tion of the patient that he had been subject to intermittent malarial fever, and by finding his pulse very concentred and small, that he ordered, after the application of leeches and fomentations, a dose of quinine; after which Mr. S. began gradually to get better.

Now, was it the malarial fever which appeared with the different above mentioned symptoms, as often is the case? or did the complaint which first appeared, such as the cholerine, the gastritis, the otitis, etc., give place to the development of the intermittent malarial fever? This I am most inclined to believe.

No doubt it is of great importance, in treating our patients, to ascertain whether they have ever had intermittent fever—at the slightest symptom, I will say, not of intermission, but of remission. If so, I think it enough to say—forewarned, forearmed.

NOTES OF A CASE OF HYDROPHOBIA.

By R. W. Cunningham, M.D., Assistant-Surgeon in Medical Charge H.M. 4th Bengal Europeans.

Private James Belshaw, 37 years of age, and two and a half years in India, served previously in H.M. 48th Foot, and also in the Baltic Fleet in 1854, under Sir Charles Napier, of sanguine temperament and intemperate habits, had suffered several times from delirium tremens. His constitution was a good deal shattered and he suffered frequently from dyspepsia and intermittent fever. For the last three months he had been more regular in his habits, and enjoyed better health than during the previous nine months he had been under my observation. On June 6th he was bitten by a small dog in the barracks. He went immediately to the hospital, and nitrate of silver was freely applied by the apothecary. The wound healed very quickly; and he thought no more of the matter. The same dog bit four other men at the same time, but was then under no suspicion of being affected with rabies. A few days afterwards, however, the dog became quite mad and was killed. Several pups of the same litter have, I believe, also become mad.

July 20th. He came to hospital about 3 p.m. complaining of a choking sensation in the throat, difficulty of swallowing, and a feeling of constriction about the chest. Being an intelligent well educated man, he described his feelings with great exactness. The apothecary gave him a draught of spirit of ammonia in camphor mixture, which had the effect of relieving him considerably. On going to the hospital about 6 p.m. I found him lying quietly on his cot; but on my entrance he started up and stared wildly at me. I was struck at the time with his wild anxious look. He said that on July 18th, he felt a sensation of numbness creeping up his right arm (it was the right hand that was bitten), but took no notice of it, thinking that he might have slept on it the previous night. On the 19th, this sensation continued. He did not observe any appearance of inflammation, neither did I at this time (on the evening of the 30th). There was no perceptible enlargement of the axillary glands. On the morning of the 20th, he went to the Regimental Bazaar to drink a bottle of gingerade; but, on opening the bottle, he found that he could not drink it from a feeling of loathing. At intervals during the day he was unable to quench his thirst from the same cause; but as yet he had no marked paroxysm. The most prominent symptoms when I first saw him were a *thickness* of the voice, like that of a person with enlarged tonsils, and an appearance of anxiety and excitement. The vascular system was perfectly quiet. He was ordered the following draught, to be repeated at bedtime.

℞ Spirit. æther. sulphur., tincturæ opii, āā ɱxx; spiritûs ammon. aromat. ʒss.; mist. camphoræ ʒiss. M.

July 21st, 6.30 p.m. He said he was considerably relieved by the draughts he had last night. He slept some during the night, but was disturbed by indescribable feelings of anxiety and oppression, which several times caused him to start up from his cot. Today he stated that he could not look at water without a spasmodic paroxysm being induced. I now felt certain of what I formerly only suspected—that the disease was hydrophobia. I talked to him of drinks, and asked if he would like some iced water. A paroxysm was immediately produced, involving the muscles of the pharynx and those of the tongue, the depression of the lower jaw, and the elevation of the larynx. At this time he certainly did not suspect the nature of his complaint, as he afterwards told me, but in describing his feelings he said that "he felt like a dog." I sent the hospital sergeant to the barracks, to make inquiry as to his having been bitten, and thus gained the information above mentioned. He was ordered to continue the draught every third hour, and to have a blister applied to the nape of the neck, through which I intended to introduce morphia. The marks of the dog's teeth on the back of his right hand were plainly visible, of a dusky colour; but I find no evidence of their having become darker at the commencement of the disease, as stated by Dr. Watson to occur at the period of recrudescence. The right hand was very tremulous; the left one much less so.

