

the tentacles are very seldom seen stretched to their fullest extent, but when the Hydroid is in its native habitat, with the water flowing past it rapidly, they equal in length the whole head, from the base to the mouth, and wave to and fro like slender threads, as if the animal had no control over them. In the various shapes which they assume, in connection with the proboscis, they agree with *Thamnocnidia spectabilis* and *tenella* (Pl. XXII.). The inner surface (Pl. XXIII. *Fig. 1°*, p^1) of the proboscis is also ridged longitudinally at the upper part, but at the base these ridges (p^2) anastomose and form a raised network.

The branch, or peduncle, which carries the medusoids is a hollow, double-walled tube (*Figs. 18, 18^a, 19, 19^a*). The outer (a) and inner walls (b) are respectively continuous with the outer and inner walls of the proboscis. The outer wall (a) is thin and very transparent, and the inner wall (*Fig. 19, b*) is about three times as thick as the outer one. The cavity of the peduncle is in direct communication with the stomach, and in it a current of chymiferous fluid and granules is constantly passing backward and forward in the same way as occurs in the main part of the body. The same degree of sensibility and contractility obtains here as in the tentacles, and also the same flexibility under the influence of flowing water. Each branch is a single uniform stem, from the tip to the base, or very near it, as it sometimes happens that two branches arise from a short and thick single trunk. The pedicels to which the medusoids (*Fig. 1^b, a, b, c*) are attached are either single (a, b) or once (c^1) or twice (e) branched. At the tip of each branchlet a medusoid is attached. When the medusoids are most crowded, the whole mass is so dense as to hide the proboscis entirely, except at the extreme tip, allowing just room enough for the buccal tentacles to move and the mouth to open. When the head is held upright, with the mouth uppermost (*Fig. 1^b*), the bunches of medusoids hang down between the tentacles (t^1) of the lower series; but when the axis of the head trends horizontally (*Fig. 1^a*), then the bunches (c) are pendent between the tentacles of the lower side; and if the head hangs with the mouth downward, the proboscis is embraced by these pedulous bunches. When, however, the tide is flowing in or out very fast, then every thing is stretched out in the direction of the swift current. The larger tentacles (t) at the base of the head are as numerous, and have the same general form, as those of the upper row, when seen with the naked eye; and are tapering from the base to the tip, where they terminate bluntly. When observed closely, with the aid of a lens, it is easy to perceive that they are not cylindrical, but four-sided, so that in a transverse section (Pl. XXIII^a. *Fig. 3*) we have the upper (a) and lower (a^1) surfaces flat, and narrower than the lateral (c^2) flat or slightly concave sides. The proportions in the breadth of the upper and lower to the lateral surfaces vary gradually from the base to the tip of the tentacle; at the base