderly scattered in the choanosome; yet also fairly well defined spiculo-fibres are found, although they are not easily seen, on account of the numerous isolated spicules; in these fibres are often 4—5 spicules lying side by side, often more close. A discrimination often can be made between main fibres and secondary ones; the primary ones are running fairly parallel towards the surface, connected by the secondary ones at often right angles; these latter are in fact only bundles of spicules lying between the primary ones, of only one spicule's length; in many places the secondary fibres are lying criss-cross, are in fact dissolved.

Spicules: (fig. 19a—c) 1. styli, somewhat bent in the middle or a little before; some are set with a swelling somewhere on the spicule. Thickness rather constant for the greater part, tapering evenly to a sharp point. Length varying from 220—295 μ; thickness ca. 10,5 μ; many developmental forms. 2. isochelae; very small, ca. 19—25 μ; shape of shaft as by chelae of *Esperiopsis normani;* apex of tooth curved a little outwards, tuberculum rather high; sides of tooth rather straight, length the same as of alae, breadth only 4—4,5 μ.

This species comes very near to *Esperiopsis normani* Bow., as will be seen from the descriptions of the species in hand. But first the fibres here are too thick for that species; secondly the skeleton here is by far too irregular; thirdly the styli here are very much stouter (10,5 μ as against 7—7,5 μ by the same length); fourthly the breadth of isochelae is here only 4—4,5 μ as against 6,5 μ. I therefore feel obliged to create a new species for the specimens in hand. — Of course I might omit giving a name to this damaged sponge; f. i. call it *Esperiopsis* sp.; but that method I consider as wrong; for this sponge, however damaged it may be, surely exhibits specific peculiarities, and so it must have a name.

Esperiopsis glaber nov. sp.

Perseverance Harbour. Campbell Island. Under stones on the shore by low-water. 8/XII.1914.

We possess several more or less damaged pieces of the sponge, which apparently has been irregularly lumpshaped; rather macerated, only in a few places the dermal-membrane is preserved; where it persists it is seen to be rather thick, though pellucid, so that the subdermal-cavities are seen through it; it is easily peeled off with a pair of tweezers, perhaps on account of the macerated state; surface glabrous, not hispid. In some places a rather big osculum is situated on the top of a conic elevation; in other places more oscula (5—8) are seen to be placed in a group close to one another at an area, which only is a little elevated above the surrounding surface of the sponge; possibly these latter openings are excurrent canals leading out into a common osculum, but then the surrounding conic elevation has disappeared by maceration. The bigger oscula are 4 mm, the smaller (?) only ca. 1—2 mm in diameter. Ostia? Consistence soft, mouldering. Colour graish, fleshy.

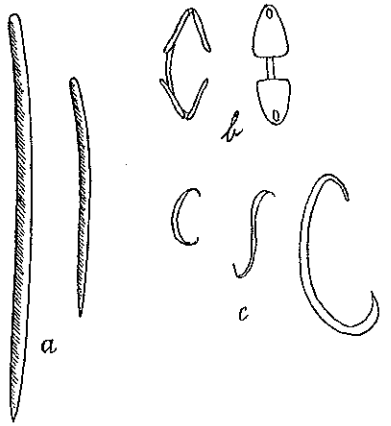


Fig. 20. *Esperiopsis glaber*, nov. sp. *a*, styli; *b*, chelae; *c*, sigmata.

Skeleton consists of fairly well developed main fibres; these latter are rather thick, containing many spicules side by side; they are running almost perpendicularly towards the surface; they are connected with one another by styli at right angles, so that a tolerably regular network of rectangular meshes comes up. A special dermal-skeleton is found: parallel with and just beneath the surface are lying styli packed very close together, in all horizontal directions.

Spicules: (fig. 20a—c) 1. styli, bent at about first 1/3, here thickest, tapering towards the sharp-pointed apex; length 200—370 μ, by a thickness of up to 10 μ. 2. chelae, built as in fore-

going species, but smaller, about 18 μ long, and shaft more evenly curved, not straight in the middle. 3. sigmata, regular or contorted, 14—35 μ.

Genus **Myxilla**, O. Schm.

Myxilla tornotata nov. sp.

1 mile E. of Auckland Island, on floating *Lessonia*. 28/XI.1914.

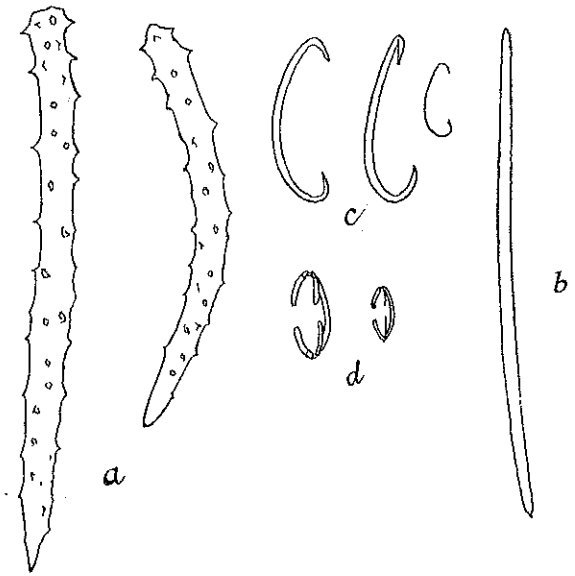


Fig. 21. *Myxilla tornotata*, nov. sp. *a*, styli; *b*, tornota: *c*, sigmata; *d*, anchorae.

One specimen, a fragment; the sponge seems to be irregularly lumpshaped; greatest extension ca. 20 mm. Surface finely hispid. Oscula? ostia? Consistence soft. Colour light reddish.

Skeleton consists of stout but ill-defined main-fibres, running somewhat parallel with the surface at a mutual distance equal to the length of one style; they are often dissolved into a diffuse mass of spicules. Secondary fibres are represented by spicules lying transversely between the main fibres at angles approaching the right. Both main and secondary fibres consist of styli and tornota indiscriminately; numerous sigmata, anchorae and also megasclera are scattered about in the tissues.

Spicules: (fig. 21 a—d) 1. styli, slightly bent, densely and rather coarsely spined all over, spines stoutest at the base; the bending, which is very even, as a rule takes place about the first third, but may be situated just at the base and beyond the middle. The base of the spicule thickest, from here tapering towards the sharp point. Length varying from ca. 90—140 μ, thickness up to 8 μ. Many developmental stages. 2. tornota, smooth; in most cases straight, only a little thicker at the middle; the sharp points always very abruptly marked off; length 130—156 μ, rather constantly 154 μ; thickness only ca. 4 μ; they are found in a much smaller number than the styli. 3. sigmata; rather evenly curved, except the ends, which are bent rather sharply inwards, almost always somewhat contorted. Size rather constant, varying about 32 μ by a thickness of 2 μ. 4. isanchorae, with three identical teeth at both ends; shaft evenly curved and of the same thickness in the whole length. Teeth, slightly curved, are projecting from the shaft at a rather acute angle; if front teeth were prolonged so as to meet one another, they would forme a curve quite symmetrical with that of the shaft; lateral teeth easily seen in side view (of the spicule) but with difficulty in front view, on account of their insignificant thickness but comparatively great breadth; length of teeth ca. $2^1/_2$ the breadth; rounded at the ends. Length of isanchorae very much varying, from ca. 10—26 μ.

Genus **Clathria**, O. Schm.

Clathria Mortensenii nov. sp.

Perseverance Harbour, Campbell Island. 20 f. Sandy mud. 10/XII.1914.

