

THE  
Canadian Journal of Medical Science.

A MONTHLY JOURNAL OF MEDICAL SCIENCE, CRITICISM, AND NEWS.

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SUBSCRIPTION, \$3 PER ANNUM.

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TORONTO, FEBRUARY, 1881.

Original Communications.

BRAIN LESIONS AND FUNCTIONAL RESULTS.

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(Read before the Canada Medical Association, at Ottawa, Sept. 1st, 1880.)

(Continued from page 4.)

It is satisfactory to see that recent investigators are paying more attention to the central organs. Their researches go to show that very important functions are likely to be found having their excito-motor centres in the internal parts of the brain. These experiments, as far as they go, point to the probabilities of my theory of localization. Richet, in speaking of cerebral excitation by means of electricity, is forced to say in explanation of certain phenomena, "Known facts demonstrate that excitation of the convolutions which surround the sigmoid gyrus act with extreme energy upon the ganglionic centres of the brain (opto-striated bodies). It is possible that such excitation culminated in the cerebral centres, and that these centres thus surcharged discharge to the muscles." Charcot says, in speaking of the lenticular nucleus of the *corpus striatum*: "These grey nuclei are possibly so many centres endowed with distinct properties and functions." This is a germ idea of the theory which I propounded several years ago in the following words: "Large portions of the cerebrum and cerebellum may be taken away from the living body without immediate danger of death; but the organs in the base of the brain, from which spring the numerous nerves so essential to life, cannot be touched in

vivisection or by disease with impunity. From this central region nerve influence radiates to every part of the body, making its connections with the depositories of nerve-power in the spinal cord and with the ganglia of the sympathetic system."—(Vide "An Animated Molecule," p. 38.) If Charcot had added to his hypothesis the probability that the base and central ganglia were the true and only motor centres, a solution of the difficulties which surround the Ferrier system could be arrived at without ignoring the doctrines of localization. Let the area be circumscribed to really the most vital parts of the brain, then, could all phenomena be explained. It would then become more evident why traumatic injury and destruction from pathological processes are not always followed by functional and mental unsoundness. If this explanation be accepted, it will be seen that the surfaces and upper portions of these nervous masses thus become adjuncts to vital organs in the centre and base of the brain. The former, in their analogy of structures and juxtaposition, give power but do not impart function; they are auxiliaries, but not necessities, to the ganglionic centres; they intensify energy, but do not direct; they are, as it were, additional cells to the battery, but are not its controlling agency. I repeat this view in another form to avoid ambiguity and misconception.

It is worthy of remark in this connection, as it is a matter of experiment, that such a large area as the Rolandic zone can be destroyed, and yet leave the intelligence unimpaired. A considerable portion of the frontal or even of the occipital lobes can be removed without any apparent alteration of the intellectual powers.