

forming when in apposition a four-sided or three-sided pyramidal roof for the hydrotheca. In some cases (*e.g.*, *Sertularia distans*) there are but two valves, and these when in apposition form a wedge-shaped roof over the orifice of the hydrotheca.

The valves in all these cases are so thin and perishable that it is only in recent or exceptionally well preserved specimens we can hope to meet with them, a fact which in itself deprives the distinctions derived from them of that practical value which ought if possible to be found in all well-selected systematic characters.

On the grounds here adduced, then, I must regard the removal from *Sertularia* of the species for which Gray founded his genus *Sertularella* as a step not borne out by fundamental differences in the species; and although Gray's revision has been adopted by so high an authority as Hincks, and though I had followed it myself in former publications, I shall in the present Report suppress the genus *Sertularella* and refer to *Sertularia* all species which agree with the diagnosis of this genus as given above.

A revision much more in accordance with natural affinities was proposed by Agassiz, who, under the name of *Diphasia* separated from *Sertularia* those species in which the female gonangium differs from the male in possessing an external chamber with chitinous walls, into which the ova are expelled from the main cavity of the gonangium in order to pass through certain stages of their development before escaping into the surrounding water.

*Sertularia gracilis*, n. sp. (Pl. XXIV. figs. 1, 1a).

*Trophosome*.—Stem monosiphonic, slender, profusely branched; primary ramification pinnate or subpinnate, many of the primary and secondary branches presenting a similarly pinnate or subpinnate ramification. Hydrothecæ alternate, distant, one borne on every internode, nearly cylindrical, adnate to the internode for about two-thirds of their height, then bending outwards; orifice with a broad cusp on each side.

*Gonosome*.—Gonangia springing each from a point just below the base of a hydrotheca, urniform, with very prominent annular ridges, distal end continued as a narrow cylindrical tube, which carries the even, circular orifice on its summit.

*Locality*.—Station 312, Port Famine, Patagonia; lat. 53° 37' 30" S., long. 70° 56' 0" W.; depth, 9 fathoms.

This slender and very elegant species was brought up in luxuriant masses about five inches in height, and richly laden with gonangia. The ramification, which is very profuse, commences with pinnately disposed branches, many of which soon branch in a similar way, and the primary ramification is further repeated in ramuli of a secondary, tertiary, and even higher order. The branches are given off each close to the base of a hydrotheca.