

frequently seen coiled upon themselves, in one, two, three, or fourfold spirals (wood-cut 33, p. 228, *d e f g h*). Here, too, they reach their extreme height, one quarter of an inch or more, in many cases, especially in the branching individuals (wood-cut 33, *e g*, p. 228). Excepting in their great length, they are indetical with those which are full of medusæ-buds; the smaller heads of the latter being perfect counterparts, as to the proboscis, mouth, and tentacles, of the former. The fact that they do not bear medusæ, so far as we have been able to ascertain, does not prove, by any means, that they are forms of a truly definite nature, inasmuch as we find, everywhere throughout the colony, many of the reproductive hydroids totally destitute of buds, whilst the others are full of their broods.¹

The sterile Hydroid.—Below the head there is no difference in the internal structure of the body of the sterile Hydroid, either in the male or female colonies, from that of the reproductive form, nor does their shape vary from that of the latter. The head, however, has a very different appearance, and even those of the male and female colonies are unlike, as we have already pointed out. A sterile Hydroid of either a male (*Fig. 2*) or female colony (*Fig. 1*), has long, slender, tapering tentacles (*Figs. 2, H, and 1, D*), disposed in a single row, like those of *Tubularia* or *Campanularia*. During the contractions and contortions of the head, the tentacles are sometimes displaced and rearranged, more or less alternately, in two rows (*Fig. 2^c*), one of which (*l*) stands out in a more spreading manner than the other (*l'*), the latter being bent upward toward the mouth (*m*). However, this does not always happen; on the contrary, the tentacles oftentimes remain as distinctly in one row (*Figs. 1^a, l, 1', l, and 2^c, l*) as when fully stretched out. The base of each tentacle appears to be decurrent on the stem (*Fig. 1, I*), under certain conditions, and, on this account, it is oftentimes difficult to determine their exact relation to one another, and to ascertain whether a tentacle is above or below the one next to it, on each side.

When the tentacles are fully expanded, these difficulties are not in the way, and there can then be no doubt that they are truly uniserial in their arrangement. Unless under very favorable circumstances, the hydroids do not fully expand their tentacles in confinement, but keep them more or less contracted, in various shapes, either club-shaped at the ends (*Figs. 2, D E F G I, and 2^c, l l'*)² or broadly

¹ Dr. T. Strehill Wright has published an article in the *Edinburgh New Philosophical Journal* for April, 1857, on *Hydractinia echinata*, in which he, for the first time, has brought these peculiar modifications of the fertile hydroid into notice, under the name of "Ophidium, or Spiral Polyps." That they ought not to be considered as a distinct

form of individuals, and still less as organs, as he regards them, we think will be sufficiently clear upon reading the results of our observations upon a species hardly distinct from that of Europe.

² Hassall, in the *Annals and Magazine of Natural History*, Vol. VII. p. 371, July, 1841, under the name of *Echinocorium clavigerum*, describes