Reports by professors of Army Medical School - arrangements for examinations of assistant surgeons at Chatham, Jan 1861. Also copies of correspondence with Sir James Gibson, War Office, etc., on this subject

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Misunderstanding as to W. C. recommendations
What they are — What they must lead to —
Competition now threatened - refer to origin

Royal Commission May 1857 . Rt Hon. Sidney
Herbert, Pres. — the then D. G. A. Smith
T. Alexander, future D. G. Ranald Martin
Sir James Clark, Dr Sutherland
among other things
Inquired into the constitution & organisation, and
position of the A. M. D. as regards
Education of M. Os, including
Qualification of Candidates
Nature of their Examn
Means of acquiring, keeping up, & adding to their
profess. knowledge

On the point in question. evidence of
Alexander, 2456-7 Mapleton, 4406-93 Hall 5573 : 5606-7 Gibson 9123
Parkes 765. Brodie 519 Paget 727-32 751-2
Parkes 762 Meyer 960 Alexander 2458 Brown 2796
Parkes 806-11 Brodie 520-1 Brodie 557
Alexander 2454-5 Brodie 526-7

Remember French Army Alexander 4587 Balfour 9584
Sutherland 4353

Regards

Army Med. School

14 April - 1860 - fixed school sessions & annual dues to
Professors to be regulated by the Senate

May 4th '60 - Questions about relieving Profs of Med. & Surg from Hosp[l] Admin. duties & responsibilities discussed

Dec. 29: 60. Sec. for Wars' approval of Staff Surgeons being attached to Profs for hospital duties.

Oct. 29. 63. Memo signed by all Profs regarding position & duties of Profs & Assistants.

Mem. by the Profs re the Minutes of Senate meeting of 30th June 66, with regard to the Profs of Mil. Med. & Surgery not performing Mil. Med. duties during the recess of the school - only employed for teaching purposes -

25/4/63 Arrangements for relieving the Clin[l] Profs from routine duties -

30/6/66. Discussion on the subject of leave of absence for the Assist[t] to the Profs Appt of 2 Staff Surs for invaliding duties, so that the Assists may be able to get leave of absence during recess of school -

Issue of £60,000 4% First Mortgage Debentures.

A. M. Schedule. Pay J. Westcott

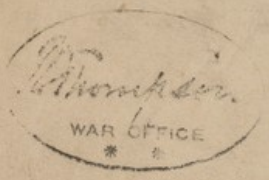
Professor Longmore.

Letter from Account Journal W. Walton

Southampton

ON HER MAJESTY'S SERVICE.

Army Medl School, Sundry letters more or less connected with
Surg. Genl Sir J. Longmore K.C.B.



The Paddock.
Woolstone.
Southampton

WAR OFFICE.


SOUTHAMPTON
AP 15
93

11 pp.

LP. 14/1

Sir –

It appears to us desirable to present to you for your information and that of Lord de Grey & Ripon, a Report on the Competitive Examination for the Medical Department of the Army shewing

1st. The intentions with which we believe the Examination was originally designed –

2nd. The method in which these intentions have been carried out.

3rd. The successes & failures of the design

4th. The measures which it seems to us expedient to adopt in future.

I. The intentions of the Examination.

In 1854 the Medical Service of the East India Company ceased to be a matter of patronage and all subjects of Her Majesty who were properly qualified, were allowed by Act of Parliament to compete for Assistant Surgeoncies in the Indian

Service. As these appointments were considered very valuable & were eagerly sought after, it was anticipated that there would be a very great competition. Four Examiners were appointed. viz. in Medicine (including diseases of women & children,) in Surgery, in Anatomy & Physiology, and in Natural History. And they were directed to institute such an Examination as might in the first place procure for the Indian Service the best Medical practitioners who presented themselves for Examination, and secondly, tend to encourage a liberal Scientific Education in the gentlemen who intended to qualify themselves for the Service. In Medicine & Surgery it was desired that the Examination should as far as possible be such as to test the practical knowledge of the Candidates, and as the foundation of Medical knowledge it was deemed expedient to have an Examination in Anatomy & Physiology. The Natural History Examination was we believe instituted for the following reasons. In India there were always as there are now, a certain number of appointments such as those of Curators of Government Gardens and of Forests, and of Superintendents of Cotton & Tea Plantations, and of Scientific Expeditions, for which a knowledge of Natural History is necessary.

[Margin note:] These Examiners were all civilians the design being not to examine applicants in military branches but to ascertain the fitness of Candidates for the service by testing the knowledge they had already acquired in the course of their ordinary medical education

and which were required to be filled by Officers of the Medical Department. Then India offers a vast, & indeed almost a virgin field for researches in Natural History, and it might have been expected that the Medical Officers would contribute their share to the progress of this Science. Indeed in the Medical Service of the Royal Army it had long been an object with Sir James McGrigor to encourage the study of Natural History, and the Candidates for that Service were obliged at one time to undergo an Examination in that subject at Chatham. A third reason for instituting this Examination was doubtless to encourage among Medical men the study of those Sciences which have always been considered as forming part of a liberal scientific Education.

Such were, we believe, the intentions of Sir Charles Wood the President of the Board of Control in 1854, and of those who advised him.

In 1859 the East India Service was abolished and India passed directly under the control of the Crown. Our tenure of office would then have ceased but we were requested by Lord Herbert to conduct the Examination of the Candidates for the Army Medical Service on the same principles.

This great and at one time very popular service had then ceased to be officered by means of patronage, and its appointments had been thrown open without distinction to all of proper age, character, & qualification.

II. The method in which we attempted to carry out these instructions, & which ~~we have not~~ has not been materially altered to the present time, was as follows.

~~We~~ It was decided to institute both a written and an oral Examination in each subject, & to make the questions as practical as possible. but at the same time, keeping in view that it was a competitive examination ~~We~~ we felt it would be proper to put a certain number of such questions as would give the best informed men an opportunity of shewing their superior knowledge. In each subject ~~we gave~~ 3 hours were allotted to a ~~of~~ written, and 15 minutes ~~of~~ to an oral Examination.

In Medicine and in Surgery we extended the Examination further. The candidates were required to Examine Medical & Surgical patients, & to report on their cases, to perform operations on the dead body, and to show a knowledge of ordinary surgical manipulation such as the application of splints & bandages.

In Anatomy and Physiology, and in Natural History we instituted to some extent an object Examination.

