

NOTES ON LENDENFELD'S TYPES DESCRIBED IN THE
CATALOGUE OF SPONGES IN THE AUSTRALIAN
MUSEUM.

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RECENT investigations have demonstrated that a large proportion of the descriptions contained in the "Catalogue of Sponges" are inaccurate, and also that the names attached to some of the exhibited types are calculated to mislead rather than assist the inquiring student. Under the circumstances I have been urged to undertake a revision of the species described in the above-mentioned work. The task is beset with many difficulties, somewhat thankless in its nature, and far from being agreeable. In the interest of science it is highly necessary that such a revision should be immediately instituted, in order to prevent further confusion in the nomenclature of our sponge fauna. In undertaking this revision I am fully cognisant of the difficulties presented. In order to render the work reliable, I resolved to examine all the material available, and to take nothing for granted. The course pursued is the same as that adopted in the Report on Sponges from the Coastal Beaches of New South Wales,¹ *i.e.*, to ascertain the whole of the characters of any given specimen before consulting the description, notwithstanding the fact that many of the specimens were obviously wrongly named. In almost every case at least two or more sections have been examined, the spicules measured *in situ*, and in doubtful specimens the spicules have been boiled out and carefully measured in the free condition. It is rather a peculiar coincidence that so many of the wrongly identified examples should bear such appropriate specific names. A few instances will serve to illustrate this point. Thus there are two specimens labelled *Placochalina pedunculata*, var. *mollis*, these upon examination proved to be (1) *Chalina palmata* and (2) *Clathria tenuifibra*. The first named consists of a series of flat lamellæ, which are intricately folded, and the specimen bears the manuscript name of *Placochalina reticulata*. The second form

¹ Whitelegge—Rec. Aust. Mus., iv., 2, 1901.

has been neatly perforated by a boring Isopod, and hence it is labelled *Placochalina porosa*. *Antherochalina dura* is represented by a specimen of the cake-shaped *Chalina globosa*, and appears under the manuscript name of *Suberochalina panis*. The following cases will convey to the reader some idea of the difficulties met with, and also of the confusion revealed by the examination of this collection. I may here remark that the examples are not all regarded as types, although it is possible some of them may be portions of the actual type specimen.

There are three examples bearing the name of *Antherochalina perforata*, two in the exhibited collection and one from the British Museum. The spicules in the original diagnosis are given as "oxea 0·09 mm. long and 0·003 mm. thick." A specimen from Port Phillip (No. 292) agrees with the figure and description in every point except one, and that is that the spicules are *styli* 0·09 to 0·11 mm. long and 0·003 to 0·004 mm. thick.

The British Museum specimen from Broughton Islands, New South Wales,—which is the original habitat given for the type,—is too fragmentary to afford any characters except those pertaining to a section. The spicules present are—(a) stout styli, 0·1 to 0·15 0·01 mm.; (b) slender tylostyli, over 0·2 mm. long and 0·003 by mm. in diameter; (c?) I have also observed spicules which may be echinating styli, about 0·06 mm. long. No. 315, the third specimen, is identical with the following species.

There are also three examples bearing the name of *Antherochalina frondosa*; two of these agree with the figure and the description. The spicules are described as "curved styli, 0·3 mm. long, and 0·016 mm. thick." In our specimen, and also in that from the British Museum, there are at least three other forms of spicules present—(a) curved strongyla, (b) slender oxea and styli, and (c) minutely spined echinating styli, with blunt spinose apices. The third example (No. 329) is identical with *Reniera dendyi*.

With regard to the above, I feel convinced that the Port Phillip specimen of *A. perforata* is correct, and by adding the word styli in place of oxea, the description and the specimen would be brought into full accord. But there remains the specimen from Broughton Islands, which is probably a species of the genus *Clathria*.

The case of *A. frondosa* is not so simple, inasmuch as the description requires three kinds of spicules adding, one of which indicates that the species belongs to the Ectyoninae, and not to the Chalininae. The Museum specimen resembles the figured type so closely that it requires close inspection to be sure that it is not the example figured. The sponge is described as being "longitudinally folded lamella;" it is possible that our example

is half of the original specimen, since it bears evidence of having been longitudinally bisected. The habitat is stated to be Eastern Australia, from the data in the register. Western Australia is probably the habitat of this species.

