

A letter on the sanitary condition of the troops in the neighborhood of Boston, addressed to his excellency the governor of Massachusetts / by S. G. Howe ; printed by request of the Advisory Committee.

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B. Howe (2961)
A LETTER

ON THE

SANITARY CONDITION

OF THE

TROOPS IN THE NEIGHBORHOOD OF BOSTON,

ADDRESSED TO

HIS EXCELLENCY THE GOVERNOR OF MASSACHUSETTS,

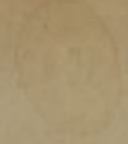
BY

✓
S. G. HOWE, M. D.,
MEMBER OF THE UNITED STATES SANITARY COMMISSION.

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1911

HIS EXCELLENCY GOVERNOR ANDREW.

BOSTON, *July 25, 1861.*

DEAR SIR: Some time ago I made, at your request, a hasty inspection of the sanitary and general condition of our troops which were first sent to Washington, and reported to you that it was, upon the whole, satisfactory, considering the ordinary condition of armies in the field, and considering that the march of our men was not only their first march, but a forced one.

In that sudden and dire emergency, it was meet that Massachusetts and her troops should accept the sufferings and hardships of war without a murmur. It was not a moment for close criticism. But we are getting into a state of persistent war, and it behooves us to see how it can be vigorously prosecuted with the least suffering and hardship to our soldiers that is consistent with honor.

Being prevented from aiding the national sanitary commission, as much as I desired to do, at Washington, I have tried to do something indirectly here by visiting our encampments, and I address to you some reflections suggested thereby.

From the moment a man enlists in the army his bodily and mental powers belong to the country. He is called upon by honor, duty, and patriotism, to devote his time, strength, and life even, if need be, to her service. These obligations are kept continually before his eyes, and those of the world, in prayer, prose, and verse, to say nothing of army regulations; but there are others which are apt to be forgotten.

Obligations between parties are reciprocal, and the country is bound by as strong ties of honor and duty to the soldier as he is to it. The soldier's health is his capital—his stock in trade. It yields a certain daily income in the shape of bodily strength and activity. All of this the country has a right to; but it has no right to touch the capital unnecessarily, or in any way to diminish it. Nay! it is bound by moral considerations, if not by army regulations, to increase it, if possible, so that the soldier may be richer when he is mustered out than he was when mustered into service. Any unnecessary fatigue or exposure, therefore, any needless lack of wholesome food and clothing,

any avoidable violation of sanitary laws, by which the soldier's health is broken, is a fraud upon him.

These remarks may seem trite and superfluous, but experience shows that governments do not practically admit their responsibility to the soldier for the care and preservation of his health—his stock in trade. That our government ought to admit this responsibility, in part at least, is clear, because it undertakes to provide food, clothing, and lodging. These, especially the latter, are often unnecessarily bad and unwholesome; worse, certainly, than our volunteers from New England are accustomed to at home.

Government ought to take as much care of the soldier's health as it does for its personal estate, its implements of war, or its horses, but it does not. For instance, it is well known that the use of straw between the ground and the soldier's blanket is very important in a sanitary point of view; it is useful, too, for horses. Now the United States army regulations allow 100 pounds a month for each cavalry horse, but only 12 pounds a month for each soldier. These straws show which way the wind blows. The government owns both the capital and the income of the horse's vital force, and economizes both; but it owns only the income of the soldier's vital force, and neglects the capital. True, a horse needs more straw than a man, but not eight times as much. The point is, that he is provided, whenever it is possible, with all that is needful for his well-being, but the man is not.

But if this instance is not well chosen, hundreds of others might be given to show what, indeed, the vital statistics of all modern armies show beyond question, that most governments do (unwittingly, perhaps) act towards soldiers as slaveholders are apt to do towards their slaves when negroes are very cheap—they use them up by hard work and poor fare in eight years, rather than make them last sixteen or twenty years by careful usage. Slaveholders have found out that this is poor policy when the prime cost is very high; but government has not found out that, to the country, the costliest things are healthy and vigorous men.

