

No. 3. — *List of the Polyyps and Corals sent by the Museum of Comparative Zoölogy to other Institutions in Exchange, with Annotations.* By A. E. VERRILL.

ALCYONARIA.

Renilla reniformis CUVIER, Règne An. 2d ed. III. p. 319, 1830 (non HERKLOTZ).

SYN. *Pennatula reniformis* PALLAS, Elench. Zooph. 1766; *Renilla americana* LAMARCK, 1816; *Renilla reniformis* AGASSIZ, Proc. Amer. Assoc. 1850. — Charleston, South Carolina; L. Agassiz.

Renilla Danæ VERRILL, MS. 1861.

SYN. *Renilla americana* (*pars*) DANA, Zoöph. Pl. 57, f. 1; *Renilla reniformis* HERKLOTZ.

This differs widely from *R. reniformis* in its broad, rounded form, it being wider than long, while the preceding is longer than broad; in its much deeper sinus and overlapping posterior lobes; in its costate and granulous under surface, which in the other is nearly smooth with lighter radiating lines; in its more crowded and smaller polyyps; and in having much more prominent spicula on the upper surface around the cells. Its color, also, is darker purple. — Rio Janeiro; J. D. Dana, U. S. Expl. Exp.

Renilla peltata VERRILL.

This is a very large species, readily distinguished by its very broad, thick frond, nearly straight on the outer margin, shallow sinus, and central position of the peduncle. The cells are larger than in any other known species, and armed with five prominent spicula. Color of alcoholic specimens, light purple. — Breton Island, near the mouth of the Mississippi River; C. T. Pierce.

Renilla patula VERRILL.

Very large and thin, with a broadly reniform frond, regularly rounded at the outer margin; sinus very deep, dividing the frond beyond the middle, with the posterior lobes considerably overlapping. Cells rather small, with five slightly prominent lobes. Polyyps very long when expanded. Lower surface slightly scabrous, marked with scarcely raised radiating lines. Peduncle attached close to the margin of the sinus. — Cumana, Ven., South America; J. P. Couthouy.

Renilla amethystina VERRILL.

Broad reniform, wider than long; sinus narrow; peduncle inserted near its edge. Under surface rough, with numerous large spicula. Cells small and crowded. Color deep purple; spicula amethystine. — Panama; T. Rowell.

Stylatula VERRILL.

Elongated, slender, nearly cylindrical; near the base naked, bulbous at the end. Pinnæ short, supported by numerous strong radiating spines, the polyps clustered on their upper surface. Axis sub-cylindrical, extending through nearly the whole length.

Stylatula gracilis VERRILL.

Very slender, nearly cylindrical above; base swollen. Pinnæ at first very narrow, leaving a linear naked space between the two rows on both sides; higher up they overlap and are much crowded, thirty-two in an inch. Length, a foot or more; diameter, .12 inch. Cape St. Lucas, California; J. Xantus.

Stylatula elongata VERRILL.

SYN. *Virgularia elongata* W. M. GABB, Proc. California Acad. Nat. Sci. II. 167, 1863.

Larger and stouter than the preceding. Pinnæ broader and more overlapping, leaving a naked space between the rows for only a short distance; in the middle, twenty occupy an inch. The spines are also larger and fewer. — San Francisco, California; A. Agassiz.

Funiculina Forbesii VERRILL.

SYN. *Pavonaria quadrangularis (pars)* JOHNSON.

A careful examination of several perfect specimens of this species, collected on the coast of Scotland by Mr. Stimpson, proves it to be distinct from that of the Mediterranean, first figured and described by Bohadsch, and afterwards named *Pennatula quadrangularis* by Pallas.

It is much more slender than the latter, with far less numerous and crowded polyps; these are arranged in oblique series of two or three, instead of five; the outer ones are the largest, those occupying the central region being rudimentary and papilliform, but all are disproportionately smaller than those of *F. quadrangularis*. — Near Oban, Scotland; Wm. Stimpson.

Pteroides Putnami VERRILL.

Small and delicate; the pinnate portion broad oval in outline. Peduncle a little more than half the whole length, smooth, slender-pointed. Pinnæ rather broad, with a wide base, supported by five or six clusters of strong spines, radiating from the base, eight or ten spines in each group. These give a strongly-lobed appearance to the edges of the pinnæ. — Hong Kong, China; Capt. W. H. A. Putnam.

Pterogorgia setosa EHRENBERG, Corall. roth. Meer. 1834.

SYN. *Gorgonia setosa (pars)* LINN. *Pterogorgia setosa* DANA, Zoöph.

This species and the following have been more or less confounded by nearly all authors, but when large series are examined they appear quite distinct. — Florida and West Indies; L. Agassiz.

Pterogorgia acerosa EHR. 1834.

SYN. *Gorgonia acerosa* (pars) PALLAS, Elench. Zooph. p. 172, 1766; *Gorgonia setosa* ESPER, Gorg. Tab. 17, fig. 1-3; *Pterogorgia acerosa* DANA, Zoöph. p. 649; *Pterogorgia pinnata* M. EDW. Corall. I. p. 168.

The *Gorgonia pinnata* of Linnæus seems to apply more particularly to a European species, entirely distinct from this. — Florida, West Indies, and Bermuda; L. Agassiz, D. F. Weinland.

Pterogorgia americana EHR. 1834.

SYN. *Gorgonia americana* GMELIN; *Pterogorgia turgida* (?) EHR. Corall. roth. Meer. p. 146, 1834; *Pterogorgia pinnata* DANA, Zoöph.; *Pterogorgia Ellisiana* M. EDW. Corall. p. 169.

The *Gorgonia americana* of Gmelin was based upon the figure of Ellis and Solander (Pl. 14, fig. 3), which is a good representation of the species when preserved in alcohol with the polyps expanded. The polyps are much larger than in the two preceding species, and are arranged somewhat irregularly, in two or three rows on each side of the large and nearly cylindrical branchlets. — Florida; L. Agassiz.

Pterogorgia bipinnata VERRILL.

Coral broad, flabelliform, branching in a plane. The primary branches arising nearly opposite on the sides of the principal stalk, and about one fourth of an inch apart, spread at a large angle; the principal ones are again pinnate, with their branchlets similarly arranged, and about one and a half inches long. Branchlets slender, strongly compressed, a few of them sometimes coalescing, forming rectangular openings. Cells very small, in two alternating series on the edges of the branches. Color violet or bright yellow. — Cumana, Ven., South America; J. P. Couthouy.

Leptogorgia virgulata M. EDW. Coralliaires. 1857.

SYN. *Gorgonia virgulata* LAMK. 1816; *Gorgonia Olivierii* LAMK. Polyp. Flex. 1817; *Plexaura virgulata* VAL.; *Plexaura viminea* VAL. 1855. — Charleston, South Carolina; L. Agassiz. — Beaufort, North Carolina; A. S. Bickmore.

Leptogorgia purpurea M. EDW. 1857.

SYN. *Gorgonia purpurea* PAL., 1766; *Leptogorgia purpurea* M. EDW., Corall. p. 164; *Leptogorgia purpuracea* M. EDW. l. c. p. 164.

This species is very distinct from the preceding in its longer, slender, rounded branches, arising in a fasciculate manner, nearly in a plane. Color purple, red, or orange. — Florida; G. Wurdemann.

Leptogorgia sanguinolenta VERRILL.

SYN. *Gorgonia sanguinolenta* PAL., Elench. Zooph. 1766.

Low, densely branching, somewhat in a plane. Several principal branches, arising near the base, give off from each side in a pinnate manner, numer-

ous, crowded, obtuse branchlets, many of which again divide in a similar way, and even their subdivisions are sometimes pinnate. Color variable, often yellow or whitish with purple cells; axis yellowish, subtransparent, compressed. — Hayti, W. I.; D. F. Weinland.

Leptogorgia rigida VERRILL.

Arborescent, rather tall, branching numerous and irregularly, somewhat in a plane. Principal branches long, irregular, often crooked, sub-pinnate, giving off lateral branches at irregular intervals of similar character. Very variable in form and color; often deep bluish purple, less frequently orange, ferruginous, or white; axis black, amber colored near the ends. — Acapulco, Mexico; A. Agassiz, D. B. Vanbrunt. — Cape St. Lucas, California; J. Xantus. — Panama; J. H. Sternberg.

Leptogorgia ampla VERRILL.

Very large flabelliform. Several large, nearly equal branches, springing close to the base, curve outward at first and then ascend nearly parallel, giving off, usually at intervals of two or three inches, long and rather thick branches and branchlets of nearly uniform size, which at first spread nearly at right angles and then rise abruptly, parallel to the main branches. The largest specimen is 20 inches high; 16 broad. Color bright lemon-yellow. — Margarita Bay, Lower California (?); A. Garret. Possibly from the Bonin Islands.

Rhipidogorgia flabellum VALENCIENNES, Comptes-rendus, XLI. p. 13. 1855.

SYN. *Gorgonia flabellum* LINN. — Florida, West Indies, and Bermuda; L. Agassiz, A. S. Bickmore.

Rhipidogorgia stenobraxis VAL. 1855.

SYN. *Gorgonia stenobraxis* VAL. Voyage de la Vénus, Pl. 12, fig. 1; *Rhipidogorgia Engelmanni* HORN, Proc. Phil. Acad. Nat. Sci. 1860, p. 233.

I have satisfied myself, by an examination of the original specimen of Horn, that the species last quoted was founded on a small and bad specimen of *R. stenobraxis*. In the Museum there are large numbers of specimens, both dry and in alcohol, from different localities on the Pacific coast showing a complete series between the extreme forms, which, indeed, seem to depend more on age than any other cause. — Acapulco, Mexico; D. B. Vanbrunt, A. Agassiz. — Panama; A. Agassiz, J. H. Sternberg.

Rhipidogorgia Agassizii VERRILL.

Fronds broader than high, very finely and evenly reticulated, the openings nearly square or pentagonal, about .12 of an inch in diameter. The very short thick base divides at once into numerous small and nearly equal branches, which subdivide so evenly and rapidly that the principal branches cannot usually be traced more than half across the frond. Terminal branchlets free for about one fourth of an inch. Cells small, crowded,

a little raised. Color purple, light red, or yellowish. — Acapulco ; A. Agassiz, D. B. Vanbrunt. — Panama ; J. H. Sternberg.

I have named this fine species in honor of its discoverer, Mr. A. Agassiz, who has greatly contributed to our knowledge of the Marine Faunæ of the Pacific coast of North America.

