

**Volume of drafts of Sir John Hall's replies to questions by the Army Medical Department re the medical arrangements for the army in the Crimea**

**Publication/Creation**

1857

**Persistent URL**

<https://wellcomecollection.org/works/rs8nyyqd>

**License and attribution**

You have permission to make copies of this work under a Creative Commons, Attribution, Non-commercial license.

Non-commercial use includes private study, academic research, teaching, and other activities that are not primarily intended for, or directed towards, commercial advantage or private monetary compensation. See the Legal Code for further information.

Image source should be attributed as specified in the full catalogue record. If no source is given the image should be attributed to Wellcome Collection.



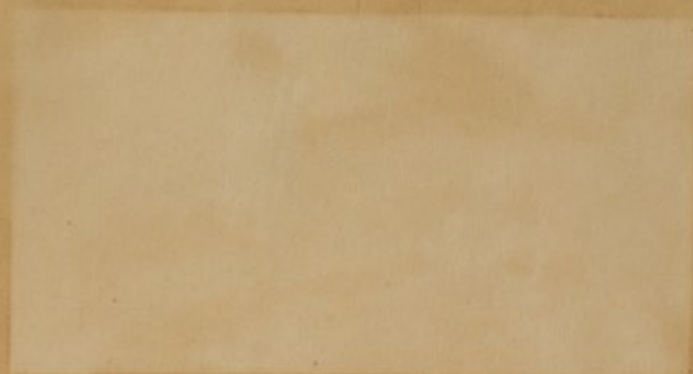
Wellcome Collection  
183 Euston Road  
London NW1 2BE UK  
T +44 (0)20 7611 8722  
E [library@wellcomecollection.org](mailto:library@wellcomecollection.org)  
<https://wellcomecollection.org>

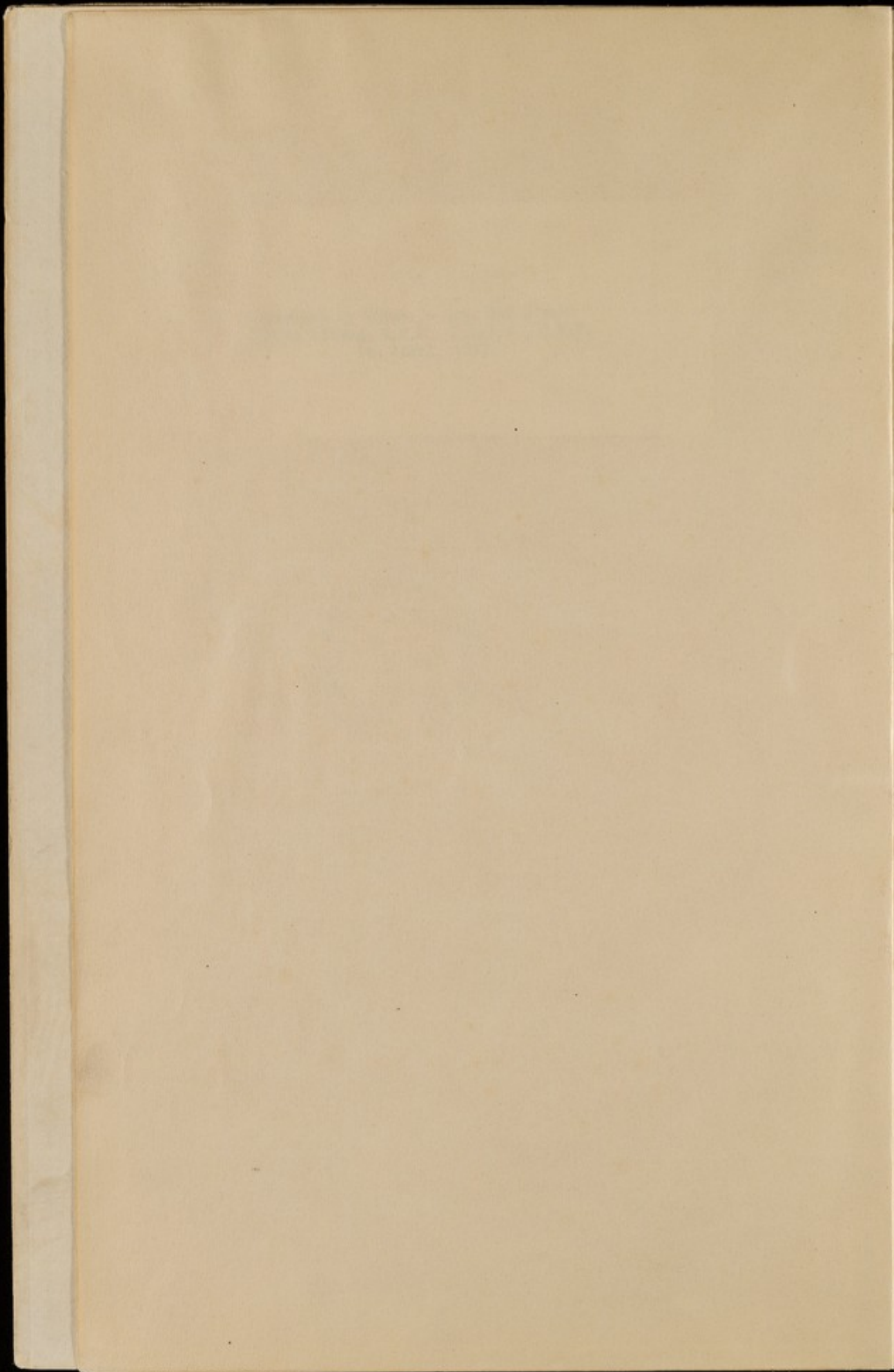
RMC (527)

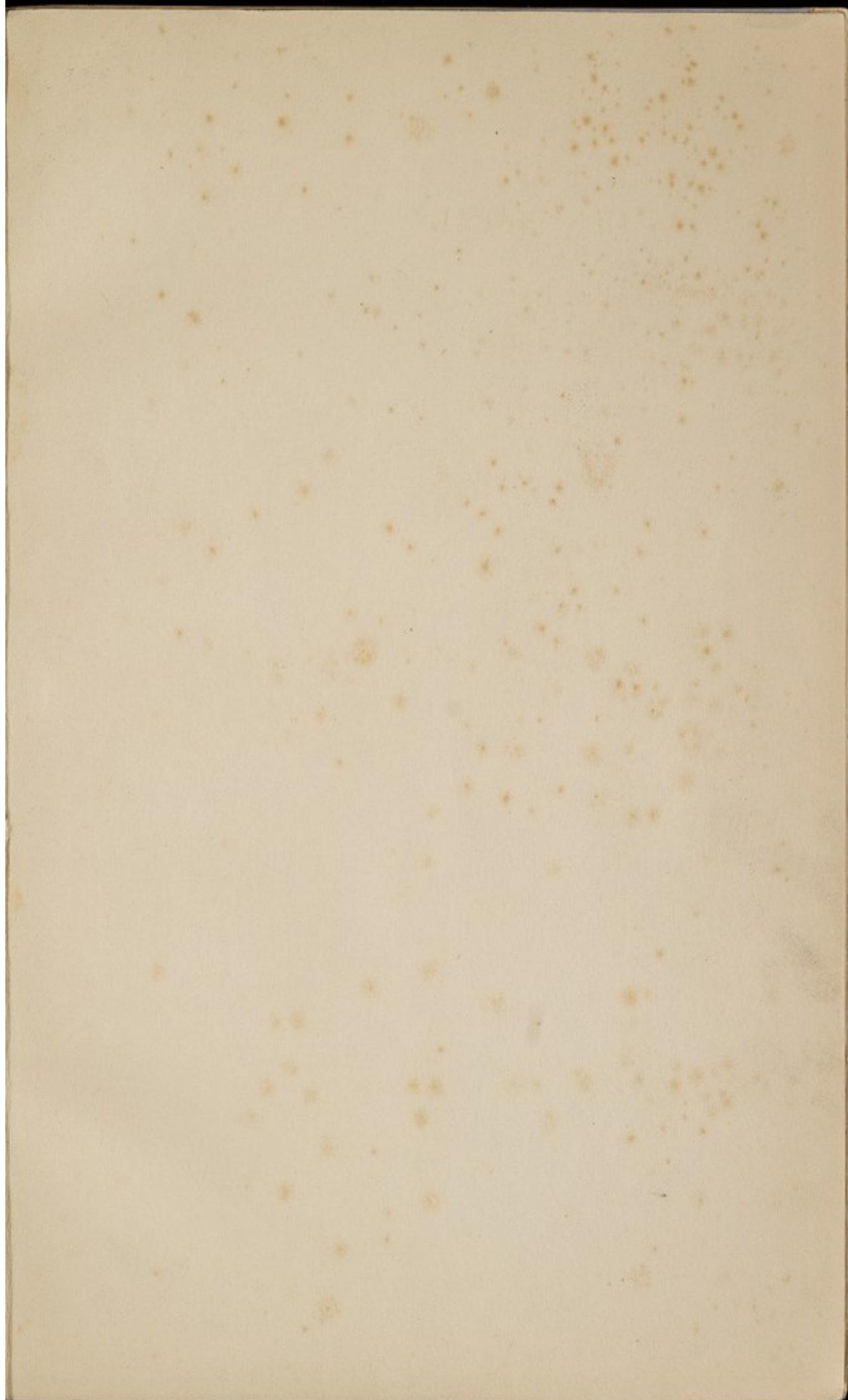
Report on  
Medical Arrangements  
for an  
Army in the Field  
rendered by  
Inspector-General of Hospitals  
Sir John Hall, K.C.B.  
formerly  
Principal Medical Officer  
British Army in Crimea  
20<sup>th</sup> January, 1857.

