

my opinion, decidedly against the union of the Arachnids and Pœcilopods. It is indisputable that *Limulus* has very little in common with the Crustacea (the Trilobites and Merostomata excluded), and that the origin of the Arachnida is enshrouded in thick darkness; but the facts at our disposal appear rather to warn us against the dissolution of the sub-type Tracheata and the union of creatures so heterogeneous as the marine Pœcilopoda and the terrestrial air-breathing Arachnida.

LVI.—*Preliminary Descriptions of new Species of Madrepora in the Collection of the British Museum.*—Part II. By
GEORGE BROOK, F.L.S.

WHEN just a year ago I published in this Journal preliminary descriptions of a number of new species of *Madrepora*, I anticipated that by the present time a revision of the whole genus would have been ready for press. Considerable delay has been caused by the acquisition of further collections, particularly of the fine series of specimens from the Great Barrier Reef area collected by Mr. Saville-Kent, and of a further selection of specimens from the Macclesfield Bank, collected by Mr. Bassett-Smith, Surgeon R.N. Before these were received a number of the species now described were diagnosed from specimens in the general collection, the distribution of which is increased by their occurrence in the newly-acquired material. As the work of revision is not yet complete, I take the present opportunity of giving short descriptions of forty new species. I believe that the characters indicated will be found sufficient to distinguish the species, although in some cases this may not at present appear to be the case, owing to the lack of precision in many of the descriptions of older species. This I hope to rectify as far as possible in the revision of the genus, the publication of which will not, I trust, be further delayed.

Madrepora ambigua.

Corallum subhorizontal (? suberect), somewhat flabellate; branches irregularly confluent, basal parts fused into a solid mass. Branches 1·5 centim. diameter, with a few short arched and blunt divisions on the upper surface. Apical corallites scarcely prominent, 2·5 to 3, rarely 3·5 millim. diameter. Lateral corallites irregular and very unequal, many immersed; prominent ones chiefly spout-shaped, spreading;

outer part of wall thin when short, but thick and keeled in the stouter corallites; length 0·5 to 2·5 millim., diameter 1 to 2 millim. Star distinct. Branches on the under surface not flattened, without branchlets; corallites numerous, all immersed.

Northumberland Island (*Saville-Kent*).

Madrepora arcuata.

Corallium pedicellate, flabellate or subvasiform, with numerous slender spiciform branchlets on the upper surface; total thickness not over 2 centim. The under surface is composed of a close reticulum of slender branches with elongate and narrow spaces between; corallites chiefly appressed, tubular, or immersed. Branchlets on the upper surface arcuate, often proliferous, 1·2 centim. long and 4 millim. thick. Apical corallites cylindrical, 1·5 millim. diameter. Lateral corallites tubulabellate at an angle of 45°, 2·5 millim. long, 1 millim. diameter. Star very imperfect.

Samoa.

Madrepora armata.

Madrepora spicifera, Dana, Zoophytes, p. 443 (part.), pl. xxxiii. figs. 4 and 4a only.

Corallum umbellate rather than vasiform, flat above, under surface obliquely pedicellate. Differs from young *M. cytherea*, to which Dana thought his specimen might belong, in the scarcity of proliferous corallites on the spiciform branchlets on the upper surface, and in the occurrence of numerous very spreading and rather long tubular corallites on the under surface. Star scarcely developed.

Singapore; Diego Garcia; Fiji (*Dana*); ? Tahiti (*'Challenger'*).

Madrepora assimilis.

Madrepora appressa, Quelch & ? Dana (non Ehrenberg).

Corallum corymbose, not pedicellate; branches horizontal, coalescing into a plate, with numerous irregular corallites on the under surface having a pore-like aperture; they are 5 millim. long and 1·5 millim. broad, usually applied to the surface throughout the whole length. Branchlets on the upper surface 6 to 7 centim. long and 6 to 8 millim. thick. Apical corallites 2 millim. diameter. Lateral corallites crowded, ascending, subequal, beaked nariform or compressed tubular with an oblique aperture; length 4 millim., diameter 1·2 and 1·4 millim. to 1·8 millim. Star well developed.

