

difference observed between the structure of the bud and that of the cortex of the parent sponge; fig. 14, Pl. XLIV. represents a part of the tissue of one of the gemmules, and it would serve equally well for the outer part of the adult cortex. It is evident that there is room for fresh investigation of this subject. In a specimen of *Tethya lyncurium*, which I obtained at Roscoff, the young gemmæ still within the cortex of the parent were well displayed in thin slices of gold-chloride preparations, their position within the cortex is indicated in fig. 15, Pl. XLIII., and one of them more highly magnified by fig. 16 of the same plate.

5. CLASSIFICATION.

POSITION OF THE SPONGES IN THE ANIMAL KINGDOM.

Before proceeding to classify the contents of the Tetractinellida, we must decide on its systematic value; this involves a decision on the value of the group Spongiaë, and in order to arrive at this, the closely connected question of the systematic position of the Sponges must be discussed.

On this question there is profound disagreement of opinion among spongologists, as will appear from the following summary account.

The Sponges are or have been regarded as—

PROTOZOA—By Carter, Kent, and the late James Clark.¹

Occupying a position intermediate to PROTOZOA and METAZOA—By Balfour.

An independent phylum—By Bütschli and Sollas (PARAZOA, Sollas).

METAZOA; within this group regarded as—

An independent phylum or special division—By Balfour, Sollas, Heider.

CŒLENTERA.—By Leuckart, Haeckel, Marshall, Poléjaeff, Schulze, von Lendenfeld, Ganin. Of those who hold this view, Schulze, Poléjaeff, and Lendenfeld regard the Sponges as having branched off from the rest of the Cœlentera at a very early stage. Marshall (as at one time Anton Dohrn) regards them as degenerate Cœlentera, which, according to Marshall, at one time possessed tentacles, nematocysts, and mesenteric pouches.

That the Sponges cannot be regarded as Protozoa seems to have become a settled opinion, with which all the known facts are in agreement. The same can hardly be said of the view which regards them as degenerate Cœlentera, and which rests chiefly on the radiate symmetry presented by the canal-system in two or three species; till it can be shown that this symmetry in those cases in which it is definitely expressed is a primitive and not a secondarily acquired character, it cannot be credited with any special significance. As to its being primitive, all the facts so far as they are known to me are definitely opposed to such a view.

¹ *Amer. Journ. Sci. and Arts*, ser. 2, vol. xviii. p. 320, 1866.