

sides, there are fewer cases of paralysis of the tongue on the opposite side to that of the lesion of the cerebral convolutions than on the same side. Amongst these last cases is one of Dreyfus', already quoted, in which the lesion occupied the very place where it ought to be according to the theory, but unfortunately it was on the wrong side. It was on the *right* side, and the tongue deviated to the *right*, while it ought to have turned to the *left*.

There is no part of the brain above the medulla oblongata which can be considered as a centre for the protruding movements of the tongue. The view that paralysis in brain disease is due to a loss of action of either nerve-cells or nerve-fibres endowed with the function of producing voluntary movements in the muscles that become paralysed is in complete disagreement, as regards paralysis of the tongue as well as it is about paralysis of limbs or of the face, with most of the facts I have mentioned. This is shown, especially as regards the tongue, by the following sets of cases:—1st, all the clinical facts in which hemiglossoplegia has existed on the side of the cerebral lesion, or on the side of the greatest lesion where there was disease in the two sides of the brain, are in absolute opposition to the admitted views, according to which every kind of paralysis from disease in one half of the brain ought to be in the opposite side to that of the lesion; 2nd, the production of glossoplegia by a lesion in any part of the brain is also in clear opposition with the admitted theories, according to which the few nerve-fibres coming from the supposed centre in the convolutions ought to be in a very small part of the corona radiata. We certainly cannot admit that the centre and the nerve-fibres employed in moving the tongue are in one individual in the anterior, in another in the middle, and in a third in the posterior lobe of the brain.

I pass now to a short summary of facts, and to some of the conclusions they lead to. I hope to have shown:

1st. That the tongue may be paralysed on the side of the only lesion found in one or several of the various parts of the brain, far away from the medulla oblongata.

2nd. That such a direct hemiglossoplegia may be on the side of the paralysis of limbs or on the opposite side, or without paralysis of any other part except the face.

3rd. A hemiglossoplegia, whether on the side of the brain lesion or on the opposite side, may be caused by a small or an extensive lesion located in almost any part of the cerebral lobes or the base of the brain.

4th. A hemiglossoplegia may arise from a lesion occupying similar parts in the two sides of the brain, and it may then be that the lesion is more extensive on the side of that lingual paralysis.

5th. The loss of the power of protruding the tongue in aphasia is sometimes due to a convulsive retraction of that organ when the patient makes an effort to put it out of the mouth. That inability to push out the tongue may also be due to some ataxical disorder, or result from a general paralysis of the protruding muscles of the tongue.

6th. The inability of protruding the tongue due to brain disease may exist without aphasia, and even without any difficulty of speech, resulting then from a real paralysis of the tongue.

7th. The protruding muscles of the tongue on the two sides may be paralysed from a lesion in only one side of the brain.

8th. The localisation of a psycho-motor centre for the movements of the tongue in certain frontal convolutions is in absolute contradiction with a large number of decisive facts.

9th. The explanations of the appearance of paralysis of the only muscle of the tongue (the genio-glossus) usually weakened in cases of brain disease, consisting in looking upon the lesion as having destroyed or altered nerve-cells or nerve-fibres endowed with the function of producing voluntary movements of that muscle, are in absolute contradiction with a very large number of decisive facts.

BEQUESTS, &C., TO MEDICAL CHARITIES.—Dr. James Blundell, of Piccadilly, bequeathed £500 to the London Hospital, and £250 to St. Mary's Hospital. The Brighton Hospital for Sick Children has received £500 under the will of Mrs. Gibson, and £100 under that of Miss E. C. Smith. Mrs. Whitworth, of Dallington Hall, has given £500 to the honorary fund of the Royal Victoria Dispensary, Northampton. The Misses Brooke have given £200 to the National Orthopædic Hospital of Ireland, and £100 to the National Institution for the Blind of Ireland.

MEMBRANOUS LARYNGITIS, OR CROUP, AS A RESULT OF A "DEFINITE EXPOSURE TO COLD."

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IN THE LANCET of Jan. 26th (p. 141) there appears the following announcement:—"The Secretary of the Sub-committee of the Royal Medical and Chirurgical Society on the relations of Diphtheria and Croup desires us to state that the Committee are anxious to obtain the notes of any case in which the formation of false membrane in the air-passages has succeeded upon a definite exposure to cold, and will be greatly indebted to any gentleman who will favour them with such information. They would also be glad of a specimen of the larynx and trachea, or of expectorated false membrane, from such a case, &c." Now, upon this communication I venture to make some comments and suggestions. Of course the object which the Committee have in view is to ascertain whether there is a form of membranous laryngitis which is not diphtheritic, but it is very doubtful whether this important question can be decided by collecting cases in which "a false membrane in the air-passages has succeeded upon a definite exposure to cold." That membranous laryngitis may follow and apparently be excited by exposure to cold is, I believe, unquestionable, but, according to my experience, a careful inquiry into the history of such cases elicits the fact that in addition to the exposure to cold there has been either infection from a diphtheritic patient, or the sufferer from catarrhal laryngitis has also been poisoned by foul air or contaminated water.

