of the 'bodies'. Similarly, no correlation could be established between the age of the patients, which varied from 20 to more than 70 years, and the number of the 'bodies'.

Although unlikely, the question might be raised whether the post-mortem treatment of the brains might have something to do with the occurrence and number of the 'bodies'. The interval between death and post-mortem varied from 2 hr. to 3 days. As the brains came not only from this hospital but from many other hospitals throughout the country, the possible effect of variations in the techniques of examination and of fixation can be excluded. No correlation could be established between the interval between death and fixation and the number of the 'bodies'.

The brains from a few species other than man have been examined by the Marchi method. These came from rhesus monkeys, cats, horses, sheep, guinea pigs, rats and mice. In none of these brains were any of these 'bodies' seen. However, the number of animals examined was too small for any definite conclusion to be drawn about the absence of these 'bodies' in mammals other than man.

At present no conclusion as to the nature of these 'bodies' is possible; but it is tentatively suggested that they may indicate some biochemical feature characteristic of the globus pallidus which has not yet been identified. Much interest is now focused on the basal ganglia. It is possible that with increasing knowledge of this region the significance of the findings reported here will become recognized.

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BIOLOGY

Dorsal Fontanelles in Selachian Neurocrania

SINCE the classical work of Gegenbaur¹ and Parker² the anterior opening lying on the dorsal surface of the selachian neurocranium is generally termed 'anterior fontanelle' in spite of the fact that it is different in its morphological significance and relations in different selachians. In some forms, posterior to this fontanelle, a small opening, the epiphysial foramen, is found; and in others another fontanelle, which is generally termed the 'supracranial fontanelle', appears. The study of several species of several families of Selachii showed that it is of great importance to name such fontanelles according to their morphological relation with the cranial cavity.

In *Squalus blainvillii* the fontanelle lies beyond the morphological anterior wall of the cranial cavity and represents the dorsal opening of the cavum præcerebrale found inside the spout-shaped rostral cartilage, and is accordingly named the præcerebral fontanelle. Posterior to this fontanelle a small epiphysial foramen occurs. In *Squatina oculata* the fontanelle is completely supracranial, as the morphological anterior wall of the cranial cavity extends to its anterior margin. Behind it is a small epiphysial foramen. In *Triaenodon obesus* the brain extends anteriorly beyond the posterior edge of the fontanelle and thus it can be differentiated into two morphologically different parts: the anterior supracranial fontanelle

lying above the cranial cavity, and the præcerebral fontanelle representing the dorsal opening of the cavum præcerebrale enclosed between the three rostral cartilages. In *Torpedo sinus* the fontanelle is morphologically similar to that of *Triaenodon*, and posterior to it lies the epiphysial foramen. In *Raja batis* there are two large fontanelles separated by a narrow cartilaginous bridge. The anterior is differentiated into a præcerebral fontanelle leading to the cavum præcerebrale inside the rostral cartilage, and an anterior supracranial fontanelle. The posterior is completely supracranial and is, here, termed the posterior supracranial fontanelle to differentiate it from the anterior one. In *Taeniura forskali* is found only one large fontanelle, which is completely supracranial, and termed the supracranial fontanelle.

Fig. 1. Dorsal view of the neurocranium of: 1, *Squalus blainvillii*; 2, *Squatina oculata*; 3, *Triaenodon obesus*; 4, *Torpedo sinus*; 5, *Raja batis*; 6, *Taeniura forskali*. Ant.S.C.Fn., anterior supracranial fontanelle; Ep.Fr., epiphysial foramen; Pr.Fn., præcerebral fontanelle; Pt.S.C.Fn., posterior supracranial fontanelle; S.C.Fn., supracranial fontanelle.

Such comparative study of the dorsal fontanelles in different selachian neurocrania shows that when rostral cartilages are not present the fontanelles are morphologically supracranial as in the case of *Squatina* and *Taeniura*. In cases where rostral cartilages are present a præcerebral fontanelle is represented, and it may be the only fontanelle present as in *Squalus*, or it may be confluent with a supracranial fontanelle as in *Triaenodon*, *Torpedo* and *Raja*. This view can be substantiated by the embryological work of El-Toubi³ and Hamdy⁴, who show that the single, spout-shaped rostral cartilage develops from three strips of cartilage having the same relations as the triradiate rostral cartilages. Thus it is easy to homologize the whole fontanelle in *Squalus* with only the præcerebral fontanelle in *Triaenodon*, *Torpedo* and *Raja*; the anterior supracranial fontanelle in *Triaenodon*, *Torpedo* and *Raja* with that of *Squatina*; and the whole fontanelle in *Taeniura* with both the anterior and posterior supracranial fontanelles in *Raja*, being confluent with each other in consequence of the absence of the cartilaginous bridge separating them in the latter fish.

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