this will be readily explained in a little older stage, in connection with the development of the peripheric circulatory system.

Soon the spinal tube (Pl. 12, fig. 11, *e*) loses its spatulate shape at the posterior end, by continuing to close over and growing narrower, till its extremity appears to vanish in a long, slender point. At the cephalic extremity, the spinal tube, constituting the brain, has approximated its upward folding edges, (Pl. 12, fig. 8, e^3, 9, e^3, 9a, e^3,) so as to form a closed arch for a short distance along the region of the optic lobes, and thence to the anterior end of the head. Behind this closed portion, the spinal tube is yet quite open and broadly gaping, (fig. 8, 9, 9a, e^2,) as far back as a point above the heart (fig. 9, *h*).

In connection with the brain, a feature appears which has not been noticeable before. On each side of the ventral portion of the head, and beneath the region of the optic lobes, a slight protuberance (Pl 12, fig. 9 and 9a, *k*) stands out, and is rendered otherwise more conspicuous by the fact that its component elements are differentiated from the mass of cells about them, so as to appear like a clear, broad ring (fig. 9, *k*) imbedded in a darker substance. From its position in the head, and its relation to the optic lobes of the brain, there can be no doubt that this is the eye. A similar differentiation occurs on each side of the head, opposite the posterior part of the gap of the brain, which is still open. Here the clear ring, (Pl. 12, fig. 8, 9, and 9a, *l*,) when viewed from above, appears to be a cup-shaped depression, (fig. 9a, *l*,) from the bottom of which a broad band of similar substance runs toward the base of the brain. This is unmistakably the ear. The dorsal vertebræ (Pl. 12, fig. 9 and 9a, *f*) are visible, close to the ears, and extend along each side of the whole length of the spinal tube to its end (Pl. 12, fig. 11, *f*). The chorda dorsalis, now much elongated, underlies the spinal marrow, from the base of the optic lobes (Pl. 12, fig. 9a, *g*) to nearly the extreme end of the body (Pl. 12, fig. 11, *g*). Behind the vanishing part of the spinal tube (Pl. 12, fig. 11, *e*) the body is constricted considerably, and then expands into a short, oval termination, which contains the parts of the spinal, vertebral, and musculo-cutaneous layers that are not yet isolated. The sides of the body (*p*) are folded inwardly and downwards, and the anterior and posterior edges of the ventral cavity (Pl. 12, fig. 5, *o*) are still farther approximated than before, so that, when the body is laid upon its back, it resembles a canoe partly decked over, with an elevated prow.

On each side of the head, opposite the open part of the brain, three or four transverse furrows are visible (Pl. 12, fig. 8, *m*, 9, *m*). These extend from near the lower median line of the head upward, almost to a level with the edges of the still unclosed spinal tube, (fig. 8 and 9, e^2,) and appear to be superficial incisions in the musculo-cutaneous layer. These are the branchial fissures. The