If any justification were needed for the views expressed in the present or preceding papers, the examination of the species included in this contribution fully vindicates the writer's position, and proves the urgent necessity for a complete revision of the Lendenfeldian species, not only the species described as new in the "Catalogue of Sponges," but also those described in the *Zoologische Jahrbücher* in 1887.

This chaotic condition of a collection of types is very unsatisfactory, and in many cases there is no hope of reducing the species to order without the aid of additional specimens. It is a pregnant fact that Prof. Arthur Dendy's donation contains authentic representatives of types described in the "Catalogue of Sponges," but not found in the Museum collection, the names of which cover some other sponge. Prof. Dendy's presentation consists of specimens received from the British Museum, and it is therefore possible that the types of others wrongly represented in the collection may also be there. The material examined and described in the following pages includes the species enumerated in the Catalogue of Sponges, from pages 78 to 91.

The following list contains thirty-two species and varieties represented by fifty-two specimens, twenty-two of which are from the British Museum collection; out of the fifty-two specimens, fourteen agree with the descriptions, fifteen are wrongly named, and the remainder are at variance with the diagnosis, either in the dimensions or the kind of spicule present. In some cases the discrepancies are great, in others small, but in any instance the inaccuracy is sufficient to lead the investigator astray, and thus prevent a satisfactory identification of the species by means of the description. Many of the forms included in the list remain unaffected as species. For instance, *Antherochalina perforata* is represented by three examples, two of which bear labels in the author's handwriting; the third is from the British Museum, and was probably named by the author of the species. Only one out of the three agrees with the figure, and this example possesses stylote spicules, whereas the type is said to have oxea. There still remains a doubt as to what particular sponge was described under the above name. Considering the confusion at present existing in the nomenclature of Australian sponges, I decided to avoid altering any names except those affecting the generic position of the species; in these cases their proper place is indicated in the text. The manuscript and specimen numbers of all the examples in the Lendenfeldian collection are given under each species.

LIST OF SPECIES DEALT WITH, SHOWING RESULTS OBTAINED.

A, Australian Museum specimen; B, British Museum specimen.

Species marked with an asterisk (*) agree with the description; those marked with a dagger (†) are wrongly named.

	SPECIES.	SPICULES AS DESCRIBED.	SPICULES ACTUALLY PRESENT.
	SUB-FAMILY RENIERINÆ.		
A	<i>Reniera collectrix</i>	oxea and styli	oxea
B	"	oxea and styli	oxea
*	" <i>australis</i>	oxea	oxea
*	"	oxea	oxea
†	" <i>megarrhapha</i>	oxea	oxea and styli
	"	oxea	oxea
	" <i>pandora</i> (<i>Rhaphisia</i>)	styli	oxea and rhaphides
A	" <i>lobosa</i> (not represented)	oxystromyula	oxystromyula, strongyula and oxea
B	"	oxystromyula	ditto
A	" <i>Halichondria rubra</i> (<i>Rhaphisia</i>)	oxystromyula	oxea and rhaphides
B	"	oxystromyula 0·25 mm. long	oxystromyula 0·1 mm. long
A	" var. <i>tenella</i>	oxystromyula 0·33 mm. long	foreign spicules
B	" <i>mammillata</i>	oxystromyula 0·25 mm. long	oxystromyula 0·09 to 0·11 mm. long
†	"	oxystromyula 0·33 mm. long	oxea and rhaphides
†	" <i>clathriformis</i>	oxea	oxea and styli
A	"	oxea	oxea and styli
B	" <i>Reniochalina stalagmites</i>	oxea and styli	oxea and styli
B	"	oxea	oxea and styli
A	" <i>lamella</i>	oxea	oxea and styli
	The above form is identical with <i>Reniochalina stalagmites</i> .		
	SUB-FAMILY CHALININÆ.		
*	<i>Chalina globosa</i>	oxea	oxea
*	"	oxea	oxea
*	" <i>subarmigera</i>	oxea	oxea

LIST OF SPECIES DEALT WITH, SHOWING RESULTS OBTAINED—Continued.

A, Australian Museum specimen; B, British Museum specimen.

Species marked with an asterisk (*) agree with the description; those marked with a dagger (†) are wrongly named.

