integuments of the back of the right foot, extending from the instep to the base of the toes. As yet there is no inflammation and no pustule of egress.

Such is the case of this extraordinary and interesting entozoon. It is difficult to say in what way this worm was generated in the body of Stavelly; but it is not improbable that the larvæ may have found access into the subcutaneous tissue through the sore which he had on the right leg when on the African coast. As this case so entirely confirms an excellent account given of this worm in the "Encyclopædia for the Diffusion of Useful Knowledge," I shall in justice to the author transcribe a portion of the article Entozoa.

"The Guinea worm frequently occurs in hot climates; but the countries where it most abounds are Arabia, Upper Egypt, Abyssinia, and Guinea. Its general habitation is the subcutaneous cellular tissue, particularly of the lower extremities; but it is also found in the scrotum, and very rarely beneath the tunica conjunctiva of the eye. The length of this worm varies from six inches to twelve feet; it is about as thick as the string of a violin; its color is generally white, but occasionally brown; it is round, and of nearly equal dimensions in its whole length, but becomes a little attenuated towards the anterior extremity. The tail of the male is obtuse, and armed with a spiculum; in the female it is acute and bent. The mode of development of this entozoon is unknown. It seems that it may exist for many months without being detected, cases occurring where it had not been discovered till more than a twelvemonth after leaving the country where it was contracted. After a time it produces irritation; in some point of the skin a vesicle, pustule, or small abscess forms, breaks, and then the end of the worm makes its appearance, which may be taken hold of, and cautiously and gradually extracted. If the filaria is broken, the portion remaining beneath the skin dies and produces inflammation, sinuses, abscesses, and often great constitutional disturbance, requiring amputation of the limb."

In the case above related there were three of the filaria in the same individual; one in the left leg, one in the left forearm, and one in the right foot, which still remains there. The worm which I saw, and which Mr. List extracted from the left arm, was, according to the above article, a female, as its tail was acute and bent, and without a spiculum.

It seems that this worm inhabits the subcutaneous cellular tissue in the human body, where it produces no irritation till it irritates the skin and forms a pustule to make its way out; and it is probable there would be but little erysipelatous inflammation attending it were it to be *gradually and cautiously* extracted without being broken.

I remain, Gentlemen,

Your obedient servant,

W. S. OKE, M.D.

Southampton, Aug. 14, 1843.

MALARIA, ITS CAUSES, EFFECTS, AND TREATMENT.

TO THE EDITORS OF THE PROVINCIAL MEDICAL JOURNAL.

GENTLEMEN,—Having had ample opportunities afforded me of noticing the effects that malaria produces upon the system, I now beg to submit to your consideration the enclosed paper respecting it for insertion in your Journal.

I remain, Gentlemen,

Your obedient servant,

EDWIN MORRIS,

Surgeon to the Spalding Dispensary.

Spalding, Lincolnshire, August 14, 1843.

The production of malaria by the decomposition of vegetable matter, favored by a moist atmosphere, has long been considered the great source of fever in low, flat countries, and this has been owing, in a great measure, to the imperfect drainage of the land. This is proved by the fact that fever, particularly that of the intermittent form, has been less frequent since the more perfect and effective drainage of the marshy districts of Lincolnshire. During my residence in this neighbourhood, of several years, I have not seen many cases of ague, and those that have occurred have been generally individuals of uncleanly habits, and living principally upon vegetable diet. The number of cases of typhus fever have not diminished in the same ratio as intermittent, although fewer fatal cases occur than formerly, which I think is to be attributed to the treatment being more judicious and better understood. The object of this paper is to show the peculiar and different manner in which persons are affected when malaria exists in the system previously to its development into a true case of fever, either of the intermittent, remittent, or continued form. It is not at all an uncommon occurrence for malaria to lurk in the system for weeks, nay, even months, harassing the individual, and producing great debility and lowness of spirits, accompanied with loss of appetite. Pulse small and feeble; tongue white and moist; breath fetid; bowels costive; urine scanty and high colored; sallow countenance, with a yellowish tinge of the conjunctiva. Thus they drag on a miserable existence, following their usual employment with the greatest reluctance. In this state they apply for medical aid, and invariably say they are not "right, and yet not sufficiently ill to lay up." Prescribe what we will, they appear to derive little or no benefit from it: purgatives are the best temporary relief; yet, notwithstanding this, they return again after a few days as bad as ever. From the peculiarity of the countenance alone, which is very difficult to describe, I can immediately detect that the person is affected with malaria, the great destroyer of youth and beauty. It spares neither young or old; it lurks alike in the mansion and the humble cottage; none are exempt from its ravages, but all are liable to its attacks who dwell in low, marshy districts. I cannot too strongly urge the authorities, who have the management of the drains, to use their utmost influence and power to maintain and keep up an effectual drainage, and to remove all accumulations of vegetable matter, which, when it undergoes decomposition, rapidly

