

catelectrotonus, while the other is in a condition of diminished excitability or anelectrotonus. The zone of increased excitability is in the neighbourhood of the cathode, while the zone of diminished excitability is in the neighbourhood of the anode. The condition of increased excitability is propagated from the cathode towards either side, and the condition of diminished excitability is propagated from the anode towards either side. This alteration of excitability in the extra-polar portions of the nerve diminishes in the same ratio as the distance at which they are from the electrodes increases, and at a certain distance it disappears altogether. Cyon has shown that Pflüger's researches, which were made on rheoscopic frogs' limbs, hold good for the nerves of the living man likewise; and the systematic production of catelectrotonus and anelectrotonus, for the purpose of increasing or diminishing the excitability of diseased portions of the nervous system, has thus been shown to be a therapeutical possibility.

These principles may be utilised in the case now under consideration by placing the large anode, armed with a moistened sponge, to the suffering cheek and jaw, and the cathode to the palm or the back of the hand. In this way, both the second and third branches of the fifth cerebral nerve are placed into the condition of anelectrotonus, while the influence of the cathode is neutralised by its great distance from the suffering parts. One application of a gentle, but plainly perceptible, current continued for five minutes is sufficient for curing almost every toothache; but, in very bad cases, a second application may be required for effecting the desired result. This may be had the same day, if practicable.

The same principles apply to the galvanic treatment of the different forms of neuralgia, which yield readily to the induction of anelectrotonus, if practised sufficiently early. In the later stages of neuralgia, the phenomena are not so simple as in the commencement of it, and the treatment then becomes more complicated, and less readily successful.

SURGICAL MEMORANDA.

M'INTYRE'S SPLINT: STARCH-BANDAGES.

IN using M'Intyre's splint, two difficulties present themselves—first, of fastening it so that it should not be easily displaced; and secondly, if so fastened, of moving the patient up or down in the bed. Nothing can be more distressing to a patient than to be compelled to lie for two or three weeks in exactly the same place; and in certain cases it might lead to sloughing of the sacrum, and even death. To obviate these drawbacks to the use of this ingenious instrument, I have contrived and used in hospital practice a very simple apparatus. It consists of two upright pieces of timber, about three feet long, two inches wide, and one inch thick, fastened by thumb-screws to the end of a deal bed without posts—one at each side—and connected at their upper ends by a cross-bar revolving on pivots. The thumb-screws are placed about midway, and also serve as pivots on which the upright bars may turn. To the cross-bar the end of M'Intyre's splint is securely fastened by screws, and if it be required to move the patient towards the head of the bed, the cross-bar is pushed in that direction, and *vice versa*. This movement will of course depress the foot; but if that be undesirable, it can be remedied by shifting the cross-bar, for the upright bars are provided with four corresponding holes, to any two of which the cross-bar can be removed by simply loosening one of the thumb-screws. By means of this apparatus, which could be made for a half-crown, not only can the patient be shifted several inches up or down in the bed, but the foot can readily be placed at many different elevations.

M'Intyre's splint could readily be converted into a "cradle" by suspending it from a cross-bar, like the one just described, and from another placed about twenty inches higher up in the bed; and a small bar of iron attached to the lower end of the splint, rising above it to the height of six or seven inches, and then bent at right angles, should terminate in a pivot which should be made to play securely in a hole in the lower cross-bar. In the upper cross-bar a pulley should be put, just opposite the hole in the lower one, and, by passing a strong cord over the pulley and under the splint, and properly adjusting it, the splint would be swung like a cradle.

In converting the splint into a cradle, the shorter the thigh-piece the better. By means of the contrivance just described, not only could a leg be swung, but the patient could be lifted up or down as easily as when only a single cross-bar is used, for the supporters of the cross-bars can always be placed at the same angle to the sides of the bed, and consequently be always parallel. In like manner the cross-bars

working on pivots would always take the position required. It is unnecessary to go more minutely into a description of the apparatus now suggested, for enough, I trust, has been said to make it intelligible to the instrument-makers.