Since we commenced to examine for the Royal Army we have assigned to each subject the following number of marks; viz.—

Medicine	1000 marks
Surgery	1000 "
Anatomy & Physiology	1000 "
Natural History	500 "
	3500

And as you are aware we have classed the Candidates in the following manner. We have considered that 1/3rd of the whole number of marks should be the minimum giving admission to the Service; that between 1/3rd and 1/2 the marks should qualify for the 3rd class; between 1/2 and 3/4 for the 2nd class; and above 3/4 for the 1st class. But a good practitioner has been sometimes admitted though, on account of ignorance in Natural History, his marks were below the minimum, and on the other hand we have occasionally not admitted men who had gained the minimum, if they showed great ignorance of Medicine and Surgery.

III. The results of the Competitive system.

The number of Candidates presenting themselves for Examination for the Indian Service did not equal the anticipation of some persons; yet it amounted annually on the average, to one tenth of those who received diplomas in Great Britain, and but for certain reasons the number would probably have been greater. Almost immediately after the Competitive system had commenced for India

the Crimean War broke out. Medical men were naturally attracted by active service and entered the Royal Army as Assist. Surgeons or as acting Assistant Surgeons instead of going to India. The Crimean War ended in 1856, and in 1857 the Indian Mutiny broke out, and the number of Medical Officers required has so much increased that every man who has qualified has sent out. When that immense demand has passing off, the Indian Service merged into the Royal Service, and the conditions of competition were totally altered.

We believe therefore that the System of competition for the Indian Service had really no proper period of fair play.

Since the year 1860 when the Indian Service ceased to have a special Examination you are cognisant of the merits of the Candidates and of the causes which have led to a deficiency in the number of applications. These causes are several, but to one only as especially referring to ourselves, we must allude.

It has been imagined by some persons that our Examination, and especially that in Natural History, has deterred men who have already been overdone by several Examinations, from going through another ordeal of the like kind. And it has indeed been asked why the Army Medical Department should institute an Examination at all, seeing that all the men who

desire to enter its ranks are already members of some Corporation, College, or institution legally empowered to grant degrees and licences.

From enquiries made at some of the London Schools, we doubt extremely if any good man has ever been deterred from presenting himself by fear of the Examination. Indeed those who have raised the objection can hardly have read our Questions. If they had, they would have seen that even in the Subject of Natural History there has never been a set of questions which a well Educated Medical Student might not have sufficiently answered. We have always put from 12 to 15 Questions, while we have only required answers to any 5 which might be selected by the Candidate. When vacancies existed no man has ever been rejected allowed we have never rejected any man who shewed sufficient Knowledge of Medicine and Surgery. We can indeed affirm that when there were Vacancies no man Qualified to practise has ever failed to get a Commission. If men have been frightened by the Examination, we are sure it only requires a little Explanation to shew them that if they know their profession fairly, they may, (vacancies permitting) look forward with confidence to the result.

We may state also, as further proof that the Examination has not been generally regarded as an objection to the Service, that it has not been enumerated among the many grievances, real or supposed, so frequently alluded to in the Medical Journals.

As to the Expediency of instituting a competitive Examination

at all, it does not fall within our province to discuss fully that question. But we are bound to state that our Experience has shown us that an Examination can never be dispensed with; it is necessary, if for no other cause, simply to guard the Soldier from having an incompetent Surgeon - At every Examination some men have presented themselves, so ignorant that ~~we have been~~ astonished that they could ever have obtained a diploma. We ~~feel bound to state that most~~ many can affirm, that many of the licensing bodies in ~~the kingdom have~~ admitted men, to practice who were ~~completely~~ ignorant not only of the very rudiments of Medicine, but almost all the branches of common Education.

In fact the public Services have always guarded themselves by an Examination: and the necessity for such a guard will not be diminished -

Those who object to an Examination ought to consider that there is no third course; either we must return to the old system of patronage, or we must institute a competitive Examination. Which is best for the Soldier? Can there be a doubt as to the answer? Which is best for the Profession? Would the Medical Profession be willing to give up this great boon of an honourable Service thrown open to all by fair Competition, and to return to the system of patronage and favour; to that system which, it has notoriously, led men too often when they had obtained a promise of a Commission in the Army Medical Department

to consider their education as completed, and to reject any further attempt at improvement.

We conceive that the objection should be raised not against the Competitive Examination but against its details; to that point we shall refer presently.

With respect to the relative merits of those admitted under the old and the present system, we feel that we have no sure data to go upon, but we are convinced that a very good class of men has been obtained for the Indian Service, and also for the Royal Army. An examination has also completely excluded incompetent men as we have always required a certain number of marks to be gained in order to qualify for admission.

We must however say that the examination in Natural History has not fulfilled all our anticipations. There have been certainly some gentlemen especially in the earlier years who not only showed proficiency in this subject but who contrived its prosecution in India, and have but the greater number of candidates have merely superficially acquired a little crude knowledge for the purpose of passing the examination. In fact of late years in Natural History the examination has gradually been replaced by one in Materia Medica, and.

x? is not this much too strong? it implies that the candidates belonged to superior the better class of students: but all we can say is, that of the few candidates who presented themselves we can warrant the majority of those we selected to be fairly good. Considering that we have some Class I & few Class II candidates has we can call the class very good

J Hooker

scarcely this quarter Not first-rate

the elements of those branches of natural sciences which are included in the Medical Curriculum.

In the other subjects the result has been more satisfactory. Both in the examination of patients & in the practice of operations there has been a marked improvement, and we believe that those who intend to present themselves for examination pay increased attention to these important subjects. We must however say that the general knowledge & proficiency possessed by the Candidates in these highly practical points is still below what it should be, and we cannot anticipate any very great improvement until the Medical Corporations make their examinations more practical than they are at present.

They [illegible] apply to [illegible] last session's examinations.

4. We now beg respectfully to offer a few suggestions for your consideration.

In Medicine, Surgery, and Anatomy we do not consider that there is room either for increasing or lessening the severity of the examination, or for altering its nature. It must be a sufficient test of general competency, and at the same time give the best men an opportunity of showing their superior knowledge. We do not see either how to extend the practical part of the examination; it is as far developed as the present state of Medical education will permit.

But we would propose to alter the so termed Natural History examination, and to confine restrict it to subjects which are taught in the ordinary medical curriculum, for example Materia Medica and Meteorology, the first Elements of Chemistry, the principal phenomena & properties of Heat, & the principles upon which the Barometer & Thermometer and Electrotyping machine &c are constructed, – & the uses of all which instruments the Medical man should be instructed.

At the same time we would permit any candidate who desired it to undergo an examination in Natural History, the object of this being that you should be furnished with a list of names of gentlemen practised & skilled parts in India & the Colonies & which demand a knowledge of this subject.

