should be completely closed. The band holding the bars should be placed on the fifth row of bricks. The door in the bars can be let down when it is desired to empty the incinerator of any tins, &c.

The design can be easily adapted to local circumstances, and in very wet and windy weather the spaces left between the bricks can, if necessary, be closed up with clay on the weather side.

Echoes from the Past.

ARMY MEDICAL ORGANIZATION IN WAR, WITH SUGGESTIONS AS TO MILITIA AND VOLUNTEER AID.

BY SURGEON-MAJOR G. J. H. EVATT, M.D., A.M.D.

I PROPOSE in this paper discussing the subject of our medical organization in war, and to make certain suggestions as to its more efficient working, and further to lay down certain proposals as to the aid we should receive from the Militia and Volunteer services of this country in order to secure war success.

I trust you will allow me at the beginning of my paper to say how important a function this Institution fulfils, inasmuch as it allows an officer of any branch of the Service to come here and offer his suggestions as to weak points which, in his opinion, may exist in the Service; and how important, in my humble opinion, it is to encourage and not to stifle such expression of opinion, provided always the just demands of a fair discipline are satisfied.

The medical service is, in this respect of free expression of opinion, more handicapped certainly than the artillery or engineer corps, for these latter arms of the Service have their own corps journals, where an officer of any rank, senior or junior, may open

1 Reprint of a Lecture delivered at the Royal United Services Institution on January 18, 1884.
up, under his own name, the most vital or radical discussions as to his corps organization. We as yet have no such journal, and hence the officer who feels any changes desirable is forced to have recourse to other means of awakening public opinion far less weighty than signed papers.

In the first place I have to complain that—so far as my personal experience goes in the Service—the subject of military medical organization for war has received little study by military officers, and I can count on my fingers the number of officers I have met who fully appreciated the fact that they—that is, the purely executive officers of the Army—are to-day as absolutely responsible for medical war efficiency as for the efficiency of the artillery or any other branch of army service. Few great military leaders have disowned this responsibility; on the contrary, the more one studies the lives of the great soldiers of past centuries, the more one can see that, according to their lights and to the then prevailing views of preserving life from disease, those military leaders were quite ahead of the age they lived in, and they felt for their men an abundant sympathy in guarding them against breakdown from sickness, and, if sick, did as much as they could to make them comfortable. I complain that to-day, in our Army, I fail to find any general knowledge of medical war wants diffused through the Service; and that while the medical service is struggling to put itself into unison with modern war demands, it finds itself handicapped, and not supported by current military opinion.

That it should be so is very lamentable; but I blame the medical service for much of this apathy or ignorance, for we have not taught the Army as we should have done. Had we but explained to officer and soldier by lectures and demonstrations what our wants and aims were, we should have killed out opposition, and made partisans, instead of opponents, of the military officers. Influenced by such views as these, I ask to-day to be permitted to explain what the aims of the more recent medical changes in the Army were, and why we have broken with the past organization of the medical service.

To understand the present system, I must ask you to go back with me thirty years to 1853, and the year that succeeded it, and see what was the then method of working the medical service in war. Let us take the army that embarked for the Crimean campaign as our example, and see how we were then situated as regards the war system of the medical service.

The medical service then consisted of a grouping of medical
Army Medical Organization in War

officers, commissioned by fours, threes, or singly, to every battalion or battery. These officers wore the regimental uniform, were under the command of the battalion commander, and administered their regimental or battalion hospitals under the control and on the responsibility of the military commander of each unit.

In every garrison there were a series of small battalion, regimental, or battery hospitals, each entirely distinct and separate, where the sick of each battery or battalion was treated by its own battalion or battery doctor.

The nursing was done by a regimental hospital serjeant and a certain number of privates of each battalion who were placed by the commanding officer for duty in the wards.

The hospital serjeant was the executive agent of the military commander to maintain discipline in the hospital, and to see that the medical officer's orders were carried out, for the army surgeon himself had no definite power of command over either serjeant, orderlies, or patients, but referred all questions of the kind to the military commander. If a regimental surgeon went sick or went on leave, a staff doctor, of which there were some sixty or seventy in the Service, was employed in filling up the sick man's place; but still the same system went on, and the staff doctor was simply the locum tenens of the absent man.

For every detail of work in the regimental hospital the officer commanding the regiment was officially responsible, save only and except medical treatment. The discipline was done by the colonel; orders were issued by the adjutant; the quartermaster did the transport and stores work, and the orderlies of the battalion did the nursing.

There were not in England in 1854 more than three, if so many, general hospitals; all the sick were subdivided in each garrison into small groups of regimental hospitals. An Army Corps consists, as you all know, of about forty-seven units, divided into divisions, brigades, and corps troops. When the army went to the Eastern campaign, the Army Corps had with each of the forty-seven units a hospital varying in size according to the size of the unit. Whatever size the hospitals were, they were purely regimental; the doctors wore the regimental uniform, and no authority existed for moving them from their battalions, or, if they were moved, no power existed to move the serjeants and nursing orderlies—men quite as important in their way as the doctors themselves.

This is what is everywhere called the regimental system, and in 1854 it was put to the test by actual war. An army exists for war;
if it fulfils that function, it is good, if it fails in that duty, then however successful as a social organization, however pleasant as a centre of comradeship, however full of interest and romance it may be, it is a sham, and had better be cleared away. I maintain that the then organization of the medical service was, as far as a military war service is concerned, a sham. Measured by the war test it was a failure; why, we shall now proceed to discover.

Whatever the old-fashioned campaigns of last century were, with their easy marches, their slow manoeuvring, their retirement for six or eight months of each year into winter cantonments, war is to-day a different thing. To-day rapidity of movement is a distinct factor in military success. The army that unencumbered can rapidly strike a blow at the enemy, is the army that has many points in its favour in the game of victory. I say now that any army which attempts in modern war to carry forward with it its sick and wounded men, a principle implied by the regimental hospital, is doomed to failure. The heaviest burden, the most killing weight an army ever carried with it, is the sick and wounded man, and how to get rid of him is really the keynote of all modern medical organization in every country.

