THE MEDICAL SERVICES IN THE FIRST LINE.

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The following notes are the outcome of certain experiences while in medical charge of an Infantry battalion during the late war. Some of my conclusions and views may not be accepted by everyone, but they will, I hope, serve to direct attention to a few of the difficulties and problems which are associated with medical service in the first line.

The causes of men falling out on the march (apart from blistered feet) are, in the early morning, diarrhoea and colic, and later in the day, exhaustion due to heat and fatigue, producing a tendency to heart failure. The latter is sometimes a most serious condition, and having once affected a man, tends to return again and again if he undergoes any extra exertion. These cases multiply rapidly if the physical strength of the men cannot be kept up by good and sufficient food, with the necessary amount of sleep and rest. Blistered feet are very common after the first day's march and for perhaps another two or three days. After the first three days this condition is not a serious cause of incapacity. I generally found that when new boots had been issued, a necessary evil in a long campaign, my care had to be redoubled on the first day or two out of camp. It is impossible for men to march with badly blistered feet, but it is fortunate that one or two days' rest in the ambulance, coupled with cleanliness and the application of vaseline, invariably makes the men quite fit again for the road. My rule has been to open a blister always, and also direct that, after bathing, the feet must be very thoroughly dried and fresh socks put on.

In the above-mentioned cases of exhaustion, I found that if the men were relieved of their rifles and ammunition, they were then generally quite able to continue the march, showing, I think, that the extra strain of carrying heavy weights and also the pressure on the chest of the straps, had been too much for the heart. The loaded pouches pressing more or less on the heart, stomach, transverse colon and liver, were causes also of great discomfort and many complaints, and possibly were one of the causes of the early morning diarrhoea. I think the bandolier is a much better
arrangement, and I am sure the men much prefer it. The cardiac exhaustion cases were much more frequent among the men of the volunteer company, than among the regulars, probably due to the former being less accustomed to the life of a soldier on active service. The regulars, too, of the battalion I was with, had mostly been serving in South Africa about two years before the war, and may not have felt the heat, exertion and the strangeness of their surroundings so much as the men of the volunteer company.

When speaking of the medical arrangements for a battalion on the march, it is as a rule not plainly enough stated that medical attention is always called for sooner or later, and also that this attention will include the means which the medical officer has of getting the sick and wounded into camp. Whether the battalion is or is not attacked by the enemy, the cases of incapacity for marching will occur and arrangements should always be made to meet them. The numbers will, as a rule, be in proportion to the length and difficulties of the road, as well as to the climate and the fitness or otherwise of the men. If the battalion is forming a rear-guard I know of no more difficult position for the medical officer. The battalion is continually falling back, and therefore frequently and unavoidably placing the regimental stretcher bearers and the ambulance between their own and the enemy’s fire. It is particularly on such occasions that a sufficient number of ambulances must be available for the use of the medical officer. The conditions are so varied that it is not possible to lay down rules to meet all cases, beyond emphasising the fact that he must make the best of the situation, and above all things get his ambulances emptied at every possible opportunity. Professional aid on the march is generally limited to giving temporary attention either of a medical or surgical character to any man needing it. The wounded or sick from flanking guards must be brought to the central roadway and, if unable to march, must either be placed in the ambulance attached to the battalion, or, if this is already full, they must be given a slip of paper showing the name of the man, his regiment, the cause of incapacity and a request for conveyance to the camp. This paper will be signed by the medical officer and presented by the man to the officer commanding the Bearer Company. The medical officer must enter all cases going sick in his own note book for the information of the officer commanding the battalion and the P.M.O. of the column. Sometimes it is necessary to leave one
or two stretcher bearers with the man, though, unless the man is seriously hurt or ill, it is best to take the bearers on with the battalion, or they may not find it possible to catch up their unit, especially if they are carrying a stretcher. It is of course quite impossible to carry a loaded stretcher at the pace a regiment usually marches, and yet this simple fact is not at all well understood by many officers.

