A LECTURE

ON THE

ORGANISATION OF FIELD-HOSPITALS.

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THE subject on which I have undertaken to address you on the present occasion is the organisation and management of field-hospitals; and I feel assured that, in an institution which owes its name to one who began his professional career as an army medical officer, and who subsequently became the greatest authority of this or any other country on all that relates to the preservation of the health of the soldier, it can especially be necessary for me to say anything to justify its selection.

In the instructions which Dr. Parkes gave on this subject in his *Manual of Practical Hygiene* and elsewhere, the judicious counsel was enjoined that, just as the individual soldier during peace is drilled and trained for war, so should the various departments of an army, and especially the medical department, so utilise the time of peace as to be able, on the outbreak of hostilities, to take the field at the shortest notice, and be ready to put in action all those measures which are needed to maintain the troops in health, and to minimise the effects of disease or injury when these occur. Dr. Parkes was well aware of the need for that injunction; for, at the end of the long peace of the last generation, he had seen our transports embark an army, which in courage, drill, and discipline, has never been surpassed; and, in a few short months thereafter, he had also seen that army reduced to insignificance and impotence, not by the shot or sword of the Russians—our enemies—but by the starvation, the misery, and the disease, which were due to the inefficiency of our military system. It was then that Dr. Parkes began the second period of his connection with the military service, and from that time to the close of his life he devoted his great abilities to the improvement of the soldier's lot. All those who are conversant with our recent military history must know well how much the soldiers of the present day owe to him for their healthier dwellings, their more comfortable clothing, the diminution of the weight of their packs, and the improved method of carrying them, their better food, and their more generous treatment in sickness. By his labours in these various directions, Dr. Parkes earned for himself a name that will descend to posterity as that of one of the greatest benefactors of his race, and the existence of this institution is one among many lasting tributes to his memory.

During the most active part of Dr. Parkes's life, our military hospitals were based almost exclusively on the regimental system; and although before he died this had undergone many changes, he did not live to witness its entire abolition, or the substitution for it of what is now known as the unification, or general hospital, system. Such a change of system was doubtless inevitable, and was foreshadowed even during the Crimean war; in such hospitals as those at Balaklava, Scutari, Renkioi, etc.; but it is to be regretted that, consequent upon its introduction, there was an interruption, or, at any rate, a diminution of much of the good understanding that formerly existed between the military and the medical officers. To a certain extent this might have been anticipated, for the army is an eminently conservative institution, and it was natural that its officers should wish to retain in the combatant ranks all those privileges of power and authority of which they have the traditions and the prestige from the feudal times. Consequently, when the medical officers said that for the efficient working of the hospitals it was necessary that their hands should be untrammelled, and that they should have control over those to whom they were bound to trust for the execution of their ideas and orders, it was not surprising that the military officers were opposed to the change, and objected that medical officers did not know how to maintain discipline, that they therefore ought not to be entrusted with command, and that they ought to have a military governor in their hospitals for this purpose.

In the discussions which have since taken place in the newspapers and elsewhere regarding the management of military hospitals, it must be acknowledged that the medical officers have been subjected to a good deal of detraction; and it has been authoritatively asserted, not

only that medical officers do not know, but that it is not even desirable that they should attempt to learn, the mystery of discipline. It has further been declared that they require the guidance of engineers in sanitary matters; of purveyors, or some similar officials, to decide how their hospitals should be equipped and supplied; and some persons have even insinuated that spies would not be amiss, to see that their patients were treated with due consideration and sympathy. Indeed, I believe I am not far wrong in saying that a very large number—perhaps the majority—of military officers are still of opinion that they could manage the military hospitals far better than the medical officers; whilst the latter, of course, think quite the contrary. In this conflict of opinion between two branches of the public service which must of necessity work together, our best course is to appeal to what has been our actual experience; and, if we do this, we shall find that, when the specially military authority was supreme, as it was at the commencement of the Crimean war, the results were highly disastrous both to the army and to the nation at large; whereas, with every increase of authority entrusted to the medical officers in our subsequent military expeditions, there have always been greater efficiency in hospital administration, more effectual preservation of the health and of the lives of the soldiers, and, as a natural consequence, greater economy. If, then, we would improve our military service still further, there is reason for saying that we ought to proceed upon these lines, and concede to the medical officers, as we do to the military, powers commensurate with their responsibilities. At the same time, it cannot be doubted that there ought to be brought about a more thorough understanding than exists at present, not only between the military and medical branches of the army, but also between them and the general public, as to various sanitary, dietetic, and hospital matters; and, if this could be accomplished, it would be better for all concerned, but especially for those who are the least able to help themselves—viz., the rank and file.

Take, for instance, the subject of the soldiers' food. I believe I am right in saying that the professors of the Army Medical School and the medical officers generally are agreed that the daily ration of meat is insufficient; but such representations as have hitherto been made on the subject have been unavailing, owing, probably, to the great expense which the requisite increase would entail. Then, there is this peculiarity about our system of dieting, both in hospital and in barracks, that by far the largest part of each diet, and of the daily ration, is allotted to the dinner; whilst, for the morning and evening meals, there is generally nothing but tea or coffee, and bread, either with or without butter. Our soldiers are accustomed to have their food distributed in this way, and they rarely complain of it. A short time ago I asked a soldier, whom I met in the street, what he had had for dinner. "Some boiled meat and potatoes," he replied, "And for breakfast?" "Tea and bread and butter." "And what more will you get to-day?" I asked. "Well," he said, "I daresay my mate will have put aside some cold tea for me, and I shall get that and a lump of bread when I go back to barracks this evening." Such is the way in which the rank and file of our army are accustomed to live; and I cannot help thinking that if they had more food, and if it were so distributed as to give them more substantial morning and evening meals, we should effect, in the end, a real economy, if only by preventing, in the young and probably still growing recruit, that sense of emptiness and exhaustion which causes him to have recourse to tobacco, and, still worse, to the beer or other alcoholic stimulants supplied by the canteen. But I need scarcely say that this reform would likewise cost money, and that public opinion must sanction it if it is to be carried into effect.