Amboina ('*Challenger*'); Seychelles, 12 fathoms (*H.M.S. Alert*).

Madrepora australis.

Corallum small, cespitose, base very broad. Branches divided near the base into two or three erect digitiform branchlets 3·5 to 4·5 centim. long and 2 to 2·5 centim. diameter at the base, slowly tapering to a blunt apex. Apical corallites somewhat hemispherical, 3 to 4 millim. diameter. Lateral corallites rather distant, short, spreading, tubular, with more or less oblique apex; diameter 1 to 2·5 millim., the more prominent ones about 2 millim., length 1 to 2 millim.; wall firm but not thick, the inner part rarely wanting.

Darnley Island and Wreck Bay (*Jukes*); Gt. Barrier Reef (*Saville-Kent*).

Madrepora bæodactyla.

Madrepora seriata, Brüggemann (non Ehrenberg), Phil. Trans. vol. clxviii. 1878, p. 575.

Corallum low, cespitose from a broad incrusting base. Branches erect digitiform, simple or subdivided, apex blunt or conical; length 3 to 4 centim., diameter 7 to 10 millim. Apical corallites 2 to 3·5 millim. diameter, margin rounded. Lateral corallites chiefly open nariform or gutter-shaped, lower border almost horizontal; length 1·3 to 2 millim., rarely more, diameter 1·6 millim. Wall usually thin; margin not rounded, but a little thickened in one specimen. Star indistinct.

Rodriguez.

Madrepora bifaria.

Corallum horizontal, with numerous erect spiciform branchlets on both the upper and under surfaces; colony 12 centim. thick. Branchlets simple, bi- or trifid, rising obliquely, but arched near the base, 3 to 4·5 centim. long and 7 or 8 millim. diameter near the base, slowly tapering. Apical corallites 2 millim. diameter, cylindrical. Lateral corallites half-tubular, labellate, or tubular with an oblique apex, at an angle of about 45°; length 2 to 3·5 millim., diameter about 2 millim., but shorter below and with a round aperture. The branchlets on the under surface are practically identical with those above. Star well developed.

Java.

Madrepora botryodes.

Madrepora gonagra, Brüggemann, Abhand. nat. Ver. Bremen, 1877, p. 398.

Madrepora Haimeii, Brüggemann, *loc. cit.* p. 575 (part.).

Corallum subcespitate, sometimes incrusting a dead colony; new growth about 3·5 centim. high. Branches erect and crowded, 1·2 to 1·5 centim. diameter, but broader at the apex, which is occupied by numerous crowded proliferous corallites, which form an acervate apex; in old specimens the apices become fused together. Apical and proliferous corallites 3·5 to 5 millim. diameter, cylindrical, but with crowded margin and small aperture. Lateral corallites appressed, tubular or half-tubular, very variable in size, wall often dilated; the more prominent ones are 2 to 3 millim. diameter, with rounded margin, many others verruciform. Star very well developed.

Rodriguez.

Madrepora brevicollis.

Corallum cespito-arborescent; branches 8 to 12 centim. long and 1·5 centim. thick in bushy specimens, but may be 22 centim. or more in those which extend obliquely; the former are much divided, and bear numerous spreading twigs and short proliferations. Apical corallites 3 to 4 millim. diameter, shortly cylindrical, margin often a little rounded. Lateral corallites much crowded, chiefly half-tubular and labellate, sometimes distinctly compressed; diameter 1·5 millim., more rarely 2 millim., outer part of the wall distinctly thickened in the stouter corallites. Star distinct. A variety with more or less tubular corallites occurs amongst the Rodriguez specimens, and was referred by Brüggemann to *M. pustulosa*, Ed. & H. The same variety also occurs in Mr. Saville-Kent's collection from the Great Barrier Reef.

Rodriguez; Great Barrier Reef, Torres Straits (*Saville-Kent*).

Madrepora bullata.