Attention to the wounded during an action is now perhaps more difficult to carry out than when the range of firearms was of less extent. The difficulty is due to two main causes, firstly, the extensive area covered by the battalion, and secondly, to the doubt as to whether the danger to the wounded man, as well as to his bearers, justifies the attempt at removal, except during a lull in the fight. It is generally quite possible to reach the wounded man and apply a temporary dressing, but if you give him a voice in the matter, he will as a rule prefer to lie where he is. Often he is in or near some comparative shelter, selected perhaps by himself when advancing. I certainly do not consider the rapid carrying from the field of all wounded to be the chief thing to aim at, and most of those to whom I have spoken agree with this view. The best possible arrangement for the safety and welfare of the man, under the circumstances, is what should be tried for; there can be no hard and fast rule to meet all cases. Dressings should be of the simplest kind, remembering that permanent dressings are not applied on the field, but are carefully and deliberately applied in the field hospitals. The wounded should be collected in some central sheltered spot, if that is possible, and there temporary dressings should be applied, the medical officer keeping up as well as he can with the battalion. When the stretcher bearers from the Bearer Company are at hand, they take charge of the wounded and carry them to the rear, otherwise it will be necessary to leave one or two regimental bearers to see that the men are properly looked after, the medical officer giving orders to these bearers to rejoin the battalion as soon as possible and report themselves to him for instructions. The collecting and dressing stations are not separate places when speaking of the medical arrangements of a battalion. The medical officer cannot be at several places at once, and it is therefore necessary to select central dressing stations as he advances.

When a battalion is attacking, I found the following positions
for myself and the regimental stretcher bearers to work satisfactorily. The battalion will be in the usual open formation, with a frontage of half a mile, and the depth from front to rear being probably about 500 yards. If the country is only moderately uneven or covered by bush, it is impossible for the medical officer to get a good view of the fighting line; I therefore placed two stretchers (eight bearers) to the right and left of me, they were well extended and marched between the first and second line of the attack. The Corporal carrying the field medical companion and one water-bottle remained with me, either in or near the second line. By this arrangement I could as a rule see the two stretcher squads to my right and left, and the bearers could at any time inform me as to any casualties that were occurring in the lines near them. I sent the surgical haversack and remaining water-bottle to the flank where the greatest number of wounded might be expected. The bearers, it will be found, soon come to the limit of their strength when carrying loaded stretchers; the medical officer must therefore arrange to have their journeys shortened as much as possible or their use as bearers will soon be lost to him. It should be noted that the man’s blanket or great coat makes a better and safer mean of carrying him down the side of any steep or rocky hill than does a stretcher. Sometimes a severe injury to a leg or other part will make the use of a stretcher absolutely necessary, but in this matter the medical officer should himself make the decision. If the man must be placed on a stretcher at least six men will be required to carry it down any rugged hill with safety. With regard to tallies I consider it is not possible or necessary to fix them on to every wounded man, but it is necessary to attach them to all serious cases and to write a few particulars of the wounds or other injuries (name, regiment, &c.) in the medical officer’s notebook for the future information of the P.M.O. and O.C. of the battalion after the action.

I am strongly of opinion that increased accommodation for the carriage of the sick of a battalion on the march should be allowed, and it must be plainly laid down that the ambulance wagons are under the control of the medical officer of the regiment, and he must be careful to see that they are always used for their legitimate purposes. I would recommend two light four-wheeled ambulances, drawn by two horses, each of which can be driven and looked after by one man on the march. The Canadians had
a light ambulance of this character, which I had the use of at Belfast. These two ambulances would carry easily between them, four lying down and six sitting patients. These small ambulances are more generally manageable, do not require such expert drivers, carry between them more patients than one ordinary ambulance of the official type, and only require the same number of horses and men. They should be with the battalion during the march, but in camp and when an action is pending they should rejoin their unit, i.e., the Bearer Company. If it is necessary to have an ambulance with a battalion in camp on account of the distance of the men from the nearest hospital, this could be easily arranged. The Bearer Company should only lend these ambulances to the medical officer of a battalion for the march.

