There is good reason to believe that the prophylactic use of antitetanic serum will do much more to ward off the attack of this most terribly fatal malady in wounds infected with soil, mud and stable litter, than it can possibly accomplish as a curative agent once the disease becomes evident.

It is more difficult to assess the value of vaccines and serums in other grave surgical wound affections, but there can be no doubt that the timely application of the rigorous measures laid down by Lister, carried out conscientiously and thoroughly with a due appreciation of the object in view and the principles involved, will do more to save life than haphazard, half-hearted and ineffectual aseptic measures.

THE BORDERLAND OF DISEASE.

BY

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PHYSICIAN TO THE DREADNOUGHT AND ROYAL WATERLOO HOSPITALS.

(Continued from page 874.)

II.

PASSING on from the circulatory and pulmonary systems, which were referred to in the notes of last week, we find similar evidence elsewhere of the importance attaching to early and often obscure indications of disturbed health, and nowhere more frequently than in the gastrointestinal system, where borderland cases are met with continually. There is, perhaps, no such land of surprises anywhere in the territory of disease as the abdomen, and none in which functional manifestations are so often the forerunners of established organic mischief. Dyspeptic troubles are among the most frequent infirmities of humanity. Many people suffer throughout the greater part of a lifetime from miseries that excite little sympathy because they carry with them apparently no danger, but in a multitude of cases they entail an amount of physical distress and mental depression that robs existence of all its happiness, envelops its achievements and successes in a gloom of personal discomfort, and makes it a burden almost more than can be borne. And yet how much might be done to mitigate this burden of wretchedness by a little more careful consideration of questions of etiology and treatment when the subjective symptoms are still "a voice crying in the wilderness"! Many a gastric or duodenal ulcer might be escaped if more active measures were adopted to correct the early indications of a disturbed digestion; calculi in the gall bladder or urinary tract might be prevented if the preliminary warnings were interpreted in the full light of their possibilities; rheumatoid changes in the joints, degenerative processes in the mucous membrane of the intestines, a whole series of vasomotor disturbances, and a final intractable neurasthenia might be guarded against by proper attention to the hygiene of the mouth, a suitable dietetic regimen, and a wise adaptation of energy output to the vital reserves of the individual. Finally, many of the tragedies connected with what we nowadays recognize as an "acute abdomen" might be of rarer occasion if the prodromal warnings were more thoroughly understood and more carefully dealt with. The following epitomized cases are both illustrative and instructive.

A man of 45 years of age, occupied in scientific research, and living a very strenuous life, came to see me in 1910 complaining of indigestion of many years' standing, which was rapidly ruining his peace both of mind and body, and was becoming worse in spite of all he had done for its alleviation. In outline his symptoms were heartburn, epigastric pain coming on three or four hours after food and at once relieved by sodium bicarbonate or a meal, obstinate constipation, flatulent distension, sleeplessness, irritability, restlessness, and loss of weight. On examination he was of a sallow complexion and spare habit of body. He had increased reflexes and all the other stigmata of a pronounced neurasthenia, a coated tongue, and a mouthful of gold-capped teeth with pus exuding from below the crowns of several of them, marked tenderness and rectus muscle resistance to the right of the epigastrium, a stomach dilated almost to the level of the umbilicus, a gurgling and tender colon, and a loose

