SOME POINTS ON THE EXAMINATION OF RECRUITS OF THE TERRITORIAL FORCE AND THEIR EARLY TRAINING.

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SINCE the mobilization of the Territorial Force some six weeks ago some interesting matters have manifested themselves, both in examining recruits and also during their early training. I have carefully noted certain points, and I think they are worth recording, both from a point of interest and also, perhaps, being of some use to others.

Teeth.

In examination of recruits much stress has been laid upon the condition of the teeth. So far, I have had practically no trouble at all with men's teeth; and after careful observation I can find no relation to exist between bad teeth and gastritis, diarrhoea, or other gastro-intestinal disorders. Men with what would be called bad teeth have on the whole had no difficulty whatever in masticating army rations, and have not complained of indigestion. They have improved physically, and with this improvement their mouths on the whole have shown a marked change in the right direction. I think, then, we should be careful about rejecting recruits, unless the condition of the teeth be very bad.

Hernia and Varicocoele.

Hernia and varicocoele speak for themselves, and I think, if present, should debar a man from being enlisted until they are permanently corrected by surgical treatment.

Feet.

It is with regard to the feet that some interesting points have been observed. When examining recruits I was at first anxious to reject all those with flat-foot except those suffering from a minor degree of the condition. A great many of these men told me their feet had given them no trouble before; others, who were being re-examined, and who had been at previous camps, told me their feet, after fifteen-mile marches, had only ached slightly, and I had confirmation of this from their officers. On the strength of this we passed them. With graduated marches and early morning physical skill, coupled with good food, these feet have improved to an amazing degree, and most of these men can now perform twelve and fourteen mile marches carrying their full kit without any suspicion of foot trouble.

I have during this six weeks quite convinced myself that physical drill, open-air life, with plain, substantial food, coupled with graduated marches, is one of the best treatments we have for flat-foot, and that flat-foot should not debar a man from enlisting until he be given a fair trial under the above conditions.

What has given more foot trouble than anything else amongst the men of this battalion have been cases of foot deformity, such as hallux valgus, hammer-toe, and any other condition that tends to take any one toe out of the plane of its fellows. Such cases have been very troublesome owing to the rubbing of bony points against the boots, and a number have had to be sent home. These are the cases that should be rejected at first unless they be of a very minor degree.

"Rheumatism."

Another very troublesome symptom has been aching and "rheumatism" in the feet. This has been observed chiefly in men over 25 years of age. This was a very puzzling condition. At first one was inclined to think these men were malingering. A number of them complained also of pain in the back, and I ascertained, after careful inquiry, that some did not sleep at night owing to the pain. After careful examination these cases turned out to be true cases of venereal rheumatism. The majority of them had had gonorrhoea previously, and after well squeezing the penis I was able to obtain slight quantities of discharge, non-purulent, but what I consider to be typical of an old, neglected gonorrhoea. There

were also evidences of past trouble in the epididymis in such cases. In all these cases of aching in the feet, in the back, and other fibrous structures, aggravated by living under canvas, gonorrhoeal rheumatism should be thought of and treated. The lesson is to go carefully into the history of gonorrhoea before accepting a recruit past the age of 25 years. If he has had gonorrhoeal rheumatism, he should have a course of gonococcal vaccines, and be completely cured of the complaint before he is accepted. I am quite convinced that much of the rheumatic pain which men get under such conditions can be proved to be genuine gonococcal, and should be treated as such.

Arteries.

In older men, examination of the arteries, liver and urine, especially in old soldiers who have been in India and other places abroad where syphilis and drink have been plentiful, should not be forgotten. I have found that these men cannot stand marches or the work generally. Too often they exert a bad influence on the younger men, and unless absolutely sound they should be rejected from the Territorial Force. I have had more trouble with them as a whole than with all the rest.

Early Training.