Rhipidogorgia media VERRILL.

Fronds low, broader than high, intermediate between the two preceding species in the size of its reticulations ; these are usually square or pentagonal, quite irregular, generally about one quarter of an inch wide and nearly the same in height. Several large branches usually radiate from the base across the frond. Cells numerous on the sides, a little prominent. Color red with yellow cells, or uniform red or purple. — Acapulco, Mexico ; A. Agassiz, D. B. Vanbrunt.

Xiphigorgia anceps M. EDW. Coralliaires. 1857.

SYN. *Gorgonia anceps* PAL. *Pterogorgia anceps* EHR., 1834 ; *Pterogorgia Guadalupensis* DUCH. et MICH., 1850. — Florida and West Indies ; L. Agassiz, G. Wurdemann.

Xiphigorgia citrina VERRILL.

SYN. ? *Gorgonia citrina* ESP. 1790 ; *Gorgonia anceps (pars)* ESP. Planz. t. II. p. 38, tab. VII. 1788 ; *Gorgonia (Pterogorgia) citrina* DANA, Zoöph. 1846 ; *Pterogorgia fasciolaris* EHR., Corall. roth. Meer. p. 145, 1834 ; ? *Pterogorgia Sancti-Thomæ* EHR. l. c. p. 145.

This species is unquestionably *P. citrina* Dana, but if, as is possible, the *Gorgonia citrina* of Esper should prove to be a distinct species, the name *X. fasciolaris* (EHR.) will be next in order.

It is a smaller and more branching species than *X. anceps*, forming low, broad corals, branching somewhat in a plane, with much compressed slender branchlets, three or four inches long ; these are rarely triangular, — a form very frequent in *X. anceps*. Color violet, or bright yellow with purple cells. — Florida ; L. Agassiz. — St. Thomas ; Dr. Otis.

Gorgonia verrucosa PALLAS. — Nice ; J. Burkhardt.

Gorgonia ramulus VAL. — Panama ; A. Agassiz, J. H. Sternberg. — Acapulco ; D. B. Vanbrunt.

Gorgonia aurantiaca VERRILL.

SYN. *Lophogorgia aurantiaca* HORN, Proc. Phil. Acad. Nat. Sci. 1860, p. 233.

This is a very branching species, with short irregular branchlets, verruciform, bilobed cells, and a distinct median groove. Color brick-red, or yellowish. Axis somewhat compressed. — Acapulco, Mexico ; A. Agassiz.

Lophogorgia palma M. EDW.

SYN. *Gorgonia palma* PAL. 1766 ; *Gorgonia flammea* ELLIS and SOL. 1786. — Cape of Good Hope.

Plexaura homomalla LAMOUREUX, Polyp. Flex. 1816.

SYN. *Gorgonia homomalla* ESPER. — Florida; L. Agassiz. — Bermuda; A. S. Bickmore.

The cells of this species sometimes have the borders prominent.

Plexaura flexuosa LAMX. Polyp. Flex. 1816.

SYN. *Eunicea furcata* EHR. 1834; *Gorgonia anguiculus* DANA, 1846; ? *Plexaura rhipidalis* VAL. 1855; *Plexaura salicornoides* M. EDW. 1857.

This species varies greatly in form and color, as well as in the degree of prominence of the cells, which depends upon the state of contraction of the polyps when dried. The color is most commonly either dull wine-red, or grayish yellow. — Florida and West Indies; L. Agassiz.

Plexaura crassa LAMX. Polyp. Flex. 1816.

SYN. *Gorgonia crassa* ELLIS and SOL. p. 91, pl. 18, fig. 3, 1786 (non *Eunicea crassa* M. EDW., nec *Gorgonia crassa* DANA); *Gorgonia porosa* ESP. Planz. tab. X. (form with large cells); *Gorgonia antipathes (pars)* ESP. tab. XXIII. (1789); *Gorgonia vermiculata* LAMK. 1816; *Plexaura macrocythara* LAMX., l. c. p. 429, 1816; *Plexaura friabilis (pars)* LAMX., l. c. p. 430; do. Exp. Methodique, p. 35, pl. 18, fig. 3, 1821; *Plexaura antipathes* EHR., 1834 (non *Gorgonia antipathes* LINN.); *Gorgonia vermiculata* DANA, 1846; *Plexaura arbusculum* DUCH., An. rad. des Antilles (1850).

There is no American species known to us, except the present, to which the description of Ellis can apply, while it agrees perfectly with this. The character of having a very black axis, very small at the extremities, is especially characteristic, and, also, of having "long fleshy branches that bend a little out and then grow upright," and, in addition, the "violet flesh," and "scattered arrangement of the cells" can leave no question of its identity. The figure quoted above, of which Ellis gave no explanation, agrees perfectly with his description and with alcoholic specimens in the Museum. — Florida; L. Agassiz. — Bermuda; A. S. Bickmore.

Plexaura dichotoma DANA, Zoöph. 1846.

SYN. *Gorgonia dichotoma* ESP., Planz. Gorg. tab. XIV. (1788); *Gorgonia multicauda (pars)* LAMK. Hist. An. s. Vert. 1816; *Gorgonia heteropora* LAMK., l. c. 1816; *Plexaura heteropora* LAMX. Polyp. Flex. (1816); *Gorgonia (Plexaura) dichotoma (pars)* DANA, Zoöph. 1846; *Gorgonia crassa* DANA, Zoöph. 1846; *Gorgonia brevis* (young) DUCHASSAING, An. rad. des Ant. p. 20 (1850); *Eunicea multicauda* M. EDW. Corall. 1857; ? *Plexaura friabilis* M. EDW. l. c. I. p. 156, 1857. — Florida; L. Agassiz. — St. Thomas; Dr. Otis.

This species varies greatly in appearance according to the mode of preservation and the state of contraction of the cells, and for this reason much confusion has arisen in regard to its synonymy. In the Museum there is a specimen labelled *Gorgonia dichotoma* by Dana, with the exterior in great

part removed, which is almost a fac-simile of the specimen figured by Esper. Other specimens agree with the descriptions by Lamarck and Milne Edwards. The axis in the present species is always gray or fuscous, looking more like wood than horn, differing greatly, in this respect and several others, from *G. crassa* ELLIS.

The character of having cells flat or slightly prominent is entirely insufficient to separate *Plexaura* and *Eunicea*, since all the species of *Plexaura* have, in certain states of preservation, cells with raised borders, and there are often to be seen on the same specimen flat cells and others which are quite prominent. For this reason the genera *Rhinogorgia* and *Gonidora*, proposed by Gray, are not admissible (Ann. and Mag. 1859, p. 442).

Plexaura turgida VERRILL.

SYN. *Eunicea turgida* EHR. 1834; ? *Eunicea crassa* M. EDW. Coral-liaires I. p. 148, 1857 (non *Gorgonia crassa* ELLIS and SOL.).

This is one of the largest known species, growing to the height of two or three feet, with the branches one half an inch or more in diameter.

In the structure of the polyps I have been unable to detect any difference between this species and *P. dichotoma*, the type of *Plexaura* Lamx., or *P. homomalla* and *P. flexuosa*, uniformly referred to this genus by authors. — Florida Reefs; L. Agassiz.

Plexaura flavida VAL. 1855.

SYN. *Gorgonia flavida* LAMK. 1816.

The color of this species is often dark violet, with the surface merely tinged with yellow. — Hayti; D. F. Weinland.

Plexaura fucosa VAL. 1855.

SYN. *Gorgonia fucosa* VAL. Voyage de la Vénus. — San Francisco, California; T. G. Cary.

Plexaura suffruticosa M. EDW. 1857.

SYN. *Gorgonia suffruticosa* DANA, Zoöph. 1846. — Feejee Islands; J. D. Dana, U. S. Expl. Exp.

Eunicea limiformis LAMX. Polyp. Flex. 1816.

SYN. *Eunicea quincuncialis* EHR. 1834; *Gorgonia quincuncialis* DANA, 1846. — Florida and West Indies; L. Agassiz.

Eunicea calyculata LAMX. 1816.

SYN. *Gorgonia calyculata* ELLIS and SOL., p. 95, pl. 18, fig. 2, 1786; *Eunicea clavaria* LAMX. 1821. — Florida; L. Agassiz.

Eunicea laxispica M. EDW. 1857.

SYN. *Gorgonia laxispica* LAMK.; *Eunicea mammosa* LAMX.; *Gorgonia papillosa* DANA. — Florida; L. Agassiz.

Eunicea plantaginea VAL. 1855.

SYN. *Gorgonia plantaginea* LAMK. — Florida; L. Agassiz.

Eunicea ramulosa EHR. 1834.

SYN. *Gorgonia spicifera* DANA, 1846. — Florida; L. Agassiz.

Eunicea Tourneforti M. EDW. 1857. — Florida and West Indies; G. Wurde-
mann.

Eunicea Rousseaui M. EDW. 1857. — Turk's Island, W. I.; J. E. Webber.

Muricea spicifera LAMX. 1821.

SYN. *Gorgonia muricata* (pars) PALLAS. — Florida and West Indies;
L. Agassiz.

Muricea lima M. EDW. 1857.

SYN. *Gorgonia lima* LAMK. — Florida; L. Agassiz.

Muricea elongata LAMX. 1821. — Florida and West Indies; L. Agassiz.

Muricea laxa VERRILL.

Very slender, with long flexuous branches. . This is closely allied to *M elongata*, but has longer and very acute verrucæ, which are much more loosely arranged and armed with very long, sharp spicula. Axis nearly terete, somewhat compressed at the axils. Color light yellow. — Florida; L. Agassiz.

Muricea elegans AG. MS.

A large erect species, irregularly pinnate and bipinnate, branching nearly in a plane. Trunk stout and nearly erect, transversely compressed; branches very numerous, curved, often pendulous. Verrucæ broad, conical, spreading, armed with large spicula. Color orange. — Off Charleston, South Carolina; L. Agassiz.

Muricea echinata VAL. Comptes-rendus. 1855. (No description.)

SYN. *Muricea echinata* M. EDW. Coralliaires, 1857. — Panama; C. F. Davis, J. H. Sternberg.

Muricea robusta VERRILL.

This is a low, stout species, branching very irregularly in a subdichotomous manner, with thick, clavate, crooked branches. Cells crowded, large, open, little prominent, especially towards the base, where they open outward. Spicula numerous, short and thick. Color brownish yellow or purple. — Acapulco, Mexico; A. Agassiz.

Muricea hebes VERRILL.

