

of sutures running from the nose to the superoccipital. In the mandible an important change takes place, for the articular part of the cartilage becomes ossified, endosteally, and then coalesces to some considerable degree with the ectosteal "articulare."

This determines the name of that outer plate, what might in younger specimens be thought to be a mere splint like the others in this part; so also in highly-ossified Batrachia, as the "Aglossa," the bone, which was taken for the "angulare" by Huxley, coalesces with the endosteally ossified articular region of the free mandible.

The post-mandibular arches merely increase in size, and not in character.

The rapidity with which this type undergoes its metamorphosis, even in an early period of its life within the egg, is very remarkable as compared with what is seen in the Batrachia with their large larvæ.

But in *Pipa*, which scarcely shows a trace of even external gills, the metamorphosis is nearly if not quite as rapid, and, at extrusion, the young are as perfect as newly-hatched Turtles; in *Dactylethra* we may see that, as to the skull, there is but a step between a Batrachian and a Chelonian.

There is one thing to be noted of great importance in the development of the Turtle, and that is the number of its body-segments at various stages, their rapid increase at first, and then the suppression or extinction of several, afterwards.

In embryos a little more than a quarter of an inch in length (first stage), there are about twenty-seven muscle-plates or somatomes.

In embryos ranging from $6\frac{1}{2}$ to 9 lines (a little more than half, to three-quarters of an inch), there are fifty-one of these divisions of the body visible externally.

Now in the adult I can only find forty-one developed vertebræ, viz., 8 cervical, 10 dorsal, 2 sacral, 21 caudal—41 in all.

But in the third and fourth stages there are at least 15 somatomes in the cervical region, in the dorso-lumbo-sacral 12 (as in the adult), and 24 in the caudal—51 in all (see Pl. I. figs. 3 and 7); thus we miss in the adult 7 in the cervical and 3 in the caudal—10 in all.

This free suppression of segments suggests a great secular modification by shortening of a form not unlike a *Plesiosaur*.

Summary.

First Stage. $3\frac{1}{2}$ lines long.—In this stage there is nothing to distinguish the embryo from that of a Snake, Lizard, or Bird. There are twenty-seven somatomes; the heart is looped; there are four clefts, of which the fourth is scarcely open; the limbs are appearing as thickenings; the rudiments of the sense-capsules are very distinct, that of the ear being especially remarkable for the clearness of its lipped opening; there is a slight rudiment of the maxillo-palatine fold (Pl. I. fig. 1).