A recruit when once he enlists comes under entirely new conditions:

1. He leads a perfectly routine life; he has regular outdoor exercise.
2. He comes under new sanitary conditions; a number of these men are drawn from poorer homes where the sanitary standard is low.
3. He comes under new conditions of personal cleanliness.
4. He comes under new, and in many cases better, conditions of food. Food is plentiful, good, and taken at regular intervals.

These conditions cannot be suddenly forced on any man who is unused to them without giving rise to some constitutional disturbance, and it is while these conditions are new and early that the recruit should be watched. These conditions, coupled with sleeping under canvas, at first swell the list of early morning sick parade. They will complain of a "bad cough," "headache," "inability to sleep," "constipation," "various pains about the body," "tonsillitis," etc.

The whole clue to the prevention and cutting short of these conditions lies in the proper sanitary care of the alimentary canal. Constipation or diarrhoea is often at the bottom of it all, and a good efficient purge, such as pill No. 9, has, in the majority of cases, been all that is necessary. The men often, at first, overeat themselves.

Diarrhoea.

This important symptom should always be investigated, and usually a cause can be found. It may simply result from the change of food and conditions, but it may also exist in an epidemic form. I had several cases of diarrhoea, and the disease once looked like becoming epidemic.

Careful investigation showed that it all originated from the men's mess-tins. The men had been cleaning out their mess-tins with sand and grass. Surface soil at this time of the year is by no means free from Gaertner's bacillus, and the diarrhoea was traced to this cause. Secondly, sand and grass did not efficiently wash out particles of meat and food. As these men take tea, meat, etc., out of this tin at different times of the day, it is easy to see that neglect to clean them thoroughly may be a potent cause of diarrhoea.

Since an abundant supply of boiling water was given them and supervision of the washing of these tins was instituted I now see practically no cases of diarrhoea. "Cramp in the stomach," causing men to fall out during a march, is in the majority of cases due to the use of the water-bottle on the march, and this should be carefully watched. Ice-cream vendors and coster-barrows containing unripe or over-ripe fruit, tripe stalls, and the like should be barred.

Prevention of Sore Feet.

One of the most troublesome of complaints is that of the feet, and the question arises, How can we prevent the occurrence of sore feet?

That much foot trouble can be prevented I am convinced, and I am pleased to say that we have in this battalion been able to reduce it to a minimum by taking the following precautions:

1. Secure properly fitting boots.
2. Properly prepare such boots.
3. Anticipate the trouble in the feet themselves and adopt prophylactic treatment.

The service boots, such as are served out, are not wholly satisfactory. They are roughly tried on at no particular time of the day, and in a hard, rough condition.

The correct time to try on such a pair of boots is at the end of a day's work. If they fit properly at this period, it may be taken that they are correct, as far as size is concerned.

The boots are hard and unyielding. They should be well softened before serving out. I find the best softening agent is crude castor oil. Such boots should be immersed in this material for five or six days before giving them to recruits. The stiffest parts, or the parts of the boot most liable to give rise to sores, are just above the heel, the instep, and about the great toe, and such parts should be thoroughly softened before the boot is given to the recruit.

As before stated, marching, properly graduated, is an excellent treatment for flat-foot, coupled with good food and physical drill. It is really astounding how these cases of extreme flat-foot have recovered themselves under this treatment, and I cannot too strongly emphasize this point. A number of men present the conditions of bromidrosis and hyperidrosis, and these are the feet which easily develop sores.

The routine treatment I have adopted for all is as follows:

The socks are washed every second or third day and thoroughly dried, so preventing the accumulation of stale sweat, which is a powerful irritant to the feet.

The feet are washed daily with soap and cold water, carefully dried, and then rubbed with methylated spirit; they are then dusted over with boracic powder.

Before a march the socks are soaped well and dusted with boracic powder.

These prophylactic measures are simple, and perhaps old, but they have answered the purpose so admirably that I have thought it wise to mention them, for in a battalion of over 1,000 strong sore feet have been the exception.

It would seem that some better designed boot could be possible, and I am hoping soon to suggest a pattern whereby certain parts in the structure of the boot may be altered to avoid chafing over the favourite sites.