right kidney which, though smooth, gave to the examining hand the impression of being enlarged. His heart and lungs were normal and there was no evidence of organic disease in his nervous system. The urine contained indican but was free from albumin or sugar. On one or two occasions he had induced active sickness in the hope of giving himself relief, but he had never experienced spontaneous vomiting, nor had he suffered either from haematemesis or melaena. His habits of life were moderate, but uncertain and badly regulated in regard both to food, work and exercise. His condition had been variously diagnosed as dyspepsia, dilated stomach, colitis, and eventually as duodenal ulcer, and he had been advised recently that nothing short of an abdominal operation was likely to do him any good. On inquiry it transpired that he worked very hard, often well into the early hours of the morning; that his life was not only strenuous but full of worrying anxieties and unrelieved by any periods of adequate rest; that he kept himself going by copious libations of tea, and that his daily diet consisted very largely of sweets and carbohydrates. Under the influence of a diet plan from which sweets, tea, and uncooked vegetables were entirely excluded, and carbohydrates rigidly cut down to small amounts; of a course of massage especially directed to the abdomen, and a period of three weeks' complete rest from work, followed by a lazy holiday; and of a drug combination after meals of valerian, carbolic acid, strychnine and codeine, together with 1 grain of calomel twice a week and half an ounce of liquid paraffin every night at bedtime, he achieved a marked improvement, regained his proper habit of sleep, put on weight, and got back again some of the cheerful equanimity which had been characteristic of him in the earlier years of his life. Over a period of fully two years he required to be kept under occasional observation, and derived help from one kind of tonic or another, according to the varying indications of his condition, but for upwards of eighteen months now he has been entirely free from discomfort, and, having arrived at a proper realization of his limitations, has been able so to regulate his daily habits as to keep the balance even and get through, with comfort and success, a large amount of the scientific work to which his life is devoted. It may be of interest to mention that of all the tonic combinations ordered for this patient, that which suited him best, and to which from time to time he still has recourse, was a mixture of papain, reduced iron, salol, nux vomica, and rhubarb, taken in the form of a capsule after meals. The evidence in this case is convincing that the years of functional disturbance threatened to culminate in peptic ulceration, and that all the risk of serious organic disease and probable surgical interference might probably have been avoided if in the earlier days of his ill health the borderland symptoms, which distinctively pointed the way to the rocks ahead, had directed the dietetic, medicinal, and hygienic treatment along lines of greater care and more persistent attention to detail. He was regarded as a sound man who was overworked and in consequence dyspeptic, and one who required no greater attention than an occasional holiday, together with a few doses of an ordinary sodium bicarbonate and gentian mixture. It is impossible to say how many cases of duodenal or gastric ulcer might be prevented if the initial borderland manifestations were taken more seriously to heart. My personal experience leads me to think their number would be very considerable, and that, under the influence of suitable and early medical methods, a largely diminished number of cases would drift to the operating table of the surgeon.

Probably there are no more painful episodes in the whole category of disease than those associated with the passage of a stone. The most frequent situations of calculi are the urinary and biliary tracts, and in both much may be done, by a timely recognition of the prodromal symptoms indicative of a tendency to their occurrence, to prevent their formation, or to limit their harmful effects once they have become an established fact. The following cases are well-marked examples of this type of disorder.

A lady of 68 years of age, stout in build, inactive in habits, and of gouty antecedents, had enjoyed good health until about 48 years of age, when she entered upon the menopause. From the time her menstrual function began to be irregular she suffered from disturbance of digestion, and became subject to occasional attacks