	SPECIES.	SPICULES AS DESCRIBED.	SPICULES ACTUALLY PRESENT.
	<i>Chalinopora tenella</i>	oxea 0.14 mm. long and 0.004 mm. thick	oxea 0.1 mm. long and 0.002 mm. thick
A	" <i>lamella</i>	oxea 0.11 mm. long and 0.004 mm. thick	oxea 0.8 - 0.9 - 0.002 - 0.004 mm.
B	" .....	.....	oxea 0.7 - 0.8 by 0.002 mm.
A	" <i>siphonopsis</i>	styl: 0.14 mm. long by 0.003 mm. thick	oxea 0.08 by 0.0055 mm.
B	" .....	.....	oxea 0.09 - 0.1 by 0.0015 to 0.002 mm.
A	<i>Cladochalina euphras</i>	oxea 0.07 - 0.002 mm.	oxea 0.07 - 0.002 mm.
B	" .....	.....	.....
A	" <i>mollis</i>	oxea 0.077 - 0.0017 mm.	oxea, strongylia, styli, and foreign spicules.
B	" .....	.....	oxea 0.07 - 0.004 mm.
A	<i>Chalinella tenella</i> .....	.....	.....
	The above is a Horny Sponge.		
B	<i>Chalinella tenella</i>	oxea 0.33 mm. long	oxea 0.07 mm. long
B	<i>Chalinissa elongata</i>	oxea.....	oxea
A	" <i>elegans</i>	oxea.....	oxea
B	"	oxea.....	oxea
B	" <i>communis</i>	oxea.....	oxea
B	" var. <i>flabellum</i>	oxea.....	oxea 0.05 - 0.06 by 0.004 - 0.005 mm.
A	<i>Pachychalina manus</i>	oxea 0.059 - 0.005 mm.	oxea 0.07 by 0.004 and also 0.08 by 0.005 mm.
B	" .....	.....	.....
A	" .....	.....	.....
	The above appears to be similar to <i>Euchalina erygia</i> .		
A	<i>Ceraochalina multiformis</i> , var. <i>dura</i> .....	.....	.....
	This is a specimen of <i>Thalassodendron utinialis</i> .		
B	<i>Ceraochalina multiformis</i> , var. <i>dura</i>	oxea.....	oxea

LIST OF SPECIES DEALT WITH, SHOWING RESULTS OBTAINED—Continued.

A, Australian Museum specimen; B, British Museum specimen.

Species marked with an asterisk (*) agree with the description; those marked with a dagger (†) are wrongly named.

	SPECIES.	SPICULES AS DESCRIBED.	SPICULES ACTUALLY PRESENT.
+	A <i>Antherochalina perforata</i> .....	.....	.....
	The above is identical with <i>Antherochalina frondosa</i>		
+	A <i>Antherochalina perforata</i>	oxea 0.09 - 0.003 mm.	styli 0.09 - 0.011 by 0.003 - 0.004 mm. styli, tylostyli, and probably echinat- ing styli
	B " .....	.....	.....
	A " <i>frondosa</i>	styli.....	styli, strongyla, oxea, and echinating spined styli
	B " .....	.....	ditto
+	A " .....	.....	.....
	The above example is identical with <i>Keniera dendyi</i>		
+	A <i>Antherochalina dura</i>.....	.....	.....
	This example is identical with <i>Chalina globosa</i> .		
+	A <i>Placochalina pedunculata</i> , var. <i>dura</i>.....	.....	.....
	This example is <i>Pachychalina punctata</i> .		
	<i>Placochalina pedunculata</i> , var. <i>poecula</i> Not represented in the collection.	.....	.....
	<i>Placochalina pedunculata</i> , var. <i>mollis</i> .....	.....	.....
A	.....	.....	.....
A	.....	.....	.....
	There are two examples under this name— (1) <i>Chalina palmata</i> . (2) <i>Clathria tenuifibra</i> .		

FAMILY HOMORRHAPHIDÆ

SUB-FAMILY RENIERINÆ.

