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CASE OF HYDROPHOBIA.

BY J. P. MAYNARD, M.D., DEDHAM.

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MR. G. S., 56 years of age, subject for the last fifteen years to occasional attacks of asthma, but otherwise healthy, on returning to his home on the evening of August 8th, 1857, complained to his wife of feeling unwell, with absence of pain but a sense of fatigue and weakness, and remarked that although he could breathe better than usual, yet whenever he felt the wind blowing in his face it distressed him unaccountably. His wife, thinking it might be only the commencement of one of his asthmatic attacks, proposed his taking a bowl of gruel; but on attempting to drink it, he found difficulty in swallowing, accompanied with great distress in breathing, which he thought was relieved by the repeated inhalation of chloroform, this having been of service to him when troubled with asthma. He therefore resorted to it at intervals throughout the night.

I saw him the next morning (August 9th), and the second day of his illness, and gathered the above account from his family. I found him sitting on a couch, his countenance anxious, mind somewhat desponding, with partial delirium, singularly intermixed with sane conversation. Pulse 86; tongue clean and natural. He expressed a sense of great suffering, but could not locate his pain. Said he thought he had hydrophobia, as he was bitten by a dog a few weeks ago. On referring to the family for a corroboration of any such circumstance, they expressed their ignorance of his statement, and the remark was attributed to his partial delirium, though he persisted in reiterating the assertion.

On testing his ability to swallow, beef-tea was offered him, and though he evidently made great effort to drink, it was with much difficulty, and swallowing was imperfectly accomplished. By waiting for a favorable moment, just at the termination of an inspira-

tion, I could succeed in tossing into his open mouth part of a teaspoonful at a time, which with great exertion he would gulp down by a spasmodic effort. This was repeated frequently, and always with similar results.

The next day, August 10th, the symptoms became more marked, and it was plainly apparent, by the acts and appearance of the patient, that he was an ill-fated victim to that dire disease—canine rabies. The efforts to relieve the throat and fauces from the saliva by hawking, were frequent and labored. Occasionally the saliva would drule from his mouth, as in a teething baby. His desire for drink was great, but all attempts to swallow were invariably accompanied by sudden dyspnœa, or, more strictly speaking, a peculiar catching of the breath—a spasmodic action chiefly confined to the diaphragm and muscles of the thorax and larynx. On placing a basin of water near him to wash his hands, he was on the point of plunging them in, when, as they approached the liquid, his whole frame suddenly grew tremulous, and the usual catching of the breath returned. This was the only instance in which I had observed the spasm to affect the general system.

The dysphagia was not confined to liquids, but extended almost equally to solids, such as small pieces of bread. A sudden puff of air across the face would occasionally produce similar spasms.

A careful examination revealed no inflammatory condition of the œsophagus or larynx, and there was no tenderness on pressure in the tracheal region. Pulse 88. Tongue covered with a very slight whitish coat.

The great loquacity of the patient was very striking; indeed he indulged, for the greater portion of the time, in one incessant stream of conversation; and, what is most remarkable, frequently intermingling a perfectly sane remark with the wildest jargon.

In the treatment of the case, the main reliance was on the free administration of ether and chloroform, which had, however, merely the effect of slightly palliating the severity of the spasms. Without their aid, the appearance and demeanor of the patient was pitiable in the extreme. The most distressing tones and exclamations would escape his lips during his paroxysms, convincing evidence of the truth of his oft-repeated assertion "that ten deaths were preferable to one such spasm."

The much-vaunted remedy of datura stramonium was resorted to, but without avail, drachm doses being given once in four hours, without any perceptible effect on the disease. The patient having passed some forty-eight hours without any sleep, I gave him two thirds of a grain of sulphate of morphia, and directed about half-grain doses to be given every hour until he became drowsy. At the expiration of four hours, as not the slightest somnolence was induced, its further administration was suspended, and subsequently sole reliance was placed on the inhalation of chloroform. The

pulse had now become gradually more rapid and somewhat irregular, the tongue still but slightly coated.

On the fourth day of the disease (August 11th) the patient was seen, in consultation with myself, by Dr. Jacob Bigelow, who, after a thorough examination of two hours, coincided in the opinion that it was a case of genuine hydrophobia, though some of the symptoms were not as strongly developed as in one other case he had previously witnessed.

