NOTES ON SIMPLE CONTINUED FEVER IN MALTA.

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The term "Simple Continued Fever" has been applied for statistical purposes to the cases of fever of unrecognised type which are met with abroad. The advances which have been made in recent years in diagnostic methods have resulted in many of these fevers being classified and named, so that nowadays Malta fever, sleeping sickness, para-typhoid fever, &c., are recognised as definite specific diseases. On the other hand, improved methods of staining have increased the accuracy of diagnosis in malaria, and fevers which were formerly believed to belong to this class are now known not to be due to that parasite, and have to be returned as simple continued fever. The name is an unfortunate one, and it is satisfactory to know that it is being altered in the new "Nomenclature of Diseases."

There are an enormous number of cases of sickness in the Army returned under this heading every year. This Island of Malta has always been noteworthy in this respect. Up to 1897, when the heading "Mediterranean Fever" was introduced into the statistical returns, cases of the disease were perforce returned as "Simple Continued Fever," although the condition was well recognised. One would expect that, since 1897, the numbers of cases of simple continued fever would have been reduced in proportion to the increase of Malta fever, but, curiously enough, this has not been so, and the cases of simple continued fever have since continued to be admitted to hospital in great numbers.

In the ten years prior to the introduction of Mediterranean fever into the returns, viz., 1887-1896, the admission ratio per 1,000 of strength was 125·6 for simple continued fever. Since then, in the nine years 1897-1905, the admission-rate per 1,000 of strength rose to 142·4, although the ratio for Mediterranean fever was 36·2. During this period the death-rate was 0·01, the year 1898 being the only one in which any deaths were recorded. This admission ratio of 142·4 per 1,000 of strength is enormously high, and compares very unfavourably with other foreign stations, in all of which the fever occurs, but in which the ratio for the same period has varied from 64·6 in Egypt to 30·5 in India, 15·7 in Bermuda, and 0·7 in Mauritius.
The question of what these fevers are is consequently one of very great interest. The Mediterranean Fever Commission in their Reports for 1906 (Part VII.), express the opinion that "their undue prevalence has a direct relation to Mediterranean fever," and again, "there can be little doubt, therefore, that many cases which have been returned as simple continued fever are in reality mild cases of Mediterranean fever. This must necessarily continue to be the case as long as there is no certain means of distinguishing between atypical cases and ordinary febrile attacks." They also draw attention to "the simultaneous disappearance of Mediterranean and simple continued fevers which has occurred in Gibraltar in the course of the last twenty years," and that "a similar reduction of simple continued fever prevalence has occurred during the second half of 1906 in Malta in connection with a reduction of Mediterranean fever prevalence."

These undoubtedly are very striking facts, although the paragraph "the simultaneous disappearance of Mediterranean and simple continued fevers in Gibraltar, &c.," is perhaps rather too strongly put, as the ratios per 1,000 are: 1897, Mediterranean fever, 4.0, simple continued fever, 10.1; 1904, Mediterranean fever, 0, simple continued fever, 4.8; and in 1905, Mediterranean fever, 0.7, and simple continued fever, 9.1. Apart from this, however, the Commission voice the general opinion of medical officers serving in Malta, that a certain number of cases of simple continued fever bear a relation to Mediterranean fever, either as atypical cases or as mild early cases, in which the serum reaction is not obtainable, although found later. Such a case has lately been under my own care:—

Patient was under treatment in January of this year for slight fever and pains of a rheumatic type. The serum reaction was negative. He recovered and returned to duty. In April he again fell sick with fever and severe neuritis of first the right and later the left sciatic, pains in the sacro-iliac articulations, and swelling of his left knee. His serum reaction was tested several times and was negative. The temperature fell to normal, and the swelling and pains practically disappeared under treatment. One began to think of sending him away for change of air, when one day a report was received from the laboratory that his serum reacted 1 in 10 to Mediterranean fever. A few days later it reacted 1 in 50, and later 1 in 100.

These cases undoubtedly do occur, but in my experience they are the exception. As a rule, too, just as in the case just related,
they present certain clinical features such as long duration, rheumatism or neuritis, or synovitis and so on, that make them quite distinct, and though they may be returned as simple continued fever, in one's own mind one keeps them separate from the ordinary run of cases returned under that heading.