Incrusting on a shell. Greatest thickness 2 mm. Surface densely hispid by spicules piercing the dermal membrane perpendicularly; this latter thin, covers small subdermal-cavities. Oscula scattered about; in one place, however, 10 close to one another in a single row; they are 0,3 mm in diameter. Ostia numerous. Ca. 0,10 mm in diameter, in several places more or less tightly shut up. Consistence rather firm, somewhat elastic. Colour dirty gray.

Skeleton composed of only slightly developed and rather ill defined skeleton-fibres, which are passing from surface of attachment

to the free surface; so they are very short, on account of the very insignificant thickness of the sponge, only a few spicules long; from these fibres radiate at right angles numerous small spined styli. In many cases one cannot discern distinct fibres; only long styli are seen placed perpendicularly towards the surface, making it hispid, while small spined styli are lying parallel with the surface. Many toxa are scattered irregularly about in the tissues; while the chelae only are found in smaller numbers.

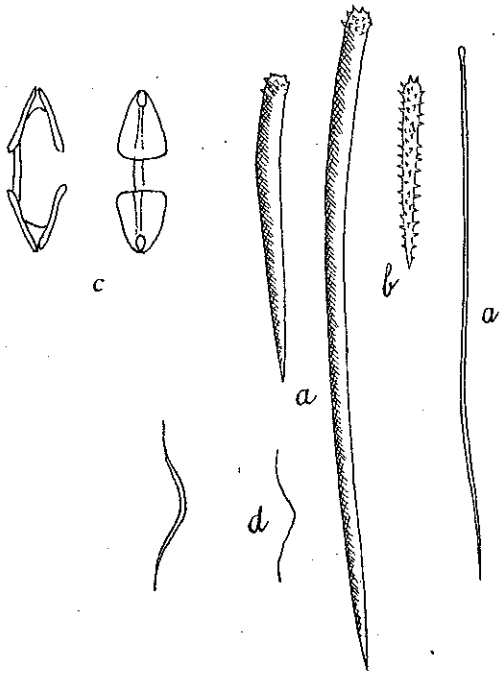


Fig. 22. *Clathria Mortensenii*, nov. sp. *a*, styli; *b*, styli; *c*, isochelae; *d*, toxa.

Spicules: (fig. 22a—d) 1. styli, big and stout, slightly bent at the first third or fourth, thickest at the base, evenly tapering to a fine point; base spined; length very much varying, from 182—520 μ, falling into two groups: lengths most commonly about 450 μ and 260 μ; thickness about 20 μ. 2. styli, smaller, spined all over, shape as the big ones, though somewhat more clumsy; length about 143 μ, thickness about 15—18 μ. Many developmental forms, especially of the bigger styli. 3. isochelae, very small; median third of the shaft straight, then bending towards the end, each ala covers a little more than $^1/_3$ of the shaft; teeth of about the same length and breadth as alae, formed as a broad isosceles triangle, the angles of which are a little rounded. Length ca. 16—19 μ, breadth 5—6,5 μ. 4. toxa, very regularly arched, very thin; length somewhat varying about ca. 100 μ.

Family **Axinellidae.**

Genus **Stylotella** Ldf.

Stylotella agminata, Ridl.

1914. *Stylotella agminata*, Ridl. Hallmann. A Revision of the Monaxonid species etc. Proc. of Linnean Soc. N. S. W. XXXIX. 2.

Perseverance Harbour, Campbell Isl., under stones, at low water. 9/XI.1914.

Specimens in hand incrusting on shells. Greatest thickness 2 mm. Dermal-membrane very thin and delicate, covers subdermal-cavities which can be seen through it, as can also the larger superficially lying exhalant canals. It is very beautifully seen how they are built up by several smaller canals, and how they are at last evacuated into the oscula, as a rule several together, so that the oscula may be the centre of nice, starshaped figures. Oscula ca. 0,8—1 mm. Ostia ca. 0,10 mm in diameter, in most places however shut up. Surface finely hispid. Consistence soft, somewhat elastic. Colour light gray.

Skeleton consists of primary fibres directed mainly towards the surface; between these fibres several spicules are scattered disorderly; main fibres in places very distinct, running a long distance quite unbroken and without anastomosing; they are often somewat curved; in many places they are dissolved and new fibres originate here and there; thickness of fibres rather different, commonly ca. 35 μ; a special dermal-skeleton could not be made out.

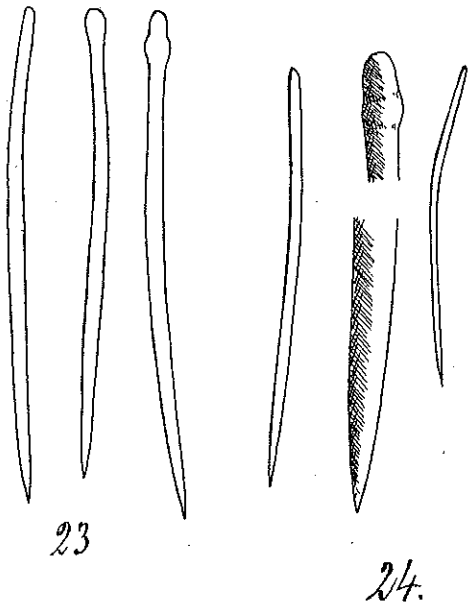


Fig. 23. *Stylotella agminata*, Ridl. Styli, subtylostyli, tylostyli, — Fig. 24. *Hymeniacidon indistincta*, nov. spec. Styli.

Hallmann (op. cit. p. 348) defines the genus for one thing in the following words: „. . . with a well-defined dermal-membrane which is provided with tan-

gentially placed spicules . . .“; as has been said above this could not be demonstrated here; but even if this passus is omitted in the diagnosis, the genus will prove to be very useful, at least at present — even if it is to be dissolved in the future as being unnatural; until then *Stylotella* may be regarded as a *Hymeniacidon* with well developed fibres.

Spicules: (fig. 23) styli; they have nearly all more or less beginnings of the tylostylote shape; slightly curved, rather evenly thick for the greater part, tapering then to a very fine point. Length 156—270 μ, by a thickness of 5,5—8 μ.

As Hallmann (op. cit.) has pointed out, *Stylotella rigida* Ldf. and *Stylotella digitata* Ldf. are identical with *St. agminata* Rdl.

Previously known from Port Jackson, East coast of Australia.

Genus **Hymeniacidon** Bwk.

Hymeniacidon indistincta nov. sp.

Masked Island. Carnley Harbour; beneath stones on the shore by low-water. 3/XII.1914.

Irregularly lump-shaped; it has evidently had a broad basis; one side is damaged, devoid of dermal-membrane, as if the sponges here had been torn off from a surface of attachment; also several very damaged specimens of extremely irregular shape are at hand. Greatest extension 45 mm; surface in places with small, irregularly mammiform processes; in other places even. Dermal-membrane rather thin, pellucid, permitting the extensive subdermal-cavities to be seen; with tweezers it may easily be peeled off from the underlying tissues, by which process it will, however, rather easily be broken, as it is somewhat brittle. Surface not hispid. Here and there some small openings of ca. one mm in diameter; they may be oscula, but may also be made by foreign organisms. It seems as if the ostia are collected in special areas: in some places the surface looks just as if it had been pricked all over with a needle, while in the greater part of the surface, such marks are not seen, and it does not seem as if eventually existing ostia are shut up. Consistence rather tough and elastic. Colour white gray to dirty gray; a few samples, preserved in formaldehyd, are light reddish.

