Hospital some years ago, for violent hæmatemesis, and, some time subsequently, for equally severe hæmaturia. Ever since he could remember, he had had a number of vascular tumours in different parts of his body. Over the outer third of the right pectoral muscle was one of the size of a small walnut; above it were two smaller ones; over the right deltoid muscle, one of about the size of a filbert. Above the right clavicle was one larger than either of these. He had a small one in the dorsum of the cleft of the right thumb, and one over the first phalanx of the left ring finger; several small ones about the neck, and one above the left clavicle. On the inside of the left angle of the lip were one or two, and on the mucous membrane of the inside of the cheeks, deep back in the mouth, were two or three of about the size of a pea on either side. The left half of the tongue was irregularly swollen out by venous growths. On the glans penis were several such tumours, of about the size of those inside the mouth.

Curiously enough, although suffering from the effects of fistula *in ano*, when I last saw him in the hospital, under Mr. De Morgan's care, he had never had bleeding from the rectum, excepting twenty years ago, but appeared now to be subject to prolapsus of the anus. He was a good deal emaciated, and had a sallow flabby look about his face. Numerous minute varicose veins supplied the healthy blush on the cheeks; in these were several very minute vascular prominences.

These naevoid tumours varied considerably in appearance, and in their relation to the cutaneous structures. Some were entirely beneath the skin, under which they felt like rolling, round, encysted tumours, made but little prominence, and were rather appreciable to the sense of touch than to that of sight. Some, on the other hand, had that peculiar pale venous-blue hue of the subcutaneous naevi of children; whilst a third set formed rounded, thin, walled, dark, purple tumours. They could all be partially emptied of their blood by pressure, filling again when this was removed. None pulsated in the slightest degree.

Here, then, we have a multiple dissemination of non-malignant tumours, which, by their presence, in all probability, in the hollow viscera, had given rise to severe local effects, but yet, after existing for years, had caused none of that undermining of the general health so often observed in conjunction with a single cancerous tumour, to all appearances, comparatively to these venous growths, innocuous by its mere local effects.

[To be continued.]

CONSIDERATIONS RESPECTING THE OPERATION OF MALARIA ON THE HUMAN BODY.

By C. HANDFIELD JONES, M.B., F.R.S., Assistant-Physician to St. Mary's Hospital.

[Continued from page 670.]

6. There are numerous forms of disease which are capable of being produced by malaria besides those alluded to. Omitting any further mention of fevers, graduating, according to the intensity of the cause and the degree of predisposition, from intermittents into continued, we may notice dysentery and neuralgia as being as much modes of manifestation of malarious action as fevers. The almost constant supervention of dysentery on remittent fever is so well known that to adduce evidence would be merely tedious. Dr. McCulloch alludes to the not uncommon occurrence of a fit of neuralgia and a paroxysm of intermittent happening on alternate days, reminding us of the double tertian. The case has been mentioned to me by one of the members of this Society of an officer, aged 23, who, having returned from Africa in ill health, had an attack of ague on Friday and on the following Sunday. On the next Tuesday, the day for the paroxysm, he had instead severe neuralgia of both forearms, continuing from the evening to the next morning. After this, the ague paroxysms recurred again. Dr. Copland, whose world-wide experience