On the other hand, as regards the equipment of the military hospitals, it must be acknowledged that we have not kept pace with the movement in civil life. The wards of our metropolitan and provincial hospitals are furnished, decorated, and made bright with flowers, pictures, books, etc., to such an extent that even the wealthiest people ought to be satisfied with their accommodation if accident or disease compelled them to take up a temporary residence there. In comparison with these, the wards of our military hospitals look bare, cold, and cheerless; and yet nearly all the foreigners that visit them express astonishment at the comforts with which, according to their notions, our soldiers are surrounded. Indeed, the story is told of a Russian officer who, after being taken round one of our barracks and hospitals some few years ago, exclaimed, "I now comprehend why it is that England, rich as she is, cannot afford to maintain a large army. You house your soldiers like officers, and your officers like princes." Now if it pleases the English people to accustom the soldiers to expensive surroundings, or at any rate to superfluities, that is their affair; but I contend that it is not the duty of medical officers to ask for expenditure on this account. Provided they have what they believe to be

essential to the proper treatment of their patients, they ought, as practical men and faithful servants of the public, to refrain from urging any unnecessary expenditure. They have to remember that soldiers are intended for warfare, and that, in warfare, those nations are most likely to prevail whose soldiers are the hardiest, the best able to dispense with superfluities, and who can be contented with the barest necessities of life; that the English army, if it is to contend successfully against that of any other power, civilised or uncivilised, must learn to dispense with unnecessary refinements. The officers, to use the expression of one of our great writers, must "de-fine-gentlemanise" themselves when campaigning. The rank and file also must learn at such a time to put up with the conditions of life which suffice for their enemies or their allies; and it must be obvious that they would find it easier to do this if, in ordinary times, they were accustomed to surroundings of a Spartan-like simplicity. Such, I believe, has been the opinion of all our greatest generals, and such are the traditions of all warlike nations.

Still, if it pleases the tax-paying public that the military hospitals shall be made to resemble our great metropolitan and provincial establishments, well and good; but they ought to count the cost beforehand, and to settle deliberately how far they will go in this direction. It is neither generous nor just to order medical officers to practise the most rigid economy, to tie them hand and foot by regulations, to refuse their requests for what they consider necessary or desirable; and then, all on a sudden, in a time of sensational excitement, such as was witnessed a little more than a year ago, to turn round and blame them for not having their hospitals equipped and garnished upon æsthetic principles.

There is another point to which I think it desirable to advert, namely, the rules for the admission of soldiers to hospital. Our present plan is to admit every man who is unable to perform his full duty. Formerly, when a military hospital was looked upon as an institution akin to a reformatory, the rule was intelligible; but, in the present day, I cannot help regarding it as prejudicial to the moral qualities both of the soldiers and of their attendants. I believe that commanding officers are in favour of the rule, because they consider it injurious to discipline to have a number of men idling about the barracks as convalescents. Still, if such men must be idling, is it better that they should do so in barracks under the supervision of their officers and non-commissioned officers, or that they should be idling in hospital under only such supervision as can be given by hospital-orderlies or female nurses? But why should they be idlers at all? Men having only slight ailments or injuries might, one would think, do much of the police and sanitary work about a barrack or camp; and, if they could do nothing else, they might, at least, attend the regimental school. I am quite convinced that our practice of sending men to hospital for every little ailment tends to make them hypochondriacal, and to engender the habit of going into hospital for trifles, which, when campaigning, is attended with serious inconvenience, both to the military and to the medical officers.

The practice is equally prejudicial to the hospital-orderlies and nurses, who, from having constantly to deal with such cases, are likely to become careless, and to lose that sense of responsibility which they ought to feel in connection with every patient placed in their charge. To a smaller extent, but for similar reasons, it is injurious to the medical officers, especially the juniors; and, lastly, it is unnecessarily expensive to treat in hospital cases which, in any rank of private life, would never be deemed to require hospital care and attendance.

Although the preceding remarks bear, to a larger extent, upon the general economy of all military hospitals, I trust that their special application to field-hospitals will be sufficiently apparent; and I now proceed to explain what the latter are, and what purpose they are intended to serve.

Closely following the troops in the fighting line there comes the "first line of surgical assistance," consisting of the corps of stretcher-bearers and of a certain number of medical officers. It is their duty to collect the wounded and the sick from the battle-field or the fighting line, to render such assistance in the way of arresting hæmorrhage or applying temporary dressings as may be requisite, and to convey them to the second line, viz., that of the movable field-hospitals. These are intended to move with the army, and are supposed to be provided with transport (horses, mules, etc.), for the purpose. They are usually stationed about a mile in rear of the fighting line, in order to receive the sick and wounded brought in by the bearer-companies. Their equipment is as light as possible, consisting of bell-tents, no bedsteads, chairs, or tables, but merely waterproof ground-sheets, bed-cases of thin canvas filled with straw, hay, dry leaves, or the like, some blankets, a certain number of sheets and pillow-cases, cooking-kettles, pans, basins, buckets, lamps, some hospital-clothing, medicines, in-

struments and appliances, wine, brandy, essence of beef, arrow-root, and so on; the object being to provide for the sick and wounded what is essential for their immediate wants, and to take due care of them until they can be transferred to the rear.