We are of opinion also that the

Constitution of the Board of Examiners requires consideration, and if desired by the Secretary of State for War we shall be happy to make our views on this point.

2 pp. LP. 14/2

The following Report has been drawn up by the three Professors at Chatham in conjunction with Dr. Neme -

Proposed arrangements for the Examination of the Candidates for Asst. Surgeoncies at Chatham, at the close of the Session in January 1861.

In forming arrangements for the Examination of the Candidates who have passed through their studies at Chatham, it is necessary to define in the first instance the object of the Examination.

On referring to the Regulations it will be seen that it is merely said:

"The Candidate will be required to pass an "Examination on the subjects taught in the School" and "if he give satisfactory Evidence of being "qualified for the practical duties of an Army Medical "Officer, he will be eligible for a Commission as Assistant "Surgeon".

According to this Regulation it does not appear whether or not the Examination is to be a Competitive one, nor whether the place already taken by the Candidate in the Examination in London is to be altered by the result of the Examination instituted at Chatham.

It is presumed however that had the Chatham Examination been intended to be a Competitive one, it would have been so expressed, and therefore it is inferred that the intention of the Regulation is merely to ascertain that the Candidates have profited by their instruction at Chatham, but not to alter the position they have already taken on the list.

If this inference be correct the Senate express their entire concurrence with the Regulations. The Examination at Chatham, although very important is necessarily limited and special. It will ascertain if a Candidate has attended to Hygiene and to certain parts of Pathology; if he has discharged his clinical duties properly in the Hospital & kept his books well. if he can examine recruits, & if he understands the principles of Invaliding. It will also decide whether he has learnt the arrangements of Armies in the Field, the formation of Hospitals, and the nature of the Medical and Surgical diseases & injuries received in war.

But the Examination can never take the range of the London Competitive Examination, nor examine into the subjects which are the foundation of all Medical Knowledge, viz. Anatomy & Physiology, and the Principles & Practice of Medicine & Surgery. The London Examination is in fact an Examination of the Candidates' entire professional Knowledge; the Chatham Examination tests only a section of this Knowledge. It would therefore scarcely be right to allow the Chatham Examination to modify the result arrived at by the London Examination, except under peculiar circumstances.

If a Candidate while at Chatham refused to take advantage of the opportunities there offered to him, was idle & indifferent, and passed an Examination, which though not enough to exclude him from a Commission was manifestly very inferior to the Examination of those placed below him in the London list, it might be well to make a Special report of the case to the Director General.

Or on the other hand if a Candidate shewed unusual diligence & zeal, & acquired a much greater amount of

knowledge than the other Candidates, a special Report might be made in his case. Necessarily a much greater amount of Evidence would be required in this case than in the former one.

In either case, if the position of the Gentlemen in the London list has altered, it should be explicitly stated on what grounds this has done.

If then the Examination at Chatham is not a competitive one the following plan is recommended. If it were competitive this plan would have to be altogether re-modelled.

The Examination should be partly oral & partly practical. It will not be necessary to have a written Examination. The oral Examination should last at least half an hour on each subject for each candidate; the practical should last for 2 or 3 days in each department for each Candidate.

Examination in Hygiene.

1. Oral Examination; to occupy 4 days at 5 or 6 hours a day; each Candidate being under Examination at least ½ an hour.
2. Practical Examination in the Laboratory, in the Examination of food water &c.

Examination in Surgery.

1. Oral Examination on the subjects taught in the Course for not less than ½ an hour in the case of each Candidate. The time will be the same as in Hygiene 5. or 6. hours a day for 4 days.
2. Practical Examination as follows.

Examination of a recruit.
Examination of an invalid; the case being written down and commented upon.
Operations on the dead body when this can be done.
Application of bandages.
The books kept by the candidate will also be examined.

Examination in Pathology.

1. Oral Examination as in Hygiene and Surgery.
2. Practical Examination in the Microscopical room in the display of healthy and morbid tissue.

Chatham, 10th. Dec.r 1860

Report of the Professors on the Mode of conducting the Exam.n of Candidates at the close of the 1st Session of the A.M. School.

QUALIFICATIONS AND EXAMINATION OF CANDIDATES FOR COMMISSIONS IN THE ARMY MEDICAL SERVICE

ORGANIZATION OF THE PRACTICAL ARMY MEDICAL SCHOOL,

INCLUDING THE SUBJECTS TO BE TAUGHT BY THE PROFESSORS;

AND

RULES FOR THE EXAMINATION OF ASSISTANT-SURGEONS PREVIOUS TO PROMOTION.

LONDON:
PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY.
FOR HER MAJESTY'S STATIONERY OFFICE.

1859.

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Section II.

Section III.

Section I.

QUALIFICATIONS AND EXAMINATION OF CANDIDATES FOR COMMISSIONS IN THE ARMY MEDICAL SERVICE.

I.

Certificates. Age of candidates.

EVERY Candidate presenting himself for admission to the competitive examination required for the Army Medical Service must be unmarried. He must produce a birth certificate from the District Registrar, or a certificate of baptism, in which the date of birth is stated. Or, if neither of these can be obtained, an affidavit from one of the parents or from some other near relative who can attest the date of birth, will be accepted. The certificate or affidavit must show that the Candidate is not above 26, nor under 21 years of age. He must also produce certificates of moral conduct and character, one of them from the parochial minister if possible.

II.

Declaration to be made by candidate.

The Candidate must make a declaration that he labours under no mental or constitutional disease, nor any imperfection or disability that can interfere with the most efficient discharge of the duties of a Medical Officer in any climate. He must also attest his readiness to engage for general service immediately on being gazetted.

III.

Candidate must possess diploma or licence to practise surgery and medicine.

The Candidate must possess a diploma in surgery, or a licence to practise it, from the Royal College of Surgeons of England, Scotland, or Ireland; or from the Faculty of Physicians or Surgeons of Glasgow; or from some other corporate body legally entitled to grant a diploma in surgery or a licence to practise it. He must besides, and in addition to such diploma or licence, possess a legal qualification to practise medicine in Great Britain or Ireland.

IV.

Degrees, diplomas, or licences and

The Candidate, in addition to his Degree, Diploma, or Licence, the nature of which must be entered on the following

certificates of attendance to be entered on the schedule.

Schedule, must transmit to the Director-General certificates of satisfactory attendance on all the courses of instruction required by the bodies from which he obtained his qualifications.

And he must enter in the Schedule a list of all certificates he can produce of hospital attendance and of attendance on Lectures or Courses of Practical Instruction which he has followed.

The following certificates will in all cases be required:—

(1.) Of his having dissected the whole body once at least.

