

On the whole, taking every thing into consideration, Mandalay cannot be considered an unhealthy city among the Burmese; neither, from what I have seen, would I be led to expect it to be an unhealthy one to Europeans.

In the event of a cantonment or a European quarter being required at Mandalay, I would recommend that it be removed a little distance from Mandalay; the old site of Amearapoorā would be a good spot, or on the other side of the river at Tsagaing.

Rangoon, 10th October 1879.

A SYNOPSIS OF RECENT VIEWS REGARDING THE TREATMENT OF ENTERIC FEVER.

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Enteric fever is unfortunately a disease of such frequent occurrence in the practice of medical officers in India, that no apology is needed for introducing the subject to the notice of the profession in this country. It is unnecessary here to discuss the oft-mooted subject of the comparative frequency of typhoid fever in recent times as contrasted with the experience of physicians of the past generation: for, even when making every allowance for possible errors of diagnosis, it is impossible not to be struck with the absence of any mention of the disease in the medical reports of former days. This, however, is a subject that would take us far beyond the scope and purpose of the present paper, and what the writer wishes to direct attention to now is the more practical and important matter of treatment, and with this view he has endeavoured to place before his readers all he has been able to gather of the opinions of the ablest writers and practitioners of the present day in regard to the origin, cause, nature, mode of propagation and treatment of enteric fever; in short, to give a succinct narrative of the etiology, pathology and therapeutics of the disease according to the views of those who, possessing the widest field of experience, bring the closest and most accurate observation and the most intelligent reasoning to bear on the investigation of the subject under review. It is needless to say that no definite order has been followed in quoting the works of the various British and Continental authorities whose opinions are to be found set forth in the following paper.

2. Dr. Maclagan of Belfast, (I believe) who has written much on the subject of enteric fever, says that both the agminated and solitary glands ulcerate and throw off their sloughs in regular order. These glands (glands of Peyer) are found chiefly in the small intestine, increasing gradually as they descend until they reach the ileum, in which situation the mucous surface is found to be absolutely studded with bodies of glandular structure. In the large intestine the solitary glands are found in the upper part, but they soon diminish in number and finally disappear. Dr. Maclagan attributes the so-called relapses in typhoid fever to fresh ulceration of glands from the contact of unhealthy acrid discharges from inflamed glands higher up, and

he thinks perforation of the bowel more likely to occur in such cases. He is therefore in favour of encouraging the alvine discharges, especially in the later stages of the affection, in hopes of getting rid of the sloughs quickly and so lessening the chance of successive contagions, and is strongly opposed to remedies of an astringent character.

3. Dr. Maclagan in referring to the intestinal lesion in typhoid fever, which he describes as a specific inflammation of the agminated and solitary glands, says that it bears the same relation to enteric fever that tonsillitis does to scarlatina. Food should be bland and unirritating—sago, milk, arrowroot, and cornflour, and Dr. Maclagan allows neither beef-tea nor soup of any kind. Diarrhœa may be restrained by Pulvis Doveri gr. iij. to gr. v. and $\frac{1}{4}$ th grain of Pulvis Ipecacuanhæ. Lime water and milk in equal proportions form an important item of the dietary scale. For a laxative, castor oil is the best preparation, \mathfrak{z} i for a dose. Excessive diarrhœa may be checked by Acetate of lead, Sulphuric acid or solution of Pernitrate of iron; of the latter Dr. Maclagan speaks favourably. The combination of a little tincture of opium or solution of morphia with the acid has an excellent effect.

4. Referring to these views an Aberdeen physician, whose name has escaped my memory, denies the assertion that the general practice is to check the diarrhœa; speaking for himself, he neither advocates encouragement or discouragement of the alvine discharges, but says he simply seeks the *juste milieu*. Dr. Balbirnie of Sheffield advocates packing in wet sheets for fevers of sthenic type; but for typhoids and fevers of asthenic character generally he prefers a sheet wrung out of hot water covered with blankets in the usual manner and a Mackintosh over all.

