of trunk-appendages become the first and second pairs of antennæ, really seem to him to be "precisely the same thing" as the upward movement of the first trunk-appendages, converted into the second pair of antennæ, such as is rendered probable by the origin of the nerves upon the subœsophageal ganglion and their change of position in the higher Crustacea? And it is upon such a fantastic argument as this that Ray Lankester ventures to bring against me the calumnious charge:—"Prof. Claus further has given expression to the remarkable conception that he is justified in ignoring the work of other zoologists, and treating their results as his own, provided that he does so not more than three years after they have published those results;" and in connexion therewith he feels himself justified in adopting a magisterial tone, and finally in posing as a moralizing judge,—Ray Lankester, who himself in so many controversies has had to submit to be set right, and has just furnished so fine an example of his proficiency in the noble art of sophistical falsification!

It only remains for me, with reference to my previous article (July 1886, p. 55), to point out that Ray Lankester has not given the revocation called for in its concluding passage, and therefore has himself pronounced judgment—a judgment which is strengthened and confirmed by the method adopted in his "Rejoinder."

XLIV.—*Preliminary Report on the Monaxonida collected by H.M.S. 'Challenger.'* By STUART O. RIDLEY, M.A., F.L.S., of the British Museum, and ARTHUR DENDY, B.Sc., Associate of the Owens College, Manchester.

[Concluded from p. 351.]

PART II.

Family 3. Desmacidonidæ (*continued*).

Subfamily ii. ECTYONINÆ.

Fibre normally echinated by laterally projecting spicules.

Genus MYXILLA (Schmidt).

Skeleton-spicules:—(1) main, acuminate, usually spined;

(2) dermal, cylindrical. Flesh-spicules tridentate equianchorates and sometimes bihamates. Skeleton usually reticulate*.

Myxilla digitata, n. sp.

Digitate. Greyish yellow. Soft and spongy. Oscula small, scattered. Fibre very indefinite. Spicules:—(1) entirely spined acuates, size $\cdot 4$ by $\cdot 014$ millim.; (2) bicapitate cylindricals, with well-marked heads, size $\cdot 24$ by $\cdot 006$ millim.; (3) tridentate equianchorates, with strongly curved shaft, length $\cdot 044$ millim.

Locality. Station 142, south of Cape of Good Hope, 150 fath.

Myxilla paucispinata, n. sp.

Massive, amorphous. Pale yellow. Rather soft, fragile. Spicules:—(1) acuates, large, stout, usually curved, rather blunt, sometimes slightly spined, size $\cdot 7$ by $\cdot 03$ millim.; (2) smooth bicapitate cylindricals, with small oval heads, size $\cdot 4$ by $\cdot 008$ millim.; (3) tridentate equianchorates, with stout, strongly-curved shafts, length $\cdot 03$ millim.; (4) slender bihamates, simple and contort, up to $\cdot 056$ millim. long.

Locality. Station 192, south of New Guinea, 129 fath.

Myxilla mollis, n. sp.

Massive, amorphous. Creamy yellow. Very soft and spongy. Spicules:—(1) smooth acuates or spinulates, sharp-pointed, size $\cdot 42$ by $\cdot 01$ millim.; (2) smooth bicapitate cylindricals, with distinct oval heads, size $\cdot 22$ by $\cdot 006$ millim.; (3) tridentate equianchorates, shaft slightly curved, often laterally expanded at each end, length $\cdot 04$ millim.; (4) simple and contort bihamates, length up to $\cdot 063$ millim.

Locality. Off south-west coast of Patagonia.

Myxilla spongiosa, n. sp.

Massive, incrusting, extremely soft and spongy. Skeleton confused. Spicules:—(1) smooth, stout acuates, gradually sharp-pointed, size $\cdot 7$ by $\cdot 02$ millim.; (2) bicapitate cylindricals, with well-developed oval heads, usually microspined at end, size $\cdot 4$ by $\cdot 01$ millim.; (3) tridentate equianchorates, with shaft laterally expanded towards each end, length $\cdot 05$

* As described by Bowerbank for *Halichondria*. The fibre in this genus is not echinated by laterally-projecting spicules, except where so stated; the genus is therefore in a transitional state.

millim. ; (4) bihamates, usually much contort, size $\cdot 063$ by $\cdot 0045$ millim.

Locality. Station 320, off the Rio de la Plata, 600 fath.

Myxilla hastata, n. sp.

Lamellar, about $\frac{1}{4}$ inch thick. Soft and spongy. Skeleton confused. Spicules:—(1) stout, gradually sharp-pointed, smooth acuates, size $\cdot 77$ by $\cdot 04$ millim. ; (2) smooth hastately-pointed cylindricals, size $\cdot 35$ by $\cdot 01$ millim. ; (3) tridentate equianchorate, with stout and strongly curved shaft, length up to $\cdot 04$ millim. (more commonly $\cdot 025$) ; (4) bihamates, often much contort, size $\cdot 07$ by $\cdot 004$ millim.

Locality. Station 320, off the Rio de la Plata, 600 fath.

Myxilla cribrigera, n. sp.

Digitate. Dark yellowish grey. Soft and spongy. Minutely hispid. Oscula small, scattered. Pores in definite rounded areas, diameter of areas $1\cdot 0$ millim., of pores $\cdot 1$ millim. Skeleton confused. Spicules:—(1) stout, smooth acuates, size $\cdot 65$ by $\cdot 025$ millim. ; (2) bicapitate cylindricals, with oval heads, sometimes minutely spined at the end, size $\cdot 3$ by $\cdot 008$ millim. ; (3) large tridentate equianchorates, with slightly curved shaft, laterally expanded towards each end, length $\cdot 08$ millim.

Locality. Station 306 A, off south-west coast of Patagonia, 345 fath.

Myxilla fusca, n. sp.

Massive, amorphous. Rather dark brown. Texture fairly firm and elastic. Sometimes minutely hispid. Spicules:—(1) entirely spined acuates, sharp-pointed, size $\cdot 52$ by $\cdot 034$ millim.* ; (2) bicapitate cylindricals, head faintly developed, smooth, size $\cdot 42$ by $\cdot 01$ millim. ; (3) tridentate equianchorates, with strongly curved shaft, teeth rather widely divergent, length $\cdot 047$ millim. ; (4) very slender bihamates, usually much contort, length $\cdot 05$ millim.

Locality. Station 150, Southern Ocean, 150 fath.

Myxilla mariana, n. sp.

Massive. Pale yellowish grey. Fairly compact, but soft. Main skeleton an ill-defined reticulation of spined acuates,

* No distinctly echinating spicules seen, but sometimes entirely spined acuates, much smaller than those described, occur.

sparsely echinated by spined acuates. Spicules:—(1) entirely spined acuates, slightly curved, gradually sharp-pointed, size $\cdot 42$ by $\cdot 016$ millim.; (2) as (1), but much smaller, and usually straight, size $\cdot 16$ by $\cdot 012$ millim. (echinating); (3) smooth bicapitate cylindricals, with small oval heads, size $\cdot 3$ by $\cdot 0094$ millim.; (4) tridentate equianchorates, with only slightly curved shaft, length up to $\cdot 04$ millim.; (5) bihamates, length up to $\cdot 057$ millim.

