

category as the *opercular cartilages* behind and around the mouth in the gill-bearing types.

The sinuous opercular folds behind the nose (the first of these, *mx.p.*, perhaps representing two) are precisely like their counterparts in the larger embryos of the Skate (see On the Skull of the Selachians, Trans. Zool. Soc., 1878, vol. x., pl. xli. fig. 1).

These folds, in this gill-less type, are now at their height, and will soon, for the most part, become fused, closing in the post-oral clefts.

The eyeball (*e.*) is now very large, and its folds have not quite united. The ear-sac (*au.*) is a short-necked lagena, the neck being the primary involution. The base of the pouch lies over the first post-oral cleft (*cl.* 1).

A basal view, from which the inferior arches have been partly cut away, shows that the floor of the skull is open under the fore-brain (fig. 4, C 1), where the oral involution (see also fig. 6, *py.*) is passing inwards towards the postero-inferior face of that vesicle.

The double maxillo-palatine fold (*mx.p.*) is sharply severed from the nasal fold in its ethmoidal or front part. It has a thin inner part, in which the palatine bone will be formed, and a thick outer part, which will contain the maxillary and its sharp, ensheathing horny plate.

The cornua trabeculæ being very short, and the prenasal not developed as yet, the *fronto-nasal process* (*n.f.p.*) is but little freed from the inferior cranial wall and prenasal folds.

When the first post-oral arch has been cut through on one side, then its "head cavity" (*h.c.*) is seen; it has already given off the pro-oral diverticulum, which lies in the hind region of the maxillo-palatine fold.

In this view the angles of the wide, gaping mouth (*m.*) are seen to be the third of a series of gaps in the facial wall, the fourth of which becomes the tympanic cleft (*cl.* 1).

On their inner side (fig. 6) the clefts are seen to be large angular pouches; they began on the inner face of the throat, in the hypoblast.

Fourth Stage. Embryos $\frac{3}{4}$ *inch long, measured along their curve.*—In this, as in the last stage, very much can be learned by a study of the undissected embryos. I have given a complete side view of this, as of the last (Pl. I. fig. 7).

We here see at a glance how rapidly this embryo is becoming transformed, and how soon the general form will become changed into the special Chelonian type.

The changes in form are of the greatest interest. The whole embryo has become so bent upon itself that the fronto-nasal process is only one-third the distance from the coil of the tail that it had in the last stage.

This also brings the umbilical vessels (*u.v.*) much nearer to the middle of the ventral region; this region is half filled by the enormous heart and its pericardium (*h.pcd.*).

The cephalic and cardiac regions are now about equal in bulk; the head is still more