CENTRAL NERVOUS SYSTEM.

BRAIN-No. 24.

DISSECTION OF TWO CEREBELLA TO SHOW THE ARRANGEMENT OF THE PEDUNCULAR FIBRES.

In the upper specimen a considerable number of cerebellar folia has been removed; in the lower, middle peduncle has also been removed. The intrapontine course of the fifth nerve, with its spinal and mesence-

phalic roots, and Gowers' tract have been exposed.

The middle cerebellar peduncle consists of the transverse fibres of the ventral part of the pons. These connect the cerebellar cortex with the nucleus pontis on both sides of the middle line. It is continuous with the pons at the level of the fifth nerve, and, extending outwards and backwards, sinks into the great horizontal fissure of the cerebellum. As the fibres proceed from pons to peduncle, they form two bundles. The upper passes downwards to the lower part of the cerebellar hemisphere, while the lower crosses the upper bundle on its deep aspect, and radiates out into the upper part of the hemisphere.

The inferior cerebellar peduncle is the restiform body of the medulla. It ascends a little way on the dorsal aspect of the pons. Bending sharply backwards, it enters the cerebellum between the superior and

middle peduncles, and spreads out fanwise towards the vermis.

It contains (a) fibres which connect the nucleus of the olive and the cerebellum, (b) superficial arcuate fibres proceeding from nuclei gracilis and cuneatus of both sides to the cerebellum, (c) the direct cerebellar tract, which arises in Clarke's column of the posterior horn of the cord, beginning in the lower dorsal region, ascends through the antero-lateral column of the cord and lower part of medulla, and is carried by the inferior peduncle to the cerebellar cortex, (d) a few fibres connecting the cerebellum with the pyramid, the fillet and roots of motor cranial nerves.

The spinal sensory root of the fifth nerve descends through pons and medulla, and ends round cells of the substantia gelatinosa Rolandi, extending as low down as the second cervical nerve. The mesencephalic motor root arises in the grey matter round the Sylvian aqueduct, and descends through mid-brain and pons to the trunk of the fifth nerve. (In the

tegmentum of the pons the fifth nerve has also a sensory and a motor nucleus.)

The figures indicate—

Upper Specimen.

1. Lower fibres, and 2. Upper fibres of middle peduncle.

3. Lateral fillet.

4. Crusta of mid-brain.

5. Fifth cranial nerve.

6. Superior cerebellar peduncle.

7. Olive.

8. Eighth cranial nerve.

9. Restiform body.

10. Corpus quadrigeminum inferius.

Lower Specimen.

- 2. Inferior cerebellar peduncle.
- 3. Lateral fillet.

4. Spinal root of fifth nerve.

- 5. Fifth cranial nerve—the mesencephalic root is seen between the nerve and the superior peduncle.
- 6. Superior cerebellar peduncle.
- 7. Olive.
- 8. Eighth cranial nerve.
- 10. Gowers' tract.