Localities. Off Marion Island, 50–75 fath.; off south-west coast of Patagonia (var. *massa*).

Myxilla compressa, n. sp.

Massive (?), flattened. Yellowish grey. Soft and spongy. Pores in groups. Main skeleton reticulate, with triangular meshes one spicule wide. Spicules:—(1) entirely spined, sharp-pointed acuates, size $\cdot 28$ by $\cdot 0155$ millim.; (2) as (1), but smaller, size $\cdot 12$ by $\cdot 008$ millim., echinating the fibre; (3) smooth cylindricals, somewhat hastately pointed, or with small oval heads, pointed at the ends, size $\cdot 22$ by $\cdot 0063$ millim.; (4) tridentate equianchorates, shaft very strongly curved, length $\cdot 044$ millim.; (5) bihamates, length $\cdot 02$ millim. (very rarely up to $\cdot 063$ millim.).

Locality. Station 320, off the Rio de la Plata, 600 fath.

Myxilla nobilis, n. sp.

Massive or lobate, may be incrusting. Greyish yellow. Soft, spongy, rather cavernous. Pores in groups. Spicules:—(1) acuates, entirely smooth or very slightly spined at base, slightly curved, gradually sharp-pointed, size $\cdot 52$ by $\cdot 03$ millim.; (2) much smaller, entirely spined, straight acuates or spinulates, size $\cdot 18$ by $\cdot 013$ millim. (echinating); (3) bicapitate cylindricals, heads slightly expanded, very short, abruptly truncated, often slightly spined at the end, size $\cdot 33$ by $\cdot 0063$ millim.; (4) tridentate equianchorates, shaft stout, strongly curved, length up to $\cdot 044$ millim.; (5) bihamates (?).

Localities. Station 148 A, Southern Ocean, 240–550 fath. (var. ?); Station 320, off the Rio de la Plata, 600 fath. (type); Station 311, off south-west coast of Patagonia, 245 fath. (var. *patagonica*); Station 307, south-west coast of Patagonia, 140 fath. (var. *bacillifera*).

Myxilla frondosa, n. sp.

A single broad, flattened frond, $\frac{1}{4}$ inch thick. Tough,

fibrous, elastic. Conulose, especially on the convex side, which also bears the oscula, which are small and numerous. Pores on concave surface. Fibre stout, *Axinella*-like, the spicules with their bases in the centre and their apices projecting obliquely forwards. Spicules:—(1) entirely but slightly spined acuates, gradually sharp-pointed, size $\cdot 6$ by $\cdot 03$ millim.; (2) smaller acuates as (1), but more strongly spined, size $\cdot 28$ by $\cdot 013$ millim.; (3) bicapitate cylindricals, with oval heads (sometimes not distinguishable), spined at ends, size $\cdot 25$ by $\cdot 01$ millim.; (4) tridentate equianchorates, shaft curved and slightly swollen in the centre, length $\cdot 027$ millim.; (5) bihamates, usually much contort, size $\cdot 044$ by $\cdot 004$ millim.

Locality. Station 170, off Kermadec Islands, 520 fath.

Genus CLATHRIA (Schmidt).

Horny fibre well developed, cored by acute spicules, and echinated by smaller spined acuates. Flesh-spicules small palmate equianchorates. No special dermal crust of spicules.

Clathria Lendenfeldi, n. sp.

Subrepent, cylindrical. Light yellow. Soft, fibrous, elastic. Surface hispid. Fibre stout. Spicules:—(1) straight smooth acuates or subspinulates, gradually and sharply pointed, sometimes faintly spined at base, size $\cdot 35$ by $\cdot 005$ millim. (dermal); (2) stout, smooth, gradually sharp-pointed acuates, slightly curved, size $\cdot 6$ by $\cdot 02$ millim.; (3) short, straight, bluntly-pointed acuates (main skeleton), strongly spined all over, size $\cdot 08$ by $\cdot 005$ millim., echinating the skeleton-fibre in great numbers; (4) minute palmate equianchorates, $\cdot 005$ millim. long.

Locality. Off Port Jackson.

Clathria elegantula, n. sp.

Sessile, composed of much-flattened, expanded, divided lobes (height and breadth each about $3\frac{1}{4}$ inches, thickness $\frac{5}{12}$ inch). Pale brownish yellow. Soft, spongy, fibrous. Surface conulose, with a thin dermal membrane stretched between the conuli over large subdermal cavities. Skeleton complicated, primary lines alone cored by smooth subspinulates. Spicules:—(1) slender straight subspinulates, size $\cdot 2$ by $\cdot 003$ millim.; (2) slender, sharp-pointed, entirely spined echinating acuates, size $\cdot 07$ by $\cdot 0032$ millim.; (3) palmate equianchorates, length $\cdot 02$ millim.

Locality. Station 162, Bass Straits, 38 fath.

Clathria? inanchorata, n. sp.

Erect, slender. Surface proliferating into inosculating ridges. Dull yellowish brown. Tough and fibrous. Surface minutely hispid. Fibre stout; primary lines alone cored by smooth acuates. Spicules :—(1) smooth acuates, size variable, up to .54 by .024 millim.; (2) sharp-pointed, entirely spined acuates, size .072 by .006 millim. (echinating); (3) smooth tricurvates, size .029 by .0016 millim.

Locality. Station 163 A, Bass Straits, 120 fath.

Genus RHAPHIDOPHLUS (Ehlers).

Differs from *Clathria* only in the possession of a distinct dermal crust of outwardly-projecting spicules.

Rhaphidophlus filifer, n. sp.

Irregularly ramose, gnarled. Greyish yellow. Hard. Surface rugose and uneven. Dermal brushes densely packed, arranged reticulately. Spicules :—(1) straight, slender, gradually sharp-pointed acuates, base usually slightly spined, size .2 by .0065 millim. (dermal); (2) smooth, slightly curved, stout acuates, size .3 by .018 millim.; (3) straight, entirely spined acuates, size .1 by .01 millim. (echinating); (4) minute palmate equianchorates, .016 millim. long; (5) long hair-like tricurvates, length .16 millim.

Locality. Station 208, Philippine Islands, 18 fath.

Genus PLUMOHALICHONDRIA (Carter).

Skeleton arranged in plume-like columns. Spicules of the main skeleton acuate and acerate; no special dermal spicule. Equianchorate flesh-spicules.

Plumohalichondria mammillata, Carter.

Locality. Station 162, Bass Straits, 38 fath.]

Genus PLOCAMIA (Schmidt).

Skeleton-spicules dumb-bell-shaped and acuate; flesh-spicules equianchorate and (usually) tricurvate.

Plocamia coriacea, Bowerbank, var.

