

expressed in the prefatory quotation from Sir J. F. W. Herschel:—"To the Natural Philosopher there is no natural object that is unimportant or trifling; from the least of Nature's works he may learn the greatest lessons."
J. A. T.

THE WASTAGE IN ARMIES BY DISEASE.

THE recent utterances of Sir Frederick Treves on the subject of the Army Medical Service (see NATURE, November 2, p. 15), and the discussion on enteric fever in the army which has appeared in the columns of the *Times*, have again directed attention to the inadequacy of the means taken in our army to prevent the incidence of enteric fever and other filth diseases. The crux of the matter is this: we have to provide hospital accommodation for 10 per cent. of our forces in the field, the Japanese for but 2 per cent. Why this difference? In the South African campaign no less than 746 per 1000 of the fighting forces were admitted into hospital for disease which is mainly preventable. In this war there were something like 450,000 admissions to hospital on account of sickness and some 22,000 admissions on account of wounds or injuries received in action.

"Among those admitted to hospital on account of disease alone, there were 14,800 deaths during the whole war; further, so far as can be estimated at present, 42,741 of the total admissions to hospital on account of disease, and 7998 of the deaths from disease, were due to enteric fever, while 31,363 of the admissions and 1248 of the deaths were from dysentery. In other words, no less than one-tenth of the admissions on account of disease were for enteric fever, and one-fourteenth were for dysentery, or these two diseases alone were the cause of practically one-sixth of the total admissions and about two-thirds of the total deaths on account of disease; these two diseases also accounted for nearly one-half of the total losses by death from all causes during the war. As we know that both enteric and dysentery belong to the group of diseases which are largely the outcome of faulty environment, the sanitary significance of these figures needs no argument."¹

How does the Japanese Army deal with the prevention of disease? The following record sufficiently answers this question:—

"The care of the sick and wounded occupied but a small share of the time of the medical officers. The solution of the greater problem of preventing disease by the careful supervision of the smallest details of subsistence, clothing and shelter was their first and most important duty. Nothing was too small to escape their vigilance, nor too tedious to weary their patience, and everywhere, in the field with the scouts or in the base hospitals at home, the one prevailing idea was the prevention of disease. The medical officer was to be found both in the front and in the rear. He was with the first screen of scouts, with his microscopes and chemicals, testing and labelling wells, so that the army which followed should drink no contaminated water. When scouts reached a town, he immediately made a thorough examination of the sanitary conditions, and if cases of contagious or infectious disease were found, he put a cordon around the quarter where they were. A medical officer accompanied foraging parties, and, with the commissariat officers, sampled the various food, fruit, and vegetables sold by the natives before the arrival of the army. If the food were tainted, or the fruit over-ripe, or if the water required boiling, notices to that effect were posted in suitable places. So strict was the discipline from commanding officer to rank and file that obedience to the orders of the medical officer was absolute. The medical officer also supervised the personal hygiene of the camp. He taught the men how to cook, how to bathe, how to cleanse the finger nails so as to free them from bacteria, as well as how to live in general a healthy, vigorous life, and it was a part of the soldier's routine to carry out these instructions in every particular. As a

result of this system the medical officer was not obliged to treat cases of dysentery and fevers that follow the use of improper food and the neglect of sanitation. During six months of terrible fighting and exposure in a foreign country there was only a fraction of 1 per cent. of loss from preventable disease."¹

It may be true that vehicles other than water, particularly dust and flies, convey the infection in enteric fever, diarrhoea, and dysentery, but much can be done by safeguarding the water supplies.

Diminishing the incidence of these diseases by any means whatever and the subsequent incidence of the disease will naturally be lessened—cases beget cases.

It may or may not be practicable to sterilise the drinking water for a big army in the field, but in camps and in small campaigns such as our "little wars" on the Indian frontier, and in Africa, a great deal more could be done than has been done. Thus in the Tochi Valley, in 1897, a force of some 4000 men was condemned to inactivity and suffered severely from diarrhoea, dysentery, and enteric. The British troops averaged an annual strength of 622, and among them there were 59 cases of enteric with 30 deaths, 371 cases of dysentery with 65 deaths, and 211 cases of diarrhoea with 10 deaths. Here was an ideal instance in which sterilisation of the water or distillation for the sick (as the water was very saline) could have been carried out, as there was plenty of fuel, and the extra cost involved would probably have been more than covered by the saving in pensions, &c. Lieut. Nesfield, I.M.S., in the Tibet campaign used his iodide iodate tablets (see NATURE, July 27, p. 303, and August 31, p. 432), with the result that of 700 men who drank water sterilised with them, none contracted cholera, while of other batches of men passing through the same region a few days later an average of 3 per cent. contracted cholera.

There can be no question that the medical officers of our army are a devoted body of men, highly trained, and fully alive to what should be done, but they are too few adequately to cope with the problem of prevention, and what is more they receive little encouragement in this direction from those in authority. In addition, a body of intelligent trained non-commissioned officers and men, a sanitary corps, is required to carry out the policy of the medical officers. At present guards for the water supply and similar purposes are drawn from the ordinary strength of the regiments, with, of course, no special training. In the China Relief Expedition in 1900 the Japanese provided three skilled men to take care of their sick and wounded for every two provided by the other armies. In olden times it was thought cheaper to obtain a new soldier than to cure a sick or wounded one; the reverse is the case nowadays if the authorities would but appreciate it, and prevention is even better than cure.

R. T. HEWLETT.

NOTES.

WE announce with deep regret that Sir J. S. Burdon Sanderson, Bart., F.R.S., late Regius professor of medicine in the University of Oxford, died at Oxford on November 23.

PROF. EMIL WARBURG, president of the Reichsanstalt in Charlottenburg, and Prof. Henri Moissan, of the University of Paris, have been elected corresponding members of the Academy of Sciences of Munich.

THE twenty-first anniversary of the Royal Scottish Geographical Society was celebrated by a dinner in Edinburgh on Monday, November 27. Prof. J. Geikie, the president of the society, presided.

¹ Lieut.-Col. Firth, R.A.M.C., *Journ. of Hygiene*, Sept., 1905, p. 543.

¹ *Brit. Med. Journ.*, 1904, ii. p. 1332.