Let us, returning to the Eastern Army of 1854, see how with its then medical organization it fulfilled the demands of modern war. Take its ambulance system on the field; go to the hillside of the Alma on the evening of September 20, 1854, and see how it worked there. The total of regimental army doctors and of regimental orderlies with the Army Corps that took part in the fight that day was ample and sufficient under better organization to have done well by the comparatively few wounded.

There was no attempt at ambulance organization. The battalion surgeons of the regiments under fire, aided by the bandmen, carried away, or tried to carry away, the battalion wounded. There were no trained regimental bearers, no bearer-companies, no field hospitals, no ambulances, no hospital corps, no equipped hospital ships, and behind all was the chaos of Scutari with its "dreary corridors of pain."

I will ask you to put yourself in the place of the battalion surgeon of September, 1854, as he stood that night on the hillside of the Alma, and saw his friends and comrades lying on the ground with none to help them, no ambulances to carry them, no hospital corps to nurse them, the bare 'tween decks of the empty transport to be their hospital ships, and trusting to the sailors of the fleet for the hammocks they used as stretchers to carry them to their ships.
I will ask you to think of Thomson of the 44th Regiment left on that battlefield with 400 wounded Russians with no attendant save his soldier servant, and say was it possible for us to stand by so fatal a system.

The faults I find with the system of 1854-55 are as follows:

In the first place, by keeping the sick of the army in a great number of small regimental hospitals in a garrison you effectually paralyse all real professional progress amongst the doctors. It is almost impossible for the small experience of a battery or single regimental hospital in peace to give a large field for medical study, and owing to the isolation of the doctors that intellectual friction which in the end produces progress, is not developed. Secondly, as regards nursing, if you make your nursing orderlies merely chance men taken from the regiment, you cannot develop a body of trained nurses who will stand by that special line and give their whole heart to it. Remember that in a regimental hospital the only post for a non-commissioned officer was the one of hospital serjeant, and no intelligent private man will come if he is to remain always a private. In developing nursing then the old system failed to provide the best.

As regards hospital administration again it failed, because to make a great hospital work, you must be trained in great hospitals. Just as you cannot practise brigade movements with a corporal's guard, so you cannot make a doctor, trained in a small hospital with one hospital serjeant and a few orderlies and some twenty or thirty patients, rise suddenly to the power of administrating and controlling great war hospitals with hundreds of sick. He is paralysed and overwhelmed by the responsibility, and as by having battalion hospitals you kill out your need of a hospital corps, when war comes you are left without subordinates, and have to fall back on the scratch teams of drunken pensioners of 1854-55. But if you do this your patients die, and your hospitals break down and become the byword of the century.

Again, if you attach your medical men by threes and fours to battalions and render them immobile, then when you go on a campaign or into a fight, if one corps is burdened with sick or wounded and another corps is fit and well, you overwork your doctors in the sickly corps, while the doctors of the unengaged and healthy regiments remain idle.

So it was at the Alma, the whole of the doctors of the battalions of the divisions not under fire were quite idle, but an overwhelming labour rested on the doctors of the engaged battalions. You are
forced *nolens volens* to fall back on a larger unit than the battalion, and you come as all armies come in the end, to the divisional unit. But if you are to keep your soldiers in good *morale*, you must let them see that if wounded in the fight aid is ready to hand. I do not call it aid to take the bandsmen and make them dressers of wounded. The band itself as music is an aid, and an important aid, to men in the day of battle, and to break it up is to handicap yourself against success. You must have trained bearers able to check bleeding and to afford real aid to the suffering; bandsmen never could do this. But beside these regimental bearers, you need to have, for the same reasons as for the doctors, some larger unit than the regimental ambulance help; that is essential and valuable, but it is insufficient. The battalion doctor cannot carry chloroform in any quantity, nor cooking-pots for the all-important soup, nor brandy enough for many wounded, nor operating tables and instruments demanded by modern surgery; and you need some help between the battalion surgeon and the field hospital farther in the rear, and that help is the admirable bearer company, of which I shall speak directly.

But if we go a step further, we come to the climax of the subject, and that is, that you cannot in war have a regimental hospital for seriously sick or wounded men. In the first place, if a division is told off for an attack, one brigade is sure to suffer more than the other, for one is in support and one is in reserve. This means more wounded in one brigade than the other, and you need some power of equalizing the work, or the sick of the first brigade will be neglected, while the doctors of the second will be idle; and so you lead back again to the field hospital common to the whole division.

But say that we have regimental hospitals, and that the twelve regimental hospitals of a division have all a fair proportion of sick and wounded, and the division is to march forward, what becomes of the sick? If you take them with you, you will certainly be beaten by the enemy, for you will be creeping along, encumbered with vast trains of sick and wounded, and that certainly is not war; while if you leave the regimental hospitals behind, you advance without any medical aid.

And think, too, of the doctor and the scratch hospital left behind! You have during peace deprived him of all power of command over his subordinates, the Colonel had the discipline, the Adjutant issued the orders, the Quartermaster did the transport and the rationing, and, lo! all are now marched on, and the unfortunate doctor, who has been taught never to take any initiative, is now suddenly to
become Commander, Adjutant, Quartermaster, and Transport Officer all in one. It is not possible; so slowly we work back again to a series of divisional hospitals, with their own nurses, their own Quartermasters, their own Transport, and controlled by doctors trained in peace to direct and manage their own hospitals in war.