There are, next, "the stationary field-hospitals" placed along the lines of communication, and occasionally at the base of operations. The equipment for these hospitals is just the same as that for the movable field-hospitals as regards the medical and surgical stores, but they are supposed to have marquees instead of bell-tents, with double the quantity of hospital-clothing, and they are not provided with transport.

According to the existing regulations, hospitals of this description are to be established at the base; but there can be no doubt that, whenever it could be managed, it would be better to have a general hospital in this position, fully equipped, with bedsteads, chairs, and, in short, all the furniture, bedding, and appliances that are ordered for the military hospitals at home.

In the movable and stationary field-hospitals, the food consists of the ordinary field-rations, which allow to each patient not less than a pound of meat, a pound of bread, a certain quantity of vegetables, tea or coffee, sugar, salt, pepper, etc.; whilst in the general hospitals there is a special scale of diets, some of which give less, but none give more, food than the ordinary rations.

Now, it is obvious that it must rest with the general in command to decide where he will establish his base and his lines of communication, and that it must be for him and his advisers to determine what description of hospitals shall be sent out from this country, and what number and kind shall be found at any given place within the sphere of his operations. Provided his orders are obeyed, we cannot imagine a general complaining of a movable hospital being where there should have been a stationary one, or of the latter being where there ought to have been a general hospital, any more than we can imagine him complaining of a park of artillery or a pontoon-train being exactly where he had ordered it to be. The executive medical officers of the army have, in fact, no more control over the positions of the hospitals than they have with regard to the disposition of the troops themselves.

Such being the purpose and destination of the field-hospitals, it is necessary to consider what should be the unit in their organisation. In the report of Lord Morley's committee on the organisation of the Army Hospital Corps, much importance is attached to this point, and it is concluded that field-hospitals ought to be distributed by brigades, and made smaller than they now are; the idea being that, by coupling such units, field-hospitals could be made suitable for divisions. I rather doubt the expediency of that arrangement, because, in doubling the establishments, it is impossible to avoid multiplying certain functionaries whose numbers need not be increased. I therefore think it would be better to lay down two or three separate scales—say one for an hospital of fifty patients or less, another for one hundred, and a third for two hundred, which is quite as large as any field-hospital ought to be. But in this connection it is important to consider not merely the number of sick that could be accommodated at a given time, but at what rate the sick could be passed through these hospitals, for it must be obvious that a hospital of two hundred beds in which the admissions and discharges respectively numbered ten daily would have much less strain than one in which the admissions and discharges averaged one hundred daily.

This point has not hitherto received any attention, but its importance is very great, as is shown by what occurred at Ismailia. The hospital there, after August 27th, was at first organised on the basis of one stationary field-hospital of two hundred beds. No. 8 was used for this purpose; and, as it was supposed that the other stationary hospital, No. 7, might be required at a more advanced point on the line of communications, its equipment was at first not taken into use. It almost immediately, however, became apparent that one such hospital was inadequate for a daily exchange of one hundred sick; and, therefore, the personnel and appliances of No. 7 field-hospital were gradually absorbed. But it would probably have been more satisfactory if the two stationary hospitals had been at once established there with their full complements of medical officers, equipment, and attendants, or, what would have been better still, had it been possible, if a general hospital had been formed. Still, on the assumption that there were two stationary field-hospitals at Ismailia, my experience is to the effect that they were insufficient for the required rate of exchange of sick. I consider that ten per cent. of admissions and discharges respectively is as much as such hospitals could effect satisfactorily from day to day; but if the various subordinates of such hospitals were all properly trained, probably twenty per cent. could be managed, which would, of course, be equivalent to a total change of inmates every five days.

This point ought not to be forgotten when the plans are prepared for the various field and other hospitals of our next military expedition.

I must now explain how a camp should be formed for a field-hospital, if houses be not available.

The regulation plan appears to me to have several defects. The tents are too crowded, and the perforation of the ground-surface is thereby interfered with. The horses are placed too near to the hospital-tents. The medical officer and the hospital attendants are too distant from the sick, and all on one side of the camp. There is no provision for sick officers, for the accommodation of the night-attendants, for an office, or for a mortuary.

For stationary field-hospitals, the plan proposed by the late Surgeon-Major Moffitt has some advantages; but it requires a large space of ground, which cannot always be obtained; the centre is blocked by the hospital staff and stores; and, in any case, the plan is suitable only for marquees.

The plan which I propose is calculated to obviate most of these defects.

Plan of encampment for a field-hospital; movable or stationary (200 sick).

Explanation.—1. Hospital tents (medical division). 2. Hospital tents (surgical division). 3. Medical officers. 4. Army Hospital Corps. 5. Sick officers. 6. Operation-tent. 7. Night-guard and office-tent. 8. Mortuary. 9. Pack-store. 10. Bât-men and drivers. 11. Military guard. 12. Store-wagons. 13. Pharmacy-wagons. 14. Water-carts. —> Kitchens. — Horse-lines. + Latrines.

This camp is naturally divisible into halves and quarters—i. e., into medical and surgical divisions and subdivisions. The officers are in the centre, instead of being all at one side. The attendants are near to the sick; and each half of the camp, and even each quarter, is very nearly complete in itself, having its own officers, orderlies, water-supply, kitchen, and transport. There is accommodation for sick officers, for night-attendants, for the kits or packs of the patients, and for the dead; whilst the horses and latrines are as far away as possible. Moreover, this plan will answer equally well with all kinds of tents, and it complies with the principle of dispersing the sick and concentrating the attendants; whereas the regulation plan tends to concentrate the sick and to disperse the attendants.