The specimens of this species, which are probably young, have erect, simple, or sparingly dichotomous stalks, three or four inches high, slender at the base, but thick and clavate above. The verrucæ are crowded, broad, and prominent, armed with numerous rather sharp spicula. Color deep reddish purple, or dark brown. It resembles *Gonigoria clavata* GRAY, which should be referred to the genus *Muricea*, but the latter is stouter, with shorter and more crowded cells. The axis is also described as black, while in the present species it is fuscous. — Acapulco, Mexico; A. Agassiz.

Muricea appressa VERRILL.

Corallum broad, flabelliform, very branching, even to the base. The trunk divides at about half an inch from the base into two, three, or more principal branches, which rapidly diverge and subdivide in an irregularly dichotomous or subpinnate manner. Branchlets slender, cylindrical or slightly clavate, with obtuse tips, one or two inches long and one eighth of an inch in diameter. Cells small, thickly crowded on all sides of the branches, rounded, closely appressed, the summits curved inward; exterior densely covered by small oblong spicula. Color, in alcohol, dark umber-brown. — Panama; J. H. Sternberg.

Primnoa reseda VERRILL.

SYN. *Gorgonia reseda* PALLAS, Elench. Zooph. 1766; *Gorgonia lepadifera* LINN. Syst. Nat. ed. XII. 1767; ELLIS and SOL. 1786; *Primnoa lepadifera* LAMX. Polyp. Flex. 1816. — St. George's Bank; C. H. Fifield.

Callogorgia verticillaris GRAY.

SYN. *Primnoa verticillaris* EHR. 1834. — Fayal, Azores; Chas. Dabney.

Gorgonella umbraculum VERRILL, MS. 1862.

SYN. *Gorgonia umbraculum* ELLIS and SOL. 1786; *Rhipidogorgia umbraculum* VAL. 1855; *Umbracella umbraculum* GRAY. — East Indies.

Gorgonella stricta VERRILL, MS. 1862. .

SYN. ? *Gorgonia stricta* LAMK. 1816; ? *Rhipidogorgia stricta* M. EDW. 1857.

This species agrees in all its external characters with the species quoted, but has a calcareous axis. — Cape of Good Hope.

Juncella juncea VAL. 1855.

SYN. *Ellisella juncea* GRAY. — Indian Ocean.

Juncella extans VERRILL.

Tall and simple, with the very prominent verrucæ curved inward and arranged crowdedly in a band on each side of the axis, leaving a wide naked space on each side. Color white. Axis grayish white, stony and rigid. — Fayal, Azores; C. Dabney.

Isis hippuris LINN. — East Indies.**Parisis** VERRILL.

Corallum irregularly branching, nearly in a plane. The axis consists alternately of calcareous and suberous segments, of uniform thickness, traversed by numerous narrow sulcations. The branches originate from the calcareous segments. Cœnenchyma persistent, rather thin, somewhat membranous, with a rough surface. Cells prominent, arranged irregularly on all sides of the branchlets, but often absent on the median surfaces of the larger branches.

Parisis fruticosa VERRILL.

Large, flabelliform; the principal branches arising irregularly along the

sides of the trunk, divide and subdivide rapidly into other smaller branches and branchlets, producing a densely ramulous frond. The branches ascend and diverge usually at an angle of about 50° ; the branchlets often spread at right angles, and do not coalesce. Papillæ numerous, crowded on the branchlets, elongated, conical. Color grayish yellow; axis white; internodes yellowish brown. — Sooloo Sea; J. D. Dana, U. S. Expl. Exp.

Melitodes ochracea VERRILL.

SYN. *Isis ochracea* LINN.; *Melitæa ochracea* LAMX. 1812. — Singapore, Capt. W. H. A. Putnam.

The name *Melitæa* having been used for a genus of Insects by Fabricius in 1808, four years before it was employed by Lamouroux, we have adopted *Melitodes* for this genus, as restricted by Gray. (See Proc. Zoöl. Soc. Lond. 1859, p. 485.)

Melitodes virgata VERRILL.

SYN. *Melitæa ochracea* (*pars*) DANA (from Feejee Islands).

A comparison of the specimens collected by the U. S. Exploring Expedition at the Feejee Islands with several hundred specimens of all forms and sizes from Singapore, in the collection of the Museum, proves that they are unquestionably distinct, though closely resembling one another in general appearance.

The principal branches in *M. virgata* rise nearly parallel, and are much more elongated, tapering and subdividing far less rapidly than in *M. ochracea*. The calcareous segments are also longer, and the general appearance of the coral is more open. — Feejee Islands; J. D. Dana, U. S. Expl. Exp.

Mopsella elongata VERRILL.

SYN. *Melitella elongata* GRAY. Proc. Zoöl. Soc. Lond. 1859, p. 485. — Singapore; Capt. W. H. A. Putnam.

Mopsella dichotoma GRAY, Proc. Zoöl. Soc. Lond. 1857, p. 284.

SYN. *Isis dichotoma* LINN.; *Mopsea dichotoma* LAMX. 1816. — Cape Town; J. D. Dana, U. S. Expl. Exp.

I am unable to find any generic differences between this species, which is the type of *Mopsella* GRAY, and those subsequently referred by him to *Melitella*, and have, therefore, united the two genera.

Mopsella aurantia VERRILL.

SYN. *Isis aurantia* ESPER, 1797; *Melitæa retifera* LAMK. 1816; M. EDWARDS, 1857; *Melitella retifera* GRAY, Proc. Zoöl. Soc. Lond. 1859, p. 486. — Australia; A. Garret.

Mopsella textiformis VERRILL.

SYN. *Melitæa textiformis* LAMK.; *Melitella retifera* (*pars*) GRAY, l. c. 1859. — Australia; A. Garret.

Mopsella tenella VERRILL.

SYN. *Melitæa tenella* DANA; *Melitella?* *tenella* GRAY. — Sandwich Islands; J. D. Dana, U. S. Expl. Exp.

Briareum asbestinum AGASSIZ, MS.

SYN. *Alcyonium asbestinum* PALLAS, 1766; *Gorgonia briareus* ELLIS and SOL. 1786; *Briareum gorgonideum* BLAINVILLE, 1830; *Lobularia asbestina* EHR. 1834; *Lobularia capitata* DUCHASSAING, 1850. — Florida; L. Agassiz. — Hayti; D. F. Weinland.

Briareum plexaureum BLAINV. 1830.

SYN. *Alcyonium plexaureum* LAMX. Expos. Meth. p. 68, pl. 76, figs. 2, 3, 4, 1821. — Florida; L. Agassiz.

Titanideum AGASSIZ, MS.

This genus is closely allied to *Briareum*, but has a more distinct axis, which is spongy and very spiculose, but firm and less porous than that of the latter. The cells are scattered on all sides, and not prominent.

Titanideum suberosum AGASSIZ, MS.

SYN. *Gorgonia suberosa* ELLIS and SOL. p. 93, 1786; ELLIS, Corallines, Tab. 26, figs. P, Q, R; *Briareum suberosum* DANA, Zoöph. p. 463, 1846. — Charleston, South Carolina; L. Agassiz. — Beaufort, North Carolina; Wm. Stimpson. — Stono Inlet; Dr. J. W. Page, U. S. A.

Alcyonium digitatum LINN.

Coast of England; Free Public Museum of Liverpool.

Alcyonium carneum AGASSIZ, Proc. Amer. Assoc. 1850.

Coast of New England; L. Agassiz.

Sarcophytum glaucum VERRILL.

SYN. *Alcyonium glaucum* QUOY et GAIMARD; DANA, Zoöph. p. 623, pl. 58, figs. 4 and 5. — Feejee Islands; J. D. Dana, U. S. Expl. Exp.

Sarcophytum latum VERRILL.

SYN. *Alcyonium latum* DANA. Zoöph. p. 623, pl. 58, figs. 6 and 7. — Tonga-Tabu; J. D. Dana, U. S. Expl. Exp.

Ammothea nitida VERRILL.

This species grows in groups consisting of several smooth, subcylindrical stalks connected together at the base, undivided for about three inches, when they suddenly divide and subdivide into a cluster of numerous slender branchlets. Cells small, prominent, rather loosely scattered along the branchlets. — Zanzibar; C. Cooke.

Spongodes arborescens DANA.

SYN. *Spoggodia celosia*, var. *arborescens* DANA, Zoöph. p. 626, pl. 59, fig. 4 (non *S. celosia* LESSON). — Feejee Islands; J. D. Dana, U. S. Expl. Exp.

Spongodes capitata VERRILL.

Large and very ramulous; the thick naked trunk subdividing in a dichotomous manner from near the base into short, capitate, terminal branches, having a dense cluster of very short branchlets at the ends on which the cells are closely crowded. Spicula white, not very conspicuous, the large ones not very numerous. Color in alcohol yellowish gray. — Hong Kong, China; Capt. W. H. A. Putnam.

Spongodes gigantea VERRILL.

Grows in a manner similar to the preceding, but stouter and more arborescent, with larger and less crowded polyps and very large, conspicuous, white spicula. Color in alcohol dark brownish red. — Hong Kong, China; Wm. Stimpson, N. Pacif. Expl. Exp.

Telesto fruticulosa DANA.

Charleston, South Carolina; L. Agassiz. — Stono Inlet; Dr. J. W. Page.

Cœlogorgia palmosa M. EDW. 1857.

SYN. *Lobularia palmosa* VAL. MS. — Zanzibar; C. Cooke.

Tubipora purpurea PALLAS. — Singapore; Capt. W. H. A. Putnam.**Tubipora musica** LINN. — East Indies; Capt. W. H. A. Putnam.

ZOANTHARIA.

Madrepora cervicornis LAMARCK. — Florida and West Indies; L. Agassiz.**Madrepora robusta** DANA. — Feejee Islands; J. D. Dana.**Madrepora gravida** DANA. — Singapore; Capt. W. H. A. Putnam.**Madrepora nobilis** DANA.

SYN. *Madrepora secunda* DANA. — Singapore; Capt. W. H. A. Putnam.

A careful comparison of the types of Dana with the extensive series of specimens in the Museum shows conclusively that *Madrepora nobilis* and *M. secunda* are but variable forms of one species.

Madrepora arbuscula DANA. — Singapore; Capt. W. H. A. Putnam.**Madrepora prolifera** LAMARCK. — Florida and West Indies; L. Agassiz.**Madrepora acuminata** VERRILL.