Corallum cespitose from an incrusting base; branches simple or forked, 5 to 6 centim. long and 1·7 centim. diameter at the base, gradually tapering to a blunt apex, covered with scattered and spreading proliferous corallites. Apical corallites 5 to 6 centim. diameter, margin strongly curved except in young condition. Lateral corallites tubular, with somewhat oblique apex, rarely nariform, increasing in length from the apex downwards for a distance of 3 centim., below

which a few are more elongate, but the majority short. Star very prominent. Differs from *M. canaliculata*, Klz., in the complete absence of dimidiate corallites and in the much better developed star.

Port Denison (*Saville-Kent*).

Madrepora calamaria.

Madrepora plantaginea, Brüggemann (non Lamarek), Phil. Trans. vol. clxviii. p. 575.

Madrepora acervata, Brüggemann (non Dana), ibid. p. 575.

Corallum cespitose from a short pedicellate base; marginal branches short and horizontal; middle branches 7 centim. long and 1.5 centim. thick, crowded and angular, more or less divided; divisions digitiform, little spreading. Apical corallites somewhat conical, 3.5 to 5 millim. diameter at the base. Lateral corallites very unequal in size, many appressed and dilated, more or less completely tubiform; length 3 to 5 millim., diameter 2 to 2.7 millim., but with small or sub-immersed ones between. Star indistinct.

Rodriguez.

Madrepora clavigera.

Corallum forming horizontal fronds 3 centim. thick, the main divisions reticulately coalescent; branches sinuous, flattened below, 1 centim. broad. Corallites on the under surface chiefly marginal, stout, spreading, tubular with rounded apex, some are 8 millim. long and bear buds. Upper surface of main divisions with numerous hemicotyloid and appressed tubular corallites. Branchlets on the upper surface erect, 2 centim. long, and rarely over 4 millim. diameter at the base if simple; each consists typically of an elongate club-shaped apical corallite, which bears buds which near the base are hemicotyloid and irregular, but tubular above, where from one to four radiating corallites surround the apical one. Apical corallites 7 to 12 millim. long, with a maximum diameter of 4 to 4.5 millim.

The type specimens were presented by Captain Belcher, R.N., but the habitat is not recorded.

Madrepora cophodactyla.

Corallum broad, flattened, cespitose, with a very broad base. Branches short, stout, and very obtuse at the apex, simple or divided near the middle; length 3 to 5 centim., diameter 1.7 to 2 centim. at the base and over 1 centim. at the apex. Apical corallites 3 to 3.75 millim., scarcely prominent. Lateral corallites stout, dilated, appressed tubular, with the

inner part of the wall short and the margin much rounded ; aperture elliptical ; diameter 2·2 to 3 millim., length 2 to 3 millim.

The species is quite distinct from any which have come under my notice, but unfortunately the habitat is not recorded.

Madrepora coronata.

Corallum cespitose, or in large specimens forming broad, much flattened clumps from an incrusting base. Branches short, crowded, acervate, undivided except near the margin, often broadest at the apex ; length 1·2 to 3 centim., diameter 5 to 7 millim. at the base, but often 1 centim. at the apex. Apical corallites cylindrical, 2 to 3 millim. diameter and 4 millim. exsert, usually two or more corallites surrounding the axial one are of the same dimensions. Lateral corallites large, appressed, but with wide aperture ; form variable, nariform at first, but dimidiate tubular or funnel-shaped later in growth ; length 2 to 4 millim., diameter 1·5 to 2·5 millim., crowded near the apex, distant and less prominent below.

Great Barrier Reef (*Saville-Kent*).

Madrepora decipiens.

Corallum consisting of stout subprostrate branches with erect digitiform branchlets or more slender and irregularly fastigiate. Apical corallites cylindrical, 2·5 to 3 millim. diameter, not over 2 millim. exsert. Lateral corallites crowded, of two kinds—the one stout and prominent, sometimes bearing buds, the other small, labellate, subimmersed or immersed ; the prominent ones are cylindrical, with a more or less deep notch in the inner part of the wall, elongate and appressed near the apex, spreading and shorter below ; length 2·5 to 6 millim., diameter 2 to 2·2 millim.

Great Barrier Reef (*Saville-Kent*).

Madrepora Elseyi.