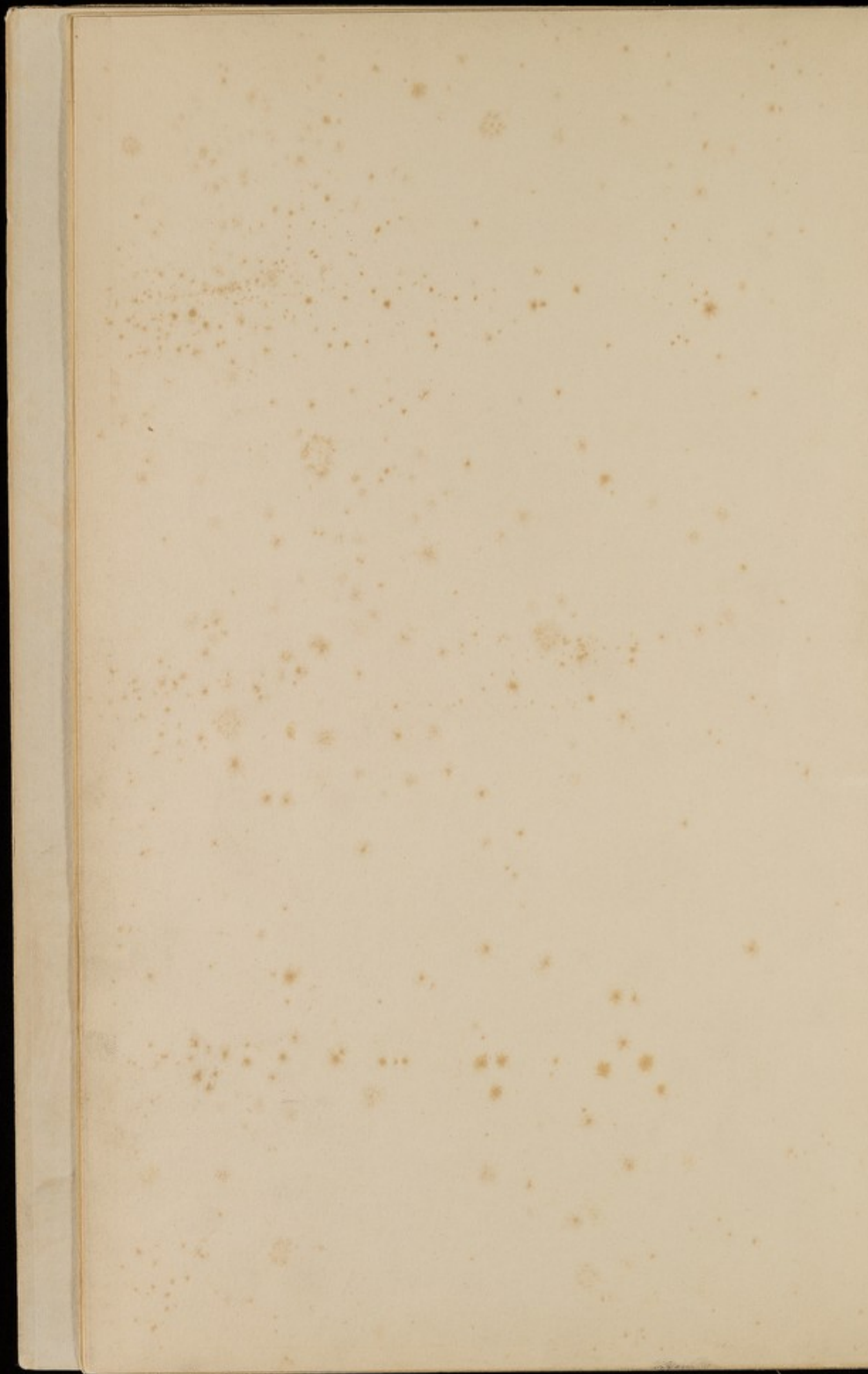
Presented by Lieut. - Gen. Sir Edward  
Altham Altham, K.C.B., K.C.I.E., C.M.G.  
5th April, 1937.











London January 28<sup>th</sup> 1857.

Sir.

I have the honor to Enclose answers to the several queries contained in the circular letter from the Army Medical Department dated 30 June 1856, and numbered 16469-

I have the honor to be &c - &c - &c

Dr. A. Smith  
Director General  
Army Medical Department

I shall  
Inspector General of Hospitals, &c.

### General Observations -

The Medical equipment, and Sanitary concerns of an Army ought at all times, and under all circumstances to be objects of special solicitude both to the government, and the general officer in command. Policy, as well as humanity demands this, particularly when an Army is about to take the field, and all wise legislators and experienced commanders have invariably adopted this principle, so one of the many ways of securing the confidence and cordial support of their followers; for however brave a man may be in action with the enemy, yet if he has a knowledge, that, should disease or the chances of war lay him prostrate, he runs no risk of being left to perish either by the way side or on the field of battle, but on the contrary that all his wants will be promptly and properly attended to.

The moral effect of this feeling of security on the part of the soldier is beyond all price: yet some modern commanders have acted as if they either did not fully comprehend its importance, or, if they did, that they were wholly indifferent to its influence. It may be pleaded that the commander of an Army on service in the field has weightier matters to occupy his attention than the mere Medical concerns of the man, and in this there is a show of truth and justice, because government has appointed and organized a Department for that special purpose; but then it is incumbent on him



to place due confidence in the head of that department, - to give him early information of so much of his plans as will enable him to make proper arrangements for the welfare of the sick and wounded during the campaign, and having satisfied himself of the sufficiency of these arrangements to afford the Principal Medical Officer the support of his authority, in carrying them out. Without this it is utterly impossible for him to do either justice to the sick, or credit to himself and the department over which he presides; for however much the Medical department may be despised by inexperienced Commanders it has for all time, and on all occasions been found one of vital importance to the welfare and efficiency of Armies, and recent Experience confirms the truth of this axiom. Had the Principal Med. Officer of the Army during the late war been kept duly informed of the general plans of the Commander in Chief, and of the intended movements of the Army many of the difficulties that embarrassed him in the execution of his duty might have been avoided, if not avoided altogether -

Napoleon, 1<sup>st</sup>, the greatest Statesman and General of modern times, invariably acted on this principle, and Baron Larrey, the head of his Medical Staff, was always one of the first persons made acquainted with the outline of his intended campaigns, and the result bears ample testimony not only of the policy of the measure, but of his deep insight into human nature, for none labor so eagerly as those who are stimulated by the ambition of meriting the good opinion of those in authority who have placed confidence in them, and who they know have both the will to appreciate, and power to recompense their exertions. No cold abstract sense of duty, however conscientiously performed, will ever secure such devotion as was on all occasions displayed by Napoleon's followers of every grade -

In the British Service a plan nearly opposite to that pursued by Napoleon was almost invariably adopted during the last war towards the head of the Medical department, who was kept in total ignorance of the movements of the army by the military authorities until the very last moment,

3

moment, and yet he was held accountable both by them and the public for its medical arrangements, and no small measure of abuse was heaped on him and the Department for what was termed its short comings - No inferior Officer has any pretension to claim the confidence of the Commander in Chief of an Army, but once he has decided on a movement, or measure to be carried out, it stands to reason that it ought to be the duty of some one of his staff either personal or general to make it early known to the heads of all the subordinate departments who have arrangements to make for its due execution - It is preposterous to suppose that the Commander in Chief can have any wish his plans should break down in their execution through want of information of this kind; and yet it is equally unintelligible to find that the head of the Medical Department was kept without the best official information of the strength, or precise date of embarkation of the whole Army from Varna for the Crimea in 1854, and that no intimation whatever was ever given to him of where it was intended the Army should winter that year - At a subsequent period even, after much public clamor had been raised against the Medical Department for its want of real or imaginary, notice to make his medical arrangements for an Expedition of four thousand men besides Officers, was only given to the Principal Medical Officer the evening before the Expedition sailed!! That Expedition was ordered on active service for an indefinite period, and yet the Principal Medical Officer was thoughtlessly placed in that embarrassing dilemma after he had earnestly solicited that he might have timely notice given to him of all intended movements so as to afford him an opportunity of making his arrangements in a proper manner.

