The corpora quadrigemina have a special relation to the eyes and also to the extensor muscles.

Irritation of the nates causes great dilatation of the pupils. The action is crossed, but powerful irritation easily acts on both sides of the body. Trismus and opisthotonus are induced when these ganglia are powerfully stimulated.

The cerebellum is shown to have a function which has never been allotted to it, viz. to be a coordinating centre for the muscles of the eyeballs. The author has only given the results of his experiments on the cerebellum of rabbits, but he has since extended and confirmed them in cats, dogs, and monkeys.

The various lobules of the rabbit's cerebellum are shown to have the power of directing the eyes in certain definite directions.

These cerebellar oculo-motorial centres are brought into relation with the cerebellum as a coordinating centre for the muscles concerned in the maintenance of the equilibrium, and these functions are indicated as mutually depending on each other.

A more complete exposition of the facts of experiment, and an account of the results obtained from a further investigation of the brains of the various classes of the vertebrata, is in process of publication.

TWO INSTANCES OF IRREGULAR OPHTHALMIC AND MIDDLE MENINGEAL ARTERIES.

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I. IN the summer session of 1872 I dissected an interesting irregularity affecting the right middle meningeal artery. The foramen spinosum was much smaller than usual, and through it passed a very slender artery from the internal maxillary, which after giving off a few small twigs to the Gasserian ganglion, entered the hiatus Fallopii. The foramen ovale transmitted the inferior maxillary nerve only. A large artery arose from the trunk of the ophthalmic soon after it had entered the orbit, and passing out through the sphenoidal fissure divided into two branches which were distributed as the normal branches of the middle meningeal, except that they ran backwards above the inferior border of the parietal bone, which was consequently smooth, and without its usual deep grooves. In addition, a large artery was given off from the internal carotid in the cranium, and coursed backwards over the basilar processes of the sphenoid and occipital bones almost to the foramen magnum. This recurrent branch was also present on the left side, but the left middle meningeal and ophthalmic arteries were quite regular.

A less complete instance than this is depicted by Barkow[1] (Tab. XVII. figs. 1 and 2), in which the anterior portion of the middle meningeal comes from the ophthalmic through the sphenoidal fissure into the cranium; but the posterior branch is given off from the internal maxillary and enters through the foramen spinosum.

II. During the past winter session I met with an arrangement almost the exact reverse of the preceding.

Besides its ordinary branches, the left middle meningeal gave off a large artery, which entered the orbit through the sphenoidal fissure, and from which all the regular branches of the ophthalmic arose, with the single exception of the arteria centralis retinæ. It ended in a long dorsal artery on the nose, running downwards as far as the tip, and supplying angular and lateral nasal offsets. The ophthalmic from the internal carotid was a very small twig; it passed through the optic foramen, gave off the arteria centralis retinæ, and terminated by joining the posterior ethmoidal branch of the irregular artery from the middle meningeal. The trunk of the left facial was smaller than usual and ended as the superior coronary, from which proceeded the septal branch as usual. On the right side, the ophthalmic, middle meningeal, and facial arteries were quite regular.

Anastomotic twigs between the middle meningeal artery and the lachrymal branch of the ophthalmic are always met with; and Cruveilhier mentions the occasional origin of the lachrymal from the middle meningeal. Barkow figures an example of this irregularity, and I have also seen it.

These anomalies are obviously due to the suppression of the main trunk, and compensatory enlargement of the anastomosing branch, similar to the mode of formation of the abnormal obturator from the epigastric, the dorsal artery of the foot from the anterior peroneal, &c. I have failed to find any reference to a deviation from the regular origin so extensive in this direction as those which I have recorded above. The only irregular origin of the ophthalmic described by Quain (Pl. XIII. fig. 8) is of quite a different type. In this the place of an absent internal carotid artery is supplied by two branches of the internal maxillary, which enter the cranium through the foramen rotundum and foramen ovale respectively, and from their junction the ophthalmic is given off.

[1] *Comparative Morphologie des Menschen und der menschenähnlichen Thiere.* 5ter Theil.

NOTE BY EDITORS.—Blandin (*Anatomie Topographique*, p. 147) mentions an accessory ophthalmic artery arising from the middle meningeal, which sometimes also gives origin to the lachrymal artery. C. Krause states (*Handbuch der mensch. Anat.* p. 892) that he once saw the ophthalmic artery arise from the middle meningeal and pass through the sphenoidal fissure. Tiedemann and Dubrueil have also recorded similar cases.