of sickness, which on several occasions were followed by a mild form of jaundice. The bowels had been irregular during her whole life, but they now became obstinately constipated, and required powerful aperients to keep them in order. Her health otherwise was fairly good, but the repeated biliary attacks gave rise to a considerable degree of mental depression, which often made life miserable both for her and her family. For about fourteen or fifteen years her health continued unsatisfactory, but she never became so acutely ill as to necessitate continuous medical care. Suddenly one night, shortly after getting to bed, she was waked by agonizing pain in the region of the gall bladder, soon followed by active sickness, and not relieved until she had half a grain of morphine injected subcutaneously. The attack was followed by very definite jaundice accompanied by a bile-laden urine and clay-coloured sticky stools, and was typical of gall colic, most probably due to the passage of a calculus. It was succeeded by many of similar character, some more severe than others. She saw an eminent surgeon, who said there was no doubt her gall bladder contained stones and held out to her no prospect of relief except by having them removed. He further warned her that the risks of malignant developments were not small. She had an unreasonable dread of an operation, and made up her mind to make the best of things so long as the acuteness of the pain, when it came on, could be relieved by morphine. She was put upon a careful dietary, was induced to do a little more in the way of open-air exercise, and was given occasional doses of blue pill, leptandrin, and rhubarb, with periodical short courses of ammonium chloride, taraxacum, sodium salicylate, and gentian. In addition, she was asked to take one ounce of pure olive oil every night on going to bed. Under this plan of treatment her attacks became less frequent and less severe, until eventually, for the four or five last years of her life, she was completely and permanently free from discomfort. She ultimately died of apoplexy. A case such as this strongly suggests that in the earlier years of her discomfort the condition was in all probability one of inspissated bile, and that more active methods of treatment and of dietetic restriction would have gone far to prevent the actual formation of stones. The early attacks were regarded too lightly, and ascribed to mere biliousness which, in its turn, was believed to be due to climacteric disturbance. No attempt was made to modify her food and her habits of life to the requirements of her condition, and so she slowly drifted into years of broken health, much of which might have been avoided if the early danger signals had been heeded. There is yet another practical point emerging from this case that is worth emphasizing, and that is the value of olive oil in the treatment of gall colic. I am fully aware that it is brushed aside by surgeons and others as a mere faith cure, and I am unable to offer any explanation of the method by which it accomplishes its purpose, but I do know from repeated experiences that in a considerable number of cases the complete relief from acute attacks of pain, together with the accompanying improvement in physical well-being and mental comfort, has been quite remarkable. I do not for one moment suggest that the removal of gall stones by operative methods is not the clearly indicated method of treatment in most instances, but there occur cases, like the one I have just related, when operation is refused, or is undesirable for one reason or another, and in such the value of olive oil should never be forgotten. Its administration can do no harm, and will sometimes yield such brilliant results as to convert a life of misery and gloom into one of contentment and comfort.

Let me now briefly relate a very interesting and instructive case of urinary calculus. A gentleman of 66 years of age had been under occasional observation for several years. In early manhood he had lived freely as regards both food and drink, but for the last eighteen or twenty years of his life he had become, as a result of religious awakening, a practical teetotaler, who devoted the whole of his time to good works among the poor and practised for himself habits of almost ascetic simplicity. He was an active man, of spare habit of body, and cheerful in disposition, who had never suffered from serious illness. His complexion was pale, and from time to time his digestion gave him passing discomfort. He had no