generates this poisonous miasm, the great source of fever. Truly, they have done a great deal already, yet I would not have them actuated by mere motives of lucre for the improvement of the land, but by a nobler one—the production of a pure and healthy atmosphere, which will greatly assist in lessening the bills of mortality in this neighbourhood. It is curious how peculiarly some persons are affected with malaria. I know a lady who suffers severely from an acute nervous pain in the face, which will immediately leave her upon going to the high country, and will return again when she comes back; and others, again, who have great relaxation of the uvula and mucous membranes of the pharynx, with a secretion of a thick, ropy mucus from about the epiglottis and pharynx, particularly in the morning when they first get up; they are always relieved by a removal into a more elevated part of the country. I have observed that persons affected with malaria are relieved from it in one of the three following ways:—First, either by suddenly leaving them, whereby they speedily recover; secondly, by passing off with a violent diarrhoea; and thirdly, by terminating in intermittent, remittent, or continued fever. Undoubtedly, the first mode is the most desirable way of getting quit of it, and yet this rarely occurs; the second is the most common, and the next to be desired. Patients will be suddenly attacked with a violent purging of fœtid stools, accompanied with small pieces of hardened feces; vomiting will also sometimes take place. The diarrhoea will last a few hours, or a day or two, after which the patient is exceedingly weak, and feels sore all over the abdomen, as if they had been beaten; they generally have an enormous appetite afterwards, and recover in a week or two.

The terminating in a case of continued fever is the most to be deplored, and yet, I am sorry to say, is the most frequent mode. The system, perhaps, has already become debilitated and worn down by weeks of suffering from the effects of malaria, and is in the worst possible state for bearing up through the different stages of continued fever, and it requires the utmost attention and skill of the medical attendant to conduct a case of this kind safely through. No plan of treatment can be laid down; all must depend upon attacking existing symptoms, and battling off any threatened local inflammation, and administering nourishment and stimulants at the very time when they are required, but no precise time can be stated when the above means are to be used; each case will differ much as to its severity of symptoms and treatment requisite, and all, all will depend upon the practitioner's practical knowledge of the subject, and each case will prove a lesson and guide for the future, and that man who is quick of observation will store up in his mind the many little facts which the present opportunity affords him of observing, and which will constitute that great desideratum, *experience*; and such an one alone will be able judiciously and satisfactorily to treat a case of continued fever.

Treatment.—Now, as regards the treatment of persons suffering from malaria: undoubtedly change of residence to a more healthy district is the best course to adopt; but all have not the means of taking advantage of this. I would, therefore, recommend the following, which I have found, after repeated trials,

to be the most beneficial plan to pursue:—Compound chloride of mercury pill, five grains, given at bed-time, to be followed by the following draught early in the morning:—

Rhubarb, half a drachm;
Compound spirits of ammonia, half a drachm;
Compound infusion of senna, one ounce and a half.
Mix.

To be repeated again and again, unless the bowels have been well purged, and not to be satisfied with three or four loose motions, but to produce watery evacuations. The patient will feel weak after this, still nothing less than the violent purging will do, and this is to be followed by bark, port wine, and nutritious diet.

When a patient is suddenly attacked with diarrhoea, I would not advise it to be arrested too soon, but rather palliate the effects it produces. Sometimes there is a great disposition to syncope, particularly in females, and in all an acute pain about the umbilicus, occurring in paroxysms, and ending with a desire to have a motion, with great tenesmus. I have found the following mixture to be very serviceable:—

Acetate of morphia, one grain;
Compound spirits of ammonia, two drachms;
Water to six ounces. Mix. Two tablespoonfuls to be taken every third hour.

A poultice applied upon the abdomen will relieve the pain considerably, if not leeches should be applied. There is frequently an accumulation of scybala in the colon and rectum. The following enema to be administered, and to be repeated occasionally:—Decoction of poppies, infusion of linseed, of each six ounces. Make an injection. These cases have occasionally been attended with delirium; of course, whenever any unusual symptoms arise, they must be combatted accordingly.

CASE I.—John —, aged twenty-four years, a groom; had been suffering for weeks past from great lassitude, and constricted feel across the forehead, loss of appetite, tongue white and moist, sallow countenance, the conjunctiva suffused, pulse soft and feeble, bowels rather confined. He says that he has had great difficulty in attending to his work, and appears to have no energy or desire to do so; has an idea that he shall not recover.

Jan. 5. He applied for medical aid. Four grains of calomel were given, and to take some aperient mixture every two hours until the bowels are relieved.

6. The bowels have been well purged, and he feels himself much better.

After this date I saw no more of him until February 15, when he again visited me. He states that he has been some days better, and sometimes not so well, and has gradually become much weaker. Present symptoms: Pulse quick and feeble; tongue dry and furred, when put out has a continued tremulous motion; great pain in the head, particularly in the direction of the longitudinal sinus; the countenance is flushed; has had cold rigors, and staggers very much when he walks; he is also very low spirited. To take five grains of blue pill, with an aperient draught directly; a dozen leeches to be applied to the head.