As to the kind of tent best adapted for campaigning purposes, I believe all medical officers are agreed in condemning the present bell-tent. Its chief advantage is its portability. It is intended to accommodate four sick, and, as it weighs about 65 to 70 lbs., the weight of tentage per patient may be taken at about 17 lbs. Its disadvantages are that one cannot stand upright in it, except in the centre; that its cubic space is small (513 feet), and that it can neither be lighted by daylight in wet weather without letting in the rain, nor ventilated sufficiently for sick men either at night, in cold or in wet weather. Besides, as it cannot accommodate more than four patients, it would be

impossible with any reasonable number of attendants to exercise satisfactory supervision over a large number of sick divided into such small parties. This tent ought no longer to be used for hospital purposes, at any rate in its present form; but, if its retention for movable field-hospitals should be considered absolutely necessary on account of its lightness, it ought to be improved by raising the vertical part to a height of three feet. In that case, the tent-pole being ten feet long, the slope of the roof would be brought to 45°, but would still suffice to carry off the rain, whilst there ought to be little or no difficulty in making the junction between the vertical and the sloping parts such that air might readily pass in and out.

The regulation hospital-marquee is a better tent. Its cubic space is about 2,766 feet. It weighs about 500 lbs. (Parkes), and it is intended for eighteen sick, at which rate the weight of tentage per patient would be about 27 lbs. If it were provided with large flaps or windows at the sides, for the admission of light as well as air, it would answer well for all situations to which it could be conveniently carried. It would, therefore, be perfectly suitable for base-hospitals, and for stationary hospitals near the base; but it is too heavy, both as a whole and in its several parts, for movable hospitals, and even for stationary hospitals at a long distance from the base, especially when we have to depend for carriage upon pack-animals or upon rickety country carts.

A far better tent for such hospitals than either of the preceding is the Indian sergeant's tent, which is square, with upright sides, and large enough to accommodate from four to six patients. This tent is used only in India, and I regret that I am unable to give its weight. It has, however, the drawback of being still too small for economical attendance on the sick.

The best tent for movable and advanced stationary hospitals would be one of this pattern, but large enough for ten patients, which is probably the most suitable number for easy attendance and supervision. Its parts might be of such a size and weight as to allow of being carried on any ordinary horse or mule; and I have no doubt it could be made so that the whole might not weigh more than 180 or 200 lbs., say, a weight of tentage of 18 or 20 lbs. per patient. I cannot help thinking that the Government might, with advantage, spend some money in experiments on this subject. To conclude what I have to say regarding it, I should remark that, even when large tents or marquees are used for the ordinary sick, there ought to be smaller tents for sick officers for special cases, for operations, for the night-guard, for an office, for a mortuary, and for a pack-store.

I have next to speak of the *personnel* of a field-hospital; and I here show the establishment that I would propose for a field-hospital of 200 sick.

Proposed Establishment for a Field-Hospital (200 Sick).

1st Class.	No.	2nd Class.	No.	3rd Class (Orderlies).	No.
Brigade-Surgeon (in charge).....	1	Chief wardmaster.....	1		
Surgeon-Majors:.....		Wardmasters.....	2		
For medical division.....	1	Dispenser.....	1	..	1
„ surgical do.....	1	Surgery-man.....	1	..	1
Surgeons:.....		Steward.....	1	..	1
For medical division.....	1	Assistant steward.....	1	..	1
„ (patho- logist).....	1	Storekeeper.....	1	..	1
„ surgical division.....	1	Assistant storekeeper (pack-store).....	1	..	1
„ „ and sanitary duties.....	1	Head cook.....	1	..	2
		Assistant cook.....	2	..	
		Clerk.....	1	(Messenger).....	1
		Writer (registrar).....	1		
		Mortuary-man (sanitary assistant).....	1	(Sanitary).....	5
		Laundry-man.....	1	..	3
		Dressers.....	14	(Water-carriers, etc.).....	5
Total.....	7		30		20

In this scheme, the number of medical officers is the same as in the regulation establishment, and it is quite sufficient if there is a reserve elsewhere for casualties. The senior should be responsible for everything, subject, of course, to the regulations and to the general officer in command, and his authority over his staff in all disciplinary matters should be as absolute as that of a colonel over his regiment. At least two of his juniors ought to be thoroughly competent operators, and these should also possess special skill in diseases of the eye and ear. To these officers the surgical work of the hospital would be allotted, and the junior should supervise all sanitary matters.

One of the staff ought to be a sound diagnostic physician, and another should be a skilled morbid anatomist. These two should have special charge of the medical cases. In short, as we know that one man can rarely excel in every branch of medical knowledge, we ought

to assimilate the staff of a field-hospital to that of our metropolitan hospitals; so that it might be equal to any of the various emergencies that arise on field-service. But, in order to have such a staff available for every field-hospital in war time, it would obviously be necessary that our whole medical department should be reorganised, and divided into general and field-hospital cadres, just as the artillery are divided into batteries and brigades; and then, for foreign service, instead of individual officers relieving each other as they do now, a whole field-hospital abroad would be relieved by one from home, and *vice versa*. I believe that such a plan would contribute to the efficiency of the medical service, and that it would foster a feeling of generous emulation throughout the department, without in any way impairing the general *esprit de corps*.

As regards the second-class establishment proposed in this scheme, the senior ward-master should be a warrant-officer, and at the head of all the subordinates, both of the second and of the third class. He would be the right-hand man of the senior medical officer in connection with the discipline of the men and the distribution of routine duties. In fact, his position should be somewhat analogous to that of the sergeant-major in a regiment. There would be only one dispenser instead of two as at present, for reasons which I shall explain presently.