Skeleton consists of indistinct spicula-tracts, as one may say, rather than of spiculo-fibres; they are constantly now dissolved, now again drawn together; they do not appear as distinct fibres well marked off against the loosely scattered spicules in the choanosom, but in every place without clear outlines, passing over the quite disorderly scattered spicules. The direction of the tracts is also very varying, practically running in every direction, though it may be pointed out, that tracts directed towards the surface may be regarded as „main fibres“; these latter often form conical projections (the small mammiform processes mentioned above) subsisting of spicules placed against one another as guns in a pile of arms. There is a rather stout dermal-skeleton consisting of several layers of dense entangled spicules parallel with the surface, but otherwise without any particularly prevalent direction.

Spicules: (fig. 24) styli; slightly bent in the first half; rather evenly thick for the greater part, somewhat abruptly pointed; sometimes beginnings of tylostyli. Length very much varying, from 160—403 μ; lengths about 195 μ and 350 μ are the most common; thickness ca. 9—11 μ.

Genus **Axinella** O. Schm.

Axinella torquata nov. sp.

Carnley Harbour. 45 f. Sandy clay. 6/XII.1914.

Five specimens. Very irregularly lump-shaped; grows with narrow protuberances, with tendency towards curving and twisting, so that the apices of protuberances again unite with the sponge-body, and in this way irregular canals and apertures are being built. Greatest extension ca. 30 mm. Surface very finely hispid, sligthly and irregularly furrowed, on account of the subdermal-cavities, into which the dermal-membrane has sunk a little; this latter rather thick and brittle because of the tangentially lying spicules which sustain it. Oscula, ostia? Colour grayish-yellow, darker above the subdermal-cavities.

Skeleton consists of tolerably well defined spicula-fibres of various thickness, often ca. 80 μ thick; they are running towards the surface, and the spicules hardly pierce the dermal-membrane; as the fibres are running along they are constantly sending off

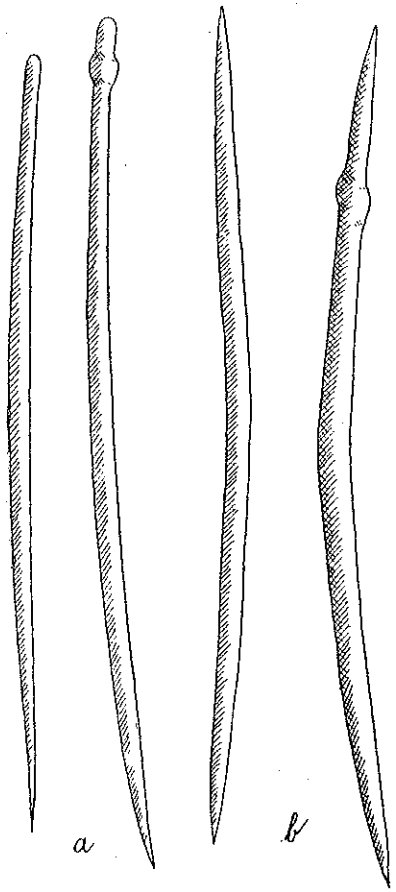


Fig. 25. *Axinella torquata*, nov. sp. *a*, styli; *b*, oxea.

branches to one another at acute angles, thus forming a rather dense network; many spicules are lying between the fibres, pell-mell. A special dermal-skeleton is made up of spicules lying parallel with the surface and constituting a thin cortex ('dermal-membrane'); they are placed in groups with ca. 4—8 in each; these groups are connected with the apices, and in this way a coarse network is formed. Both styli and oxea are making up the main- as well as the dermal-skeleton.

Spicules: (fig. 25 a, b) 1. styli, slightly curved, thickest about the middle, from here tapering just a little towards base and apex, only this latter is somewhat more clearly marked off; length most varying, from ca. 170—520 μ, by a thickness up to 12 μ. 2. oxea; very slender, only a very little curved about the middle, here thickest, tapering evenly towards both apices, which are very sharp-pointed; length varying from ca. 325 μ—ca. 570 μ by a thickness of up to 14 μ. The oxea are on an average a little longer than the styli. In both forms of spicules swellings occur.

Axinella verrucosa nov. sp.

Carnley Harbour. 45 f. Sandy clay. 6/XII.1914.

Several specimens. Irregularly lumpshaped with tendency towards branching, but the branches soon stop growing and remain as small protuberances at various length (up to ca. 10 mm long)

on the surface of the sponge; often these outgrowths are closely parallel with one another, and then fuse at the top. Greatest extension up to ca. 60 mm. Surface irregular, slightly warthy, on account of the numerous spicula-fibres, which are lifting the dermal-membrane a little up, and also pierce it, and so the surface of the sponge

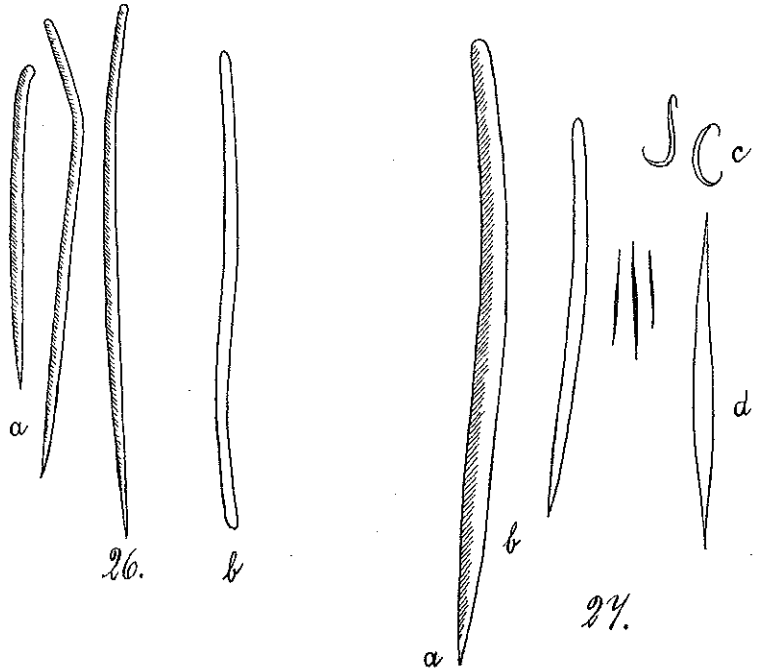


Fig. 26. *Axinella verrucosa*, nov. sp. *a*, styli; *b*, strongyla. — Fig. 27. *Sigmaxinella stylotata*, nov. sp. *a*, big styli: *b*, small styli; *c*. sigmata; *d*, rhaphides.

is as set with small spicula-brushes. Long, irregular subdermal-cavities and canals are seen through the very thin dermal-membrane. Oscula, ostia? Colour light yellowish.

Skeleton consists of typically Axinellioid spicula-fibres, so dense that the spicules from neighbouring fibres easily intercross one another; as before said, the fibres are lifting the dermal-membrane up into small prominences and are piercing it.

Spicules: (fig. 26 a, b) 1. styli; rather stout, slightly bent, often rather irregularly, so that the spicule may be bent in more places and in various degrees; thickest about the middle, from here

tapering very slightly towards the base, more markedly and evenly towards the apex. Length most varying, from ca. 400—900 μ, by a thickness up to 28 μ. 2. a few strongyla are found, which are only styli without points, and therefore of just the same length, thickness and shape as these.

Genus **Sigmaxinella**, Dendy.

Sigmaxinella stylotata nov. sp.

Carnley Harbour. 45 f. Sandy clay. 6/XII.1914.