makes his testimony especially valuable, recognises malaria as one of the most efficient causes of neuralgia. The same authority sustains also the opinion that rheumatism may result from malarious influence. I believe I have witnessed the same occurrence myself. That *pestilential cholera* is a malarious disease, closely allied to the pernicious fevers, I am fully convinced, following the opinions of Bell, Dixon, Billing, and others. While cholera was epidemic in London in 1854, I had a severe attack of an aguish character; and the peculiar depression I then experienced continued for some weeks, until the disease passed away. I could only shake it off by going to Hampstead, where I immediately regained a degree of vigour, but lost it again as soon as I returned to Paddington. From that period to the present, I may say that aguish disorder and neuralgic affections have been prevalent to a degree that I never knew before. *Apoplectic* and *paralytic* affections are known to occur as the results of the poisonous influence we are considering; and I believe these morbid phenomena are of much significance in attempting to form an opinion respecting the general action of malaria. While I do not doubt that local determination of blood may have some effect in causing the impairment of the function of the nervous structure, yet I think there is much ground for believing that both nerves and nervous centres suffer primarily by the operation of malaria, sometimes in a way of irritation, but chiefly by enfeebling and debility. Slighter cases show this even more certainly than severer ones. In the *Lancet* for October 20th, I have recorded two cases which appeared to be ordinary neuralgic affections of the upper extremities, peculiar only in this, that the motor nerves of the muscles were involved to a considerable extent, and not only the sensory. Here there could be no question of any congestion of the encephalon. A naval surgeon, a robust strong man, engaged at the Crimea, and especially in the Kertch expedition, got diarrhoea, and, soon after, paralysis of one arm came on, which lasted about a day, and then disappeared. An assistant-surgeon, who had been at Balaklava since the commencement of the war, was seized there with fever, and remained there till convalescent. He was invalided to return home, and, on reaching Constantinople, went on shore to make a few purchases. He over-fatigued himself, and, on his return on board, was seized with paralysis of all his extremities, the intellect remaining perfectly clear. He arrived in England in this perfectly helpless state, unable to feed himself, or do anything for himself. In about two or three months, he recovered perfectly. The cases of two members of our profession have been mentioned to me, who, after suffering remittent fever in the Crimea, became to a great degree idiotic. One of them imagined he had two bodies, and, if any one sat near him, was fidgeted lest his second body should not have room enough. The other thought he had two heads. Another gentleman, who suffered also from fever in the Crimea, and was very much prostrated both bodily and mentally when he returned home invalided, regained his bodily health very well after some months, but was far from having the same mental energy that he used; he could not apply himself with attention to anything, and could not use the same muscular exertion as before. In these cases, one cannot but recognise a special state of cerebral debility, or impairment of its functional power, quite apart from all suspicion of congestion. I must adduce the following instances from Dr. McCulloch, on account of the great importance of the point. In a situation exposed to malaria, and never free from its diseases, while the other members of a large family had the intermittent under different but ordinary forms, two were attacked with paralytic affections suddenly; the one in the leg and thigh; the other in the arm. I viewed these palsies as modes of the apoplexy of intermittent; and the judgment was confirmed by the almost spontaneous disappearance of the disease in both, and the immediate establishment of the regular quotidian. (Vol. i, p. 292.) The apoplectic state is not limited either to the first attack or to the acuter forms of these fevers, although in Italy that appears to be the most

common mode of its occurrence; as I have seen in this country, a perfect apoplexy, to the eye, in all its characters, sufficient to deceive both the attending practitioner and friends, lasting for eight hours, and occurring in a chronic tertian of many years standing, as a substitute for the cold fit. (Vol. i, p. 287.) A case has been mentioned to me in which a person in the first paroxysm of ague had an attack of convulsions in the place of the cold stage; in the next, the cold stage occurred as normally.

Case xli related by M. Bailly seems very much to the point. A. G., of Milan, aged 35, of weak, lymphatic constitution. On July 5th, he entered a grotto, where he experienced a general sense of cold, which he attempted to shake off by drinking seven or eight glasses of wine; but could not, however, warm himself. He then felt a great weakness, which was the predominant symptom during the six days previous to his entering the hospital. His state had so little of a decided febrile character, that, according to his account, the medical man could not tell him if he had had the fever. He had a sense of general uneasiness; took an emetic and a purgative, and returned to his work; but the general state of disease and uneasiness increasing, as likewise the weakness, on July 11th, in the morning, he came to the hospital on foot, supported by a man on each side. Being arrived in the first ward, where I first saw him, he seated himself upon a form, and appeared to feel ill. He let himself fall down upon the right side; but the expression of his countenance was not that of a person fainting. There was something in the motions of his head, of his eyes, resembling those symptoms produced by drunkenness, and not that want of power occasioned by the cessation of the motions of the heart. He was merely supported, and recovered; and he was then enabled to ascend more than thirty steps, in order to reach the clinical ward. When in bed, the following was his condition: pulse frequent, weak; temperature of thighs, legs, hands, and arms, cold; tongue moist, and not red. He was able to give a history of his previous state; nevertheless, he begged the physician to question his companion, who accompanied him to the hospital; for, although he had neither delirium, nor coma, nor syncope, he appeared so confused, so little master of his ideas, that he declined to give any account of it. He had subsequently delirium, agitation, and drowsiness, and died the evening of the following day. There was much bloody serum in the cranium; the arachnoid was minutely injected; the vessels ramifying over the convolutions were engorged; the cortical substance of the brain was rather pale, and its mass of soft consistence. There can be no question that, in this case, the action of the malaria for six days was simply to weaken and impair nervous power.

