THE TEETH OF THE SOLDIER.

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With reference to the able article on this subject which appeared in the February number of the Journal, there are a few points which it is well should not pass without comment, as they appear to minimise the importance to the soldier of having sound teeth.

(1) The statement that "persons suffering from diseased teeth continue to swallow an emulsion of pus and germs with their ferments for practically the whole of their lives, as a general rule without any consequent ill-effect on their health," would probably be better expressed by saying that a certain number apparently did so without any obvious ill-effect.

Hunter, who has devoted much attention to this subject, states in his work on "Oral Sepsis" that this swallowing of the secretions of a septic mouth are a constantly overlooked and yet common source of numerous diseases, both local and general; he calls special attention to its gastric effects.

(2) "Bad teeth do not cause poor physique and impaired constitution." This is rather doubtful; that bad teeth are adjuvant causes of bad physique and impaired constitution is undoubted; the dental caries and impaired constitution act and react on one another, but there is this point which should not be overlooked, that until the caries has progressed sufficiently far to have gone through the enamel and to have affected the dentine the resisting power of the constitution does not come into play, the enamel being a lifeless body. That men of fine physique often possess a very diseased set of teeth is true, but it is equally true that more often they do not.

(3) As regards the 400 toothless or partially toothless men of long service examined in the Northern Command, the notes as to their robustness would have been more interesting, as we are considering the teeth of soldiers, if they had been taken after a few weeks' active service on "bully beef" and biscuit ration. I have a shrewd idea that all the men with plates and those with no opposing molars would have been found in remount depôts, hospitals, &c., in fact, in places where they had lots of time to make "stews" of their rations. Their statements that their teeth
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had disappeared without pain should be taken with much salt. It is, I believe, extremely rare for caries of sufficient extent to destroy a tooth to occur without pain, but there is nothing more quickly forgotten than a toothache. Although medical history sheets would show the sickness sufficiently serious to warrant admission to hospital, they would not show the number of sleepless nights, the result of toothache, the may-be resulting "falling out" on the next day's march, nor the possible "asleep on his post when a sentry," this latter the natural result, when the swelling had come and the pain had subsided, of the previous sleepless nights; nor would the medical history sheets show whether these men had been actually at the front or on employments on the lines of communication or at the base, simply because they could not eat their rations.

(4) It is stated "that stumps, even diseased ones, help in mastication," but a stump (i.e., a root flush with the gum) is a hollow tube of septic matter, and is more liable to be a source of septic infection than an aid to mastication; the hardened gum after extraction is just as useful, in fact, often more useful, as it is not tender to bite on, whereas many stumps are so. A carious tooth, with the caries affecting the sides and not the crown, may be useful for mastication, but its usefulness and the period of its usefulness are much increased by being stopped.

(5) That decayed teeth are universal in the Army is a regrettable fact, but that "they occasion little trouble" is not my experience. That toothache and neuralgia are rare was not my experience last year in Bulford: 191 men reported sick with toothache and neuralgia. These men were two hundred and fifty-five days off duty. These figures do not include men who were under treatment by the dental surgeon. One reason, I believe, why men comparatively seldom report sick is that, as the author states, "they (the teeth), as a rule, are treated by extraction, and no more is thought of the matter." This is exactly what should not occur; numbers of teeth are probably annually extracted in the Army which could have been perfectly well stopped. Men will stand a great deal of pain to avoid extraction, especially when they know that a certain number of teeth having been extracted, they are invalided for loss of teeth. If they knew that their toothache would be relieved, the tooth more or less painlessly stopped in order to carry it over to the next visit to the dental surgeon, and that, if then properly attended to, the tooth might last another five or more years, many more men would report sick.
The Teeth of the Soldier

(6) "In the Army Medical Reports it is not even mentioned." This is because these reports (until recently) were formed from "admissions" to hospital only, and the majority of cases of caries and neuralgia are not admitted to hospital; also, "caries" more often appears under the heading of its results, viz., "Abscess, alveolar" and "inflammation of dental periosteum," and so is liable to be overlooked.

Last year in the two stations, Bulford and Tidworth, with an average strength of 5,064, the average constantly sick from "dental caries," "alveolar abscess," and "inflammation of dental periosteum," has been:

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<th>In hospital</th>
<th>Attending hospital</th>
<th>Total</th>
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<tr>
<td>Rheumatism</td>
<td>2.41</td>
<td>3.27</td>
<td>5.68</td>
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<tr>
<td>Influenza</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Syphilis</td>
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Whereas the numbers for—

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<th>In Hospital,</th>
<th>Attending Hospital,</th>
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<tr>
<td>Rheumatism were only</td>
<td>2.9</td>
<td>1.2</td>
<td>4.1</td>
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<tr>
<td>Influenza</td>
<td>3.47</td>
<td>0.7</td>
<td>4.14</td>
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<tr>
<td>Syphilis</td>
<td>5.3</td>
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So "dental caries" was responsible for more inefficiency than "rheumatism," or "influenza," and for nearly as much as "syphilis."