Several specimens. Very characteristic appearance: from a lump-shaped basis are rising a greater number of papillae or columns, which are tapering to a sharp apex; it thus in shape recalls *Sigmaxinella papillata* n. sp., but is easily recognizable from that species by its branches which are now sharp-pointed, now blunt. Diameter of biggest specimen ca. 40 mm; height ca. 20 mm; papillae 2—4 mm at the base, often 20 mm high. Surface everywhere strongly hispid, also the papillae; several funnel-shaped ostia, ca. 0,4 mm in diameter. Sponges attached to shells, serpula-tubes, stones etc. Consistence rather firm, papillae brittle. Colour ligth flesh-coloured, papillae evenly discoloured towards apex, on account of the decreasing amount of living matter.

Skeleton consists of long spiculo-fibres, mainly composed of bigger styli. Fibres ordinarily of the regular Axinellioid type: spicules with apices directed distally, not quite parallel, but a little diverging. In the innermost part of the sponge-body these fibres are lying so closely together, that the obliquely outwards directed spicules from two neighbouring fibres are crossing one another; in this way the skeleton is woven into a compact totality; between and in the fibres are scattered small styli, apparently without participation in the building up of the skeleton; the small styli may be lying with the apices in every direction. In the free papillae the spicula-fibres are also lying densely together; in continuation of the obliquely placed spicules in these fibres are lying other spicules, whose direction is more and more transversal; they may assume the character of very much diverging skeleton-fibres.

Spicules: (fig. 27, a—d) 1. styli of two sorts. a. big ones,

forming the skeleton fibres; very stout, with a slight bending in the first half, thickest in the middle, from here tapering to the only a little narrower base, and to the somewhat finely-pointed apex. Length 455—676 μ; thickness 20—33 μ; length about 550 μ the most common. b. small styli: shape the same as big ones; length from 190—403 μ, by a thickness of 8—17 μ; most common are sizes about 220 μ by 10 μ. 2. sigmata, regular or contorted, up to 40 μ in length. 3. rhaphides, up to ca. 50 μ in length, straight, thickest in the middle.

Sigmaxinella pulchra nov. sp.

Carnley Harbour. 45 f. Sandy clay. 6/XII.1914.

Several specimens. Branching and anastomosing to a high degree. Biggest specimen up to 200 mm in length; from ca. 2—10 mm in thickness. The branches consist of a very firm and rigid central-axis, from which looser skeleton-fibres arise obliquely, building the rest of the branches. Often the branches are cylindrical, but they may also have longitudinal furrows so deep and large that the branches may be folded out along with these furrows into flattened leaf-shaped bodies; and sometimes there are 2—5 furrows, and thus the branches in transverse sections will appear more or less star-shaped. In most places the sponge is so macerated, that the dermal-membrane and much of the underlying tissue is dissolved; but where it is preserved, the dermal-membrane is seen to be thin and pellucid. Oscula? ostia? Colour light reddish, especially the stem, which is pale coral-red.

Skeleton may be divided into two very disctinct parts; that of the axis and that of the peripherical skeleton.

The axis consists of very densely packed and entangled spicules; so dense are they that it is very difficult to press a knife through the axis where it is thick. These spicules are for the main part strongyla; however strong this impression of the disorder of the spicules: there is a trace of longitudinally running spicules, even in the thickest pell-mell. Distinct fibres cannot by far be made out, but we may say, that spicules with the axis in the direction of the sponge-axis in some places are denser than in other places; these spicula-tracts cannot be followed very long, they soon will

be „washed out" on account of the fact that the spicules have a tendency to diverge a little. Undoubtedly there are also spicules lying transversely to the axis, so as to bring in mind secondary

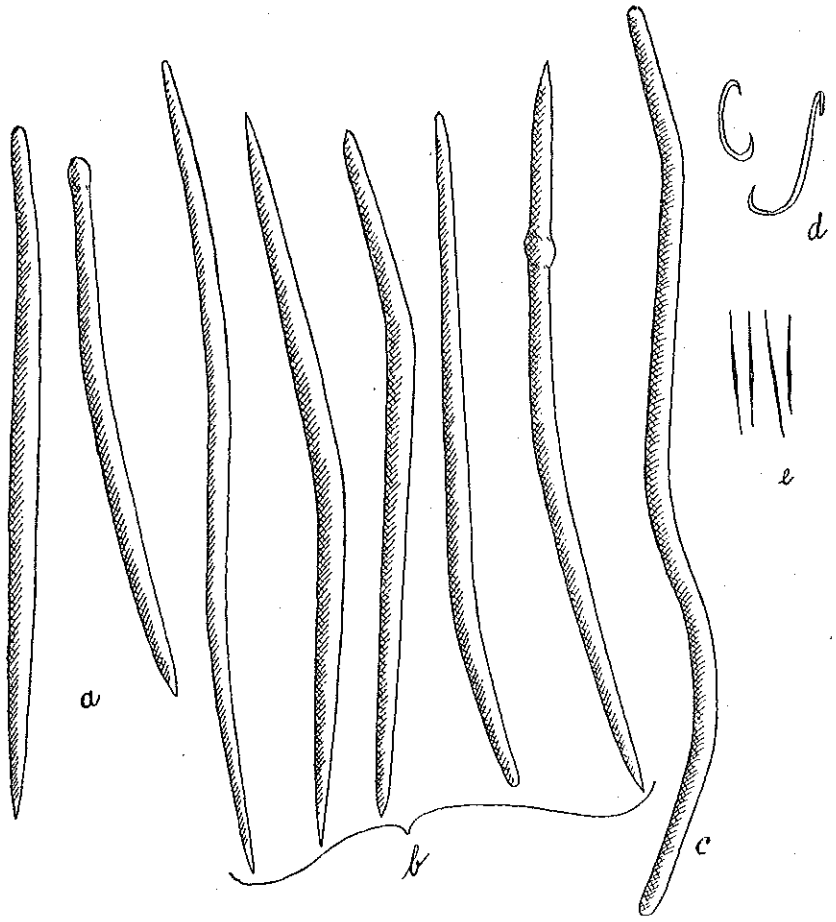


Fig. 28. *Sigmaxinella pulchra*, nov. sp. *a*, styli; *b*, oxea; *c*, strongyla; *d*, sigmata; *e*, rhaphides.

fibres; at any rate, in a more or less right-angle to the axis there are some very short fibres consisting of very few spicules, which are, apparently, only continuations outside of the axis of the just mentioned transversely lying spicules in this latter.

The peripherical skeleton is constructed mainly of oxea. In accordance with the above statements about the microscopic facts, this skeleton is heterogeneously developed. Between the bushy length-rows of spicula-fibres are found very short ones, at most a few spicules in length and breadth, which seem to be a continuation of the transverse spicules in the axis (see above). The bigger skeleton-fibres in the peripherical skeleton are extending from the axis at a rather acute angle; as the small ones, these fibres also seem to be continuations of fibres found in the axis, viz. the longitudinally directed; this, however, cannot directly be demonstrated. These fibres are rather loose in construction, and so far as can be seen, without spongin; they are branching and anastomosing rather frequently at acute angles; the spicules are not quite parallel, the distal ends are directed somewhat outwards; in fact the fibres are constructed like those characteristic of *Axinellidae*. Both sigmata and rhaphides are almost completely reserved for the peripherical skeleton.

