encountered, the highest being situate in the right crista. Further examination showed a practically complete degeneration of the left superior peduncle, degeneration of the right red nucleus and in Forel’s field, also of the left restiform body, and of the right inferior olive. A tract of degeneration on the left side of the spinal cord was identified as Hellweg’s bundle. The absence of nystagmus in this case was explained by the practically intact vestibular system, and the conservation of static equilibrium by the normal condition of the vermis. The destruction of the left restiform body was regarded as being related to the lesion of the left dentate nucleus, and the author suggests that the central tegmental tract, circumliveral fibres, internal fibres of the olive, and Hellweg’s bundle are more or less intimately connected with each other.

R. M. S.

NEUROPHYSIOLOGY.


The subject of the pharmacological investigations was an adult male who developed two large pulsating cerebral herniae after double subtemporal decompression. By enclosing the right hernial mass in a plethysmograph, satisfactory pulse-tracings were obtained. The exhibition of amyl nitrite caused a marked dilatation of the brain-vessels. Epinephrin induced a primary constriction, followed by a marked dilatation. Caffeine administered intravenously produced no demonstrable change. Pituitary extract caused a dilatation of the brain-vessels which was accompanied by a distinct general pallor of the face—the so-called ‘leuko-reaction’.

R. M. S.

[73] The oculocardiac reflex (Dagnini-Aschner phenomenon)—its use in medicine and psychology.—Sanite Naccarati. Arch. of Neurol. and Psychiat., 1921, v, 40.

Compression of the eyeball causes a slowing of the radial pulse, together with lowering of blood-pressure and modification of respiratory rhythm. This phenomenon was first reported by Dagnini, and later in 1908 Aschner published a paper on the same subject. Since this date the reflex has been investigated in many diseases, with somewhat conflicting results. It is customary to speak of a normal oculocardiac reflex when the pulse is retarded 5 to 12 beats per minute. When the pulse is reduced more than 12 the reflex is exaggerated. When the retardation does not exceed 4 the reflex is abolished. When, instead of retardation, acceleration occurs, the reflex is inverted. The use of the terms ‘normal’, ‘exaggerated’, or ‘inverted’ is somewhat misleading and ambiguous, and Naccarati suggests instead that the difference in one minute between the pulse-rate without ocular pressure and the pulse-rate with pressure be always indicated in full with a positive or negative sign. This algebraic difference should be called the reflex index. The pulse-rate should also be given, as the value of a reflex index is not absolutely the same in a bradycardiac as in a tachycardiac.
The author investigated 165 normal and 336 abnormal individuals, and found that the oculocardiac reflex is subject to individual differences and variations, as is the pulse. About 4 per cent of normal subjects showed a reflex index of from 0 to + 4. In tabes the reflex index is 0 or very small; exceptionally it surpasses three units. In general paresis the index tends to remain small, but cases showing a larger positive or negative index are encountered with much more frequency than in tabes. In the fickle-minded no tendency to a large positive index was found, as reported by some authors. In epilepsy, although a well-defined tendency towards a large positive index was found, it was not the rule. In thyroid states a definite tendency was found on the part of hypothyroid patients to react with a positive index, and of the hyperthyroid patients to react with a negative index.

Investigation of the reflex in cases of unilateral cranial-nerve palsy substantiated the results of Aschner's experiments on animals—the centripetal pathway of the oculocardiac reflex is constituted exclusively by the sensory branch of the trigeminal nerve, the centrifugal pathway mainly by the vagus and partially by the sympathetic nerve.

R. M. S.

VEGETATIVE NEUROLOGY AND ENDOCRINOLOGY.


This paper is a reprint of the inaugural address given by Professor Marburg on taking up his duties as the new director of the Neurological Institute in Vienna. It contains a complete summary of our knowledge of the pineal gland and of the structures in its neighbourhood, and is enriched by an account of contributions to the subject which the author has made during the last twenty years.

After René Descartes deposed the gland from its position as the seat of the soul, little attention was given to this part of the brain until some two hundred years later, when Leydig, in 1868, observed in reptiles and amphibians the organ now known as the parietal eye. At once interest revived, and when the author began his studies the anatomy of this region in lower animals had been fully worked out. The structures discovered were from before backwards: (1) The paraphysis; (2) The dorsal sac; (3) The commissura habenularum; (4) The parietal eye and the nervus parietalis which arises from the parietal ganglion in the commissura habenularum; (5) The pineal body (which is quite distinct from the parietal eye); (6) The commissura posterior, and on its under-surface the subcommissural organ, from whose ciliated epithelial cells arise the fibres which unite to form that remarkable structure the fibre of Reissner. The connection between the subcommissural organ and Reissner's fibre in higher mammals has been demonstrated clearly (Kohner, 1918); the paraphysis has been seen in the human embryo (Hochstetter, 1919), and the nerve to the parietal eye has been found in the antelope (Marburg, 1920). The structures present