Genus 3. *Cyrtaulon*, F. E. Schulze (Pl. XCII.).

Volvulina,[1] O. Schmidt.

1880. O. Schmidt, Spongien des Meerbusens von Mexico, p. 58.

History.—Among the sponges of the Gulf of Mexico, Oscar Schmidt[2] found some Hexactinellida of cylindrical, globular, or beaker-like form, which were procured from Morrolight, Barbados, and St. Vincent, from a depth varying from 100 to 300 fathoms. These he has embraced under the specific name of *Volvulina sigsbeei*. Their siliceous networks are united in an irregular lattice-work by strands, varying from $\frac{1}{3}$ to 3 mm. in thickness. Between these strands there are pores and passages, the outer openings of which appear to be covered by a membrane. A true gastral cavity was not observed, but, on the other hand, a pitting here and there was regarded as *pseudogastral*.

The dictyonal framework exhibits knobbed and also smooth beams. These unite in some species in round tubercled nodes of intersection, while thickenings of this kind are entirely absent at the intersections in other species.

In the outer skin hexacts or pentacts occur, and these are arranged in a regular network. Moreover, among free spicules there are (1) slender thorny spicules (uncinates), which, in the specimens procured from St. Vincent, always exhibited a central circular swelling; (2) club-shaped brooms (scopulæ); (3) hexacts with large finely-toothed hooks on the ends of the rays; (4) umbel-like rosettes (discohexasters), the single ray in each of which is prolonged without forking, and terminates in a point, but with a little thickening before the extremity.

In the fragment figured in Pl. XCII. fig. 9, which was very kindly intrusted to me by Professor Oscar Schmidt for comparative examination, I was able to corroborate his important remarks on the striking want of uniformity in the dictyonal framework. I find on the outer surface greatly thickened beams, which are richly beset with large wart-like knobs; in the interior of the framework the beams in some places are ornamented merely with small pointed knobs, while in others, on the contrary, they are quite smooth. While in some species densely tuberculate nodes of intersection are present, these are completely absent in others.

I have indicated above the general characters which may be inferred from the specific features noted by Oscar Schmidt, but the generic diagnosis of *Volvulina*, in contrast to that of some allied genera, may be formulated in the following manner:—

Cyrtaulon, F. E. Schulze (= *Volvulina*, O. Schmidt).

Cylindrical, conical, or beaker-shaped forms, in which the dictyonal framework con-

[1] The name "*Volvulina*" has been applied to a Gasteropod since 1865.

[2] O. Schmidt, Spongien des Meerbusens von Mexico, p. 58, 1880.