The surgery-man, not provided for in our present scale, would have charge of the operation tent, or room, and of all the appliances and instruments belonging to it, and he should have had some instruction as a cutler, so as to be able to keep them in proper order.

The pack storekeeper should be provided with carbon paper, duplicate "receipt and issue books," as well as with tallies and cords for labelling and tying together the arms, accoutrements, and kit of the patients admitted.

There is no part of our military hospital system that more requires improvement than that which concerns the preparation of the food for the sick. Nothing contributes more to the welfare of the sick than good cooking; and yet we are in the habit of entrusting this important function to men who are not known to have any aptitude for it, either natural or acquired. Every soldier ought to be taught how to cook his rations, but the hospital-cooks should receive a more thorough training, so as to be able to turn to the greatest advantage whatever materials might be served out to them; and for this purpose there ought to be a special training-school for cookery at Netley, if not at the other large military hospitals.

The mortuary-man should have a place in the list of all field-hospital establishments, and his duty should be to take charge of the mortuary-tent, to assist at *post mortem* examinations, to prepare the dead bodies for the funeral-parties to take away, and so on. He might also be the sanitary officer's assistant, and in that capacity superintend the sweepers and scavengers.

The laundry-man should take charge of all soiled linen, disinfect it when required, and, under certain circumstances, even superintend its cleansing, washing, pressing, etc.

The dressers should be the nurses or attendants of the sick, and should be specially selected and trained for this troublesome but most important duty.

Each individual in the second-class establishment should be required to learn the duties of the other, more or less, according to his ability and opportunities. In short, each should have enough acquaintance with the other's work to be able to know when it was properly done, and, in case of emergency, even to do it himself. But it must be evident that, if we would have all these functionaries to work harmoniously and expeditiously, they ought to be practised, each at his special duty, as regularly and systematically as the non-commissioned officers and men of a field-battery are drilled at theirs, and we must realise the fact that, without such training and practice, we shall simply invite failure if we send field-hospitals on any future campaign.

The third class of the hospital-establishment should consist of sober, steady, intelligent, healthy men, to be employed on such rough but simple duties as water-carrying, digging, scavenging, cleaning, washing, and packing—duties, in fact, which require no special training, and which might be performed by ordinary labourers, taken either from this country or from that in which the war was being carried on if necessary. Into this class would also come the drivers, if it were decided to hand over to field-hospitals the horses or other cattle necessary for their transport; but on this point I now agree with those who think that this should not be done. If the English army had to be prepared for European warfare alone, it might possibly be as desirable for the movable field-hospitals as for the field-batteries to be provided with horses and transport, in which case conductors and drivers would of course form a part of the hospital-establishment; but when we reflect that we are just as likely, if not more likely, to be required

to make war in any part of Asia or Africa, where the means of transport are very variable, I think we should do better to trust to the transport branch of the Commissariat for the conveyance of the hospitals from place to place. It ought, however, to be clearly understood on all sides that the special hospital-establishment should on no account be diverted from their special duties for this purpose, but that the task and the responsibility of all such movements would fall upon the transport branch, acting under the orders of the general officer in command.

Passing now from the *personnel*, I come to the equipment of field-hospitals; but time will not permit me to do more than briefly allude to those articles which most urgently call for modification. The opinion that the present equipment is too heavy is not well founded. It is not the things carried, but the means of carrying them, that are too heavy. We want lighter packing-cases and lighter carts; but the pots, pans, and the like, cannot well be made lighter than they are, if they are to be serviceable.

As to the bedding and clothing, we ought to use cotton instead of linen sheets; they would be lighter, cheaper, and durable enough for any ordinary campaign. At Ismailia, the sheets were of unbleached linen, so stiff and coarse, and so like the canvas of the mattresses in colour, that some persons thought we had no sheets at all in use. Still, in field-hospitals, the use of sheets must always be exceptional. At Ismailia, if every patient had been supplied with sheets, our supply would have lasted about four days, and then we should have had none for the operation and other serious cases. I should even be inclined to diminish rather than to increase the supply of sheets, and to issue, in their stead, loose drawers (*pyjamas*) of twilled calico, with shirts of the same material opening all the way down the front. A patient would be comfortable in such clothing; and over it he might use either blankets or any portion of his regimentals that he required for extra warmth.

The number of slippers ought to be increased; for nothing is more refreshing to a man exhausted by heat, hunger, sickness, or injury, than the removal of his hard, heavy, and probably ill-fitting boots, and giving him loose slippers in their stead.

Turning from the clothing to the utensils, I must first call attention to the absence of small portable cooking-stoves. I tried to get these supplied to my hospital before we went to Egypt in 1882; but the scale of equipment had been fixed at the War-Office, and no alteration could be made in it. At Ismailia, fire was kept in the kitchen all night; but the kitchen was one hundred yards distant from the hospital-wards, and of course the female nurses could not go to it.

Good and portable filters are also a great desideratum, for we can never trust to the purity of the water-supply in the field, and the importance of pure water in hospitals is only second, if second, to that of pure air. The filters hitherto furnished to field-hospitals have been unnecessarily heavy and bulky, owing to the filtering substance being contained in thick earthenware jars; but I have no doubt that, by using block-tin, cemented on the inside, and encased in wood or wicker-work, a spongy iron-filter might be made of less than half the weight of those now in use.

There should likewise be supplied to our field-hospitals a few sweeping-brushes, brooms, and cleaning cloths or dusters; for these cannot be extemporised on the sea-shore, for instance, nor can they always be procured in the localities where the field-hospitals are placed; but it is impossible to keep either tents, huts, or the rooms in houses, decently clean without such appliances.