Locality. Station 75, off Azores, 450 fath.]

Genus ACARNUS (Gray).

Acuate and cylindrical skeleton-spicules and an echinating grapple-spicule. Flesh-spicules palmate equianchorates and tricurvates.

[*Acarnus ternatus*, Ridley.

Locality. Tahiti, 20 fath.]

Genus ECHINOCLATHRIA (Carter).

Sponge usually made up of a honeycombed mass of anastomosing flattened trabeculæ. Skeleton reticulate, with much spongin. Skeleton-spicules smooth acuates or bicapitate cylindricals; smooth echinating acuates commonly present. Minute palmate equianchorates may or may not be present.

Echinoclathria Carteri, n. sp.

Cylindrical, ramose; each branch composed of flat, ribbon-like, anastomosing trabeculæ. Pale yellow. Tough; very minutely hispid. Spicules:—(1) smooth, sharp-pointed acuates, size $\cdot 132$ by $\cdot 009$ millim. (in and echinating the fibre and scattered); (2) smooth, very slender subspinulates, size $\cdot 16$ by $\cdot 002$ millim. (scattered); (3) palmate equianchorates, length $\cdot 015$ millim.

Localities. Station 162, Bass Straits, 38 fath.; Station 163 A, South-east Australia, 120 fath.; off Port Jackson, 30–35 fath.

Echinoclathria glabra, n. sp.

Massive, honeycombed. Yellow. Firm and parchment-like, glabrous. Skeleton a reticulation of well-developed horny fibres, sparsely cored by bicapitate cylindricals and sparsely echinated by smooth subspinulates. Spicules:—(1) smooth, fusiform, subspinulate, sharply pointed, size $\cdot 11$ by $\cdot 0063$ millim.; (2) smooth bicapitate cylindricals, size $\cdot 22$ by $\cdot 0032$ millim. (in the fibre and scattered). No flesh-spicules.

Locality. Station 162, Bass Straits, 38 fath.

Genus AGELAS* (Duchassaing and Michelotti).

Well-developed horny fibre, echinated by verticillately-spined acuates (cylindricals). No other spicules.

* This genus is inserted here on the supposition that it has had anchorate spicules and lost them.

[*Agelas mauritianus*, Carter.

Locality. Off Tristan d'Acunha ?]

Genus ECHINODICTYUM * (Ridley).

Skeleton reticulate, with little spongin. Skeleton-spicules smooth acerates in the fibre, sometimes accompanied by partially-projecting slender acuates; spined cylindricals or acuates echinating the fibre. No flesh-spicules.

Echinodictyum rugosum, n. sp.

Stipitate, palmato-digitate. The short stem surmounted by a broad flattened expansion. Height $7\frac{1}{2}$ inches, breadth $5\frac{1}{4}$ inches, thickness $\frac{1}{6}$ inch. Greyish yellow; hard, very rugose, with conuli. Spicules:—(1) smooth acerates, sub-hastately pointed, size $\cdot 3$ by $\cdot 015$ millim.; (2) entirely spined acuates (subspinulate), size $\cdot 13$ by $\cdot 012$ millim. (echinating).

Locality. Station 190, south-west of New Guinea, 49 fath.

Echinodictyum asperum, n. sp.

Bushy, cavernous, coarsely aculeated. Height and breadth about 2 inches. Deep chocolate-brown. Coarse and fibrous. Surface glabrous where intact. Fibre stout, about $\cdot 5$ millim. thick. Spicules:—(1) smooth, slightly curved, gradually sharp-pointed acerates, size $\cdot 35$ by $\cdot 0063$ millim.; (2) straight, tapering, bluntly-pointed, entirely spined acuates, size $\cdot 17$ by $\cdot 0075$ millim. (echinating).

Locality. Papeete Harbour, Tahiti, 20 fath.

Family 4. Axinellidæ.

Skeleton typically non-reticulate, consisting of ascending axes of fibres, from which arise subsidiary fibres radiating to the surface. Fibres typically plumose. Skeleton-spicules chiefly acuate, to which acerates and (or) cylindricals may be added. Flesh-spicules rarely present, never anchorates.

Genus HYMENIACIDON (Bowerbank).

Skeleton reticulate, of ill-defined spiculo-fibre, not plumose. Skeleton-spicules acuate or subspinulate.

[*Hymeniacidon caruncula*, Bowerbank.

Locality. St. Vincent, Cape Verd Islands, shallow water.]

* This genus is inserted here on the supposition that it has had anchorate spicules and lost them.

Hymeniacidon ? subacerata, n. sp.

Massive, consisting of irregularly anastomosing trabeculae. Pale yellow, with a waxy translucent look. Rather brittle. Surface uneven, subglabrous. Main skeleton an irregular reticulation; at the surface a thin sheet of spicules, also densely and irregularly reticulate, supporting numerous small outwardly-projecting spicules. Spicules:—(1) smooth fusiform acuates, somewhat curved, apex finely and gradually sharp-pointed, base tapering, but evenly rounded off, size 1·2 by ·031 millim.; (2) straight, gradually sharp-pointed, smooth acuates or subspinulates, size ·2 by ·0063 millim., base not constricted.

Locality. Station 208, Philippine Islands, 18 fath.

Genus PHAKELLIA (Bowerbank).

Typically flabellate or cup-shaped. Skeleton somewhat reticulate. Spicules acuate and often acerate.

Phakellia flabellata, n. sp.

Erect, stipitate, a short stem surmounted by a broad flattened lamella, $\frac{1}{8}$ inch thick. Greyish yellow, soft. One surface ribbed and furrowed, without oscula, the other comparatively smooth, bearing numerous stellate groups of minute oscula. Skeleton of stout ascending ribs, between which a rather irregular reticulation of spicules, with meshes of smaller spicules at the surface. Spicules:—(1) smooth, slightly curved, gradually sharp-pointed acuates, size ·5 by ·03 millim.; (2) smooth, straight acuates or subspinulates, rather abruptly sharp-pointed, size ·22 by ·0063 millim.

Locality. Port Jackson, 30–35 fath.

Phakellia papyracea, n. sp.

Very thin, lamelliform (? cup-shaped), minutely punctate on both surfaces; thickness $\frac{1}{12}$ inch. Yellow or brown; fragile. Very minutely hispid. Skeleton reticulate, rather rugose. Spicules:—(1) smooth, sharp-pointed acuates, size ·7 by ·02 millim.; (2) smooth, sharp-pointed acuates or subspinulates, size variable (e. g. ·35 by ·0063 millim.).

Localities. Station 145 A and Station 148, Southern Ocean, 310 and 210 fath.

Genus CIICALYPTA (Bowerbank).

Skeleton of very definite columns of spiculo-fibre radia-

ting from a fibrous or reticulate axis, spreading out at their tops and supporting the dermal membrane with its reticulation of spiculo-fibre. Very large subdermal cavities. Spicules acuate (and sometimes acerate).