The advantages of having two ambulances is, that if one is delayed to pick up a wounded or sick man, the other can keep up with the battalion and be ready for use. There is another point. I think it will be admitted that the medical officer of a battalion is the best judge as to which men should be carried, and it should not be left to the Bearer Company to decide which are the deserving and proper cases to ride in the ambulance wagons. I have heard it suggested that two-wheeled ambulances are as useful as four-wheeled; I do not agree to this. With the latter the same number of horses are needed, they are more comfortable and are safer. If on the march or in any temporary camp, the lying down cases can remain safely in the four-wheeled wagon, while the horses are taken out to graze and water. The number of stretchers with a battalion, I consider, should be six, that is four for use in action and two to be kept in reserve. The present pattern stretcher is very serviceable. A lighter stretcher could be made, but for all-round, general work, there is little to be said against the present one; the firm sides and the wheels raise it off the ground when the bearers are resting and this is imperative in a good stretcher, making it far preferable to the lighter ones that are often illustrated and described as superior to our own.

The regimental stretcher bearers, according to regulations, march fully armed with their respective companies, and only when an action is about to take place are they to report themselves to the medical officer. This appears to me to be a most serious mistake, which is largely due to making an erroneous distinction between the position the battalion is placed in “on the march,” and “in
action”; the battalion is, on active service, in an enemy’s country, and therefore is always in the position of a battalion in action. The bearers may not always be able to report themselves “when an action is about to take place,” or if they can do so, the Maltese cart may not be to the fore for some reason and there is therefore no place in which to put their arms and ammunition, and no stretchers ready for them; besides, the Corporal told off to the medical officer cannot be expected to carry the medical companion, surgical haversack and two water-bottles, until relieved by the bearers. The medical officer and the battalion lose in fact three-quarters of the usefulness of the bearers by the present arrangement. There is nothing gained by making these men tire themselves on the march, by carrying rifles and ammunition and the necessary belts and straps, if they are not to use them when the enemy comes in sight. The stretchers should, as already ordered by regulations, be carried in the Maltese cart when the battalion is marching, but should the cart for some reason not be available, it will be found that two stretchers are the outside number that can be carried by the bearers with advantage. The remaining four must be placed with the medical panniers in one of the company wagons. This arrangement is only to be regarded as a make-shift and is most inconvenient, though on many marches it was the only practical method.

The medical officer must keep his men as fit as possible; tired men are useless, and unless the length of the march is known to be quite short, two stretchers will be as much as can be managed, and, at the same time, have the men fit to meet emergency cases. I look upon the training of bandsmen, in time of peace, for the position of stretcher bearers in an action, as, to put it mildly, a waste of time, for the reason that trained musicians will never be given by the officer commanding to carry out the dangerous duties of stretcher bearers. Besides, the band is usually left at the base, and, as these men are therefore not forthcoming, it means that all the work of training fresh men devolves on the medical officer, at perhaps a most inconvenient time. The following arrangements, by permission of the officer commanding the battalion to which I was attached, were carried out by my wish and worked well under all kind of conditions. There were practically no bandsmen, trained or untrained, and regular instruction of the bearers had therefore to be commenced at once. The N.C.O. and regimental stretcher bearers handed in their rifles and came immediately under
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my control from the commencement. The N.C.O. carried the medical companion and one water-bottle; the surgical haversack and the other water-bottle was carried by one of the stretcher bearers. The men were therefore from the commencement non-batant. I trained them and, as they rapidly gained in experience, they were most useful to me, quite as much on the march as in action, and were also of great use in camp. They marched with me in rear of the battalion, unless owing to the formation of the advance the companies were at all scattered, they then joined their companies, reporting to me if there was any man requiring attention. Sometimes, on convoy duty, the battalion was divided up into advance, rear and flanking guards, and the bearers were then of great use, as I could always feel that no man would be neglected. On arrival in camp, strong picquets are frequently marched off at once to occupy any hills overlooking the camp, and the stretcher bearers were always ready to go with their respective companies, taking a stretcher and a water-bottle with them. If anything unusual occurred, one of the men came in and informed me, or the injured man was at once carried into camp on the stretcher.