For the following very interesting and instructive case I am indebted to Mr. Stewart. A general officer, aged 60, who had served in the Peninsular war, and at Waterloo, and subsequently in Portugal, had had frequent attacks of intermittent fever, and for twenty years had suffered from spasmodic asthma. I was sent for in a hurry to see him last May, and found, on my arrival, that he had lost all power over the left side, and had very little sensation. The muscles of the face on the affected side were all relaxed, while those on the opposite side were rigid and drawn. Tongue protruded towards the opposite side; speech imperfect; urine dribbling away; bowels opened three hours before the attack. Complained of nervous pains in the head; had considerably difficulty of breathing; retained his consciousness; and, but for the difficulty of speaking, would have answered my questions correctly. Pulse 100, weak, and small; skin hot and dry; thirsty; tongue thickly coated; pupil on affected side contracted; on the right, sensible to light. Upon inquiry, I found that he had had similar attacks before (for which he had been bled and mercurialised), as well as asthma and ague. This information led me to believe that the prostration of the nervous power might be dependent upon some miasmatic poison, particularly as he had recently been staying near Woolwich. I therefore gave him six grains of quinine, and some warm drink.

About a quarter of an hour afterwards, he had a very slight rigor, followed quickly by heat, and almost immediately by profuse perspirations. During the following week, he had every alternate day an ague fit, in which the hemiplegia recurred, but more slight. The rapid disappearance of the paralysis, and the non-impairment of the intellect, in this case, make it, I think, certain that it was not dependent on congestion.

The error of depleting and mercurialising such patients, which was committed in this case by the highest authorities, is most strongly pointed out by Dr. McCulloch. He states that such practice may produce "a modified fatuity, or a diminution of the intellectual powers, or a condition little short of absolute idiotism." One of the most striking and interesting forms of palsy which malaria is capable of producing is that of syncope. This seems scarcely known even to men of great experience in this country; and yet it certainly does occur, and it is of the last importance to be aware of it. I have seen a man lie for more than twenty-four hours, unable to raise himself, and in considerable danger of dying from frequently recurring failure of the heart's action. After he had taken twenty grains of quinine, the syncope did not return. He had previously suffered from ague and neuralgia, and had a few days before visited a malarious district. M. Trousseau alludes (*Thérapeutique*, vol ii, p. 383) to two cases of this kind. In the first, a man, aged 35, of good constitution, felt some lipothymic symptoms, which soon ceased, and recurred the next day at the same hour. No preventive measures were taken, and in the third attack the man dies. No adequate cause for the fatal event can be found at the *post mortem*. A young lady, aged 19, is affected in the same way; but, after the second attack, bark is administered rapidly in full doses, and the patient is straightway cured. Torti relates a case of syncope tertian, which appeared almost utterly desperate, but yet, after the last rites of the Romish Church had been administered, the patient was snatched as if from the jaws of the grave by the use of bark. Cardiac paralysis was no doubt the cause of death in some of the cases at Walcheren, of whom Sir G. Blane says, "Under the influence of the endemial air, recoveries were slow and imperfect, and relapses very frequent, not only among the few who were discharged, but among the convalescents at the hospital, some of whom, when apparently in a fair way of doing well, would unaccountably drop down dead." Slighter degrees of the same affection are, I believe, far from uncommon as sequelæ of the Crimean fevers. In a case of remittent fever under my own care, the patient was attacked one night by an alarming sensation referred to the heart, attended with faintness and a failing pulse. He thought himself dying, and said it seemed as if life was ebbing from him gradually. After he had become convalescent, this cardiac neuralgia continued for some time to recur about every second day, and was especially induced by any painful emotion or agitation. I have experienced the same sensation to some extent in my own person, and noticed its alternation with neuralgia in other parts. While it exists, it has the effect of causing the exertion of walking to produce a sense of weariness and fatigue about the heart before any is felt in the legs. I shall have to refer to these cases again; but I will now only observe here, that a good deal of evidence seems to have been adduced to prove the truth of Dr. McCulloch's statement, that the action of malaria on the nervous system is, of and by itself, essentially debilitating and prostrating. To say anything of engorgements of the liver and spleen, and of dropsy, as results of malarious disease, is unnecessary.