evidence of organic disease, and the minor ailments of which he periodically complained seemed fully explained by the busy and self-forgetful life he led. His heart was perfectly normal, but he presented signs of a moderate arterio-sclerosis. The one fact about him that arrested attention was a slight and intermittent albuminuria. The urine was often without fault, and when albumin was found it never amounted to more than a faint cloud, which seemed to synchronize with a greater than usual degree of anaemia. He had no frequency of micturition, suffered no pain in the lumbar region or down the course of either ureter, and the urine had never been discoloured. Suddenly, about a year ago, while living quietly in the country, he was alarmed to find that the water he passed one forenoon was bright red. He still had no pain, but the doctor who saw him in the course of the day found that the redness was due to blood, and that there was slight tenderness on deep pressure over the right kidney, with a noticeable retraction of the corresponding testicle. Under the influence of rest and care the urine soon became normal, and remained so for several weeks. Again, this time apparently as the result of some slight and unusual exertion, blood declared itself, and was associated with a definite subjective sensation of discomfort in the right kidney region. He came to town as soon as he was well enough to travel and was at once x-rayed, when one large and a second smaller calculus were clearly revealed in the body of the right kidney. When they came to be removed, the large stone was found so closely adherent to the kidney tissue in which it had grown that it offered some difficulty in extraction. The history of the case subsequent to operation was uneventful except for one or two curious hysterical attacks that seemed to be accounted for by the mental disturbance of a passing worry, but were accompanied, on each occurrence, by a very marked temporary diminution in the amount of urine excreted. Before he left the nursing home his urine was practically normal, the operation wound had healed throughout its whole length, and his general condition, except for a certain amount of anaemia and feebleness, was as good as could be expected. The first two occasions on which he drove out he was comfortable and happy, but after his third drive he complained of pain in the right lumbar region, and on returning home passed a small quantity of blood. He was at once put to bed and carefully looked after, but he rapidly developed almost complete suppression of urine, and died very shortly from uraemic coma. Throughout all the years this gentleman came to see me his symptoms never once aroused the faintest suspicion of the existence of a calculus, but in the light of subsequent developments it was clear that the mild albuminuria was all the time a danger signal which was misunderstood. The borderland country had not been explored with sufficient care, and though the albuminuria seemed adequately explained by the anaemia and arterio-sclerosis which undoubtedly existed, an initial recourse to examination by means of the Roentgen rays would have declared the presence of the true cause of the albumin, and would have justified the removal of the calculus at a time when it must have been smaller, and when it might have been less tenaciously anchored to the tissues in which it was embedded. Another feature of this unfortunate case that, in the light of subsequent events, raises a question of borderland importance was the occurrence of nerve-storms, accompanied by a passing diminution of urinary activity which I have related. Was their true meaning not a forecast of the ultimate irremediable cessation of kidney activity, and might the fatal issue not have been escaped by keeping this man completely in bed for a much longer period of time in order to allow the balance of his nervous mechanism to become more stable before it was exposed to the demands of extra strain? No one can tell, but the case conveyed to my mind two lessons I cannot forget: First, that in every patient past middle life who manifests a persistent albuminuria, however slight, an x-ray examination should never be omitted; and, secondly, that obscure nervous manifestations occurring during convalescence from a kidney operation call for prolonged rest in bed, and justify a guarded prognosis as regards the ultimate stability of renal function.

The most familiar example I can give of the combination of rheumatoid, colonic, and neurasthenic troubles which

constantly come within the purview of every physician is that met with in women at the time of the menopause. And, in passing, I cannot refrain from expressing a conviction that in the history of man there comes—a little later in his life than in that of the woman—a re-adaptation of tissues and secretions to the necessities of a more advanced stage of existence, which produces a very similar passing disturbance of his functional health. Between 57 and 63 he goes through a climacteric experience that is often wholly misunderstood, and consequently unsuitably treated. In both sexes the climax of life is a true borderland beyond which lies one of two alternatives, either broken health with multiplying and increasing infirmities, or a new lease of life on a plane of lessened activities, modified ambitions, and a chastened philosophy. We need only look at the mortality of the fifth decade of life, and appeal to our own experience of the frequency of breakdown in health that occurs about that period to be convinced that in both sexes Nature then admonishes all of us to take stock of our health and strike a balance so that the future may be wisely ordained with a view to the proper adjustment, under new conditions, of expenditure to income.

