

its extreme frailty, it is often carried away by the decomposing hydra. In a fresh state it is so closely applied to the wall of the chymiferous cavity, that it has not been recognized.

The reproductive calyces so closely resemble those of *Obelia commissuralis* (Pl. XXXIV. *Fig.* 11), described in the preceding section, that one figure may serve for both. They arise singly from the base of the pedicels of the hydra; not in the fork, between the latter and the main stem, but immediately above the great thickening of the stem joint, and, alternating on successive joints, they project at right angles to the plane in which the hydra-pedicels trend; so that in a view from above we would have a cross, formed by the alternating hydra-pedicels on one hand, and at right angles to this the two limbs formed by the alternating reproductive calyces. The pedicels of the latter are very short, and consist of three or four rings; and the angle between them and the joints from which they arise is not so great as that of the hydra-pedicels. Sometimes we have found a reproductive calyx on each side of one and the same pedicel, and this may be repeated four or five times on the same stem; but, in such cases, there was a strong tendency to branching, or throwing out stolon-like processes, or the stem was actually branching. This Hydroid does not usually branch, but when it occurs, the trend of the hydra-pedicels and of the reproductive calyces is at right angles to that of the main stem, so that the hydra-pedicels of the main stem trend in the same plane as the reproductive calyces of the branch, while the reproductive calyces trend in a plane which, although at right angles to that of the pedicels, cuts that of the branch-pedicels at a sharp angle, equivalent to the angle between the stem and the branch.

In every part of the hydrarium, the corneous sheath is composed of fibres, arranged longitudinally (Pl. XXXIV. *Fig.* 1), not only visible in profile (*a*, *a'*, *a''*), but also in a face view (*b*); moreover distinct fibres (*c*) may be torn off. Transverse to these fibres, and most conspicuous in the thickening of the joints of the stem, are very irregular branching and anastomosing lines, which have the appearance of cellular tissue, but in a view perpendicular to the surface (*b*), they are simply transverse to the fibres. We have not been able to satisfy ourselves as to the nature of these lines. They are most frequent in old stems.

Owing to the peculiarity of the joints of the stem, the common chymiferous channel of the hydrarium alternately approaches the thinner side of each successive internode with a slightly sinuous course, and alternately diverges, immediately above the great thickening of each joint, into the pedicels, and terminates in a hydra, or, at the base of each pedicel, passes into the reproductive calyces, where, in time, it produces medusæ-buds from its double walls.

The hydræ (*Figs.* 3 and 4) have thirty-five tentacles, and, as in other Campanu-