

Between this and the inner wall of the disk, the reproductive material, the spermatie (*sp*) or the ovarian mass (*ov*), is deposited.

Embryology.—Although the breeding season commences in May, it is not until June that any of the ovarian or spermatie bodies have attained maturity; at the latter date, we have secured and figured (*Figs.* 11, *a b c*, and 16, A B C) the ripe spermatie particles, and the egg. The egg consists of a very thin, vitelline sac (*Fig.* 16, B *v*); a perfectly homogeneous, or uniformly and minutely granular, dark yolk (*y*), the granules appearing as mere dots (A), under a magnifying power of five hundred diameters; a clear, Purkinjean vesicle (B *v*, C *v*); and a thick-walled, homogeneous, Wagnerian vesicle (*v*). In a fully-developed medusoid, the eggs are so crowded upon each other, as to be irregularly polyhedral, but upon being set free, they assume perfectly curved outlines, almost, or quite spherical. The spermatie particles fill the male medusoid (*Fig.* 8) in one uniform mass (*sp*); they are comparatively very minute, so that, as seen with a power of five hundred diameters (*Fig.* 11, *a*), it is impossible to represent their proper form, and, therefore, we have drawn them on a diagrammic scale (*Fig.* 11, *b c*), and in two positions, showing that from one side they are pear-shaped (*b*), and from the side at right angles to the latter they are oval, and have a slender filament, about four times as long as the body, appended to the narrower end.

Budding.—The main stem increases in length by terminal growth (*Fig.* 12, *y*); the extreme apex (*h*) is constantly developing new cells, and a chitinous sheath, which gradually become lateral by the onward progress of the newer portions. At certain points, corresponding to the bases of the hydra-calyces, the stem broadens as it grows, the walls become extremely thick, especially the outer one (*Fig.* 14^a, *a*), and the inner walls become three-lobed (*c c'* *c''*). At the lower part of the bud, the cellular structure of the outer wall (*a*) is barely intimated by fine transverse striæ; but above, the cellular structure is quite evident, seeming to be a congeries of coarsely granulated, oval cells, arranged end to end in rows which traverse the thickness of the wall. Those cells which lie in the youngest part, or terminal portion of the bud, have a transparent, thin wall (*Fig.* 13, *a b c*), which is thickly lined by a layer of globular particles (*d*); others, from this neighborhood, but a little older (*Fig.* 13, *e f g h i*), appear to have thick walls (*f*), and homogeneous, highly refractive contents, and are rather elliptical than oval in outline. The inner wall (*e*) shows more of its cellular nature, in the older portions, than the outer wall. The chitinous sheath (*e*) is very thick below, and very clearly shows the superposed lamellæ, of which it is composed; but it thins out quite rapidly, and is a mere film across the end of the bud. In the next stage which we have to present, the slight triple lobulation of the last, has become fully three-parted (*Fig.* 17, *f f'* *f''*), reminding one very much of a three-toed,