A concrete example will provide a picture of the ordinary climacteric instability which characterizes this uncertain time in the life of every woman and, making due allowance for sexual differences, of some men. A lady of 52 years of age, who was the mother of four children and had enjoyed hitherto more than average good health, came complaining of recent discomfort from headaches, impaired digestion, broken sleep at night, a constant sense of weariness, irritable bowels, flying muscular pains, and an unpleasant experience of mental depression, irritability of temper, and failure of memory. She was a stout, florid, gouty type of woman, who looked as if there could not be much amiss with her health, and who proved, on examination, to have no evidence of serious disease. The prominent features of her condition were irregularity of menstruation for about fifteen months; flushings, polyuria, vertigo, sweatings, dermographia, palpitations, and other minor evidences of vasomotor instability; occipital headaches, marked increase of the knee-jerks with accompanying absence of the plantar reflexes, muscular tremors, impairment of memory, recurring attacks of acute mental depression, restlessness by day and often by night, introspective miseries, and a general unrest of her nervous system; abdominal distension with gripping pains, diarrhoea, alternating with intractable constipation, stools that were at one time scybalous, at another liquid, often abnormally pale in colour, and from time to time accompanied by quantities of membranous mucus, and digestive discomforts that compelled her to seek relief by avoiding one article after another in her daily dietary until she was in a perfect maze of confusion as to what she should and what she should not eat; pains which she described as rheumatic and which she referred to the tendinous insertions of her muscles and to the terminal joints of her hands and feet, those of her fingers, especially on the right hand, being obviously the seat of early Heberden thickening; and periodic attacks of aphonia, accompanied by shortness of breath on exertion, and a choking sensation in her throat, for which no satisfactory explanation could be found on physical examination. This bewildering riot of symptoms is peculiarly significant of fundamental changes upsetting the balance of health, and is illustrative, more than any other example that could be quoted, of the disturbance of equipoise which accompanies the passage of most of us through the climacteric borderland. The problem which presents itself for solution in all such cases constitutes an invitation for a reply to the obvious question, What maintains the equipoise of health? No completely satisfying answer can, in the present state of physiological achievement, be given to this interrogatory. But, though our knowledge of the internal secretions is still a mere glimmering in the early dawn of pioneer discovery, enough is known to justify the hypothesis that in ways which are still obscure some break in their normal inter-relationships may prove the keynote to a solution of climacteric and many other clinical puzzles which, though without organic explanation, are inimical to comfort and may even mark the threshold of permanently broken health.

When we come to consider the question of "acute abdomen" we are faced with a subject of vast extent and importance. I have interposed it in the currency of this sketch because there are so many examples of the condition which subsequent reflection makes plain to us might have been escaped or prevented if only the initial warnings had conveyed a sufficient sense of the possible dangers they betokened. I need not enter into a discussion of the various conditions upon which the acute abdomen depends. I must content myself with the choice of one cause of this emergency, and the selection recommends itself to me for two reasons: First, because it illustrates graphically in this sphere of disease the value of borderland evidence; and secondly, because the abdominal flare-up is directly and entirely due to medical—as distinguished from surgical—disturbance of the organism.

I do not know whether the accidental circumstances of my particular practice are accountable for the fact that nowadays I see a very much larger number of cases of glycosuria than formerly, or whether this particular form of metabolic disturbance is increasing in prevalence among the people of this country. I rather suspect the latter to be the true explanation, because I am particularly struck with the increasing numbers of such cases that pass through my hands not only in my consulting-room but also in the wards of both the hospitals to which I am attached. If this apparent increase is statistically real, one wonders why it is so, and whether it is yet another of the penalties exacted by an advancing civilization. We are not built so that we can live beyond a certain limited span of years, and all the satisfaction we gain by what we are pleased to call the conquest of one disease after another is relentlessly counterbalanced by increased incidence, and consequent mortality, in some other directions. It seems not unlikely that the greater diversity of food which, within recent years, has become accessible to all grades of society, may with some degree of reasonable likelihood be held responsible for a widespread increase of instability in metabolic integrity. Foreign fruits, chilled meat in ever-growing abundance and variety, preserved foods of every description, all at such prices as to bring them within the reach of a very large section of our population, and in addition the fashionable folly that sets the seal of approval on the provision of all sorts of edible delicacies that are out of season, may account for subtle changes taking place in the human economy, and explain variations in type of disease as well as increased prevalence in some and corresponding diminution in other directions of many disorders. Be this as it may, the point about glycosuria at which I wish, for the purposes of this paper, to arrive, is that one of its less common and therefore less recognized, but still highly important possibilities, is the occurrence as a terminal event of acute abdominal symptoms. My interest in the condition was first excited some years ago by the sudden death of a lady I knew well from what was, at the time, supposed to be some form of acute intestinal obstruction. Her illness was very short and her death came with almost tragic suddenness. No autopsy was allowed, and therefore the provisional diagnosis remains to this day doubtful. It was always significant to me that this lady was known to have had sugar in her urine for many years, and that she belonged to a family of which two members at least had died of true diabetes in early life. The whole story of her last illness and the manner of her death always made me feel that the clinical evidence did not fit in quite conclusively with the theory of an obstructed gut as the explanation. Many years afterwards my memory was carried back to the record of this lady's story by the occurrence of the following case. A lady of 64 years of age came to see me first in 1908 on account of an intolerable and intractable pruritus, which she ascribed to gout. The outcome of an examination into her state of health revealed a definite amount of arterio-sclerosis, with consequent accentuation of the second aortic sound and some increase in arterial tension, together with a urinary secretion of from 90 to 100 ounces daily, containing sugar of varying amount, but averaging between 2 per cent. and 5 per cent. The pruritus was both pudendal and anal, and had been a source of trouble off and on for years. She had no other evidence of organic disease, but gave a record in earlier life of several attacks of abdominal