5. Dr. Hoffman of Markstett treats typhoid and other fevers on the principle of lowering the temperature by rolling the patient up in sheets wrung out of cold water and surrounded by a woollen cover or dry sheet. The patient is left in this condition until the temperature of the body and covering approximate: about two hours will be usually enough in the case of a child. In the early stage perhaps 20 to 30 minutes. As often as the patient is removed from his envelopes in order to maintain the cooling effect, the whole body is sponged freely with cold water: or if there be comatose symptoms, he is placed in a bath of lukewarm water and cold water poured over him.

6. Dr. Oglesbury of Leeds recommends that the patient should at first be placed in a bath registering 98° or 99°, and remain in it for at least five minutes; afterwards cold water should be gradually added, and only discontinued when the patient complains of its severity.

7. Liebermeister recommends the cold bath in typhoid fever. As soon as (about the 9th day) the fever has declared itself, he commences the employment of the bath. For ordinary cases the temperature is 68° F., and the patient remains in the bath for about ten minutes. This is repeated as often as the temperature rises to 102° F. Sometimes he has given as many as six or seven baths. The effect is to produce a tendency to considerable periodic remissions, of which he takes advantage to

administer quinine, which he insists ought to be given in large doses (as much as from xxii. to xxvii. grains in half an hour), but these doses ought to suffice for 48 hours.

Liebermeister insists that in the treatment of pyrexia as such the temperature may be always lowered by the administration of large doses of quinine.

8. Dr. Felorsen of Dresden also recommends the cold bath with quinine to lower the temperature. Dr. Hall of Omensburgh, Kentucky, says that after the bowels have been cleared with calomel, or blue pill, or castor oil and turpentine, he gives 15 grains of chlorate of potass in half a tumbler of cold water every third hour as a diuretic and diaphoretic. To reduce the temperature he knows no remedy like water, warm or cold, with sponge or bath, whichever is most agreeable to the patient's feelings. He controls diarrhoea with acetate of lead and opium, and reduces vascular excitement with Tincture of Veratrum and Infusion of Digitalis (R. Tincturæ Veratri \mathfrak{M} v. ad. \mathfrak{M} x. Infusi Digitalis \mathfrak{z} i \mathfrak{M} . ft. haust.) In the early stages he gives sulphate of quinine and opium with marked effect: ten grains of the quinine may be given every four hours, free perspiration following its use. In his town a combination of typhoid and malarial disease is common; in these cases quinine and opium with an occasional blue pill proved most efficacious. He thinks indiscriminate use of brandy and wine hazardous. To procure sleep he prescribes opium. In the third stage he employs tonics and stimulants. For tympanitis he relies exclusively on oil of turpentine in twenty drop doses with spirits of lavender every three hours. Diarrhoea in this stage he treats with nitrate of silver and opium. Hæmorrhage from the bowels may be arrested with acetate of lead and opium: and injections of ten grains of acetate of lead in solution. Delirium may be controlled with morphia and brandy or hydrate of chloral. Epistaxis he treats with injection of perchloride of iron into the *nares*: or if this fails plugging must be resorted to.

9. In regard to diet in typhoid fever an eminent practitioner has stated that beef tea in his experience increases the diarrhoea, accordingly he substitutes mutton, veal, or chicken broth with an ample supply of milk.

10. At the Bremen Fever Hospital the plan of treatment is immersion in water at a temperature of from 10° to 20° Cent. (50° to 75° F.) The temperature is taken every three hours, or in bad cases every two hours. A temperature of 39° Cent. (102° F.) in the axilla is considered as an indication for a bath. When immersed the patient either moves himself or is slightly rubbed. The duration of the bath is from ten to fifteen minutes, or in many cases not more than five or six minutes; when the brain is much affected cold douches are directed against the head while the patient is in the bath, and ice caps are occasionally used. Cloths dipped in cold water are placed at intervals of a quarter of an hour upon the chest and belly.