The following instance of the production of gastric disturbance by malaria is very striking and interesting. It is mentioned in an excellent paper by Mr. Hyslop on the Medical Topography of Mohamneh and Bussorah, two places in the vicinity of the Persian Gulf. They are both situated on creeks, on a low alluvial soil, and surrounded with swamps. Fevers are very prevalent; they are common during summer, but more general and fatal in autumn.

"Intermissions are seldom seen, and remissions even are rarely obtained. Organic visceral complications are almost universal, the liver and spleen being chiefly affected; and not unfrequently the disease assumes a malignant typhoid type. Should the patient recover from the first attack of the fever, it still lingers upon him for months, or even years, recurring at the new or full moon with the greatest regularity. In 1849 and 1850, a considerable party of Europeans was located at Mohamreh, where they were encamped on a dry plain, about a mile to the north of the town, just outside the gardens. They suffered severely from fever, which proved very fatal amongst the escort of Turkish troops; but all were affected with a disagreeable complaint, to which they could assign no cause, and which no precautions could prevent. This was a constant vomiting after meals, which affected not only the party residing there, but also their visitors who remained with them for a day or two. It at length became so general and so distressing, that they gave up eating breakfast, and all became emaciated to a great degree. That this was not caused by anything deleterious in the diet, was proved by the fact that two parties who had separate messes suffered equally, and that many of the men in one of the H.C.'s vessels which was lying off Mohamreh suffered in the same way." The editor adds a note, to state that the Bombay Fusiliers were similarly affected in the Punjab. In these cases, the action of the malaria seems to have told on the nerves of the stomach producing a morbid amount of irritability. This was a primary neurosis, or neuralgia. Is there not very much similarity between this and some of our gastrodynias?

Dr. Morehead, in an excellent report on *Pneumonia*, as observed in the Hospital at Bombay, has noticed the occurrence of this affection as complicating intermittent or remittent fever. His remarks relative to the effect of treatment seem to me most significant as to the real cause of the lung disease. He says: "From five to eight grains of quinine, with from one-tenth to one-quarter grain of tartar emetic, given at intervals of two or three hours for five or six doses, will in general suffice to check and then stop the febrile recurrences. When this effect on the febrile symptoms has been produced, it will generally be found that improvement in the pneumonia will at once commence; and, in a large majority of cases, if the recurrence of the febrile state be prevented for some days, the inflammation of the lung will be speedily removed." He adds in a note: "Indeed, I am not acquainted with anything more striking and satisfactory in the whole range of rational therapeutics than the progressive but speedy restoration of an hepatised lung, coexisting with fever of remittent type, when the exacerbations have been controlled by the adequate use of quinine. It is true that small local detractions of blood, the application of small blisters, and the use of quarter-grain doses of tartar emetic, have been had recourse to at the same time; but it is quite impossible for any one familiar with disease, and the actions of these means in these degrees, to attribute the benefit chiefly to them, and not to the circumstance of the prevention of the febrile exacerbation by the actions of the quinine." The pneumonia seems in these cases, which Dr. Morehead distinguishes from ordinary or "primary" pneumonia, to be the result of that action of malaria to be presently considered, which produces local determination of blood, or congestions. The number of the febrile cases was 27, that of the primary 76, making a total of 103 in the course of six years.

