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## Chapter X: Military hygiene

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leg should be supported with the roller, or adhesive strips.

As preventive of ulcers of the legs, the limbs should be daily washed in cold water with Castile soap, and no soldier should be permitted to wear garters.

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## CHAPTER X.

### MILITARY HYGIENE.

MUCH disease and suffering may be prevented, and many lives saved, by a careful observance of hygienic regulations. There is no question whatever that immense numbers of soldiers everywhere fall victims to their recklessness and the indulgence of their appetites and passions. We would not advocate too much restraint; men are but men everywhere, and soldiers form no exception to the general law. They, like civilians, must have their amusements and recreations. The bow cannot last long, if kept too constantly and too tightly on the stretch. Occasional relaxation is indispensable to health.

Indolence, however, should never be countenanced in any army. Its demoralizing effects, and its influence upon the health of the soldier, have been noticed and commented upon in all ages. "The efficacy," says an eminent military surgeon, in speaking on this subject, "of due attention to the occupation of the mind must never be lost sight of. Many illustrations of its powerful influence, whether for good or evil, whether in resisting or accelerating the inroads of disease, may be found both in ancient and in modern times, from the retreat of the ten thousand Greeks under Xenophon down to the present day. It may be observed that disease goes hand in hand with indolence and inactivity, whether of body or of mind; and that, on the contrary, where the minds of soldiers are agreeably occupied, and their bodies energetically employed, as in the attainment or pursuit of victory, disease is kept in abeyance." It was the observation of another experienced authority in military medical affairs, Mr. Alcock, that "the period of the smallest loss to an army is a victorious and vigorously prosecuted campaign, with frequent battles and much marching;" an asser-

tion corroborative of the facts, long since so painfully realized, that sickness, however induced, destroys incomparably more soldiers than the sword and the musket.

No intemperance, either in eating or drinking, should be tolerated in an army; both are demoralizing, and both predispose to, if not actually provoke, disease. Alcoholic liquors should not be permitted to be used except as medicine, and then only under the immediate direction of the medical officer. The ordinary drink and food should be selected with special reference to their healthful properties. The use of bad water, even for a short time, is invariably productive of mischief. The tea and coffee should be of good quality, and well prepared, to preserve their agreeable flavor and their soothing and refreshing effects. Lager beer, ale, and porter, if sound, are both nourishing and wholesome, if consumed within judicious limits.

The practice of allowing soldiers spirituous liquors, as a portion of their daily rations, has, I believe, been pretty generally, if not entirely, abandoned in the European service. Its injurious effects upon the health and morals

of troops have long been deprecated. In the British army in India, the use of alcoholic liquors was, at one time, universal, on the supposition that it had a tendency to counteract the depressing influences of a tropical climate; the men took their spirits regularly before breakfast, and not unfrequently several times during the day, especially if on active duty; but it was soon found that it produced quite a contrary impression, causing instead of preventing debility, and affording a temptation to general drunkenness, which was followed by insubordination and crime. The result was that the government abolished the alcoholic ration system altogether, substituting coffee and tea, which are now regularly served once, and often twice a day.

The condition of the 13th Regiment of Light Infantry, stationed at Jellalabad, during the late insurrection in India, affords a happy illustration of the salutary effects of abstinence from spirituous liquors. While the siege was progressing, the men, during a period of five months, were entirely debarred from drinking, and yet their health and courage were most excellent. As soon, however,

as the garrison was relieved, and they began to indulge in spirits, many of them in a short time became sick and riotous. The experience of Major-General Wylie, of the Bombay army, was precisely similar. When the soldiers under his command were quartered in districts where no liquor could be obtained, their health, discipline, and morals were all that could be desired; whereas, under opposite circumstances, insubordination and disease prevailed to a frightful extent.

During the Crimean war, coffee and tea were found to be eminently wholesome and invigorating, enabling the troops to sustain fatigue and to resist disease. When the men were in the trenches, and could not obtain their usual supplies of these articles, they became languid, and suffered from dysentery and diarrhoea. To produce their peculiar sustaining and exhilarating effects, coffee and tea should be taken hot and moderately strong, with sugar, if not also with cream.

Fresh meats are always preferable to salt, though good ham and smoked beef may be taken once a day with advantage as an agreeable change. Fresh fish are always accept-

able. Pickled pork and beef are far from being good articles as a portion of the daily rations. The frequent use of fresh vegetables is indispensable to the health of the soldiery. Ripe fruits are nearly equally so. Without a proper admixture of this kind, dyspepsia, bowel complaints, and scurvy will, sooner or later, inevitably ensue; and woe to the man that is assailed by them! The acids and other properties contained in these substances are indispensable to the healthy condition of the blood and the solids, and the importance of such a diet cannot be too deeply or too frequently impressed upon the attention of every commissariat. Potatoes, rice, hominy, beans, peas, beets, spinach, lettuce, asparagus, radishes, horse-radish, water-cresses, dried peaches and apples, and the different kinds of fruits as they come into season, should be constantly on hand. Soups, both animal and vegetable, are generally grateful to the palate, as well as useful to the system, and should be used whenever the occasion is favorable for their preparation.

Eggs, butter, milk, and butter-milk should be freely indulged in whenever they can be

procured. Serious disease is often engendered by bad bread and biscuit, and it should therefore be made a part of the duty of every medical officer to see that no articles of this kind are brought into camp.