(2.) A course of operative surgery, with a certificate of having performed all the great operations on the dead body.

(3.) Three months' practical chemistry. The certificate must state that the pupil has conducted chemical analysis himself during the whole of that period.

(4.) Three months' Natural History or Comparative Anatomy.

(5.) Practical midwifery; a certificate of having attended 12 cases.

(6.) Three months' Lectures on Ophthalmic Surgery.

Certificates of having attended the following courses of instruction are also recommended, but are not imperative:—

1 Course, Natural Philosophy.
1 „ Logic.
1 „ Dentistry.
1 „ Mathematics.
French and German.

V.

Qualifications and certificates to be lodged a week before examination.

Degrees, Diplomas, Licences, Certificates, &c., must be lodged at the Army Medical Department for examination and registry at least one week before the Candidate appears for examination.

VI.

Subjects of examination.

On producing the foregoing qualifications and certificates the Candidate will be examined by the Examining Board on the following subjects:—

Anatomy and Physiology.
Surgery.
Medicine, including Therapeutics, the Diseases of Women and Children, Pharmacy, and the Laws of Health.
Natural History, including Zoology and Comparative Anatomy.
Botany.
Physical Geography, including Meteorology.

The subjects for the three last heads of this examination will be taken from the following books:—

(1.) Carpenter's Zoology. Edited by W. S. Dallas, F.L.S.

(2.) Rymer Jones' "Outlines of the Structure and Functions of the Animal Kingdom;" or, "Cours Elémentaire d'Histoire Naturelle," par Milne Edwards.

(3.) Lindley's or Henfrey's "Elements of Botany."

(4.) Somerville's "Physical Geography."

(5.) Kemptz' "Treatise on Meteorology."

(6.) Lyell's "Elementary Geology," or Page's "Advanced Text-book of Geology."

VII.

Classification of successful candidates.

The Names of Candidates who pass the Preliminary Examination of the Examining Board, will be sent to the Director-General, and communicated to the Professors of the Army Medical School. The Names will be arranged in the following Classes:—

Class I.

Names of those who have passed a pre-eminently distinguished examination, *arranged in their order of merit.*	Characters which distinguish the excellence of each. General estimate of individual capacity, or fitness for special service.

Class II.

Names of those who have passed a creditable examination, *arranged in alphabetical order.*	Statement of the topics in which each has individually excelled, and a general estimate of his individual capacity.

Class III.

Names of Candidates who have passed the MINIMUM examination, *arranged in alphabetical order.*	Statement of the particular branches of science in which each has been found to be DEFICIENT.

This information will enable the Professors of the Army Medical School to carry out their instructions with a definite aim as regards each Class.

VIII.

Course of practical instruction at the Army Medical School.

After passing his preliminary examination, every Candidate will be required to attend one entire course of practical instruction at the Army Medical School, before being admitted to his examination for a commission, on

(1.) Hygiene.

(2.) Clinical and Military Medicine.

(3.) Clinical and Military Surgery.
(4.) Pathology of Diseases and Injuries incident to Military Service.
(5.) Applied Chemistry.
These courses to be of not less than four months' duration.

IX.

Examination for commission.

At their conclusion the Candidate will be required to pass an examination on the subjects taught in the school. The examination will be conducted by the Professors of the school.

The Director-General, or any Medical Officer deputed by him, may be present, and take part in the examination. If the Candidate give satisfactory evidence of being qualified for the practical duties of an Army Medical Officer, he will be eligible for a commission as Assistant Surgeon.

X.

Allowance to candidates at the medical school.

During the period of his residence at the Army Medical School, each Candidate will receive an allowance of 5*s.* per diem with quarters, or 7*s.* per diem without quarters, to cover all costs of maintenance. And he will be required to provide himself with uniform, viz., the regulation undress uniform of an Assistant Surgeon, but without the sword.

XI.

Candidates to conform to discipline.

All Candidates will be required to conform to such rules of discipline as the Senate may from time to time require.

Schedule of Qualifications and Certificates.

Recommended by _____.

Christian and Surname at full length.

I _____

_____ Years of Age, in _____ last, a Candidate for employment in the Medical Department of the Army, do hereby attest my readiness to engage for General Service, whether at Home or Abroad, and to proceed on Duty immediately on being Gazetted.

I declare that I am unmarried, and that I labour under no Mental nor Constitutional Disease, nor *any imperfection* or disability that can interfere with the most efficient discharge of the Duties of a Medical Officer in any Climate.

(*Signature*) _____

I have pursued the under-mentioned Course of Study, of which I am ready to produce the Vouchers for Registry, and also a Certificate of my Age; namely—

I possess Certificates of regular attendance at the under-mentioned Hospitals, and Courses of Lectures for the number of months stated :—

The	Hospital or Infirmary for	Months
The	Hospital for Mental Derangement for	Months
The	Hospital for Diseases of the Eye for	Months
The	Lying-in-Hospital for	Months

Stating the Number of Lectures in each Course.

Lectures.	Professors' Names.	Place.	Period in Months.
Anatomy, by - - -			
Practical Anatomy, by - (*stating the number of subjects dissected*)			
Physiology, by - -			
Surgery, by - - -			
Clinical Surgery, by -			
Practice of Medicine, by -			
Pathology, by - -			

Stating the Number of Lectures in each Course.

Lectures.	Professors' Names.	Place.	Period in Months.
Clinical Lectures on the Practice of Physic, by			
Chemistry, by			
Practical Chemistry, by			
Botany, by			
Materia Medica, by			
Practical Pharmacy, by			
Comparative Anatomy, by			
Natural History, by			
Midwifery, by			
Practical Midwifery, by			
Ophthalmic Surgery, by			
Forensic Medicine, or Medical Jurisprudence, by			
Dentistry, by			
Natural Philosophy, by			
Logic, by			
Mathematics, by			

The Dates of Graduations and the Universities or Colleges are to be stated.

I have the Degree of A.M. or A.B. from the _____

I have the Degree of M.D. from the _____

I have a Licence to practise Medicine from the _____

I have a Diploma in Surgery from the _____

I have a Licence to practise Surgery from the _____

(*Signature at full length*) _____

(*Date*) _____

(*Place of Residence*) _____

Section II.

ORGANIZATION OF THE PRACTICAL ARMY MEDICAL SCHOOL.

I.

Candidates for commissions to attend course of instruction.

After passing his preliminary examination, every Candidate for a Medical Commission in the British and Indian Armies will be required to attend one entire course of practical instruction at the Army Medical School, and at the Military Hospital in connexion with it, on the subjects herein-after named, before being admitted to his examination for a Commission.

