larynx to the external, affirming that it is the less painful of the two.

11. There are a few words only which I wish to say about local spasms. The forms of spasm in which electricity has been most commonly used are "torticollis," a spasmodic condition of the muscles of the neck on one side; "writer's cramp"; and so-called "histrionic spasm" of the face. It is said that such cases have been cured, but my own experience has been unfortunate with regard to them. I have tried electricity again and again, and in every available form, but have never seen it do any good. I have tried battery currents, direct and indirect; I have tried faradisation weak and faradisation strong, with wet sponges and with dry; I have used static electricity also, and each form of electricity persistently; I have not given up because the treatment has done no good at first; but I do not know one single instance in which it ever seemed to me to do the smallest good. In torticollis, for the time being, you can put the head straight by either a strong battery current passed through the contracting muscles, or by faradisation of the other side, the muscles of which are often weak; but directly you cease the application the head goes back again into its abnormal position. I have obtained similar negative results in cases of both writer's cramp and histrionic spasm. Others have been more successful, and I trust that your experience may resemble theirs rather than my own.

12. In painful affections, such as the neuralgiæ, migraine, sciatica, tic douloureux, and the like, and also in some conditions of modified sensibility, such as the spontaneous feeling of heat or cold, the sense of numbness, of tingling, "pins and needles," or such-like discomforts, electricity is often of considerable service. It is the continuous galvanic current which you should use, and it should be of only such strength as to be just perceptible by the patient; it should be applied to the part with well-wetted sponges, and should be applied for a short time only, but with frequent repetition. I know of nothing more distinct or more satisfactory in therapeutics than the relief which may often thus be given to suffering of the most intense character, the relief being very rapidly induced, and in many cases permanent. In applying galvanism to the head you must be very careful to avoid using such a strength as to cause vertigo or faintness, and I am sure that you may avoid these evils by trying the current upon your own head first, and then by carefully observing the patient, and stopping the application for a time the moment that there is any complaint, by word, gesture, or look, of any uneasiness in the head or epigastrium.

Electricity is one of the most powerful agents that you can employ in the treatment of disease; but it is useful, useless, or mischievous, according to the manner in which it is applied; and my endeavour has been to furnish you, by means of these lectures, with the information which shall enable you to derive help from it in diagnosis, and confer real advantage upon your patients by rightly directing its therapeutic powers.

ON

HYPODERMIC INJECTION OF QUINIA IN AGUE.

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IN April last my friend Mr. W. J. Hodgson, of Sutton St. Mary, had a conversation with me on the desirability of trying subcutaneous injection of quinia in the somewhat numerous cases of ague occurring in his district. We agreed that it was useless to operate with a salt requiring any other solvent than distilled water; and from Messrs. Bullock and Reynolds I procured a neutral sulphate of quinine which fulfilled this requirement. The results of several trials of this preparation were to be forwarded to me; and Mr. Hodgson has since kindly expressed a wish that I should make what use I please of his communication.

CASE 1.—The first case was that of a lad fifteen years of age, who had suffered from ague for nearly seven months,

and was very much out of health. The tongue being loaded and the breath very foul, an emetic was given on the 23rd of April. Twenty minims of a solution of the neutral salt above named, containing two-thirds of a grain, were injected on the 24th, 25th, 27th, and on the 2nd, 3rd, and 6th of May. He was not cured, but got very much better by the last date, and Mr. Hodgson then lost sight of him.

CASE 2.—The patient was a man suffering from ague since the harvest of last year, and who had also been treated for severe lumbago during three or four months of the winter. Very little relief was obtained until the injection of quinia. The ague and rheumatic pain then seemed to leave him, as if by magic; and, whereas he could not formerly stoop to lace his boots, he soon was able to walk, several times in May, more than seven miles, to see his doctor.

CASE 3.—A woman, aged thirty-eight, of hæmorrhagic diathesis. Great difficulty was experienced in introducing the solution, as every puncture bled freely. At last a trial was made without loss of blood by punctures over the scapulæ. The remedy acted favourably, and all signs of ague disappeared. The dates and number of injections are not recorded.

CASE 4.—June 10th: A man, aged sixty-four, lying apparently very ill in bed in the hot stage of a bad attack of ague. The wife stated that he had it badly on the 6th and 8th. An emetic was given, and the next day (11th) thirty minims of the solution of neutral or soluble sulphate of quinine were injected. As the patient lived at some distance, the doctor could not call until the 13th. He found that the man had gone to work. A message was left, desiring him to come to the surgery in the evening. Thirty minims, containing one grain, were then injected into one arm, and twenty into the other. The next day the patient remained at home, feeling "knocked up"; but on the 7th July his wife reported that he had been hard at work every day since the 15th June, and was as well as ever she knew him.

CASE 5.—A well-grown girl, eighteen years of age, had tertian ague for seven weeks. The medicines given relieved her for six days; but on June 11th she was worse than ever. Thirty minims of the neutral quinine solution were injected into the arm, and it was to have been repeated on the 13th; but for some unavoidable reason it was postponed. On the 16th she looked as well as possible, and her mother said she had never worked better about the house.

CASE 6.—On June 26th a man who had suffered from tertian ague for six months or more was injected with thirty minims of the solution. It was repeated on the 28th and 30th, but the result was not satisfactory; at least the ague was only modified, not cured.

In looking over these cases, few in number, and briefly recorded, one prominent fact comes out which is of real practical importance. When a practitioner is located in an ague-engendering district, he finds that the bulk of his patients are not unlikely to suffer from a supplementary attack of *horripilatio* on the appearance of the bill at Christmas, which must be a heavy one if three or four members of a family have had to be supplied with mixtures containing sulphate of quinia during several months of the year. And here let me not be supposed to mean by the sulphate of quinia of the British Pharmacopœia, the salt supplied by Messrs. Bullock and Reynolds. The former requires ten minims of diluted sulphuric acid to form a perfect solution of ten grains in half an ounce of water, whilst the latter is soluble in distilled water, and its introduction by the syringe gives rise to no smarting or prolonged tenderness.

Case 5 is rather an astonishing one. The malady had proved obstinate, and the girl looked extremely ill in the intervals, and could do no work. Yet the injection of one grain of quinine seems to have produced a beneficial effect, which a long course of medicine administered internally could not accomplish. But it must not be supposed that the hypodermic treatment will supersede the exhibition of the various preparations of bark or arsenic; and perhaps the best conclusion to which one can come is that injection of quinia used early, and at the commencement of uncomplicated ague, is invaluable as a remedy; but that it will often fail when tried in long-established cases, where there is hepatic or splenic complication.

Grosvenor-street, W., Oct. 1870.