Ciocalypta hyaloderma, n. sp.

Cylindrical, ramose. Dirty brown; very delicate and fragile. Dermis stellately marked, transparent. Skeleton of axial portion both fibrous and reticulate. Spicules smooth, slightly curved, fairly gradually, but not very sharply pointed acuates; size in the dermal reticulation $\cdot 53$ by $\cdot 014$ millim., in the central portion $1\cdot 0$ by $\cdot 037$ millim.

Locality. Station 320, off the Rio de la Plata, 600 fath.

Ciocalypta amorphosa, n. sp.

Massive, amorphous. Grey. Very spongy, fibrous, honey-combed. Dermal membrane stretched on top of numerous projecting fibrous tufts. Main skeleton confused. Spicules:—(1) smooth, slightly curved, fusiform, sharp-pointed acerates, size up to $1\cdot 7$ by $\cdot 02$ millim.; (2) slightly curved smooth acuates, size up to about $1\cdot 47$ by $\cdot 028$ millim.

Locality. Station 320, off the Rio de la Plata, 600 fath.

Genus ACANTHELLA (Schmidt).

Ramose or bushy. Texture cartilaginous. With glabrous surface beset with ridges and spines. Skeleton-spicules smooth (acuate, cylindrical, and acerate).

Acanthella pulcherrima, n. sp.

[=*Acanthella*, sp., Ridley, Zool. Coll. H.M.S. 'Alert,' Brit. Mus. 1884, p. 463, *q. v.* for description *.]

Locality. Torres Straits, 3–11 fath.

Genus AXINELLA (Schmidt).

Typically ramose (may be massive). Fibre plumose. Skeleton-spicules acuate and sometimes acerate or cylindrical.

Axinella arborescens, n. sp.

Erect, ramose, cylindrical or flattened. Height $8\frac{1}{2}$ inches, diameter of branches $\frac{1}{8}$ inch. Greyish yellow. Texture firm

* We must add that an unequal-ended acerate is also common, though not originally mentioned, measuring about the same as the acuate.

but rather woolly. Central skeleton-axis ill-defined, giving off radiating fibres terminating in dense brushes of spicules. Skeleton-spicules smooth, slightly curved, rather abruptly pointed acuates; size $\cdot 28$ by $\cdot 024$ millim.

Locality. Port Jackson, 30–35 fath.

Axinella balfourensis, n. sp.

Erect, stipitate, with spreading, branched root and long, cylindrical stem, surmounted by a large head of dichotomizing finger-like, tapering branches. Height 14 inches. Yellowish grey. Stem firm and compact, branches extremely soft and spongy. Very slightly hispid. Skeleton loose, poorly developed. Spicules smooth, straight or slightly curved acuates, gradually sharp-pointed, size $\cdot 42$ by $\cdot 0075$ millim., of the same shape in both the dermal tufts and the main skeleton, but in the former of about half the size.

Locality. Kerguelen Island, 20–60 fath.

Axinella mariana, n. sp.

Erect, delicately branched; branches slender, somewhat flattened. Height about 2 inches. Greyish yellow. Hirsute. Texture soft and friable externally, internally tough. Skeleton, a central axis of irregularly-packed, short, bent acuates, amongst which are imbedded the bases of very large stout acuates, whose apices project far beyond the surface. Spicules:—(1) smooth (rarely slightly spined) acuates or sub-spinulates, sharply bent near the base, finely pointed, size variable (*e. g.* $\cdot 3$ by $\cdot 013$ millim.); (2) smooth acuates, usually slightly bent towards the base, finely pointed, size $2\cdot 2$ by $\cdot 03$ millim.

Locality. Off Marion Island, 50–75 fath.

Axinella profunda, n. sp.

Small, stipitate, branching dichotomously in one plane, slightly flattened. Height about 2 inches. Yellowish grey. Texture: axis tough and woody, with a soft spongy coat. Surface hispid. Skeleton, a central axis of longitudinally disposed large acuates, from which similar spicules radiate in tracts or brushes, surrounded by bunches of smaller slender acuates. Spicules acuminate, straight, sharp-pointed, size from $\cdot 55$ by $\cdot 0084$ to $2\cdot 0$ by $\cdot 037$ millim., the bases, with few exceptions, very minutely spined.

Localities. Station 241, North Pacific, 2300 fath.; Station 281, South Pacific, 2385 fath.

Axinella fibrosa, n. sp.

Massive, lobate. Height $6\frac{1}{2}$ inches. Greyish yellow. Soft, spongy, coarsely fibrous. Surface subglabrous but conulose. Skeleton of stout branching fibres, coming to the surface in tufts. Fibre consisting of a plumose core of acuate spicules almost entirely sheathed in spongin, diameter about $\cdot 4$ millim. Spicules smooth acuates, slightly bent towards the base, usually very gradually sharp-pointed, size $\cdot 63$ by $\cdot 015$ millim.

Locality. Station 313, east of Straits of Magellan, 55 fath.

Axinella reticulata, n. sp.

Massive, sessile, with short, thick-walled, oscular tubes above. Height $1\frac{1}{2}$ inch. Pale yellow. Very firm. Surface conulose, but glabrous. Skeleton an irregular reticulation, with loose plumose fibres. Spicules:—(1) smooth, slightly curved acuates, sharp-pointed, size $\cdot 45$ by $\cdot 02$ millim.; (2) smooth, curved acerates, sharp-pointed, of same size, scarce.

Locality. Bahia, 7–20 fath.

Axinella monticularis, n. sp.

Massive, sessile, apparently free; diameter about $1\frac{1}{2}$ inch. Yellowish grey. Firm and compact, containing much foreign matter. Surface abundantly conulose. Skeleton composed of stout plumose columns ending in the surface-conuli. Spicules:—(1) smooth, gradually sharp-pointed acuates, size $\cdot 6$ by $\cdot 0126$ millim.; (2) entirely spined, usually subspinulate, gradually sharp-pointed, size about $\cdot 12$ by $\cdot 0066$ millim.

Locality. St. Vincent, Cape Verd Islands, shallow water.

Axinella? lunæcharta, n. sp.

Massive, sessile. Diameter about $1\frac{1}{2}$ inch. Pale yellow. Fairly firm, but rather spongy. Surface glabrous, with numerous small monticular eminences, and fewer but much larger projections, each with a crateriform depression at the top, in which are the minute oscula. Skeleton loosely reticulate. Spicules:—(1) smooth acuates, gradually sharp-pointed, size $\cdot 4$ by $\cdot 014$ millim.; (2) smooth acerates, usually gradually sharp-pointed, commonly with unequal ends, size $\cdot 35$ by $\cdot 0126$ millim.

Locality. St. Vincent, Cape Verd Islands, shallow water.

Axinella? tubulosa, n. sp.