Abnormal increase of the secretion of various glands may, I believe, be stated unhesitatingly as one of the results of malaria. Dr. Copland describes a variety of jaundice as depending upon excessive production of bile. It is most frequent in miasmatic and tropical countries, but also occurs in the temperate. I have known it precede remittent fever, or rather become converted into it as the patient was removed from the malarious locality. According to the authority just cited, it is connected with biliary remittent fever in temperate climates and in European constitutions, and "is most appropriately treated by the means most ser-

viceable for the constitutional affection; but it sometimes continues or returns after the fever has disappeared." Fluxes from the lachrymal and salivary glands are common attendants upon neuralgia of the nerves supplying them and the adjacent parts. Torti relates a case of pernicious tertian fever, in which (he himself being the sufferer) an extraordinary most profuse sweat broke out, and increased along with the fever. After a violent shock of neuralgic pain in the thighs, "as if they had been suddenly cut across," he describes himself "colliquari ex continuâ, et semper aductâ sudoris, etiam malè tepentis, profusione." Frequently recurring perspirations, in a less degree, are exceedingly common phenomena in obscure aguish disorder. Dr. McCulloch mentions an instance of intermitting diabetes connected with intermitting fever, the commencement of the saccharine secretion never differing from what had been the former hour of the attack of the intermitting, or proceeding beyond its ancient limit, viz., six hours.

[To be continued.]

ON FÆCAL FERMENTATION AS A SOURCE OF DISEASE.

By C. H. F. ROUTH, M.D., Physician to the St. Pancras Royal General Dispensary; Assistant-Physician to the Samaritan Hospital for Women and Children; Vice-President of the Medical Society of London; etc.

[Read before the Medical Society of London, February 23rd, 1856.]

PART I (concluded).

SINCE writing the former paper, my attention has been directed by Dr. Richardson to a report by Dr. Rennie, in a parliamentary report on *Further Correspondence on the subject of Convict Discipline and Transportation*, of the results obtained by overfeeding convicts in Western Australia. These men receive upon an average from 7 lb. 8 oz. to 7 lb. 14 oz. of food daily, from 59 to 67 oz. of which were solid food. This gross amount of food resulted in the production of a disease which affected the individual in various ways, sometimes bringing on dyspepsia, dysentery, severe constipation, or other analogous bowel complaints; sometimes a severe kind of ophthalmia; sometimes a cutaneous eruption. These diseases yielded to powerful purgatives and low diet. In one case (that of a man named Nain), the patient took 5 purgative injections, 480 grs. of compound jalap, 8 oz. of Epsom salts, 32 other purgative pills, 1½ oz. castor oil, 5 drops of croton oil, 8 grs. of scammony, and 6 grs. of gamboge, before the cure was effected. During this period, he voided 30 lbs. of feculent matter in a state of decomposition.

The daily average number of prisoners was 504; of sick, 42. The total number of sick in one year was 2,590; of whom 959 had diseases of the digestive organs; 598, diseases of the eyes; and 633, diseases of skin, including ulcers and abscesses. These diseases, as showing their origin from the same cause, were cured by the same mode of treatment and low diet, and were frequently metastatic one to another.

But what I wish to call attention to, is the fermentative character of the disease which was set up in connexion with the putrid character of the evacuations passed. Dr. Rennie says: "With respect to the peculiar nature of the blood disease, I stated that, from finding on a microscopic examination of certain forms of skin-diseases, a low form of vegetation, resembling the yeast plant (one of the most primitive illustrations of organic life), there were rational grounds for supposing that the large and badly constituted diet might lead to fermentation and the development of this low form of vegetation, which, after becoming absorbed and circulating for a time in the blood, ultimately might become expelled in the form of local disease. As a proof of the fermentative process going on in the intestinal canal, I mentioned that one of the most common appearances which the evacuations presented in the early stages of dysentery was that of copious, frothy, watery stools in a high state of