No one can provide by instinct for such contingencies, and it is worse than thoughtless to leave the head of the Medical, or any other Department

4  
to chance for his information on such occasions. But  
as this is not exact, the time or place to enter on  
such discussions I shall now address myself to the queries  
contained in the circular letter from the Army  
Medical Department dated June 30<sup>th</sup>. 1856, and  
numbered 16469, in hopes that I may contribute  
something towards forming general regulations  
which will prevent a recurrence of difficulties  
similar to those that were experienced by the  
Medical Department at the commencement of the  
last war. But no previous arrangements will be  
of any avail unless the suggestions of the Principal  
Medical Officer are attended to by the General in  
Command, and unless a portion of the transport of the  
Army be set apart for the special use of the Medical  
Department; for the medical department being considered  
a subordinate one, and viewed as one of little importance  
by some military officers, its wants and requirements  
are too apt to be overlooked, and the representations  
of its head to remain unregarded by the military  
authorities in the hurry of preparation for actual  
warfare -

Medical Officers ought also to bear in mind  
that they cannot have all the appliances in the  
field that they have been accustomed to in garrison  
and fixed quarters, and in place of complaining  
of difficulties that are nearly inseparable from  
a state of

a state of active warfare they would show good sense and better feeling by exerting themselves and endeavouring to make the best, and not the most of them as has too frequently been the case of quarrels and inefficient ~~quarrels~~. Clamor and cabal may occasionally serve the purpose of individuals, but in the long run, union and good fellowship will more effectually benefit the Department at large -

Having said so much I will now endeavour to reply to the different points embraced by the following queries, which are amply sufficient to meet almost every contingency of Service in the field - But war was never made, and no Campaign of any duration was ever carried on without difficulties of one kind or another being experienced

Subjects on which the Opinions of Medical Officers are Requested.

at some period or another of it by almost every Department - It is the business, as it is doubtless the earnest wish of those in office to remedy them as speedily as possible - and, perhaps, if those who complain the loudest, and boast the most confidently of their own abilities, were placed in authority in times of difficulty they would soon be taught a salutary lesson - It is an easy matter to complain, and to make written demands for stores, but a very different thing to provide for the wants of a large army placed in difficulties such as <sup>those</sup> the British Army experienced in the Crimea during the early part of the winter of 1854-5 - Such a combination of adverse circumstances does not often occur; but, in my opinion, it was unwise to place the Army in such a position at the beginning of winter without any preparation for a Campaign during inclement weather, and it was equally ungenerous to attempt to throw all the odium of failure on the Quartermasters and there - Failure too arising from causes over which they had no control, and which they could not immediately remedy by any exertions of their own on the spot - No class of officials, I verily believe, ever labored

An Army of 40,000 men on active service in the field would in all probability have a sick list of 6000 men, and would require for its medical wants - assuming it to consist of

30 Battalions of Infantry 1000 each 30,000  
 10 Regts of Cavalry — 500 each 5,000  
 15 Btts of Artillery — 200 each 3,000  
 4 Battalions military train 500 each 2,000

40,000

	Field	Fixed Hosp
Inspector General	1	1
Deputy Inspector	5	4
Staff Surgeon 1 <sup>st</sup> Class	6	8
" 2 <sup>nd</sup> Class	6	16
Staff ass <sup>t</sup> Surgeons	10	70
— Apothecaries	1	1
Accountants for D <sup>o</sup>	1	1
Staff Dispensary	8	12
Regimental Surgeons	44	0
" ass <sup>t</sup> Surgeons	103	0
" Dispensers	59 with rank of non Commissioned Officers	
Surgeon in Chief	0	1
Surgeons	1	1
Purveyors	4	6
" Clerks	12	20
Army Cuthers	287	135
		= 413 of all grades

1. The number of Medical Officers necessary for an army of 40,000 men; the number of each grade, and of Purveyors, their Clerks, Apothecaries, and Dispensers.

2. Supposing the above force to be in four Divisions, each of 10,000 men, what number of Medical Officers, &c., should belong to each Division?

3. The Medical Staff, Purveyors, Clerks, &c., who should accompany a Division of the above detached from the main body?

4. Medical Staff, &c., for a Brigade (of three regiments), detached from the main body?

5. Vehicles best suited to the removal of sick and wounded, under every circumstance, whether roads exist or otherwise; the best manner of conveying sick on line of march; and, when sick fall to the rear, the best provision and arrangement for their care and transport?

6. Best means of conveying wounded from the field?

Opinion of caçolets for the above purpose?

Best description of bearer for removal of wounded, and the number required for 1,000 men?

Q<sup>o</sup> 2. A Division of 10,000 men would in all probability consist of

7 Regiments of Infantry — 1000 each — 7000  
 3 Regiments of Cavalry — 500 — 1500  
 2 Battalions of Artillery — 240 — 720  
 1 Battalion Military Train — 500  
 Commissariat & med<sup>l</sup> Staff Corps — 280

and would require a medical staff of

1 Deputy Inspector General of Hospitals  
 1 Staff Surgeon 1<sup>st</sup> Class  
 1 " " 2<sup>nd</sup> Class  
 2 Staff ass<sup>t</sup> Surgeons  
 1 Staff Dispenser as Medical Storekeeper  
 11 Regimental Surgeons  
 25 " ass<sup>t</sup> Surgeons  
 14 Dispensers, with the rank of non C. Officers

56

Q<sup>o</sup> 3. The medical establishment detailed in answer to query No 2.

with the addition of 2. S. A. Surgeons  
 1 Purveyor, &  
 2 Purveyors Clerks should accompany a division of 10,000 men if detached

Q<sup>o</sup> 4. The medical Staff of a Brigade of three Regts. detached from the main body of the Army should consist of

1 Staff Surgeon 1<sup>st</sup> Class  
 2 Staff ass<sup>t</sup> Surgeons  
 1 Staff Dispenser as med<sup>l</sup> Storekeeper  
 1 Purveyor's Clerk as Storekeeper  
 3 Regimental Surgeons  
 6 " ass<sup>t</sup> Surgeons  
 3 " Dispensers, with rank of non Commissioned Officers

17

7

more zealously than those in the Crimea did, and none I may safely assert were ever rewarded with such an amount of abuse as they were. No charity was extended to them, no allowances were made for them, <sup>in the position in which they were placed</sup> but they were charged with delinquencies as if they had been wilfully negligent, and had omitted in place of doing all in their power to alleviate the misery which surrounded them, a cheering reward buty for men who labored twenty out of twenty four hours during the <sup>greater part</sup> of that dreary winter, a most recompense for their misdeeds and adances to it, and a powerful incentive to future exertion -

4:5 Where roads exist waggons with India Rubber Springs (Guller's Improved) that were supplied to the <sup>army in the</sup> Crimea, answered well -

Where no roads exist mule litters and chairs are best adapted for the purpose -

On the line of march the disk cars recommended and supplied to Sundry Regiments in the Crimea during the last war would answer well to pick up men that fall out, and the waggons attached to each division should be sufficient either to remove to the rear or transport the sick of the whole division - and for this <sup>purpose</sup> provision should be made on the scale of five per cent <sup>of the total force</sup> which I am of opinion would answer every purpose under almost every contingency, with the aid that could be obtained from the return waggons of the Military Train on any great, or unforeseen emergency - Indeed these might be converted into waggons nearly equal to the regular ambulance waggons at very little expense by having elastic moveable platforms made for them such as are used in the Baer's family waggons at the Cape of Good Hope, & called "Cartels" these are made of interlaced strips of hide stretched on a <sup>wooden</sup> frame which fits the waggon and is suspended by strong straps at the ends and sides of their frames were supplied with short India Rubber buffers they would be nearly as easy as any ambulance waggon and much more economical - This was the mode of transport adopted <sup>by me</sup> for the sick, and wounded during the Caffre wars of 1846-7. & 50-51 - and the Boer War over the Orange River in 1848, and was found to answer very well - By placing a Cartel of this description

on the top of the load in a certain number of Commissariat <sup>size</sup> dragoons, a like number of Ambulances <sup>convoys</sup> were provided when they were emptied of their loads, <sup>and this at</sup> ~~with~~ additional expense to Government.

no. 6. - There is nothing to be compared to the Camass Bearer <sup>in point of ease & simplicity</sup> for the removal of wounded off the immediate field of battle, and the folding ones with a small pillow like some of those that were supplied to the Army in the East during the last war, are, I think, as good and convenient <sup>as any that</sup> can be devised. Shoulder straps would render the burden easier to the bearers, but it is almost impossible to persuade soldiers to use them and those that were supplied <sup>during the last war</sup> were all thrown away and lost. It would be different, however, if there were a regular ambulance corps, as the men would then be trained to the duty.

Cacole's answer admirably for removing sick, or men slightly injured where the distance to be carried is greater than could be well managed by <sup>means of</sup> the Camass Bearer. In like manner the mule litter comes into use for the removal of more serious cases, and is admirably adapted for field service where there are no roads. The litters supplied to the British Service have been made fixtures to the pack saddles which is a great defect, because it is difficult to lift up a seriously wounded man and place him in a litter when it is on the mule's back. They ought to unhook like those in <sup>use in</sup> the French Service, and then the wounded man can be placed in the litter on the ground, and raised up by two men without <sup>inconvenience or danger</sup> disturbance.