pain, which seemed not unlikely to have been caused by biliary colic. She was a ruddy, well-nourished woman of active habits and cheery disposition, but one to whom dietetic restrictions were such a serious punishment that complete obedience to a hard-and-fast rule of life was impossible to enforce. Under such guidance as she would submit to, her life was kept fairly comfortable for two years; the amount of sugar did not increase, the quantity of urinary secretion came down to an average of from 60 to 70 ounces per diem, and the pruritus entirely disappeared. Suddenly one night she was waked from sleep with acute pain in the abdomen, followed after two or three hours by active sickness and pyrexia. When I saw her early the following morning she was restless, flushed, and complained of constant pain, which she referred entirely to the epigastric and right hypochondriac regions, and which she declared she recognized as a return of one of the old attacks of years ago. Her pulse was 120, small, thready, and abdominal; her temperature registered 102.5°, and her respirations, though 40, failed to completely satisfy her requirements for air. Her heart presented no new physical signs; her lungs were normal to percussion and auscultation; the abdomen was moderately distended, and over the whole area between the umbilical level and the short ribs there was acute tenderness and increased resistance to touch, but no definite swelling. The bowels had moved freely twice during the previous twenty-four hours, and for twelve hours she had passed no water. Later in the day a specimen was obtained, and was found to contain 28 grains of sugar to the ounce, with a distinct ferric reaction indicative of the presence of diacetic acid. By evening she was becoming somewhat incoherent and drowsy, and though complaining of less abdominal discomfort, was plaintively calling out for open windows that she might have more air to breathe. Respirations, pulse, and temperature were much the same as in the morning. By 10 o'clock she was completely comatose, and so she remained until she died about 5 o'clock the following morning. Obviously there was no question of bowel obstruction in this case, and the explanation of her terminal illness seemed to be an acute pancreatitis, probably of the haemorrhagic type. The symptoms presented by this patient entirely coincided with those related to me by the doctor who attended my lady friend years before, and my suspicions that, in her case, as in this one, though the symptoms bore many resemblances to those that would be produced by an acute obstruction somewhere in the intestinal tract, the more likely cause of the "acute abdomen" from which she died was the preceding glycosuria with a sudden accession of abdominal mischief, probably of pancreatic origin. The point to remember is the possibility of such an occurrence in the course of ordinary glycosuria, because though we are all alive to the risk of coma in such cases, we are not equally familiar with the fact illustrated by these cases, that this comatose state may be ushered in by abdominal symptoms difficult, or even impossible, to distinguish from a like train of events dependent upon entirely different conditions. No opinion should ever be expressed on the etiology of an "acute abdomen" until it has been ascertained whether the urine does or does not contain sugar, because, as we all know, such a condition may have existed for years without attracting the attention of the patient, and without, therefore, having afforded any chance of being discovered.