At present the arms and ammunition of the regimental stretcher bearers must be placed in the Maltese cart under the care of the one orderly told off by regulations for this purpose. Besides, therefore, the questionable correctness of carrying arms in a cart marked with the red cross, there is the probability of their going astray, leading perhaps to considerable trouble for the medical officer. The Maltese cart should always be for purely medical equipment at all times. Commanding officers of battalions do not always look on medical arrangements as seriously as they deserve; implements such as entrenching tools and all kinds of camp necessaries are at times placed in the medical cart. It would be well for the medical officer to be able to refer to some strong ruling in this matter, as, if he is to be of the greatest service to the battalion he must have the Maltese cart entirely for his own equipment. Handing in the stretcher bearers' arms and ammunition from the first paves the way to bringing the bearers and the Maltese cart with its' contents under the protection of the Geneva Convention; as I think they should be. The bearers could then wear the Red Cross instead of the usual "S.B." brasard. The friction that was caused between the Boers and ourselves on these
points would then not have arisen. It was, I found, quite impossible to state clearly to anyone what was the true position of regimental stretcher bearers, and I could not but agree with the Boers when they fired on my men, as by our own showing they might become combatants at any time, and were therefore, they considered, fairly open to be shot, even if acting at the time as stretcher bearers.

I do not consider that enough use is made of the medical officers attached to regiments, especially is this noticeable in camp. It could be always arranged that they should look after all minor cases of disability themselves, not troubling the hospitals, and it would be a good thing if the medical officers were always members of a "Camp Sanitary Committee" acting under the P.M.O. The above method was used very generally during the war, but as it is not laid down in regulations definitely, commanding officers were inclined to think that they could excuse the medical officer attached to their particular unit from any duty that seemed to be outside the actual limits immediately affecting the battalion.

The following notes and suggestions would, I consider, make it possible for the medical officer of a battalion to be more generally useful than at present, and are chiefly addressed to alterations in the medical equipment. A larger amount of surgical dressings should be allowed, and I would suggest a similar box to the "anti-septic case" (tin lined), containing much the same material and having a smaller "expense" box inside it for holding the materials in actual use. The medical officer of a battalion is not as well equipped as he ought to be to meet ordinary dressings and to combat minor complaints. A much larger amount of vaseline or some similar material for blisters or chafed parts should be allowed. The perforated zinc for making splints, together with the hammer and anvil, are not suitable things for an officer to depend on in the field. He is not always in a position to make a splint from such material just when it is required, and I consider perforated zinc and the card-board supplied cannot take the place of the ordinary wood or wire splint. The medical officer should have a sufficient number (say two sets) of reliable, ready-made splints with him. I think the addition of another surgical haversack (which would allow of one for each half-battalion) is required, and if three more water-bottles were allowed, each stretcher squad and the N.C.O. with the medical officer would then be in possession of one. This additional equipment would well repay the
extra labour of carriage. On the march the medical officer must be able to treat cases of diarrhoea, colic, ordinary colds, malaria, dysentery and collapse, and this leads me to suggest that increased quantities of the drugs to meet these diseases might take the place of the following rarely used remedies in the medical panniers: i.e., gallic acid; argent-nit.; antipyrine; iodoform; aconite; pot. bicarb.; Blaud’s pills, and also the large quantities of pulv. ipecac. The amount of tinct. of opium might be doubled and the extract omitted; the quantity of castor oil should be increased, while the olive oil could be omitted. The case containing the hypodermic syringe would be improved by adding a little cup that would stand, and large enough to allow the top of the syringe to enter it. For use on the field, I would suggest a flat leather case divided into two compartments, which would fit into the left breast pocket; one compartment to contain a flat bottle (capable of holding half an ounce of a solution of morphia), the mouth of which must be fairly wide or fitted with an india-rubber tube to allow the solution to be easily drawn into the syringe; and the other, a metal case with screw or bayonet catch lid, to hold a hypodermic syringe and two needles. It is very difficult, with our present arrangements, for a medical officer to have the morphia solution and the syringe always at hand, and I think the above would perhaps meet the difficulty. The solution for the bottle can be freshly made before an action, using the case of tabloids. A binaural stethoscope should take the place of the present single one, as nothing can be heard with the latter in camp. Two good-sized enamelled basins would be a most useful addition to the medical officers’ equipment. An additional lantern and some cleanly means of carrying a supply of candles is required.