Let us again turn and see what was the end of this Crimean chaos, for you must remember that although the Crimean and Scutari were great troubles, the Crimean campaign was not really a war trial at all. War means movement, and the Crimean Army never moved; practically it marched to the heights above Sebastopol, and there it dug itself in, huddled itself, and there it remained until the town fell. Such wars are rare. It was really a great case of sitting out, and not fighting, and anyone can see that if transport troubles and hospital troubles beset the sitting army that lay in front of Sebastopol, how far more heavily the same troubles would have fallen upon that army if a long line of advance into the Russian interior had taken place, and a line of communication had required to be held.

But public opinion demanded a full inquiry into the Crimean medical experiences, and in 1857 and 1858 Sydney Herbert's Commission sat and introduced a number of improvements, but it still made no radical change, and it really made war efficiency little less within the range of practical achievement than it was before the war of 1854-55. It gave the doctors rank and pay. It founded the germ of a hospital corps; it developed a kind of hospital commissariat; it formed two general hospitals, supposed to be training schools for war work; but it still stood by the fatal error of maintaining the regimental hospital and the regimental doctors in peace, and that really killed out all the other advantages.

As I have said previously, if you keep up regimental hospitals, you paralyse our training for war, and if you take all control out of the doctor's hands in peace, and make some one else responsible, you develop a body of weak-kneed men, who, when war comes, stand paralysed by its demands on their energy.

To Lord Herbert we owe much, and his name will never be forgotten by the medical Officers, or by that great profession of which they are but the war section. But our debt to him is more that he recognized our sanitary duties in preventing disease than for any real advance in war organization. The Corps of orderlies he founded was not linked to us in title or control or sympathy. Of the two general hospitals he founded, the one which bears his name was never anything but a series of regimental hospitals
thrown confusedly together, and Netley is a great school, with a permanent staff who do not go to war. The purveyors, who were intended to be our assistants and our agents, became in the end quite independent of us, and the ambulance relief to soldiers on the field was so badly dealt with that, at the Committee on Army Transport in 1866, a very pretty discussion arose between the then Director-General of the Medical Service, the Chief Purveyor, and the Chief of the Transport Service as to who was really responsible for removing the wounded off the field. Nobody knew who was responsible even in 1866.

But the great means of securing progress in our medical service were the war of the Rebellion in America, the campaign of Sadowa, and the disasters of Sedan and its sequences. We began to study foreign systems more and more, and in 1873 and subsequent years we have developed and are developing a new system, which I think will stand scrutiny alike by the scientific soldier, the humanitarian, and the physician.

The scheme of unification now slowly making progress in our Army was introduced in March, 1873, further developed in 1876, and in 1877 it received a still further development. It is still, however, in its infancy, and when you remember what time it takes in England to introduce any change, I think we have not done badly.

In 1873 the medical Officers were removed from the various regiments in which they were commissioned, and the staff and regimental doctors were unified into the Army Medical Department.

Regimental hospitals as distinct units in each garrison were abolished and replaced by central garrison hospitals. The Army Hospital Corps was developed from its previous scattered condition into a strong corps doing all hospital duties, and the medical Officers were made responsible for the management and control of their hospitals in peace and war.

Gradually a body of fifty-two Quartermasters were developed who were to have charge of the subsidiary duties of storekeeper and paymaster of the hospitals, and in 1877 the command of the Hospital Corps was given over to the doctors.

But what interests us most is the war scheme of the 1873 organization.

Firstly, the three or four doctors of each battalion were replaced by one medical Officer who is posted to the unit, be it battery, battalion or regiment, at the outbreak of the campaign, and who remains with it throughout the war. If he gets sick or wounded he
is replaced at once from the divisional doctors. In war, sickness is
rife, wounds are frequent, battalions are up to war strength, and
there is full employment for a medical man, and further he is a
great aid to moral, and has had to do sanitary duties also. In
peace it is not so. Batteries are absurdly weak, and battalions
mere skeletons waiting for reserve men to fill them up in war. A
medical man posted to so small a charge would probably come to
grief from need of work.

In war time, however, besides the battalion surgeon there is now
a body of regimental stretcher bearers, sixteen men trained to
ambulance work who assist the surgeon in giving first aid on the
field. The band keeps to its music, and a distinct body of men is
told off for the wounded. This surgeon has also with him medicine
boxes containing portable medicines and first dressings, but there
is no battalion or battery hospital.

If a man be sick or wounded he is sent to one of the field
hospitals of the division.

If you look at the Diagram on the wall you see at a glance the
existing medical system for an army corps in the field. There are
forty-seven units in the army corps, and there are forty-seven
surgeons with those units. There are in addition forty-seven
detachments of regimental bearers.

But an entirely new organization now intervenes, that is the
bearer company. Of these there are four with an army corps, viz.,
one with each of the three divisions, and the fourth is divided into
half companies, one half with the cavalry brigade, and one half with
the corps troops. I claim for the bearer company that it is the very
best and most useful outcome of modern humanity in dealing with
the wounded in war. No one can see it at work at Aldershot
without recognizing at once its eminently practical character, and
what an enormous boon it is to the soldier in war. It seems to me a
great pity that it should be working at Aldershot in remote parts of
the camp by itself, and not taking part in every field day, and not at
Aldershot alone, but at every great military centre where soldiers
can be mustered. Its work is most realistic, most thorough, and
I feel absolutely certain it only needs to be seen to be appreciated.

In war time this company consists of eight medical Officers and
some 200 Army Hospital Corps and Transport men who have with
them surgery wagons containing an elaborate supply of instruments,
operating tables and dressing supplies, cooking-pots for soup, brandy,
various stimulants and suitable refreshment for the wounded, and
ambulance wagons thirty-three in number for the removal of
wounded. This bearer-company can break into two half bearer-companies, and it is believed that Lord Morley's Committee will separate them definitely into distinct companies. It is merely a question of detail. What is the function of these companies? When a man is hit say in the 1st Battalion, 1st Brigade, 1st Division,

the battalion bearers carry him to the regimental surgeon, who stops bleeding and applies a hasty first application to the wound, giving water or brandy if possible. The wounded man is then carried to the rear until he meets the ambulance wagons of the bearer-company and the Army Hospital Corps bearers. He is then
Army Medical Organization in War

taken over from the regimental men and conveyed to the dressing station of the bearer-company. This is the regularly equipped spot chosen by the bearer-company to collect all the divisional wounded. Here the wounded man is examined by the operating surgeon, operated upon, thoroughly dressed, fed with soup, wine, &c., and finally passed back by the ambulance wagons to the field hospitals, which must be always farther in the rear, and to reach which might cause great delay.