2 p.m. I now found him much worse. The paroxysms were more frequent and severe, and more easily produced; a draught of cool air from the punkah being quite sufficient to produce a severe attack. He now recollected having been bitten, and concluded that he had hydrophobia and would certainly die. The spasms involved all the muscles of the neck, including the sterno-mastoids. A tenacious frothy fluid collected in his throat from time to time, and caused considerable trouble in attempting to get rid of it. Dr. Watson says that the so-called barking sound, said to be present in this disease, has its origin in the sounds produced by attempts to get rid of this tenacious mucous substance, which have been likened by ignorance and credulity to the barking and foaming of a dog; but, as I shall presently show, the said barking is no myth; it has nothing to do with the extrusion of the mucus, and has a distinct pathology of its own.

4 p.m. Dr. Carden, Deputy Inspector-General of Hospitals of the Lucknow Field Force, saw him with me. He coincided in my opinion as to the nature of the case, and advised the addition of twenty minims of chloroform to each dose of the former medicine.

6 p.m. The patient said he was better; but this amelioration I concluded to be owing merely to the anæsthetic effect of the medicine upon his feelings, for the paroxysms were quite as severe and more extended than when I saw him before. The respiratory muscles were now involved; and the paroxysm commenced with something like sobbing. The draught was ordered to be repeated at 7 p.m.

9 p.m. He was much worse. The whole chest, the diaphragm, and the abdominal muscles were now involved. The paroxysms were very severe, and a sound exactly similar to the bark of a dog was produced, as I conceive, by the violent expulsion of air through the larynx. The muscles of the larynx itself did not seem to be involved to any extent; certainly, there was no evidence of spasm of the rima glottidis. Perhaps the vocal cords were put upon the stretch; but otherwise, the larynx seemed to be passive, and the sounds to be solely produced by the expulsion of air by the diaphragm and abdominal muscles. On the occurrence of a paroxysm, he instantly raised himself to the sitting posture, and requested the attendants to hold his hands, apparently with a view to give a fixed point to the chest, and lessen the effects of the concussion on the frame. The paroxysms became more frequent and less severe,

apparently from the failing of the *vis vitæ*. In the intervals, the breathing was tranquil, and he said that he had no pain. His pulse was now scarcely perceptible at the wrist, and his heart beat quick and weak. The draughts caused such an aggravation of the symptoms, and he appeared to be so near his end, that I desisted from repeating them; but I administered by inhalation, also without any good effect. Vomiting succeeded the paroxysm on several occasions. About 12 P.M., fits of contortion of the features came on, resembling intense maniacal laughter; and this was accompanied by profuse frothing at the mouth. About 1 A.M. on the 22nd, he died; not, as I had expected, during a paroxysm, but quietly, as if completely exhausted. His faculties were perfect from beginning to end, even during the fits of laughter, which were not the result of any aberration of intellect, but perfectly involuntary.

Post Mortem Examination. The surface of the body was pale, except in the neck, where there was discoloration from venous congestion, no doubt caused by the obstruction to the return of blood to the heart by the spasmodic action of the muscles of the neck. The parotid glands were perfectly healthy, not the slightest appearance of congestion being found in them. The superficial veins of the neck and those of the scalp were all distended, and the blood was quite fluid. On removing the calvarium, the dura mater was found congested, all the veins being found distended with dark coloured liquid blood. On opening the dura mater, a large quantity of muddy serum flowed out, having the appearance of containing much fibrine. In many places, the layers of the arachnoid were adherent, especially along both sides of the longitudinal sinus. The adhesions were quite soft and recent, and many flakes of coagulated fibrine floated in the lymph-like fluid in the cavity of the arachnoid. There was also considerable effusion between the arachnoid and the pia mater, which in many places adhered firmly to each other, but there was nothing abnormal between the pia mater and the surface of the convolutions. The substance of the brain appeared perfectly healthy, with the exception of a reddish tawny spot in the substance of the pons Varolii, having somewhat of the appearance of inflammatory softening. The ventricles contained fluid similar to that contained in the arachnoid; and the various parts forming the floor of the cavity all appeared healthy. On the lower surface of the medulla oblongata, at the origin of the seventh, eighth, and ninth pairs of nerves, these membranes were highly vascular, thickened, softened, and matted together; but the substance of the nerves themselves, and of the medulla oblongata at their exit, seemed perfectly normal. I did not pursue the examination further, thinking that anything that might be found in other organs would only be of secondary consequence, except, perhaps, at the origin of the cervical and brachial plexuses, where similar lesions to those observed at the origin of the nerves at the medulla oblongata might be presumed to exist.