Let us glance at the imperfect statistics of mortality in our armies. In the Mexican war, 1,549 of our men were killed in battle or died of wounds, while 10,986 died of disease; that is to say, for every man whom the Mexicans slew, disease slew seven. This, however, does not tell the whole story. A man slain in battle is one man less in our army; but for every man sick enough to be in the hospital there are

several others ailing, and only half fit for duty, while every patient requires the care and attention of others ; so that 1,000 men on our sick list diminishes our force at least 2,000.

Again : To the slain man there is a sad end. If he does not benefit, he does not cumber the world ; but of your sick men, many are invalided for life. In the Mexican war, 9,749 were discharged as unable to do further military duty. These were young men, and most of them broken down by exposure and fatigue, and many forever ruined in health.

The statistics of the war of 1812-'14 are imperfect, but full of sad, though useful lessons. Some of the regiments had one-third of the whole number sick in the hospitals at one time. Dr. Mann says, that from estimation of the number sick in general and regimental hospitals, he believes that about one-half of the whole army of Fort George was unfit for duty during the summer months.

It is useless, however, to dwell on this matter, because our people begin to understand that the frightful mortality in armies is caused by disease far more than by wounds ; but they do not so well know that most army diseases are preventable, and that sickness and death among soldiers need not be more common than among men at home. Government reduces the mortality in good State prisons below the average in civil life, and they might so reduce it in the army if they would increase the expense. Why not ? The soldier lives in the open air. His diet, and his lodging, and his habits may all be wisely regulated. Nay ! the thing has been proved. In consequence of the frightful mortality by disease the British government sent out a sanitary commission to the Crimea ; and Miss Nightingale sent herself. The soldiers had been dying like rotten sheep. Late in 1854 they died at the rate of 33 per cent. a year. The rate afterwards increased so fearfully, and rose so high, that if it had continued, and if recruits had not been continually poured in to fill the dead men's places, the whole army would have perished in less than a year.

In consequence of active, wise, and resolute efforts the number of deaths immediately began to lessen, and continued to lessen until, in the first quarter of 1856, the rate of mortality was as low as it is usually among men of the army ages in the most healthy rural districts of England.

Let us now look at the condition of the recruits in our encampments. They are said to be in good health. Of course they are, for they are fresh from their various wholesome callings. As time is necessary to

form an army, so it is to breed an epidemic ; and the processes for both are in active operation.

The main object of these encampments should be two-fold—to train men by drill and manœuvres, and to raise their physical powers to a maximum. The first is the duty of the officer, the second of the sanitarian; an actual though lamentable distinction, for a really good officer will be also a good sanitarian. The first duty is everywhere looked after ; the second is almost everywhere overlooked. It ought not so to be. In training men for the ring we not only teach them to hit skilfully, but we at once put them on such diet and regimen as will increase their vital force and make them hit hard. In training soldiers, however, we submit them to such diet and regimen as must decrease their vital force. Who would think of training boxers on salt junk and lodging them in close rooms with foul air ? Yet this is what we are doing while training soldiers ; and it will tell in the coming campaign.

There should be a very small percentage of *kid glove* in an army. We want muscular men who can march fast and far ; who can carry weight, and wheel guns, and use spades, and endure fatigue. In the southern army they have not merely ten but fifty per cent. of *kid glove*. But most of all we want men of abundant vital force, who can resist destructive agencies of all kinds ; among these are climatic influences ; and it will be found that strong, temperate, well-trained northern men will stand tropical heats better than southern men not so trained.

In our encampments there are several things which tend to lower the vital force of recruits.

The space allotted is too small, especially at night.

A crowd is always unwholesome. Men want room. Packing human bodies closely together tends to breed disease. Hence comes the well known fact that epidemic army diseases resemble those engendered in closely packed quarters of large cities. But in no city, and no quarter of a city, perhaps, are people so closely packed as our soldiers are, or have recently been, at one of our camps, where accurate measurements show that the population was at the rate of over a million to a square mile. A thousand men were encamped on 20,460 square feet of ground.