RENIERA COLLECTRIX, *Lendenfeld.*

The type (No. 477) has been compared with a fragment from the British Museum; it is massive, with an irregular upper surface and has several points of attachment at the base. The length is 160 mm., the breadth 100 mm., and the height is about 60 mm. The texture is hard and tough. The colour externally is a dirty white, and the cut surface is marked by a series of irregular lines of a dark brown or black in shade, which indicate the course of the foreign bodies. The latter consist of fragments of various species of *Crisea*, together with a few sand grains and bits of zoophytes. The stems of *Crisea* are very abundant throughout the sponge, and perfect specimens are attached to the outer surface. In longitudinal section it exhibits large areas of sarcode, with scattered foreign bodies, often wide apart. In the clear spaces a few proper oxeote spicules are scattered here and there, but rarely exhibit "strings of single spicules, which are attached to each other by their ends;" in some parts near the surface they occur in irregular tracks about 0·7 wide, and are disposed at all angles to each other. The spicules are described as "oxea and styli, the former more numerous than the latter;" but the various sections failed to yield any styli that I could regard as proper to the sponge. The dermis, besides containing abundant oxea similar to those in the ground substance, exhibits scattered sphaerasters, triradiates, tylota, and styli, the latter of very variable dimensions and probably of foreign origin.

A fragment of the sponge was boiled in nitric acid; the residue when examined did not reveal any styli that might be safely regarded as belonging to it. The spicules are oxea 0·1 to 0·13 mm. long, and 0·005 mm. in thickness.

RENIERA AUSTRALIS, *Lendenfeld.*

Reniera australis, Whitelegge, Mem. Aust. Mus., iii., 2, p. 324.

Spicules, oxea 0·12 by 0·004 mm.

RENIERA MEGARRHAPHEA, *Lendenfeld.*

The type of this species (No. 385) now measures 60 mm. in height, 40 mm. in breadth, and 25 mm. in thickness; originally it was probably much larger; in its present condition it exhibits three cut surfaces. The texture internally is firm, open, and breadlike. The dermis (to the unaided eye) is smooth, porous, and finely reticulated, but rather harsh to the touch.

The primary fibres are 0·2 mm. in diameter, and about the same or less apart. The secondaries vary greatly; when in the form of distinct fibres they are usually about 0·05 in diameter.

The mesh is oval or elongate, and is from 0·2 to 0·3 mm. wide. The main fibres consist of very dense bundles of oxeote spicules, with a few large, and numerous small, styli; the latter are generally disposed at right angles to the fibres, and project beyond their limits; they are especially abundant in the dermal skeleton, and form rather dense, radiating tufts at the surface. There is little or no obvious spongin investing the fibres.

The spicules are as follows :—

(a) Curved or straight oxea, tapering from the middle to acute points; size 0·35 to 0·8 by 0·006 to 0·025. A few styli, equal to the larger oxea, are present.

(b) Small straight styli, with a well-rounded base and acute apex; size 0·2 to 0·25 mm. by 0·006 to 0·007 mm. The latter might probably be the "straight-pointed oxea?" about 0·02 mm. long and 0·008 mm. thick" of the original description, but there is a wide difference between 0·2 mm. and 0·02 mm. in length.

The British Museum fragment from New Zealand is a mere scrap, barely sufficient to afford a section; the spicules are oxea 0·2 mm. by 0·01 mm., which is much larger than the original dimensions given of the smaller kind. The spicules are uniform in size; there are no "smaller ones, densely packed, and scattered more or less irregularly between the fibres, and also participating in their formation."

RENIERA PANDÆA, *Lendenfeld, sp.*

The type (No. 302) has been so cut up that its width or height cannot be estimated, the thickness varies from 20 to 30 mm. It agrees with the brief description of the outward form. The dermal membrane is very minutely porous, but it requires a lens to see the indistinct, surface reticulation.

The primary fibres are 0·1 mm. in diameter, and are separated by spaces 0·2 to 0·5 mm. wide. In some parts they are quite distinct, in others consisting of diffused longitudinal bands of spicules, which occasionally present two or three lines of concentration, and they are here and there connected by rarely distinct secondary fibres. The mesh is extremely irregular and generally obscured by deposits of numerous scattered spicules.

The spicules consist of straight or but little curved oxea; they are mostly cylindrical to within one or two diameters of the extremities, and from thence suddenly taper to acute points; size 0·18 to 0·2 mm. by 0·006 to 0·008 mm. Numerous raphides 0·12 mm. in length and 0·0015 mm. in thickness, occur throughout the sponge, either scattered or in bundles. I failed to find any "styli" either *in situ* or by boiling a portion of the sponge.