Instead of the few, heavy, and expensive lanterns allowed by our present scale, we ought to have small tin-candlesticks fitted with shades of glass, talc, or horn, with sockets for small oil-lamps, or for such candles as we call night-lights. Of course, some of the large lamps would be required as well; but, of these small night-lights, there ought to be at least one for every ward and marquee, one for every three or four bell-tents, and one for each latrine; for nothing is more annoying to patients suffering from diarrhoea than to have to grope their way in the dark.

In the matter of close stools, the regulation equipment is defective rather in kind than in number. At Ismailia, where nearly every patient was troubled more or less with diarrhoea, we had at first serious difficulties respecting the latrine-accommodation; and the time of the orderlies was too much occupied in carrying about and cleansing the close stools and the extemporised earth-closets. Within the palace, on each story, there were some water-closets; but, when I took charge, the cistern was empty, and could not be refilled; consequently, the closets were a nuisance, and a very dangerous one. I, therefore, after having them cleansed and disinfected, ordered the seats to be screwed down, so as to prevent their further use. This measure caused much annoyance, and I believe many hard things were said

about it, but I should unhesitatingly follow a similar course again under like circumstances; for there can be little doubt that much of the peril attending the occupation of houses for hospitals in war time is attributable to the unwholesome condition of the house-closets. The difficulty, however, was to find a substitute for these dangerous closets, and I was pretty nearly at my wits' end until an accident, or, rather, a happy thought, suggested the means of overcoming it. I was conferring, one day, with Captain Gordon, R.E., about making some portable dry-earth boxes, when he told me that he had found, among a lot of Egyptian lumber, some iron-wheelbarrows, which might serve my purpose. The barrows were constructed so that the box might be raised on a pivot, and its contents tipped out beyond the wheel. It was, therefore, only necessary to fit them with a wooden bar or seat between the handles, to make a latrine that could be placed wherever it was most wanted—a latrine that could be wheeled away, cleaned, disinfected, and then replaced, as often as was requisite.

In future, a dozen of these ought to be supplied to every field-hospital; for I scarcely know which conduces most to a patient's happiness—the ingestion of food, or a convenient *lieu d'aisance*. These barrows would meet this important desideratum, and, what is of equal consequence, they would enable us to dispense with the evils of open latrines in the immediate neighbourhood of the sick. Moreover, if not required as latrines, they would always be useful for scavenging, for the carriage of stores, and other similar purposes.

Before I leave this subject, I ought to mention that Professor de Chaumont is of opinion that field-hospitals might be provided with a furnace for burning the excreta, and, perhaps, also for cremating the dead. If this could be done, the furnace might be utilised in various other ways, such as, 1st, for drying and disinfecting the clothes of all patients admitted, which would obviate the objection to their wearing their regimental clothing in hospital; 2nd, for drying the towels, sheets, shirts, etc., washed by the laundryman; 3rd, for boiling water, and thereby affording to the patients the means for efficient ablution. I must likewise add that latrine-paper ought to be issued to field-hospitals. At present this article has no place in our scale of supplies, but, as a sanitary measure, the defect ought to be remedied without delay.

I have now to say a few words regarding the medicines for field-hospitals. I believe the regulation list is undergoing revision at the present time. In what direction, or to what extent this may be carried, I do not know; but I have long been of opinion that we ought to cease carrying about huge bottles full of tinctures and powders and other bulky drugs. Can we not treat such diseases as we meet with in the field, without, for instance, the tinctures of orange-peel, cardamoms, myrrh, senna, and valerian, or such articles as chiretta, cinchona bark, soap-liniment, bruised ginger, and resin-ointment? Would it not be better to have all, or nearly all, the medicines for campaigning made up beforehand in the form of coated pills or globules, and lamels or discs for hypodermic injection? I believe it would be quite possible, by utilising the modern and improved methods of compounding, to put into a very small compass all the drugs that are essentially necessary for field-service; but, of course, it would be necessary that every officer going to a campaign should be aware that dispensing establishments on the scale of those of Savory and Moore, or the Apothecaries' Company, are not to be expected in a field-hospital. By the adoption of this plan, one dispenser for each field-hospital would evidently be sufficient.

Then, as to the means of carrying the medicines and appliances, surely the ingenuity of the country might contrive something lighter and more manageable than our regulation medicine-chests and pharmacy-wagons. In Egypt, the latter gave us an infinity of trouble. It was no easy task to land them from the barges; but, after this difficulty was overcome, and the wheels and shafts had been put on, they had scarcely been moved a few yards before they sank deep into the sand, from which neither men nor horses could extricate them. It was, therefore, necessary to unpack them, and to carry their contents to the hospital piecemeal. I am aware that these wagons were used in South Africa; but it must be obvious that what happened in Egypt might happen elsewhere, and that vehicles which could not at a pinch be taken over a sandy plain or through a ploughed field, ought to form no part of the equipment of a field-hospital, either movable or stationary.

The remarks which I have made upon the field-hospitals, imperfect as I know them to be, will nevertheless suffice, I trust, to show that we ought not to trust to our being able to create such institutions by a mere stroke of the pen at the commencement of a war. Inasmuch, then, as the army ought to be prepared at all times for war, it is desirable that all our military hospitals should be organised on the same principles as those which we should have to adopt in the

field. There should be field-hospitals, or at any rate the cadres and *matériel* of them, at Netley, Aldershot, Portsmouth, Woolwich, and all the other large military stations; and advantage should every year be taken of the presence of troops in such camps as Shorncliffe and Aldershot, and of the summer or autumn manœuvres, to establish and work field-hospitals precisely as they should be conducted on a campaign.