As a general thing, not only at the islands, but in the camps on the mainland, the men are too much crowded.

This is especially true of their quarters by night. The able report of the British commissioners on the sanitary condition of the army

recommends that each soldier be allowed in his barracks a space containing at least 600 cubic feet of air. A room to contain this should be 10 feet square by 6 feet high. If the ceiling is higher, of course the superficial dimensions may be less; but it will not do to carry this too far, for we run against a law which seems to require that every human being shall have lateral room and verge enough in order to be healthy. If you raise the ceiling to 10 feet, you may reduce the floor space to 10 feet by 6, but you cannot by raising it 20 feet reduce the floor space to 10 feet by 3 without detriment to the health of the sleepers; and if they are forced to lie in close contact, no height whatever, though it be of the whole heaven, will prevent contamination of the atmosphere, and injury by other means besides.

With these principles in view, let us look at the lodgings provided for our volunteers. At Forts Warren and Independence some of the men lodge in casemates, some in tents. The casemates are, of course, damp in most weathers, and fires have to be kept up, even in summer, to make them less unwholesome. The following table shows the measurement of these rooms, at Fort Independence, with the number of men occupying them in the latter part of June.

No. of lodgers.	Length of room.	Width.	Height.	Floor surface.		Cubic space.	
				Total.	To each man.	Total.	To each man.
	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>
16	25	13½	10½	344½	12½	3,614	226
16	18 1-6	14	11	254½	16	2,897	181
12	14½	14½	11	212½	17½	2,339	195
12	14½	14½	11	212½	17½	2,339	195
11	14½	14½	11	212½	19½	2,339	212
14	14½	14½	11	212½	15 1-6	2,339	167
21	23	17	13	391	18½	5,083	242
17	23	17	13	391	23	5,083	299
18	23	17	13	391	21½	5,083	282
18	22	18	13	414	23	5,382	299
14	18	11½	13	204	14 4-7	2,652	189 3-7
16	18	11½	13	204	12½	2,652	185½
22	18	16½	11	300	13 7-11	3,300	150
236	3,744½	15 51-59	45,102	190
60	88	27.6	13	2,426	40½	31,538	525½

Here the maximum cubic space of air to each man is less than one-half the minimum recommended by the British Sanitary Commission.

The floor space was still more cramped, being less than 16 feet upon an average, and in one room less than 13 feet to a man. This allows

only about two feet lateral space upon the floor, so that the men slept in actual bodily contact, packed almost like herring. It could not be otherwise. One company, more fortunate, were lodged in a sort of barn, had over 40 feet of floor space, and 500 feet cubic space per man.

The following table gives the measurement of the rooms at Fort Warren:

No. of lodgers.	Length.	Width.	Height.	Floor surface.		Cubic space.	
				Total.	To each man.	Total.	To each man.
	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>
12	15	13 1-6	7 1-6	197.5	19	1,425	119
11	16½	11	7 1-6	181.5	17.6	1,267	115
12	16½	10½	7 1-6	176	14.8	1,261	113
60	45	15	16	675	11.25	10,800	180
12	16½	11	7 1-6	181.5	15	1,283	106.6
12	16½	10½	7 1-6	176	14.8	1,261	105
11	16½	10½	7 1-6	176	16	1,261	113

Here, again, the average floor space was less than 15 feet to each man, and the average and cubic space less than 145 feet.

I omit from the calculation one room, in which on one night 75 men are said to have slept, with a floor space of only nine feet to a man; which is hardly credible even by western travellers, who have to sleep three in a bed, or on the floor.

It is useless to say that the air in such rooms must be unwholesome even with the port holes and doors open in warm breezy weather; but when closed in cold nights, or whether closed or open in still nights, the air must become fetid and unwholesome. Breathing it must, of course, continually, and little by little, lessen the stock of vital force. As for those lodged in tents, they fare worse.