The bearer-company dressing station is really a very light advanced hospital, and a great collecting place of the divisional wounded, who may sometimes remain there until the field hospital is able to make its way through the crowded roads behind the fight and be pitched over the wounded. All this collection and removal of wounded, and pitching and arranging the dressing station is a drill, a distinct technical drill which needs to be practised and learned just like any other technical drill. The great pity seems to me to be that it is not done with the Army at every field day, so that the Army might see and learn what they now do not know, that is, what a bearer-company is, how it works, and what is its organization.

I hope that one day Generals will arise who will study this company and see if it be not really what I claim it to be, an admirable organization and most essential to the Service. A few such companies at the Alma might have shortened the war very much, and have saved many valuable lives.

In Egypt, as you know, Lord Wolseley stated that the removal of the wounded was well done, and if it were known with what extreme difficulty the companies got their needful transport, all the world would say that the doctors had done well there.

When the bearer-company has handed over the wounded to the field hospitals, it again advances with the advancing army and resumes its place with its division.

It is still a young creation, slowly developing itself, but its future is absolutely assured. In our future wars it will be the most honoured and valued unit in the Army.

We now come to the field hospital. We saw that in 1854-55, with an army corps we had forty-seven regimental hospitals, fragile creations without trained nurses, without their own Quartermasters, and completely organized to break down when left behind by the advancing regiment.

These forty-seven fair-weather yachts that perished in the storms of war have been replaced by twenty-five field hospitals,
complete units in themselves. Every army corps of 36,000 men has now in war these twenty-five field hospitals, each supposed to be ready to nurse, feed, and treat 200 wounded or sick men. Their equipment is packed in special wagons, they have abundant drugs, instruments, blankets, cooking and feeding requisites, and are as mobile as a battery of artillery. There are seven doctors to each hospital, one Quartermaster of the Army Hospital Corps, but alas! only thirty-seven hospital corps subordinates. Of this more by-and-by.

These twenty-five hospitals are posted, as you can see by the diagram, two to each division, making six, six more in reserve behind the front of the army, and thirteen along the lines of communication and at the base. When an action is fought, the wounded are taken first to the dressing station and thence to the field hospitals of the division, these being filled, halt upon the battle ground, and two more hospitals out of the reserve are posted to the division, which is again able to advance with its bearer-companies and field hospitals ready for another fight. The sick and wounded in the halted field hospitals, if they recover, rejoin their battalions, if they get worse or are seriously hurt they pass back along the lines of communication from hospital to hospital to the base hospitals. Here they remain, and if they recover, rejoin their battalions; or if still ill, return to England in those well-found floating hotels called hospital ships which have now replaced the comfortless transports of our old wars. We have now, as you see, a definite system, and we know how we stand. We never knew it before, and success is sure to come to us if we work on these lines, which are themselves merely adaptations of the German system. We can tell exactly how a soldier ought to be cared for, and this was impossible in the confused old days. I do not claim for this system perfection in detail, for it has unfortunately many defects; but its principle is, I think, absolutely true, and no soldier can find fault with it on that ground. The fact is that the medical service is striving to force upon the Army a system of war organization framed to assist the fighting soldier in achieving war success, and as yet the average soldier does not see it. It only needs education to perceive its great advantages over past systems. As it gives a more decided field for medical energy and power of work, so it demands more labour from the medical Officers to work it, but it is entirely the interest of the Army that the medical Officers should have free scope to do good work. There is ample work for both classes of Officers. In the purely military line much has to be
done by the pure soldier to teach his men the very great and urgent demands of modern military knowledge. Leave to us the hospitals and we will learn to make them perfect, and it will in the end be for the best.

One of Lord Morley’s Commission wished to have the doctors again posted to battalions in order that they might learn to obey and learn to command. This is in truth quite what the old system never taught any army doctor. Having two masters, viz., the principal medical Officer and the regimental commander, we played off one against the other, and certainly did not obey either very much.

As to command, when did a battalion surgeon ever learn to command? Why, every rule and regulation was framed to paralyse all such acts. An old regimental surgeon never gave an order to any man, and as the Army rules reared him, so he grew up, and then having first deprived him of all power, he was expected in war to rise and do wonders on his own account.

It is not in such ways that men are trained for accepting responsibility. We are now on a better path, and shall no doubt make further progress.

I will now ask you to agree with me that field hospitals are needful, and should be efficient for the work they are called on to do.

I regret to say that manned as they are to-day it is absolutely impossible for them to do good work; nay, indeed, to work at all. But the remedy is easy, and very simple.

To nurse 200 sick men in a war hospital is a heavy task. It is not so in a peace hospital, for in peace many patients are trivially ill, and many are convalescent.

In war few of either are to be found in field hospitals. Trivial cases do not come to war hospitals, and convalescents are generally in a depot near the base. At any rate, the general average of war patients are far more severe than peace patients. Now in peace we get one orderly to ten patients, and in war one to nine. It is completely insufficient. Naval hospitals get one per 7½ patients, and we all say that one per five sick is needed for war. That would require forty orderlies to nurse 200 sick men. But if you look at the following table you will find that it gives only twenty-two for the purpose.