In the A.M.D. report for 1899, page 467, there is a description of an “emergency carrier”; it would I think be of service for bringing in cases from short distances that do not require a stretcher, and as the “carrier” only weighs eight ounces it seems worthy of a trial. Light frames on wheels called the “MacCormack-Brooke,” for carrying loaded stretchers, were used in hospital camps a good deal and gave much satisfaction. I think if these were modified they would be of use on the march, in action and also in camp, saving the labour of turning out an ambulance for perhaps one case of sickness, and also because they would be able to go into many situations that would be impossible for an ambulance; and
yet the fatigue to the bearers wheeling the carriage is very slight, and two men could bring the patient many miles over a fair road with moderate comfort to the man and ease to themselves. The modifications recommended are the following: the wheels must be made about 6 to 9 inches less in diameter and the legs increased from two to four, the wheels themselves must be made easily detachable from the frame, so that when the carriage is not in use the whole can be easily packed into the Maltese cart. These modifications would allow of two bearers lifting a loaded stretcher on and off the frame with ease and safety, which the present wheeled carriage does not. I would suggest one or two of these wheeled frames for each battalion.

It is necessary that a medical officer should have at least two tents; they should be part of his equipment and be carried in the Maltese cart. One tent is his "inspection" tent and serves also to keep the dust and rain off his technical equipment; the other is the "emergency" or "detained" tent, to receive any sick man from the company lines, and in which he can wait until a conveyance to hospital can be provided. There is no mention in regulations that I am aware of, that a batman or groom should be told off to the medical officer of an Infantry battalion; this man takes charge of the officer's horse during an action and also immediately on arrival in camp—he is therefore an absolute necessity.

The following men of the battalion should be considered always at the disposal of the medical officer:—

One N.C.O.
Sixteen stretcher bearers.
One orderly to look after the Maltese cart, and who can act as the officer's personal servant.
One groom.

I found it quite impossible to work with less than this number, viz., nineteen; it is not excessive and the medical officer should be able to refer to regulations that he is entitled to these men. If he is short handed it is impossible for him to do his duty.

For the Maltese cart the following contents are suggested:—
Six stretchers and one or two "wheeled frames."
Two field medical panniers (Nos. 1 and 2).
One antiseptic case or similar box.
Two special tents.
Two hand basins.
A sanitary officer, under whom all the medical officers of units would act, should always be appointed to a Division. With a smaller command the S.M.O. would naturally be the chief sanitary officer. The sanitary officer must be a man whose opinion will carry weight with the commanding officers from his acknowledged experience, as well as from his rank. The need of such a sanitary medical authority was very apparent in many of the large camps in South Africa. New comers were frequently marched on to ground only lately left by other units, a wrong thing in itself and doubly so when the corps leaving had suffered much from enteric fever or diarrhoea. Proper care of the water supply was frequently not taken in large camps. Small camps were, as a rule, well cared for, perhaps because insanitary conditions were more easily seen, and it was not such a large undertaking to remedy them. Personally, I did not find the Berkefeld filters were a practical success; they were easily damaged in carriage as well as by careless or hurried working of the pump. On many of the marches the water was too thick or too slimy to put through any filter of this kind. Also, the men will continue to drink from any stream or dam, in spite of all warnings. It is probable that except when in camp for a day or two the men do not get filtered water to drink, even once a day. I tried many times to work these filters successfully, but I could not shut my eyes to the fact that most of the water drunk by the men had not passed through the filters. It is, I think, quite impossible to keep very thirsty men waiting for a drink even when resting in a temporary camp. If a battalion is marching every day and starting almost before sunrise, it is not possible to fill the water-bottles with filtered water. Again, on arrival in camp one or two companies have frequently to march straight on piquet, perhaps before the wagons get into camp, so that filtration of their drinking water is out of the question. If Berkefeld filters or any other arrangements for the filtration or sterilisation of water are to be more efficiently used, a regular staff must be allotted for this most important sanitary duty, and drawing extra pay.

The trench system of disposal of excreta if carefully planned, well dug and filled in when within 18 inches to 2 feet of the surface, is very satisfactory for temporary or even for more or less permanent camps. For permanent camps, concreting the surface of the latrine should always be carried out, especially the ground on which the
pails stand. The pail system, as used at Bloemfontein was, I consider, not a success, chiefly because the floors of the latrines were not concreted and the ground around them consequently became very foul; the carts also, when removing the pails, frequently left a trail of filthy liquid on the roads through the camp. This was probably the main cause of the plague of flies from which we suffered a good deal. If trenches are used they should be covered in twice a day and the ground around them kept very clean, chloride of lime being freely used.