Cadets and Officers of the Royal Engineers and of the Indian Engineers may also attend a course of instructions on hygiène and a course of Chemistry.

Combatant officers will have the same privilege extended to them should they desire it. Army Medical Officers will also have access to the School.

II.

Subjects of course.

The special practical instruction which the school is intended to afford will be given by the following five professors:—

The Professor of Hygiène.
The Professor of Clinical and Military Medicine.
The Professor of Clinical and Military Surgery.
The Professor of Pathology.
The Professor of Chemistry.

III.

Government of the school.

The school has a distinct and independent existence under the Secretary of State for War, and is governed by its own Senate, which will hold a meeting for the dispatch of business at least once a month or oftener if necessary.

IV.

The Senate. Its functions.

The Senate consists of the five Professors and the Director-General of the Army Medical Department, who will preside, when present, at the meetings of Senate; but only those members of Senate who may be present shall vote on the questions discussed.

The Senate will regulate the routine business of the School.

It will decide on the arrangement, number, hours, &c., of the Lectures.

It will make and amend regulations for the conduct of the Students.

It will preserve discipline.

It will also have the regulation and direction of the Library, Museum, Model-room, and Laboratory; the selection of books, models, chemical and other apparatus necessary for the School, and will make up, and submit to the Secretary of State all estimates of expenditure connected with the School.

All acts of the Senate will be communicated to the Director-General.

No act of the Senate shall be binding until it has received the approval of the Secretary of State.

V.

Museum.

The Museum will consist of four divisions:—

1. A collection of Pathological Anatomy, having special reference to the more prevalent diseases of the Army.

2. A collection of Specimens of Geology and Natural History.

3. A collection of Materia Medica and Alimentaria, containing specimens of the more important articles, both in their natural and prepared states; and of the principal seeds, grains, pulses, and other dry or prepared articles of food, from all parts of the world.

4. A collection of plans and models of whatever is used in the Army for the conveyance, support, or protection of wounded men; models of tents, hospitals, and the like.

Classified Catalogues of the contents of these several divisions are to be kept.

VI.

Library.

The Library contains standard works in every branch of Medicine, and the allied sciences. Attached to the Library there is a Reading room, properly furnished with maps, books of prints, &c., to be kept in the Library, but the Pupils will have permission, under the regulations of the Senate, to take books to their own quarters.

VII.

Length of session.

The business of the session will be arranged by the Senate, in such manner that there shall be at least six months' residence at the School and Hospital, including courses of not less than four months instruction by lectures, &c.; so that there shall be two sets of Candidates ready for examination for commissions every year.

VIII.

Nature of the instruction.

The Lectures and Practical Instructions to be delivered at the School will be directed exclusively to the specialties of the Military Medical Service.

The Courses of Lectures will include the subjects in the following five programmes arranged in such order and manner as the Senate may from time to time decide.

I.

Hygiène.

Lectures and Instructions on Hygiene.

The Course of Lectures and Instructions in Hygiène should be directed to impress forcibly on the mind of the Student the whole principles on which the prevention of disease is based, not only in their scientific but in their practical aspect, and from thence to follow out the application of those principles to the preservation of the health of troops in Barracks, Hospitals, Garrisons, Stations, Camps, and on Marches, both by practical instruction in the problems of Army hygiène, and by reference to maps, diagrams, models, instruments, and other methods of illustration.

Part I.—*Principles of Hygiène.*

Part I. Hygiene, Principles.

Nature and importance.

Hygiène, its nature, importance, historical notices of, objects as regards civil populations and armies.

Literature.

Ancient legislation on this subject.

Physiological laws relating to health.

General statement of physiological laws relating to health and disease.

Influence of age, sex, temperament.

Influence of trades and occupations.

Longevity.

Conditions on which health depends.

External conditions upon which health depends, considered in relation to individuals and communities.

Comparative healthiness of different races.

Physical and mental qualities of different races, influencing their fitness for military service.

External conditions as to climate, &c.

Examination of external conditions and the effect of these on health and life.

General sketch of the meteorology of the different zones.

Effect of temperature on health and longevity: and of sun heat, season, moisture, droughts, rains, winds, calms, storms,

day, night, light, darkness, electricity, apparent lunar influence in tropical climates.

Sun-stroke, snow blindness, day and night blindness.

METEOROLOGY. Meteorology: its importance in the science of hygiène.

Manner of making and keeping meteorological observations.

Barometer.

Sun thermometer.

Maximum and minimum thermometer.

Wet and dry bulb.

Rain gauge.

Electrometer.

Anemometer.

Clouds. Snow. Hail.

Ozone papers.

Reduction of observations.

Description of climates.

Effect of different climates on health.

Influence of light and of sun radiation on health.

Beneficial effect, or the reverse, of change of climate, and precautions required.

Acclimatization.

Positions occupied by the human race on the Earth's surface.

PHYSICAL GEOGRAPHY. Physical Geography. General sketch of the Earth's surface. Land. Water. Mountains. Hills. Plains. Plateaux. Deserts. Valleys. The sea. Rivers. Lakes. Proportions of land and water. Natural drainage. Marshes and marshy ground.

Vegetation. Forests. Jungles. Brushwood.

General geological sketches of the Earth's surface. Stratification. Formations. Surface soils. Subsoils.

Physical geography and medical topography of the British islands, colonies, and possessions.

MEDICAL TOPOGRAPHY. Medical topography of countries where great military operations have been carried on.

Geographical distribution of disease and mortality over the surface of the Earth in relation to the physical geography of different countries.

Sketch of external conditions influencing the geographical distribution of disease, such as climate, elevation, marsh and subsoil miasm; miasm from river and lake banks, and stagnant waters. Salt marshes. Salt and fresh water marshes. Sea coasts. Defective natural drainage, irrigation, heavy rains, damp and stagnant air, and mists in plains, valleys, hollows, forests, jungles, rapid changes of temperature, decomposing organic matter, &c.

Effect on health of the use of marsh water, river water, stagnant waters, shallow and deep well waters, brackish waters, mineral waters.

Diseases produced or aggravated by the use of water containing organic matter in a state of putrefaction.

Influence of elevation above or below the sea-level on health.

Beneficial effects of change of elevation.

Sanitaria. Rules for selecting them.

Rules for selecting military stations.

Medical topography of mountain ranges in our foreign possessions, including the history of mountain climates. Sanitary advantages of such climates in our intertropical possessions. Necessity of establishing European troops in the hill ranges of our intertropical possessions. Advantages of solitary mountains. — Advantages of mountain climates in tropical countries.

