

Periscope.

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ANATOMICAL.

***Further Remarks
on the Projection Sys-
tem of the Human
Cerebrum.***

By Prof. Flechsig (*Neurol. Centralbl.*, 1896. No. 1). Most of the bundles of projection fibres in their course to the cortex choose the shortest path-way, taking a radial course from the internal capsule to the cortex. Some divisions of this system, however, make considerable round-about-ways, which fact is of importance for the *topic diagnostics* of cerebral diseases. Among the bundles taking such unusual course the following ones deserve special mention :

(1) The inferior longitudinal fascicle. This bundle has heretofore been considered as an association tract connecting the occipital lobe with the entire temporal lobe, including its anterior portion. F. finds that this tract, indeed, ends *posteriorly* in the occipital lobe, especially in the visual area, that anteriorly, however, they do not connect with the cortex but with the optic thalamus. From the occipital lobe these fibres go over into the temporal lobe in which they pass forward as far as the region, lateral and backward of the nucleus amygalæ. From here they go upward partly under an acute angle encircling the inferior part of the lateral ventricle *anteriorly*. In the thalamus they become connected partly with the basal portions of its lateral nucleus or with the "schalenformiger Körper," partly they ascend at the posterior surface of the pulvinar and enter into the Hauptkern (Flechsig).

The inferior longitudinal fascicle is accordingly nothing else than a part of Gratiolet's optic radiations. This fascicle probably does not serve exclusively for the conduction of visual

impressions, but presumably contains also centrifugal pathways, securing to the visual area an influence upon muscular motions, etc.

(2) The projection system of the body—sensational area ("tactile-area" of Flechsig, motor area of the other authors): The pathways for the foot of the first frontal convolution and for the middle third of the fornicate gyrus describe a forward curve reaching as far forward as two or three cm. from the "pole" of the frontal lobe. Lesions (softening foci) involving the anterior end of the frontal lobe may consequently interrupt projection fibres for the trunk and neck muscles represented in the said cortical areas (foot of third frontal convolution and middle third of the fornicate gyrus).

(3) The fasciculus subcallosus also contains projection fibres which, leaving the internal capsule at the level of the middle thalamus, pass along the caudate nucleus partly as far forward as the knee of the corpus collosum and join the projection system of the fornicate gyrus, and of the most anterior divisions of Flechsig's "tactile-area."

The examination of the infantile brain shows that long association fibres connecting the occipito-temporal lobe with the frontal lobe are very scarce. ONUF.

On hemisection of the spinal cord. By Dr. F. Botazzi (*Rivista sperimentale di freniatria*. Vol. 21, Fasc. 4).

In this article the author describes the clinical condition and the degenerative changes observed in four dogs on which he had performed hemisection of the cord in the dorso-lumbar region and which were allowed to live for 16, 127, 132 and 207 days after the operation respectively. In giving a general critical review of the literature on hemisection of the cord and comparing his results with those of other investigators the author reaches the following conclusions:

1. The motor pathways for the inferior (posterior) extremities are contained chiefly in the lateral column of the same side.
2. The fibres for the tactile sense are contained exclusively in the uncrossed half of the cord, probably in Goll's columns.
3. The pain sense and the electric sense are conducted in both sides of the cord, but predominantly in the homonymous half.
4. [The temperature sense is conducted in the uncrossed half of the cord (?); the muscular sense does not seem altered after hemisection (only one observation)].
5. Hemianæsthesia exclusively of the side opposite to the hemisection would result only, if the section was made above the level at which the last sensory fibres have undergone decussation, namely, above the spinal cord.