The blood sugar average in fasting animals is slightly lower after pituitary or hypothalamic operation, but this may be within normal limits of variation. Transient glycosuria for from one to two days occurred after hypothalamic puncture in a few cases, and during this time the blood sugar was higher than normal. Because of the transience of this symptom it is probably of little importance.

The height of the blood sugar curve following operation, in all cases except those of anterior lobe removal, was reached at the end of one hour, in contrast to the curve in normal animals in which the height occurs at the end of one half-hour. The blood sugar curve in the cases of anterior lobe removal was of the normal type.

Sachs and Macdonald were unable to produce a permanent glycosuria experimentally, although it has been observed in cases of pituitary disease. Some, but not all, of these were cases of hyperfunction of the anterior lobe, which cannot be produced experimentally.

R. M. S.


The author attempted to trace the exact distribution of each cerebral artery by injecting an opaque substance which would show by means of the Röntgen ray, but from the first it was found impossible to confine the mercury to any one arterial distribution. Stereoscopic studies showed several well-defined anastomotic trunks which could be traced by means of the stereoscope as directly connecting the anterior, middle, and posterior cerebral arteries. There was evidence of definite end arteries on the cortex, and it was interesting to note that no anastomosis seemed to exist between the larger vessels supplying the subcortical ganglia. Of some surgical value was the discovery of a relatively avascular zone extending from the frontal lobe to the parietal area about 2.5 cm. from the midline. The posterior and middle cerebral arteries appeared to send out branches directly toward their termination on the cortex, but the anterior cerebral artery sends into the cortex large arterial loops which radiate like the spokes of a wheel.

R. M. S.

NEUROPATHOLOGY.


The author’s summary of his work and conclusions are as follows:

1. The results of the investigation of 102 ventricular fluids in cases of brain tumour are presented.

2. In forty-six cases—45 per cent.—a diagnosis of brain tumour was made on the basis of the serological findings. This was confirmed by operation. The diagnosis was based largely on Lange’s goldsol curve. The other cerebrospinal fluid tests were found to be of slight value in the diagnosis.

3. No typical curve could be established for brain tumours. The reduc-
tion occurred mainly in the lower dilutions. In one case a typical paretic curve was obtained.

4. In certain cases the cell count was increased, but this was not a uniform finding.

5. Finally, the findings presented are not given as typical of brain tumour. They are offered with the idea that help may in certain cases be obtained from the laboratory findings in cases of brain tumour, and that, in the author's experience, the greatest help is obtained from the goldsol test of Lange.

E. B. G. R.


Under most varied titles, some twenty examples of true papilloma of the choroid plexus are to be identified in the literature. In a series of 964 verified intracranial tumours, six of these papillomas have been encountered. Two arose from the lateral choroid plexus and four from the plexus of the fourth ventricle. In five cases the lesion was identified by tissues removed at operation; in one, at necropsy. In three of the tumours an accompanying cyst formation was a striking characteristic. In the other three the tumour was a simple cauliflower-like papilloma. In all cases, however, the sections showed villi with a central well-vascularized core of connective tissue covered by cuboidal epithelium, usually in a single layer. The tumour above all others for which the papillomas of the plexus are most likely to be mistaken is the papillary ependymoma which tends to seed itself, like certain papillomas elsewhere in the body, and to show multiple foci of growth. The choroid plexus tumours, on the other hand, appear to remain single. The two can also be clearly differentiated by the fact that the core of the papille of the ependymal papilloma is composed of subependymal glia, whereas the core of the plexus tumours is connective tissue. Moreover, the mitochondria of the ependymal epithelium are scanty and minute, whereas those of the plexus epithelium are abundant and coarsely granular.

R. M. S.


A woman, age twenty-three, succumbed to coal gas poisoning on the seventeenth day of her illness. Naked eye examination of the brain showed a fine grey line running parallel to the cortex in the middle of the grey matter, which was present throughout the entire brain, and broken here and there by bridges of normal tissue, variable in width. The grey line proved, on microscopic examination, to be a zone confined to the lower part of the third and the entire fourth cortical layers (Brodmann's classification). It was not an area of softening in the usual sense of the term, but rather a selective cellular necrobiosis and contained normal ganglion cells even in the centre of the zone. The basal ganglia were but slightly involved, and showed mainly
acute cellular changes and not the softening which is usually found. Spielmeyer has described similar changes in experimental lead poisoning. The cortical lesion exactly resembled that found by Stewart in another case of carbon monoxide poisoning (this Journal, 1921, i, 105). It is known that the third cortical layer is the most vulnerable to exogenous poisons, but why this should be so is not definitely known. It is possible, as the Vogts have suggested, that this layer possesses a peculiar susceptibility of a physico-chemical nature for which the term ‘pathoklise’ has been coined, but in any case Wilson and Winkelman are convinced that peculiarities of the cortical blood supply do not afford an explanation of this singular selective necrosis.