11. M. Petier gives a glass of Seidlitz water every other morning and an emollient injection morning and evening to remove putrid matters. To combat the fever he gives seven or eight grains of quinine, augmenting

the dose if necessary. He also gives vinous stimulants, and four ounces of quinine wine daily. The drink otherwise allowed is a pint or two of vinous lemonade. He does not approve of cold bathing or affusions, but recommends cold sponging with vinegar and water when the temperature is high; the surface being rapidly dried after being moistened.

12. In the Hastings Coolie Hospital, Calcutta, much success has been had with cold water treatment combined with small (2 grains) doses of quinine. Three baths are given every day: one at 6 A. M., one at 1 P. M., and one at 6 P. M. The average duration of each bath is from twenty minutes to half an hour. Water is poured over the head of the patient while sitting in the bath. As a rule the patients like the bath, and are grateful for a cool instead of a burning skin. If not able to walk, the patient is wrapped in a blanket and put to bed.

13. Dr. Little in treating of enteric fever, says that next to confinement in bed he ranks the rigid exclusion of animal broths and jellies, as tending to keep the disease mild. Milk, he says, should be the chief article of diet in enteric fever. Tunket or renneted milk given before it has separated into whey and curd, rice, milk, custard, baked custard in small quantities, rusks and hot milk and blanc-mange afford sufficiently varied ways of giving milk. A little water added to the milk is an improvement. Freshly made chicken jelly is less liable than beef tea to increase the abdominal symptoms. In cases where milk even with lime water disagrees, Dr. Little gives two or three good cups of tea or coffee between daybreak and 2 P. M. on the recommendation of Dr. Parker who has observed the effect of coffee in increasing the elimination of urea in fever. Dr. Little finds that both it and tea lessen drowsiness and prostration and increase the secretion of urine. He considers alcoholic stimulants in any quantity seldom needed. Dr. Little considers cold baths serviceable. Three or at the utmost four may be given in 24 hours. When during the first eight days there is much headache, a high temperature and furred tongue, and when the evacuations three or four in twenty-four hours are neither very large nor very liquid, a dose of calomel grains 4 to grains 6 lessens the heaviness of the fever. The calomel may be repeated in a day or two, but not oftener. When the abdomen is tumid and projecting but not very tender a drachm or two of turpentine with two drachms of castor oil give relief. Looseness of bowels may be held in check with a pill containing Carbolic acid gr. $\frac{1}{6}$, Pulvis opii gr. $\frac{1}{2}$ and Bismuth grains 3; Sulphuric acid is another remedy. Hæmorrhage from the bowels is rare when cold baths and milk diet are employed. When it occurs, turpentine and gallic acid, a scruple every second or third hour, are the most reliable remedies. Ergotine injected hypodermically also arrests hæmorrhage. There is a group of nervous phenomena sometimes present in typhoid fever, for which a full dose of quinine is the best remedy. For delirium and wakefulness, with severe headache cutting the hair and leeches are the remedies. Nausea and persistent vomiting may be relieved by an emetic of ipecacuanha or by ice, or a draught containing 10 grains of Bicarbonate of soda, 10 grains of Carbonate of Bismuth and 4 minims of Prussic acid. Scantiness of urine requires dry cup-

ping of the loins and the internal use of the Salts of potash and Spirit of nitrous æther. Indications of pulmonary congestion which are sufficiently common in enteric fever are best relieved by a turpentine stupe.

14. In regard to the etiology of typhoid fever Dr. Budd is well known as a strong advocate of the view which looks on cases of typhoid fever as caused by continuous development either in or out of the body, so that one case more or less directly derives the disease from a previous one.