Erect, tubular; tubes open widely above or closed finger-like. Height 2 inches. Greyish yellow. Fairly firm. Skeleton very confused, no distinct fibre. Spicules smooth acuates:—(1) stout, fusiform, more or less bent, fairly gradually sharp-pointed, size $\cdot 87$ by $\cdot 03$ millim.; (2) similar, but much smaller, size $\cdot 45$ by $\cdot 009$ millim.; the latter especially in loose brushes near the surface.

Locality. Station 320, off the Rio de la Plata, 600 fath.

Axinella? paradoxa, n. sp.

Sessile. Massively lobate. Diameter 1 inch. Greyish yellow. Texture indiarubber-like, internally fibrous. Surface glabrous, but conulose. Oscules grouped on tops of lobes. Skeleton of large smooth acerates, size $\cdot 87$ by $\cdot 022$ millim., forming very stout but very loose *Axinella*-like fibre.

Locality. Inaccessible Island, South Atlantic, 90 fath.

Genus RASPAILIA (Nardo).

Long, slender. A central axis of spiculo-fibre, containing much spongin, always present, from which loose tufts of spicules radiate to the surface. Skeleton-spicules chiefly acute or subspinulate; spined echinating acuates sometimes present.

Raspailia tenuis, n. sp.

A very long, slender, flexible stem, giving off branches of the same nature as itself, and produced into a long unbranched terminal portion; no secondary branches. Diameter $\frac{1}{12}$ to $\frac{1}{16}$ inch. Greyish yellow; tough, stringy, externally friable. Surface minutely conulose, hispid. Spicules:—(1) smooth, slender acuates, almost straight, size up to $1\cdot 75$ by $\cdot 018$ millim.; (2) smooth slender cylindricals, size up to $\cdot 77$ by $\cdot 01$ millim.; (3) very slender smooth acuates, surrounding the large ones, size $\cdot 42$ by $\cdot 0035$ millim.; (4) small spined acuates, rather rare, imbedded in the axis, size $\cdot 175$ by $\cdot 0125$ millim.

Locality. Off Bahia, shallow water.

Raspailia flagelliformis, n. sp.

Stipitate, branched; stem short, rigid; branches long, whip-like. Diameter $\frac{1}{8}$ inch. Yellowish. Axis very dense. Rind thick, friable. Spicules of one form only, almost or

quite straight, smooth, gradually sharp-pointed acuates; size in surface-tufts $\cdot 3$ by $\cdot 0032$ millim., in deeper parts $\cdot 45$ by $\cdot 009$ millim.

Locality. Simon's Bay, Cape of Good Hope, 10-20 fath.

Raspailia? rigida, n. sp.

Erect, straight (single specimen with one incipient branch). Maximum diameter $\frac{1}{6}$ inch. Yellowish grey. Tough, subrigid. Hispid. Skeleton a dense central axis of closely-packed spicules, from which rather sparse bands radiate to the surface, ending in great divergent brushes. Little or no spongin. Spicules, straight smooth spinulates or subspinulates, finely pointed; size variable, up to $2\cdot 0$ by $\cdot 025$ millim., usually smaller, especially in the dermal brushes.

Locality. Station 142, Agulhas Bank, Cape of Good Hope, 150 fath.

Genus DENDROPSIS *, n. g.

Skeleton-arrangement *Raspailia*-like. Skeleton-spicules acuate of various forms. Flesh-spicules minute spined acerates.

Dendropsis bidentifera, n. sp.

Erect, stipitate, dichotomously branched, branches flattened; all approximately in one plane. Greyish yellow. Tough, hard; minutely conulose and hispid. Skeleton an axial core of close-packed spicules, from which much larger spicules radiate to the surface in loose bundles surrounded by dense sheaves of the "bidentate" acuates. Spicules:—(1) smooth, gradually sharp-pointed acuates, fusiform, bent near the base, size in axis $\cdot 35$ by $\cdot 025$ millim., in radiating tufts $1\cdot 1$ by $\cdot 044$ millim.; (2) slender, smooth acuates, size up to $1\cdot 75$ by $\cdot 019$ millim., sometimes cylindrical; (3) slender, straight, hastately-pointed acuates, each with two sharp spikes projecting from the base, size $\cdot 56$ by $\cdot 0075$ millim.; (4) small spined acerates, bent, size $\cdot 09$ by $\cdot 0045$ millim.

Locality. Simon's Bay, Cape of Good Hope, 10-20 fath.

Genus THRINACOPHORA (Ridley).

Long, cylindrical, axiate. Skeleton-spicules acuate and (or) acerate. Flesh-spicules trichites.

Thrinacophora cervicornis, n. sp.

Erect, dichotomously branched, like a stag's antler. Greyish

* δένδρον, tree, from the arborescent form of *D. bidentifera*.

yellow. Firm, tough, flexible, elastic. Surface minutely conulose and strongly hispid. Axis a dense reticulation of acerate spicules imbedded in spongin. Spicules:—(1) acerates, abruptly sharp-pointed, size $\cdot 28$ by $\cdot 018$ millim.; (2) long smooth acuates projecting from surface, size $5\cdot 2$ by $\cdot 037$ millim.; (3) smooth slender acuates in whorls around the last named, size $\cdot 52$ by $\cdot 0075$ millim.; in the rind long slender spicules, acerate to cylindrical, of about the same size; (4) trichite-bundles $\cdot 0126$ millim. long.

Locality. Station 208, Philippine Islands, 18 fath.

Thrinacophora funiformis, n. sp.

Cylindrical, elongated, may be branched; flexible, rope-like. Dirty yellow. Surface beset with prominent conuli. Skeleton a dense axis of spiculo-fibre from which fibres radiate to the surface. Spicules:—(1) slender acuates, finely pointed, size up to $1\cdot 8$ by $\cdot 025$ millim.; (2) slender acerates with unequal ends, size up to $1\cdot 7$ by $\cdot 023$ millim.; (3) fusiform acerates with equal ends, bent at centre, size up to $\cdot 6$ by $\cdot 023$ millim.; (4) crooked acuates with apex branched into irregular short fangs, size $\cdot 52$ by $\cdot 0063$ millim., often in bundles; (5) trichite-bundles, size $\cdot 1$ by $\cdot 01$ millim.

Locality. Off Bahia, shallow water.

Suborder II. CLAVULINA (Vosmaer).

Typically corticate, skeleton typically radiate; skeleton-spicules almost always spinulate. Flesh-spicules may be present, but never anchorates.

Family 1. Suberitidæ.

Without flesh-spicules.

Genus SUBERITES (Nardo).

Skeleton-spicules spinulate or subspinulate, with smaller spicules of the same form radiately arranged at the surface. Surface without mammiform projections.

Suberites caminatus, n. sp.

Sessile, hemispherical; diameter about $\frac{3}{4}$ inch; with one or more usually chimney-like oscula at the summit; often forming colonies by lateral budding. Cortex dense, well defined, and packed with outwardly projecting spicules. Main skeleton of separate radiating fibres. Spicules smooth, spinulate,

size in cortex $\cdot 35$ by $\cdot 01$ millim., heads roundedly triangular; in main skeleton $1\cdot 2$ by $\cdot 017$ millim., heads pointedly oval.