A large species allied to *M. nobilis*, but having much longer, regularly tapering, often curved branches, which are an inch in diameter, evenly rounded and thickly covered by spreading, nearly uniform, cylindrical, dimidiate corallites.* Surface of corallum between the cells and exterior of the corallites covered with minute spines, the latter subcostate. Septa

* We use the word *corallite* as the English equivalent of *polypierite* employed by Milne-Edwards, as his *polypier* corresponds to *corallum* of Dana.

rudimentary, only the two largest usually distinct. A few rudimentary corallites, often opening downward, are scattered among the others.—Kingsmills Islands; A. Garret.

Madrepora diffusa VERRILL.

Corallum low arborescent, much branched; branchlets widely spreading or divaricate, curved, gradually tapering to the acute extremities, about a third of an inch in diameter, and two or three long. Corallites broad tubulariform, short, scarcely compressed, widely open, the exterior closely striate, the costæ consisting of numerous, distinct points; intercellular tissue firm, reticulated, the surface spinose. Septa narrow, the six primary ones distinct, the inner one broadest. Terminal corallite exsert, scarcely larger than the lateral. This species resembles *M. arbuscula* and *M. formosa* in its mode of branching, but the cells are entirely different.—Kingsmills Islands; A. Garret.

Madrepora parvistella VERRILL.

Arborescent, numerously branched; branchlets spreading, curved, neatly rounded and tapering, about half an inch in diameter and three or four long. Corallites evenly crowded, very small, short, tubular, opening obliquely upward; exterior costate, scabrous; cells small, broad oval, stellate; twelve septa distinct, the two largest nearly meeting in the centre.—Singapore; Capt. W. H. A. Putnam.

Madrepora horrida DANA. — Feejee Islands; J. D. Dana.

Madrepora abrotanoides LAMARCK. — Feejee Islands; J. D. Dana.

Madrepora virgata DANA. — Feejee Islands; J. D. Dana.

Madrepora hebes DANA. — Feejee Islands; J. D. Dana.

Madrepora austera DANA. — Singapore; Capt. W. H. A. Putnam.

Madrepora implicata DANA. — Feejee Islands; J. D. Dana.

Madrepora tortuosa DANA. — Feejee Islands; J. D. Dana.

Madrepora formosa DANA. — Feejee Islands; J. D. Dana.

Madrepora brachiata DANA. — Sooloo Sea; J. D. Dana.

Madrepora echinata DANA. — Feejee Islands; J. D. Dana.

Madrepora longicyathus M. EDW. — Singapore; Capt. W. H. A. Putnam.

Madrepora tubigera HORN, Proc. Phil. Acad. Nat. Sci. 1860, p. 435.

SYN. ? *Madrepora corymbosa* LAMK. — Singapore; Capt. W. H. A. Putnam.

Madrepora Danæ VERRILL.

SYN. *Madrepora deformis* DANA (non MICHLIN). — Tahiti; J. D. Dana, A. Garret.

Madrepora cuspidata DANA. — Tahiti; A. Garret.

Madrepora plantaginea LAMARCK (non DANA).

SYN. *M. acervata* DANA. — Singapore; Capt. W. H. A. Putnam.

Madrepora cerealis DANA. — Singapore; Capt. W. H. A. Putnam.

Madrepora nasuta DANA. — Tahiti; J. D. Dana, A. Garret.

Madrepora globiceps DANA. — Tahiti; J. D. Dana, A. Garret.

Madrepora millepora DANA. — Singapore; Capt. W. H. A. Putnam.

Madrepora convexa DANA.

SYN. *Madrepora corymbosa* DANA (non LAMK.), the young. — Singapore; Capt. W. H. A. Putnam.

Madrepora surculosa DANA. — Singapore; Capt. W. H. A. Putnam.

Madrepora turbinata DANA.

SYN. *Madrepora surculosa*, var. *turbinata* DANA.

This species is perfectly distinct from *M. surculosa*. Unbleached specimens are delicate rose-colored. — Tahiti; J. D. Dana, A. Garret.

Madrepora appressa DANA.

SYN. *Heteropora appressa* EHR. 1834; ? *H. imbricata* EHR.; *Madrepora plantaginea* DANA (non LAMARCK); ? *M. echidnaea* DANA. — Singapore; Capt. W. H. A. Putnam.

Madrepora paxilligera DANA. — Tahiti; A. Garret.

Madrepora cytherea DANA. — Tahiti; J. D. Dana, A. Garret.

Madrepora spicifera DANA. — Singapore; Capt. W. H. A. Putnam.

Madrepora palmata LAMARCK.

SYN. *Madrepora perampla* HORN, Proc. Phil. Acad. Nat. Sci. 1860, p. 435. — Florida and West Indies; L. Agassiz, D. P. Woodbury.

Porites furcata LAMARCK. — Florida and West Indies; L. Agassiz.

Porites clavaria LAMARCK. — Florida and West Indies; L. Agassiz.

Porites compressa DANA. — Sandwich Islands; A. Garret.

Porites mordax DANA. — Sandwich Islands; A. Garret.

Porites lobata DANA. — Sandwich Islands; A. Garret.

Porites astræoides LAMARCK. — Florida and West Indies; L. Agassiz.

Synaræa VERRILL.

Corallum irregularly branched or glomerate. Cells without distinct walls, the septa rudimentary; six prominent paliform lobes surround the central cavity, which has a rudimentary or very small, tubercular columella; outside of the pali are other similar points, or granulations, scattered between the cells, which are not distinctly circumscribed, but often separated for some distance by a porous cœnenchyma.

This genus includes *Porites erosa*, *P. informis*, and *P. monticulosa* of

Dana, together with the following. The existence of generic characters distinct from *Porites* in these species was suggested by Milne-Edwards, although he had not been able to examine specimens of them.

Synaræa Danæ VERRILL.

SYN. *Porites contigua* DANA; *Porites Danæ* M. EDW. and HAIME.
Feejee Islands; J. D. Dana.

Synaræa irregularis VERRILL.

This species forms large irregular masses, consisting of numerous angular, clavate, uneven and crowded branches, often nodose at the ends, and much coalesced, giving a rough, eroded appearance to the mass. Cells larger than in the following species; pali prominent, slender; columella rudimentary, often wanting. Surface covered with slender, prominent, often toothed granulations, which are rather loosely arranged. Color, deep umber brown. — Sandwich Islands; A. Garret.

Synaræa convexa VERRILL.

Corallum forming rounded hemispherical clumps, composed of numerous closely crowded, slender branches, very much divided, angular, and often flabelliform at the summits, much coalesced near the ends, leaving the tips free for about one third of an inch. Cells closely arranged even on the sides of the branches, small and shallow; pali short, thick, obtuse, surrounded by short, obtuse granulations, which are crowded over the whole surface between the cells. Color, dark ash. — Society Islands; A. Garret.

Synaræa solida VERRILL.

Corallum convex and glomerate, arising from a narrow base, formed by numerous very irregular stout branches, coalesced nearly throughout into a solid mass, leaving only the ends free for about half an inch; these are often one half an inch thick, angular and proliferous. Cells rather open and distinct, numerous; pali distinct, not very prominent; septa apparent, but imperfect; columella generally wanting; granulations of the surface rough, irregular, not crowded. Color, grayish brown. — Society Islands; A. Garret.

Alveopora excelsa VERRILL.

Coral incrusting at base, massive, gibbous, rising into long subcylindrical lobes, rounded at the summits. Cells deep, neatly polygonal, nearly uniform in size, averaging about .08 of an inch in diameter, with, occasionally, much larger ones intermingled; septa in two cycles, represented by twelve vertical series of slender spines, uniting at the middle into a loose rudimentary columella; walls thin, pierced by numerous rounded pores. — Singapore; Capt. W. H. A. Putnam.

Alveopora retusa VERRILL.

Corallum irregularly lobed or gibbous; the lobes thick, clavate, often

compressed or subfurcate at the ends. Cells deep, unequal in size, the largest about one tenth of an inch in diameter, with others not half as large intermingled; septa represented in the large cells by three cycles of spines, uniting into an imperfect columella; walls rather stout, with large oval pores in vertical series. — Singapore; Capt. W. H. A. Putnam.

Montipora capitata M. EDW. and HAIME.

SYN. *Manopora capitata* DANA. — Sandwich Islands; A. Garret.

Montipora effusa M. EDW. and HAIME.

SYN. *Manopora effusa* DANA. — Society Islands; A. Garret.

Montipora nodosa M. EDW. and HAIME.

SYN. *Manopora nodosa* DANA. — Feejee Islands; J. D. Dana.

Montipora erosa M. EDW. and HAIME.

SYN. *Manopora erosa* DANA. — Feejee Islands; J. D. Dana.

Montipora hispida M. EDW. and HAIME.

SYN. *Manopora hispida* and *M. spumosa* DANA (non LAMK.). — Singapore; Capt. W. H. A. Putnam.

Endopachys Maclurii M. EDW. and HAIME. 1848.

SYN. *Turbinolia Maclurii* LEA. 1833. — Tertiary, Alabama.

Balanophyllia elegans VERRILL, Report on the Polyps of the Northwest Boundary Survey, 1861 (not yet published).

Corallum attached by a broad base, low, subturbinate. Calyx broad, oval, deep. Epitheca well developed, covering more than half the height of the wall, which is thin and very porous. Septa thin, forming five complete cycles, the principal ones a little exsert, strongly toothed at the summit, finely dentate below; those of the last order unite together near the columella, and are joined near their middle by those of the preceding order; columella porous, little developed. Height .4 of an inch; greatest diameter of the calyx .48, shortest .4. Color of the living polyp, bright orange. — Crescent City and Mendocino, California; A. Agassiz.

Balanophyllia scabrosa VERRILL.

SYN. *Dendrophyllia scabrosa* DANA, 1846; *Balanophyllia Cumingii* M. EDW. and HAIME, 1848; *Dendrophyllia? scabrosa* M. EDW. Coralliaires. — Singapore; J. D. Dana.

Cænopsammia equiserialis M. EDW. Coralliaires. 1857.

Singapore; Capt. W. H. A. Putnam.

Cænopsammia tenuilamellosa M. EDW. and HAIME.

Monographie des Eupsammides, 1848. — Panama and Acapulco; A. Agassiz.

Cænopsammia radiata VERRILL.

Similar to the preceding species, but having a much smaller, spongy col-

umella, more conical and less open cells, and the six primary septa much broader and thicker than the others, with rounded nearly entire edges. — Society Islands; A. Garret.

Stylophora digitata M. EDW. and HAIME. 1850.