As to food, the biscuit ration was barely enough, and when reduced, as it was several times, to one half, it became starvation diet. Fortunately, we never had a very long spell of such short commons, but its evil effects were noticeable for many days after the men had again come on full diet; they were much weakened and could only do short marches with any ease. The reduction in the meat ration was not nearly such a trial, perhaps because it was frequently very poor in quality, tough and uninviting. The tinned beef in its different forms was very good at all times. The rum ration was much appreciated, and, I think, did nothing but good after some of the long and exhausting marches, especially during the cold months; but as a routine issue and especially in camp under ordinary circumstances, it should not be allowed, indeed, I often thought it made the men slow, forgetful and generally dull. I would prefer to see good whisky issued instead, on the exceptional occasions that spirits are needed at all. Tea might be allowed in more liberal quantities, say half an ounce per man daily; the men would carry it willingly and perhaps the knowledge of its refreshing qualities would help them to wait until the water was boiled and the tea added in their canteens. They are always keen cooks, and I believe the increased issue would be a good thing and perhaps help to prevent illness. Coffee was always greatly valued by officers and men. Cheese would have been greatly appreciated. Sugar and jam, of which there was a most liberal allowance, were much liked and were I think of great value as articles of food. No “fancy” biscuits ought to have been tried on the men; on some occasions rather daintily made biscuits, flavoured with ginger were issued. They were most unsuitable and not satisfactory as food.

Khaki drill I look upon as a distinctly dangerous clothing for many months of the year in South Africa, and I think serge
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should entirely take its place. I have often seen khaki drill wet through with rain or perspiration, indeed, I have experienced this many times myself and know what the discomfort, apart from the danger, is like. The method of wearing putties over ordinary trousers, led to dragging at the knees and seat, and after a very short time the men's trousers were hopelessly torn at both places. Either peg-top trousers or knee-breeches, with double cloth at the knee and seat, would be an improvement, and they should be made of ample dimensions. Three or four pairs of socks are needed to allow of sufficient changing and washing.

As for the Geneva Convention, I do not consider many of its articles are nearly explicit enough, while several of them are fundamentally unsound. Something more charitable to the sick of both belligerents is necessary. I believe the Boers would never have fired on our sick and wounded if they had not heard of the Geneva Convention (I am speaking now entirely of my own experience in the field). The Convention allows that ambulances “held by a military force,” or if not, if they are not carrying sick, can be freely fired on and taken by the enemy; surely this arrangement cannot be defended. How, for instance, can it be known whether sick men are in the ambulance or not? As far as my experience goes, sick or wounded men were nearly always in the ambulance on the march with troops. I have already stated that I think the regimental stretcher bearers should at no time carry arms and should wear the red cross and not the ambiguous stretcher bearer badge. There should in my opinion be no question as to the neutrality of all arrangements for the sick and wounded, hospitals and their equipment, bearer companies, isolated ambulances, medical equipment carts, stretcher bearers and others who are entitled to wear the Geneva cross. The distinction of regimental stretcher bearers, as being outside the Convention, is not workable, and led to a good deal of misunderstanding during the late war. An ambulance should be allowed to carry the rifles and ammunition of the sick or wounded actually in the wagon; the arms of course being liable to be taken by the enemy from the ambulance. I do not think any ambulance cart or hospital should “take charge” of arms and ammunition; if the sick or wounded bring their arms with them they must be handed over at once, if possible, to their proper units, otherwise to some recognised depot, and should never be taken “on charge” by those attending the sick. Medical arrange-
ments can never be regarded as neutral, if their carts and hospitals are full of arms. During the late war hundreds of rifles and enormous quantities of ammunition were taken on charge and kept in the stores of our hospitals. Having got rid of the arms and ammunition from the medical stores and carts, and also from the regimental stretcher bearers, the neutrality of those attending to the sick and wounded and of their equipment generally surely ought to be allowed, and no further unnecessary difficulties placed in the way of what is after all merely ordinary charity, and which equally affects both sides.