Localities. Off Marion Island, 50–75 fath.; Station 320, off the Rio de la Plata, 600 fath.; Station 150, Southern Ocean, 150 fath. (a slight variety with very minute, non-tubular oscula).

Suberites senilis, n. sp.

Sessile, hemispherical; covered with very long, delicate, projecting spicules. Diameter, excluding spicules, $\frac{1}{8}$ inch. Skeleton composed of great divergent brushes of spinulate spicules arising from various levels in the sponge, with shorter spicules scattered between. Spicules spinulate:—(1) slender with oval heads, length up to 3·0 millim., diameter $\cdot 019$ millim.; (2) shorter, stouter, more fusiform, with constricted neck and subglobular head, size about $\cdot 5$ by $\cdot 015$ millim. (intermediate forms occur).

Locality. Station 246, North Pacific, 2050 fath.

Suberites perfectus, n. sp.

Erect, lobose, but unbranched. Size $3\frac{1}{4}$ by $\frac{3}{4}$ inch. Brownish yellow. Hard, firm, very minutely hispid. Dermal membrane fairly distinct, but reduced to a network by numerous pores. Oscula small, scattered, each on a small papilla. Skeleton of radiating fascicles of large spinulate spicules, with smaller ones in close-placed brushes at the surface. Spicules spinulate, slightly fusiform, with well-marked subglobular heads, sharply and rather abruptly pointed. Size in dermal crust $\cdot 28$ by $\cdot 0126$ millim., in main skeleton $1\cdot 0$ by $\cdot 025$ millim. (but very variable).

Locality. Port Jackson, 30–35 fath.

Suberites axiatus, n. sp.

Irregularly lobose or digitate. Soft and spongy, with a thick dense axis; hispid. Skeleton, a thick central axis of longitudinally and closely-placed spicules, from which bands of spiculo-fibre radiate to the surface, where they diverge. Spicules spinulate, fusiform, with subglobular heads; size variable, in the deeper parts $1\cdot 75$ by $\cdot 03$ millim., towards the surface $\cdot 7$ by $\cdot 0126$ millim.

Locality. Station 320, off the Rio de la Plata, 600 fath.

Suberites durissimus, n. sp.

Pedunculate, rounded, lobate. Light yellow. Hard, woody, *Ann. & Mag. N. Hist.* Ser. 5. Vol. xviii. 33

solid throughout. Surface even, but covered with a velvet-like pile. Skeleton very dense, consisting of closely-packed fascicles of chiefly acuate spicules radiating to the surface, and a dense dermal crust of projecting spinulates. Spicules:—(1) spinulate, with well-marked globular heads and fusiform shafts, size $\cdot 24$ by $\cdot 0063$ millim. (but variable), chiefly dermal, passing into (2) straight, smooth, fusiform acuates and subspinulates, size $1\cdot 5$ by $\cdot 0157$ millim.

Locality. Off south-west coast of Australia.

Suberites mollis, n. sp.

Stipitate, with expanded lobose head. Height $1\frac{1}{4}$ inch. Pale yellow. Stem firm but brittle; head very spongy and soft; minutely hispid. Skeleton: in the stem a dense axis of longitudinally placed spicules; in the head very diffuse, consisting of loose bands of spiculo-fibre radiating upwards and ending in brushes of smaller spicules. Spicules smooth spinulates, with fairly well-marked subglobular heads, size very variable, length up to $2\cdot 0$ millim., diameter up to $\cdot 03$ millim.; in the surface-brushes about $\cdot 45$ by $\cdot 01$ millim.

Locality. Station 148, Southern Ocean, 240–550 fath.

Suberites elongata, n. sp.

A slender fleshy stalk, expanding into attaching rootlets below, and an oval, elongated, narrow head above. Relation in length between head and stalk very variable—diameter of stalk $\frac{3}{4}$ inch, of head $\frac{1}{8}$ inch; total height about 2 inches. Pale yellow. Firm, cork-like, minutely hispid. Skeleton, a central axis of acuate spicules from which, in the head, bands of spiculo-fibre radiate outwards and upwards, branching towards the surface; also a dense dermal crust of small projecting spinulates. Spicules:—(1) straight, smooth acuates or subspinulates, size $1\cdot 8$ by $\cdot 016$ millim.; (2) straight spinulates, with well-marked subglobular heads, size variable, $\cdot 35$ by $\cdot 0063$ millim. &c.

Locality. Station 75, off Azores, 450 fath.

Suberites spiralis, n. sp.

Stipitate, cylindrical. Height $3\frac{1}{2}$ inches, diameter of body $\frac{1}{4}$ inch. Stalk and axis of body very dense, body rather open and compressible. Minutely hispid. Skeleton, a dense axis of spicules from which, in the body, radiate loose fibres to the surface, arranged in a somewhat spiral manner and ending in loose brushes of smaller spicules. Spicules:—(1) straight, slender spinulates with subglobular heads, size $1\cdot 0$

by .013 millim., in the fibres; (2) similar, but much smaller, length about .4 millim., in the surface-brushes.

Locality. Off the S.W. coast of Patagonia.

Suberites ramulosa, n. sp.

Stipitate. Stem long, slender, simple or branched, ending below in spreading rootlets, and each branch expanding above into a pear-shaped head. Texture rather soft and spongy. Surface hispid. Oscula, one at the summit of each head. Skeleton, a dense spicular axis in the stem, and in the head longitudinal tracts of similar spicules with loose brushes of smaller ones at the surface. Spicules:—(1) straight, stout, fusiform spinulates, usually blunt, and with well-marked subglobular heads, size 1.8 by .063 millim.; (2) slenderer, usually sharp-pointed spinulates, size 1.0 by .028 millim., but variable, in the surface-brushes.

Localities. Station 207, Philippine Islands, 700 fath.; Station 209, Philippine Islands, 95 fath. (var. *cylindrifera*, with large blunted acuates in place of the large spinulates).

Genus POLYMASTIA (Bowerbank).

Massive, sessile, corticate; differing from *Suberites* in the presence of mammiform processes on the upper surface. Skeleton-spicules spinulate or acuate. No long supporting fringe of spicula as in *Trichostemma*.

Polymastia corticata, n. sp.

Cushion-shaped; cortex $2\frac{1}{2}$ millim. thick. Milky white. Very minutely hispid. Mammiform processes of two kinds:—(1) very numerous, hollow, flattened, closed, height $\frac{1}{8}$ inch, breadth $\frac{1}{8}$ inch; (2) a very few flattened conical tubes, sometimes fairly widely open at summit, height 1 inch, breadth at base $\frac{1}{8}$ inch; these are the oscular tubes. Skeleton:—(a) Of body: (1) on the outside a dense layer of brushes of small spinulates, .28 millim. thick; (2) below this a much thicker layer of vertically set large acuates or subspinulates; below this "cortical" layer the skeleton is confused, with loose fibres. (b) Of the mammiform processes, outermost cortical layer as before, then stout longitudinal fibres of large spicules and a loose network of the same. Spicules:—(1) sharp, fusiform spinulates with oval heads, size .28 by .008 millim.; (2) fusiform acuates or subspinulates, sharp-pointed, size .98 by .022 millim.

