

sensory, and complete. Like Déjerine, he distinguishes a pure aphasia, when the centre is left intact but the centrifugal or centripetal fibres are destroyed. In such case there may be word-blindness, or word-deafness, or incapacity for speech, but intelligence and internal speech are unaffected, since none of the centres have been attacked. He is of the opinion that transcortical aphasias, resulting from lesions of the associating fibres between the centres, are purely theoretical. Anatomical grounds for his views are put clearly forward, and there are accounts of the modes of partial recovery and partial preservation of speech in cases of aphasia. In addition there is a criticism of the various schemes of the mechanism of aphasia advanced by Kussmal, Bastian, Crocq, and others.

The paper is one of great interest, and should be read in the original, as it is not one that can be easily condensed into a digest.

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*Les localisations motrices dans la moelle lumbo-sacrée.* By FITZ SANO. Société Belge de Neurologie, 1897.

In this paper Sano advances the opinion that there are within the cord certain definite groups of cells, which act as nuclei to certain muscles or groups of muscles, and that these nuclei are as distinct and invariable as, for instance, the subdivisions of the oculo-motor nucleus into groups of cells supplying the various ocular muscles. His opinion is supported by the examination of the spinal cord in four cases of amputation in the human subject. He found that there were definite changes in certain groups of nerve-cells in the anterior horn. These changes were similar to those described as *réaction à distance* by M. Marinesco and others, except that having reached a certain stage of chromatolysis they remained without further alteration for seven months in one case, and beyond being eccentric in position, the nucleus continued healthy. Sano was further supported in his opinion by the results obtained by injecting the vessels of the cord of a cat. He found that there was distinct evidence that many of these groups of cells or nuclei had terminal vessels and definite blood-supply. The nuclei which Sano was able to localise were as follows:—The muscles of the foot and leg are supplied by a nucleus in the dorso-lateral group of the anterior horn cells between the fourth sacral and third lumbar segments; the glutei by an antero-lateral group between the

second sacral and the upper border of the fifth lumbar; the quadriceps femoris by cells in the antero-lateral group, external to those for the quadriceps, between the fourth and second lumbar segments; the abdominal muscles by cells in the external angle of the cord in the first lumbar segment and higher; the lumbo-sacral muscles probably in the median group of cells in the upper lumbar segments.

Sano found, further, that the cells of the intra-spinal neurons showed *réaction à distance* after an injury to the cord in the same manner as do those whose axis-cylinders pass into the peripheral nerves when the nerve is injured.

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*The Localisation of Headaches and Sick Headaches.* By H. BENDELACK HEWETSON, F.L.S., &c. Simpkin, Marshall, and Co., London.

This small work of 140 pages contains Dr. Hewetson's account of the relation of errors of refraction to headaches and sick headaches, and also to digestive disorders occurring between the attacks of the latter. The first chapter is largely made up of illustrative cases from the writer's practice. The second chapter is devoted to the discussion of the relation of various general neuroses to ophthalmic defects. The third chapter contains an account of the headaches due to carious teeth, pathological conditions of the naso-pharynx and ear and other local lesions.

None of the views are particularly new, but they are presented in an interesting and suggestive manner. The work concludes with a series of diagrams, in which the position of the headache produced by the various causes is indicated in colour. It would be interesting to know if this precise localisation accords with the experience of other observers.

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*Text-book of Nervous Diseases; being a Compendium for the Use of Students and Practitioners.* By CHARLES L. DANA, M.D. Fourth edition, revised and enlarged. 246 illustrations. London: J. and A. Churchill. Price 20s.

Dr. Dana is to be congratulated on the rapid succession of the four editions of his text-book. When this volume is compared with the first edition of 1892 it is seen how much care and trouble have been expended in bringing the work up to date, and in rendering it one of the most readable as