Corallum cespito-arborescent ; branches sometimes relatively long, with a cluster of branchlets near the apex, at other times resembling *M. brevicollis* in habit. Branches 1 to 1·5 centim. diameter ; branchlets numerous and acuminate. Apical corallites 2 to 3 millim. diameter. Lateral corallites ascending, tubular ; wall thick ; margin much rounded ; inner part of the wall often shorter ; average length 2·5 millim., diameter 1·5 to 2 millim., becoming verruciform below ; many proliferous corallites occur at intervals.

North Australia (*Elsey*), types; Great Barrier Reef area (*Saville-Kent*).

Madrepora exilis.

Corallum very variable in form, shrubby arborescent to virgate, with short peripheral twigs as in *M. ornata*. Apical corallites scarcely 2 millim. diameter, cylindrical. Lateral corallites nariform or tubo-nariform, a little spreading, becoming tubular and proliferous; usually 2 millim. long and 1·5 millim. diameter; wall firm and a little thickened. Numerous subimmersed corallites between the branchlets have a ring-shaped border. Star distinct.

Arafura Sea, 10 fathoms (*H.M.S. 'Penguin'*); Port Denison (*Saville-Kent*); Macclesfield Bank, 13 fathoms (*H.M.S. 'Penguin'*).

Madrepora fruticosa.

Corallum bushy, cespitose, hemispherical above; middle branches 9·5 centim. long and 2 centim. thick, angular below. Apical corallites subhemispherical, 4 to 5 millim. diameter. Lateral corallites rather regular and spreading, a little compressed, chiefly tubiform, with the inner part of the wall always thin and usually shorter, the outer thick; length 3·5 to 5 millim., diameter 2·2 to 2·5 millim., shorter and quoit-shaped below; margin plain; star distinct.

Habitat not recorded.

Madrepora gemmifera.

Madrepora seriata, Quelch (part.), Challenger Reef Corals, p. 155.

Corallum massive, corymbose. Central branches erect, digitiform, 4 to 6 centim. long and 1·5 to 2·5 centim. thick, quadrate and proliferous near the base; marginal branches divided, the outer divisions covered with numerous spreading blunt twigs. Apical corallites hemispherical, 4 millim. diameter. Lateral corallites broad, spreading, subtubular or gutter-shaped, with small immersed cells between. Prominent ones increase in length from the apex downwards, often arranged in rows, the lower ones of a row being proliferous; length 1·5 to 4 millim., diameter 2 to 3·5 millim. Star indistinct.

Great Barrier Reef (*Saville-Kent*), Fiji (*'Challenger'*).

Madrepora grandis.

Corallum stout and lax arborescent, distal divisions relatively slender and tapering. Apical corallites 3 millim. dia-

meter, cylindrical. Lateral corallites on the distal 5 centim. of a branch, thin, ascending, tubular; cup deep; septa scarcely recognizable; length 4 to 5.5 millim., diameter 2 millim., with smaller and subimmersed corallites between. Below the distal 5 centim. all the corallites extend at right angles, and none are over 2 millim. long, and differ from those of *M. robusta* in similar situations in the thinner wall, the absence of dimidiate corallites, and the lack of a recognizable star.

Great Barrier Reef (*Saville-Kent*).

Madrepora Guppyi.

Corallum broad, flattened, cespitose from a broad base. Central branches simple or subsimple, conical, erect, 2 to 2.5 centim. thick at the base, 4 to 6.5 centim. long, regularly tapering and rather distant, apices often 4 centim. apart. Axial corallites 3.5 to 5 millim. diameter. Lateral corallites small, very crowded and spreading, subequal, usually thin-walled, often a little compressed, half-tubular or gutter-shaped, with a rounded apex; length 1.5 to 2 millim., diameter 1.2 to 1.5 millim. Star not well developed.

Solomon Islands (*Dr. Guppy*).

Madrepora irregularis.

Madrepora alces, Brüggemann (non Dana), Phil. Trans. vol. clxviii. p. 576.

Corallum consisting of alciform plates with marginal erect digitiform acuminate branches or of short plate-like clusters of incipient branchlets from a narrow base. Proliferous clusters very variable in diameter, up to 2 centim., but not over 1.5 centim. long, unless forming branches. Apical corallites cylindrical, 2 millim. diameter. Lateral corallites dimidiate or labellate; wall thin but firm, very unequal in length, the more prominent are about 1.3 millim. diameter and proliferous.