Spicules: (fig. 28 a—e) 1. styli; found rather scarcely both in the peripherical and in the axial skeleton; they are stout, slightly bent at about the first third or fourth. Thickest in the middle, decreasing only a very little towards the basis, while the tapering towards the distal end is very even and constant, except the very point, which is rather abruptly marked off; there are sometimes beginnings to subtylostyli. Length varying from ca. 390 —710 μ; sizes about 480 the most common; thickness varying from 11—24 μ. Styli lying in the axis have the same size, generally, however, somewhat thinner and longer than the above given medium size, and the shape much more irregular, so that one spicule may be curved in several places. 2. oxea, are, as already mentioned, particularly reserved for the peripherical skeleton, and only there regularly developed. The typical shape is slightly bent in the middle, where also the thickness is the greatest; from here evenly tapering towards the two very sharp points, which as a rule are more abruptly marked off. I regard this as the type; but there are several and most varying exceptions. It is for instance common that the points, one or both, are so abruptly marked off as to make the spicule a tornota; or they may be blunt, so as to make the spicule rather strongyla-like; or the bending may be

closer to one end than to the other; or there may be swellings on the spicule in the middle or on one of the axes. Also the dimensions are of course very much varying: from ca. 260—530 μ, common sizes about 10 μ. 3. strongyla; very long and slender, bent as serpentine windings, apparently to the purpose that the axis which is in the first place made up of these spicules, may be firm and rigid, as they are braided in one another; thickness almost the same allover, sometimes, however, a little tapering distally; the rounded end may be pointed so as to build many transitory stages to oxea; also with regard to the bendings there are all transitory stages between the two types; I therefore hold it probable, that the oxea in the peripherical skeleton, being by and by enveloped by the axis, on account of the increasing thickness and length of this one, serve to build up the axis, and are thus by means of apposition of new silicium-material, transformed into serpentine strongyla. Length of strongyla of course very much varying; I have measured lengths up to 1600 μ. Thickness the same as that of oxea, ca. 10 μ. 4. sigmata; regular or a little contorted, ends rather sharply inwards bending; varying in length from 25—60 μ, sizes about 35—40 μ by thickness of 2—3 μ most common. 5. rhaphides; very fine and delicate; thickest in the middle, from here evenly tapering towards both sides into very fine points; length 40—45 μ, thickness 1—1,5 μ; developmental forms, very fine spicula-threads, are very often found.

A few isanchorae are found with 3 teeth, evenly and strongly curved shafts, length ca. 40 μ; so far as I can judge, these spicules are foreign to the sponge, and accordingly I have not recognized them in referring the specimens in hand to *Sigmaxinella.*

Sigmaxinella florida nov. sp.

Carnley Harbour. 45 f. Sandy clay. 6/XII.1914.

Resembles flowers built up of ice-crystals or certain branched corals, very beautiful and characteristic shape; from a main axis radiate in all directions a great number of branches, like those of a spruce, also conical in shape as on that tree. Very macerated, so that practically only the skeleton persists. Specimen in hand unfortunately only a fragment, ca. 30 mm high.

Skeleton consists of very typical Axinellioid-fibres, constantly branching in very acute angles; the fibres are lying very close to one another, so that the spicules, which are placed with the apices directed obliquely outwards in the fibres intercross the spicules from

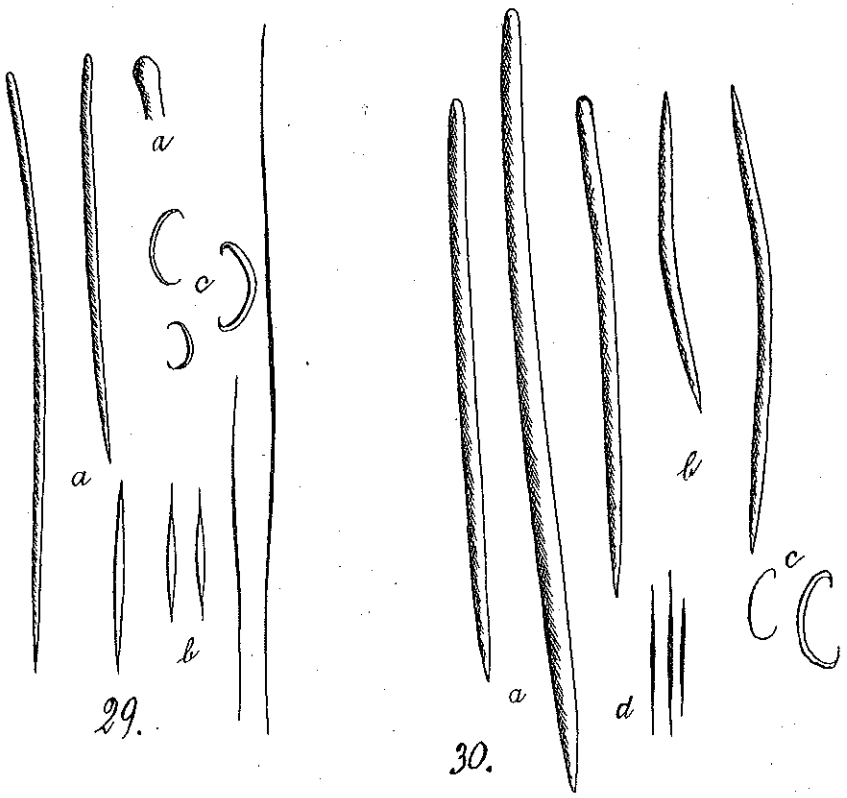


Fig. 29. *Sigmaxinella florida*, nov. sp. *a*, styli; *b*, rhaphides; *c*, sigmata. — Fig. 30. *Sigmaxinella papillata*, nov. sp. *a*, styli; *b*, oxea) *c*, sigmata; *d*, rhaphides.

neighbouring fibres; the fibres are rather strong, built up by several spicules in the row.

Spicules: (fig. 29a—c) 1. styli, stout, curved; the bending may take place in various parts of the spicules; sometimes subtylostyli may be found; thickness most often the greatest just beyond the bending; from here evenly tapering; length very varying, from 416—858 μ. Lengths about 650 μ most common, by a thickness of about 20 μ. 2. rhaphides, of three sizes; a, hair-

like, 200—270 μ in length, not very numerous; b, hairlike, ca. 70 μ; c, smaller ones, thickest in the middle, almost like small oxea ('microxa'), length 35—50 μ, by a thickness of up to 2,5 μ. 3. sigmata; regular or contorted, length up to 70 μ, most common about 55 μ.

Sigmaxinella papillata nov. sp.

Carnley Harbour. Ca. 45 f. Sandy clay. 6/XII.1914.

Several specimens. Shape very characteristic: from a lump-shaped basis rise a number of fingerformed branches which are nearly of even thickness from base to apex. Biggest specimen measures 45 mm in greatest extension; papillae or branches reach a hight of 40 mm. Consistence firm. Surface scarcely and finely hispid, to the touch just like sand-paper. Oscula could not be made out; between the branches are here and there found some holes, which do, however, look rather as if made by foreign organisms. If the wet sponge has been lying in a dry place for some minutes, one can see the subdermal cavities as white spots and strings extended under the subdermal-membrane as a beautiful network. Dermal-membrane rather thick, ca. 200 μ, may be peeled off separately from the underlying tissues. Colour yellowish-white.

Skeleton consists of rather stout spiculo-fibres, which, anastomosing, are running in right angles towards the dermal-membrane; they are easily seen with the naked eye; the ends of these fibres spread out like fans, upon which the dermal-membrane rests, and between these fibres the subdermal-cavities and -canals are running, ca. 1/2 mm in breadth; these fibres are also extending into the papillae, continually sending off small branches to the surface of the papillae. In the dermal-membrane the spicules are principally lying parallel with the surface as a very dense layer, many spicules thick, spicule by spicule, pell-mell. The small spicules are especially reserved for the dermal-membrane, the bigger styli and oxea are found in the main skeleton.

