as well as in the treatment of chorea. In infantile convulsions it is to be administered by enema. Used in this way it quiets diarrhea, and its internal administration favorably influences gastric catarrh. This remedy is valuable in insomnia due to nervous excitation, as in neurasthenia, delirium tremens, maniacal conditions, etc., and is to be preferred to other hypnotics where prolonged use is necessary. Its analgesic properties make it desirable in cases in which the origin of pain lies in the central nervous system. Brompepton is best used in 20 per cent. watery solution. For children the best method of administration is by enema or brompepton malt-extract.

FIELDING (New York).

NEW TREATMENT OF TRUE EPILEPSY. Lion (Berliner klin. Woch., No. 52, 1901).

Lion has seen rapid and marked improvement in 20 advanced cases of epilepsy through the use of cerebrinum-Poehl; while symptoms in the first stages of epilepsy decreased after the first dose, and epileptic seizures gradually disappeared entirely. In severe cases a combined treatment of cerebrin and bromide is efficacious. Cerebrin or opocerebrin is to be given in tablet 0, 2—0, 3; and 0, 4—0. 6 administered daily; it should be used at least a month, bromide 2. 0—3, 0 pro die being given at the same time.

TRIONAL IN CHOREA (Brit. Med. Jour., 1901, Nov. 2).

Meade states that trional is sedative in chorea where preparations of arsenic and bromide fail entirely of effect. It is best administered in doses of 1 gm. in the morning, and 1.5 gm. at night, in fruit-juice, immediately followed by a drink of warm water, to insure its speedy absorption by the system. FIELDING (New York).

THE PHYSIOLOGICAL ACTION OF THE POLAR DISCHARGES OF HIGH PRESSURE INDUCED CURRENTS AND OF VARIOUS INVISIBLE RADIATORS. L. Freund, Sitzungsberichte der Akademie der Wissenschaften, Wien (cix, bd., viii hft.).

This is a voluminous experimental paper in four parts in which the author describes his methods of exposing rabbits and cultures of micro-organisms to the brush discharges and to direct spark discharges from the secondary terminals of a large induction coil and from the high potential terminal of an Ondin resonator. In a former paper in 1897 the author considered that the Röntgen rays themselves were responsible for the physiological effects, but from the results of the experiments described in this article he is led to conclude as follows: (1) Direct spark discharges either in the form of the spark discharge from the terminals of an induction coil, or in the form of a brush discharge from the D'Arsonval-Ondin apparatus can produce depilation in animals. (2) Directly-applied sparks can not only inhibit the development of, but even kill recently-planted or fully-developed cultures of *Straphylococcus pyogenes aureus*, typhoid bacilli, diphtheria bacilli, tubercle bacilli and *achorion schoenleinii*. (3) The effect of the directly-applied sparks is augmented by directly or indirectly grounding the culture container, by prolonging the exposure, by diminishing the distance between electrodes and container, by increasing the intensity of the primary current through the induction, and by a more rapid rate of interruption. (4) The above-mentioned action occurs under certain conditions through intervening thin layers of wood, paper, aluminum, tin foil or human skin. (5) Micro-organisms in suspension in fluids are also acted upon. (6) The physiological action of the negative spark discharge is more intense than that of the positive, although the extent of the area affected is less.

(7) The silent discharge is a variety of spark discharge in which the physiological activity becomes somewhat diminished, but by which, however, many undesirable accompaniments of the directly-applied sparks, for example, pain, are avoided. Although the extent of its field of action is greater than that of the actual spark discharge, its mode of action is qualitatively the same. (8) According to these experiments no physiological import can be attributed even to Röntgen rays as regards their influence upon bacterial life. (9) Neither Becquerel rays nor phosphorescent rays manifest physiological activity upon bacterial growths or upon normal skin. (10) The pathological changes produced in the skin by direct spark discharges consist of hemorrhages into the cutis, in inflammation and in the formation of vacuoles in the internal and middle coats of the arteries.

R. H. CUNNINGHAM (New York).

WEITERE BEITRÄGE ZUR PATHOLOGIE UND PATHOLOGISCHEN ANATOMIE DES UNTEREN RÜCKENMARKSABSCHNITTES (Further Contributions to the Pathology and Pathological Anatomy of the Lower Portion of the Spinal Cord). L. R. MÜLLER (Deutsche Zeitschrift für Nervenheilkunde, 1901, xix, 5 and 6, s. 303).

AND

ZUR PATHOLOGIE DER TRAUMATISCHEN AFFECTIONS DES UNTEREN RÜCKENMARKSABSCHNITTES. DAS GEBIET DES EPICONUS (On the Pathology of Traumatic Affections of the Lower Part of the Spinal Cord. The Region of the Epiconus). L. MINOR (Deutsche Zeitschrift für Nervenheilkunde, 1901, xix, 5 and 6, s. 331).

In these two articles, the authors—the former of whom has previously made an important contribution to the subject—give the histories of cases of injury to the lower portion of the spinal cord and cauda equina and discuss the diagnostic points involved. By far the most interesting is Müller's first case, since it presents the picture of a pure conus lesion, confirmed by autopsy.

A man of thirty-seven, in 1887, fell from a height of ten meters, striking his back in the lumbar region on a beam. He lost consciousness and upon regaining it suffered scarcely any pain, but was completely paralyzed. At the start he was catheterized, but later the urine passed involuntarily and without sensation. After about six weeks he began to recover the use of his arms, eventually regained some power in the legs, and could walk with a crutch. Entire incontinence of urine and feces remained, but sexual power was retained and after the accident he begat two children. Examined by the author in 1896, he presented a prominence of the spine of the first lumbar vertebra, weakness in the abductors and external rotators of the thigh and flexors of the leg, complete paralysis of the glutei, and all the muscles of legs and feet. The calf muscles, however, showed no wasting, but were thick and felt firm. There was anesthesia as high as the knees in front and extending up an area on the back of the thigh and over the buttocks. It was complete except over a narrow area on the inside of leg where touch sense was preserved. There was also loss of temperature and pain sense over penis and scrotum. Electrical irritability was lost in the gluteal and calf muscles. The patient gradually failed in health and died of pulmonary tuberculosis in April, 1900.

The autopsy showed an old fracture of the first lumbar vertebra, with compression and entire destruction of the cord from the fourth lumbar throughout the sacral segments, the lower part of the conus having escaped. The nerve roots forming the cauda equina were little affected. Microscopical examination showed in the cervical