Rodriguez (types); Macclesfield Bank, 7 to 8 fathoms (*H.M.S. 'Penguin'*).

Madrepora Kenti.

Corallum horizontal or corymbose, with important branchlets on the under surface as in *M. bifaria*, but they are here not quite so stout as those on the upper aspect and the corallites are less prominent. Upper series of branchlets 3.5 to 6 centim. long and 7 to 10 millim. diameter. Apical corallites 2.5 to 3 millim. diameter, cylindrical. Lateral corallites

appressed tubular, with a ligulate border; length 3 to 4 millim., diameter 2·5 millim. across the lip, rather less at the base. Star moderate.

Thursday Island and Great Barrier Reef (*Saville-Kent*).

Madrepora latistella.

Corallum subhorizontal, without fusions, recalling the habit of *M. patula*. Branchlets on the upper surface erect, spiciform, simple or in groups; length 2·5 to 3 centim., diameter 5 millim. Apical corallites 2·5 to 3 millim. diameter, cylindrical. Lateral corallites chiefly gutter-shaped or labellate, ascending, becoming reduced to a crescentic rim near the base of the twigs; length 1·5 to 2 millim., diameter 1·3 millim. Star very well developed.

Port Denison (*Saville-Kent*).

Madrepora loripes.

Corallum bushy, with numerous short, stout, arched branchlets, usually without corallites on the inner side. Apical corallites 4 millim. diameter, margin rounded. Lateral corallites on the stouter divisions appressed tubulariform to spreading tubular and proliferous, becoming verruciform below; those near the apex are appressed, 4 millim. long and 1·5 to 2 millim. thick; others become thicker, more spreading, 5 millim. long and 3 millim. diameter, with shorter between; the stouter spreading ones gradually give rise to arcuate branchlets naked on the inner side. Star indistinct.

Great Barrier Reef (*Saville-Kent*).

Madrepora nigra.

Madrepora Ehrenbergi, B.-Smith (non M.-Ed. & H.), Ann. Mag. N. H. vol. vi. 1890, p. 452.

Corallum prostrate, openly reticulate, under surface sub-complanate. Upper surface provided with erect or ascending branchlets arranged irregularly, not over 7 centim. long, and about 1·2 centim. thick near the base, tapering to a slender apex. Apical corallites cylindrical, 2 millim. diameter, 1 to 2 millim. exsert. Lateral corallites on the branchlets tubular, with oblique or gutter-shaped apex, slightly compressed, length 2 to 4 millim., diameter 1·5 to 2 millim., margin always sharply defined; a few subimmersed ones are scattered between. On the main divisions the corallites are of the same type, but not compressed, and the aperture is not so oblique, about 2 millim. long and broad. Star very pro-

minent, and the septa are level with the margin for their whole length.

Tizard Bank, 5 fathoms (*H.M.S. 'Rambler'*).

Madrepora oligocyathus.

Corallum fan-shaped, semi-vasiform, pedicellate, closely resembling *M. microclados*, Ehrb., in habit. Apical corallites 2 millim. diameter, wall very thin. Lateral corallites immersed or subimmersed, excepting near the apex of the branchlets, where a few are short, round, nariform; the marginal branchlets usually bear more or less prominent corallites to the base, 1 millim. diameter, the outer part of the wall rarely over 1·5 millim. long. Star indistinct. Corallum very fragile.

Mauritius (*Robillard*).

Madrepora orbicularis.

Corallum disk-shaped, composed of several layers of radiating branches fused into a solid mass excepting near the periphery. Apical corallites 2·5 to 4 millim. diameter, cylindrical. Lateral corallites dimidiate and somewhat appressed near the apex of a branch, but spreading at right angles, 2·5 to 6 millim. long and 1·5 to 2 millim. thick; the larger ones are proliferous, but the buds are always small and delicate labellate; small labellate and immersed corallites extend between the more prominent ones.

Ceylon (*Dr. Ondaatje*).

