

Gonosome not known.

In the external calyx-like duplicature of the hydrotheca walls of the remarkable Plumularian on which the genus *Diplocheilus* has been founded, we have a character which is absolutely unique among known Plumularians. A scarcely less exceptional character is found in the absence of lateral nematophores, and in the reduction of the mesial nematophore to a sessile, shield-like process unconnected with the hydrotheca.

Diplocheilus mirabilis, n. sp. (Pl. VIII. figs. 4-7).

Trophosome.—Colony attaining a height of two or three inches, sparingly branched; stem monosiphonic, divided into internodes by oblique joints; hydrocladia about two-tenths of an inch in length, having their internodes separated by very oblique joints. Hydrothecæ widening from below upwards, and with the margin everted; mesial nematophore very short and wide, forming a concave shield-like process, with a central perforation at a short distance below the hydrotheca.

Gonosome not known.

Diplocheilus mirabilis presents unmistakable points of affinity with both Eleutheroplean and Statoplean Plumularidæ. To the Statoplean forms it is connected by its fixed nematophores, and this character is presented not only by the mesial nematophore of the hydrothecal internode, but by certain cauline nematophores which are developed on the internodes of the stem. To the Eleutheroplea it shows an affinity by the non-serrated margin of its hydrotheca, and by the very oblique joints which separate the internodes of the hydrocladia, a character which specially recalls a similar condition in the Catharina group of the Eleutheroplea.

Its position among the Statoplean rather than among the Eleutheroplean Plumularidæ must be regarded as decided by the entire absence of moveable nematophores.

Diplocheilus mirabilis—the only known species of its genus—is represented in the collection only by a fragmentary specimen.

Dredged at Station 162, April 2, 1874, off Monceour Island, Bass Strait; depth, 38-40 fathoms; bottom, sandy.

Cladocarpus, Allm.

Cladocarpus, Allman, Trans. Zool. Soc. Lond., vol. viii., 1873.

GENERIC CHARACTER. *Trophosome*.—A simple or branched hydrosoma, with pinnately disposed hydrocladia.

Gonosome.—Gonangia not included in corbulæ, or protected by any other form of modified hydrocladium, but borne on the sides or at the base of special protective branches, which are appendages of the hydrocladia.