The Canada Lancet.

VOL. XXXI.] TORONTO, APRIL, 1899. [No. 8.

RECENT ADVANCES IN BRAIN SURGERY.

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This department of surgery always demands our most earnest attention because of the serious consequences which may arise from apparently trifling injuries to the head. Head injuries are of special importance because they may not be limited to the outer soft parts and the bones, but may affect the brain and its membranes. The brain is well protected by a dense fibrous scalp and firm hard skull. Within the bony case lies the brain enveloped by its membranes, and protected by fluid outside the convolutions and within the ventricles. Inflammation of the brain and its membranes usually follows injuries of these structures; serum is exuded, which produces swelling and pressure, and can be relieved only by an operation such as trephining. Occasionally the intracranial pressure is relieved by the escape of the intracranial blood and cerebro-spinal fluid into the spinal canal. Should the pressure increase, the functions of the brain become interfered with, or they may be completely destroyed. This change or loss of function may affect the motor, sensory, or intellectual functions of the brain, and produce spasm or paralysis, hyperæsthesia or anæsthesia, mania or coma. At first the change or loss of function may be local, and cause paresis or paralysis of an arm or a leg, or half of the face, alteration or loss of speech. If the brain injury is severe, complete loss of function may occour and death supervene. Sometimes the alteration will be obscure, and is functional rather than organic, and will produce headache, epilepsy, or insanity without any apparent change in the substance of the brain. Epilepsy may be caused by the pressure from a blood clot following head injury with or without a fracture of the skull.

LOCALISATION OF FUNCTION IN THE BRAIN.—The localisation of function in various parts of the brain has been well recognized during the past twenty years. Cerebral surgery has become a most important branch of general surgery. Through the scientific labors of Horsely, Ferrier, and Macewen in Britain, Broca in France, Fritsch in Germany, marvellous results have been obtained in the surgical treatment of diseases and injuries of the brain. Until quite recently operations on the brain were seldom successful, the chief reasons being imperfect knowledge of the cerebral motor areas and want of aseptic precautions in the treatment of wounds.