Marching and Work.

Lastly, I would issue a word of warning against expecting too much at first in the way of marching and work from men of the Territorial Force newly mobilized. Short and easy marches at first, carrying only a portion of their kit, increased gradually while they are becoming accustomed to their new surroundings, are most important points, but very apt to be overlooked.

Beer in moderation and pipe tobacco are far preferable, in these men, to aerated waters and cigarettes. Regular attention to the bowels and a daily shower-bath after a march are most desirable, and the sanitary squad have done much good in assisting in seeing that these have been carried out, and also in explaining to the men the importance of them.

I have left out of this article the hygiene of tents, occurrence of lice, and other complaints which require special treatment, as such is all laid down. What I have tried to set forth is early and prophylactic treatment of Territorials suddenly coming under new conditions—a state new to them, but old to the regular army—and to suggest a few points which I have found by practical experience have been of great service to me as medical officer to this battalion.

It is estimated that in the Franco-Prussian war of 1870-71 rifles were responsible for 90 per cent. of the deaths, artillery for 8 per cent., and the bayonet for 2 per cent. In the Russo-Japanese war, thirty-four years later, the rifle killed fewer—82 per cent., and the gun more—16 per cent. But this does not reach anything like the proportion of the present war, when the chief execution so far has been done by artillery.

INSECTS AND WAR:

LICE.

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LICE form a small group of insects known as the *Anoplura*, interesting to the entomologist because they are now entirely wingless, though it is believed that their ancestry was winged. They are all parasites on vertebrates. In quite recent books the *Anoplura* are described as "lice or disgusting insects, about which little is known," but lately, owing to researches carried on at Cambridge, we have found out something about their habits. As lice play a large part in the minor discomforts of an army, it is worth while considering for a moment what we know about them.

Recently the group has been split up into a large number of genera, but of these only two have any relation to the human body. I do not propose, in the present article, to consider one of these genera—*Phthirus*—which frequents the hairs about the pubic region of man and is conveyed from one human being to another by personal contact. We will confine our attention to the second genus, *Pediculus*, which contains two species parasitic upon man—(*Pediculus capitis*) the hair-lice, and (*Pediculus vestimenti*)

the body-lice. Both of these are extremely difficult to rear in captivity, though in their natural state they abound and multiply to an amazing degree.

Wherever human beings are gathered together in large numbers, with infrequent opportunities of changing their clothes, *P. vestimenti* is sure to spread. It does not arise, as the uncultured think, from dirt, though it flourishes best in dirty surroundings. No *P. vestimenti* occurs that is not the direct product of an egg laid by a mother and fertilized by a

Pediculus vestimenti (Nitzsch). A. Magnified 20 times; B, natural size.

father. In considerable collections of men drawn from the lower classes, some unhappy being or other will turn up in the community with lice on him, and these swiftly spread to others in a manner that will be indicated later on in this article.

Like almost all animals lower than the mammals, the male of the body-lice is smaller than the female. Its body attains a length of about 3 mm., and is about 1 mm. broad. The female is about 3.3 mm. long and about 1.4 mm. broad. It is rather bigger than the hair-lice and its antennae are slightly longer. Its colour is said to vary with the host upon which it lives, and Andrew Murray gives a series of gradations between the black louse of the West African and Australian native, the dark and smoky louse of the Hindu, the orange of the Afriander and of the Hottentot, the yellowish-brown of the Japanese and Chinese, the dark brown of the North and South American Indians, and the paler brown of the Esquimo, which approaches the light dirty-grey colour of the European parasites.

The latter were the forms dealt with in the recent observations undertaken by Mr. C. Warburton in the Quick Laboratory at Cambridge, at the request of the Local Government Board, the authorities of which were anxious to find out whether the flock used in making cheap bedding was instrumental in distributing vermin. Mr. Warburton at once appreciated the fact that he must know the life of the insect before he could successfully attack the problem put before him. He found at an early