It is notorious that an inflamed mucous membrane or an abraded skin is very liable to become inoculated by the diphtheritic poison. Hence it happens that the throat of a sufferer from measles or scarlet fever, or simple tonsillitis or catarrhal laryngitis, is often infected by the diphtheritic poison, with resulting membranous exudation. So in like manner, where the skin has been abraded by a blister, or wounded by a leech or by the knife of the surgeon, there may be an inoculation with the morbid poison which gives rise to the diphtheritic exudation. These facts, I repeat, are notorious; but will they be borne in mind as they should be by those who are in search of cases of membranous exudation in the air-passages following exposure to cold? I venture to suggest that the Committee, in asking for histories of such cases, would have done well to point out the necessity for great care and watchfulness to discover the existence of any morbid influence other than exposure to cold which may have co-operated in any given case. I may illustrate the importance of this by a brief reference to two cases which have recently come under my own observation.

A delicate youth, who had often suffered from catarrhal tonsillitis, had lately an attack of his old malady. The inflammation, pain, and swelling were less severe than they had been on several former occasions, but there was now the new feature of a distinct, though soft, membranous exudation on the surface of each tonsil. The disease did not extend to the air-passages, and it soon yielded to treatment. The question arose, what was the pathology of the exudation on the tonsil? Was it a result solely of catarrhal inflammation excited by exposure to cold? The house was on high ground near Henley, and no expense had been spared by its wealthy and most intelligent owner to render it not only beautiful and comfortable, but wholesome. There was no reason to suppose that the patient had come in contact with any sufferer from diphtheria. I therefore expressed to the father my conviction that sewer poison was the cause of the peculiar condition of throat. And I heard subsequently that a very offensive smell had repeatedly emanated from one closet at the foot of a staircase, and, later still, that it had been found that, in consequence of some defect in the ventilation of the drains, sewer gas escaped into every closet when the water was rushing down. Here then, I take it, was the explanation of the membranous exudation, which in this case had "followed a definite exposure to cold."

The second case was that of a healthy infant, whose fore-skin had to be partially removed in consequence of con-

genital phimosi. The wound, made by an eminent surgeon, did not heal, and in a few days it was covered by a diphtheritic membrane. The child was the son of a wealthy man, whose spacious house stands on the eastern border of Hyde-park. The two gentlemen in attendance upon the child, feeling sure that the unhealthy condition of the wound was the result of some insanitary surroundings, removed the patient to another house, where I met them in consultation, and where the wound soon assumed a healthy appearance and healed. With some difficulty I persuaded the father to have his house thoroughly inspected, when grave sanitary defects were discovered and corrected. Now, if this child, instead of undergoing a surgical operation, had been exposed to cold, and had thus got a catarrhal inflammation of the larynx, he would very probably have had a membranous exudation on the inflamed mucous surface, and the case might have been reported as one in which "the formation of false membrane in the air-passages had succeeded upon a definite exposure to cold."

It is only with reference to cases occurring in private practice, and especially amongst the middle and upper classes, that the inquiries which are requisite in order to throw light upon the etiology of these diseases can be thoroughly carried out. Cases occurring in hospital practice are, for the most part, quite unsuitable for this purpose, and it is a mistake to suppose that any trustworthy inference can be drawn from a large number of imperfectly observed and recorded cases.

In the last volume of the Guy's Hospital Reports there is a "Collection of Cases of Diphtheria and Croup," communicated by Dr. Hilton Fagge. In that paper, in the section headed "Cases of membranous pharyngitis or laryngitis due to local injury of the throat," I find, amongst other cases, one (Case 91) of a child who, having "swallowed a piece of hot potato, which lodged in his throat for some time," was found after death not only to have flakes of lymph on his tongue and tonsils, but the interior of the larynx and "the whole trachea were more or less lined with lymph." Now, surely it is inconceivable that this exudation in the air-passages was a result solely of a piece of hot potato in the gullet. In the history of this case it is said "there is no diphtheria in the neighbourhood," but nothing is stated, probably nothing was known, by the reporter with regard to the sanitary or insanitary condition of the patient's dwelling. In another case (93) of scald of the throat "a membrane was found on the pharynx and larynx, and down as far as the minute branches of the bronchial tubes"; and in a third case (94) of cut-throat there was "plastic lymph in pharynx and larynx, traceable into the smallest bronchial tubes." Surely these cases prove too much to warrant their being designated "cases of membranous pharyngitis or laryngitis, due to local injury of the throat." They prove that a membranous exudation spreading into the air-passages far beyond the seat of injury must have been due, not to the mere local injury, but to a diffusible, specific, infecting poison, the source of which might probably have been discovered by a careful investigation of the patient's surroundings before and after the receipt of the injury.

