

depression marked the position of the future fossa and fissure of Sylvius. With a pocket lens one could also see the commencement of the differentiation of a Sylvian convolution about this fissure. On the tentorial surface of the hemisphere a shallower fissure was also seen, which was probably the beginning of the splenial fissure.

I do not intend to enter into a discussion of the question whether the fissures on the surface of the hemispheres are primarily due, either to unequal growth of the cortex in different parts, or to unequal resistance offered to the growth of the cortex, or to both causes acting in different parts of the same brain. I would, however, state that in stripping off the pia mater from certain parts of the hemispheres of the brains which I have dissected I have been struck with the tension and consequent pressure exercised by the arteries on the surface of the cortex in the direction of their course. This was well seen in the fissure of Sylvius occupied by the large middle cerebral artery. Also in a less degree by the arteries which ran in the pia mater occupying the great transverse fissure of the cerebrum, and which as they turned round the hippocampal convolution undoubtedly indented its surface by their pressure.¹ In these localities therefore there seems to be sufficient evidence to show that fissures may be produced and deepened by the tension of the arteries, and doubtless the same cause operates also elsewhere.

COMPARISON OF THE CONVOLUTIONS OF THE SEALS AND WALRUS WITH THOSE OF THE CARNIVORA AND OF APES AND MAN.

M. Leuret, in his well-known *Anatomie comparée du Système Nerveux*, both figures and describes the cranial surface of the brain of a Seal, probably *Phoca vitulina*. He considers that the convolutions in this animal are analogous to those of the Ungulata, especially the Pig, though without resembling them throughout, and in his arrangement of the Mammalia, according to the grouping of their convolutions, he places the Ungulata, Edentata, and Marsupialia between the Carnivora and the Seals. He recognises only three convolutions in the hemisphere of the Seal—one *internal*, on the inner surface, which is obviously the gyrus fornicatus or great limbic lobe of Broca; one *external* bounding the fissure of Sylvius and very irregular; one *superior* extending from before backwards on the top of the hemisphere and forming two tiers, with two subdivisions in front and three behind, whilst he regards the supraorbital convolution as only an offshoot of the two anterior subdivisions. Sir Richard Owen again has recognised in the brain of *Phoca* a prefrontal lobe in front of the frontal crucial fissure; an orbital fold above the orbit; Sylvian, supersylvian, medilateral, and medial folds or convolutions arranged in tiers above the fissure of Sylvius; it is obvious, however, from

¹ Johannes Seitz has recently published an elaborate memoir (Ueber die Bedeutung der Hirnfurchung, *Jahrbücher für Psychiatrie*, 1887) on the signification of the fissures in the hemispheres, in which he associates them with the places of entrance and emergence of the blood and lymph vessels of the brain—that they are in fact nutrient fissures.