Madrepora patula.

Corallum broad, depressed, bushy, from a short simple stem, diameter nearly three times the height. Branchlets on the upper surface spiciform, simple or in subparallel divisions, 2 to 4·5 centim. long, 7 millim. thick if simple, gradually tapering. Apical corallites 2 millim. diameter, cylindrical. Lateral corallites chiefly nariform, outer borders at an angle of 45°, more or less prominent quite to the base of the branchlets, length 2 millim., rarely 3 millim. with an elongate lip, diameter 1·2 to 1·5 millim, wall thin and fragile. Star indistinct. Branchlets on under surface 8 to 16 millim. long, 4 millim. diameter, tapering, with nariform, or more frequently verruciform, corallites.

Port Denison (*Saville-Kent*).

Madrepora pectinata.

Corallum plate-like or vasiform, recalling the habit of

M. conferta, Quel., and *M. hyacinthus*, Dana; total thickness 2·5 centim. Under surface flattened, openly reticulate, without projecting branchlets; corallites very short, open bursiform or immersed; diameter nearly 2 millim., wall rarely 1·5 millim. long. Branchlets on the upper surface arranged usually in groups of two to five along the course of each branch, 9 to 14 millim. long and 4 millim. thick. Apical corallites cylindrical, 1·5 millim. diameter. Lateral corallites short, spreading, round labellate, with curved lip; length 1·5, rarely 2 millim., diameter 1·2 to 1·5 millim. Star not recognizable.

Thursday Island (*Saville-Kent*).

Madrepora Rayneri.

Corallum horizontal, forming fronds similar to those of *M. speciosa*, Quel., but less confluent and dense. Branches scarcely flattened, naked below, except for a few scattered and appressed twigs, 1 centim. or more long. The upper surface of the branches bear scattered, appressed, nariform corallites and a few which are immersed. Branchlets erect, varying in importance from elongate simple corallites to stout divided twigs, each bearing several elongate radiating corallites at the apex. Elongate tubular corallites 1 to 1·6 centim. or more in length, 2·5 millim. diameter at the base, and 2 millim. at the apex, margin suddenly contracted. Star well developed.

Fiji (*F. M. Rayner*).

Madrepora recumbens.

Corallum subcespitate at first, becoming flattened, frondose, or semivasiform with increase in size. Proximal portions of main divisions fused into a solid plate in the larger specimens, without branchlets below. Branchlets on the upper surface short, subconical, and somewhat arcuate, 1 to 2·5 centim. long, and 8 to 13 millim. diameter, rapidly tapering, usually simple. Apical corallites 2 millim., rarely 2·5 millim., in diameter, cylindrical. Lateral corallites nariform to tubo-nariform or tubo-labellate, with smaller and immersed ones between; prominent corallites often in rows; length 1 to 2 millim., diameter 1·5 to 2 millim.; wall firm, but not thick. Star indistinct.

Great Barrier Reef (*Saville-Kent*).

Madrepora reticulata.

Corallum complanate or reticulate; branches elongate, but

rarely over 7 millim. thick. Under surface with distant spreading tubiform or tubo-nariform corallites, 1·5 millim. diameter, with immersed ones between; sometimes, apparently owing to secondary deposition of lime, the corallites on the under surface are obliterated. Upper surface covered with suberect labellate corallites, chiefly acuminate, length 1 to 3 millim., diameter 1·3 millim., certain of these become tubular and proliferous, and give rise to irregular groups of suberect twigs about 7 millim. long. Axial and proliferous corallites cylindrical, 2 millim. diameter. Star indistinct.

Amarante Islands (*H.M.S. 'Alert'*), Arafura Sea (*H.M.S. 'Penguin'*), ? Macclesfield Bank (*H.M.S. 'Penguin'*).

Madrepora sarmentosa.