The above spicular characters are those of a *Rhaphisia*, to which genus I propose to remove the species.

RENIERA LOBOSA, *Lendenfeld.*

Not represented in the collection.

PETROSIA HEBES, *Lendenfeld.*

This species agrees with the diagnosis, but the latter is deficient as regards the spicules present. Besides the "stout and large oxystrongylote spicules with blunt ends, which measure 0.22 mm. in length and 0.013 mm. in thickness," there are numerous boomerang-shaped strongyla 0.06 to 0.09 mm. in length, and 0.008 mm. in diameter; also abundant slender oxea 0.15 to 0.22 mm. in length, and 0.0045 to 0.006 mm. in thickness.

HALICHONDRIA RUBRA, *Lendenfeld.*

This species has already been referred to the genus *Rhaphisia*.²

HALICHONDRIA MAMMILLATA, *Lendenfeld.*

The type (No. 338), a spirit specimen, agrees with the description in every character, except the dimensions of the spicules. The latter are described as "mostly straight, exceptionally, also slightly, curved, sharp-pointed oxystrongyla, 0.25 mm. long and 0.006 mm. thick." The spicules observed *in situ* in the type, and also others obtained by boiling, measure about 0.1 mm. in length and 0.004 mm. in diameter. The British Museum example received under this name has the fibres densely charged with foreign spicule fragments.

HALICHONDRIA CLATHRIFORMIS, *Lendenfeld.*

The type (No. 409) measures 130 mm. in height, and 60 mm. in width. The specimen consists of two compressed branches, joined at the base and also at the summit by short processes. The branches are 20 mm. in their broad and 15 mm. in their narrow diameter. The dermal membrane is smooth, and exhibits a series of circumscribed areas, which are reticulated and porous; these are separated by narrow well defined non-porous spaces. The oscula are few and scattered, and measure from 5 to 7 mm. in diameter; each has an elevated margin, and a well-marked cribriform structure within the aperture. Internally the sponge presents an open cellular appearance, not unlike that of a fine-meshed species of *Euspongia*. The texture is soft, tough, and elastic; the colour yellowish stone. The skeleton consists of a series of well-defined horny fibres, about 0.1 mm. in diameter; these are connected by numerous secondaries, which rarely exceed 0.5 to 0.7 mm. in diameter; both are charged with very numerous spicules. Each spicule appears to have its own coating of spongin, and I found it most difficult to reduce the fibres by boiling in

² Whitelegge—Rec. Aust. Mus., iv., 2, 1901.

nitric acid, two or three attempts resulting in a mass of short bits of fibres with the spicules still imbedded. The spicules agree with the description as regards form, *i.e.*, "oxystrongyla slightly curved in the middle, and very slightly tapering towards the ends; the ends are somewhat rounded, and from them a very narrow and sharp spine projects, which lies axially and renders the spicule sharp-pointed; the spicules are 0.33 mm. long and 0.011 mm. thick in the centre; the terminal spine is 0.006 mm. long." I failed to find any spicules of the above dimensions in the type, either *in situ* or by boiling. This result cast a doubt on my standard of measurement, and I at once made fresh tests with the micrometres, and also with the spicules of a well-defined sponge, *Siphonochalina annulata*, Ridley and Dendy.³ In this species the spicules are given as measuring 0.1 mm. by 0.0065 mm. The length of the spicules is very constant, and might be used as a standard of 0.1 mm. The spicules of *H. clathriformis*, as measured *in situ*, and after boiling, are as follows:—0.09 to 0.11 mm. in length, and 0.002 to 0.0025 mm. in diameter; the most pronounced contracted points rarely exceed 0.004; frequently they do not attain to 0.002, and sometimes they are absent.

This species appears to be nearer to the Chalininæ than the Renierinæ.

The British Museum specimen appears to be a species of *Rhaphisia*, with oxea and raphides; the former are about 0.4 by 0.015 mm., and the latter 0.25 mm. in length.

RENIOCHALINA STALAGMITES, *Lendenfeld*.