SYN. *Madrepora digitata* PALLAS, Elench. Zooph. p. 326, 1766; *Porites scabra* and *elongata* LAMK. 1816; *Sideropora digitata* and *elongata* BLAINVILLE, 1830; DANA, 1846; *Porites digitata* EHR. 1834. — Singapore; Capt. W. H. A. Putman.

Stylophora Danæ M. EDW. and HAIME. 1850.

SYN. *Sideropora palmata* DANA, 1846 (non LAMK.). — Singapore; Capt. W. H. A. Putnam.

This approaches the preceding very closely in some of its forms, and may not be distinct.

Stylophora stellata VERRILL.

Corallum forming even rounded clumps, a foot or more in diameter, consisting of numerous, evenly crowded branches, which are rounded, about one half an inch in diameter, furcate, often flattened at the ends. Cells evenly crowded over the surface, arranged somewhat in spiral lines, the upper edges prominent, rather stout. Septa forming three cycles, the last two often rudimentary or wanting; primary septa a little exsert, rather narrow, the inner edges vertical, scarcely traceable to the columella, which is small, papilliform. This species resembles *S. digitata* in form, but the cells are entirely different. — Kingsmills Islands; A. Garret.

Madracis decactis VERRILL.

SYN. *Astrea decactis* LYMAN, Proc. Bost. Soc. Nat. Hist. VI. p. 260, 1857. — Florida; L. Agassiz.

Stylaster roseus GRAY, Zoöl. Misc. 1836.

SYN. *Madrepora rosea* PALLAS, 1766; *Oculina rosea* LAMK. 1816; *Allopora rosea* DANA, 1846; *Stylaster roseus* Agassiz, Florida Reefs, with fig. (unpublished). — Florida; L. Agassiz.

Stylaster elegans VERRILL.

Corallum flabelliform, the principal branches large, compressed, rapidly dividing into smaller branches and branchlets, the ultimate divisions very slender and delicate, rarely coalescent. Cells very small, a little prominent, mostly arranged on the edges of the branchlets, but a few are scattered over the sides; septa narrow, about sixteen distinct; columella minute, styliform. Color, bright rose, lighter on the large branches. — Ebon Island; A. Garret.

Stylaster tenuis VERRILL.

Corallum similar to the preceding in its mode of branching, but the branches are not compressed. Cells one third larger, about .02 of an inch in

diameter, arranged in simple longitudinal series on the edges of the branchlets, deep at the centre, with a minute slender columella, which is often wanting; septa twelve or fourteen, a little exsert, about one third as broad as the cells. Color, light red, with small irregular spots of white; sides of the branchlets thickly covered with small verrucæ.—Upolu, Navigator Islands; J. D. Hague.

Distichopora nitida VERRILL.

Corallum flabelliform, branching dichotomously in a plane. Branches round or flattened transversely; the branchlets obtuse, often compressed at the tips; surface very minutely granular, appearing almost smooth, with scattered patches of rounded verrucæ, having rudimentary septa and pits surrounding them, and therefore probably corresponding to the enlarged columellæ of cells without solid walls. Three rows of minute pits are arranged closely in regular series along the edges of the branches; those of the central, larger row are circular and often have a slender columella in the centre. The lateral ones are much smaller, and generally irregular in form; a transverse section shows that the central pits correspond to the central open space in the cells of *Stylaster*, while the lateral ones are interseptal chambers, the greater part of which have been obliterated by the thickening of the septa; in some of the cells, twelve septa may be traced. Color bright red, with the tips of the branches yellowish white; other specimens are light orange.—Ebon Island; A. Garret.

Distichopora coccinea GRAY. 1860.—Australia?; A. Garret.

Errina aspera GRAY, Trans. Zoöl. Soc. 1835.

SYN. *Millepora aspera*, LINN. Ed. XII. 1767.—Fayal; Chas. Dabney.

An examination of the structure of this coral has convinced me that it is closely allied to *Distichopora*, and consequently to *Stylaster*, the process of filling up the cells being here carried to the last degree.

Oculina varicosa LESUEUR. 1817.—St. Thomas, W. I.; Dr. G. H. Otis.

This species is unquestionably distinct from the next, with which it has been united by Milne-Edwards and Haime. It resembles more *O. Petiveri* M. EDW. and H.

Oculina diffusa LAMARCK.—Florida; L. Agassiz, G. Wurdemann.

Oculina arbuscula AGASSIZ, MS., Rep. on the Florida Reefs, with fig. (unpublished).

Corallum arborescent; the trunk, arising from a flat, incrusting base, divides rapidly into spreading, round, tapering branches and branchlets. Corallites prominent, arranged somewhat in spiral lines; cells large (.96 inch), open, deep; septa in three cycles well developed, the principal ones exsert, rounded at the summits, vertical within; columella little developed.

Costæ scarcely apparent between the cells. — Off Charleston, South Carolina; L. Agassiz.

Oculina implicata AGASSIZ, MS., l. c., fig. (unpublished).

Corallum forming dense clumps of irregular, crowded, much coalesced branches. Corallites irregularly arranged, numerous, very slightly prominent, with nearly level interstices, marked by the scarcely prominent radiating costæ. Cells smaller than in the two preceding species and less open; columella rudimentary; septa very little exsert. — Off Cape Hatteras, North Carolina; L. Agassiz. — Beaufort, North Carolina; A. S. Bickmore.

Astrangia Danæ AGASSIZ, Smith. Contr., with 6 plates (unpublished); Proc. Amer. Assoc. Vol. II. p. 68, 1849 (non M. EDW. and HAIME, 1850).

SYN. *Astrangia astreiformis* LEIDY (non M. EDW. and HAIME). — Long Island Sound; L. Agassiz.

Astrangia astreiformis M. EDW. and HAIME. 1850.

Charleston, South Carolina; L. Agassiz.

Astrangia solitaria VERRILL.

SYN. *Caryophyllia solitaria* LESUEUR, Journal Phil. Acad. Nat. Sci. I. p. 180, pl. VIII. fig. 11, 1817. — Hayti; D. F. Weinland. — St. Thomas; Dr. G. H. Otis.

The corallites in this species are distantly scattered, but connected by a thin basal expansion; septa crowded, strongly denticulate.

Syndepas Gouldii LYMAN, Proc. Bost. Soc. Nat. Hist. VI. p. 274. 1857. —

Cumana, Venezuela, South America; J. P. Couthouy.

Phyllangia dispersa VERRILL.

Corallites connected by a basal expansion, which is generally thin, but sometimes thickened, irregularly scattered, often one half an inch distant, about one fourth of an inch in diameter, and somewhat less in height. Primary and secondary septa much exsert, with narrow, subentire summits. Columella well developed, trabicular, and rudely papillose. — Panama; A. Agassiz.

Cladocora arbuscula M. EDW. and HAIME. 1849.

SYN. *Caryophyllia arbuscula* LESUEUR, 1820; DANA, 1846. *Cladocora arbuscula* Agassiz, Florida Reefs, with fig. (unpublished). — Florida; L. Agassiz, G. Wurdemann.

Orbicella cavernosa AGASSIZ, MS. l. c., fig. (unpublished).

SYN. *Madrepora cavernosa* ESP. 1797; *Favia cavernosa* OKEN, 1815; *Astrea argus* LAMARCK, 1816; *Orbicella argus* DANA, 1846; *Heliastrea cavernosa* M. EDW. 1857. — Florida; L. Agassiz. — Hayti; D. F. Weinland.

The subgenus *Orbicella* of Dana is almost identical with *Heliastrea* of

Milne-Edwards, the first three species, at least, belonging to the latter genus; therefore there appears to be no sufficient reason for changing the earlier name.

Orbicella annularis DANA. 1846.

SYN. *Madrepora annularis* ELLIS and SOL. 1786; *Astrea annularis* LAMARCK; *Heliastrea annularis* M. EDW.; *Orbicella annularis* Agassiz, l. c., with fig. (unpublished). — Florida; L. Agassiz. — Hayti; D. F. Weinland.

Goniastrea varia VERRILL.

SYN. *Astrea varia* DANA; *Prionastrea ? varia* M. EDW. and HAIME. — St. Thomas; Dr. G. H. Otis.

Favia ananas OKEN, Lehrb. der Nat. I. p. 67. 1815.

SYN. *Madrepora ananas (pars)* LINN. Ed. X. 1758; PALLAS, Elench. Zooph. 1766; *Astrea ananas* LAMARCK, 1816; *Parastrea ananas* M. EDW. and HAIME, 1850; *Favia ananas* M. EDW. Coralliaires, 1857. — Florida; L. Agassiz, D. P. Woodbury.

Cœloria dædalea M. EDW. and HAIME. 1851.

SYN. *Madrepora dædalea* ELLIS and SOL. 1786; *Mæandrina dædalea* LAMARCK, 1816; DANA, 1846; *Astroria dædalea* M. EDW. and HAIME, 1849. — Singapore; P. Ellis.

Hydnophora exesa M. EDW. and HAIME. 1849.

SYN. *Madrepora exesa* PALLAS, 1766 (young); *Hydnophora Pallasii* and *H. Demidoffi* FISCHER, 1810; *Monticularia meandrina*, *M. folium*, and ? *M. polygonata* LAMARCK, 1816; *Hydnophora Demidoffi* and ? *H. polygonata* M. EDW. and HAIME, 1849. — Singapore; Capt. W. H. A. Putnam.

The extensive series of specimens in the Museum shows that the synonymes quoted refer to the various stages of growth of one species, as suggested by Milne-Edwards.

Diploria cerebriformis M. EDW. and HAIME. 1849.

SYN. *Mæandrina cerebriformis* LAMARCK. — Florida; L. Agassiz. — Bermuda; H. Hammond.

Manicina areolata (pars) EHR. 1834.

SYN. *Madrepora areolata* LINN. Ed. X. 1758; *Mæandrina areolata* LAMARCK; ? *Manicina meandrites*, *M. hispida*, *M. prærupta*, and *M. manica* EHR. 1834; *M. dilatata* DANA, 1846; *Manicina areolata* Agassiz, l. c., with fig. (unpublished). — Florida; L. Agassiz, G. Wurdemann. — St. Thomas; Dr. G. H. Otis.

Trachyphyllia amarantum M. EDW. and HAIME. 1849.

SYN. *Manicina amarantum* DANA, 1846. — Singapore; Capt. W. H. A. Putnam.

Mæandrina clivosa VERRILL.