Corallum flattened, bushy, extending obliquely, with short blunt crowded branchlets on both upper and lower surfaces. Branches 2 to 3 centim. thick, more or less fused into a solid plate below. Whole upper surface studded with blunt branchlets, simple or in groups of three or four, diameter 5 to 10 millim., length 1 to 2 centim., the more slender ones near the base. On the under surface the branchlets are similar to those above, but distinctly tapering, and scarcely so stout. Axial corallites 3·5 to 4·5 millim. diameter, sub-hemispherical. Lateral corallites on the basal parts subimmersed and dilated, on the distal divisions hemicotyloid, broad nariform or sublabellate, length 2 to 3·5 millim., diameter 2 to 3 millim., outer part of the wall thick and convex. The interval between the branchlets is occupied by large immersed corallites. Star rarely well developed. Young specimens have the wall less thickened.

Great Barrier Reef (*Saville-Kent*).

Madrepora spectabilis.

Corallum stout, corymbose; outer branches oblique and proliferous, fusions rare. Central branches 6 centim. long, erect, 2 centim. diameter at the base and 1·5 centim. at a point only 1 centim. below the apex, usually crowded and angular, greatest diameter (including corallites) occurs about the middle of a branch and is often 2·5 centim. Axial corallites 6 to 7 millim. diameter, hemispherical, aperture only 1·5 millim. Lateral corallites variable in different situations. On marginal branchlets nearly all are tubular, with the inner part of the wall more or less incomplete, angle 45°, length 2 to 2·5 millim., diameter 1·5 millim. or a little over. Wall a little thickened, margin not rounded. On the

central branches the corallites are more unequal, tubular, dimidiate, or spout-shaped, with smaller thin-walled ones between, the majority becoming dilated, nariform, bursiform, or subimmersed lower down, many 2·5 millim. thick; between these numerous stout tubular corallites, 2·5 millim. long and broad, occur at irregular intervals, which indicate new out-growths. Star moderate.

Habitat not recorded.

Madrepora squamosa.

? *Madrepora millepora*, Dana (non Ehrenberg), Zoophytes, p. 446, pl. xxxiii. fig. 2.

Corallum corymbose or subvasiform, flattened above, branches rarely coalescent. Main branches oblique, not flattened on under surface, but bearing numerous horizontal twigs 1·5 to 3 centim. long and 6 millim. diameter, provided with subimmersed corallites. Branchlets on the upper surface simple or subsimple and erect near the centre of the colony, more divided near the periphery; length of central ones 4·5 centim., diameter 8 millim. at the base, 4 millim. at the apex. Apical corallites 2·5 to 3·5 millim. diameter, cylindrical. Lateral corallites of the central branches small, equal, labellate with rounded lip spreading almost at right angles, rarely over 1 millim. diameter and 0·75 millim. long, but becoming wider and subimmersed towards the base. On the marginal branches the corallites are much larger and more distant; usually 2 millim. diameter, 2 millim. long, and the lips nearly 2 millim. apart; scarcely so spreading near the apex. Star moderately distinct in the corallites of the outer branches, but the septa are almost undistinguishable in the corallites of the central branches.

Great Barrier Reef (*Saville-Kent*).

Madrepora syringodes.

M. cf. Durvillei, Ortmann, Zool. Jahrb. Bd. iii. p. 151.

Corallum bushy or of the bottle-brush type. Branchlets 1·6 to 3·5 centim. long and 8 millim. thick, bearing several spreading proliferous corallites 1 centim. long, the stouter corallites of which also bear buds. Apical and proliferous corallites 3 millim. diameter, not over 2 millim. exsert, scarcely tapering, margin only slightly rounded. Lateral corallites at an angle of 45°; either tubular, 1·75 millim. diameter and 3 to 4 millim. long, or shorter and then nariform. Septa scarcely recognizable in the lateral corallites, but well developed in the apical and proliferous ones.

Great Barrier Reef (*Saville-Kent*); Samoa and "South Seas" (*Strassburg Museum, Ortmann*).

Madrepora tenella.