This allowance of thirty-seven men is completely insufficient to do good work. If you want nursing well done you must have rest and fair reliefs. Twenty-two men cannot nurse 200 with anything
like thorough work. Increase it to forty per 200, or one per five sick, and the machine will work. If you read the Report of Lord Morley's Committee you will see in every page evidence of complete overwork of the nursing orderlies; so if in the next campaign we are to do good work we must have men given us to do it. Take again the cooks; six are allowed for 200 men, and that cooking for the sick is very trying, for there are many dishes to be made separately, and also much has to be cut up in small portions. We need eight cooks, or two per fifty sick.

Establishment of an English Field Hospital for 200 Beds.

<table>
<thead>
<tr>
<th>Office</th>
<th>Allowance</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Steward</td>
<td>...</td>
<td>1</td>
</tr>
<tr>
<td>Assistant</td>
<td>...</td>
<td>1</td>
</tr>
<tr>
<td>Wardmasters</td>
<td>...</td>
<td>2</td>
</tr>
<tr>
<td>Compounders</td>
<td>...</td>
<td>2</td>
</tr>
<tr>
<td>Storekeepers</td>
<td>...</td>
<td>2</td>
</tr>
<tr>
<td>Clerk</td>
<td>...</td>
<td>1</td>
</tr>
<tr>
<td>Cooks</td>
<td>...</td>
<td>6</td>
</tr>
<tr>
<td>Nursing orderlies</td>
<td>...</td>
<td>22</td>
</tr>
</tbody>
</table>

Total: 37

Again, as to clerks, if we are to keep regiments informed of where their men are, we need a clerk to do it, and we have only one man to keep all the records and carry on the large correspondence. We need at least four clerks for the 200-bed hospital, so that if 100 beds are detached there may be two clerks for it. But the gravest cause of overwork and threatened breakdown is the complete absence of the coarser assistance needed in a war hospital.

I have placed here a comparative table (see p. 102) of an Indian and an English war hospital for 200 beds, and you will see the difference at once.

In an English field hospital there is not one man allowed to carry water for the hospital. This is the most killing want, as it goes at the root of all cleanliness, and if I am to get water to my hospital I must have men to do it. You do not ask a battery commander to work his guns with half the proper number necessary for the work. Why ask me to work a field hospital on such conditions?

We want this question to be dealt with before our next campaign, for we shall certainly go to grief if we do not get men to do this work. We are asked to do impossibilities, and we only ask that these questions be looked into to see that no man, however energetic, can work under such a handicap.
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Comparison of the Personnel of a 200-Bed Field Hospital on the English and Indian Scales.

<table>
<thead>
<tr>
<th>Class of servant</th>
<th>English scale</th>
<th>Indian</th>
<th>Proposed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compounders</td>
<td>2</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Wardmasters or dressers</td>
<td>2</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Nursing orderlies</td>
<td>22</td>
<td>29</td>
<td>40</td>
</tr>
<tr>
<td>Clerks</td>
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<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Storekeepers (and Stewards)</td>
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<td>5</td>
</tr>
<tr>
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<td>6</td>
<td>9</td>
<td>8</td>
</tr>
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<td>8</td>
</tr>
<tr>
<td>Sanitary police (sweepers)</td>
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<td>8</td>
</tr>
<tr>
<td>Messengers</td>
<td>0</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Carpenters</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Tent-pitchers</td>
<td>0</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>Barber</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Total for 1 hospital</td>
<td>37</td>
<td>132</td>
<td>93</td>
</tr>
<tr>
<td>Total for the 25 hospitals of an Army Corps</td>
<td>925</td>
<td>3,050</td>
<td>2,325</td>
</tr>
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</table>

We want at least eight fatigue men to supply water for the hospital. This will give two men for each fifty sick. When we consider the number of baths, the washing in and about a hospital, it is seen at once that many men are needed.

Again, as to conservancy or sanitary police. In peace we have admirable drains to carry away all sewage from our hospital, but in war we have nothing of the kind, and in a hospital camp in war these men are much needed. In fact, it is deadly to the hospital not having them. I say again, you are asking us to do impossibilities. You are asking us to make bricks not only without straw, but without clay, and we cannot do it. You are asking us to toil as we do in war like slaves at the coarsest menial work, and yet you give us no men to act as pioneers and to keep the place healthy and clean. When the need comes in great moments of trial there is no work I will not do for the sick man, but it is quite another affair to embark from this country on a campaign and to know that no proper provision is made for this all-important work. Again, as to washing, we have not a single man given us to wash the clothes, and yet we are blamed if the clothes are not clean.

We have, then, to appeal against this want of forethought which hurries us to war without the necessary means of doing good work, and while we are continually urged to be professional, no one is given us to carry water, to act as sanitary cleansers, or to wash patients' clothes. Again, as to messengers, if I want to send a note
to a regiment or to an Officer close by my camp, I have no orderly or messenger, and as a consequence I must take a nursing orderly already overworked to do messenger duty, and so neglect of the sick occurs.

You see then by the scale I have drawn up that thirty-seven men are completely insufficient to work our field hospitals in war, and that ninety-three men are not only not too much, but barely enough to make a hospital work. You can now see how legitimate are our complaints, and how heartbreaking it is to go into the field with a unit completely organized for failure.

If England, or the Army, demands that her soldiers be cared for in war, it will not do for her to develop a flash of warmheartedness when a campaign occurs, and accuse her doctors of want of sympathy and neglect. England has her duty to perform, and that is to listen in peace to the fair and just demands of her doctors, and as far as they be legitimate to grant them. Thus, and thus only, can war efficiency come. Nor do we in any way absolve the military commanders of their responsibility. Command has its duties as well as its rights, and one of its duties, as high as any, is to see that, before going on a campaign, the just demands of the medical service are met. You must not in all these matters legislate on the basis of heroism and self-sacrifice. The sentry at the outposts keeps vigilant not from self-sacrifice, but because he is regularly relieved, and so with our service. You must not draw up codes for saints and angels, but for average men, who get tired if overworked, get hungry if not properly fed, and who feel bitter in their heart if treated unfairly. These are points which are not fully dealt with in Lord Morley's Committee, but they are as true as anything can be, and no Officer I have spoken to on the subject can deny their truth. We need, then, large reserves for war, and I will, in a few minutes, when concluding this paper, show how they can be obtained.

