

*Lifocarpus secundus*, Kirchen. (Pl. XIV.).

*Alphitonia* (section *Lifocarpus*) *secundus*, Kirchenpauer, Abhandl. aus dem Gebiete der Naturwiss. von dem naturwiss. Verein in Hamburg, Band v. 1872.

*Trophosome*.—Colony attaining a height of more than two and a half feet; main stem fastened, rooted by an entangled mass of fibres, and emitting, along nearly its entire length, short branches which carry the hydrocladia, and which, though regularly disposed in alternate pinnae, are all directed towards the same side of the stem; hydrocladia about two-tenths of an inch in length. Hydrothecae rather deep, with crenate margin; hydrothecal ridge short and broad, situated near the base of the hydrotheca; mesial nematophore adnate to the hydrotheca walls for about two-thirds of the height of the walls, and terminating as a short, free, blunt spine, which does not reach the level of the hydrotheca margin; lateral nematophores thick, spout-shaped processes not overtopping the hydrotheca.

*Gonosome*.—Phylactocarps replacing the hydrocladia at short intervals along the hydrocladia-bearing branches, each consisting of a jointed rachis, supporting on every alternate internode a long curved spine, which carries from its base to its apex a double series of wide cup-shaped nematophores, similar nematophores being also borne by the rachis.

No gonangia were present in the specimens.

*Lifocarpus secundus* is a remarkable and beautiful Hydroid, rendered very striking by its large size, and by its regularly disposed primary branches. These are each about two inches in length, and though at their origin given off as pinnae from opposite sides of the stem, become all directed towards one side, thus giving a secund character to the ramification. In some of the larger specimens a few branches are given off irregularly towards the base of the stem.

Another very striking feature is found in the curious comb-like phylactocarps. These are shorter than the hydrocladia, generally about half their length, and their rachis, like that of the hydrocladia, consists of a consecutive series of nearly equal internodes, which in the phylactocarp are about eighteen or twenty in number. From the same side of every alternate internode there is sent off a short thick process which supports the long slightly curved spine, the spines thus carried in a single series along the rachis, giving to the phylactocarp its resemblance to a comb. Large regularly disposed cup-shaped nematophores are arranged from the base to the apex of the spine in two alternate or sub-opposite series. The spine is itself hollow, with a terminal orifice. Nematophores entirely similar to those of the spine are scattered over the rachis.

Though no gonangia were developed in the specimens, I take it for granted that the comb-like organs are true phylactocarps. The spine-like appendages (the teeth of the comb) are probably the representatives of the mesial nematophores of suppressed hydrothecae.