The result of my own investigations has been the conclusion that, in the absence of direct contagion, the occurrence of membranous pharyngitis or laryngitis affords conclusive evidence of infection by sewage-poison conveyed through either air or water. It will scarcely be denied that if this doctrine be true, it is of immense practical importance.

Savile-row.

ON

NERVE-STRETCHING IN ACUTE TRAUMATIC TETANUS: WITH TWO CASES.

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THE effects of stretching upon the nerve-cords or their centres are not at present known with precision; but most experimental physiologists, as well as practical surgeons, are quite aware that nerves do bear considerable stretching without finally losing their characteristic properties. Attention was, I think, first attracted to this subject as a means of treating certain painful and spasmodic nervous affections by Nussbaum. Mr. Callender and others have since recorded their experience of the operation in cases of neuralgia, epi-

lepsy, &c. But, except a bare notice in the *British Medical Journal* for 1876 that M. Verneuil had had a case of tetanus at La Pitié which recovered after nerve-stretching, I have not been able to find any recorded case of traumatic tetanus treated in this way. Yet I am sure that most surgeons will agree with me that the suggestion thus made is at all events worthy of a trial. I certainly have much confidence still in the Calabar bean, which I believe I was the first to recommend, for the treatment of this terrible disease; but the operation of nerve-stretching does not prevent the use, while it may possibly assist the action, of the drug. Hence, when the following cases occurred in my hospital practice, I thought I was bound to give my patients the benefit of the proposed operation; and I now feel equally bound to make the result public without delay.

Before relating these cases, I may here remark that I have found the action of the Calabar bean of late very uncertain, so that I have sometimes doubted the genuineness of the drug. It is well known that the bean is much more potent at some seasons than at others, and if this is not attended to by those who collect and send them to market we may get a very untrustworthy article. Besides, I understand that the extract requires much care and a large consumption of beans in its formation, and hence, I fear, it is not always what we expect it to be, as, indeed, my second case illustrates.

CASE 1.—I. M—, aged sixteen, was admitted to the Royal Infirmary, under my care, on the 21st November, 1877. On the 7th of the month he had the tip of his left index-finger crushed off, and the wound was suppurating but not unhealthy when I first saw it. On the 18th day of the month, and the eleventh from the injury to the finger, symptoms of tetanus commenced in the usual insidious way; but he did not come to the hospital till late on the evening of the 21st, by which time the disease was fully confirmed and the boy's strength considerably diminished. Appropriate food and stimulants were given during the night, as well as several doses of the extract of Calabar bean; but, as the disease continued unabated in severity, I next morning proposed to my colleagues to stretch the brachial nerves, and, with their consent, I at once proceeded to perform the necessary operation.

The boy was brought fully under the influence of chloroform, and I made an incision about three inches long over the upper part of the brachial artery, at once exposing the median and ulnar nerves. Then, by separating the artery and vein and turning the former a little outwards, I readily came upon the musculo-spiral behind the vessel. All the three nerves named were severally hooked up on an aneurism needle and stretched. They were laid hold of between the finger and thumb, and pulled both upwards and downwards so strongly as to move the limb and to give to my fingers a feeling of slight fatigue. The operation was performed under carbolic spray, and after the nerves had been carefully replaced, the wound was stitched up and dressed antiseptically.

The patient was then put to bed, and on recovering from the chloroform had a general spasmodic paroxysm, after which, however, he seemed better. The Calabar bean, which was now given by subcutaneous injection, acted more powerfully than before, and he was able to swallow fluids fairly well, but his pulse and temperature continued high. His perspirations were profuse, and his strength continued to fail notwithstanding the free use of stimulants. This failure of strength was so great that the house-surgeon thought it prudent to diminish the frequency of the injection of the Calabar bean; and during the night of the 23rd he took a general convulsion, and died. A post-mortem was refused.

CASE 2.—A. F—, aged thirty-five, a drayman, was admitted to my wards on Nov. 16th, 1877. A lorry-wheel had passed over his left hand and caused a ragged wound across the palm of the hand, fracturing the two external metacarpal bones. My house-surgeon dressed it antiseptically at once, and I agreed with him next day that it did not call for operative interference.

On Nov. 24th he complained of a draught from a window near his bed, and said it had given him rheumatism in the shoulder of the injured limb. Next day his mouth and neck were a little stiff, but not sufficiently to attract attention. However, on the following morning, when I visited, the characteristic expression and other early symptoms of