Spicules: (fig. 30a—d) 1. styli smooth, very sharp-pointed, as a rule thickest in the middle, slightly curved in the first third, rather stout; varying from 286—650 μ, by a thickness of 9—17 μ. 2. oxea, smooth, sharp-pointed, slightly curved, thickest at the bending, which most often is in the middle, but may be displaced

towards the ends; varying from ca. 145—416 μ in length, by 7—11,5 μ in thickness. 3. sigmata; evenly curved, sharply inwardly bent points; rather constantly ca. 30 μ by 2 μ; in certain places in the choanosome between the fibres these sigmata are forming enormous heaps, but they also may appear in considerable numbers interwowen in the fibres between the megascleres. 4. rhaphides; very fine, thickest in the middle, evenly tapering to the awl-shapen points; ca. 50 μ by 1 μ; rather uncommon.

Genus **Thrinacophora,** Ridley.

Thrinacophora dubia nov. sp.

Coleridge Bay, Carnley Harbour. 25 f. Sandy mud. 4/XII.1914.

Several specimens. Incrusting; forming thin, up to ca. 1 mm thick coatings over stones or the like (could not be stated with certainty on account of the fact that the sponges were torn from their bodies of attachment; greatest extension ca. 30 mm; surface very finely hispid. Oscula? ostia? Colour pale dirty gray.

Skeleton very confused. The long styli are lying in one plane, it is parallel with the surface; most of them are running parallel with one another in two main directions, crossing one another at an angle inclining towards 90°; but some, however a smaller part, are also lying in every other direction. The other spicules only in some places in their distribution show a tendency towards regularity; elsewhere they are lying quite disorderly.

Spicules: (fig. 31a—c) 1. styli, smooth, varying through subtylostyli to tylostyli; all intermediate forms are found; often the swellings are situated at some distance from the basis of the shaft. All sligtly curved, tapering evenly to a very sharp point; thickest at the base or about the bending; varying in length from ca. 90 μ—2000 μ, thickness up to 14 μ. 2. styli, slightly spined all over, curved, often strongly curved, at about the first fourth; but this may be varying; thickest at the base, from here tapering evenly to a most often tolerably sharp point which may however in a few cases be blunt. Length varying from ca. 100 μ to 160 μ by a thickness of ca. 4—5 μ. 3. rhaphides, like rods, silicium-threads, often curved in more or less regular bows, semicircular

or S-shaped; length very varying; I have measured up to ca. 400 μ; thickness 3—1 μ or less.

I am greatly in doubt as to the right genus-determination of the sponge in hand. Ridley and Dendy (Chall. Rep.) consider the

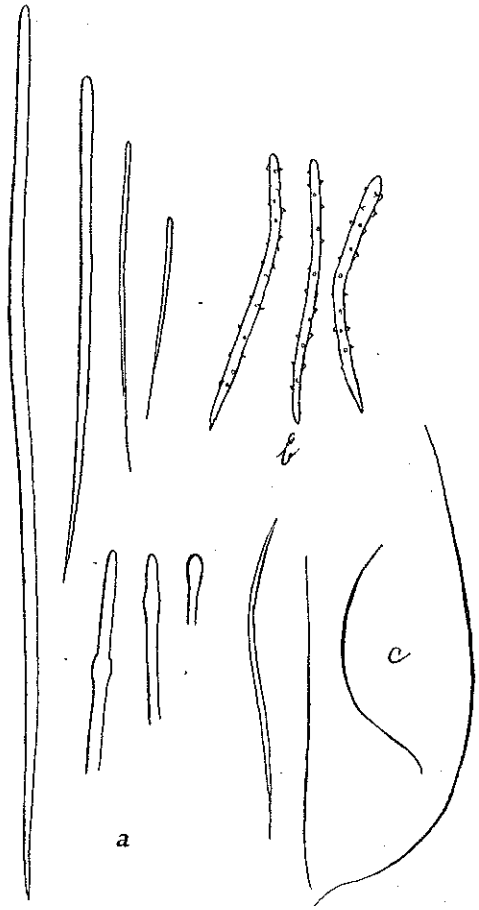


Fig. 31. *Thrinacophora dubia* nov. sp. *a*, styli: *b*, styli; *c*, rhaphides.

only difference between *Thrinacophora* and other *Axinellidae* to be the fact, that the former possesses trichodragmata (also isolated rhaphides?). The hitherto described species have well developed spicula-fibres and oxea; but as this character is not inserted in the genus-definition, and as f. i. in *Axinella* species occur both with and

without oxea besides the styli, and as the specimen in hand is incrusting and therefore cannot have well developed skeleton-fibres, it seems to me that I am justified in referring the sponge to the genus *Thrinacophora*, in spite of the lacking of the oxea.

Family **Suberitidae.**

Genus Suberites Nardo.

Suberites affinis nov. sp.

Carnley Harbour. 45 f. Sandy clay. 6/XII.1914.

Several specimens. Pear- or club-shaped. Biggest specimen ca. 70 mm high, ca. 10 mm thick; attached by a narrow base, then rapidly increasing in thickness, and having attained its greatest thickness it grows cylindrically upwards; top roundish. Osculum at the top, ca. 1 mm in diameter. Ostia? Texture firm, only a little elastic; colour pale grayish-yellow. Surface even, glabrous.

Skeleton in the interior of the sponge very irregular; spicules for the main part lying pell-mell; only round the canals there is a tendency towards a vague regular arrangement; but the spicules are forming distinct fibres directed at almost right angles towards the surface; the fibres are so close that they almost touch one another; the most external spicules are diverging a little and pierce the dermal-membrane, so that the surface of the sponge is finely and evenly hispid; and these spicules are somewhat smaller than those in the interior of the sponge (although big ones are found between them). The outer layer, containing veritable fibres, is only ca. 1 mm thick.

Spicules: (fig. 32) tylostyli. Many developmental-forms; the spicules are as a rule slightly curved, most often about the first third; but especially the longer spicules may sometimes have several curvings; but also many

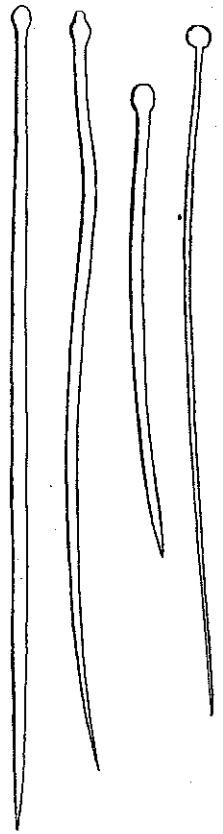


Fig. 32. *Suberites affinis*, nov. sp. Tylostyli.

straight tylostyli are found; thickness almost the same from head and over $^3/_4$ of the spicule, but then tapering to a very fine point; the small spicules, however, are tapering only in the last fifth or sixth; head beautifully marked off, situated in most cases at the base; but there are also found specimens with the swelling at a little distance from the base; apparently the shaft does not grow as fast as the head; all grown-up spicules have heads, the diameter of which is only a little larger than that of the shaft. Length very varying, from ca. 130 μ—520 μ; sizes about 220 μ and 430 μ most common; thickness rather constant, shorter forms just as thick as the longer, ca. 7—8 μ.

Suberites ramosus nov. sp.

Perseverance Harbour; Campbell Island. 10—20 f. Sandy mud. 9/XII.1914.