And now, before I conclude, I should like to say a few words regarding the hospital work in Egypt in 1882. If the medical service in that campaign was reasonably efficient, how, it may be asked, did it happen that so many complaints were subsequently made about it?

It would be difficult to answer this question without again referring to the fact that the new, or "unified," system of hospital management was certainly not popular with the officers of the army; and I think it is not doing them any injustice to say, that at least some of them would not have regretted to see the system break down. We know also that when people entertain any special dislike, either to an individual or to a system, they are not long in finding, or imagining that they find, causes to justify their aversion. I cannot in any other way account for those absurd but somewhat malicious stories to which some of the newspaper-correspondents gave currency.

Then we must remember that many, even of the senior regimental officers who went to Egypt, had had no experience of actual warfare, and that they probably overrated the hardships which they had to encounter. Besides, I think they did not make due allowance for the difficulties with which the medical department at Ismailia had to contend, owing to the late arrival of the hospital establishments and stores in the *Carthage* and other ships, to the want of transport, and to the rapid increase of the sick-list.

The medical service at Ismailia had to perform the transport-work not only of the hospital stores and equipment, but, nearly every night, the men were engaged for hours in bringing in parties of sick and wounded arriving from the front. It must be evident that there are limits to human endurance, and that if men have to work hard by day under a burning sun, in a temperature of nearly 90° Fahr. in the shade, whilst at night they have a continuance of labour, with only snatches of sleep, they cannot long be in a condition to give that constant, patient, and watchful attention to the sick which good nursing requires.

As to the accusation brought against them of shirking their duty, of coarseness and brutality in dealing with the sick, and of appropriating to their own use the food, stimulants, and other good things ordered for the patients, I would only remark that the men of the Army Hospital Corps are Englishmen like ourselves, and that these are not ordinary English vices. We all know how difficult it is to refute general statements, especially when these are made long after the event; but I can adduce at least one fact to show the unfairness of these complaints. On September 2nd, when the Franciscan Sisters of Mercy came to assist in the nursing at Ismailia, the sick officers were asked if they would like to have one appointed to their ward, and the answer brought to me was that they were almost unanimously opposed to it. Surely this would not have been their reply if there had been among the orderlies either the coarseness, the want of attention, or the dishonesty of which they have been accused.

I will now briefly refer to the bread question about which there has been so much misapprehension. In the evidence given before Lord Morley's Committee it was authoritatively stated that the medical officers made no written complaints about the bread, and that they took no action in the matter until Lord Wolseley called their attention to its bad quality.

Nevertheless, I hold in my hand proof positive, in the shape of copies of official correspondence (which, however, I have no authority to publish), that I wrote to the senior commissariat officer on September 1st, about the bread; that his reply, with other correspondence on the subject, was submitted to head quarters on that same day; and that it was not until the following day that the memorandum was sent from head quarters authorising the commissariat to buy bread in the shops. The correspondence further bears, I think, intrinsic evidence that no complaint had previously been made regarding the bread.

Of course the bread was bad, or I should not have taken steps to condemn it; but the inference that the medical officers gave to their patients without remonstrance bread that was "unfit for human food," would not be justifiable for any part of the time during which the hospital was under my charge. It seems to have been forgotten that the bread issued for the medical officers from August 27th to September 1st, was exactly like that issued for the sick, and I would ask whether you think it probable that, even if the medical staff were indifferent to the welfare of their patients, they would also have been so indifferent to their own as not to notice what the bread was like until their attention was drawn to it by the military officers.

Then, as to the statements that the wards were not all lighted at night, and that there was not an orderly in each ward; I think if you compare the number of rooms in the palace with the number of lanterns provided for the field-hospitals, you will see it was not possible to light them all. But there were lights where they were most needed, viz., in the hall, staircase, and corridors; and wherever they were required for special cases. In short, all that we had were in use; and as regards the complaint that there was not an orderly in each ward at night, the answer is that the whole of the orderlies at my disposal would not have sufficed for such a purpose; moreover, that it was unnecessary.

No medical officer, I imagine, will contend that our present hospital-system is a perfect one. In reality, it is still in the inceptive stage. It is comparatively a thing of yesterday, and its development, even when it has not been actively opposed, has at least been regarded with some disfavour, whereas the regimental system was the product of the combined efforts of several generations of military as well as of medical officers. Nor do we contend that our work in Egypt was faultless. Human endeavours, indeed, rarely meet with absolute success, but it may be fairly questioned whether any other part of our military organisation would have sustained more successfully than the medical service has done the attacks of hostile and unscrupulous critics, and such an investigation as was made by Lord Morley's committee. Opinions may differ regarding the prowess of the army against which our troops had to fight in Egypt in 1882, but there is no room for doubt as to the strength of the enemy against which the medical service had to contend. When it is considered that there were 1,187 cases of fever treated in the military hospitals during that campaign with only 33 deaths, a mortality of 2.77 per cent.; that there were 171 cases of sunstroke with only three deaths; that, with 1,139 cases of ophthalmia, not a man lost his sight; that there were 2,725 cases of dysentery, diarrhoea, hepatitis, and other diseases of the digestive system, with only 31 deaths, or 1.13 per cent.; and that with 691 cases of injury, including those sustained in action, no man lost his life from pyæmia, erysipelas, or hospital-gangrene, results unprecedented in the history of this or any other nation, and attributable to the exertions of medical officers imbued with the doctrines of Lister, and faithful to the teachings of Parkes and the present distinguished professors of the Army Medical School, we may be sure that justice will, sooner or later, be rendered to those who obtained so signal a victory over so dangerous a foe.