SYN. *Madrepora clivosa* ELLIS and SOL. p. 163, 1786; *Madrepora*

filograna ESP. Tab. XXII. 1789 (non *Mæandrina filograna* LAMARCK); *Mæandrina mammosa* DANA; ? *M. interrupta* DANA; ? *Mæandrina grandilobata* M. EDW. and HAIME. — Florida; L. Agassiz, D. P. Woodbury. — Hayti; D. F. Weinland.

Mæandrina strigosa DANA. 1846.

SYN. *Cæloria strigosa* M. EDW. Coralliaires. — Florida; L. Agassiz.

Mæandrina labyrinthiformis DANA. 1846.

SYN. *Madrepora labyrinthiformis* LINN. Ed. X. 1758; *Madrepora labyrinthica* ELLIS and SOL. 1786, pl. 46, figs. 3 and 4 (non *Mæandrina labyrinthica* LAMARCK, EHR., nec *Cæloria labyrinthiformis* M. EDW. and HAIME); *Mæandrina labyrinthica* DANA; *Mæandrina sinuosissima* M. EDW. and HAIME. — Florida; L. Agassiz. — St. Thomas; Dr. G. H. Otis.

Mæandrina sinuosa LESUEUR, Mém. du Mus. VI. p. 278, pl. 15, figs. 4-7, 1820 (non *Madrepora sinuosa* ELLIS and SOLANDER, nec *Mæandrina sinuosa* QUOY and GAIM.).

SYN. *Madrepora labyrinthiformis* (pars) LINN. Ed. X.; *Mæandrina labyrinthica* (pars) LAMARCK; LAMOUREUX; *Mæandrina crassa* (?) M. EDW. and HAIME. — Florida; L. Agassiz, G. Wurdemann.

Colpophyllia gyrosa M. EDW. and HAIME. 1849.

SYN. *Madrepora gyrosa* ELLIS and SOL. 1786; *Mæandrina gyrosa* LAMARCK; *Mussa gyrosa* DANA; *Colpophyllia gyrosa*, AGASSIZ, l. c., with fig. (unpublished). — Florida; L. Agassiz.

Tridacophyllia lactuca BLAINVILLE. 1830.

SYN. *Madrepora lactuca* PALLAS, 1766; *Pavonia lactuca* LAMARCK, 1816. — Singapore; Capt. W. H. A. Putnam.

Tridacophyllia Manicina DANA. 1846.

SYN. *Madrepora lactuca* ELLIS and SOL. pl. 44 (non PALLAS). — Singapore; Capt. W. H. A. Putnam.

Caulastrea furcata DANA. — Feejee Islands; J. D. Dana.

Symphyllia radians M. EDW. and HAIME. 1849.

SYN. *Mussa crispa* DANA (non LAMARCK). — Singapore; Capt. W. H. A. Putnam.

Mussa tenuidentata M. EDW. and HAIME. 1849.

SYN. *Mussa sinuosa* DANA. — Singapore; Capt. W. H. A. Putnam.

Mussa cytherea DANA. — Society Islands; A. Garret.

Mussa regalis DANA, Zoöphytes. 1846.

SYN. ? *Symphyllia Valenciennesi* M. EDW. and HAIME, 1849. — Singapore; Capt. W. H. A. Putnam.

Isophyllia dipsacea AGASSIZ, MS.

SYN. *Mussa dipsacea* DANA; *Symphyllia ? dipsacea* M. EDW. and

HAIME; ? *Symphyllia guadulpensis* M. EDW. and HAIME, 1849. — Florida Reefs; L. Agassiz. — Bermuda; Frederic Rees, M. D.

Isophyllia sinuosa VERRILL.

SYN. *Madrepora sinuosa* ELLIS and SOL. 1786.

This species forms spreading rounded masses, often six inches in diameter and about two thick. Walls echino-costate exteriorly. The rather shallow, open cells are generally confluent in series of from two to five, but often simple. Septa very numerous, the edges divided into long, slender, subequal teeth. Columella well developed, papillose. It differs from the preceding in its broader growth, more numerous and thinner septa, much more shallow and narrow cells, which are about .7 of an inch, instead of an inch or more, in diameter. The ridges are narrow and sinuous, often with a groove at the top. — St. Thomas, West Indies; Dr. G. H. Otis.

Isophyllia rigida VERRILL.

SYN. *Astrea rigida* DANA, Zoöph. 1846. — Florida; L. Agassiz. — Bermuda; T. C. Hill.

Euphyllia fimbriata M. EDW. Coralliaires. 1857.

SYN. *Euphyllia mæandrina* DANA, Zoöph. 1846. — Singapore; Capt. W. H. A. Putnam.

Galaxea fascicularis OKEN. 1815.

SYN. *Madrepora fascicularis* LINN. Ed. X. 1758; *Anthophyllum fascicularis* DANA, 1846; *Galaxea fascicularis* M. EDW. and HAIME, 1851. — Singapore; Capt. W. H. A. Putnam.

Galaxea cæspitosa VERRILL.

SYN. *Madrepora cæspitosa* ESPER. 1789; *Anthophyllum cæspitosum* DANA, 1846; *Galaxea Ellisii* M. EDW. and HAIME, 1851. — Singapore; Capt. W. H. A. Putnam, J. D. Dana.

Fungia patella M. EDW. and HAIME. 1851.

SYN. *Madrepora patella* ELLIS and SOL. 1786; *Fungia agariciformis* and *patellaris* LAMARCK, 1801; *Fungia agariciformis* DANA. — Singapore; Capt. W. H. A. Putnam.

Fungia repanda DANA. 1846. — Singapore; Capt. W. H. A. Putnam.

Fungia dentata DANA. 1846. — Singapore; Capt. W. H. A. Putnam.

Fungia Danæ M. EDW. and HAIME. 1851.

SYN. *Fungia echinata* DANA, Zoöph. (non PALLAS nec ESPER.). — Singapore; Capt. W. H. A. Putnam.

Fungia confertifolia DANA. 1846 — Feejee Islands; J. D. Dana.

Fungia concinna VERRILL.

Corallum strongly convex, with a deep, narrow central fosse. Septa very unequal, the principal ones nearly evenly exsert, broad, rather thick,

the edges evenly dentate, with large, regular, acute teeth; latest ones narrow and thin, deep between the larger, the edges scarcely divided. Lower surface crowdedly costate, the costæ unequal, covered with obtuse papilliform spines. This species is allied to *F. repanda*, but is very distinct in the character of the septa. — Zanzibar; C. Cooke, E. D. Ropes.

Fungia serrulata VERRILL.

Corallum somewhat convex in the centre; fosse very narrow. Principal septa subequal, much narrower than in the preceding, the edges irregularly dentate, with small, very acute, unequal teeth; latest septa thin, much more narrow, the edges finely and regularly denticulate. Lower surface with the principal costæ about .5 of an inch distant, and many other finer ones between; all of them covered with prominent, obtuse, papilliform spines. — Kingsmills Islands; A. Garret.

Fungia Haimeii VERRILL.

SYN. *Fungia discus* M. EDW. and HAIME, 1851 (non DANA).

This species differs from *F. discus* DANA, of which the original specimen is before me, in having stronger and nearly equal costæ, furnished with numerous sharp, curved spines, instead of scattered, irregular, obtuse ones, nearly obsolete on the central portion, and in having more equally developed septa, which are more finely and regularly serrated with small, acute, angular teeth. — Zanzibar; C. Cooke.

Fungia valida VERRILL.

Nearly circular, elevated at the centre. Septa very unequal, the principal ones very broad and thick, the last narrow and thin, all except those of the latest cycle strongly serrate with very large, broad, acute teeth. Costæ very unequal, the principal ones thick and prominent, with numerous strong, acute, often curved spines; between these are from three to five, scarcely distinct, except near the edge, and not spinose. Columella fine spongy. — Zanzibar; C. Cooke.

Ctenactis AGASSIZ, MS. 1860. — Type, *Fungia echinata* PALLAS.

This genus includes besides *Fungia Ehrenbergii* LEUCKART, and *F. crassa* DANA, the following: —

Ctenactis gigantea AGASSIZ, MS.

SYN. *Fungia gigantea* (var.) DANA, Zoöphytes, p. 303, pl. 19, fig. 12. — Feejee Islands; J. D. Dana.

Ctenactis echinata AGASSIZ, MS. 1860.

SYN. *Fungia echinata* PALLAS, 1766; *Fungia pectinata* EHR.; DANA; *Fungia Ehrenbergii* (pars) DANA; *Fungia echinata* M. EDW. and HAIME. — Singapore; Capt. W. H. A. Putnam.

Lobactis AGASSIZ, MS. 1860. — Type, *Fungia dentigera* LEUCKART.

Lobactis Danæ AGASSIZ, MS. 1860.

SYN. *Fungia dentigera* DANA, Zoöphytes, p. 301, pl. 18, fig. 4, 1846 (non Leuckart). — Sandwich Islands; A. Garret.

Lobactis conferta AGASSIZ, MS.

Oblong oval, thick, massive, with even, closely crowded, rather thick, flexuous septa, evenly and finely serrate, with very small, acute, angular teeth, their sides strongly granulated. Tentacular lobes, much thickened, strongly exsert, angular, subacute. Lower surface thickly covered with rounded, slightly prominent papillæ. Length of a large specimen, 6.5 inches; breadth, 4; central fosse, 2.5 long. — Kingsmills Islands; A. Garret.

Pleuractis AGASSIZ, MS. 1860. — Type, *Fungia scutaria* LAMARCK.

Pleuractis scutaria AGASSIZ, MS. 1860.

SYN. *Fungia scutaria* LAMARCK, 1801; DANA; M. EDW. and HAIME. — Singapore; Capt. W. H. A. Putnam.

Herpetolitha Limax ESCHSCHOLTZ. 1825.

SYN. *Madrepora Limax* ESPER; *Fungia limacina* LAMARCK, 1816; *Hali-glossa limacina* EHR., 1834; *Herpetolithus limacinus* DANA, 1846. — Singapore; Capt. W. H. A. Putnam.

Herpetolitha ampla AGASSIZ, MS.

A large, spreading species, broad oblong in form, obtusely rounded at the ends; rather thin, about one inch in the middle, half as much near the edges. Septa thin, rounded, exsert, the median ones about an inch in length, the lateral half an inch; the edges evenly serrate with fine, acute, angular teeth. Lower surface crowdedly echinate, with short, conical, acute spines. A specimen 13 inches in length is 6 broad. — Zanzibar; C. Cooke.

Podabacia crustacea M. EDW. and HAIME. 1851.

