NEUROLOGY

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 feeble-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
ABSTRACTS

in saurians, therefore, are also present in mammals, the parietal eye being represented by a rudiment, the nervus parietalis.

Marburg failed to find the pineal body in several mammals, but is inclined to attribute this to faulty technique. On the other hand, he found the subcommissural organ in every one of the fifty-four orders he examined, and noticed that it was often large when the pineal body was small. He gives a detailed account of the varying size of the gland in a large number of animals. From this, one point of general interest emerges, namely, that it is absent or very small in those with a hard covering—elephants, crocodiles, etc.—while it is largest in the horse and in other animals with a rich blood-supply to the skin. This, together with his experimental and clinical observations, has led the author to believe that the pineal secretion has an influence on vasomotor nerves and is concerned in the mechanism of heat regulation.

A critical review of the published cases of tumours of the pineal body follows. In most cases, but not in all, the tumour was a teratoma. These cases prove that involution of the gland is associated with sexual maturity, and that early involution causes sexual precocity. This precocity is found in boys only, and is greatest between the ages of two and eight years. From eight to sixteen early breaking of the voice, hairiness, and other secondary sexual characteristics may appear early, but hypertrophy of the genitals is not so striking. It appears, therefore, that the pineal secretion influences the interstitial cells of Leydig as well as the development of the male sexual apparatus.

The relation of the pineal body to certain psychical and metabolic disorders is discussed.

The subcommissural organ is present in man and in almost every animal. It is an organ of sense, with cells resembling those of the vestibular apparatus. It has wide connections with the brain through the fasciculus subcommissuralis, and with the spinal cord as far as the filum terminale through Reissner's fibre.

The various functions which have been attributed to it are mentioned, the author favouring the view that it is concerned in the regulation of changes in the pressure of the cerebrospinal fluid.

This brief abstract does scant justice to a paper which deals fully with every aspect of a subject by one who has taken an active part in its development. The bibliography gives a list of over one hundred papers.

W. J. Adie.


The animal used was the dog. Partial and complete hypophysectomy was often followed by severe polyuria, but only when the base of the brain was injured accidentally or otherwise. Following on these results it was found that injury to the base of the brain with a heated needle, the pituitary remaining intact (confirmed by post-mortem examination), induced a polyuria of varying duration, from fifteen days to seven months, and one which is uninfluenced by the exhibition of pituitary extracts. "It seems
that the optopeduncular region alone marks the zone within which a
lesion is followed by polyuria; it lies at the level of the tuber cinereum
in the vicinity of the infundibulum." From the fact that the polyuria
may occur without an increased intake of water, at least for the first few
days, the authors conclude that the polyuria is the cause and not the result
of the polydipsia. In many animals the intake and output of water did
not run parallel, indicating some disturbance of the regulating mechanism.

The authors also found that genital atrophy only occurs after hypo-
physectomy when the base of the brain is injured.

As regards glycosuria, only 6 dogs out of 45 presented this condition,
and in at least 4 out of the 6 basal injuries were found post mortem. In
all cases the glycosuria was mild and fleeting, and injections of pituitary
extracts in the animals operated upon did not sensibly affect the limit of
tolerance to carbohydrates.

The paper, which is well illustrated, deals with the actual facts
observed, and hypothetical considerations are altogether avoided.

J. L. BIRLEY.

[76] A case of acromegaly associated with brain tumour.—W. A.
BRYAN and S. UYEMATSU. Arch. of Neurol. and Psychiat., 1921,
v, 20.

There are in the literature many cases of acromegaly with cerebral tumour
situated in the neighbourhood of the pituitary body, or at some distance
from it. The question arises, Are the tumours found in these cases acci-
dental, or are the acromegalic symptoms dependent on pressure, with
resultant biochemical changes? From a study of such a case Bryan and
Uyematsu conclude that cerebral tumours may cause symptoms of
acromegaly in an indirect manner. The patient, a man, age 50, displayed
typical symptoms of acromegaly over a period of eighteen years. Four
years before death he showed exophthalmic goitre and other symptoms
of hyperthyroidism. Temporary relief followed a transsphenoidal opera-
tion and radium treatment. At the autopsy a large meningeal endothe-
lioma was found, pressing down the right parietal region, and flattening the third
ventricle. The pituitary gland was only slightly enlarged and retained
its original form. It showed on microscopical examination an adeno-
matus transformation, which was regarded not as malignant, but as an
extreme hyperplastic condition.

The authors maintain that in this case the cerebral tumour was in all
probability the cause of symptoms of acromegaly. First, the pituitary
body was attacked through pressure on the hypophyseal fossa; thereaf-
er the other endocrine glands became involved in consequence of the altered
functions of the pituitary, with a resultant clinical picture of exophthalmic
goitre.

R. M. S.

[77] The influence of the thyroids on the functions of the suprarenals.

This paper constitutes a review of recent work on a subject which is still
far from being completely elucidated. For example, widely divergent
opinions are held as to the importance of adrenalin in physiological activities; the earlier investigators perhaps tended to exaggerate the rôle played by this substance. Stewart and Rogoff, on the other hand, are inclined to belittle its importance, while Cannon thinks that it acts chiefly in emergencies.

The balance of experimental evidence favours the view that the administration of small doses of thyroid in healthy animals is followed by hypertrophy of the suprarenals, especially of the cortex, while the adrenalin load of the chromophile tissues is increased. No increase in the adrenalin content of the blood has been satisfactorily established in conditions of hyperthyroidism; this may or may not be due to the fact that the biological methods for determining the adrenalin content are not strictly reliable. The effects on the adrenals of hypothyroidism are indefinite and inconclusive.

There is a large amount of evidence that the secretion of the thyroid has a sensitizing action upon the structures stimulated by adrenalin, the action not necessarily being a specific one. In this connection it has been suggested by Asher and Flack that the phenomena of Graves’ disease can be ascribed to the action of adrenalin upon structures which have been sensitized by the existing hyperthyroidism.

The author regards it as probable that the effects of hyperthyroidism on suprarenal activity are due rather to changes in general metabolism than to some specific influence exerted by one endocrine gland upon another.

J. L. Birley.


The experimental investigations recorded in this communication were carried out before the war. The animal used was the rooster, on account of its well-marked secondary sexual characteristics. After removal of one testis and ligature and resection of the opposite ductus deferens, the testis, with or without preceding swelling, becomes atrophic, with increase of its interstitial tissue and degeneration of the seminiferous tubules. There is no change, however, in the secondary sexual characteristics, and the interstitial or Leydig cells are unaffected. Removal of the atrophic testis is followed by rapid loss of secondary sexual characteristics. These results are identical with those obtained in rabbits by Ancel and Bonin in 1904.

No changes are found in the hypophysis after ligation, but castration is followed by hypertrophy of the pituitary and increase of its eosinophil cells, as previously recorded in 1905 by Fischera.

Peritoneal grafts of testicular tissue were rarely successful, and led to no important results.

J. L. Birley.

TREATMENT.


The author suggests the following simple device for supporting the paralyzed cheek in the acute stage of facial palsy. A strip of adhesive plaster