R. M. S.


This is an account of observations on a condition of the cortical ganglion cells believed by the writer to be caused probably by the action of severe toxic or retained metabolic substances, the observations having been made in the course of routine study of State hospital autopsy material (114 cases). Changes in the nerve cells (of a degenerative nature) were found in varying degree in thirty-five cases. These changes have been reported by Mott as occurring in dementia praecox, and by Dunlap as occurring in control cases. Comparison of histological findings in certain cases of acute maniacal (delirious) states, thought to be manic-depressive psychoses, with similar findings in severely toxic conditions of more or less chronicity, aside from its purely histological interest, also affords an example of one way in which co-operation between the State hospital laboratory (the decline of which is alluded to in the body of this paper) and the State hospital clinical staff can be valuable without being spectacular.

Abstracts of twenty of the cases are given.

E. B. G. R.


The author describes two cases of gunshot wounds of the spine in which there was evidence of lesion of the sympathetic ganglia. In the first the missile entered to the left of the spinal column at the level of the tenth dorsal vertebra, and made exit in the right axilla. Paralysis of the lower limbs was immediate and complete, but at the autopsy three months later no evidence of damage to the spinal column or cord could be found. Serial sections of the sympathetic ganglia in the vicinity of the lesion showed, however, on the tenth ganglion of the right paravertebral chain a scar at the side of entry of the white ramus communicans. The cord was softened in the lower part of the tenth and the upper part of the eleventh dorsal segments. The axis cylinders were swollen or disintegrated and numerous hæmorrhages into
the grey matter were seen. The author discusses the possibility that these lesions in the cord might have been caused by sudden spasm of the blood vessels supplying the affected part, the spasm being induced by injury to the corresponding sympathetic ganglion.

The second case originated as a cord lesion at the level of the first lumbar vertebra. Six months later a herpetic eruption appeared on the inner surface of the arms, accompanied temporarily by a burning sensation in the skin of this region. Death occurred a year later. At the post-mortem examination the lumbosacral segments were found to be severely damaged, and in addition a syringomyelic cavity, partly filled with blood and surrounded by firm, thick neuroglial walls, was found extending from the fourth cervical to the eighth thoracic segment. In spite of the clinical history the author considers that the syringomyelia resulted from haemorrhage into the cord which occurred at the same time as the wound, and that the herpetic eruption was incidental to the process of cicatrization in the cord. He confesses that the relationship of cause and effect is problematical in both cases, but publishes them in order to provoke discussion on the physiological connections between the sympathetic ganglia and the spinal cord. J. G. Greenfield.


A report based on a series of sixty pneumograms. In forty-two cases the air was injected directly into the ventricles; in twelve cases the injection was into the spinal canal by lumbar puncture, and in six cases a neoplastic cyst of the brain was filled with it. The chief value of the method lies in its ability to show where the tumour is not located, but it is impossible to pass a reliable judgment on the plates unless information is available as to how the injection was made, and the positions and preliminary oscillation of the head.

The introduction of air into the ventricles may be followed by two types of reaction: first, an increase of intracranial pressure (most to be feared in cases of marked papilledema); secondly, evidence of bulbar irritation or paralysis. The former may be long continued; the latter is immediate. In more than half of the cases hyperpyrexia lasting for from one to four days follows the injection.

R. M. S.

SENSORIMOTOR NEUROLOGY.


The author has had the opportunity of observing two cases of Jacksonian epilepsy in which the behaviour of the plantar reflex has not conformed to the classical description given by Babinski. In the first case the reflex was never abolished or even enfeebled during the convulsions, and both on the left and right the reaction was always normal flexion. After the attack the plantar reflex continued to be normal.

In the second case, as soon as the rigidity which held the toes flexed had ceased, plantar stimulation, which had previously produced a Babinski sign