The patient continued to be convulsed at intervals until about 1 o'clock, P.M., when, worn out and exhausted, he sank into a quiet sleep, until death terminated his sufferings at 5½, P.M., and on the fourth day of the disease. No *post-mortem* examination could be obtained.

The previous history of the case, collected from a trustworthy and reliable source, is briefly this. On Friday (the 6th), he complained to a friend of feeling very weak. On Saturday morning (the 7th), he was unable to continue his usual work, and stopping at a boarding house, laid down on a sofa, saying he felt so tired and faint he could hardly walk. At noon a cup of tea was offered him by the landlady, which it was observed he could not swallow. In the afternoon he was seen at a water-pail, endeavoring to drink, when he was seized with trembling of the whole body.

After his decease, a memorandum-book was found in his pocket, containing the following entry, "July 2d, bitten by a dog." The scar of a wound was quite perceptible, but presented nothing unusual in its appearance. There was no complaint of pain at that spot, nor could I learn that it had been the seat of any morbid sensation. This last-mentioned fact is not in accordance with the experience of the majority of observers, though the absence of pain or any abnormal appearance in the original wound has been noticed by a few authors.

It may not be amiss to recur to a few prominent points, strenuously insisted upon by those of acknowledged authority, as elements for a differential diagnosis between the genuine and simulated disease.

According to Elliotson, patients afflicted with the genuine disease usually make the greatest possible efforts to overcome the difficulty of swallowing; and although they may many times put the cup from their lips, their courage failing after they have promised to attempt to swallow, they will frequently at last, by great effort, open the mouth, throw the head back, and gulp down considerable draughts of fluid in violent haste, even in the midst of their greatest difficulty in swallowing. Except that the amount swallowed was very limited, the above description was in its graphic details remarkably applicable to this case, as well as those other pathognomonic signs, morbid impressibility of the surface of the skin to a current of

air, and a peculiar "catching of the breath," undeveloped by any other disease.

As a remarkable peculiarity of the delirium of hydrophobia, it is stated by Lawrence that it may be suddenly arrested, in its height, by the patient being quickly spoken to, when sane conversation will ensue. All of these symptoms were strongly marked in the case of my patient.

Owing to the extreme rarity of hydrophobia in this vicinity, I have reported the above abstract from my notes, embodying all the important features of the case, as well as its treatment, trusting it will not prove unacceptable to those of the profession who may never have witnessed the disease.

DR. EDWARD BROWN-SEQUARD'S EXPERIMENTAL AND CLINICAL RESEARCHES APPLIED TO PHYSIOLOGY AND PATHOLOGY.

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NOT only is it wrong to say that convulsions in epilepsy are due only to laryngismus, but it would be wrong also to say that they are due only to asphyxia, whatever be its cause. The tonic convulsions, which, according to Dr. Copeland (*Dict. of Med.*, vol. i., p. 786), and to Herpin (*Loco cit.*, p. 451,) always exist in the beginning of fits of epilepsy, are not to be attributed to asphyxia, neither are the convulsive rotary movements which sometimes exist, and which result principally from the irritation of some parts of the isthmus of the encephalon. The tonic convulsions may occur in almost all the muscles of the body at once, simulating tetanus, or they come first in the larynx, the neck, the eyes, or the face, and thence extend to the upper limbs, and at last to the trunk and inferior limbs. These convulsions are mere reflex spasms, as are the contractions of the bloodvessels. Their duration is only of some seconds, according to Copeland (*Loco cit.*, p. 786), or a quarter of a minute, according to Herpin; but they may appear again during the seizure, as Hasse (p. 252) and Herpin (p. 430) justly observe, and as I have twice seen. This kind of convulsion, and also the rotary convulsions, cannot be the result of laryngismus, because asphyxia does not seem able to produce them. Asphyxia causes only clonic convulsions, and it seems that we must attribute to it the universal clonic convulsions of a complete fit of epilepsy. We have perused the history of many hundred cases of epilepsy, and we have witnessed eight violent fits in as many epileptics; and in all these cases, universal clonic convulsions have begun only after the appearance of symptoms of asphyxia. In healthy animals prevented from breathing, clonic convulsions begin in less than half a minute, and they are universal and very violent in about three