Meteorology of mountain ranges, specifying the different phenomena and their influences on health at different degrees of elevation.

Causes of the greater healthiness of certain geological formations than of others.

Effect of emanations from putrescent animal matter on health. Emanations from excreta: from the skin: from the lungs. — Effects of miasmata from putrescent animal matter.

Illustrations of the production of speedy death by such emanations; also of plague, gaol fever, typhus, &c.

Diseases arising from marsh miasm, intermittent, remittent, and tropical bilious fevers, yellow fever, &c. — Diseases arising from marsh miasm.

Diseases aggravated by emanations from putrescent animal matter. — Diseases from putrescent organic matter.

Plague, and fevers of the continued type. Typhus, cholera, diarrhœa, and dysentery, ophthalmia, phthisis, carbuncle, "Pustule Maligne."

Sources of putrescent organic effluvia. — Sources of putrescent organic effluvia.

Overcrowding of the population on a given area. Illustrative examples of this in civil life and in the Army.

Relation of disease and mortality to surface overcrowding. — Surface overcrowding.

Effect of surface overcrowding during epidemics, in increasing their intensity.

Beneficial effect of spreading the population during epidemics.

Influence of defective surface and subsoil drainage, in predisposing to epidemics, with illustrations. — Defective drainage.

Similar illustrations from defective or deficient drainage in towns and buildings.

Fatal effects of sewer air diffused through the atmosphere of towns and buildings.

Miasmata from nuisances, unwholesome manufactories, cesspools, sewers, accumulations of decaying refuse, unburied carcases, and offal, dead bodies, and overcharged grave-yards. — Putrescent organic matter.

Defective burial of the dead. Burial in churches, or under habitations. Illustrations of their influence on health, and in predisposing to epidemic disease.

Overcrowding in cubic space.

Influence of overcrowding in cubic space in the production of disease, especially during epidemic seasons.

Amount of cubic space and superficial area requisite for health in barracks, huts, tents, hospitals, and ships.

Principles on which the amount of cubic space should be determined.

Ventilation.

Ventilation.

Sources of atmospheric impurity in unventilated dwellings from respiration, carbonic acid, animal exhalations from the skin and lungs. Effluvia from foundations of buildings: from fires, lights, cooking, stables, under or near buildings.

Inquiry as to their effects, especially during epidemic seasons, with illustrative examples, taken from the Army and from civil life.

What constitutes good ventilation.

Discussion as to the quantity of air required.

Simple methods of ventilation in use, with models and plans.

Natural ventilation, artificial ventilation, their relative advantages.

DIET.

Relation of diet to health.

Animal diet.

List of dietetic substances, animal and vegetable.

General account of the classes of animals from which dietetic substances are derived.

Geographical distribution of animals.

Classes of animals fit for food to be obtained in different countries.

Comparative nutritive value of beef, mutton, pork, veal, fish; when fresh, dried, salted, smoked: also of cheese, milk, eggs.

Chemical analysis of different kinds of animal food.

Marks of health and disease in animals. Signs of fitness or unfitness for food.

Sanitary precautions to be adopted on board transports for animals.

Diseases, deterioration of flesh and loss of animals arising from neglect of these precautions, and probable injury to the troops in consequence.

Signs of wholesome and unwholesome meat.

Diseases arising from the use of unwholesome or badly prepared flesh or fish.

Cooking.

Different forms of cooking apparatus and utensils.

Cooking, stewing, boiling, roasting, frying, baking.

Benefits to health of change in the mode of preparing food.

Cereals.

List of grains used for food.

Their geographical distribution.

Wheat, oats, barley, maize, rye, millet, rice, &c., their generic and specific characters.

Chemical composition.

Comparative nutritive value.

Signs of wholesome and unwholesome grain.

Diseases arising from the use of unwholesome grains.

Ergotism.

Signs of good, bad, and adulterated flour.

Microscopic characters. Deterioration by insects.

Preparation of grains for food. Biscuit. Bread. Cake. Baking.

Preparation of biscuit. Its constituents. Its nutritive value. Under what circumstances it may become injurious to health.

Bread, its constituents and manner of preparation. Yeast and its substitutes. Characters of wholesome bread. Field ovens.

Methods of preparing maize flour as food.

Bulbs, tubers, roots used as food. Potatoes, carrots, oots. turnips, onions, leeks, &c.

Chemical composition.

Nutritive qualities.

Preparation for use.

Distinguishing characters of wholesome and poisonous roots.

Green vegetables. List of plants used as such. Vegetables.

Their geographical distribution.

Dried vegetables. Constituents. Mode of preparation and preservation.

Peas, beans, haricots. Nutritive value. Chemical constitution. Mode of cooking.

Sugar and Saccharine matter. Nutritive value. Sugar.

Condiments. Mustard, pepper, salt. Their use and abuse. Condiments.

Materials used for hospital diets. Hospital Dicts.

Drinks. Water. Daily quantity per man required for drink, cooking, washing. DRINKS.

Physical tests of pure water. Rain water, its composition and qualities.

Chemical substances dissolved in water.

Hardness and softness, their tests and nomenclature.

Saline ingredients. Calcareous, organic, and metallic ingredients. Their effects on the purity and wholesomeness of water.

Sources of water. Rain, springs, streams, rivers, lakes, wells, ponds, marshes.

Diseases produced or aggravated by impure water: Diseases from impure water.

Fever, cholera, diarrhœa, dysentery, dracunculus, &c.

Mode of action of impure water in producing disease.

Methods of purifying, collecting, storing, and distributing water. Storing and purifying water, &c.

Subsidence, filtration, boiling, distillation, chemical purification.

Collecting by superficial drains, by earthenware, metal, or wooden pipes. Necessity of guarding water sources and wells. Covering reservoirs. Precautions in distributing water to prevent pollution.

Supply of water for animals.

Tea, Coffee, &c. Tea, coffee, cocoa. Their chemical composition, dietetic properties, utility in repairing waste.

Wines. Wines. Kinds, qualities, geographical distribution. Wines obtainable in different countries.

Their healthiness or unhealthiness.

Adulterations, and the manner of detecting them.

Spirits. Spirits. Rum, brandy, whisky, arrack.

Adulterations, and the means of detecting them.

Influence of spirit drinking on health.

Malt Liquors. Malt liquors. Their chemical and dietetic qualities.

Vinegar, lime-juice, acids. Their properties and uses in dietetics.

Adulterations.

Clothing, Accoutrements, Composition, &c. Clothing. Its weight, material, colour. Conducting or non-conducting power for heat. Also the fitting of clothes to allow free play to the muscles and internal organs.

Accoutrements. Their nature, weight. Influence on health.

