

entirely destitute of internal structures, or containing in the great majority of cases: (1) well developed tabulæ, with or without radiating septa; or (2), vesicular tissue with or without tabulæ and septa; or (3) a distinctly hexamerous or tetramerous system of septa; or (4) indications of bilateral symmetry.

The class, as thus defined, may be subdivided provisionally, and especially for determinative purposes, into eight leading sections, as in the following scheme:

Corallite cell entirely empty, *i.e.*, without any internal structures:

§ 1. VACUATA (Type form, *Aulopora*.)

Septa absent or quite rudimentary; tabulæ well developed:

§ 2. TABULATA (Type form, *Favosites*.)

Corallites united by a tubular or cellular cœnenchyme.

§ 3. CELLULATA (Type form, *Fistulipora*.)

Tabulæ and septa both present.

§ 4. TABULO-STELLATA (Type forms, *Amplexus*, *Zaphrentis*.)

Tabulæ central only, surrounded by area of vesicular tissue. Septa well developed:

§ 5. VESICULO-STELLATA (Type forms, *Cyathophyllum*, *Lonsdalia*.)

Tabulæ entirely replaced by irregular vesicular tissue:

§ 6. VESICULOSA (Type form, *Cystiphyllum*.)

Cell provided with an operculum composed of a single valve or of several valves:

§ 7. OPERCULATA (Type form, *Calceola*.)

Cup or cell containing septa only; tabulæ absent:

§ 8. INTEGRI-STELLATA (Type form, *Petraia*.)

§ 1. VACUATA:—The representatives of this section, distinguished essentially by their tubular cells being entirely destitute of internal structures, are of very doubtful position. Very probably, they should be referred to the Alcyonaria or placed near the Sertularians under the Hydro-medusæ; but nothing definite, it is obvious, can be determined on this point, and as the forms in question are of not uncommon occurrence in palæozoic strata, it has been thought advisable to retain them here, at least provisionally. They form but one family, that of the *Auloporidæ*, containing the following genera:

Fam. *Auloporidæ*:—Corallum composed of short, tubular or funnel-shaped empty cells, united in branching groups: