of training, which I maintain is wrong in principle. It is customary in all schools or training establishments of every description, except for army recruits, to advance a pupil according to his ability, and this system, I suggest, should be adopted at the depôts. It would be greatly to the advantage of the Service were a recruit to remain in the lowest squad, both in the gymnasium and on the square, until he is physically fit to be advanced to the next; some men are fit to be promoted a few days after joining, others may never be fit. The system of urging the weak and delaying the strong is not conducive to the efficiency of either.

It is possible that the present system may to a certain extent account for the increase of losses to the Service attributed to heart defects, and a change in the principle of training is justified on this ground. The hearts of the majority of recruits are capable of resisting considerable pressure, but a large minority have never been exercised during the lives of their possessors, and as it is undesirable to select the weakly ones for marked attention, I suggest that no recruit should attend the gymnasium during the first fortnight's service, but that this period should be allotted to vaccination, feeding, and gentle exercise in the open air. During the second fortnight gymnastic training should be commenced, but no fixed apparatus should be used. Training commenced thus gently is more likely to result in a higher standard of physical fitness during the later periods without the risk of early breakdown.

Echoes from the Past.

ON THE MEDICAL ORGANISATION OF THE BASE OF OPERATIONS IN WAR TIME.

By Surgeon-Major G. J. H. Evatt, M.D.
Army Medical Staff.


[It has been suggested that this article should be printed as an "Echo from the Past," and as an historical record of what the advanced opinions which, twenty years ago, were regarded as essential to successful work in war, it is a veritable "echo"; but there is so much in it that has yet to be realised that it is not a mere interesting reflection of a dead "past," but an incentive to achievement in the perennial present, for we still fall short of Surgeon-General Evatt's ideal of 1885. Our existing organisation is not, in some respects, comparable with that set forth in these pages, for in it it is assumed that the base is the head-quarters of the line of communication, and much of the administrative duty
that is allotted to the Medical Staff at the base now devolves on the Medical Directing Staff of the line of communication. The headquarters of a line of communication may be located at a base, but the tendency is to push the head-quarters up the line and to confine the duties of the base Staff to those connected with the passing through of personnel and stores. When this is possible great advantage must ensue from the decentralisation that results. An ideal base in an over-sea expedition would consist, from a medical point of view, merely of a port where troops and stores would disembark and be entrained, and where the sick would leave the train to embark for home. Troops should be passed through a base, and if this is possible the problems at the front are enormously simplified. The duties of the Base Sanitary Officer should be confined to the harbour where troops disembark and entrain. The duties of the Embarkation Medical Officer, General Executive and Medical Transport Officers are similarly simplified. If such an ideal could be achieved the base hospital might disappear. The term is no longer recognised, although, of course, general and stationary hospitals may be located there; but a base hospital is no longer an essential part of our organisation.—Acting Editor.

INTRODUCTION.

I propose in the following brief paper to deal with the question of the organisation needed at the base of operations by the Medical Corps of an army in the field to enable the Medical Service to do its duty with efficiency, and according to the demands of modern ideas as to the working of a Medical Corps in the field.

We are now going through the constructive stage of Military Medical Organisation. We have really no tradition of the past to copy implicitly as a guide for our work. We have to-day to originate, to lay down first principles, so that those coming after us may have easier work to do and more to guide them in doing it than has been our lot.

We should take courage in this matter from the enormous progress made in military medical organisation between the years 1882 and 1885, and should remember that between these few years the personnel of the field hospitals was practically doubled. We have now to deal calmly and accurately with the subject of medical organisation at the base of operations in war time. Its efficient working is of paramount importance to the success of the army, and that efficiency can only be achieved by thoughtful forecasting of its needs in peace, and laying down a definite scale of officers, men, and material for its due working.
In foreign armies fighting on the mainland of Europe, and starting from their garrisons for the field, practically their whole country is for them a base of operations, and the German Army can draw supplies of men and equipment from the whole extent of the German Empire in war time.

With us it is quite different. Our armies are flung down on a hostile coast; they have to land all their supplies often at a single and perhaps indifferent port, and all the vast converging mass of men and materiel coming from England have to pass through the narrow tunnel of the base of operations before they again expand into the army in the field. The base is like the narrow constriction in the centre of an hour-glass, the upper division of which may represent England pouring out her supplies with a lavish hand from her shores, every particle of which must run through the base before it again expands into the lower division which represents the army spread out in the field. For the Medical Service the highly important fact has to be borne in mind that in addition to landing all its personnel and materiel from England at the base, through that base must also re-pass the whole of the sick and wounded returning from the field to England; and further, that large accumulations of sick and wounded are likely to be collected for treatment in and about the base itself.

We should now in peace time quietly think out what machinery is needed at the base of operations to discharge this duty, and openly submit the demands to English public opinion, so that everyone in the nation may know what the Medical Service of the army needs for its successful administration in war.

We must put on one side altogether the idea that the nation will not grant the men needed, or that it will refuse the extra cost needful establishment will entail in the war estimate. This is not the case. It is quite certain that if we can calmly and accurately show the need of the special aid we require it will certainly be granted. This labour of accurately studying our needs in peace for war is one only beginning in every branch of our army, but it is certain that without this preliminary study successful war cannot be made. The whole history of the past in the Medical Service has been the highest, fullest, and most excellent aspirations on the part of the medical officers to succeed in war, and with this a complete absence of the means of reducing these aspirations to the level of practical work.

It is no use theorising as to what we are to dream of in a future campaign; the true course is to frame a clear demand for so many
officers, men, materiel and transport, and say definitely that without these success cannot come. All happy-go-lucky makeshift endeavours are not organisation. Organisation is above all things accurate definite forethought applied in peace to the study of the national needs in the field.

Up to the present I cannot find that any single military leader has ever thoroughly gone into the question of medical field organisation, however ready they may have been in the field to blame all short-comings. To-day we are doing this work for ourselves and endeavouring to educate public opinion on this matter so important for the well-being of the Army, particularly in its lower grades.

The subject of the medical organisation at the base of operations may be considered under the following heads:

Section I.—The Principal Medical Officer at the base. His staff, &c.
Section II.—The Sanitary Officer at the base.
Section III.—The Medical Transport Officer at the base.
Section IV.—The Medical Charge of the Base Military and General Staff.
Section V.—The Medical Store Depot at the base.
Section VI.—The Base Hospital.
Section VII.—The Hospital Ship.
Section VIII.—The Sick Transport Ship for England.
Section IX.—Medical Staff Corps Depot at base.
Section X.—Reserve hospitals parked at the base.
Section XI.—The Statistical Officer to the Army Corps.

SECTION I.—THE PRINCIPAL MEDICAL OFFICER AT THE BASE.

The Principal Medical Officer of the base is one of the most important officials needed in the medical corps of an army in the field, for on his energy depends much of the successful working of the whole medical field system. He should be active, of good physical health, and able to endure fatigue. It is a question of the existing age of retirement for deputy surgeons-general, viz., 60 years is not much too high, and that an officer who has to undergo the physical labour now demanded of a deputy surgeon-general should not retire at 55 years of age. These last five years from 55 to 60 years are the last straws on the camel's back, and officers full of tropical service, and who have seen several campaigns, are not well fitted when over 55 for such active work. With surgeons-general it may be different—but for deputies, 55 should probably be the age of retirement.
The P.M.O. on leaving England should take with him, in the same vessel, his secretary, who should be a surgeon-major. This officer should be the office assistant and representative of his chief, and should sign all routine letters, returns, and orders "by order" for him. No secretary is allowed to the P.M.O. at the base by the existing field service regulations, and anything more painful than the result of this absence of a secretary cannot be imagined. It is painful beyond measure to see old and experienced officers filling this post, wearied and tired out with petty routine details.

To send a P.M.O. to work the base and to give him no secretary, is to run the risk of failure in war with our eyes open. If the P.M.O. goes from his office to a board, or to visit the base hospital, or to inspect the hospital ship, a constant and important duty, he finds his office empty and some sergeant in charge. This is completely wrong. We cannot do our duty or speak with sergeants on important confidential subjects such as medical matters are. Even if we in the medical service did discuss matters with sergeant-clerks, other officers of other branches will certainly not do so, and thus hitches, misunderstandings, and failures occur. The secretary should be always on the spot in the absence of his chief, and should be fully aware of all the various lines of work at the base, so that if the P.M.O. goes sick, or is invalided, the whole working may not collapse, but the new P.M.O. will find the office work going on fairly under the secretary when he takes charge. We cannot dwell too strongly on the need of this officer. He may cost £500 a year for his pay, but in the war charges this is nothing, and without him a P.M.O. cannot do his work and failure is quite certain to occur. This should be clearly understood, and none will deny it. There is no doubt whatever that our P.M.O.'s are to-day completely overburdened with petty details in the field, owing to the absence of secretaries.

During the whole of the voyage out the P.M.O. should discuss matters with his secretary and lay down his system of work, and if others of the base staff be on board with him he should call them together frequently and regularly drill them by lecture and explanations into what his system of work may be.

There is no great difficulty in working the base if this be done, but if all the base staff land ignorant of their work and have to learn it there, confusion will result.

Doubtless this base organisation routine should form part of the senior examination now introduced into the department.

The P.M.O. of the base is, of course, subordinate to the P.M.O.
of the communications line, but within the base itself he has a free hand and full power to act. The P.M.O. of the communications is really a travelling Inspector-General, whose power extends from the immediate rear of the army in front to the extremest point of the base towards England. This communications P.M.O. should probably be perpetually on the move up and down this line, and he really is the vivifying influence along the whole line. It is difficult to over-estimate the importance the efficient working of the line of communication bears to the medical service. It is the very basis of good medical war work that the communication be well organised. To-day, of course, we deal merely with that section of the communication called the base of operations. In addition to his secretary the base P.M.O. needs a junior officer of active habits and good address as his orderly officer. There are a great number of points which come under the P.M.O. of the base which can be settled at once by a personal interview, or by a personally delivered message, and for this purpose an orderly officer is of great importance. Practically all P.M.O.'s in the field strive to develop such an officer, but he is only to be obtained by filching him from one of the medical field units, which unit is thereby injured in its efficiency. The true method is openly and boldly to say to the nation that such aid is needed to ensure the efficient working of the base. Tradition gives us no aid in this matter. The chaos of Scutari teaches us not what to copy, but rather what to avoid. Deficiency of staff is the thing we must avoid.

So far as I have seen of army life the short-handedness of the medical corps in its war work receives not the slightest sympathy from the army generally. They rightly think that it is entirely our own fault in not openly stating our needs and referring the matter to those who know what labour war really is. If England desires her soldiers to be cared for when ill she must grant the staff needed for the work, and I have in every case found that the military officers simply wondered at our going into the field short-handed. The need of secretaries is of paramount importance to us, not only at the base but at the divisional headquarters, where the P.M.O.'s are entirely devoid of secretarial help, being in this way far worse off than any other commanding officer of a corps. The very lives of the P.M.O.'s are at stake in this question of continuous overwork from petty details which should fall on secretaries.

The P.M.O. of the base takes out with him in the same vessel his sergeant and private clerks. These are trained disciplined men of the Medical Staff Corps, and there should be a sufficiency of
them. On the voyage out the P.M.O. explains to them his line of work and allows them to attend any lectures he gives to the medical officers on the subject.

In addition to these and quite apart from them are his messengers, of which he needs probably three. There are also M.S.C. men, who know the meaning of the medical unit, designation of officers, &c., &c.

These men are lodged in the tents with the clerks and are rationed and looked after by the orderly officer of the P.M.O., who also rations the servants, looks after the horses, and attends to all the minor details of the P.M.O.'s camp in addition to his other duties.

Mounted orderlies are also needed and should be supplied from the mounted corps at the base, or the transport depot should supply ponies or horses for the messenger orderlies, which probably is the simplest way of arranging matters. The loss of time in using foot messengers over a large base is considerable.

Great advantage results from joining the base hospital and the hospital ship to the P.M.O.'s office by telephone, or by flag signals, and by laying down a few simple signals referring to transfer of wounded to the ship, &c.

The P.M.O.'s offices are, of course, near the base commandant’s office, and ought to be distinguished by a red cross flag and by a large conspicuous notice board, painted in white on black with the words P.M.O. of Base Office. In war camps label everything, so that he who runs may read.

In addition to the flag and the notice board, at night a lantern should be used, as constant messages at night may arrive and the P.M.O.'s office should be easily found. One of the messengers should always be on the qui vive to receive messengers arriving and show them the office where one of the clerks sleep as if on guard there.

When the P.M.O. goes out on inspections, his orderly officer should accompany him with all note books and documents needed, and the secretary should remain in the office. It should be the rule that either the P.M.O. or his secretary should at all times be in the P.M.O.'s office. If both are away the public service is distinctly injured, and this is intolerable and means failure in war. The delay of half-an-hour in carrying out an order may entail great loss to the nation.

The P.M.O. of the base is now responsible for the clothing accounts and for the pay documents of all the Medical Staff Corps employed in the campaign. This is a frightful trouble, and one from which the P.M.O. should be completely freed.
During one of my campaigns I could not get a pair of shoes for one of my men without the counter-signature of the base P.M.O., an overworked official who lived thirty miles away from my post. All this clothing and document work should be handed over to the Officer Commanding Medical Staff Corps Depot at the base, who should be completely responsible. Of this officer and depot we shall speak presently.

Wherever the ordinary landing place of the troops may be, a printed notice board should be fixed there stating where the P.M.O. of the base has his office. This is very useful, and constant care is needed to distinguish the base P.M.O. from the chief medical officer of the base hospital. These two officials are constantly confused with one another by the uninitiated, and even by the rank and file of Medical Staff Corps who should know better.

In referring again to the need of secretaries for the different higher medical officials, we must remember that the secretaries learn an immense deal by their appointments, and this knowledge so learned while young, fit them as they grow old for the filling of the higher posts themselves. In fact a tradition is formed.

In all these attempts to free senior officers from overwork, and to develop new officials where needed, the aim is, of course, a double one. First to do absolute justice to the individual by freeing him from overwork, which may be beyond the limits of human endurance, and which if persisted in may permanently injure the health of the officer, but still more to paralyse and to remove altogether all excuses for work ill done. This has to be guarded against with the whole official class. They remain silent before the strain comes upon them, although they must know if they study their wants that failure is inevitable, then when they fail they trot out the excuse of overwork. The aim of the nation is to remove all reasonable hindrance to good work, to place ample means ready to do the duty, and in case of failure to demand full enquiries and insist on punishment.

SECTION II.—THE SANITARY OFFICER AT THE BASE OF OPERATIONS.

Whoever may be appointed as sanitary officer at the base of operations of an army in the field has certainly his work cut out for him. He has before him arduous, unceasing and unpleasant work, which will as a rule bring him into contact with everybody at the base, and he needs much strength of character to carry out his duties.
So fully will he be occupied that all idea of his fulfilling any other duty save sanitary work is completely out of the question. Under existing rules he is to combine the duties of sanitary officer, with superintendence of the embarkation of sick and wounded. It may safely be said that no one officer can carry out accurately such duties. The base of operations is the most difficult place to keep in a sanitary condition. Thousands of soldiers pass through it, staying only for a few days, and all the time in such confusion that sanitary neglects are certain to occur. To the base come crowds of contractors, sutlers, and the rabble which follow an army. Such persons are completely undisciplined in sanitary routine and set at defiance all orders on the subject. To the base come hundreds of animals of every kind for transport purposes, as well as for the food of the army. These alone create enormous trouble from a sanitary point of view.

Epidemic disease is more likely to develop at the base than elsewhere, because ships arrive with men and animals from all points of the compass, and disease loves to revel in such agglomerations.

At the base are landed vast supplies of food for the army, all needing to be watched, so that the rascality of contractors may be checked.

Every ship arriving in the harbour has to be inspected to see if infectious disease exists.

All this is for one officer a heavy task, and it is simply impossible for him to take over the sick transport duties of an army corps if he is to do his duty fully. That duty is in itself most onerous.

The brigade-surgeon appointed as sanitary officer is of course simply the staff officer of the P.M.O. of the base, who is finally responsible in all sanitary matters, but who uses the sanitary officer as his agent and executive officer.

The sanitary officer has his office close beside the P.M.O.'s office, with whom he is in constant communication. His office is labelled with a signboard, clearly and distinctly, with his official designation so largely printed as to be visible at a distance. If at all possible he plainly posts up that at a certain hour in the morning and a certain hour in the evening he will be found at his office, so arranging as not to interfere with his out-door work, which is of the chief importance.

He sets up near his office a set of meteorological instruments, which should be supplied to him before leaving England, and he causes a correct observation to be made of the conditions of the weather by one of his clerks.
He arranges with the medical store depot at the base to form, either at the depot, or near his own office, a temporary laboratory where a more accurate analysis of water or food may be made than is possible in the front of the army. Samples of water are frequently sent back to the base for examination, and samples of the food and drink for the army may be tested there also.

He needs a quartermaster, or other officer of the quartermaster-general’s department, to be placed under his orders as an executive officer for the carrying out of the general sanitary work. He needs a certain number of sergeants, either from the Medical Staff Corps depot at the base, or from the troops or police at the base, as assistant inspectors, to report to him daily as to their districts.

He, in conjunction with the Base Commandant and P.M.O. of the base, decentralises the sanitary responsibility to the various corps and departments, marking off accurately the space of ground for the sanitary care of which they are each responsible, and arranges with each unit that a certain number of their men are told off specially as sanitary fatigue men, or pioneers to keep the place in order.

He keeps under the central authority such portions of the camp or town as cannot be conveniently told off to special corps, and for the cleansing of these portions he arranges with the Q.M.G.’s department that a company of the regiment doing duty at the base is regularly handed over complete as sanitary police. If it be a tropical country he utilises these men, not as workers, but as inspectors and district chiefs over native labourers, causing them to report daily to him of any defects.

He arranges for the construction of latrines and urinals in all public thoroughfares where crowds of men pass, and which can hardly be handed over to corps or departments to keep in order.

He moves the Q.M.G.’s people to provide such transport, either cart, or pack, or human, as will be sufficient to remove the filth from the collecting places in the camp or town.

He arranges for the formation of a quarantine depot for all suspected or infectious disease cases, and he obtains a detachment of Medical Staff Corps to look after it.

He visits all butcheries and cattle yards, and sees that all cattle landed are in healthy condition and fit for food.

He visits the great bakeries at the base and sees that the flour is good, the water supply suitable, and the workers themselves clean and healthy, and that no sewage pollution exists.

He inspects the sutler’s stores and condemns all bad supplies,
and reports to the Commandant all liquor shops existing against orders. In those shops where liquor is sold he sees that it is good.

He watches the brothels and the vagrant prostitutes that follow in the train of all armies, and if needful arranges for their registration and inspection.

He watches most carefully the condition of the shipping in the harbour, and either by himself, or by a naval surgeon told off as his assistant, has frequent inspections of the crews.

He notes the condition of the harbour, often loaded with floating sewage matter; and if needed he forms a marine sanitary corps to keep it clean. If on the sea coast, he needs sewage boats to convey the filth of the camp outside the harbour and there throw it into the sea.

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He needs so many steam launches with crews told off by the naval transport officer to tow out the filth boats to the sea to be emptied.

He inspects every vessel arriving, especially vessels with native labourers, or men from the Levant.

He notes that the transport department tell off from their own corps a permanent burying party to inter all dead transport animals; and that the commissariat slaughtering subordinates have the means of removing entrails and offal for burying outside the camp.

He notes the water supply and marks off the wells, &c., for washing and drinking purposes.

He receives weekly, from the medical officer of the base hospital, or the medical officer in charge of the staff at the base, reports of prevailing sickness, and keeps himself au courant with the statistical condition of the army as regards diseases which may be preventable.

He frequently inspects the cemetery or burial ground chosen for the base, and he sees that the graves are dug of a sufficient depth, and that an engineer N.C.O. is told off by the engineer officer at the base to look after it, to keep a plan of the ground and the graves, and that the place is securely fenced in and protected from wild animals.

In his capacity as a staff officer of the P.M.O. of the base, he has the full right to visit and inspect and report upon the sanitary condition of the base hospital, its grounds, latrines, and every sanitary detail—even though the medical officer in charge be his senior. He submits his report to the P.M.O. of the base, who moves the medical officer of the hospital to make any needful
changes. He visits the hospital ship in the same way, reporting on all overcrowding, or on any unsanitary condition which may be prejudicial to the welfare of the sick. Being the staff officer of the P.M.O. of the base he passes freely through every place, as on "inspection duty."

He forwards to the P.M.O. of the base for record weekly, a statement that during the week he performed certain duties, viz.:

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(To be continued.)

Reviews.

La Fievre Méditerranéenne en Tunisie. Nos connaissance actuelles sur Dr. Felix Cardaliaguet. Published by Imprimerie Commerciale, 53, rue du Hautoir, Bordeaux.

Of recent years our French confrères in Tunis have been taking a great interest in the existence in Tunis of cases of Malta or Mediterranean fever. Dr. Hayat of that city, some two and a-half years ago, took it as the subject of his graduation thesis. From time to time Dr. C. Nicolle, Director of the Pasteur Institute of Tunis, has published in the French Medical Press cases, with bacteriological observations thereon; and just recently Dr. F. Cardaliaguet a brochure of some eighty pages, inscribed as above.

After a brief sketch of the disease in general, which includes the work embodied in the first three volumes of "Reports of the Mediterranean Fever Commission," he enters upon its existence in Tunis as follows:—

Historical.—It would appear it was first described in Tunis as a separate entity by Dr. Morpurgo, in 1894, who then regarded it as a variety of typhus; the first complete clinical description of it under its