In habit and surface this form closely resembles *Echinodictyum rugosum*, Ridley and Dendy.⁴ The spicules consist chiefly of oxea of various sizes, straight or curved, and somewhat swollen at the basal third, tapering to a rather abruptly pointed base, and also to the often acutely pointed apex; the extremities of the oxeote forms are frequently denticulated, or provided with a small cap tipped with minute spines. Megascleres (*a*) oxea, size 0.2 to 0.37 mm. by 0.004 to 0.01 mm.; (*b*) styli 0.15 to 0.2 mm. by 0.01 mm. A few slender oxea and styli are also present, which measure about 1 mm. in length, and 0.008 mm. in diameter.

RENIOCHALINA LAMELLA, *Lendenfeld*.

The spicular characters are identical with the above, the surface of the specimen also agrees, but the habit is slightly different. The locality given in the "Catalogue of Sponges," and also on the label, is evidently wrong. The specimen bears a registered number; the habitat given in the register is Western Australia, and the example was purchased from the late Mr. J. F. Bailey, of Melbourne.

³ Ridley and Dendy—Chall. Rep., Zool., xx., pl. vii., fig. 2, p. 21.

⁴ Ridley and Dendy—Chall. Rep., Zool., xx., pl. xxxii., fig. 1.

SUB-FAMILY CHALININÆ.

PACHYCHALINA TENELLA, *Lendenfeld*.

Pachychalina tenella, Dendy, Proc. Roy. Soc. Vict., new ser., vii., 1895, p. 242.

Chalinopora tenella, Lendenfeld, Zool. Jahrbücher, ii., 1887, p. 765.

The specimen bearing the above name (No. 249) consists of a series of main and secondary branches, which arise from a small but incomplete basal plate; the example is 250 mm. in height and 200 mm. in width. The branching is dichotomous, and the ends are usually swollen; they measure 10 mm. in their shorter, and from 15 to 25 mm. in their longer diameter. The oscula are confined to the summits and inferior surfaces of the branches; they vary from 3 to 5 mm. in diameter. The dermis is very finely reticulated and minutely porous. The internal skeleton consists of a loose open network. In texture the sponge is soft, easily compressible, and elastic; colour, in the dried condition, dull yellowish gray. The main fibres are 0·07 mm. in diameter, and 0·3 to 0·05 mm. apart; the stouter secondaries are 0·03 to 0·04 mm. in diameter, and 0·03 to 0·04 mm. apart. The spicules in the main and secondaries fibres are numerous, closely packed, and occupy nearly the whole of the fibre. In the more slender connecting fibres the spicules vary from 1 to 6 in a row.

Megasccleres—Oxea, size 0·09 to 0·1 mm. by 0·0015 to 0·0025 mm.

PACHYCHALINA MANUS, *Lendenfeld*.

The named example (No. 282) consists of a series of primary and secondary branches, which usually attain to the same level. Apically they are somewhat dilated, and frequently anastomose. The oscula are about 1 mm. or less in diameter; they are scattered over the branches generally; at and near the summit they are situated in the centre of dimple-like depressions, which gives the upper aspect a peculiar appearance characteristic of the species. The example measures 110 mm. in height, 70 mm. in width, and 30 mm. in thickness; the individual branches vary from 4 to 10 mm. in diameter.

The spicules are oxea 0·05 to 0·06 mm. in length, and 0·004 to 0·005 mm. in diameter.

No. 438 in the collection does not agree with the description.

The British Museum specimen exhibits numerous oxea in the fibres, and also in the ground substance; those in the latter measure 0·07 by 0·004 mm., and in the former 0·08 by 0·005 mm.

CHALINA GLOBOSA, *Lendenfeld*.

This species has been described in the report⁵ previously referred to.

⁵ Whitelegge—Rec. Aust. Mus., iv., 2, 1901.

The British Museum specimen is evidently a bit from the exhibited example. A well-preserved spirit example from Jervis Bay exhibits numerous oxeote spicules in the ground substance.

CHALINA SUBARMIGERA, *Ridley*.

Chalinopora intermedia, Lendenfeld.

The only available specimen is from the British Museum, received under Lendenfeld's name, and it agrees with the description. The spicules are oxea and measure 0·08 by 0·0025 mm.

CHALINOPORA LAMELLA, *Lendenfeld*.