In the first place, the tents are badly pitched. In some no attention is paid to drainage; and in none that I have seen is the drainage systematic and thorough. In some, as at Readville, a slight ditch is dug around the tent, and the sods and dirt left in a heap or carried away at leisure. A far better way is, supposing the tent to be circular, first, to mark a space equal to its circumference at the bottom, and take off all the sods from the inside of this circle, then dig a trench all around the outer edge and throw the dirt within the circle, then take the sods and put them back again and beat them down firmly. You have then an elevated floor; and if you drive the pegs at the bottom of the trench, and strap down, you can easily keep the tent dry without closing it at the bottom. If the wind blows, throw in a

little light straw, hay, or brush, and break the draught without closing the opening. If the ground is well chosen, it is easy to drain all the trenches into one common drain.

I was told by many officers when I suggested these precautions that they were not necessary; that there was not much rain, and the ground being sandy readily absorbed it. But our camping grounds ought to be schools; and the soldiers ought to be taught to take such measures to secure dry sleeping places as will be necessary in the worst weather. As it is now, a three days' heavy storm, such as we have at some seasons, would make most of our tents very uncomfortable and unwholesome, if not uninhabitable.

In the next place, the tents are too much crowded together. For instance, at Long Island, a regiment was encamped on 20,460 square feet, which gave less than 23 square feet of surface for each man. Moreover, the tents, instead of being in separate rows with wide space between each, were in double rows, with the back ends in contact.

This may not occur again; but the same error, though in a less degree, prevails in many camps, and ought to be corrected. Military considerations, of course, often require a sacrifice of sanitary precautions, but they do not in this matter.

As for the floor space and the cubic space of air allowed to the men inside the tents, it seems hopeless, with the modern ideas of encampment, to have as much as is absolutely required for health. Of all the *impedimenta* of an army, tents are among the greatest; and many brilliant campaigns have been made without them. Indeed, I doubt whether, in the long run, men who sleep in the open air, without other covering than a hooded capote or a poncho, suffer more than those who are poisoned by the close and fetid air of tents. In ours the floor surface allowed is so small that the men must lie in contact; while the roof is so low that the cubic space is no greater than that of the black hole of Calcutta.

It is true that in dry weather the canvass is porous; and, besides, the flaps can be kept open; but in wet weather the canvass becomes almost air tight, and the doors must be kept closed.

As for the self-ventilating tents, so called, they afford relief to some extent, and in ordinary weather; but, like all other modes of ventilation which depend upon atmospheric pressure, they fail in those conditions of the atmosphere when ventilation is most needed.

Think of putting twelve men to lodge in a room twelve feet square

by six feet high, though never so well ventilated ! We would not so treat our children ; we should be ashamed so to treat our servants ; but we do so treat our soldiers.

Another matter not sufficiently attended to is the frequent change in the location of the tent. The effluvia and imperceptible emanations from the human body will affect even the ground on which men sleep ; and although they may use straw, or have board floors, still it is desirable that the tents should be frequently struck and re-pitched, even if only ten feet from the old place.

BARRACKS.

Whatever necessity there may be for crowding the men in tents, it cannot exist in regard to wooden buildings erected expressly for the troops, because there is ground space enough, and there are boards enough in Massachusetts ; also, carpenters enough to put them together. The buildings, however, at Camp Cameron, in North Cambridge, are not large enough, or not numerous enough for the purpose intended.

Buildings erected for soldiers' barracks should be spacious, dry, and airy. They should have single bunks, and should be so constructed that the men can observe decency with regard to personal exposure. In the model barracks in England, each man is screened from his neighbor by a bulkhead of thin corrugated iron, not reaching to the floor, nor the ceiling, lest it interrupt ventilation.

The barracks should be provided with shelves, with pegs to hang clothing, and with tables for reading ; but not for sleeping, for soldiers should not be allowed to take their meals in the room where they sleep.