Remarks. On looking over the symptoms, we find first a numbness of the limb stretching towards the sensorium, a tremulousness of the limb, no evidence of lymphatic absorption; and I think there is much reason to suppose that the poison introduced by the tooth of the dog is not at once absorbed into the circulation, but, like the syphilitic virus, lies for a time inert, all the while magnifying itself zymotically, until at length, after a variable interval, the period of recrudescence or maturation occurs, and the dreaded disease is produced. On this hypothesis, we might reasonably expect to obviate the disease in all cases by a thorough excision of the cicatrix at any time previous to the occurrence of recrudescence, more especially if we assume at the same time that the morbific influence is conveyed to the nervous centres through the medium of the nerves, as I think we have much reason for supposing; and not through the medium of the lymphatics or the general circulation. Again, we find that all the muscles partaking of the spasms receive their nervous influence from the seventh, eighth, ninth, and phrenic nerves, or those at whose exit from the nervous centre inflammatory lesions were observed. The spasms seemed to commence with the palato-glossus and palato-pharyngeus muscles, gradually involve all the muscles of respiration and deglutition, and finally the facial muscles.

Now the question arises, Whence these phenomena? How are the spasms produced? This point resolves itself into three heads, as follows:—1. Are the muscular spasmodic phenomena produced by a reflex or excito-motory process? the virus in the seat of the wound being the excitant, and the nerves of respiration and deglutition being the efferent nerves through which the motor influence is conveyed to the muscles, after passing by an afferent or sensory nerve to the spinal column. 2. Does the influence originate in the nervous centre, in obedidience to the stimulus of a special poison, which at the same time causes a psychical change in the sensorium, whereby the mere mention of liquids, or, so to speak, the contact of liquids with the mind, is as effectual in producing the spasmodic phenomena as the contact of water with the mucous membrane of the mouth, or of a draught of air with the skin of the face? 3. In how far are the local lesions connected with the production of the phenomena? Do they occur as a consequence of the action of the poison, and prior to, and causatory of, the development of the convulsive symptoms? or are they to be considered as purely secondary, arising from the disturbed function of the parts, and determination of blood thereto by increased action?

These appear to me to be the points to which investigation ought to be directed; and, when these questions are satisfactorily answered, we may fairly hope to cure the disease, not by an empirical, but by a rational method.

Lucknow, July 25th, 1861.

SCARLATINA IN THE PUERPERAL STATE.

By C. Blakely Brown, M.D.

The following cases of scarlatina occurred in Queen Charlotte's Hospital, under my care, last year; and, as the disease during the puerperal state is generally considered by the profession to be almost uniformly fatal, I send the short notes of them, thinking they may be of interest.

Case I. Mrs. M. C., aged 28, was delivered on Jan. 31st, 1861, of her second child. A few hours after its birth, the rash of scarlatina was distinctly visible; the sore-throat and other symptoms were well marked. Desquamation followed; and in three weeks she left the hospital, perfectly recovered.

Case II. Mrs. H. H., aged 25, was confined March 12th, with her first child. On the 15th, scarlatina appeared. The usual symptoms followed, and were rather severe in character; but she left quite well.

Case III. Mrs. S. D., aged 28, was delivered March 13th, of her first child. For six days nothing was observed; but the rash of scarlatina then appeared. The disease ran its usual course, and after three weeks she was discharged cured.

Case IV. Mrs. L. T., aged 35, was delivered March 22nd. After two days, the eruption of scarlatina appeared. The throat was much affected, and there was great depression; but she rallied, and left quite well.

Case V. Mrs. A. P., aged 36, on March 26th was delivered of her sixth child. When admitted, she was in a weak state. On the 30th, the disease was developed, and the symptoms ran high. The throat was so much affected that for two days no nourishment could be taken by the mouth, and she was entirely supported by