

so as to appear about three times the diameter represented here, the yolk-cells would have the size and appearance of those in *Fig. 24 y*. The yolk-sac is so exceedingly thin that the yolk appears to extend to the very periphery of the egg. At this stage of growth the yolk has no longer the transparent, colorless appearance of the earlier periods, but presents a bluish-gray color. From this time forward there is but one remarkable change noticeable in the egg, and that is the dissolution of the yolk-cells and their re-development. That this does occur is proved by the fact, that in a fully grown egg (*Fig. 22*) the yolk-cells (*y*) are smaller than those of the last phase mentioned (*Fig. 21*); and to demonstrate that they are not the mesoblasts of the cells of the previous period, it is enough to say that these cells were not mesoblasted.

For a short time after this, the egg would seem to increase in size, but not as an entire egg. The Purkinjean vesicle (Pl. X^a. *Fig. 23 p*) bursts, and yet the space occupied by it remains clear, and the Wagnerian vesicle (*Fig. 23 w*) continues intact, and might be mistaken for the Purkinjean vesicle, were it not for its peculiar appearance, by which it may be recognized when compared with other Wagnerian vesicles of undoubted character and relations. The yolk-cells, at this period, are larger than ever, and have an apparent diameter, under this magnifying power, of about one thirtieth of an inch, or in reality $\frac{1}{30}$ of an inch in diameter. The vitelline sac is very thick, a peculiarity also noticeable in the ripe egg of another genus, *Cyanea* (see Pl. X. *Fig. 2 r*), but never in the eggs of any of the naked-eyed Medusæ. Finally, the Wagnerian vesicle bursts, and leaves a homogeneous clear space (Pl. X^a. *Fig. 24 p*) in the centre of the egg. To what degree this clear space is filled up, or whether it disappears altogether during segmentation, we are not able to state; for we have not seen the segmentation of the yolk either in *Aurelia* or in *Cyanea*.¹

THE PLANULA OF *AURELIA FLAVIDULA*.² After segmentation there is some variation in the age at which the young leave the ovary and enter the pouches of the oral appendages; for they do it by their own strength, being provided with vibratile cilia all over the body (*Fig. 25*). Some go out before they have lost their globular shape (*Fig. 25*), and others remain until they have become oval (*Fig. 30*), or even quite elongate (*Figs. 31 and 32*); but at no time do they leave in an unsegmented state.³ There would seem to be considerable variation in size among the young,

¹ If we may judge from Siebold's figures (Neueste Schriften der Naturforschenden Gesellschaft in Danzig, 1839, Tab. 1, *Figs. 3, 4, 5^a, and 5^b*) of the segmentation of the yolk of *Medusa (Aurelia) aurita*, we should say that this clear space became obliterated during the process.

² See Vol. III. p. 80 for the meaning of the word planula as used here.

³ SIEBOLD (Neueste Schrift. etc., Danzig, 1839, *Fig. 18*) says in regard to *Aurelia aurita*, that the eggs escape from the ovary and reach the pouches without the help of vibratile cilia; but then again,