Clothing for different countries, climates, and seasons. Its essential parts for health, and their composition. Waterproof materials. Stock. Head-dress. Boots and shoes, their kind and quality. Precautions in manufacture required to prevent foot lameness.

General Resumé. General resumé of the conditions necessary to health already discussed. Limits within which these conditions may be imperfectly fulfilled without producing disease.

Operation of neglect of Hygiène in causing disease. Operation of neglect of hygiène on the human organism in causing disease, or in predisposing to it, in different climates, ages, sexes, temperaments, and civilizations.

Great differences in the amount of disease and mortality existing in different countries.

Statistical facts to prove this. Differences among town and country populations in the same country.

Vital Statistics. Vital statistics. Their foundation. Method of collecting facts.

Structure of tables and diagrams.

Tables exhibiting the leading facts of comparative vital statistics referring to the health of countries, districts, cities, and towns, sex, age, occupation.

Examination into the causes of mortality.

Diseases which influence mortality to the greatest extent. Importance and necessity of a common nomenclature of diseases.

Nomenclature. Explanation of the nomenclature. Importance also of one classification for the public service.

Prominence due to zymotic diseases in all classifications. Their importance to civilization. Their especial importance in armies.

Epidemiology. Epidemiology. Importance of this branch of science.

Laws of epidemics.

Localizing conditions of epidemics.

Predisposing effects of season, bad and unwholesome food, deficient clothing, misery.

Mediæval epidemics. Plague, black death, sweating sickness.

Account of the conditions under which these diseases desolated Europe and Asia. Facts as to predisposing conditions that have come down to us.

Modern epidemics, plague, cholera, yellow-fever, typhus, small pox.

Transmissibility of disease. Transmissibility of disease. Inoculation, vaccination, re-vaccination. Illustrative examples of the mitigation and extirpation of epidemic diseases by sanitary measures.

Advantage of treating zymotic diseases, especially cholera, in their early stages.

Sanitary measures and legislation. Sanitary measures. Earliest records of their use for preserving health, and preventing epidemics among Egyptians, Hebrews, Greeks, Romans, &c.

Sanitary legislation.

Authorities, Officers of Health, and Inspectors, their duties and usefulness.

General organization of sanitary police in towns.

Detailed account of recent sanitary improvements introduced into towns, buildings, and country districts.

Drainage, its object and principles. Formation and construction of sewers and drains. Trapping, ventilation, flushing of sewers and drains. Various forms of soil-pans, water-latrines, urinals.

Cleansing and preventing nuisances.

Paving. Its great utility as a means of preventing disease, with illustrations.

Limewashing of houses. Its *modus operandi* and beneficial effects in checking epidemic disease.

Baths, ablution rooms, and wash-houses. Their arrangement and construction.

Improved health. Instances of improved health from sanitary works.

Improved towns.

Model lodging-houses.

Requisites for healthy buildings.

Hygiène as applied to the treatment of disease. Hygiène as applied to treatment of disease.

Pure air and pure water the prime requisites in all Hospitals. Hygiène of Hospitals.

Beneficial influence of light on disease.

Amount of window space in relation to cubic contents of wards.
Cleanliness.
Removal of excreta.

PART II. ARMY HYGIENE.

PART II.—*Application of Hygiène to Armies*

MILITARY VITAL STATISTICS.

Military Vital Statistics.
Army ages.
Mortality due to Army ages in civil life.
Mortality in the Army.
Inquiry as to its amount.
Sanitary condition of civil population out of which the Army is selected.
Process of selecting recruits and proportion of recruits rejected, and for what diseases.
Effect of this on the vital statistics of the Army and of civil life.
Invaliding, its amount at different ages. Causes of invaliding. Deaths amongst invalids.
Actual Army mortality, and comparison with that of civil life.

Mortality of Foreign Armies.

Mortality of different foreign armies. Comparison with that of the British Army.

Mortality in different Arms.

Mortality in different branches and arms of the service, Household Troops, Foot Guards, Cavalry of the Line, Infantry of the Line, Artillery, Engineers, Sappers and Miners, Land Transport, Colonial Corps, black and white troops.
Comparative mortality of troops on home and foreign service.

Comparative Mortality in different Colonies and Possessions.

Comparative mortality in different Colonies and Possessions.
India, Ceylon, Hong Kong.
Africa, Cape.
West Indies.
Mediterranean.
Canada.
Australia.
Mortality in War, Peninsula, Walcheren, Scutari, Crimea, Napoleon's Russian Campaign.

Causes of high Mortality in Armies, Zymotic Diseases.

Examination as to the diseases which occasion the high rate of Army mortality. Zymotic diseases.
Effect of zymotic diseases on the mortality of armies as compared with diseases of other classes.

Diseases of different Colonies and Stations.

Diseases incident to different Colonies and Stations:—India, West Indies, Ceylon, Cape, Mediterranean, Bermuda, Canada.

Sick in Armies.

Percentage of sick in Armies, and from what diseases.

ARMY EPIDEMICS.

Historical sketch of Army epidemics.
Yellow fever, Army typhus, remittents, intermittents, continued fevers, dysentery, plague, cholera, diarrhœa, scorbutus, ophthalmia.
Local and personal conditions with which they are usually connected.

Conditions under which any epidemic may be anticipated.
Epidemic influence. Signs of its approach. Effect on other diseases.

Yellow Fever.

Yellow Fever. Temperature and latitude under which it exists. Yellow fever zones. Account of Army yellow fever epidemics. Barbadoes, Jamaica, Gibraltar, Bermuda, Trinidad, &c.
Their history, origin, mode of propagation. Statistics.
Sanitary defects in Stations, Barracks, Garrisons, and Hospitals with which they have been connected.
Loss to the Army from them.
Sanitary improvements already carried out to diminish their intensity.
What preventive measures are further required.

Army Typhus.

Army Typhus. Nature of the disease. Causes. Influence of sanitary defects in predisposing to it, with illustrations.
Sanitary and other prophylactic measures required to prevent it.

Remittent Fevers.

Remittent Fevers. Their relation to yellow fever.
Their origin. Local favouring conditions. Personal predisposing causes. Parts of the globe where they occur. Facts connected with their occurrence. Influence of marsh malaria and decomposing vegetable matter under high temperature.
Sanitary and other prophylactic measures required for their mitigation.

Intermittents.

Intermittents. Influence of malaria, extremes of heat and cold, exposure to night air, &c.
Prophylactic and sanitary measures required for their mitigation.

Continued Fevers.

Continued Fevers, their local favouring conditions.
Influence of damp, overcrowding, defective ventilation.
Prophylaxis.