Locality. Station 125, between Pernambuco and Bahia, 1200 fath.

Polymastia agglutinans, n. sp.

Sessile, subglobular, incrusting and enveloping pebbles &c., and cementing on to its own surface numerous small foreign objects. Giving off long, stiff, slender, cylindrical, hollow processes closed at the top, free from foreign objects. Diameter of body about $\frac{3}{4}$ inch, length of fistulæ up to $\frac{1}{2}$ inch. Skeleton:—(a) Of body: a dermal layer of dense brushes of small spicules only present between the foreign bodies, which replace it; beneath this scattered spicules and stout columns of spiculo-fibre running to the surface. (b) Of processes: outside is a dense crust of small projecting spinulates, then a reticulation of larger spicules parallel with the surface, backed by a circle of stout longitudinal bands of spiculo-fibre. Spicules:—(1) straight acuates or subspinulates, subfusiform, size up to 1·17 by ·0157 millim.; (2) very small slender spinulates, size ·175 by ·004 millim. (chiefly dermal).

Locality. Station 75, off the Azores, 450 fath.

Genus PROTELEIA * (Dendy & Ridley).

Differs from *Polymastia* in the presence of a grapnel-like spicule projecting from the surface of the body.

[*Proteleia Sollasi*, Dendy & Ridley.

Locality. Simon's Bay, Cape of Good Hope, 10–20 fath.]

Genus TRICHOSTEMMA (M. Sars).

Corticate, free-living, discoidal or hemispherical, with a marginal fringe of long supporting spicula. Skeleton-spicules mainly spinulate.

Trichostemma Sarsii, n. sp.

Discoidal; flattened, especially on the upper surface. Diameter of largest specimen $\frac{1}{2}$ inch, thickness $\frac{1}{8}$ inch. One osculum (or more?) on the summit of oscular tube (or tubes?) on the flat surface. Skeleton: a dense thatch of spicules covers the lower convex surface, radiating outwards and upwards; the upper surface is provided with a thick cortex of projecting spicules, beneath this lies a confused mass of spicules. Spicules:—(1) straight, slender spinulates or subspinulates, forming the thatch and fringe, length up to 4·7 millim., diameter ·02 millim.; (2) short, stout, fusiform spinulates, in the interior

* For full description and discussion of genus and species *vide* Ann. & Mag. Nat. Hist. ser. 5, vol. xviii. p. 152, pl. v.

of the sponge, with globular heads, size $\cdot 3$ by $\cdot 016$ millim. Spicules of cortex spinulate or subspinulate, intermediate in size.

Localities. Station 73, off the Azores, 1000 fath.; Station 184, S.E. off Cape York, Australia, 1400 fath.

Trichostemma irregularis, n. sp.

Resembling *T. Sarsii* in general shape, but less regular, thicker, and with strongly hispid upper surface. Diameter $\frac{2}{3}$ inch, thickness $\frac{1}{3}$ inch. Skeleton arranged as in *T. Sarsii*. Spicules, all spinulate or subspinulate, of very variable length, those of cortex and interior much longer and slenderer than in *T. Sarsii*, the former often projecting 1 millim beyond the surface; size of the latter about $\cdot 5$ by $\cdot 012$ millim., often longer.

Locality. Station 299, west of Valparaiso, 2160 fath.

Genus TENTORIUM* (Vosmaer).

Sessile, columnar or conical, with a dense cylindrical sheath of large, external, longitudinally arranged spicules. On the top a proper cortex containing bundles of smaller spicules with large subdermal cavities between them. Pores on upper surface only. Oscula tubular, in centre of upper surface.

[*Tentorium semisuberites* (Schmidt).

Localities. Stations 49 and 50: S. of Nova Scotia, 85 and 1250 fath.; Inaccessible Island, South Atlantic, 60-90 fath.]

Genus STYLOCORDYLA (Wyville Thomson).

Corticate. With distinct head and stalk. Skeleton in head radiate, with cortical layer of smaller spicules. Skeleton-spicules acerate.

[*Styllocordyla stipitata* (Carter).

Localities. Station 49, South of Nova Scotia, 85 fath.; Station 147, Southern Ocean, 1600 fath.; off Bahia 7-20 fath. (Station 145, Southern Ocean, and off Kerguelen, 10-100 fath.: var. *globosa*, n.; characterized by globular bullet-like head.)]

Genus QUASILLINA (Norman).

Sponge corticate, stipitate, with oval body†, bearing a single

* = *Thecophora*, Schmidt.

† The soft internal tissues generally shrink up and disappear, and thus give to the sponge a characteristically hollow form.

osculum at the summit, and a short stalk. In the cortex primary skeleton-fibres ascend in parallel lines from the base, crossed at right angles by secondary ones. Skeleton-spicules large and small acuates.

[*Quasillina brevis* (Bowerbank).]

Locality. Station 49, south of Nova Scotia, 85 fath.]

Genus CLIONA (Grant).

Sponge of boring habit. Skeleton-spicules spinulate.

Cliona dissimilis, n. sp.

Incrusting and boring into a flat porous Madreporarian coral. A thin cortex incrusts the entire corallum on both surfaces, varied by abundant, small, round, cushion-like thickenings, each of which blocks up the entrance to an excavated canal. On one surface these cushions are more abundant than on the other, and present no opening to the naked eye; they are, however, perforated by minute inhalant canals. On the other surface each is perforated by a small osculum. Skeleton chiefly developed in the thin cortical layer, where it consists of spinulate spicules usually more or less vertically placed. Spicules rather slender spinulates with very well-marked "enormi"-spinulate heads; size about .32 by .0065 millim.

Locality. Station 188, south of New Guinea, 28 fath.

Family 2. Spirastrellidæ.

With special flesh-spicules, which chiefly form a dermal crust.

Genus SPIRASTRELLA (Schmidt).

Massive, sessile, with spinulate or acuate skeleton-spicules and spinispirular flesh-spicules*.

Spirastrella massa †, n. sp.

Massive, large. Pale yellow. Of somewhat cheese-like texture, rather spongy. Dermal membrane thin. Pores very abundant in some parts. Skeleton very diffuse, with no

* For figure *vide* Carter, Ann. & Mag. Nat. Hist. ser. 5, vol. iii. pl. xxix. figs. 11, 12, which represent two forms of spinispirular spicules.

† Represented by two large squarish blocks, evidently cut from one or two large specimens.

distinct spiculo-fibre; most compact just below the surface, forming a cortical layer. Also with irregular tufts of projecting spicules at the surface. Spicules:—(1) smooth acuates, rather irregular in form, size $\cdot45$ by $\cdot0065$ millim.; (2) spinispirulæ, the largest slender, with five or six bends, length $\cdot044$ millim.; more abundant are smaller ones, often with only one joint, $\cdot0095$ millim. long.