The subject of borderland illnesses is extensive, but these desultory notes and illustrative cases may stimulate some interest in questions affecting the earliest departures from the high level of perfect health. Perhaps there is almost no such thing as "perfect" health, but it is possible by careful inquiry and patient investigation to make sure that we do not found a firm opinion upon a casual observance of physical signs or a mere negation of subjective symptoms, but that we look a little more sharply after collateral evidence—that, in short, we forage inquisitively in the borderland, where, more often than we believe, we will find evidences of minor imperfections that so often escape discovery. It would be a provident and wise plan if every man went to his doctor for a thorough overhaul once in six months, not because he was driven to him on account of feeling ill, but because he was led to him by the desire to keep well. As custom now dictates it, the doctor is only sought out when there is an evil

to remedy, but the day is not far distant when he will be retained in order that the evil may be, as far as possible, averted. It is true that we are more frequently consulted about trivial ailments than on account of acute and serious disorders; nay more, our time is often vexatiously encroached upon by having to listen to a long tale of imaginary woes and a formidable recital of aches and pains for which we can find no physical explanation, but, if my contention is right, all such patients are on the borderland of disease. Their discomforts, whether physical, mental, or emotional, have a foundation in fact somewhere, and clearly point to a fault that disturbs the harmony of perfect physiological activity. The engine is not tuned up to the best work it is capable of, and unless adjusted in time, some part must inevitably become permanently faulty, and constitute the blemish which spells premature consignment to the human scrap-heap. "Prevention is better than cure" is truer to-day than ever before, and we will do much to justify the proverb and to hasten its full realization if we direct our attention more and more to the borderland country and the evidences which are constantly to be found there of the earliest movements on the part of the enemy of mankind.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

TREATMENT OF TETANUS.

I HAVE read with interest the note by Dr. Sheaf, in the *BRITISH MEDICAL JOURNAL* of October 17th, on the treatment of tetanus by chloretone. Tetanus, as every one knows, is of much more frequent occurrence in the tropics than in temperate climates, and during twenty-five years' work in British Guiana I saw a good number of cases. I was fortunate enough to have had a few recoveries even before the days of serum treatment.

Wounds of the foot were responsible for by far the greater number of my cases, a small wound from a splinter of greenheart being the very frequent history. Sometimes the patient denied any knowledge of injury, and no wound could be discovered, but it can be readily understood that natives who go about barefooted will frequently sustain an injury so trivial as to excite no notice. My experience of the disease led me to classify my cases into two groups: (a) Those with severe febrile disturbance; (b) those with slight or no febrile disturbance. In the former—unfortunately by far the most numerous—the temperature quickly ran up to 103° or 104° and even higher, and these cases almost invariably proved rapidly fatal. In the latter, the febrile disturbance was slight, up to 101°, and subsided very rapidly. In these cases the prognosis was more favourable.

My routine treatment after careful attention to the wound (if any) was to give a very full dose of chloral hydrate and to follow this up with just sufficient of the drug to keep the patient constantly under its influence, and free from spasms. Under this treatment I had quite a fair number of recoveries, including one case of tetanus neonatorum which was severe at the outset.

The most watchful care is required throughout the whole course of the case; nourishment must be given as freely as possible, and some judgement is needed to give just enough of the chloral and not too much, but my experience leads me to think that the more frequent error lies in too small rather than too large dosage.

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THE TREATMENT OF ENTERIC FEVER.

FORTUNATELY previous inoculations will greatly reduce the incidence of enteric fever in this war, but already a certain number of cases have been sent back from France. The disease is of a very severe type, probably owing to the exhaustion of the men.

I should like to recommend the use of an icebag in the treatment. It should be suspended from a cradle over the right side of the abdomen in the region of the lower part of the ileum. It is important that there should be nothing between the icebag and the skin but a piece of