

wards, as well as downwards. This recess, or middle nasal passage (*m.n.p.*), is like that which is seen in many "Urodèles" (Phil. Trans., 1877, pl. xxix. p. 579), and appears to be a petromyzine remnant.

In front of and behind the recess the sub-carinate orbito-nasal septum (*s.n.p.e.*) is seen; behind, each lateral element of this longitudinal wall is articulated to the fore part of the base of the transverse post-pituitary wall.

The rest of the basis cranii is the gently concave continuation of the transverse wall; its moieties are separated by the notochord (*iv.nc.*), and the auditory sacs lie on its bevelled edge, as in the Skate and Shark (Trans. Zool. Soc., vol. x. part. 4, pls. xxxiv.-xlii. 1878). On the under surface of the auditory capsules two fenestræ can be seen on each side, from the foremost of which a rod of cartilage is seen emerging; these are the fenestra ovalis and fenestra rotunda, and the rod is the columella (*f.o.,f.r.,co.*).

The hollowed quadrate cartilage (*q.*) is seen outside and in front of the columella; and half-way between each quadrate and the notochord the Eustachian passages (*eu.*) are seen to open; these are extensions of the first cleft, which has become large in the body of the quadrate.

(*g.*) *Upper view of the inferior arches.*—These arches (Pl. III. fig. 6) are very similar to those of a Frog whose branchial pouches have recently been absorbed. Only such parts are chondrified in the Turtle as are left after metamorphosis in the Frog, where the four outer pouches, and the four rudimentary intra-branchials are almost removed, leaving the sub-basal "thyro-hyals" for attachment to the larynx.

The free mandibles (*mn.*) are united by a plate which requires but little further segmentation to convert it into a basimandibular element.¹

This is evidently a somewhat rare modification of the mandibular arch, but, according to Mr Charles Stewart, it occurs in the Crocodile also. This sub-orbicular piece is clearly marked off from the terete rods (*mk.*), which thicken upwards, and end in a reniform condyle.

The upper element of the hyoid arch will be described with the auditory apparatus: it is the shaft of the columella (Pl. IV. fig. 7, *co.*); the "cerato-hyal" (Pl. III. fig. 6, *c.hy.*) is a gently arcuate rounded rod set on the basal piece behind the pyriform "hypo-hyal" (*h.hy.*).

The basal piece is a broad apiculate plate of cartilage, which is, in reality, a basi-hyo-branchial (*b.hy.,b.br.*), as it belongs to two arches; it ends, as in metamorphosed Frogs, in a pair of divergent "hypo-branchial" horns (*h.br.*), or thyro-hyals.

¹ The basal pieces constantly run in front of the bars to which they belong, and, knowing this, I have already suggested to Professor Huxley, that the "median ventral cartilage" of the Lamprey cannot belong to the mandibular arch, as it lies behind it, but is most probably a true "basi-hyal" (see Huxley, "On the Cranio-facial Apparatus of Petromyzon," Journ of Anat. and Phys., vol. x. p. 421).