Again, take another point. Where are our field hospitals at the present moment? They are entombed in Woolwich Arsenal, and until the Egyptian campaign no one ever saw one taken out of store. The Officers who saw them in use in Egypt saw them then for the first time, and no wonder that difficulty occurred as to the character of their equipment. In my opinion they should be taken out of the store-room, and posted to each divisional centre, and then the Army and ourselves would see what they are like, and find fault with them if necessary in peace, so that when war comes they may be efficient. This is the way the artillery is efficient. The
battery commander does not read about his battery only, or hear
that it is in a store-room in Woolwich Arsenal. He has his guns
with him, and hence he is accustomed to them, and he and his men
know how to work them. Give us and our men an equal chance.
Let us have a month every year and practise our field work with
the Army.

But, again, take another point. We have a Chief Medical
Officer, a Deputy-Surgeon-General, who is responsible for the
medical arrangements of the twelve regiments in the division, for
the bearer-company, and for at least two field hospitals. Every
soldier knows what an immense amount of correspondence this
involves and what an anxious position the post is. Yet while the
artillery commander and the Royal Engineer of the division have
both Officer assistants as Adjutants, our divisional chief has no one
whatever to assist him, and he is in consequence completely over­
burdened with detail work and formal correspondence. I could tell
stories of the result of this state of affairs in the field which would
be laughable were they not really sad in their results on war
efficiency. The remedy for this is not difficult; it is to give the
divisional principal medical Officer a junior medical Officer as his
secretary or Adjutant or personal assistant.

The attention of the Army should also be drawn to another
very urgent detail of our war system, I mean the relations which
should exist between the Army commander in the field and the
chief medical Officer serving with him. I maintain that it is
entirely in the interest of the Service and of the nation that rules
of the clearest kind should be laid down by the Secretary of War,
defining the relations of both these officials. All will agree, I think,
that intimate and confidential relations should exist between them.

A new theory, however, is now being advanced that the Surgeon­
General with an Army in the field is not to be considered as the
General's Staff Officer, but simply as the head of a subsidiary
department, on a par with the smallest and least important branch
of the Service. This is not the history of successful campaigns.
We think it a highly injurious idea that would deny to the Chief
Surgeon of the Army the status of a confidential Staff Officer of the
chief commander. If you so cut off our chief from personal and
continuous contact with the General, it will react on the whole of
the medical service in the field, and we shall feel that he is not in
the confidence of the Army commander, and that there is no one to
be spokesman of our needs, and of the wants of the sick at head­
quar ters. Such a condition of affairs will paralyse our energies,
and injure our esprit de corps.
To-day, we need above all things definiteness as to our position. Either we should be accepted wholly by the Army, or we should be set wholly free from it, and allowed to work altogether under our own responsible chiefs as a distinct and separate department of the State. We can succeed perfectly under either conditions, but we cannot exist at all if we be indefinitely dealt with, if we are to be in the Army but not of it; to be blamed for failure in war, but left unconsidered in peace; to be thrown over for want of success, yet not listened to in our cry for assistance; to be held down by the bonds of military discipline, yet denied military rights and privileges; to be required to share in all the risks and hardships of field service, yet denied the share of the glory of victory; then, despite pay however remunerative, and rank however high, we shall fail England in the hour of her need.

We read military history, and we gauge very thoroughly our value in the military machine. We recognize the bravery of the soldier and the devotion of the Officer, and we estimate perfectly the efficiency for war work of the battalion and the battery. But we also know well why and where your armies have failed. They have failed in what are called the Departments, that is to say in the Commissariat, in the Transport, and in the Medical services, and it is for the Army to say if it shall always be so.

It most certainly will always be so until one day a great leader arises who, reading the signs of the times aright and grasping completely the spirit of the age, sees that you must crush out with a firm hand all inequalities in the treatment of the various classes of Officers in the Service, and make every man in the Army from highest to lowest, feel that all are working for the same end—the military success of the nation, and that the victory achieved by the Army is his victory, and its failure is his disgrace.

These seem to me to be the only lines on which to-day an Army in England can be successfully worked, and there is no reason whatever why they should not be made the rule.

If they cannot be made the guiding principle for the Army, at any rate set the medical service free from the military administration, and we will organize as the "Red Cross" societies organize, and build up under the Government a Medical Department for civil and military duties alike, and will send into the field a contingent of medical aid organized under its own chiefs, to be completely responsible for its own failure, and completely rewarded for its own success.

There is another very important question for us in war, and that
is the commissariat question. Certain reformers of Lord Herbert's school maintain that we should have our own commissariat in the shape of a distinct Purveyor's Department. We are, I suppose, to free the general Army commissariat from all responsibilities for feeding the sick, and we, a weak, poorly-manned department, are to develop a rival commissariat for ourselves and let the greater commissariat go free. Now apply this principle to the Egyptian campaign. Let us remember that 583 per 1,000—that is nearly six men out of every ten in the Army—went sick during that brief campaign. Are we, out of our weak establishments, to feed, and that, too, daintily, six men out of every ten in the Army? But when we remember that the Army commissariat did not succeed in feeding the Army very successfully, with all its large establishments and masses of trained subordinates, it is hardly to be expected that we would succeed with our infinitesimally smaller commissariat section. In my opinion we should do nothing of the kind. We should hold on tightly to the principle that the General of the Army is responsible for the feeding of his men, sick or well. That if he goes to war, he should first of all think out how his men are to be provided with food, and that the sick soldier has a distinct claim on the general Army commissariat; and just as you post junior commissariat Officers to the commissariat charge of brigades and divisions, so you should, when a war is imminent, post commissariat Officers to the base hospital and to the various units of the medical service, and it shall be their business to provide such food and supplies as the medical men need for their sick. If this cannot be done, and we are to have our own separate commissariat department to ration our own 583 sick per 1,000 of the Army, we might as well simply undertake to ration also the odd men remaining out of hospital! An army with a poor defective commissariat service is really no army at all. It is certainly not a war engine, and no General has a claim to such a title who does not see before a war begins that this all-important service will not break down.