The total number of cases of simple continued fever admitted to hospital in Malta in the years 1902-1905 was 4,311. In Table IV. of the Commission's Reports for 1906, Majors McCulloch and Weir, R.A.M.C., have worked out some very interesting figures concerning these admissions, and showing the number of days they were under treatment in hospital:


<table>
<thead>
<tr>
<th></th>
<th>Totals</th>
<th>5 days and under</th>
<th>5–10 days</th>
<th>10–15 days</th>
<th>15–20 days</th>
<th>Over 20 days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Totals</td>
<td>4311</td>
<td>591</td>
<td>2646</td>
<td>650</td>
<td>179</td>
<td>245</td>
</tr>
<tr>
<td>Percentage</td>
<td></td>
<td>13.7</td>
<td>61.4</td>
<td>15.1</td>
<td>4.1</td>
<td>5.7</td>
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</table>

This table is very interesting, and shows that—as they say—"roughly speaking 75 per cent. of the 4,311 cases" required "only a short stay in hospital," i.e., under ten days. They are inclined to look with suspicion on the remaining 25 per cent. as perhaps having been "mild or atypical cases of Mediterranean fever." Personally, I am not prepared to go so far as this. I think that 25 per cent. is too high a percentage to rate the suspicious cases at, and that 10 per cent. would more nearly represent the possible atypical Mediterranean fever cases.

My own experience last year covered 172 cases admitted to the hospital of which I happen to be in charge, and most of which were under my immediate care. A table similar to that of Majors McCulloch and Weirs shows:

<table>
<thead>
<tr>
<th></th>
<th>Totals</th>
<th>5 days and under</th>
<th>5–10 days</th>
<th>10–15 days</th>
<th>15–20 days</th>
<th>Over 20 days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Totals</td>
<td>172</td>
<td>65</td>
<td>81</td>
<td>18</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Percentage</td>
<td></td>
<td>37.8</td>
<td>47.1</td>
<td>10.5</td>
<td>2.3</td>
<td>2.3</td>
</tr>
</tbody>
</table>

These figures are for one year only, and for one hospital in the Command, and, consequently, are not of the same value as those given in the other table; but still, they are of interest.
They show that 84.9 per cent. of the cases required less than ten days' treatment in hospital, and that 95.4 per cent. were able to go out in less than a fortnight, leaving 4.6 per cent. as belonging to the suspicious class. However, I am able to say that not one of all these cases developed Mediterranean fever during the year, and that only one of them was suspicious of being an atypical Mediterranean fever case. He has since left the Army, and I am unable to give any particulars of him. The serum reaction of all these cases was tested once at least—more often in the longer cases—and was always found to be negative.

The next point I would wish to draw attention to is the nature of these cases of fever from a clinical point of view. I have made out a selection of the temperature charts which are reproduced and which I venture to think will prove interesting. The ones chosen are those which appear to be the most typical of the disease or diseases, and which show most clearly the points to which I would like to draw attention. The cases seem to me to divide themselves naturally into two great classes which I have called A and B. Both have many points in common, and it may...
be that the differences are only in degree. Still, there are also many points of difference. In class A, I would include all cases in which the temperature is raised for not exceeding three days, and in class B those in which the temperature is raised more than five days continuously. This is, of course, very rough, but it will serve. Under class A, it will be noticed, are given two sets of temperature charts, but of these I consider those marked (1) as representing the typical case of this fever. They show a febrile attack beginning abruptly, lasting three days, and falling to normal on the morning of the fourth day. These temperature charts are mostly of men who were already in hospital for some other complaint, so that we were able to observe the whole of the attack. Most of the cases admitted from barracks run a course like A (2), that is to say, that when they come in they have already had the fever on them for one or two days.

The symptoms in these cases are almost identical. The patient complains of the usual feverish symptoms, but is mainly troubled by frontal headache and "pains in the back," across the loins. The tongue is large and foul, thickly coated with a dirty-yellow or yellowish-grey fur, the abdomen is somewhat distended, there is a history of constipation, and the pulse is slow. There is no enlargement of the liver or spleen, the face is rather dull and the complexion muddy. Patient is inclined to sleep. There are no spots, and no pains in the shoulder tip.

The routine treatment for these cases is simple. Calomel, with a saline draught later; a diaphoretic mixture or phenacetin with caffein if the headache is severe. As the temperature begins to fall, fresh lemonade and an acid mixture are usually given. Convalescence is rapid, and they are usually fit to go out of hospital in seven or eight days.

Such are the class of cases which go to make up 75 per cent. of the cases in McCulloch and Weir's table, and 85 per cent. in mine. It is by far the largest class, and indeed, is quite the commonest form of fever I know. I have suffered from it myself several times, though not in Malta (so far), but in India and South Africa, and so have most men who have served abroad. Before modern methods of diagnosis were perfected, it was considered to be of malarial origin, and diagnosed remittent fever.

