Abstracts.

Neurology.

NEURO-ANATOMY AND NEUROPHYSIOLOGY.


The posterior horns of the spinal cord in fishes differ materially from what is found in man. In the latter three areas may be distinguished, viz., body of the posterior horn, substantia gelatinosa Rolandi, and marginal zone of Lissauer; whereas in fishes the cornu is made up chiefly of substantia gelatinosa. That its main function is visceral is probable from the facts (1) that cranially it becomes continuous with the commissural nucleus of the vagus in the medulla, and (2) that fine medullated fibres from the posterior roots can be traced to it.

A comparison of the relations between the body of the posterior horns and the substantia gelatinosa in mammals, and of the corresponding areas in fishes, demonstrates the small size of the body of the horn and the great size of the gelatinous substance in the latter. Thus in the higher animals the substantia gelatinosa loses in relative size. The conclusion from various lines of evidence is that the substance is related to primitive sensation ('protopathic' of Head, 'vital' of Kappers).

S. A. K. W.


When an extensor muscle of a decerebrate preparation is placed under slight initial passive stretch, irregular action-currents are detectable in the galvanometer record. If a series of knee-jerks is elicited from a muscle under these circumstances, though large action-currents precede the action-current of each jerk, the irregular vibrations of the tonic muscle are absent during the jerk but reappear in the course of its relaxation. This is interpreted as indicating that during a knee-jerk the adequate stimulus is removed from the stretch afferent end-organ. A discussion is given of the nature of an end-organ which is responsive to passive stretch but unresponsive to tension set up by active contraction. It is argued that such an end-organ must exist in parallel with the tension-yielding elements of the muscle, for if, as is the case with the tendon.
organs, it were disposed in series with these elements, no distinction could be
drawn between the tension of a passive stretch and that of active contraction.
Histologically the most important group of end-organs existing in parallel with
the striated muscle fibres are the muscle spindles.

In view of all the evidence, it is concluded that the muscle spindles are the
receivers for the knee-jerks and the stretch reflex.

The tendon organs are evidently the tension recorders, and it is also
possible they give rise to impulses leading to reflex inhibition of the muscle
itself. Whether or not they mediate pain is left an open question.

J. V.

NEUROPATHOLOGY.

[217] Illuminating gas poisoning; an experimental study of the lesions of the
nervous system in acute and chronic stages.—Armando Ferraro
This is a record of a valuable piece of work of considerable interest to the
neurologist.

Experimental illuminating gas poisoning in rabbits is followed by diffuse
nerve-cell changes throughout the cortex, brainstem, cerebellum and spinal cord.
In the early stages the lesions are mainly degenerative in type: the nerve-
cells show acute swelling, liquefaction, and lesions of both ischaemic and shrink-
age type. Neuroglia reaction accompanies these changes, and microglia and
oligodendroglia undergo a process of acute swelling. At a later period the
process is one of combined degeneration and inflammation. Areas of softening
occur, and microglia reaction leading to the formation of 'gitter-cells' is plainly
visible.

In acute stages the endothelium of the blood vessels is swollen, while in
chronic stages a true endarteritic process may be found. The degenerative
lesions have no predilection for the corpus striatum as is frequently the case in
human pathology, but are evenly distributed in various cortical and central
areas. The olfactory system is early affected and among other structures the
ganglion habenulae and corpus mamillare are particularly damaged. In-
fundibular and hypothalamic structures are seriously involved, also the per-
ipheral nervous system (lesions of anterior horn cells and of both anterior and
posterior roots). The pathogenesis of the lesions is complex.

J. V.

[218] Intracranial tumours among mental hospital patients.—Leo M. Davi-
doff and Armando Ferraro. Amer. Jour. Psychiat., 1929, viii,
599.
The incidence of brain tumours among psychotic patients is no greater than
among those in general hospitals. Of 75 tumours collected, 48 per cent. were
gliomas and 30-6 per cent. meningiomas. Of the gliomas 66 per cent. belonged
to the group of spongoblastoma multiforme and 16 per cent. were astro-