In simple fractures of the leg I have recently used a starch-bandage, consisting of two cotton stockings, with very satisfactory results. To apply a starch-bandage of the ordinary kind, requires considerable experience, tact, and judgment; and it is scarcely an exaggeration to say that many surgeons who could perform an amputation of a limb, would be unable to put on a starch-bandage properly. When I want to apply a starch-bandage, I take two common cotton stockings; the one to be drawn over the leg first, fine and elastic, slips over the leg without the least difficulty; the other, coarse and strong, requires to be drawn on slowly and carefully. The size of the stockings must of course depend on the size of the leg; but it would be better and safer that they should be too large than too small, for no force should be used in drawing them on. To the first stocking, which serves merely to protect the leg from irritation, no starch is applied; but when the second stocking has been drawn over it, plenty of starch should be rubbed in from the toes to the knee. It will be found when the starch has dried, that an elegant starch-bandage has been formed, with no trouble to the surgeon, and with no danger or discomfort to the patient. I have found two stockings thus applied after the third week quite sufficient to support the bones; but if they were to be applied earlier, it might be necessary to draw on a third stocking, and to starch it also: this should be done when the starch on the second one had dried. Instead of drawing on a third stocking, however, I would recommend a few turns of a roller, starched, to be applied over the seat of the fracture, which might be done without the slightest fear of causing swelling of the foot, and would in cases of oblique fractures be particularly useful.

It appears to me that fractures of the fore-arm and arm could be treated in a similar manner—cotton gloves, of course, being used instead of stockings; but having as yet no opportunity of trying this plan of treatment, I must leave it to others to test its practicability. When the stockings are getting limp the starch should be rubbed in again, and when they are to be removed the starch should be washed out; and, when dry, they may readily be slipped off, or, if preferred, cut open with a scissors.

JEREMIAH DOWLING.

DISLOCATION OF THE RADIUS BACKWARDS.

A. B., aged 10, was brought to me on Saturday, September 12th. Twenty-four hours previously, he had met with the following accident. He had been playing with some other boys on a barley-mow, and was pushed off (no great height), and could not say on what part of his body he pitched. When I first saw him, the whole elbow was so swollen and tender that it was utterly impossible to feel the articulation, and the movements of the joint were impeded to some degree. From the commencement there was a look as if the elbow projected somewhat backwards, and the impression left on my mind was the possibility of a fracture through the condyles. There was no crepitus of any kind. Rest and spirit-lotions were continually applied, and the bowels well cleared out. The boy was seen in the course of the week by both Mr. Bleek and Mr. Hinton of Warminster, without any definite opinion being formed as to the state of affairs. The swelling was but slightly lessened, and the pain certainly as bad as ever. About ten days after the accident, he was again seen by us together. The swelling had subsided slightly; and, on a careful examination, we came to the conclusion that the radius was dislocated backwards. The deformity of the bones did not appear very marked; the anterior external portion of the humerus near the joint was more plainly felt than in its sound neighbour; and, on deep pressure, there was the sensation of being able to pass the finger a little under it posteriorly. The head of the radius was felt projecting, but certainly not to the extent that one would have imagined; yet the finger passed down the arm appeared to impinge on the head. The following morning we placed the boy under chloroform, and, on extension of the arm and flexion of the joint, the radius went home with a very audible noise.

The interest of the case turns upon the rarity of the accident. Sir A. Cooper, in his work on the joints, gives a drawing of the deformity, but says he had never seen it in the living person. Fergusson says (but my edition is not the most recent) that he once saw it in the dissecting-room, undetected during life, the motions of the joint being very little interfered with. Druitt says it is extremely rare. The two points that seemed to us to demonstrate the nature of the case were the nearness of the anterior and external portion of the humerus to the touch, and the slight projection of the radius posteriorly. This, I have said, was far less marked than one would have imagined.

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