(7) "The South African War caries has no connection with the ordinary decay in peace time." It is almost certainly the caries of peace time which brought men to unfitness and hospital in the time of stress and war, as it always will do. The statement that the caries was of the nature of an "epidemic" requires considering under two heads, namely, the two factors necessary to produce caries: (a) enamel; (b) acid-forming bacteria.

(a) The enamel is formed in early life, and after its development is practically not a living tissue; neither its chemical nor physical attributes can be altered by constitutional changes on the part of the owner; any alteration is due to the chemical action of acids, hence no constitutional changes affect the liability of the enamel itself to absorption or softening.

(b) I am not aware of any moderate departure from health which will render the normal buccal juices acid. Any increase of bacteria in the mouth, numerically or increased virulence as regards their "acid-forming powers," or "extreme peptonising power," if it occurs, would be due to increased want of cleanliness on service, or to want of resisting power in the mucous membranes covering the gums, &c., and not due to diminished resisting power in the enamel. As a secondary consequence of the recession of the gums,
the result of tartar or scurvy, the teeth do get loosened and the
dentine of the root liable to invasion.

An impaired constitution will, however, act this way: The
caries having got as far as the dentine, this tissue will fail to
throw out any hard, false enamel, as occurs in the natural arrest
of caries, and the caries will probably be more rapid. If the teeth
are sound at the beginning, no effects of climate or insufficient
food, or reduced health from stress of service, will produce caries;
they will only aggravate it. I have not noticed this epidemic caries
in native troops on service, who started with sound teeth, and
served under conditions as disadvantageous as regards food, climate,
shelter, &c., as I am informed obtained in South Africa. I think
the "epidemic" might be fairly attributed to want of cleanliness,
hard food on brittle enamel, pre-existing caries plus the ordinary
caries incidence, brought to notice by cold, diet, exposure, and
want of early treatment.

I write these remarks for fear that an impression may be left
on the minds of readers of the former paper that the evil
of dental caries is at present exaggerated, and that, as it does not cause
much obvious inefficiency, it may be put aside as a subject not
worth notice in the daily routine. A Service paper recently pub­
lished an extremely incorrect and ill-advised paragraph to that
effect. It is a question that is becoming more and more important,
there being no doubt that as a nation, in common with other
European nations, our teeth are becoming worse. This fact is being
recognised by local health bodies, and will probably shortly be
officially recognised by Government bodies in charge of the educa­
tion of the youth of the country. To us as Army officers it is more
important than to the civil practitioner. Men who cannot properly
chew hard food in times when it is necessary to chew hard food are
undoubtedly more liable to gastric and intestinal disturbance, and
more liable to diarrhoea, dysentery and enteric.

The proper time to treat a tooth is before there is toothache.
This point is always forgotten. The time to treat a soldier's teeth
is the first day he is enlisted; periodical examination and treat­
ment, if necessary, should be continued to the day he goes on the
Reserve.

Every medical officer should be able to clean a tooth, and
temporarily stop a tooth, in order to save it for permanent stopping
by the dental surgeon. Stopping cases should be supplied in field
panniers.

Extraction should be regarded in the same light as an ampu­
tation, and only resorted to when other means have failed.
A possible and probable explanation of the increase of caries in the white race is the combination of soft food and want of cleanliness; in my experience the more savage the nation the more care they take of the teeth. Tooth-brushes are issued to soldiers, but a very large percentage do not use them; this is due partly to laziness, and partly to the fact that, having one or more carious teeth, the use of the brush is painful, especially in cold weather; also partly to the fact that there is no mug convenient at the wash-house. Some men use their tooth-brushes to clean their buttons. Also, there is an erroneous idea prevalent that it is no use cleaning the teeth unless with tooth powder; this is perhaps deduced from button-cleaning experience. Having dirty teeth should be considered as bad an offence as being dirty on parade.

The very common refusal on the part of the soldier to allow the dental surgeon to treat his mouth is largely due to ignorance as to what can be done to improve his mouth, but also largely due to the fact that nowadays it seems that a soldier has a right to refuse treatment, and he is very pleased to exercise this "right"; the exercise of this "right" should, I think, include the right of his superiors to refuse him his proficiency pay for inefficiency.

Old officers and old soldiers will state that thirty years ago there was no necessity for dentists, and that if a man could not eat his food he could always make a stew. Nowadays war is often conducted on somewhat different lines; a column may be taken out and forbidden to light fires, perhaps for one night, perhaps for two nights; where, then, is the opportunity to make a stew? In the long service days the average physique was better, the amount of dental caries less, and the actual active caries proportionate to strength was less, as caries is most active in early adult life.

The following figures are of interest: In an examination of 51 skulls of North-West American Indians only two were found to have had caries. An examination of 10,500 school children (average age 10 years) of the lower orders, showed 37,000 decayed teeth; in 86 per cent. of the mouths caries was present. In 500 boys in schools (average age 13 years), 701 permanent teeth had been lost, and of the remaining teeth 3,521 were carious; in 87 per cent. of the mouths caries was present.

I would also point out that, in my opinion, the proportion of dental surgeons at present employed is quite inadequate for the amount of work which requires doing.