

branches fascicled, hydrocladia springing from the branches at distant and irregular intervals, and being themselves set with rather distant, pinnately-disposed alternate hydrocladia. Hydrothecæ campanulate, every internode of the hydrocladia carrying a hydrotheca, which is adnate to the supporting internode for about two-thirds of its height; lateral nematophores very short, cup-shaped, not reaching the margin of the hydrotheca; mesial nematophores like the lateral in form, one borne by every internode at the proximal, and one at the distal side of the hydrotheca.

*Gonosome* not known.

*Plumularia laxa* is a very remarkable form, rendered striking by its somewhat diffuse habit, and by the doubly pinnate arrangement of its hydrotheca-bearing ramuli.

In this doubly pinnate condition of the hydrocladia we have a very exceptional character, for though it is not unusual among the Plumularidæ for the ultimate hydrothecal pinnae to be borne by ramuli also pinnately disposed on the main stem or primary branches, such ramuli rarely carry hydrothecæ. The primary hydrocladia of the present species vary in length from about three-tenths to six-tenths of an inch; the secondary hydrocladia attain a nearly constant length of about two-tenths of an inch.

Dredged in Station 163, April 4, 1874, lat. 36° 56' S., long. 150° 30' E.; 120 fathoms.

*Plumularia dolichotheca*, n. sp. (Pl. I. figs. 7, 8).

*Trophosome*.—Colony attaining a height of about three inches, stem irregularly branched, monosiphonic, hydrocladia alternate, about two-tenths of an inch in length, divided into internodes of unequal length, each carrying one, two, or three hydrothecæ. Hydrothecæ deep, thimble-shaped, adnate to their internodes by their entire height, and with the lateral nematophores springing from a point close to the margin of the hydrotheca; mesial nematophore sub-calicine only, and found only below the proximal hydrotheca of the internode.

*Gonosome* not known.

*Plumularia dolichotheca* presents several very unusual characters. It is, with the exception of *Plumularia frutescens* of the European shores, the only Plumularian with which I am acquainted in which more than one hydrotheca is carried by one and the same internode. While in the present species some of the internodes of a hydrocladium carry as usual only one hydrotheca, others carry two, or even three. When two or more hydrothecæ are carried by a single internode, it is only the proximal hydrotheca which is subtended by a nematophore. This nematophore is supported on a small tubercle-like process of the internode, while the corresponding points below the more distal hydrothecæ show no trace of the tubercle, a fact which affords evidence that the absence of the nematophore is not due to its having been accidentally detached.

Under the name of *Plumularia cylindrica*, Kirchenpauer describes a species—also from