

The first indication of any change taking place in the interior of these ciliated globes is a growing transparency of the peripheric portion, just beneath the coating of cilia (*Fig. 25*), and also a similar modification of the centre of the mass. Soon the nature of these changes becomes more obvious, as we find that the outer portion of the embryo grows more and more transparent, until a distinct layer (*Fig. 26 a*) declares itself, surrounding the whole mass as if with a thick envelope. At the same time the centre continues to increase in transparency over a larger field, until the whole is lighted up as if by an interior illumination. By plunging the focus of the microscope to the centre of the embryo, we find there a spherical cavity (*Fig. 27 d*) with a very clearly marked outline. This at once gives a definite character to the different regions of the body: the outer envelope is the outer wall (*a*) of the body, the part included by this is the inner wall (*b*), and the cavity (*d*) is the digestive cavity in an incipient state. As yet there is nothing present which indicates either right and left or before and behind, but every thing is equally disposed about a central spherical cavity. The average diameter of the majority of the embryos at this time is $\frac{1}{30}$ of an inch: some, however, measure as small as $\frac{1}{35}$ of an inch, and others as large as $\frac{1}{25}$ of an inch. The digestive cavity continues to enlarge until its diameter is equal to half that of the whole body (*Fig. 28 d*) before any other sensible changes take place. Up to this time the embryo has been of a uniform, transparent gray color; but now the inner surface of the digestive cavity (*Fig. 28 d*) is tinted with a faint rosy color, which suffuses the whole body with a delicate blush.

The next phase introduces the formation of the mouth. This is brought about in the first place by the formation of a depression (*Fig. 29 c*) on the outer surface of the inner wall (*b*), and from thence a passage is formed inwardly to the digestive cavity (*d*). The outer wall is pierced, sometimes soon and at other times much later. After the formation of the mouth and the passage-way to the digestive cavity they are seldom seen, because the embryo keeps them closed, except when swallowing its food; and hence some of the older forms figured on this plate appear to have no mouth (*Figs. 31 and 32*), or no passage (*Figs. 30, 34, 35, and 36*) to the interior. The figure which we have referred to for the formation of the mouth and the passage-way to the digestive cavity (*Fig. 29*) was contracted vertically at the moment it was drawn, but the true form is oval like the figure below it (*Fig. 32*). The degree of contractility which these embryos possess is well illustrated by two figures (*Figs. 31 and 32*) placed here side by side; for these figures were copied from the same individual. This faculty is possessed by the embryo from the earliest period after segmentation has finished, and increases in degree with the development of the body. Sometimes one may observe a single organ or part of the body contract or expand, while the rest remains immovable;