Now the barracks at Camp Cameron are rough, unsightly, untidy, and cheerless. They are about 100 feet long by 20 wide ; upright joists, 10 feet ; roof, 10 feet. They are built of rough boards, roughly put together, and not battened. They are intended for 125 soldiers, non-commissioned officers, and musicians.

On one side are three rows of bunks, made of rough boards, one row above the other. These are each seven feet long and six wide, and intended for *three* men!! On the other side are two rows of single bunks, one above the other, for non-commissioned officers and musicians.

Such buildings may do upon sudden emergency, but they are utterly unfit for New England men to live in. They are unfit for barracks for soldiers who are being trained for the army.

It is no great matter, in summer, that the wind draws through the cracks in the sides and in the floor; but it is a very serious matter in a sanitary and social point of view, that men are forced to pig in together, and sleep by threes in coarse wooden bunks.

There ought to be scrupulous cleanliness, and perfect order, and some little appliances for the comfort of the men, such as smooth deal tables and benches, and the means of some ornamentation. But instead there is, almost necessarily, dirt, and confusion, and indecency.

But what touches nearest the point I am considering is the lack of sufficient space in which the men can live and breathe and have their being. In all well regulated poor-houses it is thought that every pauper should have his own bed; that the beds should be separated from each other by at least two or three feet of floor space, and that the rows of beds should be separated by ten or twelve feet of floor space. It is held essential also that each pauper should have at least 50 square feet of floor space, and at least 500 or 600 cubic feet of air, while it is desirable that he should have 1,000 feet, or more if it can be had. The barracks, however, at Camp Cameron are so constructed as to allow our soldiers less than 14 feet floor space, and less than 245 cubic feet of air. Admitting that the buildings are not full, and that upon an average the inmates do not exceed 100, still we give them only twenty feet of floor space, and 300 cubic feet of air; a stinted allowance, which, if made to paupers, ought to cause the almshouse to be indicted as a nuisance. The same may be said of the Park Barracks in New York and many others.

Again, among the causes which affect the purity of the air in camps is the condition of the

LATRINES, SINKS, OR PRIVIES.

More systematic and strict regulations are needed in our encampments to prevent the contamination of the air by the removal and burial of all offal. The daily accumulation of dirt and filth—the refuse of kitchens, and other matter—is necessarily great wherever human beings closely congregate, but especially where women do not come. In camps the refuse animal and vegetable matter is great, and unless regularly and systematically disposed of, it putrifies and

contaminates the air. For this reason, as well as for others, even with the best police regulations, frequent change of camping ground is desirable.

Around some of our camps are found strewn about on the grass bits of pork rind, potato skins, and the like. But it is especially in the matter of privies, or publics, as they should rather be called, that more care and attention is needed. Is it necessary because they are constructed and used in armies without regard to decency, that they should be so in Massachusetts? Is it necessary to break down that sense of propriety among the men which governs them at home? However this may be, surely the privies should be located and regulated in such manner as to be the least offensive to the senses and pernicious to health; but it is not so. For instance, at Fort Warren, the vast trench dug for the common privy could have been constructed so that the tide would cleanse it; or, if this was not desirable, it might have been placed on any side of the fort. But there was *one* side on which it ought not to be placed, because from that come the prevailing wind. But it is placed exactly there, in the very eye of the east wind, which sweeps the odor into the interior of the fort. The trench itself, too, when I saw it, was in a very bad state, it did not seem to have been filled over for a long time.

In the camps upon shore I saw but one where the privy was constructed with a view to decency, the one at Quincy, but even that was in a most neglected and filthy condition.

The location of the camp privy is important; it should not be too far from the tents, else the men will shirk going to it in the night; on the other hand, it should not be so near as to be offensive.

But what is most needed is strict police regulation for its management. The trench should be at least eight feet deep, and where a foot of refuse has accumulated a foot of fresh earth, mingled, if possible, with some disinfecting substance, should be thrown in. Finally, when within two feet of the surface, the whole should be filled up, and a new trench dug.