Where there are roads, spring waggons, such as those sent out lately to the British Army in the Crimea are the very best mode of transport. - and the carts with two living cots in each, which were supplied, but no opportunity of using them after their arrival, <sup>offers</sup> promise well. & will not only be easy to the occupants, but particularly convenient when only one or two officers, or seriously wounded men, require to be removed.

11<sup>o</sup> 10- The best mode of conveying Divisional Stores of the Medicines, and Surgical appliances, is by chests properly fitted, made to open in front, capable of being transported in ordinary waggon covered with tarpauling, and removed when required for use in Divisional Hospital - The Divisional Storewagon that was sent out to the Crimea was well devised as to its fittings and Supplies, but it was too cumbersome, and too heavy for actual service, and too carefully, and delicately parcelled for the rough usage of warfare - Had the waggon been half the height, and the Medicines & Instruments & Surgical Instruments packed separately, would have answered better - but some of opinion moveable Chest would be found much more convenient, because they could be transported in any kind of waggon - and in the event of its breaking down they could be easily transferred to another whereas in the event of any accident happening to a waggon like that which was sent out to the Crimea the whole Supply would be lost, as it must be left on the road -

11<sup>o</sup> 11- Much would depend on the length of time the Supply was calculated to last, the nature of the Service, and extent of Subscriptions prevailing in the Army, as well as the facilities for replacing that which was expended; but I think the following Scale which was laid down for the Divisional Waggon would be amply sufficient to take on all ordinary occasions for 10,000 men

Acetic Acid 10.00	Ferri Chlorid 2.00	Pulv. Santali 1.00
Aether Anethid 12.00	" Oxid. 2.00	" Cinnamon Comp 2.50
Aether Sulfur 8.00	" Sulfuric 2.00	" Belli Comp 10.00
" Hydrocyanic 10.00	Hydr. Bismuthi 12.00	" " C. Op. 12.00
" Hydrocyanic 12.00	" Chlorid 8.00	" Opus: Comp 10.00
" Icteric 10.00	" Icteric 2.00	" Icteric Comp 10.00
" Sulfuric 10.00	" Icteric 9.00	Liquor Sassafras 10.00
" Tartaric 10.00	" Icteric 10.00	Rhac. Comp. 5.00
" Vanillic 8.00	Liquor Sassafras Comp 10.00	Sassafras Pulv. 10.00
Aether Chlorid 2.00	Liquor Sassafras 10.00	Sassafras Bourbon 20.00
Alumini Pulv. 10.00	Liquor Sassafras 4.00	" Sassafras Comp 6.00
Ammonia Acetic 10.00	" Rhamni dentat 4.00	" Sassafras 8.00
Ammonia Sulfuric 2.00	" Rhamni 0.00	" Ammonia armat 10.00
" Argenti Nitrat 2.00	" Rhamni 1.00	" Rhamni 10.00
" Baryt. 10.00	" Rhamni Chlorid 8.00	Tinct. Camph. Comp 10.00
Camphor 3.00	" Rhamni 4.00	" Camphorid 1.00
Carbonic Acid 1.00	" Rhamni Sulfur 2.00	" Camphor 5.00
" Calc. 10.00	" Rhamni 16.00	" Calcher 10.00
" Resin 10.00	Morphine 1.00	" Calcher 2.00
Chloroform 10.00	" Hydrocyanic 1.00	" Ferri Sassafras 8.00
Comp. Aromat. Sassafras 10.00	Oil Cinnamon 8.00	" Ferri 10.00
" Opus Sassafras 10.00	" Lini 10.00	" Ferri 10.00
" Rosa 2.00	" Mentha Pip. 1.50	" Ferri 2.00
Capivi 2.00	" Mentha 10.00	" Ferri 2.00
" Cantharid 2.00	" Oliva 10.00	" Ferri 4.00
" Castoreum 8.00	" Ricini 40.00	" Ferri 4.00
Cupri Sulfuric 2.00	" Sassafras 40.00	" Ferri 4.00
" Sulfuric 10.00	" Sassafras 1.00	" Ferri 4.00
" Resin 10.00	Opus Sassafras 10.00	" Ferri 4.00
Ext. Calcher 1.00	" Sassafras 4.00	" Ferri 4.00
" Calcher Pulv. 1.00	" Sassafras 10.00	" Ferri 4.00
" Hydrocyanic 2.50	" Sassafras 1.00	" Ferri 4.00
" Opus 2.50	" Sassafras 10.00	" Ferri 4.00
" Sassafras 4.00	" Sassafras 10.00	" Ferri 4.00
" Sassafras 10.00	" Sassafras 10.00	" Ferri 4.00
" Sassafras 1.00	" Sassafras 10.00	" Ferri 4.00
" Sassafras 1.00	" Sassafras 10.00	" Ferri 4.00
" Sassafras 1.00	" Sassafras 10.00	" Ferri 4.00
" Sassafras 1.00	" Sassafras 10.00	" Ferri 4.00



10	6	Mortars Composition	11.6	Lamps with reflectors	- 2
Lith. Zinc	50	Canvases, 2 1/2 yds	6	Lamp bottles & shades	1 Box
" Lead	50	Panthers	6	Case of oil	1
Ten Surgeons	50	Pile Boxes Paper, Chief	12	Lamp glasses	1
Linum Murchd	20	" Paper	12	Canvases in box	18
Calico	50	Bobbin, square 4 1/2	24	Skein of red thread	1
Shen's leather	40	" 6 1/2	18	Yerba percha pomul	1
Paul S. Rubber	10	" 8 1/2	24	Labels box	1
Lein Papers	24	" 12 1/2	6	Cork knives	100
Artificial Plaster	216	Pop Spatulas	2	Amput. Scissors	1
Soap Carate Plaster	50	Galeopsis in Soot's Dye	3	Spare glasses for hands	6
Sunglass	50	Plaster Spatula	1		
Sunglass	50	Elastic Enemas	4	Carded Cotton	24 lbs
Surgical Saline	10	Eutha Percha Inteing for	12	Hand Sewing Machine	1000
oil of Salk	30	22 pairings	12	Scissors	50
Eutha Percha	60	Vial Corks	2	Surgons' Springs	100
Crani Scalp	4	Point	1	do	5
Crani	4	do	1/2	Capital Cases	2
2 pound	1	Bungs	24	Portable do	4
Enamel & Drives	2	Bolus Knives	6	Elastic Gum Calipers	2
Pharmacopaeas	1	Cork Screws	6	do	2
Horn Caps graduated	12	Pack Thread	2	Rome Forceps, Ferguson	4
Scissors Paris	4	Boa cord	3	Artery	6
graduated, Pile Slab	4	Cord laid	1	Amput. Forceps	1
" Minimum Measure	6	Broad Tapes pieces	12	do	1
" 2 1/2	6	narrow	12	Signoroni's do	2
" 4	4	Wrapping paper	4	Bullet Forceps made	6
" 8	4	Pen Steel boxes	2	do	6
Penster cement	10	Knives	2	Water proof Box	1
Funnels Wedgwood	6	Ink powder papers	12	with Springs	4
" Fun	6			Operating table	1
				Horns, oil lamp	2
				Stops glass	2
				Eutha Percha pro	6
				Uterine	6
				Scissors for cutting	1
				Hand for legation	1 lb
				Silk	80
				Lamp for Maltes	24
				Cupping Instruments	2

7:02. In the Surgeon's field panniers, and packed in the  
 wall of the risk car which accompanied the Regt.

13. The Surgeon's capital case of Instruments, as defined by regulation, &  
 a portable case for detached duty provided by Government -  
 The Surgeon and his assistants should each be provided with a case of  
 pocket Instruments, and a case of amputations, his own property. The public  
 should also provide a water proof tin, or pack, for the orderly  
 who accompanies the ass. Surgeon to the field, to put the dressings, &  
 portable do. in. Two water canteens fitted with cups for drinking;  
 a pair of medicine Panniers opening in front, and fitted agreeably  
 to the scale laid down; a box with splints &c: a cupping case,  
 and a small medicine chest fitted with a few additional useful  
 Medicines not contained in the Medicine Panniers - such as  
 acidi Tartarici ℞. Hyd. c. creta ℞. Conf. Aromat. ℞. Conf. Opii ℞.  
 Canvost 1℞ - ol. Ricini ℥j. Polyp. Biscorbon ℞. Sulfuric 8℞ -  
 Pulv. Camom. C. 1℞ Pulv. C. 4℞ Pulv. C. 4℞ - Semip. Pulv. 8℞  
 Tinct. Cathar. 1℞. Matico 1℞. Rho. C. 1℞. Spices of ginger. 4℞, or any  
 articles that particular officers may be in the habit of using, as such kind.  
 Opium has his own money in such matters - all Medicines for actual  
 service that a unit get should be prepared before hand, such as pills  
 powder &c. as it is almost impossible to compound them on the  
 line of march or in presence of an Enemy.  
 Sulfuric Camom. Panniers, should be fixed for every 1000 men; and each Regt  
 may carry a leather stool for operations.