15. Dr. Murchison is the principal advocate of the view which considers that cases may arise independently of any prior case, and are caused by air or drinking water polluted with the products of putrefying sewage: while advocating this view Dr. Murchison expressively admits "that enteric fever is in some way communicable by the sick to persons in health," and he thus admits two modes of communication—one the rarer in which healthy persons catch typhoid fever in some way from persons ill with that disease: and secondly, a more common mode in which persons get the disease because they breathe or swallow particles of putrefying sewage not derived from persons ill with typhoid fever. To use the common though inaccurate phrase, these cases arise spontaneously. In combating Dr. Murchison's views Dr. Budd very pertinently asks "if putrefying sewage produces the disease how is it when the pythogenic compounds are rife there is often no fever born of this putrescence? Sewage emanations are inhaled for years in some places, and give rise to no typhoid fever."

This is certainly a strong argument *ad hoc* with which this dissertation, already I fear too lengthy, may be brought to an appropriate close.

Poona, September 15th, 1879.

NOTES ON ENTERIC FEVER, OR ABDOMINAL TYPHUS.

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That the diagnosis of enteric fever, in India, is encompassed with special embarrassments will be admitted by all: and that the attention drawn to the subject recently by the Army Sanitary Commission must sooner or later be productive of good results to settle the prime question of the existence, or otherwise, of the disease in this country; and in the progress of deciding this point, it is to be hoped that the investigators will at the same time hit upon the circumstances and conditions which aid in the importation of the *contagium vivum* of the malady, or those which foster the generation *de novo* thereof.

Its etiology, we know, is still a burning question; and opinions, even in the nineteenth century as to its origin, and to its modes and channels of dissemination, are divided. There is very little harmony amongst different observers; and, this being so, the difficulties in the way of arriving at an accurate conclusion are multiplied tenfold. Before the publication of the two works—which

will last from generation to generation as master-pieces of literature, and immortalize the memories of their great authors—allusion is, of course, made to "A Treatise on the Continued Fevers of Great Britain," and "Typhoid Fever," respectively from the pens of Drs. Charles Murchison, and William Budd—our knowledge was very limited. The attention of the profession was forthwith drawn to the subject by these books, both in the United Kingdom and on the Continent; and although some of the criticisms, from time to time, have been hostile, yet the amount of scientific and public good done by these two luminaries has been, and will be, immense. As an instance of the universal respect with which their names are associated, we know of the deep gloom cast upon all parts of the scientific world by the sudden and melancholy death of the first-named *savant*.

In proposing to briefly summarize our knowledge of the subject of enteric (typhoid) fever, an apology is needed for the repetition of what are already known: the object of this article is far from possessing any pretence of attempting to advance any novel feature in the affection, or of any special recommendations as to treatment or prevention; but simply to indicate roughly and in general terms some of the directions in which our endeavours may be pursued with the desire and hope of succeeding to turn over some of the stones which as yet seem to be untouched.

We know that it was Dr. Murchison who advanced the theory that enteric fever originates from "putrefying sewage" which finds access through the *media* of *drinking-water*, *other food*, and *breathing air* into the system. This is this author's principal view, and which will be found in page 482 (2nd. Ed., 1873, London, Longmans); but he does not seem to oppose the other view, which asserts that the disease is communicated from a *previous case*, in fact this is plainly allowed by him to be a mode, but a *rarer* one. By reference to page 465, we are taught, that "enteric fever is in some way communicated by the sick to persons in health"; according to him the commoner mode, by far, is by putrid sewage polluting drinking-water, breathing-air, food (such as milk, &c). Dr. Murchison shows himself to be a believer of the purest water in spontaneous generation by his laying stress upon the important point that the sewage need not necessarily be of persons suffering from the disease, typhoid fever; that is to say that typhoid can be produced in a person from the fæces of another *not* suffering from it, but the *proviso* with him is that they be putrid. In other words, with the *sine qua non* of putrid sewage being taken into the system, typhoid or enteric fever may be generated *de novo*, or spontaneously. His further clinical and literary knowledge, for he has often written on the subject, even up to the time of his death, has not enabled him to alter his views.

On the other side of the scale we have the *anti-de novo-origin* theory of Budd, whose views are opposed to those of Murchison. Dr. Budd teaches that every case of typhoid originates from another case of *that disease*. Independently of putrefying or putrid sewage—unless of a person suffering from that disease—a *previous case*