THA PRACTICAL MEDICINE SERIES. VOLUME X: NERVOUS AND MENTAL DISEASES, SERIES 1907

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649655984

Tha Practical Medicine Series. Volume X: Nervous and Mental Diseases, Series 1907 by Hugh T. Patrick & Charles L. Mix & Gustavus P. Head

Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

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Trieste

THE

PRACTICAL MEDICINE SERIES

COMPRISING TEN VOLUMES ON THE YEAR'S PROGRESS IN MEDICINE AND SURGERY

UNDER THE GENERAL EDITORIAL CHARGE OF

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VOLUME X.

NERVOUS AND MENTAL DISEASES

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SERIES 1907

CHICAGO
THE YEAR BOOK PUBLISHERS
40 Dearborn Street

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NERVOUS DISEASES.

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THE NEURONE THEORY.

Nerve Degeneration and Regeneration. During the past year attention has been diverted from the neurone theory to an investigation of nerve-elements. However, W. D. Halliburton,[1] in the Oliver-Sharpey Lectures, discusses the processes of nerve-degeneration and regeneration, and presents besides a critical analysis of the present controversy in regard to autogenetic nerve-regeneration, a carefully recorded set of experiments, performed by Mott, Edmunds, and himself. These may be classed under five headings:

1. Experiments in which union of central and peripheral ends was prevented, such as enclosing the proximal end of each popliteal nerve in caps made of small sterilized drainage tubes.
2. Experiments on transplanted pieces of nerves.
3. Experiments on degeneration of regenerated fibers.
4. Experiments on the rate of medullation in regenerating nerves.
5. Experiments on the influence of stimulus on regeneration.

These experimental methods thus approach the subject in diversified ways, and in no one case was evidence forthcoming of autoregeneration. "The facts recorded, taken in conjunction with those published by such observers as Cajal and Langley and Anderson, form, on the other hand, strong pieces of evidence in favor of the Wallerian doctrine that new nerve fibers are growths from the central ends of divided nerve trunks. The experimental facts recorded by those who, like Bethe and Kennedy, hold the opposite view are susceptible of easy explanation, mainly on the lines emphasized by Langley and Anderson of acci-

(1) Lancet, May 4 and 11, 1907; British Med. Jour., same dates.

dental and unnoticed connection of the peripheral segments with the central nervous system by means of other nerves cut through in the operation. If such connection is effectually prevented, real regeneration of structure and restoration of function never occurs. Moreover, the regenerated fibers always degenerate in a peripheral direction, and in a peripheral direction only, when the link that binds them to the central nervous system is again severed."

In an appended note Halliburton states that Bethe[1] now admits that "in adult animals no regeneration of medullated fibers occurs autogenetically; he does not, however, state at what age animals lose their power of autogenetic regeneration, nor explain how it is that after a certain date an animal repairs a divided nerve in the exactly contrary manner to that it would have adopted if the nerve had been cut before that date. He also again admits that a regenerated nerve when cut, degenerates in a peripheral direction only, but denies that degeneration has anything to do with direction of growth."

SYMPTOMATOLOGY.

Pallesthesia. R. T. Williamson,[2] discussing the vibrating sensation in nervous diseases, reports twelve illustrative cases. In early tabes dorsalis the vibrating sensation was lost on the legs (at the malleoli, inner surface of the tibia, and soles of the feet), when sensations of touch, pain, and temperature were distinctly felt. In some of these cases there was no ataxia, in others it was present. Similar results were obtained in early suspected tabes, when other symptoms were very few. The author's conclusions follow:

"1. The vibrating sensation is a delicate test for detecting slight impairment of sensation. The vibrating sensation may be lost when other forms of sensation (to tactile impressions, pain, and temperature) are felt quite well, or are only very slightly impaired. This is sometimes the case in early tabes, in slight peripheral neuritis, and often in diabetes mellitus.

"2. In diabetes mellitus the vibrating sensation may be

(1) Pflüger's Arch., 1907, cxvi, p. 385.
(2) British Med. Jour., July 20, 1907.

lost on the feet, or feet and legs, when there are no other nervous symptoms; but often the latter are present.

3. In diseases strictly limited to the motor structures, the vibrating sensation is not lost even at an advanced period of the disease.

4. In cases of paraplegia from spinal caries, and occasionally in spinal syphilis, the loss of the vibrating feeling may be the only objective symptom of affection of sensation, at an early stage of the disease.

5. In hemianesthesia, if the vibrating feeling is lost when the foot of the tuning-fork is placed on the edge of the sternum on the side of the tactile anesthesia, but felt on the other side, the case is one of hysterical or functional hemianesthesia, or of malingering; while in hemianesthesia due to organic disease the vibrating sensation is felt when the foot of the vibrating tuning-fork is placed on the edge of the sternum on the side of the tactile anesthesia.

Quinquaud's Sign. L. Minor[1] has made a very exhaustive study of Quinquaud's sign, and its frequency among abstainers, alcoholics, hysterics, tabetics, and victims of various nervous diseases. He tells an interesting story of the origin of the sign. One day Quinquaud asked his students to spread their fingers and place the tips at right angles against the palm of his hand. They did so, and without saying a word, he looked at two of them ironically, and shook his head warningly at some others. A month later he died, without explaining his act. Maridort, one of the students, set out to discover the essential feature of the test, and its meaning. To the sign he gave the name of his master, and declared that it prevailed among alcoholics. The sign is a feeling experienced by the investigator as though the ends of the metacarpal bones and phalanges bumped on one another in a series of tiny impacts. Minor has improved on the technic of observation, making use of the phonendoscope, and a resonator of soft wood, 9 by 12 by 3 cm. Thus he distinguishes six degrees of intensity of the sign. His conclusions follow, somewhat condensed:

1. Quinquaud's sign is neither a specific nor pathog-

(1) Berlin. klin. Woch., May 6, 13, 20, 27, 1907.