All the refuse of the kitchens and of the tables should be carefully collected and thrown into the trench daily.

I have dwelt upon this matter of a supply of space and fresh air, because it seems of the greatest moment. Perhaps there is no one of the numerous agencies acting upon the human system which is more important than air, food itself hardly excepted. Let a man live out of doors and breathe perfectly pure air, by night as well as by day,

and disease will seldom touch him. Statistics, so far as they have been carefully taken, go to confirm the belief that breathing foul air in barracks and in tents is a fertile cause of the great mortality among soldiers. In the British army, of the entire number of deaths from all causes, it appears that of the cavalry, 53.9 per cent., of the infantry, 57.277 per cent., and of the guards, 67.683 per cent., are from diseases of the respiratory organs. In other words—while in civil life, deaths among men of the army age are 6.3 per 1,000; they amount in the cavalry, (the healthiest men of the service,) to 7.3; in the infantry of the line, to 10.2; and in the guards, to 13.8 per 1,000.

It is in view of these remarkable statistics that the British sanitary commissioners forcibly remark that “in civil life, insufficient clothing, insufficient and unwholesome food, sedentary and unwholesome occupations, and the vitiated atmosphere of unhealthy dwellings, all contribute to the propagation of this class of diseases. But, in the army, it cannot be alleged that the clothing, the food, or the nature of the occupation itself, are of a character which would justify the imputation that they are among the predisposing causes of the excessive mortality of the soldier by pulmonary disease.”

If, therefore, it can be shown that the soldier in his barracks breathes a vitiated and polluted atmosphere, it follows, that of the four predisposing causes above enumerated, the last is the one “to which the excessive liability of the soldier to this class of disease may be chiefly attributed.”

If the subject is pursued more closely, it appears that excluding inflammation of the lungs, acute catarrh, and other diseases having no obvious connexion with the purity or impurity of the atmosphere—the statistics still show a great prevalence among soldiers of disorders plainly connected with the state of the air.

FOOD—RATIONS.

Abundant experience shows that men of the army age require daily at least 28 ounces of nutritious food, of which one quarter should be nitrogenous or reparative. The vital force cannot be kept up with less. The quality should be good. You cannot make good muscle out of hard, tough food. It should be easily digestible; because if you waste the vital force of a man on digesting tough food, you cannot have it for effective service.

So far as I have been able to observe the food served out in our encampment, it is sufficient in quantity. As compared with army

rations generally, it is good in quality, but it is not so good as we should furnish to men if, without regard to cost, we were trying to raise their physical power to its maximum.

The United States rations are sufficient in quantity, and generally as good as can be expected in quality, though it is very desirable that the meat should oftener be fresh. The very process by which meat is made to resist putrefaction makes it resist the digestive power longer.

By economy and careful management, however, the United States rations may be made to suffice for the reasonable want of the soldier, all the complaints of the grumblers to the contrary notwithstanding.

But when we come to the matter of *cooking*, it is quite another thing. As tolerably good bread is furnished in our encampment ready made, no other comments are needed, save that it seems served too fresh, and that it would be well to teach the men to make and bake bread. If some such method as that proposed by Professor Horsford can be brought into successful use among the troops, it would be an immense advantage. This is a very important matter, however, and should be gravely considered and carefully tested before any change is made.

The most important culinary matter, as it regards our troops, is the cooking of meat. The object of this is not only to render it more palatable than raw meat, but to make it *shorter*—that is, to have the fibre more easily separable, and also to extract part of the oil without changing that which remains into an empyreumatic state.

The best and wholesomest mode of cooking (as all trainers for the ring know) is *broiling*; for the piece is thin; the fibre is *cut across*, and the oil exudes easily.

Next is *roasting*, especially with the old fashioned spit, (a ramrod will do,) and with motion.