Again, as to transport, we want a clearly defined transport allowance given to us. We should have a small section of purely medical corps transport; that is to say, enough to move our hospital wagons, and enough to horse the ambulances of the bearer-companies. This transport should be wholly our own, but be available for all camp duties when not specially needed for hospital service.

In our Army the question of transport has always been one of considerable concern, because, as it seems to me, it has been little studied in peace. With numbers of civilians trained and accustomed
in peace to look after horses, we have, as yet, no militia transport corps. Yet I feel confident that one could embody, either from the militia reserve or by direct enlistment from the peasantry, several thousand transport militia men accustomed daily to the care and driving of horses. Why not adopt such a course and apply to the great supply services the principles already existing in the other branches of the combatant service?

We have a reserve of Officers, why not call upon them to train themselves for commissariat and transport duties as well as for the duties of the front line of the Army? As to the horses, an army reserve of horses is as easily formed as an army reserve of men, if only somebody takes up the question and sees it through.

As to our medical transport, we need only be told whether we are to look for it to the Army or not. If the Army says no, and if we are allowed to appeal to England for men and horses, we can get the best of both to come and help us.

But I think a militia transport service, and indeed also a militia commissariat corps of civil butchers and bakers, is as easily formed as a militia artillery regiment. If, as is often said, the Army is to be part of the nation, the more we weld together the Army and the people, the better for our war success.

Every hospital embarking for war should march down to the beach with its wagons, its horses, its drivers, its equipment, and its medical staff as complete as a battery of artillery is complete, and so disembark in the enemy's country. This was the aim of the medical reform party, and this aim will surely be realized as time goes on.

Again, at the base of operations we need some body of men who will do the unloading of the hospital ships and medical transports, and who will move the sick from the great base hospitals to the ships and the railways. For this work we have no one now detailed, and you may read in Lord Morley's Report that, while the few nursing orderlies were engaged nursing all day in the hospital, they were waiting all night at the station, to convey and carry by hand the sick to the hospital. If anybody imagines that you can thus work your men and yet make the hospital work with accuracy, they are entirely mistaken. I would suggest, then, half a bearer-company be posted at the base of operations for this special duty. You should also have for your lines of communication two or more bearer-companies for use as sick convoys, either to man the ambulance trains conveying the sick from the front, or to transport and care for the sick proceeding to the base by road convoys in wagons.
There is one word more I would say before proposing Militia or Volunteer schemes.

It seems to me a sad thing that, as a department, we do not regularly teach the Officers of the Army and the men what sanitary laws mean. In the long tedium of foreign service and in the winter months in England, I would have the army doctor teach, by lectures, ambulance instruction, sanitary laws, the way to avoid the common diseases of campaigns. It is lamentable to think how completely ignorant officers and men are of the very first principles of health preservation. I take it that no man is fit to command men and armies who does not know the laws of sanitary science and health preservation himself.

The ignorance on these subjects in our Army—always the very one that needs it most—is very great, and the loss of men in the beginning of a campaign from want of knowledge of how to avoid sickness is a most serious matter in a small army. Many men on our Egyptian sick list ailed simply from purely preventable disease. Want of food, want of shelter, and want of knowledge of what sun exposure means, contributed largely to it; for this, however, the medical service is not to blame, save that it has not in the long era of peace taught the Army the knowledge it ought to have. If our cavalry horses had broken down in any numbers, would there not have been a great outcry? We have classes for veterinary instruction at Aldershot and Woolwich. But no combatant Officer, as far as I know, has ever been regularly taught to look after the health of his men. I notice that the German Officer is taught the elements of sanitary science, yet he, living in his own climate and serving only in European wars, does not need it at all so much as our Army, which serves in every possible climate, and is liable to every epidemic and malarial disease.

But while I thus propose to teach the combatant Officer, I cannot forget to say that you must let us learn all we can ourselves. To-day, however, your Army surgeons are shut out from all contact with the London schools. The Army Medical Department has no point of contact with the great centres of London medical and surgical knowledge. The London garrison is altogether in the hands of the special Guards doctors, and they alone have the chance of seeing the practice of the London civil leaders of medical science. We hope that one day a great central military hospital for the whole metropolitan garrison will be formed either at Chelsea or elsewhere, and that we who have to spend long years on foreign service in India, the Cape, Ceylon, and China, may have the chance
of meeting the great London civil doctors, and learning all we can from them.

I now turn to the question of how we are to obtain the large reserves needed for war. We do not need heavy peace establishments, because in peace our hospitals have all the subsidiary services, viz., water supply, laundry, messengers, sewage, otherwise provided for. But in war we want a body of trained men to be called out to assist us.

I think we should have, of course, our own army reserve of men trained in the hospitals, and passed back into the reserve like ordinary soldiers. But if you work this reserve too rapidly we should only have boys to nurse our sick in peace, and hence we need a kind of extra establishment to be rapidly trained, say for one year, and passed into the reserve for the remainder of their service. These would be in addition to the ordinary peace need of a hospital and would be a kind of a one-year volunteers, as on the German or French system. We might get many who would spend a year in learning nursing for the sake of getting into civil hospital or nursing employment.

