

alternate ramuli, every ramulus supported by a rather long cladophore, and having its proximal internode united to the next by a very oblique, splice-like joint. Hydrothecæ borne both by main stem and pinnæ; those of the pinnæ in distant pairs, exactly opposite, adnate to one another along their opposed sides, then strongly divergent, and terminating in an orifice with a broad cusp on each side; apocauline wall with a strong, inflected fold at somewhat more than half its height from the base; hydrothecæ of main stem subopposite in distant pairs, with a solitary hydrotheca in the axil of every pinna; those of each pair not adnate to one another by their opposed sides.

*Gonosome* not present.

*Locality*.—Station 36, off Bermuda; depth, 30 fathoms.

*Desmoscyphus gracilis* is a small and elegant species. It attains a height of about two inches, and its slender, undivided stems, with their regular, pinnately disposed ramuli, give to it a symmetrical and graceful habit. The pinnæ are divided by distinct joints into well-defined, rather long internodes, each of which carries close to its distal end a pair of connate hydrothecæ. The deep inflexion of the apocauline wall of the hydrotheca forms in the interior of its cavity a prominent, transverse ridge. The pinnæ are supported on rather long cladophores, and the proximal internode, which is cylindrical and destitute of hydrothecæ, is united to the next by a very oblique, overlapping, splice-like joint, the opposed sides of these two internodes being here cut away to an acute point. The union between the internodes is weaker at this joint than at any other, and the pinna here becomes easily separated from the proximal internode, which remains still attached to the cladophore, its sharp, distal end giving it the appearance of a rigid spine. Many of the pinnæ, towards the hydrorhizal end of the stem, have in the greater number of the specimens become detached at this joint, and the stem has then the appearance of being, for some distance from its base, armed on each side with a series of sharp spines.

The main stem is also divided into distinct internodes by joints which are situated one just below every pinna. The hydrothecæ of the stem are not as in the pinnæ exactly opposite. They are subopposite, and those of each pair, instead of being adnate to one another as in the pinnæ, are separated by a considerable interval.

*Desmoscyphus obliquus*, n. sp. (Pl. XXXIV. figs. 3, 3a).

*Trophosome*.—Stem monosiphonic, unbranched, divided into short internodes, each of which sends off a pinna from alternate sides; pinnæ composed of well-defined internodes, each carrying a pair of obliquely opposite hydrothecæ. Hydrothecæ of pinnæ wide, adnate to internode for nearly their entire height, and with their free ends slightly divergent; margin with a broad cusp on each side.