

ORIGINAL COMMUNICATIONS.

ENTERIC FEVER IN CIVIL PRACTICE.

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In an editorial article, published in the October number of the *Gazette*, entitled "Surgeon-General Gordon on Enteric Fever in the European Army of Madras," it is stated that "the rarity or absence of enteric fever among other classes of Europeans in India is also a fact of great importance."

Death announcements in the public papers from typhoid among the civil population are by no means unusual, and, judging from my own experience, gained in civil practice, I can confidently state that the disease is far from being rare.

During the past three years I have attended in private practice here twenty cases of enteric fever. Twelve of these contracted the disease in this station, and the remainder in the plains.

In support of my diagnosis, I shall give a short statement of several cases, showing different varieties of the disease.

1. The patient, a girl aged 7 years, of European parentage, was slightly ill on 4th September 1876. I was asked to visit her on 7th September, she had then slight fever, occasional cough, loss of appetite and diarrhoea. The tongue was coated in the middle, clean at tip and edges; pulse 120. The child looked heavy; was listless, and felt disinclined to play, spending most of the day on the sofa. I took the temperature on the 10th September, and the morning and evening observations, till the termination of the disease, were as follows:—

Sept.	10	11	12	13	14	15	16	17	18	19	20	21	22
Mng...	101	101	102	103	103	103·3	102·7	100·8	100·4	101	99·8	98·4	98
Evg...	103·6	104·5	103·8	104	103·6	103·8	103·5	101·8	103·2	103·5	101·4	99·3	..

The pulse throughout was high, rising at times to 130. On the morning of 12th September a few rose-coloured spots, disappearing on pressure, were observed on the abdomen; these were marked with ink. A few fresh spots were noted next morning. Two or three large pea-soupy motions were passed daily: tympanitis was present from the 15th September. There was no pain or tenderness in the iliac regions, and the spleen did not appear to be enlarged. The fever ceased on the 21st September, on the eighteenth day from commencement of illness.

2. On the same day, the 7th September, I was called to see a boy aged 5 years, of European parentage, with exactly the same symptoms as above. The temperature from 10th September was as follows:—

Sept.	10	11	12	13	14	15	16	17	18	19	20	21	22
Mng...	103	103·6	102·6	102	101·8	102·3	102·7	102·7	103	101·6	101·4	98·4	98
Evg...	104	103·5	103·4	103	103·4	102·5	103·6	103·6	104·5	102·4	102	102·3	..

There was a rose-coloured eruption on the 15th September, and a few fresh spots appeared on the 17th September. The child perspired profusely on the 22nd September.

Both these children were day scholars at the same school. Two girls residing in the school were also attacked,—one of them severely.

3. The notes of a severe case are as follows:— A lady, aged 18 years, was not in her usual health on the 13th October 1878, and on the following day she felt chilly and cold, and retired early to bed. I saw her on the evening of the 20th October; she was then flushed and skin hot, but her pulse, which was only 96°, did not indicate high fever; her temperature was however 105·2°. There was severe headache, deafness, and occasional bleedings from the nose; the abdomen was slightly tympanitic; the spleen was enlarged to more than double its natural size; there was gurgling in both the iliac fossæ, but no marked tenderness in the right. The temperature was as follows:—

OCTOBER.

Date.	20	21	22	23	24	25	26	27
Mng...	..	103·3	105	103	104	103·6	103·8	103·7
Evg...	105·2	105	104·4	105·3	104·7	105	104·5	104·5

OCTOBER.

NOVEMBER.

Date.	28	29	30	31	1	2	3	4
Mng...	104·5	104·4	104·3	103	102·5	101·5	99·9	97·5
Evg...	105·5	104·6	104	101·5	102·5	100·6	99·8	98·4

On the 22nd October, a profuse rose-coloured rash appeared, covering the whole of the abdomen and lower part of thorax. On the night of the 24th October she became slightly delirious, and gradually passed into a state of muttering delirium, which continued night and day. The cough, which was slight at first, became more troublesome, and bronchial rales were heard over the front of the chest. On the 3rd November she perspired freely; the urine remained free from albumen. On the twenty-first day from the chill the fever disappeared; there were no vacillations in the temperature towards the termination of the disease, as usually observed; the pulse never rose above 100.

4. Another case was complicated with pneumonia and ended fatally. An Eurasian, aged 12 years, was said to have been attacked with fever on the 13th July 1876; I was asked to see the boy on the 30th July. There was consolidation of right lung, diarrhoea, pain and gurgling in the right iliac fossa, and enlargement of the spleen; there were a few rose-coloured spots on the abdomen; the tongue was thickly coated in centre: tip clean; slight delirium at night. The general symptoms became worse, delirium increased, and he gradually sank and died on the 13th August. The temperature from the date of my attendance was as follows:—

JULY.		AUGUST.					
Date.	31	1	2	3	4	5	6
Morning ..	104·3	104·3	103	103	103·2	103·6	104
Evening ..	105	104	105·7	104·1	104·5	103·6	104·3

August.	7	8	9	10	11	12	13
Morning ..	104	101·7	102·5	101·2	105	103·6	104·2
Evening ..	103·5	102·4	101·1	103·7	103·6	103·7	102·5*

* After death.

