by the apex of the notochord (*nc.*), its investing structures, and the third nerves (*motores oculorum*).

There are three pairs of chambers built in the sides of the dome-like structures of the cranium; these are for the complex machinery of the organs of special sense, which are placed at the outgoings of the nerves that are specially modified for them.

Indeed, the middle of these, the eyeballs, are not so much supplied by modified nerves, as by a direct outgrowth on each side of the fore-brain itself.

But these three things—the crowding of the inferior parts themselves, the free *hypertrophy* the brain of vesicles, and the lodgment in the cranial walls of special chambers for the organs of special sensation—all go to modify the lower or facial parts of the head.

Further back, especially in the lower kinds of gill-bearing Vertebrata, there exists a very regular series of open passages into the throat, and of arches, or skeletal bars, to form the skeleton of the respiratory region.

But when the digestive cavity opens in front, a right and left cleft open freely into each other below; in this way the mouth (*m.*) is formed by the extension of the third pair of clefts, counting from before backwards (the first post-oral is the first cleft of embryologists).

The first post-oral bar, which forms most of the framework and machinery of the mouth, is the dominant *visceral arch;* it gets the start in growth, and aborts or even suppresses the arches in front of it to a great extent.

It may so bend itself over and subdivide as to form by itself the antagonising upper and lower jaws, as in the Selachians (see Trans. Zool. Soc., vol. x., plates xxxiv.–xlii.; but, as a rule, rudiments of pre-oral arches supplemented by subcutaneous bones, form and finish the upper jaw.

On the whole, however, the series of clefts and folds along the face of the embryo of the Turtle, at this stage, are very regular (fig 3), although those in front of the mouth are rather indistinct.

The sense capsules (*ol.,e.,au.*) are intimately connected with the arches and clefts below, and their outworks are largely formed by modification of these oro-faucial structures.

Even now the nose and eye, and afterwards the ear, influence in many ways the growth of the parts of the lower face and throat, so that these are specialised to functions that are altogether secondary, as it regards that which was their first form and function, as the ventral portions of a simple segmented creature.

The slit-like recess below the nasal sac (*ol.*), and the gaping space between the eyeball and maxillo-palatine fold (*mx.p.*) are apparently openings of the same nature as those behind them; they both very soon become open inwards.

The tubular cartilage that forms round the external nostril is homologous with the "labial" that serves the same purpose in the Ichthyopsida, and belongs to the same