

is disposed in a uniform series. Immediately beyond the bases of the calyces, the main stem suddenly contracts to its original thickness, and proceeds to the base of the next pair of calyces, where it diverges in two opposite directions as before, and so it traverses the whole length of the stem to its apex. Wherever a branch arises (*Fig. 3, i*), its base is a prolongation from the distal side of the expansion of the main stem, just below the calyces; and the same relation obtains, where a branchlet arises from a branch. When extended from its calyces, the hydra (*Fig. 2, e p l*) has no thicker outer wall (*a*) than the main stem, but the inner wall (*b*) is at least twice as thick, whereas, in the stem, it scarcely more than equals the outer one in this respect. When retracted within its calyces (*Fig. 2, m*), the outer wall (*a*) is sometimes very thick, but at other times it is comparatively thin (*Fig. 3*). The outer wall is not altogether free from the chitinous sheath, which envelops the whole hydrarium, but here and there film-like prolongations (*Figs. 2, a'*, and *12, a'*) from the wall attach it to the inner face of the sheath. In the younger stages of development, these processes are quite numerous (*Fig. 15, a'*), but, with increasing age, the greater part of them are retracted. In the reproductive calyces, not only the outer wall, but the inner one also, enters into the composition of these props, and, moreover, the chymiferous cavity pervades them to a considerable extent (*Figs. 10 and 10^a, h*). As regards the reproductive calyces, it is noteworthy that the diverticula arising from their axis (*Figs. 10, a'*, and *10^a, j*), originate from, or near the terminal portion (*g*) of the axis, and branch more or less, as they project toward the base and down the sides of the calyces.

Proles medusoides. — It is only during the breeding season, from May to September, that the reproductive individuals (*Figs. 7, 8, 9, 10, and 10^a*) are present. A fully-developed calyx contains a prolongation of the stem of the hydrarium, and a medusoid which buds from it; the first extends, as a uniform, double-walled tubule (*a' c*), from the base to the apex of the chitinous calyx, at the latter point expanding into a disk (*g*), which completely fills the aperture; and the second, the medusoid, a double-walled sac (*b b'*), with a central, single-walled, probosciform body (*l*), occupies nearly the whole available room within the calyx, the axial prolongation (*a' c*) of the hydrarium being pushed aside against the chitinous investment. The two walls (*b b'*) of the medusoid are directly prolonged from the tubular axis (*a' c*), and are about as thick as those of the latter, and totally devoid of radiating or circular chymiferous canals. The probosciform, axial prolongation (*l*) of the actinostome is a duplicature of the inner wall (*b'*) of the medusoid; arising from a point (*l'*) just within the junction of the latter with the tubular axis, it forms a sac within a sac, and is the immediate investment of the chymiferous cavity, which is prolonged from the stem into the medusoid.