No. 373. Sponge pedunculate, 140 mm. high, with a hand-shaped lamina 70 mm. long, 65 mm. wide, and 5 mm. in thickness. The upper margin exhibits four or five digitations. The oscula occur on the margin, and also on the convex surface, extending on to the upper part of the peduncle; they are about 1 to 3 mm. in diameter and 5 mm. or more apart. The dermal membrane exhibits numerous circumscribed pore areas, which are separated by non-porous spaces. Texture in spirit close, soft, moderately tough and elastic; colour yellowish gray. The main fibres in the central region form trellised bundles, with oval or rounded mesh; they are 0·15 mm. in diameter and 0·5 mm. or less apart. The ground substance is charged with numerous spicules.

Megascleres—(a) oxea of the ground substance, size 0·08 by 0·004 mm.; (b) oxea of the fibres, 0·09 by 0·0025 mm.

The spicules in the fibres of the British Museum fragment agree with the above measurements.

CHALINOPORA SIPHONOPSIS, *Lendenfeld*.

The exhibited specimen (No. 342) does not agree with the description. The spicules are oxea 0·08 by 0·0055 mm. The British Museum fragment received under the above name appears to be identical with *Chalinopora tenella*, Lendenfeld, and possesses oxea 0·09 to 0·1 mm. by 0·0015 to 0·002 mm. Neither specimen exhibits any trace of "styli."

CLADOCHALINA EUPLAX, *Lendenfeld*.

No. 422. This form has already been dealt with in the "Report on Sponges from the Coastal Beaches of New South Wales,"⁶ under *Chalina palmata*, Lamarck.

No. 373. *Chalinopora lamella*, Lendenfeld, is identical with *C. euplax*, Lendenfeld.

CHALINELLA TENELLA, *Lendenfeld*.

The example exhibited under this name (No. 421) is a horny sponge, with a highly conulose surface. The specimen from the

⁶ Whitelegge—Rec. Aust. Mus., iv., 2, 1901, p. 73.

British Museum presents a series of very fine fibres, with distant uniserial hair-like oxeote spicules, varying from 0.17 to 0.2 mm. in length, which does not agree with the measurement given, *i.e.*, "0.033 mm. long and 0.0009 thick."

CHALINISSA ELONGATA, *Lendenfeld.*

This species is not represented in the collection except by the fragment from the British Museum, which agrees with the description.

CHALINISSA ELEGANS, *Lendenfeld.*

No. 219. The exhibited specimen in the collection, and the British Museum specimen, agree with the diagnosis.

CHALINISSA COMMUNIS, *Lendenfeld.*

This specimen is also in accord with the description.

CLADOCHALINA MOLLIS, *Lendenfeld.*

The exhibited specimen (No. 407), is flabellate and somewhat lobate, with low elevations, each of which bears an osculum from 4 to 10 mm. in diameter; a number of smaller oscula are distributed over the surface of the lamella; they exhibit thin elevated margins and a cribrate surface interiorly. The dermal membrane is finely reticulated, and displays a series of porous areas separated by narrow non-porous spaces.

Texture in spirit soft, with very open mesh, elastic and rather tough. Colour brownish-grey. Height of specimen, 100 mm.; width, 140 mm.; thickness of lamella, 5 to 15 mm.

A longitudinal section of the lamina exhibits a series of densely spiculous main fibres 0.2 mm. in diameter, and about 0.5 mm. apart; these are connected by transversely arranged fibres, which are exactly like the primaries; the points of union are greatly dilated, and charged with numerous spicules, which are disposed in a regular fashion, and follow the trend of the fibres. The mesh in the central region is rounded or oblong; as the surface is approached the fibres rapidly diminish in diameter, and the mesh becomes square or angular; the dermis consists of a fine, meshed, unispicular network, the size of the mesh being in keeping with the length of the spicules.

The spicules in the fibres are straight oxea 0.1 by about 0.0025 mm. The ground substance exhibits numerous styli, oxea, and a few strongyla; these are about 0.08 mm. long and 0.004 mm. in diameter. Other spicules were observed in the sections examined and also in the mass of spicules obtained by boiling a piece of the sponge. These were elongated styli and small anisochælae. I am not in a position to say whether the latter are proper to the sponge, or are of foreign origin. The British Museum example appears to be quite distinct from the above, and to possess oxeote spicules 0.06 to 0.08 mm. in length by 0.0025 mm. in diameter,

which is rather different from the measurements in the original description, *i.e.*, 0·077 by 0 0017 mm.