The temperature was irregular and not quite typical of enteric, in consequence, no doubt, of the lung complication.

5. Another case was followed by relapse. There was distinct chill followed by severe headache on the 21st July 1878; the tongue had a brown coating, except at the tip and edges. There was slight deafness, and in the second week muttering delirium; the spleen was enlarged; there was little or no tympanitis, and no tenderness in the right iliac fossa.

There was a slight short cough. The case progressed favourably, and the fever ceased on the 7th August, the eighteenth day after the chill. The patient, a young military officer, remained free from fever till the 17th September; on that day he walked and rode eleven miles; this exertion was followed by diarrhoea and a foul tongue; on the morning of the 20th September the temperature was 102°, in the evening 103·4°; on the morning of the 21st 101°, and in the evening 102·2°; next day he was free from fever, and has been quite well since. The disease was contracted in Naini Tal. In a second case the relapse continued for a fortnight.

6. The following case was puzzling until the appearance of a typhoid rash. A civilian, aged 38 years, had been ill in another station, with congestion of the brain and liver, accompanied with the presence of large quantities of earthy phosphates in the urine. On his arrival here on the 20th April, he was weak and depressed, with complete loss of appetite. He had a slight dry cough, not due to any lung affection; the liver was neither enlarged nor painful. In a day or two he was able to walk about the house, but continued listless and took no interest in anything. On the 2nd May, feeling stronger, he went out for a short walk, and was caught in a shower of rain. On returning to the house, he felt very fatigued; next day he had chills, vomited frequently, and had several loose motions; the cough became worse, and he felt altogether so ill that he remained in bed. After a few days he became very deaf; no quinine had been given; the diarrhoea continued. As no obvious cause existed to account for the symptoms, they were supposed to be due to some hidden disease of the liver, till the 10th May, when a profuse rose-coloured eruption, disappearing on pressure, appeared on the abdomen and thorax; the spots in a limited area were marked. Attention was then directed to the right iliac fossa, pressure in this region elicited pain and produced gurgling. On the 11th May there was a decided spleen enlargement, with tympanitis; he was drowsy and occasionally muttering

to himself; the centre of the tongue was covered with a broad line of brown fur, the edges of anterior half being clean. On the 12th May, fresh spots were noted in the area marked; perspiration became profuse, and continued so till the termination of the attack; tympanitis had greatly increased. On the 15th May hepatic dulness was enlarged upwards; diarrhoea continued, the deafness was less. The temperature from the appearance of the eruption was noted and was as follows:—

May.	10	11	12	13	14	15	16	17	18	19
Morning...	103·4	103·2	102·8	102·2	100·9	100·3	100·2	99·2	99·1	98·3
Evening..	103·8	103·6	103·7	101·6	101·3	101·1	100·6	100·1	100	..

The fever disappeared on the eighteenth day after the chill.

7. The following case had been treated for remittent fever. A lady, aged 22 years, was attacked with fever in one of the stations in the plains. I saw her in the second week of the fever. Her face was flushed; she complained of great thirst; the tongue was coated and dry; she had frequent loose motions, and the abdomen was tumid. She was much troubled with a short dry cough; perspiration was profuse; she was delirious at night; there was no eruption; the temperature during my attendance was as follows:—

Day of disease.	10	11	12	13	14	15	16	17	18	19
Morning..	101·5	100	100	102	100	99·3	100	99·7	98·3	98·3
Evening..	102	102·5	100·5	102	103	103	103	101·7	101·2	99·5

The fever left on the nineteenth day of the disease.

The type of the disease appears to be milder in India than in England; but the symptoms are essentially the same in both countries; it is therefore unnecessary for me to write of them in detail. Those first complained of are headache, pains in the body generally, a feeling of lassitude with great disinclination to do any thing, parched mouth and almost invariably diarrhoea. The patient has a sort of vacuous expression, a wearied look, with slightly flushed cheeks. Epistaxis is not unfrequent, and in the first week or ten days a varying degree of deafness. There is always slight cough. As the case progresses, the abdomen becomes tumid, the spleen enlarged, gurgling can be heard in both iliac fossa, and there is pain or tenderness in right. The eruption appears about the eighth or tenth day. Four to six spots may only be seen, but they are of importance, as on daily examination they had not previously existed. In a day or two other spots will become apparent; on their appearance the diagnosis is complete. Even before the appearance of the eruption, or should none appear, the diagnosis as regards typhoid can be confidently made by the daily use of the thermometer, morning and evening. The temperature in no other diseases can be confounded with that of typhoid. It is pathognomonic of typhoid.