SYN. *Madrepora crustacea* PALLAS, Elench. Zooph., p. 291, 1766; *Pavonia explanulata* DANA; *Podabacia cyathoides* M. EDW. and HAIME, 1850. — Singapore; J. M. Barnard.

Cryptabacia talpina M. EDW. and HAIME. 1851.

SYN. *Fungia talpina* LAMARCK, 1801; *Polyphyllia talpa* BLAINVILLE; DANA. — Singapore; Capt. W. H. A. Putnam.

Halomitra clypeus VERRILL.

SYN. *Halomitra pileus (pars)* DANA, Zoöphytes, p. 311, pl. 21, f. 2, 2 a, 1846 (non *Madrepora pileus* LINN. Ed. X., *Fungia pileus* LAMARCK, 1801, nec *Halomitra pileus* M. EDW. and HAIME). — Feejee Islands; J. D. Dana.

This is a very thick, massive species, quite distinct from that described by Milne-Edwards and Haime, which appears to be the true *Madrepora pileus* LINN.

Halomitra tiara AGASSIZ, MS.

Corallum solid, very convex above, much thinner than the preceding, about half an inch thick. Septo-costal plates thin, short, strongly incised-dentate, the teeth elongated, acute, granulated. Cells very distinct, irregularly scattered, but less remote than in the preceding, owing to the much shorter plates, which are .3 of an inch long near the centre, and about .6 near the margin. Lower surface very concave, with the costæ distinct to the centre, close, slightly thickened, covered with nearly equal, sharp, conical spines. — Kingsmills Islands; A. Garret.

Zoopilus echinatus DANA, Zoöphytes, p. 319; pl. 21, fig. 6. 1846.

Feejee Islands; J. D. Dana.

This genus is perfectly well founded, being closely allied to *Lithactinia*; not, as Milne-Edwards has supposed, a *Fungia*.

Trachypora VERRILL.

Corallum explanate, thin; below echinate and coarsely costate; above with scattered polyp centres destitute of walls, with one or two cycles of septa, radiating at the centres, but becoming subparallel between them, as in *Halomitra*, strongly dentate or lacerately lobed, the strongest lobes surrounding the polyp centres; columella loose, trabicular.

This genus is in several respects intermediate between *Halomitra* and *Echinopora*; in its mode of growth it resembles the latter, but not in its cells. It appears to include, besides the following, *Echinopora aspera* DANA (*Madrepora aspera* ELLIS and SOL.).

Trachypora lacera VERRILL.

Broadly explanate and gibbous, thin, with many irregular openings near the margin. Below coarsely and irregularly ribbed or costate, the principal costæ very thick, prominent, strongly echinate, the spines irregular, lacerately lobed, smaller intermediate costæ scarcely spinose. Upper surface covered by rather loose, very unequal septo-costal plates, which are deeply and irregularly divided into strong lacerate spines; the plates are nearly parallel, except close to the polyp centres, where they bend abruptly and unite with the columella. The spines around the centres are large and stout, often broad at the ends; centres irregularly scattered, from half an inch to an inch distant. — Singapore; J. M. Barnard.

Phyllastrea tubifex DANA. 1846.

SYN. *Mycedium tubifex* M. EDW. and HAIME, 1851. — Feejee Islands; J. D. Dana.

This genus is quite distinct from *Mycedium* in its coarse, spinose septa, and strong costæ beneath.

Phyllastrea explanata AGASSIZ, MS.

Differs from the preceding in its broadly explanate, thin, semicircular or

subturbinate fronds, smooth below, with distant, strong costæ, and many smaller intermediate ones. The cells are smaller, less remote, with much thickened, lacerately toothed septa, which become very thin between the cells. Columella rudimentary. — Tahiti; A. Garret.

Echinopora flexuosa VERRILL.

Corallum forming broad, thin, foliaceous, flexuous, and contorted plates, often growing upright, covered on both surfaces with circular, slightly prominent corallites about .12 of an inch in diameter, separated ordinarily about a quarter of an inch. Between the cells the septo-costal striæ are numerous, thin, divided into slender, sharp spines. There are two complete cycles of septa, with rudiments of a third; those of the first cycle are thickened exteriorly and divided into prominent teeth, which are themselves lacerate. Columella loose, trabicular, little developed. — Singapore; Capt. W. H. A. Putnam.

Echinopora reflexa DANA.

This differs from *E. rosularia* LAMK. in having three complete cycles of septa. — Feejee Islands; J. D. Dana.

Acanthopora VERRILL. — Type, *Echinopora horrida* DANA.

Corallum ramose, solid, the cells being filled below as in *Oculina*. Costæ between the cells represented by series of spines. It differs also from *Echinopora* in its polyps.

Acanthopora horrida VERRILL.

SYN. *Echinopora horrida* DANA, Zoöphytes, p. 282, pl. 17, f. 4, 4 a, 4 b, 4 c, 1846. — Feejee Islands; J. D. Dana.

Pavonia formosa DANA. — Tahiti; A. Garret.

The genus *Pavonia* was first established by Lamarck in 1801, in *Système des Animaux sans Vertèbres*, p. 372; therefore this name must be retained, instead of *Lophoseris* proposed by Milne-Edwards and Haime, since it was not employed among insects until 1816.

Pavonia prætorta DANA. — Tahiti; A. Garret.

Pavonia frondifera LAMARCK.

SYN. *Pavonia frondifera* (pars) DANA; *Lophoseris frondifera* M. EDW. and HAIME. — Singapore; Capt. W. H. A. Putnam.

This species is, possibly, *Madrepora ficoides* Ellis and Solander.

Pavonia oculata DANA.

SYN. *Pavonia crassa* var. *oculata* DANA; *Lophoseris?* *crassa* (pars) M. EDW. and HAIME. — Singapore; Capt. W. H. A. Putnam.

This is, perhaps, *Madrepora acerosa* Ellis and Solander.

Pavonia venusta DANA.

SYN. *Lophoseris?* *venusta* M. EDW. and HAIME. — Singapore; Capt. W. H. A. Putnam.

Pavonia Danæ VERRILL.

SYN. *Pavonia boletiformis* DANA (non LAMK.); *Lophoseris Danai* M. EDW. and HAIME. — Sooloo Sea; J. D. Dana.

Pavonia varians VERRILL.

Corallum incrusting, varying in form according to the object upon which it grows, at times glomerate, massive, and gibbous, with short angular or convoluted crests rising from the surface. These sometimes become more elevated, with an acute edge, or, by incrusting the tubes of *Serpulæ*, rise into irregular ramose forms. Septa from twelve to sixteen, the primary ones thickened, strongly granulated. Cells rather small, open; columella small, papilliform, often wanting. — Sandwich Islands; A. Garret.

Leptoseris papyracea VERRILL.

SYN. *Pavonia papyracea* DANA. — Sooloo Sea; J. D. Dana.

Mycedium fragile DANA; AGASSIZ MS., Florida Reefs, fig. — Florida; L. Agassiz.

Agaricia agaricites M. EDW. and HAIME. 1851.

SYN. *Madrepora agaricites* PALLAS, 1766; *Pavonia agaricites* LAMK.; *Agaricia (Mycedia) agaricites* DANA. — Florida; L. Agassiz. — Hayti; D. F. Weinland.

Agaricia purpurea LESUEUR. — Hayti; D. F. Weinland.

Siderastrea radians AGASSIZ, MS. l. c., fig. (unpublished).

SYN. *Madrepora radians* PALLAS, 1766; *Madrepora galaxea* ELLIS and SOL. 1786; *Astrea galaxea* LAMK. 1801; *Siderastrea galaxea* BAINV. 1830; M. EDW. and H. 1850; *Siderina galaxea* DANA, 1846; *Astrea radians* M. EDW. 1857. — Florida; L. Agassiz. — Hayti; D. F. Weinland.

Professor Agassiz ascertained by an examination of the living polyps of this species, in 1850, that it is a *Fungian* closely allied to *Pavonia*, with which it also agrees in the structure of the coral; the name *Astrea*, therefore, cannot with propriety be retained for the genus, although it was one of the species originally included in that genus by Lamarck.

Siderastrea siderea BLAINVILLE. 1830.

SYN. *Madrepora siderea* ELLIS and SOL. 1786; *Astrea siderea* LAMK. 1816; *Pavonia siderea* DANA, 1846. — Florida; L. Agassiz. — Hayti; D. F. Weinland.

Siderastrea clavus VERRILL.

SYN. *Pavonia clavus* DANA, 1846; *Lophoseris ? clavus* M. EDW. — Feejee Islands; J. D. Dana.

Pachyseris fluctuosa VERRILL.

Corallum forming large explanate plātēs, which are rather thin, somewhat semicircular in outline, attached by the central part of the lower

edge. The upper surface concave, sometimes undulate near the margin; lower surface strongly striated, the costæ close and thickened, somewhat granulated. The transverse ridges of the upper surface are regular and often extend across the whole breadth of the surface, occasionally interrupted, mostly undulated or flexuous, about as high as broad. Centres of the polyp cells very minute, but distinct, not radiated; septo-costal striæ close and even; bent in a zigzag manner on the ridges. Breadth of a large specimen, 28 inches; height, 15; average thickness, .25; width of the valleys, .20. — Kingsmills Islands; A. Garret.

Merulina ampliata EHRENBERG. 1834.

SYN. *Madrepora ampliata* ELLIS and SOL. 1786; *Agaricia ampliata* LAMK. 1801; *Merulina speciosa* HORN (non DANA) is the mature form with rising branches, Proc. Phil. Acad. Nat. Sci. 1860, p. 435. — Singapore; Capt. W. H. A. Putnam.

Merulina regalis DANA. 1846. — Feejee Islands; J. D. Dana.

Merulina speciosa DANA. 1846. — Feejee Islands; J. D. Dana.

Clavarina VERRILL.

Corallum compact, branching. Cells imperfectly circumscribed, but not confounded in series. Septa and walls thickened, the former lacerate-toothed, with paliform teeth at the bases. Columella rudimentary.

Clavarina scabricula VERRILL.

SYN. *Merulina scabricula* DANA, Zoöphytes, p. 275, pl. 16, f. 2, 2 a, 2 b, 1846. — Feejee Islands; J. D. Dana.

Zoanthus sociatus LAMARCK. 1801.

SYN. *Actinia sociata* ELLIS, Phil. Trans. 1767; ELLIS and SOL. 1786; *Zoantha sociata* LAMK. Syst. An. sans Vert. 1801; *Zoantha Ellisii* LAMK. Hist. An. sans Vert. 1816; *Zoanthus sociatus* EHR. 1834. — Florida; L. Agassiz.