Corallum much flattened, flabellate; allied to *M. elegans*, Ed. & H., but more delicate, and the marginal branchlets are not flattened. Main branches 7 millim. broad, rarely over 3 millim. thick, somewhat sinuous, the subdivisions and corallites almost all lateral. Simple lateral corallites give rise by increase in size and the development of buds to twigs ranging from 5 millim. to 4 centim. in length, the larger ones again divaricately divided. Apical corallites 1 to 1.5 millim. diameter, a little compressed, usually 3 millim. exsert. Lateral corallites distant, compressed; nariform at first, but soon becoming tubular and very spreading, diameter 1 millim., length 1 to 5 millim., those which are longer bear buds. There are no immersed corallites, and in this species the upper as well as the lower surface of the main divisions is usually void of corallites of any kind. Star moderate.

Macclesfield Bank, 31 and 37 fathoms (*H.M.S. 'Penguin'*).

Madrepora tizardi.

Madrepora nasuta, B.-Smith (non Dana), Ann. Mag. N. H. vol. vi. 1890, p. 453.

Madrepora effusa, B.-Smith (non Dana), *loc. cit.* p. 454.

? *Madrepora plantaginea*, B.-Smith (non Lamarek), *loc. cit.*

? *Madrepora valida*, B.-Smith (non Dana), *loc. cit.*

Corallum corymbose, a little convex above; under surface oblique, reticulate or almost solid, with short stunted twigs in the general plane, provided with a few scattered verruciform and immersed corallites in reticulate specimens. Branchlets erect and relatively slender and elongate in some specimens, but shorter and stouter in others; apices about 1.2 centim. apart; length 4 millim., diameter 6 to 8 millim., or 1 centim. in stunted forms. Apical corallites 2 millim. diameter, cylindrical. Lateral corallites ascending and distant, dimidiate, gutter-shaped and hooked nariform, with the outer margin curved; those below are dilated, verruciform, with the aperture opening inwards; all are immersed at the base of the branchlets; length very variable, usually 2.7 to 4 millim., diameter about 1.6 millim., but all the more prominent ones are distinctly compressed. At intervals elongate, compressed, tubular corallites, with oblique apex, occur, which indicate new outgrowths. Walls a little thickened and very dense. Star moderately developed.

Tizard Bank, 5 fathoms (*H.M.S. 'Rambler'*); Macclesfield Bank, 13 fathoms (*H.M.S. 'Penguin'*).

Madrepora violacea.

Corallum cespitose or subcorymbose from an incrusting base. Branches short, stout, and much divided, somewhat angular near the base; main divisions 2·5 to 3·5 centim. long, over 1 centim. diameter at a point 1 centim. below the apex. Axial corallites 2·5 to 3·5 millim. diameter, usually 1·5 millim. exsert, subconical, with a rounded margin. Lateral corallites chiefly stout, spreading, tubular, with smaller tubular, nariform, or subimmersed ones between; stout corallites sometimes in subregular rows, diameter 2 to 2·5 millim., length 2 to 4 millim., inner part of the wall often a little shorter than the outer, margin distinctly rounded; the longer ones bear buds. Wall dense and thick. Star moderately developed in stout corallites, but scarcely recognizable elsewhere.

Fiji (*Rayner*); Great Barrier Reef (*Saville-Kent*); Macclesfield Bank, 7 to 8 and 13 fathoms (*H.M.S. 'Penguin'*).

LVII.—*Description of a new Species of Slug from South Africa.* By EDGAR A. SMITH.

THE British Museum has recently received from Mr. J. H. Ponsonby a very remarkable slug which was collected near Pietermaritzburg (Natal) by Mr. H. Burnup.

It belongs to the genus *Apera**, of which only a single species has as yet been described. This group originally bore the name of *Chlamydephorus*†; but as that term had previously been employed in Mammalia‡, that suggested by Heynemann may be conveniently substituted. Heynemann, however, does not appear to have been aware that Agassiz had used the name *Chlamydephorus*, which is practically the same as Binney's *Chlamydephorus*, but abolished Binney's name on the ground that it indicated a false characteristic, namely the presence of a mantle. On the contrary, Heynemann considered that the pallium was entirely wanting or concealed, and hence he proposed the term *Apera*.

* Heynemann, Jahrb. deutsch. Mal. Gesell. 1885, p. 20.

† Binney, Bull. Mus. Comp. Zool. Harvard, vol. v. (1879), p. 331.

‡ Agassiz, Nomen. Zool. Mammal. p. 8 (1842).