Locality. Station 162, Bass Straits, 38 fath.

Spirastrella solida, n. sp.

Sessile, lobate: $3\frac{1}{2}$ inches high by $2\frac{1}{2}$ inches at base. Light yellow. Very firm and hard, with much foreign matter at base. Surface uneven, subglabrous in appearance. Dermal membrane rather dense, heavily laden with spinispirulæ. Oscula at tops of lobes. Pores scattered. Skeleton a dense but irregular reticulation of spinulate spicules; no fibre; with loose radiating brushes of smaller spinulates at the surface. Spicules:—(1) spinulates, with well-developed subglobular heads, size in main skeleton $\cdot7$ by $\cdot019$ millim., in dermal brushes $\cdot31$ by $\cdot0094$ millim.; (2) spinispirulæ, (a) minute, slender, with about three bends, size $\cdot0126$ by $\cdot0025$ millim., (b) a few much larger and relatively slenderer, size $\cdot056$ by $\cdot0025$ millim.

Locality. Station 208, Philippine Islands, 18 fath.

Spirastrella papillosa, n. sp.

Erect, sessile, conically lobose. Oscula at apex. Surface covered with abundant low papillæ. Height 6 inches. Grey. Texture fairly firm, rather spongy. Dermal membrane thin, loaded with spinispirulæ, arranged so as to leave small pore-bearing areas. Skeleton diffuse, fibres very slightly developed, especially dense just below surface; at the surface also are irregular brushes of small spinulates. Spicules:—(1) spinulates, with broadly oval heads, size $\cdot5$ by $\cdot0157$ millim.; (2) similar, but smaller (dermal), size $\cdot3$ by $\cdot008$ millim.; (3) spinispirulæ, stout, with three or four bends and strong spines, size (excluding spines) $\cdot05$ by $\cdot009$ millim.; smaller ones (young forms?) also occur.

Locality. Port Jackson, 30–35 fath.

Genus LATRUNCULIA (Bocage).

Massive, sessile, with acute (or acerate?) skeleton-spicules and "sceptrella"* flesh-spicules forming typically a dense

* For figure *vide* Carter, Ann. & Mag. Nat. Hist. ser. 5, vol. iii. pl. xxix. fig. 14, which represents one modification of the "sceptrella."

dermal crust. Typically corticate; beset with mammiform projections, some of which bear oscula and others pores.

Latrunculia apicalis, n. sp.

Sponge hemispherical. Osculum-bearing and pore-bearing processes distinct: the former at the top of the sponge, in form conical; the latter smaller, more abundant, abruptly truncated. Yellowish grey. Corticate. Fairly compact, but spongy internally. Skeleton: the sceptrellæ form a continuous dermal crust, below which the skeleton is loose and irregular, denser towards the surface. Spicules:—(1) smooth acuates, size $\cdot 6$ by $\cdot 014$ millim.; (2) sceptrellæ, with expanded spinose base, straight shaft, and four or five discoid whorls with indented margins, the lowest whorl the largest; shaft produced upwards into a long, smooth, terminal portion; length of spicule $\cdot 126$ millim., diameter of largest whorl $\cdot 044$ millim.

Localities. Off Christmas Harbour, Kerguelen, 70 fath.; Station 320, off the Rio de la Plata, 600 fath.

Latrunculia brevis, n. sp.

Much resembling in appearance and skeleton-arrangement *L. apicalis*, but the corticate skeleton of acuates is barely represented. Spicules:—(1) smooth acuates, size $\cdot 6$ by $\cdot 0126$ millim.; (2) sceptrellæ, differing from those of *L. apicalis* in having no apical prolongation. The upper whorls are approximated so as to form a thick bush at the top; length $\cdot 05$ millim., diameter of largest whorl $\cdot 044$ millim.

Locality. Station 320, off the Rio de la Plata, 600 fath.

Latrunculia Bocagei, n. sp.

Subglobular, sessile; resembling *L. apicalis* in appearance and skeleton-arrangement. Corticate. Spicules:—(1) smooth acuates, size $\cdot 6$ by $\cdot 018$ millim.; (2) sceptrellæ, with slightly expanded base, armed with two whorls of spines, and a smooth, stout shaft, bearing three distinct, subequal, separate whorls towards the apex, and ending in a tuft of spines which follows close upon the last whorl. Each disk-like whorl is deeply but unequally notched all round; length $\cdot 07$ millim., diameter of whorls $\cdot 03$ millim.

Locality. Kerguelen, 10–70 fath.

Latrunculia (?) *acerata*, n. sp.

Massive, cake-like; without mammiform projections.

Pores scattered through a distinct dermal membrane. Skeleton :—(a) dermal, an irregular feltwork of slender cylindrical spicules ; (b) main, a reticulation of large acerate spicules, with fibres distinct in parts. Spicules :—(1) smooth, slightly curved cylindricals, size $\cdot 48$ by $\cdot 012$ millim., chiefly dermal ; (2) long, smooth, curved acerates, sometimes sharp and sometimes blunt, size $\cdot 9$ by $\cdot 025$ millim. ; (3) a very small and slender sceptrella-like spicule, consisting of a slender shaft, bearing two saucer-like whorls near the base, with very slightly denticulated margins, length $\cdot 037$ millim., diameter of larger (upper) whorl $\cdot 0125$ millim. Occurring scattered, chiefly in the dermal membrane.

Locality. Station 135 ?, 60 fath.

ERRATUM.—We find that the generic name *Trochoderma* (p. 344, *suprà*) has been already used ; we therefore propose instead the name *Axoniderma*, from Greek ἄξων, a wheel (type species *Axoniderma mirabile*, Ridley and Dendy).

XLV.—On Harpacanthus, a new Genus of Carboniferous Selachian Spines. By Dr. R. H. TRAQUAIR, F.R.S., F.G.S.

UNDER the name of *Tristychius fimbriatus* a small but interesting Selachian spine from the Carboniferous Limestone of Gilmerton, near Edinburgh, was described and figured by Mr. T. Stock in a paper "On the Structure and Affinities of the Genus *Tristychius*," published in this journal three years ago*.

The spine is described as being $1\frac{2}{3}$ inch in length ; it is tolerably slender, and, according to the figure, is pretty sharply curved backwards beyond the middle. "Its surface is smooth ; but a shallow and wide groove occupies a nearly central position along the middle third of the spine." Posteriorly it shows along its distal fourth seven strong, pointed, recurved denticles, in connexion with which the writer remarks that "the second row (if existent) is concealed in the matrix." The walls are described as being "apparently thick and the pulp-cavity small," and it is further stated that the inserted portion of the spine is not preserved.

* Ann. & Mag. Nat. Hist. (5) xii. pp. 177–190, pl. vii.