

so as to form a network. Here and there this network rises, bearing with it the overlying soft layers, as if pushed up from beneath, into more or less elevated pillars, of a cylindrical or conical shape (Pl. XVI. *Figs. 1, s, 2, s, and 6*), thus adding another diversity to the polymorphism of the colony. In some instances, where the colony is situated on *Buccinum undatum*, the spines are arranged in rows along the spiral ridges of the shell, with such perfect regularity that one might at first sight suppose he had a different species before him. There is considerable variation in regard to the proportionate size of the three different forms of a colony. In some colonies the reproductive hydroids (Pl. XVI. *Fig. 1, A B*) are nearly as tall as the sterile forms (D), and in others they are hardly one third as high (Pl. XVI. *Fig. 2, B*), but yet they bud as plentifully as the largest ones.

The hydroids, of all forms, are as closely crowded together as are the individuals of a colony of Bryozoa, among the *Flustras* and *Lepralias*, but not with any such regularity. We have observed an instance where a colony of *Hydractinia* had settled upon the calcareous habitation of a dead *Flustra*, and nearly every Hydroid had chosen a cell of the Bryozoan for a basement, into which it withdrew itself almost entirely when touched. This adaptation of our Hydroid to the nature of its habitat reminds one of a similar phenomenon which occurs among Oysters, and in the genus *Crepidula* among Gasteropods. Fossil Oysters, for instance, attached to Ammonites, frequently assume the form of the ornaments of the latter, along their growing edge; the *Crepidula* of our shores, when growing upon Pectens, becomes plicated; when growing upon *Natica* or *Pyrula*, it is smooth; and those which are attached to the outside of these shells are convex, while those growing upon the inside of empty shells become concave. These different forms have been described as distinct species.

The fertile Hydroid.—In general outline the fertile hydroid (Pl. XVI. *Figs. 2^a and 2^b*) may be compared to a club, gradually tapering from a broad, more or less globular head, to a slender base. In a contracted state (*Fig. 1^e*) the stem swells in the middle, so that, on the whole, it resembles a figure 8. When the stem is loaded with medusoids, it is almost invariably thicker at the point of attachment of these buds than elsewhere (*Figs. 1, 2, and 3*). This is not caused by a thickening of the walls, but by the expansion of the digestive cavity (*Fig. 3, d*). The head is as changeable in shape as that of the sterile form. In a natural state, or rather in that state in which it is seen most frequently, it is globular (*Figs. 1, B C, h, 1^e, 2, C K, 3, 4^a, and 4^b, h*), the whole spherical mass seeming to be composed of the conglomeration of the tentacles; but that this is not so, may be seen when, as frequently happens, the tentacles are spread apart at the extreme tip of the head, and a broad, thick proboscis (*Figs. 2, A p, 2^a, m, 2, ^b, m, and 2^e, p*) is protruded for a considerable distance. There can be no doubt that this is a