to exist, and the various groups of ganglionic cells can therefore no longer be combined for synergic, orderly, or purposive action. There is no longer any harmony between the muscles which act, and their antagonists which regulate the action; wrong groups of muscles are called into play, which impair the action instead of facilitating it; and there is therefore useless expenditure of nerve-force, causing fatigue.

The mode of production of locomotor ataxy thus appears satisfactorily explained; it only remains for us to account for the phenomena of static ataxy which are generally associated with the former in tabes.

The cerebellum, which was once believed to be the seat of the reproductive faculty and desire, is now known to be the centre of equilibration of the body. Removal of this organ in an animal causes static ataxy; the animal cannot keep steady on its legs, but staggers about as if drunk. It is not paralysed, and endeavours to carry out certain movements; but there is an utter want of precision, and even the most desperate efforts do not succeed in steadying it. The behaviour of animals deprived of their cerebellum, in fact, resembles, in the closest possible manner, that which takes place when the ataxic attempts to stand on one leg, or on both, with his eyes closed, etc. The erroneous information which the cerebellum receives from the diseased posterior columns may, however, be, to some extent, corrected by sight; and this accounts for the fact of standing being so much more difficult when the eyes are closed (Romberg's symptom), as well as for the other phenomena of static ataxy. Whether the paths through which information is given to the cerebellum are situated in Goll's columns, in which case the road would be somewhat more indirect, or in the direct cerebellar strands of the cord, which would carry information in a straight line to the cerebellum, we are at present not in a position to determine. We may, however, take it as an indisputable fact that locomotor ataxy is caused by an interruption of the paths between the posterior roots and the central ganglia of the brain, through sclerosis of the posterior columns, and that static ataxy is, in its turn, brought about by an interruption of the paths between the posterior roots and the cerebellum, through sclerosis either of Goll's columns, or of the direct cerebellar strands.

CLINICAL NOTE ON THE TREATMENT OF BURNS AND SCALDS.

Read in the Section of Surgery.

By J. WALTON BROWNE, B.A., M.D.,
Surgeon to the Belfast Royal Hospital.

DURING the past ten years, I have had a very varied experience in the treatment of burns and scalds, in dispensary, hospital, and private practice, and may say that I have tried almost every known remedy, including continuous warm baths, warm water baths with sulphate of iron in solution, white paint, in the form of carbonate of lead, the immediate application of saturated solution of sodabicharbonate, carron-oil, oakum, and the use of many ointments; deriving much benefit from an ointment composed of iodoform, extract of conium, carbolic acid, and spermacetic. From the use of these various remedies I have obtained more or less success; but the local treatment which I wish especially to bring before the notice of the Section is the application of a solution of chlorate of potash. In doing so I do not imagine I am communicating any new or original method of treatment, but merely wish to urge the use of a remedy which has proved highly beneficial in many dozen of cases.

I know that the treatment which I advocate has been tried by some of my medical friends and found wanting, but I feel confident the non-success arose simply from the fact that the lotion was not applied of the proper strength, and with sufficient frequency.

This treatment was first recommended to me by my friend Dr. Harkin of Belfast, who for upwards of thirty years has carefully studied the therapeutical effects of chlorate of potash, and who read a valuable paper upon its uses at our annual meeting in 1879. Dr. Harkin has shown that the salt exercises a most marked influence on all maladies dependent upon defective nutrition, secretion, excretion, aëration, and molecular metamorphosis. We all know its great value in diphtheritic exudation of the throat, gangrenous stomatitis, etc.; but, perhaps, among its very valuable qualities, none is more remarkable than the rapidity with which its application as a lotion repairs the injuries produced by burns and scalds. It is really marvellous how

soon the healing process commences after the application of the lotion, and how rapidly the raw surface is covered by the formation of new skin.

In the treatment of burns and scalds of the second and third degree the lotion is especially useful; in many of these cases perfect healing has taken place in four to five days. I could give the histories of many such cases.

In severe burns of the fourth or fifth degree it is also useful, seeming to favour the formation of granulations after the separation of the sloughs, and certainly no remedy which I have tried so thoroughly keeps the wounds clean and sweet.

In superficial forms, after a few applications, a zone of new skin appears at the margins of the broken surface, and proceeds towards the centre until healing is perfect. It is quite common to see a border of newly formed cuticle in the short space of twenty-four hours. The method I adopt is the following. In superficial burns, I direct the blisters to be punctured, and a bread and water poultice to be applied over all the injured surface every fourth hour, until the cuticle has become detached; you generally find this accomplished upon the removal of the second poultice. I then commence the application of the solution of chlorate of potash, five grains to the ounce; pieces of lint of the required size, saturated with the lotion, are applied four times a day. The lint is covered over with gutta-percha tissue or oiled silk; all dressings being retained *in situ* by a bandage. The lotion must not be of greater strength than five grains to the ounce; of this strength it acts as a sedative, although at the same time stimulating the capillaries to the formation of new skin. If applied much stronger it causes pain; in fact, it acts as a caustic. In some cases, where the lint occasionally adheres to the wound, and is difficult of removal, without injuring the capillaries and causing bleeding; I add to the chlorate of potash solution some glycerine, in the proportion of two ounces to the pint. To prevent the lint from adhering to the wound, Dr. Harkin has for years used an ointment composed of chlorate of potash and lard, of the strength of five grains to the ounce.

In the treatment of very deep burns I advise the application of poultices until all sloughs are separated; granulations then spring up, and nothing seems to increase their activity and vitality equal to the potash solution, of the strength of five grains to the ounce; should the granulations become weak, flabby, or too exuberant, we then use a potash-lotion of the strength of ten grains to the ounce, and at the same time prescribe a mixture of chlorate of potash and tincture of perchloride of iron, to be taken three times a day. At any time, should there be offensive discharges, one can combine the potash-solution with some permanganate of potash.

In the treatment of burns and scalds, the indications are, after promoting reaction and calming the system: 1, to limit resulting inflammation; 2, to promote the sloughing process; 3, to favour the development of granulations; 4, to moderate contraction; and 5, to sustain the strength of the patient during the wasting effects consequent upon the protracted suffering which so often occurs.

I submit that all these indications are fulfilled by the local and internal uses of the salt, the beneficial effects of which, in the treatment of burns and scalds, I have had the honour of bringing before your notice.

ON THE METHODS OF DEMONSTRATING THE PHYSIOLOGICAL ACTIONS OF DRUGS ON THE FROG'S HEART.

Read in the Section of Pharmacology and Therapeutics.

By DUDLEY W. BUXTON, M.D., B.S., M.R.C.P.,
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It is my duty to-day to bring before you some of the many striking points which the field of practical therapeutics brings before the explorer in physiological research. As the time allotted to my demonstration is necessarily short, I have decided to bring under your notice only a few experiments, and explain briefly the method I propose to employ. It has appeared to me most consonant with your interest that I should select illustrations of the methods from most striking instances of antagonism and mutual co-operation of salts, instances which will evolve themselves in a few moments, rather than to attempt to introduce to you, in the short space of time at my disposal, any original and so disputatious communication.

Dr. Sydney Ringer, in the *Journal of Physiology*, has brought before the world the remarkable behaviour of the various saline constituents