

On *Tubularia crocea* in Plymouth Sound.

By

Edward T. Browne,
University College, London.

DURING my visit to the Plymouth Laboratory in September, 1895, Mr. Roach brought in, on the 28th, some fine colonies of *Tubularia* which he had found attached to the stern of a large three-masted sailing ship, the *Ballachulish*, of Ardrossan. This ship had come direct from Iquique, Peru, and after staying a few days in the Sound left for London. The *Tubularia* was kindly given to me for identification by Mr. E. J. Allen. After making drawings and noting the variation of the different organs, I came finally to the conclusion that as it agreed so closely with *Parypha crocea*, Agassiz, from Boston Harbour, there was no need to add another species to the genus. I was fortunate to meet with colonies of both sexes, and to find the ova in various stages of development. I believe enough material has been preserved to trace the development of the ovum, which shows a remarkable similarity to the development of the ova from the medusa of *Hybocodon prolifer*.

Actinulae were being liberated in large quantities when the colonies were taken from the ship, so it is possible that this hydroid may become an interesting addition to the fauna of Plymouth Sound.

To distinguish this species it is necessary to examine the female gonophores, and count the number of apical ridges. Agassiz states that the number varies between six and ten, but only eight were present in my specimens. The male gonophore is destitute of ridges, and usually terminates in a blunt apex. In the European species of *Tubularia* the gonophores are either without ridges, or when they are present their number does not exceed four.

The stolon ramifies and gives off numerous stems which are branched, twisted, and contorted near the base, so forming a thick, matted mass, from which the simple stems arise to about two inches in height. The stems are not often straight, and are always annulated at the base, and

at intervals higher up. The annulations on the stems are neither constant in position nor in number. There are usually three to five sets, and the number of rings in each set varies from two to twelve, but usually three or four are found together.

The colour of the colonies showed considerable variation. At first I thought the colours showed a distinction of the sexes, but further examination upset this view. The colours of the different colonies may be separated into two well-marked groups, the one extending from a pale yellow to a dark brown, the other from a brilliant reddish brown to crimson. The hydranth carries twenty to twenty-four proximal and distal tentacles. The clusters or racemes of gonophores show variation in number, which is chiefly due to their not all developing at the same time. The species is described with gonophores in ten to twelve pendulous racemes, which are disposed in two to three rows one over the other, and which surpass in length the proximal tentacles of the hydranth. To judge from the specimens which I have examined, the gonophores in each row are of about the same age. At first there is only one row, then follows a second between the first row and the proximal tentacles, and lastly, a third row on the outer side of the second row. There is apparently a great difference in the age of each row, and usually only one row is mature at a time. There are usually about eight racemes of gonophores, arranged in two rows; the greatest number counted was twelve, arranged in three rows. The racemes are not as long as the proximal tentacles, and do not hang down as figured by Agassiz.

A description of *Tubularia crocea* is given by Allman in his monograph on the Gymnoblasic Hydroids.