We only possess fragments, some cm in length. Very irregular, forming a clustering tuberous cover on seaweed; to be precise the sponge consists of irregularly and densely anastomosing branches, 4—8 mm thick. Dermal-membrane very thin, but in most places macerated off. Consistence soft, incoherent. Oscula? ostia? Colour pale reddish-gray.

Skeleton consists of long and comparatively thick (up to 70 mm) spicula-fibres, some of which are directed nearly parallel with, though a little converging towards the surface; other fibres are crossing these fibres at various angles, but with almost the same inclination to the surface; the dermal-membrane seems to be sustained by a layer of smaller spicules at an oblique angle, lying with the apices outwards directed; often they appear as tufts, continuating the spicula-fibres; several isolated spicules are lying pell-mell between the fibres; these latter are branching and again confusing, so that the whole skeleton appears as rather indistinct and diffused.

Spicules: (fig. 33) tylostyli; straight or a little curved somewhere on the shaft, tapering evenly to a sharp point; head well marked off; varying greatly in length, from ca. 200 μ to ca. 500 μ, by a thickness of up to 11 μ.

Suberites anastomosus nov. sp.

Perseverance Harbour. Campbell Island. 20 f. Sandy mud. 10/XII.1914.
Coleridge Bay, Carnley Harbour. 25 f. Sandy mud. 4/XII.1914.

Lump-shaped, or in other specimens lump-shaped at the base, and from here issue a number of irregular, anastomosing branches, forming the main part of the sponge; thickness of branches up to

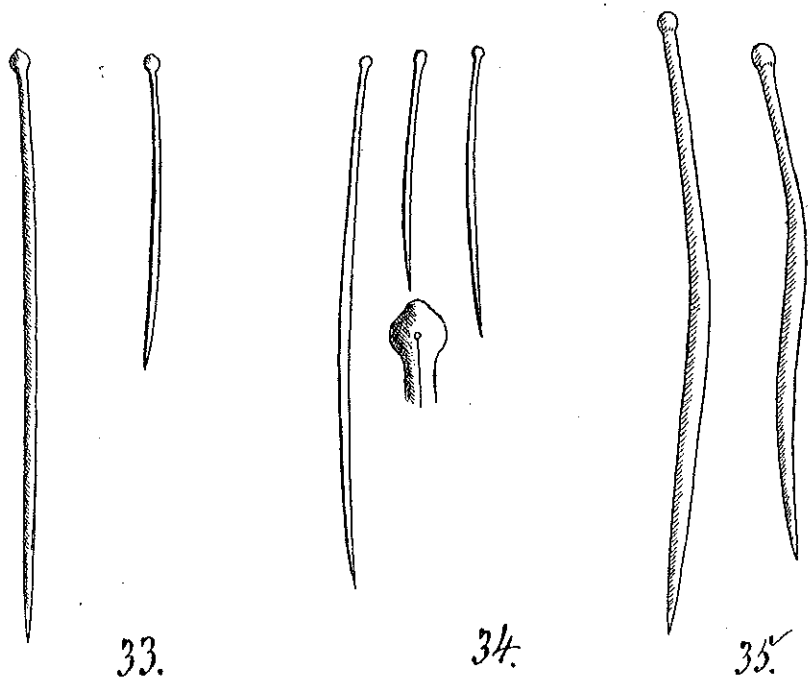


Fig. 33. *Suberites ramosus*, nov. sp. Styli. — Fig. 34. *Suberites anastomosus*, nov. sp. Styli. — Fig. 35. *Suberites incrustans*, nov. sp. Styli.

5—6 mm, greatest extension of sponge ca. 40 mm. Surface very finely hispid. Dermal-membrane delicate and pellucid, covers the big and numerous subdermal-cavities; oscula are found here and there, ca. 0,5 mm in diameter. Ostia? Consistence rather soft, somewhat elastic. Colour light grayish.

Skeleton consists of very dense and in several directions intercrossing spiculo-fibres, which often are rather loosely composed, dermal-membrane sustained by rather compact and closely placed

spiculo-tufts, directed more or less perpendicular to the surface; the small tylostyli compose mainly the tufts, the bigger ones mainly the fibres.

Spicules: (fig. 34) 1. tylostyli; slightly curved, the bending may be situated in several places; thickest just beneath the bending; the head not situated at the very base, wherefore this latter is seen as a little prominent part of the head. Length varying from 156—403 μ. But two groups of sizes are dominating, one about 190 μ and one about 309 μ; thickness 7—11 μ.

Suberites incrustans nov. sp.

Perseverance Harbour. Campbell Island. 20 f. Sandy mud. 10/XII.1914.

Incrusting on a shell as a very thin layer, only up to $^1/_2$ mm thick. Dermal-membrane exceedingly fine, covers small subdermal-cavities, which are seen below as dark spots. Oscula few and scattered, 0,2—3 mm in diameter. Ostia? Surface in a few places even, in other places very finely hispid. Consistence rather soft, slimy, thin, like wet skin. Colour clear pale-gray to dirty gray (on account of foreign particles).

Skeleton consists of irregularly dispersed spicules, lying for the main part without any order, only in few places indications of spiculo-fibres are found.

Spicules: (fig. 35) tylostyli, somewhat curved, with beautifully marked heads, thickest at about the bending, tapering very evenly to the sharp-pointed apex. Varying in length from ca. 170 μ—530 μ, by a thickness of up to 12—13 μ.

Family **Polymastiidae.**

Genus **Polymastia,** Bwk.

Polymastia granulosa nov. sp.

Figure 8 Island, Carnley Harbour. Under stones at lowwater. 2/XII.1914.

Incrusting. Of the specimen in hand, which is somewhat damaged, the greater part consists of a bark-layer. The most characteristic external feature of the sponge are the numerous fistulae,

which are up to 15 mm high, ca. 4—5 mm thick; they rise as chimneys at about right angles to the surface; cylindrical; at the summit, which appears as if it had been cut transversally with a knife, the bark-layer is wanting; whether this is due to destruction or if it is so in the living state of the sponge, I dare not say; perhaps the oscula, which nowhere else can be seen, are situated here. Surface hispid, appears a little granulous; between the 'granules' the very small ostia are found. Consistence of the cortex like that of skin, very firm and tough; the parenchyma very soft, crumbling. Colour light grayish-brown, with a reddish tint.

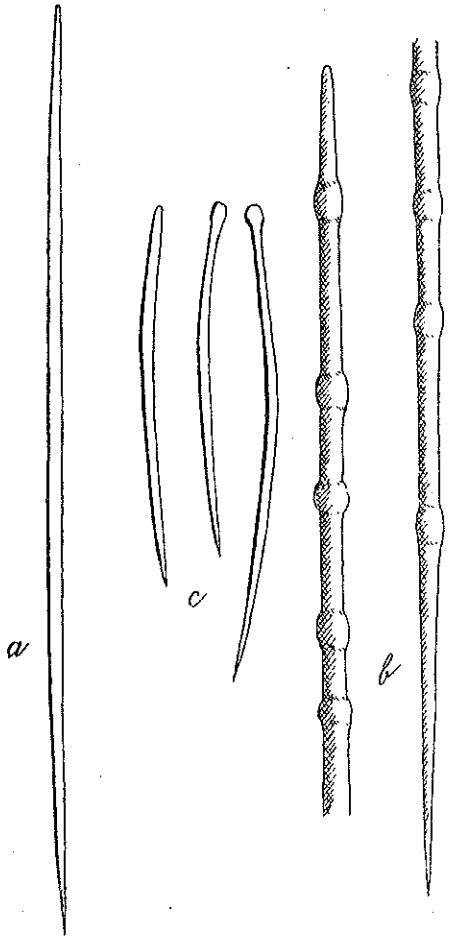


Fig. 36. *Polymastia granulosa*, nov. sp. *a*, *b*, big styli; *c*, small styli-tylostyli.