14 In addition to the Surgeon's pack animals, the best mode of obtaining, and transporting the spare supply of medicines and materials is to pack it in one of the drawers of the Regimental Car. The Conroy Benches could be secured partly on the Car, partly in the Stone Cart, and if a folding leather stretcher for operations be carried it can be put in the Stone Cart also.

If an Ambulance Car, and a Stone Cart be allowed to each Regt they would be amply sufficient, with the Surgeon's Sapper mule, to convey all the supplies that would be necessary for field service for at least one month.

7. Best method of sheltering wounded after an action?

n.º 7. Houses, if they can be obtained, are the best shelter for wounded, but where they are unattainable Hospital *Marguerd* answer very well.

8. Best method for the extemporaneous preparation of food and comforts on such an occasion?

It may even be necessary to resort to the commonest food, but for want of better accommodation - On Service it is not always what is best, but what is available at the time that must be used.

9. How the first field-dressings, and other appliances, may be most readily accessible for immediate use?

n.º 8. It is seldom that a fire cannot be lighted, and the contents of A & B Canteens afford ready means of preparing all that is required at first in the way of nourishment. A man that is seriously wounded requires very little nourishment, indeed he is better without it, and more stress has been laid on the subject, by perhaps, well meaning, but uninformed persons than is necessary. A little soup made with spleen & Beef and warm water, or a little tea both of which can readily be prepared almost anywhere are all that are required for wounded men in the first instance.

10. Best method of conveying Divisional Stores of Medicines and Surgical appliances?

11. What Divisional Store of Medicines, Instruments, and Surgical appliances, absolutely necessary?

n.º 9. The medical officers who are detailed for field duty during an action should see that the orderlies who accompany them are furnished each with a haversack containing what is necessary. viz: Lint - Bandages - Sponges - oil - silk &c - a few splints, Bandies the best, and a concave pile quatern - and they should take care that their own pocket cases are complete, and duly provided with Ligators and cups, and it would be well for either them, or the orderlies who accompany them to carry three or four field tourniquets - Tho' on service the want of these is not so much felt as is generally imagined - Hemorrhage in gunshot wounds is a rare occurrence unless some large vessel is divided & then it proves immediately fatal.

12. Best method of conveying Medicines with a Regiment?

13. Medicines, Instruments, and appliances which ought to constitute a regimental supply for the field?

14. Best method of stowage and transport for such regimental supply?

Agreeable to an order which was issued in the Crimea each soldier was furnished with a Bandage, & piece of Lint as part of his equipment and these he was directed to carry about his person so as always to have them ready for use in case of their being required.

15. all that is required in addition to the contents of the field Baggage, should be packed in the bulk of the Irish Car recommended to accompany each Regt. and the Canvas Benches, when not required for use, can be packed on the top of the stacks and secured by straps -

No 19 Continued from page

Hand Tools 24: Sack Tools 12: Folding Beds 1: Huckleback  
 yd: 18: Hammock yd: 12: Boxes of matches 24: Sets of Diet Scales  
 & weights: Hammer claw 2: 1 hdp 1: 1 scale: marks of white iron  
 Knives Staples & Padlocks - 4 - night Caps 100: Benches for  
 wounded 12: Water Dubs. 6: Shovels 2: Spades 2: Pick axes 2:  
 Water Buckets 6: Water Skins 1: Sets of measures for all 1:  
 Sets of measures for Wine 1 -

Medical Comports to be taken with a Division

576 1/2 12 Dozen of wine  
 240 6 Do of Brandy  
 58 lbs of arrow root  
 58 lbs of Tea  
 58 lbs of Candles  
 58 lbs of Soap  
 58 lbs of Bury or Rice  
 112 lbs of Sugar  
 112 lbs of Raisins  
 112 lbs of Preserved meat  
 1372

75 lbs in 1/4 p - two of Essence of Beef  
 50 lbs of Lard & Milk  
 20 lbs of Dissolved milk  
 20 lbs of compressed vegetables  
 58 lbs  
 28 lbs of Salt  
 5 lbs of ground Peppers  
 5 lbs of powdered Mustard  
 239  
 1372  
 1611

No 20 - Huts either wooden, or Hubble & Dab. When tents are used in winter they should be double, and have a ventilator in the top similar to ~~that~~ those used by the French Imperial Guard - I think the shape of the tent used in the French Service is better than ours and it is more conveniently constructed both for shade & ventilation; but the Bell tent at present in use in the British Service, if it were ventilated and the entrance flap altered and improved, would answer very well - But it is difficult to close a Bell tent from the inside, and almost impossible to open it after rain when the cords are drawn tight -

The Hospital Marquee at present in use is too high in the pitch and too low in the wall, and its form might be improved without impairing its usefulness - It is warmer than a hut in winter, and if additional warmth be required in severe weather a stove with piping which can be carried out underground answers the purpose perfectly - Hospital Marquees as well as the Bell tents should have ventilators - The disadvantage of all tents as dwellings either for sick or well, is their liability to be blown down in wet and stormy weather

N<sup>o</sup> 15 For a Regiment in front of an Enemy, assuming that the lower officers can supply the ordinary labors of the Regiment and that the following Medical comforts will be sufficient

15. Medical comforts for a regiment in front of an enemy, their mode of transport, in small canteens? Lights, their kind and quantity?

- 8 bottles of Brandy
- 12 doz of 1/2 pint Milk
- 5 lbs of Tea
- 10 lbs of Arrowroot
- 12 lbs of Rice or Barley
- 4 lbs of Sugar
- 50. 1/2 pint tins of Essence of Peppermint
- 24 tins of Ladan & Milk
- 4 lbs of desiccated Milk
- 7 lbs of Salt in 1/2 pint jars
- 1 lb of ground Pepper in bottles
- 8 oz of Mustard in bottles
- 12 lbs of Dried & compressed Vegetables
- 10 lbs of Lard

Lamp with reflection  
 prepared for strength  
 to be followed above by 1/2 lb  
 and covered in  
 the bottom with  
 knife preparing tins of  
 prepared tins of  
 The surgeon should carry  
 in his possession two pint  
 flasks of brandy & one of  
 (one of which the 1/2 pint  
 tins are to be used in  
 bottles) 50 doz of 1/2  
 pint and two pint  
 Lard packed in small  
 tin canteens, and six  
 quart pint tins of  
 Essence of Peppermint  
 in cases  
 of emergency or when  
 temporarily deposited  
 from his store cart

16. Best method of arranging and packing Medicines in England, so as to render them most readily available for distribution and use on arriving at or near to an army engaged in field operations?

N<sup>o</sup> 16. Articles should be put in quantities ready for distribution, & they should always be ~~delivered~~ by the apothecary or druggist, making the demand as it becomes, price and availability, duty on service, and they should be packed, if not by individual articles, in classes, in cases not exceeding 12 oz in weight with the uniformity of the list, so as to prevent mistakes, or confusion. Labels and packs being both the officers by the rough usage of the

17. Instruments best suited for the operations resulting from the casualties of war? The best description of field and other tourniquets, best bullet-forceps, splints, description of ligatures for arteries, &c.?

N<sup>o</sup> 17. The Instruments contained in the Surgeons Cases are amply sufficient for almost all the operations required for the casualties of War - a number of Chain saws, which are easily carried, and which might be purchased to such an extent as to be added to each case as it is occasionally required for purposes about the throat - The Tourniquets at present in use in the Army are very good and answer every purpose - Groups pointed the same as those used in Germany are all that are necessary - The multiplicity of bullet scoops, pullers & extractors, &c. sent out to the Regiments are pretty in their kind, but useless in practice - Simplicity & not complexity of surgical instruments on service is the object to be aimed at -

To be packed in one of the drawers of the first case  
 as the home  
 & covered in  
 in store  
 cart, or  
 packed in one of the drawers of the first case  
 in the  
 cart, or  
 packed in one of the drawers of the first case

18. Operating tables, best form of, for field service? How proposed to be carried?

19. Purveyor's stores, what they should consist of. The kinds of extras and medical comforts to be provided; bedding and utensils of all descriptions, for field and fixed hospitals?

20. What description of shelter, in the absence of houses, is best for soldiers and sick, when required to remain stationary during the winter?

Opinion in reference to tents, single and double, their form? Hospital marquees, &c., best means of warming?