Cerianthus americanus AGASSIZ. MS.

Body very long, often two feet when expanded, and upwards of an inch in diameter, tapering gradually to the base. Outer tentacles very numerous, one hundred and twenty or more, slender, about 1.5 inches long, very flexible; inner ones close to the mouth, about .75 of an inch long, often twisted together spirally. Color of column dark cinnamon brown, with darker lines of the same; marginal tentacles cinnamon color, lighter at the base; inner ones darker, marked with longitudinal white lines; outer portion of the disk yellow, with dark spots at the base of the tentacles. — Charleston, South Carolina, buried in mud; L. Agassiz.

The descriptions of the colors of this and other species of *Actinidæ* have

been taken from a series of drawings which Professor Agassiz caused to be made from living specimens, in 1852.

Halcampa albida AGASSIZ, MS.

SYN. *Corynactis albida* AGASSIZ, Proc. Bost. Soc. Nat. Hist. VII. p. 24, 1859.

Column, in full expansion, long and slender, but very changeable in form; upper half covered with prominent suckers, arranged rather closely in longitudinal rows. Tentacles twenty, slender, with a rounded knob at the end. Length in expansion, about 3 inches; thickness, .4. Color light brownish yellow; tentacles lighter, with the ends dark brown.—Nantucket, Massachusetts, buried in sand; B. T. Morrison.

Dysactis pallida VERRILL.

SYN. *Actinia pallida* AGASSIZ, MS. 1849; ? *Anthea flavidula* MCCRADY, Proc. Elliott Soc. of Charleston, S. C., I. p. 280 (without description).

Column short, subcylindrical, expanding above the middle to the margin of the broad disk, but varying somewhat in form according to the state of contraction. Inner tentacles an inch or more long, slender, those near the margin short, conical, with some of intermediate length between. Column sometimes 1.25 inches high; disk .75 broad. Color light yellowish brown; longest tentacles lighter, spotted with white.—Charleston, South Carolina; L. Agassiz.

Bunodes cavernata VERRILL.

SYN. *Actinia cavernata* BOSC, Hist. nat. des Vers, 1802 (the young).—Charleston, South Carolina; L. Agassiz.

Rhodactinia Davisii AGASSIZ, Comptes-Rendus, XXV. p. 677, 1847; Revue zoologique Soc. Cuv. p. 394, 1847.

SYN. *Actinia obtruncata* STIMPSON, Marine Invertebrata of Grand Menan, p. 7, 1853 (littoral variety).—Massachusetts Bay; L. Agassiz.—Eastport, Maine; A. E. Verrill.

The genus *Rhodactinia*, established by Professor Agassiz in 1847, is perfectly equivalent to *Tealia* recently proposed by Gosse, the type of the former, *R. Davisii*, being the American representative of *R. crassicornis* of Europe, to which it is very closely allied.

Aulactinia AGASSIZ, MS.

Column elongated, upper portion capable of involution. Walls with prominent verrucae in longitudinal rows on the upper portion; the marginal ones larger, trilobed, the lobes again subdivided on the lower side. Tentacles short, subequal.

Aulactinia capitata AG., MS. 1849.

Column much elongated; basal disk somewhat expanded. Suckers

extending down about an inch from the summit, becoming obsolete below. Marginal tubercles well developed, lower surface lobed and papillose. Tentacles numerous, short, and thick. Color of the column greenish or purplish brown, with lighter lines; tentacles light yellowish green, with a dark longitudinal line on the inside, interrupted by white spots. — Charleston, South Carolina, buried in sand to the tentacles; L. Agassiz.

Metridium marginatum M. EDWARDS, Coralliaires. 1857.

SYN. *Actinia marginata* LESUEUR, Journal Phil. Acad. Nat. Sci. I. p. 172, 1817; *Actinia dianthus* DAWSON, Canadian Nat. and Geologist, Vol. III. p. 412, figs. 1 and 2, 1858. — Massachusetts Bay; L. Agassiz. — Bay of Fundy; A. E. Verrill.

This is the American representative of *M. dianthus* of Europe, which it closely resembles in colors and form. Living specimens of the two species, compared side by side in the Museum, however, have shown constant differences in the arrangement of the tentacles. The specimens of *M. dianthus* were forwarded from the Free Public Museum of Liverpool, through Capt. J. Anderson.

Cereus sol AGASSIZ, MS.

SYN. *Actinia sol* AGASSIZ, MS. 1849.

Very contractile and variable in form; when fully expanded usually elongated, narrowest in the middle, expanding both above and below. Tentacles very numerous, often four or five hundred, those of the primary cycles about half an inch long, scattered, placed about midway between the mouth and the margin of the disk, the outer ones becoming very crowded and small. Actinostome with seven folds on each side. Walls for a short distance below the tentacles covered with small suckers and pierced with loop-holes. Column with about eight broad stripes of cinnamon brown, alternating with narrower gray ones, the whole surface irregularly spotted with dark brown, darkest near the tentacles; mouth bright yellow, surrounded by a ring of deep crimson or purple; outside of this the disk is greenish blue, with darker radiating lines; inner tentacles with a white longitudinal line on each side and darker brown spots on the inside and at the base; others nearer the margin are tipped with red, then farther outward they become orange-yellow with red tips, while the outermost ones are nearly white. — Charleston, South Carolina, on shells inhabited by hermit crabs; L. Agassiz.

This species is closely allied to *C. Bellis* of Europe, the type of the genus *Cereus* of Oken; therefore I have restricted that name to this section of the genus *Sagartia* of Gosse.

Edwardisia sipunculoides STIMPSON, MS.

SYN. *Actinia sipunculoides* STIMPSON, Marine Inv. of G. Menan, p. 7, pl. 1, f. 2, 1853. — Eastport, Me.; A. E. Verrill.

HYDROIDEA.

Tabulata.

Millepora alcicornis LINN. Ed. X. 1758; Agassiz, Florida Reefs, fig. (unpublished).

Florida; L. Agassiz, D. P. Woodbury. — Hayti; D. F. Weinland.

M. moniliformis Dana is a form of this species.

Millepora pumila DANA, Zoöph. 1846. — Porto Cabello, South America; Coll. Harvard University.

Millepora intricata M. EDWARDS. 1857. — Manilla; J. Russell.

Millepora insignis VERRILL.

Corallum forming large, meandering plates, giving off smaller plates at right angles to their surface; the edges are thick, obtuse, often lobed, and sometimes divided into short, irregular branches, obtuse at the ends; surface irregular, covered with small verrucæ. Cells large for the genus, the principal ones situated at the summit of slight prominences, surrounded by a circle of about six small ones. — Kingsmills Islands; A. Garret.

Heliopora cærulea BLAINVILLE. 1830.

SYN. *Millepora cærulea* PALLAS, 1766; *Madrepora cærulea* ESPER; *Pocillopora cærulea* LAMARCK, 1816. — Singapore; Capt. W. H. A. Putnam.

Heliopora compressa VERRILL.

Corallum forming a thick, massive or incrusting base, from which it rises into broad winding plates, thin at their edges, which give off from their sides smaller plates and compressed, lobe-like branches. Cells somewhat larger than in the preceding species and more distant; the minute secondary cells are also less numerous and smaller. Surface of the cœnenchyma covered with crowded papillæ, terminating in two or three points. — Kingsmills Islands; A. Garret.

Pocillopora cæspitosa DANA. — Sandwich Islands; A. Garret.

Pocillopora ligulata DANA. — Sandwich Islands; A. Garret.

Pocillopora nobilis VERRILL.

SYN. *Pocillopora verrucosa* DANA, Zoöphytes, p. 529, pl. 50, fig. 3 (non LAMARCK). — Sandwich Islands; A. Garret.

Pocillopora Danæ VERRILL.

SYN. *Pocillopora favosa* DANA, l. c., pl. 50, fig. 1 (non EHR.). — Feejee Islands; J. D. Dana.

Pocillopora squarrosa DANA. 1847. — Feejee Islands; J. D. Dana.

Pocillopora acuta LAMK. 1816. — Feejee Islands; J. D. Dana.

Pocillopora suffruticosa VERRILL.

This species forms neat, densely-branched, rounded clumps, often eight inches in diameter, resembling those of *P. bulbosa*, with small, irregular, and very proliferous branches. The surface is more strongly echinate than that of the latter, with much deeper and less open cells. — Tahiti; A. Garret.

Pocillopora ramiculosa VERRILL.

Branches very slender and elongated, much divided, forming rounded clumps less dense than the preceding, or *P. cæspitosa*, to which it is allied. Branchlets very small, often .1 of an inch in diameter, subacute, not crowded. Cells small and deep, nearly circular. Surface evenly and crowdedly echinulate. This species resembles *P. acuta* in its mode of branching, but is more slender and has much smaller cells than either that species or *P. cæspitosa*. — Kingsmills Islands; A. Garret.

Pocillopora stellata VERRILL.

Corallum forming close clumps of long, moderately thick, subparallel branches, which are covered with rising, elongated, subacute, rather distant verrucæ; surface crowdedly echinulate. Cells distant, small, and deep with twelve prominent radiating plates, which give them a stellate appearance. This species resembles *P. damicornis* somewhat in the size of its branches and mode of growth, but is entirely distinct in the structure and small size of the cells. — Zanzibar; C. Cooke, Capt. Ashby.

Pocillopora damicornis LAMK. 1816.

SYN. *Madrepora damicornis* ESPER. — Singapore; Capt. W. H. A. Putnam.

Pocillopora bulbosa EHR. 1834. — Singapore; Capt. W. H. A. Putnam.**Pocillopora capitata** VERRILL.

The corallum consists of a cluster of large irregular branches, often an inch or more in diameter, covered with elongated, squarrose, subacute verrucæ, .3 of an inch long and .1 in diameter, about .2 of an inch distant. Branchlets spreading, often rounded and clavate at the end, where the verrucæ become obsolete; surface echinulate, the grains unequally scattered, most prominent immediately around the edges of the cells, which are small, circular, and very deep. This species, although very variable in the form and size of the branches, is very distinct from all the other species known, in the character of the surface and cells. — Acapulco, Mexico; A. Agassiz.



Verrill, A. E. 1864. "List of the polyps and corals sent by the Museum of Comparative Zoology to other institutions in exchange, with annotations." *Bulletin of the Museum of Comparative Zoology at Harvard College* 1(3), 29–60.

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