CERAOCALINA MULTIFORMIS, var. DURA, *Lendenfeld.*

As previously stated the exhibited specimen bearing this name is *Thalassodendron viminalis*, Lendenfeld.

The specimen from the British Museum agrees with the description.

ANTHEROCALINA DURA, *Lendenfeld.*

This species is misrepresented in the collection by a specimen (No. 355) of *Chalina globosa*, Lendenfeld. There is no example in Professor Dendy's donation.

PLACHOCALINA PEDUNCULATA, var. DURA, *Lendenfeld.*

The example covered by the above name is probably *Pachychalina punctata*, Ridley and Dendy, as stated in my report.⁷ There are many examples of *Pachychalina bilamellata*, Carter, in the collection, but there is no specimen named by Lendenfeld.

PLACHOCALINA PEDUNCULATA, var. POCULA, *Lendenfeld.*

I failed to find this variety in the collection.

PLACHOCALINA PEDUNCULATA, var. MOLLIS, *Lendenfeld.*

Two examples are exhibited under the above name, one (No. 335) is a young specimen of *Chalina palmata*, Lamareck, and the other (No. 352) is *Clathria tenuifibra*, Whitelegge. The latter example has been neatly perforated by a boring Isopod, and bears the manuscript name of *Plachochalina porosa*, Lendenfeld.

ANTHEROCALINA PERFORATA, *Lendenfeld.*

This species is represented by two examples bearing the above name, and a third specimen is included in Professor Dendy's donation from the British Museum. No. 315 is certainly a specimen of *A. frondosa*. The British Museum fragment is quite distinct from *A. perforata*. The spicules of the fibres consist of (a) stoutish styli, 0·1 to 0·15 mm. long and 0·01 mm. thick; (b) abundant slender tylostyli of the ground substance, over 0·2 mm. long and 0·003 to 0·004 mm. in diameter. I have also observed what may be echinating styli, with smooth shaft and blunt apex, about 0·06 mm. long, but the material is too scanty to satisfactorily determine this point. The above is probably referable to the genus *Clathria*.

No. 292, from Port Phillip, accords with the figure and description in every character except one, *i.e.*, the spicules are styli 0·09 to 0·11 mm. long, and 0·003 to 0·004 mm. in diameter, and not *oxea* 0·09 mm. long and 0·003 mm. thick, as stated in the description.

⁷ Whitelegge—Rec. Aust. Mus., iv., 2, 1901, p. 70.

FAMILY DESMACIDONIDÆ.

SUB-FAMILY ECTYONINÆ.

CLATHRIA FRONDOSA, *Lendenfeld*.*Antherochalina frondosa*, Lendenfeld.

The exhibited specimen of this species (No. 321) agrees with the figure, and also with the description, and is identical with the example from the British Museum. The description of this species is very deficient, as regards the spicules, and the locality is wrong. According to the register this specimen was purchased from the late J. F. Bailey, of Melbourne, and is probably from Western Australia. A longitudinal section of the sponge exhibits a series of main fibres about 0·1 to 0·15 mm. thick; these give off on either side a number of secondaries, which are gracefully curved outwards, and end at the surface. The main and secondaries are joined by numerous slender connecting fibres; these are equal in length to the larger spicules, and have from one to four spicules in a row. All the fibres are echinated by minutely-spined styli, with blunt and often spiny apices. The fibres consist of stout curved styli, stout strongyla, and numerous slender oxea and styli are scattered in the ground substance. The horny matter investing the fibres is not very marked, except in the stout primaries.

Megascleres—(a) Stout curved styli 0·3 mm. long and 0·02 mm. thick; (b) curved strongyla 0·25 mm. by 0·02 mm.; (c) slender styli and oxea, 0·25 mm. long and 0·008 mm. in diameter; (d) minutely spined echinating styli, with blunt spinose apices, and often somewhat swollen at the base, 0·06 to 0·09 in length, and 0·008 in diameter.

No. 329 appears in the collection as *Antherochalina frondosa*, Lendenfeld, with the manuscript name of *A. levis*. This form is identical with *Reniera dendyi*, Whitelegge.