These are the instruments which are most applicable for service in the field, and should be carried by the Orderly who accompanies the ass<sup>ist</sup> surgeon into action, in preference to any other - It is noted that such as is used

in the Army, and this was made matter of discussion, from the nature of the business of the purveyor, this complaint came with about five years ago, from Mr. Graham, as I believe, he was original, & I do not know if the cases of Capital Instruments for the Army, were not fitted up on a scale suggested by himself - The multiplicity of Chain saws in the list seems to be of little importance as it is an instrument very rarely required and never used by some Surgeons whose duty is in any of the more practical part of the work, though it is, and has been used, the convenience of having them in the purveyor's list, for the sake of the list, is not to be desired - It is supplied to each Dragoon in the Cavalry,

6  
 The compressing pad of the first tourniquet is made too small and irregularly by the use of the Indian instrument, but this is a defect easily altered - Each Dragoon should be supplied with a double quantity of tourniquets. There are frequently great delays in supplying secondly, because there is a common tourniquet which is applied without doing mischief and where ligatures are applied with difficulty & uncertainty

by dentists, and stout well twisted fine thread are all that any one can require for Ligatures for securing arteries. <sup>In pinning the edges of wounds together or closing the flaps of flaps after amputation</sup> I would recommend platinum wire to be used in place of common Ligatures. It is less irritating, and as it is secured by simply twisting the ends together it admits of being readily undone, in case of the stump or wound swelling without allowing the wound to gape entirely open as in the case when it is found necessary to cut the ordinary ligature in such ~~cases~~ occasions

No 18 A Folding leather stretcher which can be carried either on the top of the Surgeons panniers, in the Drisk Car, or <sup>in the</sup> bare cart, is as convenient, and good a thing perhaps, as can be devised for Regimental use in the field. But in my opinion more has been made of this want than was necessary - That Surgeon must be found in resources who cannot extrajure a table either out of a bank of earth, or his panniers if in the open field, & if in or near a house he surely could not be long without supplying himself with a substitute. in the shape of a window shutter or a ~~board~~ <sup>board</sup> but it is probable supports for these would be made ground of complaint by many who consider that every thing ought to be provided for them, and that they are not called on to make any exertion to assist themselves -

think he could support on his own things better presented -

No 19 - The amount of Surgeons Stoves, bedding - Drifts and utensils for field, and general hospitals has recently been under the consideration of the medical Board - and the Boarding they refer for particulars. The equipment of Regimental Hospital in the field should be limited I think to 20 patients and for that number the following articles would be required in addition to what has already been enumerated in an answer to Query No 15 -

- One hospital marguerie, and two Bed tents;
- 20 Cork mattresses: 20 Blankets: 20 Rugs: 20 Water proof sheets;
- 1 Bed: 1 pack case: 1 Hand saw: 1 axe: 2 Water Buckets; & one Water skin - In addition to the Regimental establishments which would accommodate 200 men in a Division there should be a reserve Divisional establishment capable of receiving 100 more - which would require an
- 2217/45 Equipment of 5 Hospital Margueries 3 Bed tents - 100 Cork
- 2195 mattresses with Blankets, Rugs, and water proof sheets complete.
- 1 Colours signal Lamp - 5 Hand lamps with burners for double wick - 6 lbs of Cotton wick - Can of oil of cedar for burning lamps - 1 Hand Lamp - 1 Lamp with deflector for operations at night: 2 primed bottles
- 2 Condens tubes with snuffers chained - 100 Tin plates - 112 pint Tin pots
- 100 knives of forks, Common: 6 Carvers: 100 Iron spoons: 2 Flanders kettles:
- 2 nests of Vincennes Tin, 8 1/2 4 3/4 2 2 1/2 1 3/4 pint: Tin Tea kettles 4 9 2:
- Tin meat dishes 13 1/2 inches 6: Frying pan 2: Fish pots 2: Soup ladles 2:
- Chamber pots 24: Iron pans 12: Panniers for do 12: Kitchens 12: Spitting pots 12:
- Washed Basins 12: Wads 2: Meat Choppers 2: Hand Saw 1:

37. The personnel of the Ambulance <sup>Company</sup> should be placed under the orders of the Director General of the Military Train - each Regt and Division should have a fixed amount of Ambulance, and conveyance <sup>provided</sup> for them at all times - The Regiments should be at the disposal of the Surgeon, the Divisional at that of the Principal Medical Officer of the Division, and the whole to be at the disposal of the P.M.O of the Army if occasion require it - But from my experience the care of the animals and discipline of the men attached to them should be under the orders of the Director General of the Field Train

37. Views as to the personnel of the ambulance department?

38. Best method of fitting ships intended exclusively for the conveyance of sick? general suggestions for form and arrangement of beds? ventilation, disinfecting, &c.?

39. Ships conveying troops—what provision of standing berths for per cent. of embarked?

40. Best mode of registering cases in the field?

41. Best forms of returns for the same service, keeping in mind that all cases of sickness or wounds must be shown?

42. Best method of classifying wounds?

43. Best nosological arrangement for medical returns?

44. Best forms of diet and extra rolls, &c., for field hospitals?

The equipment for a Regt should consist of one strong Car drawn by two mules with a driver mounted which would convey six men sitting, & one remains bent with two packs and arms, and all the spare medicine, & surgical materials in the drawing in the back besides four canvas panniers - a Car with two mules to convey the Hospital Marquee - two Pale tents - Bed Comforts A-B Canvas furniture &c. and spare canvas chairs & others - two pack - a mule, with pack saddle, to which either a Chair or Silla can be attached, for the Surgeons Medicine Panniers - a pack saddle of the same kind, & mule for the leather skins one mule with pack saddle, & pair of Chairs - and another with pack saddle and pair of Sillas - making a total of one Car for sick - 1 Car for stores and eight mules, which on an emergency would convey 19 sick - the Surgeons Panniers, & 12 Cwt of Stores and Equipment - and a pair of pack horses

There would be required for the conveyance of the Divisional Stores

Two covered waggon, such as were used in the Crimea & called <sup>Grand</sup> <sup>waggon</sup> for medicines -

Two ditto for Medical Comforts - both sets to be secured with good strong padlocks -

Four Store waggon for Divisional Hospital Stores & Equipment - which would make the full equipment of all kinds

12 <sup>the best answers of</sup> for a Division of 10,000 men to consist of

13	13 Pairs of Surgeons Panniers with pack saddles, & mules complete	
13	13 Pairs of chairs with mules, pack saddles & chairs complete	
26	13 Best Car to accompany Regt - and convey 6 men each = 78	
26	13 Regimental Store Cars with two mules each	
48	12 Waggon with India rubber Springs, Tilters, & improved canvas bed	96
13	13 Mattress with one mule each, with two strong cots	26
100	100 Pairs of Carabats - 1 mule each	200
50	50 Pairs of Sillas - 1 mule each	100
32	8 Store Waggon 4 mules each for Divisional Stores	
32	Conveyance for -	500

h<sup>o</sup> 19-9 But I may mention the following detail, as containing nearly nearly all the stores & equipments that will be found necessary, and the supply I think should be calculated for a list of 15 per cent of the whole price employed -

Situation of a suitable building in a healthy locality having been made for hospital purposes it is desirable that it should contain the following accommodation in addition to the wards for the sick -

1. Cook house, fitted with boilers for the ordinary duties, and proper accommodation for cooking & stores
2. Wash house, with laundry & drying shed, and if the establishment be likely to be of any duration I would advise a mangle to be fitted up as mangle looks so much better, and appears clean so much longer when it is mangled than when it is merely washed & rough dried.
3. Reception room for sick, with a bath or other means of personal cleanliness attached to it, where patients can be properly purified & their clothes changed before they are sent to the wards -
4. Store room for packs, arms, and accoutrements, fitted with proper racks
5. Store room for bedding, drapes, & other hospital equipment belonging to the Surgeon's Department
6. Store room for provisions & medical comforts -
7. Store room for apothecary stores, & a dispensary attached to it
8. Dead house, and room attached to it for making post mortem examinations in - the dead house should be fitted with stone tables, or if not obtained, with wire or wooden covers for the bodies to preserve them from mutilation - The dissecting room should have a table properly fitted with blocks &c, and there should be a plentiful supply of water laid on, if possible, by means of pipes with stop cocks.
9. Room for the officer on duty, fitted with a cot, bedding, a chair, a table and the other conveniences for sleeping &c
10. A room for the officer of the P. M. C.
11. 50 - for the Surgeon in charge
12. A ward room & Porter's lodge -
13. Room for the accommodation of the hospital orderlies and other ~~other~~ servants attached to the establishment

The Medical Officers doing duty in the hospital should be quartered as near to it as possible, if there is not accommodation for them within its walls -

I think it is not desirable that a general hospital should contain more than 500 patients, and if it does I am of opinion it should be divided into separate divisions  
of



16  
No. 17 continued The Splints contained in the fracture box of each Regiment are sufficiently varied for general use; and in the great general hospitals of the British Service almost every Splint in use in Surgery is to be found - Certainly every Splint that can possibly be required by any Surgeon who knows anything of his profession - I think of the anxiety that was raised during the last war had its origin in the inexperience and incapacity of those who were the most clamorous, & had the best resources within themselves - On one occasion I recollect a gentleman writing to the newspapers that there were neither angular Splints, nor Dr Ingham's Splints in the Hospital in which he was serving - The fact he had no occasion for for any patient under his own care, and if he had there was plenty of Cuba Parca sheathing out of which angular, or any other shaped Splints might have been cut in a minute - Dr Ingham's Splint has been superseded by Liston's improved Splint & is not manufactured by any Surgical Instrument maker at the present day - The beauty of it is this Newspaper Surgical Critic had drawn an requisition signed with his own hand one of these Substitutes for the exploded Dr Ingham's, & he made his comments without either will knowing, it would appear, what he was writing about, or, if he did calculate on the ignorance of the greater part of his readers in which, judging from the result, he was correct

