

(5) still come into view, and the "geniculate ganglion" (7) is also seen just inside the skull.

The Eustachian passages (*cl.* 1) are seen on each side of the pituitary region, but far apart; the ampullæ of the anterior and horizontal semicircular canals (*a.s.c.*, *h.s.c.*) are laid open in the auditory capsule (*au.*), and the occipital arch (*s.o.*) comes now into view at its fore-edge. The "meatus internus" (*m.i.*) behind the geniculate ganglion (7), and the "aqueductus vestibuli" (*aq.v.*) are also shown; as also the three chief arteries (*i.c.*, *b.a.*).

But more important than all this is the structure revealed here in the back of the pituitary region, for here the razor has cut through a distinct lobe or nodule of cartilage, the downward continuation of the solid sheath of the notochord (Pl. IX. fig. 1, *1a*, and Pl. VIII. fig. 6, *6a, nc.*). We can tell exactly how far this descends, for in the next thin slice (Pl. IX. fig. 2) we are below it; and in the former (Pl. VIII. fig. 6), this part was fused with the front of the post-pituitary wall (*p.cl.*).

Moreover, we can see that this tract of cartilage is at a greater distance from the notochord at this place, for here the latter lies in a groove of the basal plate, and is not now embedded completely in it (see also Pl. VIII. fig. 6, *nc.*).

The whole "intertrabecular" bar (*i.tr.*) is manifestly as much a direct continuation of the mesoblastic sheath of the notochord as the prochordal part of the trabeculæ are outgrowths of the parachordal tracts, and both these single and paired elements are necessitated by the down-growth of the fore-brain.<sup>1</sup>

*Eighth Section.*—The hind part only of this section has been figured (Pl. IX. fig. 2, *2a*); here, on each side of the pituitary space, we see a tract of new bone, the pterygoid (*pg.*) and a rod of cartilage subparallel with and outside it, the epipterygoid (*e.pg.*); this has been severed from the pedicle of the quadrate. The Eustachian openings of the first cleft (*cl.* 1) are exposed behind that cartilage, and this is bounded on its inner side by the investing mass (*iv.*), which is confluent with the auditory capsule (*au.*), the cavity of which is laid bare below the anterior, and partly below the horizontal canal, and through the posterior (*p.s.c.*). The cochlear ganglion (*g.cl.*) lies in the "meatus internus," and fibres are seen passing from it into the sac. Here, and in the next section (fig. 3, *3a*), the lateral cartilages are retiring from the notochord to form the well-known "posterior basi-cranial fontanelle." On each side of the basilar artery (*b.a.*) a nerve is seen

<sup>1</sup> We are evidently treading close upon the causes of the cranial modifications as compared with what is seen in the spine. Most of the segmental muscles are suppressed, the segmental nerves are greatly modified, the hæmal region is marked by dehiscence of the walls (to form clefts) down the middle of each proper segmental region, these regions being marked out also by the forks of the cranial nerves embracing them. Then, also, the attempts at secondary segmentation by the formation of distinct neural cartilages and notochordal constrictions are very slight, although the three homologous tracts of mesoblast are there, and are continued up to the actual front of the head. Lastly, the arrest of the notochord, which stops short even of the organic end of the down-folded head, is a most important factor in this great modification of the cranium as compared with the spine.