When in the camp or barracks, the soldier should take his meals with the same regularity as the ordinary citizen at his home. Neglect of this precaution must necessarily lead to great bodily inconvenience, and, if long persisted in, may ultimately lead to serious disease, especially dyspepsia and other disorders of the digestive apparatus. He should not disregard regularity even with respect to his alvine evacuations; for there are few things more conducive to the preservation of the health.

The soldier's *dress* should be in strict conformity with the season of the year and the vicissitudes of the weather. He should, at no time, be either too hot or too cold, but always comfortable, changing his apparel with the alterations of the temperature. Flannel should be worn next the surface both winter and summer. The shoes must be thick and warm, with broad soles; and woolen stockings



will be more comfortable, especially when the troops are marching, than cotton. A thin woolen cap-cover, found so useful in India, will protect the neck from the hot sun, and an oil-silk cap-cover, from the rain. In very wet weather the shoulders might be defended with a cape of oil-cloth.

Frequent *ablutions* will largely contribute to the comfort of the soldier and the preservation of his health. They should be performed at least once a day, the best time being late in the afternoon or in the evening just before retiring. The feet, in particular, should be often washed, especially in marching, for reasons which need not be dwelt upon here. The under-shirt should be changed every night, and frequently washed, to promote the healthy state of the skin.

*Exposure* to the hot sun, to cold and wet, must alike be avoided. Sojourning in malarious regions will be certain to be punished by an attack of neuralgia or intermittent fever.

All *offals* should be promptly removed from the camp, and carried to a distance of several miles, or be well buried.

The privies should be in the most favora-

ble location as it respects ventilation, and be closed at least every three or four days; or, what is worthy of consideration, every man should be compelled to bury his alvine excretions, as was the custom, in time of war, among the ancient Hebrews, each man being obliged to carry a paddle for that purpose. The emanations from these sources cannot receive too much attention, especially when large masses of men are crowded together, as they are then extremely prone to induce disease.

Finally, the medical officer should make it his special duty to see that every recruit is *vaccinated*, or, if the operation was performed prior to his enlistment, at a distant period, matter should again be inserted, experience having shown that the effects of the virus are, in time, in many instances, totally eradicated from the system. In most of the European armies revaccination is extensively practiced; and it is asserted by Stromeyer that during the Schleswig-Holstein war, on an average, 38 operations out of 1000 were successful.

It is impossible to bestow too much care and attention upon the selection of the camp ground, and the arrangement of the tents, as

a vast deal of the comfort and health of the soldiers must necessarily depend upon them. The following judicious remarks upon this subject are from the pen of an eminent military surgeon, the late Dr. Ballingall, who served in various campaigns, and who was for many years, as stated elsewhere, Professor of Military Surgery in the University of Edinburgh.

“A camp,” says Ballingall, “is most advantageously situated on a gentle declivity, on a dry soil, and in the vicinity of a running stream. In order to ascertain the state of the ground it may sometimes be necessary to dig into it to some extent; for, although apparently dry on the surface, it may be found sufficiently wet at the depth of a few feet; and if so, ought, if possible, to be changed, particularly if an encampment is to be stationary. A camp should never be formed on ground recently occupied, nor on a field of battle where much carnage has recently occurred. Many favorable spots are to be found on the banks of rivers, which, perhaps, upon the whole, afford the most eligible sites. We must yet bear in mind

that, when the banks of the rivers are low, or the country subject to periodical rains or sudden inundations from the melting of snow on contiguous mountains, there may be a very serious danger from this cause. Against the danger of such a position, we are cautioned in Mezeray's 'Médecine d'Armée,' which states a case in which the Austrian army lost 500 men and 200 horse from a sudden inundation of this kind."

When damp ground or a low situation is unavoidable, it should be abandoned as soon as possible for a better, and, in the mean time, the greatest care should be taken to protect the soldiers from damp and wet with straw or other suitable means.

An army has been known to suffer severely from disease contracted in a malarious region. Against such a calamity useful information may often be elicited from the people of the neighborhood, especially physicians conversant with insalubrious sites.

When an army is obliged to remain for a long time stationary, an occasional change of camp will be greatly conducive to health, although such change should involve a good

deal of labor and temporary inconvenience. A camp under such circumstances should, at all events, be frequently ventilated, and kept constantly clean, a pure atmosphere being of paramount importance to health and comfort. It may often be difficult to do this, but it must, nevertheless, be done; the welfare of the service absolutely demands it, and no medical officer honestly performs his duty unless he interests himself personally in these matters. "The most obvious and perfect way," says Ballingall, "of thoroughly airing the tents is by shifting them occasionally, and exposing the straw, blankets, and soldier's clothing to the open air; the necessity of frequently changing the straw, and enforcing cleanliness in camp in every possible way, are circumstances too obvious to require any effort of reasoning to enforce. With this view the slaughtering of cattle, and everything likely to create noxious or putrid effluvia, ought to be conducted without the camp, and on the side of it opposite to that from which the wind generally blows."

The demoralizing influence of a camp life is well known, and I am convinced that there

is nothing so well calculated to counteract this influence as rigid discipline, reasonable activity of mind and body, strict temperance, both in eating and drinking, and frequent religious worship. Every regiment should have its chaplains, not less than its medical officers, not only with a view of restraining vice and promoting morality, but of affording to the poor soldier, away from home and friends, in the hour of his mortal extremity, those consolations which the minister of the gospel alone knows how to impart. The mitigation of the horrors and miseries of war, not less than the tendencies of the age in which we live, absolutely demand such a provision.

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## CHAPTER XI.

### DISQUALIFYING DISEASES.

TROOPS, whether regulars or volunteers, should include no men that are not perfectly qualified, both physically and mentally, for the hardships of the public service. They