in the first medusa (*Fig.* 6, c^2). Each of these secondary medusæ goes on developing its tentacular appendage (*Fig.* 12, *g*), exactly as did the parent (*c*), and in the same way secondary (c^1) and tertiary (c^2) herniæ, and so on, arise from the first hernia; whilst the tentacle of the primary medusa (*Fig.* 12) elongates to twice, and finally to thrice the length of the disk (*Fig.* 13, g^2). In such a state of development, there being no less than ten or a dozen medusæ attached to the base of its tentacle, the primary medusa soon drops from the head of the hydra, from which it has arisen, and enjoys a free life (*Figs.* 14, 14ª, 15, and 15ª). In this condition it is not unlike some of the Siphonophoræ. Indeed, no one can doubt that if such colonies of medusæ had been first observed in the ocean, in their free condition, away from the hydroids from which they originate, they would have been referred to the Siphonophoræ, and not to the Hydroids. In a discussion of the natural affinities of the Siphonophoræ, the genus Hybocodon cannot fail to appear as an important point of evidence of the close relationship which unites the Siphonophoræ and the Hydroids proper. For my own part, I have no doubt that the Siphonophoræ belong to the order of the Hydroidæ, in which they will be subdivided into a number of distinct families.

Histology.—The cells of the outer wall (Pl. XXIIIª. *Fig.* 10, *b bb*) are arranged in two layers, which, together, are about one one thousandth ($\frac{1}{1000}$) of an inch thick. The cell contents are perfectly homogeneous, and, although there is no trace of granulation, the wall appears darker than the inner wall (*d*). The cells are irregularly polygonal, and have very thin walls. The cells of the inner wall (*Figs.* 10 and 11, *d*) form but a single continuous layer, and are elongate in the direction of the length of the stem, having an irregular lozenge shape, when viewed from their inner face. They are about one two thousandth ($\frac{1}{2000}$) of an inch long, and from one third to one half as broad, and four fifths as thick as the outer wall. Their contents, as well as those of the semi-partitions (g^3 g^4), are perfectly hyaline, with the exception of a large, rather faint mesoblast (*Fig.* 11, g^1). The cells of the semi-partitions (g^3 g^4) are disposed in three or four layers. They are usually broader than those of the inner wall proper, being about half as broad as long, but about the same length as the latter. They vary considerably in thickness, according to whether the semi-partitions project more or less into the cavity of the stem. On each side of every semi-partition there is a collection of cells (*dd*), of moderate size, in one, or two, or three irregular rows; each cell contains a large, irregular, pigmentary, orange-red mesoblast, which occupies from one half to two thirds of its diameter. It is these mesoblasts which give the orange-red hue to the whole stem. With the exception of the space occupied by the pigment-bearing cells, the whole interior surface of the inner wall and semi-partitions is covered by vibratile cilia, which are about as long as the thickness

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