One often hears of remittent fever in Europeans, running its course it may be for two or three weeks, but I have never seen a case of this disease, although I have served in some of the most malarious districts in the Bengal Presidency. Remittent fever is a severe form

of intermittent, and is naturally supposed to be due to an excessive dose of the malarial poison. Cases such as I now refer to, are observed in stations where malaria can hardly exist. If the malarial poison be present to such a degree as to produce remittent fever, surely there would be more than one or two cases of the disease to record, and there would be many cases of intermittents, especially among children. The publication of temperature records would clear up such cases. Read the published accounts of so-called true remittents, and the symptoms are found to be those of enteric fever.

Naini Tal, 30th December 1878.

REPORT ON AN OUTBREAK OF ENTERIC FEVER IN B. BATTERY 2nd BRIGADE R. A. AT DEESA, IN AUGUST AND SEPTEMBER 1878.

BY SURGEON-MAJOR HUBERT GREENE, A.M.D.

1st.—There is no evidence whatever that the disease was imported from any other station.

2nd—I do not think the disease was in any case contracted through personal communication with an individual already suffering from enteric fever. It is worthy of remark, however, that three of the patients lived permanently on the hospital premises: three were employed as orderlies attending on cases of cholera in August and September; and five had recently been under treatment in hospital for other diseases.

3rd.—The sanitary condition of the barracks, guard-room, stables, followers' lines, harness rooms, canteens, gun-shed, latrines, ablution rooms, kitchens, and married quarters,—with the exception of roof leakage—was perfect throughout the year. I am unable to point out anything at all likely to have originated enteric fever. The vicinity of the lines has always within my experience been kept clean and in good order; and since I assumed medical charge in May 1876, there has never been rank vegetation, or any thing else objectionable in the immediate neighbourhood.

(a.) The water used for both cooking and drinking purposes is obtained from one well in the lines. I consider it to be of very good quality, and remarkably pure. It is to be analysed, and I await the result with confidence. The well is one of the best I have seen in India; and is so carefully looked after and protected, that nothing short of wilful design could cause its contamination. Drinking water has always been carefully filtered, (since the 17th February last in Macnamara filters,) and the men of the battery and their wives are quite alive to the danger of using impure water. I am decidedly of opinion that the possible origin of the disease through the instrumentality of drinking water may in this case be set aside altogether.

(b.) The latrines are conducted on the dry earth system: the soil being removed daily in iron receptacles to a manure yard 1,250 yards distant, where it is buried in deep trenches. The only fault I can indicate is that the covers of these receptacles are not perfectly airtight, though nominally so. Quick lime and carbolic acid have been freely used, and the utmost cleanliness

strictly enforced: the followers' latrine being in all respects as carefully attended to as the others.

The system of surface drainage though very elementary, is sufficient to prevent the accumulation of stagnant water. I do not think the origin of the disease can be laid to its charge.

There is no subsoil drainage. Two drains exist, but they only carry off the overflow from the well and swimming bath. Both lead to the soldiers' garden, where the water is utilized for cultivation. They are and have been in good order.

As regards surface cleanliness, I think the R. A. lines would bear comparison with any I have seen in India. Whatever may have caused the outbreak, I am confident that the fault does not lie in this direction.

(c.) The bazaar principally frequented by the men is that belonging to the European Infantry Regiment. It is distant about half a mile from the R. A. lines in an easterly direction, and stands at nearly the same level. It consists chiefly of four rows of houses, and is surrounded by a cactus hedge, and pretty abundantly studded with *nim* and other umbrageous trees. The shops it contains are principally for the sale of dry goods, groceries, grain and vegetables. There is also one Parsee shop, nearest the entrance on the left hand side. I shall allude to it more particularly further on.

When I made my first inspection of this bazaar, the back premises of the principal houses contained latrines, with imperfectly fitting trap doors in the external walls for the removal of the night-soil. They were in a very bad condition, being unprovided with pans; and several of them were defiled with recent liquid yellow ordure. This has now been remedied to a certain extent; the trap doors having been built up and superficial cleanliness enforced. The habits of the class of natives however, which inhabits bazaars of this nature, are so inherently filthy that a perfectly sanitary condition can scarcely be hoped for.

The remainder of the bazaar was also in an objectionable state; for, in consequence of the screened trenches outside the boundary having fallen into ruin, the inhabitants used to go to the rear of their dwellings for the purposes of nature. The deep sand which is present in patches in many parts of the enclosure, and which is resorted to from the ease with which traces are effaced, became in consequence very foul: and as it has little or no decomposing effect, I have no doubt but that during and after the heavy rain we had in August, when nearly 22 inches fell, the organic emanations were noxious in the extreme.

Another point to which I would wish to draw attention is this. The inhabitants of this bazaar are supposed to use the trenches before mentioned, but in case of illness this becomes practically impossible. The trenches are upwards of 400 yards from the houses, and people suffering from diarrhoea, dysentery or typhoid fever cannot be expected to go this distance every time they have a call to stool. As a matter of fact they do not do it; and the result is that the very kind of pollution which it is desirable to prevent takes place. The subject requires careful consideration and legislation; for it must be apparent to every one that until some effectual plan be