11:198 of that number each having its own kitchen  
 Larders &c - for the convenience, and expedition of  
 cooking, and supplying the patients wants; but one general  
 Store, and reception Room would be sufficient for the  
 whole Establishment - Having established an Hospital  
 each ward should be fitted with Iron bedsteads with  
 Sacking bottoms, or with boards & strips - allowing at least five  
 feet of make surface for each, and 1000 Cubic feet of air -  
 Each bed should be supplied with a Chamber pot, a Spitting  
 pot, a bedside table, and tin slide for his teeth  
 The Bedding should consist of a work mattress made of  
 water proof cloth (Frost's patent) a pillow - a pair of sheets - a  
 pair of blankets and a rug - In estimating for bedding  
 allowance ~~allowance~~ must be made for that which gets  
 soiled, or is rendered useless by wear &c - for instance  
 500 patients would require 15,000 pairs of sheets 700 pairs of blankets  
 700 rugs; 600 work mattresses & 600 pillows - the same rule  
 should be observed with regard to Draps, and each patient  
 should be provided with a change - The ward should be  
 provided with Tin Soup plates - tin cups - knives & forks & spoons  
 according to the number of patients in each - Each ward  
 should be supplied with 1 or more 13 1/2 pint dishes - a soup  
 Can - a water Can, and a wooden tray to bring the dirt  
 on from the kitchen to the ward - a Corning knife Fork a fish  
 fork, and a Soup ladle - a potatoe fork - a net for the meat  
 and two Scissors <sup>Labels</sup> and chains with the number of the ward on  
 them - night chairs, & bed pans in the proportion of 1 to 6 or  
 more if the nature of the cases require it - Urinals in the pro-  
 portion of 1 to 10 - Bedding cups according to draughts - There should  
 be a Urinal tub for the night - Rattens Brackets & Round trays  
 Brooms & Scrubbers - The ward should also contain a table  
 and forms where the men could take their meals &c  
 should be lighted by means of a lamp suspended from the  
 roof or ceiling, and secured so that the patients cannot  
 obtain access to - The following is a list of some of the  
 articles that have not been mentioned in the ward  
 Supplies which should be provided, and there may be  
 many others that I have ~~omitted~~ overlooked, or that  
 modern Refinement in Military Hospitals has introduced  
 with which I am unacquainted -

Copper buckets of different sizes with CONFIDENTIAL

Tea Kettles Iron and Tin

Trampets Mock Tin

Traying Pans

Meat Choppers

" Saws

Cullender Straws

Scales weight

Steel yards

Coffee Roaster Mill

Tin Galeri

Dry brush brushes

Hand Saws

axes, Pick axes

Shovels Spades

Rugers Shovels

Copper ridges

Wheel Barrow (Cambrian)

Hand Barrow See Regiment Dept.

Lumber matches boxes

Funnels

Hand Baskets

Water Baskets

Washing tubs

Lamps and Lamps & choppers cleaned

Hand Lamps

Lamps

oil lamps: Glass tank Lamp feeders

Baskets for dirty clothes

Clothes Lines

Hoovers claw

Chairs

Tap Pans

Iron Saws

Iron wedges

numerous types Marking Irons ↑ H

Shipper Baskets

The amount of supplies prepared for general hospitals would depend on their size, and the number of men accommodated at them, but I would recommend their being always provided on a liberal scale, so that no want might either be felt or apprehended at any time. This supply can only be kept up by constant additions, and demands equivalent to the consumption should be made monthly by the purveyors Department for that purpose

34 Cont<sup>d</sup>, when the demand is large, and the supply limited & no Lime Juice might either be taken or issued that will not saturate 32 grains of Soda. In the Crimea we were compelled to condemn a quantity of inferior Lime that had been supplied from Constantinople on account of its adulteration with acetic acid, & solution as it was found to have a saturating power of only 11 <sup>grs per 100</sup> instead of 32, which is the standard of the Army Service x

x the following is the proportion of lime juice, 4 pounds per 100 men's Rum 8 parts Water 10 parts

35. My own opinion is that neither Wine, Spirit, nor Malt Liquor is necessary for health. The healthiest Army I ever served with had not a single drop of any of them, and altho' it was exposed to all the hardships and exposure of stiffer warfare at the Cape of Good Hope in wet, and inclement weather without tents, or shelter of any kind, and yet the sick list ~~never~~ <sup>seldom</sup> exceeded one per cent. and this continued not only throughout the whole of the active operations in the field during the campaign, but after the men were collected in standing camps about ~~the~~ <sup>the</sup> terminations, and this favorable state of things continued until the termination of the war; but immediately they were again quartered in towns and great ports where they had free access to spirits, particularly called, "Cape Smack," an inferior species of brandy - numerous complaints made their appearance amongst them -

found as the amount of sickness & mortality was in the Crimea during the winter of 1855-6 it would have been reduced the half I am quite sure with the rule that was observed in Kaffraria have been superior to those which I have seen in any other part of the world. It may be the prejudice of the moment in favor of the former trial but in another, that it would be difficult to withstand the wish and on service a male. Sickness of any kind is perhaps as good as any thing that could be wished. It is the only thing that transport can be provided for on service. Better & all are out of the question except in fixed quarters where water conveyance is available and of the two either ale or brandy, is the best.

In Kaffraria the troops were supplied that they had no means of obtaining liquor of any description, and all attempts of the drinkers, to infringe the police regulations were so summarily and heavily punished by fines and expulsion that the illicit trade was effectually suppressed by Lt. Mackinnon the Commandant, and of British Chaplains the consequence was that drunkenness, disease, crime and insubordination were unknown - And yet that army was frequently placed in the very position that the advocates for the use of spirits would have said required a dram

21. Hutting, what method best? Excavation with wattle roof? wooden huts? form of the latter to be preferred? shape and covering of roofs?

22. Means of protecting men against the damp and exhalations of the ground in huts or tents? boarding, tarpaulins, &c.?

23. Quantity and description of clothing best calculated to protect men from the inclemency of the weather in the cold season?

24. Best summer dress for the field?

25. Kind of diet best calculated to maintain soldiers in health? what proportion of salt meat injurious? Opinion of compressed vegetables? what quantity should form part of ration?

26. Tea, coffee, or cocoa, which most relished, which recommended, which most easily prepared?

27. Suggestions for field cooking— best apparatus?

No 21. Wooden Huts with felt covering ©  
 Such as were used in the Crimea, Care should be taken that the only with projecting eaves, are best for both health & comfort. ©  
 Excavated Huts with wattle roofs were erected - covered with earth like those used by the Turks, and Russians are invaluable for their wounded, but were compelled to abandon them  
 that earth is not piled against the boarding outside and that the floors are either raised on stones or a stratum of charcoal placed under the boarding to which the men sleep to prevent infectious exhalation from the ground under their feet  
 Home - These huts should have not Ventilators, and means for admitting fresh air into them below which cannot be substituted with by the in mats, and it is a great misfortune that the huts be not overcrowded

No 22. Where boarding can be obtained it is the best. Tarpaulins were not found to answer well in the hospital hill tents in the winter of 1854 as the rain beat thro' and lodged on them. But a water proof blanket or tent is an admirable thing for men to lie on on Service.

No 23. This depends entirely on the climate the Soldier happens to be serving in. Joint waterproof boots, warm woollen under clothing, and a good great coat with a hood to it like the French great coats, are nearly all that Soldiers require in ordinary cold weather - where the cold is intense, as in Canada, provision should be made accordingly

No 24. I should prefer a thin dark grey twined dress, made loose to the lower skirt that was served out to the men in the Crimea in Summer -

No 25. The kind of diet best calculated to keep Soldiers in health is a due admixture of fresh meat, bread and vegetables such as they are accustomed to in quarters, only if undergoing much fatigue the quantity should be augmented, in about the proportion it was in the Crimea -  
 Salt meat may be given twice or thrice a week without any risk of injury to the men's health, Compressed vegetables when used are generally issued in the ratio of two ounces to 8<sup>oz</sup> of fresh vegetables

Wheat flour	16 <sup>oz</sup>
Bread	20 <sup>oz</sup>
Peas	16 <sup>oz</sup>
Tea	1/4 <sup>oz</sup>
Coffee	1 <sup>oz</sup>
Sugar	1 3/4 <sup>oz</sup>
Rice	2 <sup>oz</sup>
Wheat salt meat or mutton	8 <sup>oz</sup>
Fresh vegetables	8 <sup>oz</sup>
Preserved or compressed	4 <sup>oz</sup>
Salt	1/4 <sup>oz</sup>
Pepper	1/8 <sup>oz</sup>

No 26. Tea, and coffee, are more relished by Soldiers than Cocoa, they are more easily prepared and if changed occasionally are more agreeable. Tea, perhaps, is more generally liked than coffee, but no complaints were made of the

and sent back to the military stores, when the soldiers are in quarters, a few pounds of each additional part which would be a very good thing to have on hand.

