

olfactory apparatus. When that is large the Sylvian fissure is shallow, but when the olfactory peduncle and roots diminish in size, as in the Seal and Walrus, the fissure deepens and the Sylvian convolution becomes partially concealed, until in Apes and Man, with a still greater diminution in the importance of the olfactory sense, the fissure attains its maximum depth. In this connection, however, it must be remembered that the Polar Bear, though with an arched convolution concealed within the Sylvian fissure, yet possesses large olfactory nerve roots.

This view of the homology of the convolutions in this region enables one to harmonize the results of physiological experiment with anatomical arrangement, and to remove a difficulty which is experienced so long as the superior temporo-sphenoidal convolution is regarded as corresponding with the posterior limb of the Sylvian convolution. Dr. Ferrier, from his experiments, determined that the areas marked (14) in his figures were the auditory centres. Thus when these areas in the superior temporo-sphenoidal convolution were stimulated in Monkeys the opposite ear became pricked, the head and eyes were turned to the opposite side and the pupils became widely dilated; whilst stimulation of areas (14) in the 3rd external convolution of the brain of the Dog and Jackal also produced a pricking or retraction of the opposite ear, and stimulation of a similar area in the Cat produced both pricking of the opposite ear and turning of the head and eyes to the opposite side. Hence these areas in the carnivorous and Ape's brain are regarded as physiologically the same; though in the Ape the convolution stimulated bounds the Sylvian fissure, whilst in the Carnivora it is separated from that fissure by an intermediate convolution. On the theory that the Sylvian convolution either becomes the Island of Reil or blends with the insula and sinks into the fissure, the 3rd external convolution would then become the boundary of the fissure and its posterior limb would be homologous with the superior temporo-sphenoidal convolution of the brain of Man and Apes, whilst the suprasylvian or 3rd curved fissure would become lost in the Sylvian fissure, and be represented by the sulcus insulæ. This theory is somewhat different from the conception of the relation of parts in this region entertained by Ferrier, who suggests that the Sylvian convolution is in the Monkey's brain represented within the lips of the Sylvian fissure, overlapping and concealing the Island of Reil.

Ferrier has also shown that electrical stimulation of the posterior limb of the Sylvian convolution gives no definite reactions, and similarly stimulation of the Island of Reil is not followed by movements except after increased irritation, when some movements of the mouth and tongue occur, which he considers may be due to conduction of the stimulus to the motor areas situated immediately anterior to the part irritated. Ordinary stimulation in both instances therefore produces no definite results, showing that neither of these convolutions responds to the electrical stimulus, and although the experimental result is negative, it is certainly not adverse to the view that they are homologous with each other. Confirmation of this theory is also furnished by the fact