But I think that we ought to have a distinct militia branch of the Army Hospital Corps, called out yearly like the ordinary combatant militia. These men would be equal in number to the needs of the home army hospitals in war time, so as to free the regular hospital corps and its reserves for war; 1,500 such men spread over England, Ireland, and Scotland would enable us to be quite certain that when war occurred we could call out a body of partially trained attendants who would replace the regular men. When these men were called out annually, either at Aldershot or at the district centres, it would enable us to muster sufficient men of the regular and militia hospital corps men to go through all the field drill of the bearer-company and the pitching and working of field hospitals, a work of which we are to-day ignorant, because the hospitals are packed away in Woolwich Arsenal, and the regular corps is too weak to go through this field service drill. I do not know a more economical system than this of obtaining men, and I imagine we could all recruit for it in the districts. I would form in it again a militia reserve on the lines of the regular militia reserve, and so get together a number of men fit for the fatigue work of the hospitals in war.

We cannot possibly succeed if the subsidiary services of the hospitals are not provided for, and the way to provide for them is to copy, as far as possible, the methods used by the Army to secure
men. The formation of a militia hospital corps would, at any rate, give young men a chance of seeing if they liked the hospital duties, and they might eventually enlist into the regular service. I think if we once get the chance of enlisting a militia corps that, scattered as the medical department is over the country, it could secure recruits in sufficiency. While we have artillery, engineer, and infantry militia, I think we also need a medical militia. The militia educates men for the regular army, and so in like manner would our proposed militia hospital corps train men for our needs. I beg you will think of this proposed militia scheme. You cannot think to what difficulties we are put in England, even in times of petty wars, by the complete absence of such a body of men. We have to go about begging for help from every corps, and in the end the corps is weakened, its training is interfered with, and our nursing work is very indifferent.

Only give us a chance of acting as recruiting serjeants for a militia corps of our own, and we shall, I think, succeed in induc[ing] men to serve under our Red Cross, and to learn discipline and ambulance work in our hospitals. Why should we differ from artillery, engineers, or infantry? They all have a strong militia help behind them. We, who need it greatly, have none. Can anyone devise a cheaper, an easier, a more constitutional, or a more common-sense scheme? If so, let us have it, our want is above all things men.

We come now to the Volunteer force of the country, and I would point out how completely insufficient its medical service is, measured by modern needs. It has no bearer-companies and no field hospitals; in fact, nothing behind the battalion surgeons and the regimental bearers. We need to organize in every county, and in every large town, a volunteer bearer-company or companies of a volunteer medical corps to supplement the already existing volunteer battalion surgeons. I believe that we could enrol in such a corps many hundreds of men who feel an interest in ambulance work, and many surgeons in civil life, would take a commission in such a corps, and drill and organize the bearer-companies and field-hospitals. I would organize such companies like ordinary volunteers. Dress them like the Army Hospital Corps, and drill them in all ambulance and field hospital work. They would fill up a great want in the volunteer army, and they would also send us many men for a campaign, and we should thus be strengthened for war.
To begin such a movement you must first of all train your doctors. Last year a scheme was put forward asking the medical students of London to practise ambulance work, and enrol themselves as a volunteer branch of the hospital corps. Several schools are now at work at this idea, and if the Secretary of State for War will give them a capitation grant the movement will succeed. It will be of inestimable value to England in every way in developing ambulance knowledge amongst the civil doctors, and it is therefore to be hoped that official sanction will be given to the scheme. Your interest and sympathy in the movement would be a great aid. I hope we shall one day see paraded in London a battalion of trained medical volunteers composed of companies made up of students from the various metropolitan hospitals who will go through all the drill as privates, corporals, and serjeants, and so train themselves to command and control the bearer-companies and field hospitals of the future volunteer medical service. When that day comes we shall ask the brigade of Guards to meet the student corps in the park, and form up for the attack of a position; and as they dash forward over the field the bugles will sound the “lie down,” and 500 men will throw themselves upon the ground as if wounded; the students’ corps with its stretchers, ambulances, and all the paraphernalia of medical equipment will then sweep over the field, take up the sham wounded, convey them to the dressing station, and go through the routine of sham dressings, and finally convey them to regularly pitched field hospitals in the park. When this day comes we shall provide for London a most interesting sight, and for humanity a real triumph.

It is by such instruction we shall educate the public, and if England once knows what it is we, her military doctors, have been aiming to achieve, her heart will be stirred, and we shall have our one desire fulfilled.

Working on these lines, when war has been declared, the Director-General would simply telegraph to the Divisional P.M.O. “Mobilize.” At once the regular Army Hospital Corps in the district would be called in to form the nucleus of the field hospital. The district army medical reserve men would join at the same centre to fill up the cadre of the nursing staff of the hospital. The militia hospital corps would be called out, and would take over the district hospitals, the extra men of the militia reserve joining the district field hospital, and the volunteers of the local bearer-company would no doubt join in certain numbers. The whole would then form a complete field hospital, and with their equipment, transport,
and staff, would embark as a body for foreign war. This seems easy, and it really is so. But it needs thinking out in peace, and that all arrangements should be made beforehand. I firmly believe it will one day come.

I have now roughly outlined the main points of our new medical field system. It is an interesting study, and I commend it to the soldier and to the civil physician for their consideration. To-day you have to reckon with new conditions in war, and the growing humanity of the race will not fail to demand due provision being made for the sick and wounded. If the establishments demanded are apparently heavy by comparison with the past, you must remember that the demands of a civilized race exceed the demands of old days and ruder times; but the remedy against these increased establishments is to attend to the sanitary condition of the soldier in the field, and so prevent men going sick. If they do, you must provide liberally for their care and nursing.

Out of our great troubles in past wars we in the medical service are being ourselves educated as to what we want, and we should fail in our duty to England and the Army if we did not boldly state our needs. The autonomy of the medical corps of the Army is essential to our success, and the more it is fostered, the more we shall rise to efficiency in peace and in war. The more we are made dependent on others for success, the more likely we are to fail. If the remarks I have made in this paper at all aid to the better understanding of the war needs of the medical service, I shall be amply repaid.