The second class of fever met with differs in many respects from the one I have just described. It usually lasts six or seven days, and the range of temperature reminds one very much of the ending up of a case of enteric fever; one finds the evening rise and morn-
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ing fall gradually "spiking" down to normal. This is well shown in the temperature charts marked B. The history on admission of men suffering from this disease is much the same as those in class A. They rarely complain of having been feeling ill more than a day, but they are much more ill when they come in than

the former. Whether the poison be an entirely different one or one of increased virulence, it is very powerful, and the patients are often very ill. The headache is usually very severe, the backache not so marked. The tongue is thickly coated as before, but shows a tendency to clean at the tip and edges, and the fur to become
creamy. I have never seen diarrhoea, and after purgatives the motions are watery and bilious. There is usually a good deal of distension, but no enlargement of the liver or spleen. I have never found any tenderness or gurgling in the right iliac fossa, nor any enteric spots. I have, however, frequently noticed a solitary spot, generally in the neighbourhood of the umbilicus, which at first looked suspiciously like the Tache rose lenticulaire, but which on the next day was found to have developed into a tiny pustule. This is most probably an accident, but I have been struck by its very frequent occurrence in these cases. Another noticeable point is the appearance of the abdomen: the soft white skin with the veins just showing through it also remind one of enteric. The pulse is soft and very often compressible and dicrotic. It is slow, 55 to 70, and quite out of keeping with the temperature. The face is flushed, the eyes suffused, the lips dry with that peculiar quiver when an attempt is made to speak that one sees so commonly in enteric. Altogether the appearance of the patient is strikingly like that of a case of enteric fever in the early stage of a severe attack. It is a poison of intestinal origin I am convinced, and a very power-
ful one at that, but what it is is another question. It is not enteric and not paratyphoid; at all events in the ordinary acceptation, the serum reactions being invariably negative to these diseases.

The treatment does not require any special note. Calomel I consider my sheet anchor, beginning with 3 to 5 grains, repeating in smaller doses later on. Soda water and milk, beaten up eggs, tea, later on arrowroot, extract carnis, beef tea, and so on, as the temperature comes down. I have tried salol, beta-naphthol, and other intestinal disinfectants, but they are really not needed. The distension is not great, and is best controlled by calomel, which has an almost specific effect in improving the patient's condition. There is a good deal of weakness and debility left after an attack, and patients are generally in hospital two or three weeks before being allowed out even to light duty.

There is also a further series of cases which seems to be a sort of transition type between these two classes of fevers. They run a four or five days' course, the range of temperature resembling that of cases in class B, but the symptoms are much milder and more quickly recovered from.

These, then, are the two principal types of fever met with in this Island, which are returned as simple continued fever. Cases of paratyphoid also occur, but I am not concerned with them, as though they have so far been returned under this heading, I believe their existence is recognised in the new "Nomenclature of Diseases."

What then are these fevers? Clinically, in both classes, the symptoms all point to a poison of intestinal origin, and in class B to one resembling in many ways that of enteric or paratyphoid fever. Yet the cases in class B do not present the classical features of either of these diseases, and neither do they correspond in their duration, their severity nor their serum reactions. One is inclined to consider them infectious, either by the Bacillus coli communis itself or by some bacillus of the coli group lying somewhere between the B. coli communis and the paratyphoid.

As to the causation of these fevers the two principal factors appear to be the hot weather and chills. The tendency for "chills" to affect the abdomen, when one is abroad, is well known, in contradistinction to the respiratory organs, which appear to be their favourite objective at home. The ordinary attack of colic is a very much more painful complaint abroad than at home; vomiting and diarrhœa (not the result of ptomaine poisoning), congestion of the liver, colitis with diarrhœa of a dysenteric type, are all compara-
tively common affections in warm climates. After a hot day it is very pleasant to sit outside in the evening in trousers and shirt, and enjoy the evening breeze, but it is very dangerous. It is what the British soldier does, however, and in this Island in addition they bathe a great deal. They sit about on the rocks before and after, smoking their pipes, fishing perhaps, and in this way I think most of the damage is done. Last year's figures show a remarkable difference between regiments in barracks near the sea and those inland. Of the 172 cases in my hospital last year the majority were from corps as follows:

<table>
<thead>
<tr>
<th>Corps</th>
<th>Barracks</th>
<th>Cases</th>
<th>Months</th>
</tr>
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<tbody>
<tr>
<td>1st Battalion Rifle Brigade</td>
<td>St. Andrew's</td>
<td>21</td>
<td>9</td>
</tr>
<tr>
<td>4th &quot; &quot;</td>
<td>St. George's</td>
<td>76</td>
<td>12</td>
</tr>
<tr>
<td>Royal Garrison Artillery, 3 Double</td>
<td>Tigne</td>
<td>59</td>
<td>7</td>
</tr>
</tbody>
</table>

The strength of these units was approximately about 750 each. The difference in favour of the battalion in St. Andrew's Barracks is very marked. These barracks lie about half a mile inland from the sea and there is not quite so much temptation to bathe as in the others, and moreover, after bathing the men have an appreciable distance to walk back, uphill, and are not so tempted to sit about on the rocks.