Feb. 16. He took to his bed this day; the pain in the

head is very acute; pulse 120; tongue dry, and much furred. More leeches to be applied, also a blister to the back of the neck, and to take a saline mixture every four hours. His bowels have been well relieved. He remained much the same up to the 19th, when he passed a restless night. Cold lotions to be kept constantly applied to the head.

20. He continues much the same.

21. Is very restless; the pain in the head is so severe as to make him scream out aloud. An anodyne draught to be taken directly; fourteen more leeches to be applied. The bowels have again been well relieved. To take a grain of calomel every four hours, with the saline mixture. He this evening became comatose.

22. He has not moved from the position he now lays in since he became comatose; he is perfectly insensible to external impressions; breathing hurried; pulse 130, small, and feeble; incontinence of urine; hands and feet cold; pupils dilated; has a very dejected, frowning look; jaws quite fixed, so that he cannot take food or medicine. A blister to be applied upon the head.

Eight, p.m. Much the same. Mustard cataplasms were applied to the feet.

23. Still in the same insensible state, having never moved the whole of the night; has had an involuntary evacuation from the bowels; pulse 120; surface of the body cold.

24. Ten, a.m. He has been much in the same state all night as yesterday; the nurse informs me that he moved himself a little about seven o'clock this morning; he is now sensible, although very deaf, and not able to speak; he put out his tongue when asked to do so, which has a black crust upon it, also sordes upon the teeth; the breath is very offensive; pupils still dilated; pulse 100, and feeble. He drank a little milk and water I gave to him, for the first time since the 21st. To take decoction of bark and port wine.

25. Passed a quiet night; is exceedingly feeble; pulse 100; feet very cold; evidently sinking fast.

26. Slept some time during the night; pulse scarcely perceptible; surface of body quite cold. Died this morning, ten, a.m.

Autopsy, Forty-eight Hours after Death.

I had great difficulty in removing the calvarium, the dura mater adhered so very firmly to it along the sagittal suture; the dura mater was much thickened and congested; there were several deposits of pus upon it over the longitudinal sinus. Upon cutting into it, several ounces of fluid escaped; the blood-vessels of the membranes and brain were very turgid; the ventricles contained a quantity of serum; the brain was very soft. I much regret we had not the opportunity of examining the chest and abdomen.

I was induced to relate the whole history of the above case, because it shows well the length of time that malaria may exist in the system before it develops itself into a true case of continued fever, and also from the opportunity having been afforded of examining the head after death. Chronic inflammation of the dura mater must have existed some time, which would account for the thickened and congested state of it, and also for the pain felt in the direction of the longitudinal sinus. We had sufficient pathological

appearances to account for the comatose state, but I am at a loss to know what was the cause of the cessation of coma and return of sensibility previous to death.

CASE II.—Miss —, aged eleven years, an intelligent, lively girl, has suffered for upwards of three weeks from cold chills, accompanied with great debility, loss of appetite, tongue white and moist; complains of a bitter taste in the mouth; pulse very feeble; a dull pain in the forehead; bowels costive; for several days together she will be very well, and her accustomed gaiety returns, she then eats voraciously. Purgatives were given, followed by quinine, without the least benefit; change of air was recommended, and she was taken into Leicestershire. On the second day after her arrival the chilliness came on again, but more severe; the extremities were very cold. This state continued for two hours, and was afterwards followed by great fever, and then profuse perspiration; her night-clothes were completely saturated with it. The weakness after this was very great; she was unable to stand for upwards of a fortnight, and was obliged to be carried about; but she never had another attack after this, and began to recover rapidly, taking good nourishing diet, and the decoction of bark daily.

PROVINCIAL MEDICAL JOURNAL

SATURDAY, AUGUST 26, 1843.

We know not whether it will be considered a cause for self-gratulation or otherwise, but the proceedings of those in authority, to whom the arrangements for the future government of the medical profession are committed, are so dilatory on the one hand, so hurried on the other, and always involved in so much mystery, and managed with such diplomatic secrecy, that we are scarcely aware whether the time even for remonstrance may not have passed away. To say that nothing has been done for the medical profession during the protracted session of Parliament just brought to a close, would be a very negative mode of characterising the proceedings either of her Majesty's government or of the *imperium in imperio*—the secret conclave which, with Machiavelian policy, moves the puppet strings of the Home-office. Truth compels us to allow that much has been done, not for, but in regard to, the medical profession. There has been much meddling in medical matters; and though neither the members of the profession, the community at large, nor the great councils of the nation, have been permitted to take part in the regulation of what so eminently belongs to them, the Home-office, and, what we presume we must call the medical officer, her Majesty's Secretary of State for the Home Department, and the self-constituted secretary of state for the medical department, have been in frequent and close communication.