A LECTURE ON THE RELATION OF MADNESS TO CRIME.

Delivered at the London Institution, February 28th, 1884.

By J. C. BUCKNILL, M.D., F.R.S.,
Late Lord Chancellor's Visitor in Lunacy.

(Concluded from page 502.)

HAVING come to this conclusion, I must still crave your indulgence for a short time, while I make some remarks upon procedure, i.e., upon the manner in which the law, as it stands, is administered, and add some suggestions perhaps as to its possible amendment. In this country, the questions of the commission of a crime and its excuse on the plea of insanity are, as you know, the joint subjects of our judicial investigation at the trial of the prisoner. But this is not the case in other countries; notably it is not the practice in France, where the code of procedure enacts that when the magistrate during the examination perceives, or is informed by attested certificates, that the person accused of crime does not enjoy the full measure of his intelligence, he is to suspend his examination, and to make an order by virtue of which one, two, or three experts are requested to examine the accused. These experts having been sworn, examine into the particulars of the crime, and the prisoner's history, and they examine the prisoner himself as often as need be, either in prison or elsewhere; and they can even have him removed to a lunatic asylum for the purpose of prolonged observation. If they report that the prisoner is insane, the magistrate generally accepts their verdict as final, and issues an order of *non lieu*, or no jurisdiction. It is upon the report of these experts, or on the report of another set of experts whom the court has the power of appointing if not satisfied with the first, that it depends whether the trial for the crime itself does or does not take place. But at the real trial, the question of irresponsibility cannot be raised. Practically the same system prevails in Austria and some other continental countries. In a remarkable paper on insanity as a defence for crime, read by Mr.

George B. Conkhill, United States Attorney for the District of Columbia (every one will remember Guiteau's abuse of Conkhill), read last year before the Medical Society of New York, this most experienced prosecutor says:

"My candid opinion, resulting from a very large experience in the trial of these cases, is that, when a prisoner proposes to defend his crime on the ground of insanity, a jury specially selected for their fitness should be chosen to try the special plea; and, if the prisoner be found insane, then he should be confined in an insane prison for a time commensurate with the character of the crime; and, if the verdict of the jury be in favour of his sanity, then the plea should not be allowed upon the trial of the cause." (P. 219.)

At the last annual meeting of the English Medico-Psychological Association, which is composed mainly of the superintendents and other medical officers of lunatic asylums, a resolution, proposed by the President, Dr. Orange, was adopted, recommending a medical examination of persons supposed to be insane before the trial. This examination, it was proposed, should be made in each county by the surgeon of the county gaol, the superintendent of the county asylum, and one other local medical man; and their joint report should be given to the counsel for the prosecution. I see many objections to this proposal. Among others, I feel sure that the examiners indicated would not always be competent to the efficient discharge of their difficult task. Our procedure, as you are aware, does not provide for any official examination into the prisoner's mental state before the trial, although an unofficial one does frequently take place in his behalf; but a prisoner is put upon his trial with no official provision for his defence beyond the nomination of a counsel by the judge, if one have not been provided by the prisoner or his friends. If he should have no friends and no means, I am not aware of any manner by which he will be provided with the services of a solicitor, or in what manner evidence can be sought for, or witnesses summoned for his defence. It is true that, in criminal trials, the witnesses for the prosecution are expected to tell the truth without reservation or prejudice; and consequently, in these days, there is no great danger of a man being found guilty of a murder which he has not committed, however poor, friendless, and undefended he may be. But the absence of pecuniary resources, or personal interest in the defence of an insane prisoner is very likely to occasion, and, there is no doubt, frequently has occasioned, a wrong verdict, with the chance of being remedied in an irregular fashion by the Royal prerogative of mercy, or the other chance of being hanged in ignorance and mistake.

Lord Sydney Godolphin Osborne, the well known "S. G. O." of the *Times* columns, expressed a strong opinion on this matter to the Royal Commissioners on Capital Punishment, an opinion founded upon his large experience as a prison-chaplain. He said: "I am satisfied that we have hanged many insane people; and that we have let off, on the ground of insanity, very many who were never anything but sane."

The late Dr. Swaine Taylor, also, who had great experience of medico-legal trials of all kinds, entertained and expressed a very strong opinion on the great uncertainty which attaches to the trial of insane criminals, arising from the different degrees of publicity and interest which the offence or the trial has excited. Indeed, we may see that it must be so, if we reflect that the lunatics who commit murders are usually those who are afflicted with some kind of madness the signs of which have not been easily observed, so that they have been left at large instead of being confined in asylums. I have known some instances in which madness has for the first time been discovered at the trial. We need, therefore, be little surprised that a number of persons are condemned to death for murder who have to be reprieved by the Home Secretary on the ground of insanity, or that the cause of these reprieves is, to a great extent, accidental. Take, for instance, the two men already mentioned, who were tried and sentenced for murder at the Central Criminal Court last autumn, William Gouldstone and James Coles. Respecting the first case, Dr. Savage of Bethlem wrote a letter to the *Times*; and, respecting the second case, Dr. Jackson of Thornton Heath also wrote to the same journal, demanding further inquiry. Each of these gentlemen had personal knowledge of the condemned man, of whose insanity and irresponsibility he was convinced. The medical press and some organs of the general press of this metropolis backing up these opinions, the Home Secretary was moved to order a medical investigation, with the result that both of these men were reprieved on the ground of insanity, and removed from the condemned cell to the care and protection of Broadmoor Asylum.

There can be little doubt that, if these men had been tried in some remote county, and had not attracted the attention of eminent medical men with knowledge of the subject, and spirit to assert their opinions, both of them would have been executed; for the terms in which