Skeleton consists of a typically developed bark-layer and a soft parenchyma. The cortex is built up of a very dense layer of spicula, packed closely together and placed at a right angle to the surface, the apices directed outwards; on the very surface between these latter spicules are lying bigger ones, mostly slender strongyla, but as there are several forms and as they are lying externally on the sponge-surface, I reckon them as foreign to the sponge. From the interior of the parenchyma are running strong spicula-fibres consisting of bigger spicules running at right angles towards the surface and raising it a little into the above mentioned granules. As for the rest of the skeleton it is built up of a great number of spicules, mainly par-

allel with the surface, and often arranged in two directions crossing one another at a right angle. The brownish pigment is especially deposited in the cortex.

Spicules: (fig. 36 a—c) 1. styli; sometimes polytylote; narrow base, growing thicker towards the middle, then again tapering evenly to the very sharp-pointed apex; spicule very straight; length varying about 650 μ. 2. tylostyli, but varying through intermediate forms to styli; slightly curved; thickest about the bending, tapering a little towards the somewhat narrower base, and tapering evenly towards the very sharp apex; length varying somewhat about 165 μ, by a thickness of ca. 4 μ.

Family **Spongidae.**

Genus **Spongelia** Nardo.

I must confess, that the evidently numerous *Spongelia*-species are rather unfamiliar to me, so that it is impossible for me to determine the following species with a tolerable degree of certainty. The Australian forms, especially those described by Lendenfeld, are in most places so incompletely described, that I for one cannot recognize them; and besides it seems to me that the genus *Spongelia* needs a critical monographic revision; I will therefore not further complicate the matter by adding new uncertain species.

Spongelia sp. a.

Carnley Harbour. 45 f. Sandy clay. 6/XII.1914.

Irregularly shaped; consists mostly of densely anastomosing, rather evenly thick branches. The biggest specimen 40—50 mm in greatest extension. Most characteristic are the numerous small conuli, ca. 2 mm in height, separated from one another by a distance of 2—4 mm; from the apices of these conuli are stripes extending in every direction, quite as if the dermal-membrane were plaited as a tent-canvas raised in the middle by a stick. Oscula small, ca. one mm in diameter. Ostia cannot be seen. Dermal-membrane very thin and pellucid. Consistence soft, rather tough, only a little elastic. Colour fleshy.

Skeleton-fibres formed by very clear and colourless spongin-fibres, containing a dense mass of foreign substances; thickness of fibres naturally most varying; I have measured fibres from 50—260 μ.

Spongelia sp. b.

Coleridge Bay. Carnley Harbour. 25 f. Sandy mud. 4/XII.1914.

Surface also here set with small conical projections, only ca. one mm high, separated ca. 4 mm from one another; also here fine lines are radiating from the apices of the papillae, some of these lines are continued into those radiating from the neighbouring papillae. Shape very varying; the primitive form seems to be oblong, lumpshaped. Shells seem to be a convenient matter of attachment. Greatest extension ca. 50 mm. Colour pale gray to grayish-yellow. Consistence soft-elastic. Dermal-membrane tough. Big subdermal-cavities. Oscula, ostia?

Skeleton-fibres irregularly netformed connected. Main fibres are running somewhat perpendicularly towards the surface, where the dermal-membrane is elevated into the above mentioned papillae; thickness of the fibres very varying; a common thickness is ca. 160 μ. Thin spongin-fibres may be almost devoid of foreign particles, elsewhere the fibres are filled up with sandgrains, spicula-pieces and such things; crossing points of bigger fibres are often sustained by one bigger particle, e. g. a shell of a *Globigerina*.

CALCAREA.

Homocoela.

Genus **Clathria** Gray.

Clathria procumbens Ldf.

1885. *Ascetta procumbens,* Lendenfeld. — A Monograph of the Australian Sponges, part III. Proc. Lin. Soc. N. S. W.. IX, 4.
1888. *Ascetta procumbens,* Lendenfeld-Catal. Spong. Austr. Mus.

Carnley Harbour, the coast. 29/XI.1914.
Port Ross, the coast. 26/XI.1914.
Perseverance Harbour, Campbell Isl., under stones at low-water. 9/XII.1914.

Known from the South and East coasts of Australia.

With this sponge I identify some specimens (biggest specimen ca. 15 mm in diameter); in external features they closely agree with this species; the spicules are apparently somewhat more pointed than stated by Lendenfeld; the rays somewhat shorter, ca. 90 μ (Ldf. ca. 0,$_{10}$ mm), shape the same.

Heterocoela.

Genus **Leucandra** H.

Leucandra conica Ldf.

1885. *Leucandra conica* Lendenfeld. — Monogr. Austr. Spong. Part III. Proc. Linn. Soc. N.S.W. IX, 4.

1888. *Leucandra conica* Lendenfeld. — Catal. Austr. Spong. Austr. Mus.

Port Ross. Ca. 10 f. Sand, algae. 25/XI.1914.

Known from the East coast of Australia.

One specimen, somewhat damaged. The small diacts are here somewhat smaller than in Lendenfeld's specimens, up to 60 μ, against Lendenfeld's 0,$_{08}$ mm. The oscular diacts are not present here on account of the fact, that the part of the sponge, carrying the osculum has been torn off.

So far as I am aware, only 7 sponge-species were hitherto known from the Auckland- and Campbell-Islands, viz. *Leucosolenia echinata* Kirk ("Contribution to the knowledge of the New Zealand Sponges"; Trans. N. Z. Inst., Vol. XXVI, p. 175) and *Stylohalina conica* Kirk ("Two Sponges from Campbell Island"; The Subantarctic Islands of New Zealand. Vol. II, 1909, p. 539—40. Pl. XXV); further *Antherochalina concentrica* Ldf., *Ceraochalina multiformis* Ldf., *Euchalinopsis oculata* Ldf., *Thorecta exemplum* Ldf., var. *tertia* Ldf., *Spongelia elastica* F. E. Schulze, var. *lobosa* O. Schm.; these 5 species being enumerated by Lendenfeld ("Note on some Sponges from the Auckland Islands". Ann. Mag. Nat. Hist. 6. Ser. XIX).

Stylohalina conica Kirk comes very near to *Hymeniacidon indistincta* mihi; but this latter species differs from the former in having more distinct spicula-tracts; in the lacking of conical elevations with osculum at the apex; in having in places small mammiform processes; in the shape of the styli which is here more abruptly tapering. I do not doubt that Kirk's genus *Stylohalina* is identical with *Hymeniacidon* Bwk., that therefore *Stylohalina conica* Kirk and *Hymeniacidon indistincta* mihi are closely allied species.

To the already known 7 species from the Auckland- and Campbell-Islands the present paper adds 40 species, 9 of which are previously known, 3 of uncertain position, and 28 new species; this great number of new species will not astonish the spongiologist, who is familiar with the fact, that the Porifera is a group, which, like f. i. the Compositae, is varying and splitting into small systematic entities in a degree perhaps not known elsewhere in the animal kingdom.

The fact, that one collector in comparatively few days has been able to find 40 species, different from the 7 previously known makes it probable that many more species will prove to occur there.

The zoogeography I prefer to deal with in a paper in preparation on sponges from New Zealand.

12—4—1923.

Andelsbogtrykkeriet i Odense.