© and in some cases have better what might be considered moderate amount required for each

Coffee after it was pressed in a roasted and ground state - The first complaints were made about the issue of the coffee berry to the soldiers in the Crimea and difficulty was doubtless experienced at one time in obtaining fuel to roast it with - Still it must be borne in mind that the inhabitants of all countries where coffee is extensively used, and especially made to perfection, invariably roast and grind their coffee as it is required for use - The French soldiers did the same in the Crimea, and the British soldiers would have adopted the same plan from choice in France as the coffee is undoubtedly far superior when so prepared being made from the berry alone -

No. 27 - The ordinary camp kettle and temporary fireplace answers every purpose for field cooking and are all that is necessary on service. Indeed all that can be conveniently carried with an Army engaged in active warfare -

No. 21 - a Stratum of Sunk Lime, or charcoal should be placed under the flooring of the huts - and the surface moisture should be carried off by deep double trenches dug round them - ventilation should be attended to in an efficient manner, and for this purpose ventilators should be fixed in the roof to carry off the heated and impure air, and an abundant and constant supply of fresh air should be admitted thro' small apertures near the ground to replace that which is vitiated -

No. 36 - In each Regimental Hospital, there should be an Hospital Sergeant as Steward, taken from the ranks of the Regiment, who will maintain discipline in the Hospital during the absence of the Medical Officers; a Dispenser with the rank of Staff Sergeant taken from the Hospital Corps, or selected from the ranks of the Regt - as the case may be - a Cook - a Clerk or assistant Steward, and four orderlies, all taken from the Med-Staff Corps, attached to the Regt for the time being & subject to the Military authority, and discipline of the Commanding Officer while so attached, but <sup>they must do duty in the ranks except by sentence of Court martial or</sup> not liable to be removed except for misconduct

no orderlies allowed  
every line drill, but  
more than four  
orderlies - an application  
to be made for an  
additional number of  
Med-Staff Corps men for  
what would be better than  
to be taken from the  
ranks of the Regt

The pay of the men of the Med-Staff Corps when thus employed should be the same as if they were serving in the Hospital, and to be drawn & paid to them by the Regimental Paymaster -

28. What light best for field service? Candles, lamps, or lanterns? construction of latter?

n<sup>o</sup> 28. Candles are best calculated for field service, as they are most easily transported into an Army, and lanterns the best made of using them - Those with reflectors such as were sent out to the Crimea answer remarkably well

29. Use of disinfectants in camps and hospitals, best descriptions?

n<sup>o</sup> 29. Burnett's Solution of Chloride of Lime is, I think, one of the best and most generally applicable.

30. Best position of latrines?

n<sup>o</sup> 30. Latrines should be placed in rear of the Lines at a convenient distance, and the soil should be covered over daily with earth, ashes or peat charcoal.

31. Best method for effecting the purification of water?

n<sup>o</sup> 31. Boiling and filtration. Rude Filters of Charcoal, and Sand can be easily constructed when troops are stationary and answer every purpose.

32. Burial of Dead—is the addition of quicklime or other materials desirable?

n<sup>o</sup> 32. The addition of Quicklime is neither necessary nor desirable. If the body be placed 4 feet underground nothing is required, and if a disinfectant be required Peat Charcoal answers better than Lime.

33. Prophylaxis; whether use of quinine added to spirit ration, or amorphous quinine specially prepared, is recommended?

n<sup>o</sup> 33. In malarious districts Quinine as a prophylaxis given either in wine, or spirit is necessary, but Soldiers do not like it, and often declare that it gives them Diarrhea and other complaints.

34. Lime-juice; quantity and how to be administered?

34. When scantiness of diet has been used for any length of time, and there is difficulty in procuring a due proportion of vegetable food, for salt meat is by no means essential to the production

35. Stimulants; spirits, porter, ale—which considered best, and the quantity of each considered salutary?

of Serum, as was amply proved in all the Russian wars at the Cape good Hope. Lime juice to the extent of  $\frac{1}{2}$  ounce with Sugar, <sup>peas</sup> and Spirit if a spirit ration be issued may be given with advantage, but care must be taken that the men

36. Hospital servants; number for a regiment?

drink it, and that the Lime juice used is neither adulterated, nor diluted as is apt to be the case by the Contractors

When not a single ounce of salt meat was used, and yet more Serum followed than salt

38 Ships filled exclusively for the conveyance of sick  
and wounded men should not keep them six feet between  
decks, and they should have the main deck cleared  
five feet, and be fitted with standing berths from stern  
to stern - These should be arranged by pairs with a  
division board, and a space between each two pairs  
of berths for the convenience of helping wounded  
or attending sick men - Each berth should be provided  
with a lock mattress with water proof ticking, a pillow,  
pair of blankets, pair of sheets & a rug; there should  
be a chamber vessel fixed in a rack between  
each pair of berths, and a board with a ledge for  
the sick to stand their drinking cups & on, should  
stand from one berth to the other - The night chairs  
should have arms to them, and should be fixed  
near the masts, on each side, heads one at the  
stern & another at the stern of the vessel - In the  
Medical Equipment there should be a supply  
of Bed pans - Urinals & feeding cups in the proportion  
of about 1 to 6 of her complement - Hospital Drapes consisting  
of four - trousers - waistcoat - shirt - flannel socks,  
and slippers on a scale proportionate to the estimated  
length of the voyage - There should be an Equipment  
of tin plates - drinking cups - knives forks & spoons  
sufficient for the number of sick so that all may  
be supplied, and in addition to the Ordinary means  
of cooking provided by the Ships Galley Lancians  
for the preparation of medical comforts should be put on  
board as well as two kettles & tea pots - Care should  
be taken that means of mashing & scrubbing  
the deck be provided, & that Boracic Chloride of  
Zinc in the proportion of 30 lbs to every 100 tons of  
the Ships Measurement is on board to be used  
disinfectant or deodorant  
In addition to an ample supply of Medicines, Drs,  
and Surgical appliances, which should have a  
Cabin or properly fitted up place set apart for  
their reception - Medical comforts, Drapes, spare  
bedding & linens, means of heating & brooding  
should be provided, & ample supply of live stock  
and fresh vegetables be put on board - Attention  
should be paid to the means of ventilation, and  
in addition to hatches scuttles & wind sails - Hospital  
ships should invariably be fitted with double  
lutes with cowls which throw down an ample  
supply of fresh air in all weather, and cannot  
be wintered with as wind sails frequently are  
by those who sleep near them -  
Ship lanterns with secured - should be suspended  
between decks at night to give light in case and  
should be required by any of the sick



the medical staff and orderlies from hospital  
ship should be removed as seldom as  
possible, as great inconvenience to the sick  
is frequently occasioned at the commencement  
of a voyage by the sea sickness for some days  
of both the medical attendants & many of the  
orderlies. I have not entered into the detail  
of equipment, and duty of medical officers  
on board ship, as that would be another  
general instruction from the P. M. O. on this  
point who would be best able to judge of what  
was necessary for the particular service con-  
templated.

39 - 4 per cent I should consider amply  
sufficient, but I would recommend an  
equal number of cots to be put on board  
to be used in case of need.

40 - The following instructions issued by me  
in Bulgaria in July 1854 are as good as any  
I know of, and are calculated with the best  
labor to meet every requirement, both as a  
general register of admissions, and a register  
of particular classes of disease, if so arranged,  
for the purpose drawing accurate conclusions  
from the whole number treated; and if  
further registers were printed with this heading  
it would facilitate the medical officers duties  
and tempt all to be correct in the registry  
of their cases, a thing of so much importance  
in the medical history of campaigns, & so  
far superior to opinions given on general  
inspections without data of any precise nature  
I have given copy of Dep't order of 10 July 1854  
and form of heading -

41 - The daily weekly, & monthly Returns  
of sick adopted in the Army answer  
very well, and I would recommend the  
Table given in the Sanitary Report in  
preference to that in general use in the  
Army Medical Department for the Annual  
Return - The Returns should be so framed  
that they facilitate the compilation of such  
Returns, and afford as much information  
as possible.

The following is the form generally  
returned & recommended by me to be  
adopted in the Army in Prussia - 30 June 1852

Here insert form

42 - That by regions adopted in the  
Army answer every purpose, and is  
perhaps, as satisfactory as any -

43 - The hospital table in use in the  
Medical Department might be improved -  
That used in the Sanitary Report is better  
arranged, and with some modification  
would answer very well -

44 - The old monthly form of Regimental  
Diet Roll, and the daily Roll of Patients at  
present in use answer every purpose

I shall  
I send of them. HP

London  
June 1867

Rough copy of answers to Queries  
about Medical Equipment for an Army  
of 40,000 men on service in the field -

London ~~~~~ January 1857

St.