Next is *baking*, not so good as the two first, but far better than the next, which is *boiling*. This extracts the oil, but it is wasteful by dissipating the juices, unless the piece is plunged into boiling water and the albumen coagulated at once. This, however, makes a part of the meat hard. On the whole, it is more expensive and gives less nutrition than the other modes named.

Stewing is only a sort of boiling.

As for *frying*, it is too abominable to be taken into the account. It is positively bad, as it changes the oil into an empyreumatic state

and hardens the fibre. Butter, &c., when melted by gentle heat is digestible and nutritious, but when melted at a very high heat, as by frying, it is indigestible and hurtful.

Now, it is to be regretted that no provision is made in our encampment, nor, indeed, in the United States army, for cooking meat by either of the first three and most wholesome processes.

The British commissioners in their report say: "When a soldier enters the service, he has the prospect of dining on boiled meat every day for twenty-one years, if he is enabled to serve so long; and we have it stated in evidence that men frequently leave part of their meat, which, when cooked and free from bone, does not much exceed a half a pound, their stomachs loathing the constant repetition of the same food in the same form."

British soldiers, when quartered in town, frequently send their meat to the bakers at their own expense, rather than have it boiled free of cost to them.

The French sent out a hundred and fifty ovens to the Crimea for baking not only bread, but meat.

It is highly desirable that some mode be introduced into our encampments and into the United States army for broiling, roasting, and baking meat.

The cooking apparatus in our encampment is entirely insufficient for the purpose of furnishing that variety in the mode of cooking food which is necessary, not only to make it persistently palatable, but even wholesome. Men require variety, not only in the substance, but in the form of their food.

I am reluctant to touch upon the matter of the actual health of our troops, for it is in the hands of able medical men; and I shall do so no further than is necessary to illustrate one point of my communication.

The general health is said to be good; that there are very few on the sick list, and fewer in hospital. But this is an imperfect test of the sanitary condition of the troops. I found many complaining that they were rather unwell; and slight diarrhœas are almost epidemic. These are attributed by most doctors to "change in the mode of life." Now, this is the very matter in discussion. The change of mode of life *ought not* to be such as to lower the vital force of the men at the outset.

It seems to me that the diarrhœas are mainly caused by the fre-

quent checks of the insensible perspiration to which the men are subject in the night. The bedding is insufficient. Many of those who sleep in tents must be exposed to draught, for the flaps must be kept open, in order to prevent suffocation. This is one of the practical ill-effects of crowding men in tents and barracks. We shall hear more of these diarrhœas when they intensify into dysenteries.

We shall learn, too, the necessity, perhaps, of rigidly excluding from the encampments all venders and donors of food, drink, fruit, &c., and confining the men to plain, wholesome food at regular intervals.

I found that lice had begun to infest several of the camps; but the medical men are on their guard, and our troops may escape better than did the army of the revolutionary war, which was never free from vermin and the itch.

I wish I could see the sanitary condition of our encampments in such rose-colored a light as it presented itself to the learned and eminent body of doctors who made the tour of the camps some time ago; but I cannot. I have great faith, however, in the skill and ingenuity of the regimental surgeons. They are getting the "hang" of camp life; and I trust that, by and by, our troops will be models of personal cleanliness, health, and morals, if only good general sanitary regulations for the army are adopted at headquarters, and rigorously enforced by the regimental officers. God forbid that the narrow and impious policy of breaking down all but the animal nature of the men, and of converting them into mere fighting machines, should prevent wise measures for raising the moral and sanitary condition of our soldiers above the common and low standard of armies.

There are other important matters affecting the sanitary condition of our troops upon which I would gladly touch, such as clothing, exercise, amusements, &c., but I have made this communication too long already.

I will close by observing that I have urged the importance of attention to the health and vital force of our troops, mainly upon economical grounds, trusting that others will urge the moral and religious duty of the government and the people to do everything possible for the well-being of those on whom the country is to rely for all which makes a country worth living in.

Respectfully,

S. G. HOWE.

His Excellency J. A. ANDREW.