Dysentery.

Dysentery. Types of the disease.
Predisposing causes from filthy camps, bad water, monotonous or unwholesome diet, exposure to extremes of heat and cold, night air, &c.
Sanitary and prophylactic measures required.

Plague.

Plague. Instances of its appearance in armies, and the conditions under which it has shown itself.
Sanitary state of towns and districts visited by plague.
Prophylactic measures.

Cholera.

Cholera. First appearance of Asiatic cholera in 1817. History, progress. Subsequent epidemics in India, Europe, America.
Local and personal conditions under which cholera is most fatal. Bad water, overcrowding, defective ventilation, malaria, fatigue, filth, drunkenness, &c. Premonitory diarrhœa.

Precautions against Cholera.

Precautions against Cholera. Evacuating affected Barracks and Hospitals. Camping out. Shifting camps, reducing overcrowding, ventilating, lime-washing, cleansing, spreading

marked papers removed to Surgical lecture.

the men on march. Avoiding bad camping ground on march. Spreading the troops. Short marches. Avoiding fatigue. Regulation of latrines.

Great importance of inspection for the discovery of premonitory diarrhœa.

Scorbutus. Scorbutus. Importance of to armies.

Causes, influence of salt provisions, monotonous diet, want of vegetables, damp, exposure, foul air, other concurrent causes.

Prevention, rations, vegetables, and vegetable acids, lime-juice, lemon-juice, vinegar, acid fruits, vegetables. General attention to hygiène.

Ophthalmia. Ophthalmia. Its great importance in armies.

Predisposing conditions, sunlight, dryness of air, dust, defective ventilation and overcrowding, want of personal cleanliness, bad habits, intentional communication of the disease.

Preventive measures against ophthalmia.

Phthisis Pulmonalis. Phthisis pulmonalis. Its predisposing causes in barracks.

Necessary sanitary measures.

Farunculus, sun-stroke, frost-bite.

Foot lameness, its causes, importance of prevention.

Syphilis. Syphilis, its importance in armies.

Prophylaxis of syphilis.

Prevention of parasitic diseases.

PRACTICE OF ARMY HYGIENE.

Enlistment. Enlistment.

Enlistment. Examination of recruits. Signs of health, of disease, of constitutional defects. General appearance, height, weight, development of chest, abdomen, spine, muscular development. Spirometer. Dynamometer. Marks of medical or surgical treatment. Stethoscopic examination. Pulse, heart, tongue. Eye, hearing, voice, form of feet and hands, skin, glands, marks of vaccination, &c.

Defects rendering recruits unfit for service.

Feigned and simulated diseases.

Explanation of instructions for examining recruits. Great importance of selecting only the best men for service, and the injury to the service of admitting weak and unhealthy men.

Training Exercises. Gymnastics. Training. Drills, exercises.

Games, gymnastics, their nature, and importance in developing different sets of muscles, of respiration, walking, running, arms, &c.

Gymnastic apparatus.

Classification of exercises.

Injurious gymnastic exercises and accidents that may arise from them, and precautions.

Practical importance of gymnastics in improving health and increasing the agility and muscular power of the soldier.

Personal cleanliness. Baths, &c. Functions of the skin in preserving health.

Personal cleanliness, washing, bathing, different kinds of

baths, bathing parades, hygiènic rules and precautions in respect to bathing in different climates and seasons.

Prevention of cutaneous diseases. Scabies.

Prevention of diseases of scalp.

Construction of lavatories. Substitutes on field service. Washing clothes on field service.

Stations. Selection of sites for buildings in different climates, with reference to elevation, exposure, configuration of ground, marshes, natural drainage, nature of surface and subsoil, water supply. Changes of station. Clearing away vegetation. Stations.

Plans and constructions of barracks. Foundations of buildings for warm climates. Drainage of site. Plans and construction of Barracks.

Materials for building.

Arrangement of rooms and staircases to secure independent ventilation of every part of the building.

Size and proportions of barrack rooms.

Cubic space per man in different climates and seasons, and during epidemics.

Means of ventilation and warming.

Amount of window space.

Means of lighting.

Limewashing.

Materials for walls, ceilings, and floors.

Cleansing floors, furniture, bedsteads, bedding.

Latrines and urinals, their structure.

Drainage. Drains not to pass under buildings, and why?

Hygiène of barrack-rooms. Hygiène of Barracks.

State of the air in unventilated barrack-rooms at night.

Ventilation during night.

Chest diseases produced by neglect of night ventilation.

Methods of ventilation.

Cleanliness.

Objections to basement barrack-rooms.

Barrack kitchens, their structure for various kinds of cooking. Necessary utensils. Boilers. Soyer's stove. Open fire-places. Ovens. Gas ovens. Economy of fuel.

Cavalry barracks. Special sanitary precautions regarding them. Position of stables. Arching of stables. Independent ventilation of stables. Cleansing. Drainage. Removal of manure.

Selection of existing buildings to be occupied as barracks. Their position, neighbourhood, drainage, structure, cleansing, ventilating. Allotment of cubic space. Limewashing. Provision of latrines. Selection of quarters. Billeting of troops. Nature of the sanitary precautions and works required. Selection of Buildings.

Sanitary inspections, and reports on barracks. Points to be examined into.

Garrisons. General sanitary police. Drainage. Cleansing. Hygiène of buildings. Casemates, their construction. Their sanitary defects in want of light and ventilation. Special Garrisons.

sanitary precautions required in regard to them, whether used as barracks or as hospitals.

Special sanitary precautions in respect to occupied towns during war.

Duties of Quartermaster-General's Department in respect of buildings, stations, camps, marches.

Duties of Medical Officers under the regulations.

Inspection of towns as to vicinity, position, drainage, cleanliness, population. Water supply.

Sanitary Police. Organization and duties of sanitary police.

Selection of buildings for quarters and hospitals.

Precautions against epidemic disease in occupied towns. Cleansing. Drainage. Removal of Nuisances, &c.

Seaports in occupation. Special sanitary precautions in regard to them. Harbour police. Co-operation of military and naval authorities in preserving the health of seaports.

Sanitary regulations and works for occupied towns and seaports.

Hygiène of Hospitals. Selection of sites for Hospitals.

Exposure

Locality.

Vicinity.

Composition of surface and subsoil. Natural drainage.

Plan of hospitals.

Discussion as to advantages and disadvantages of different plans for sanitary and administrative objects.

Great principle in hospital construction to break up the sick into small numbers under separate roofs.

Number of flats.

Size of wards for administration and salubrity.

Number and position of windows. Windows should be on opposite sides of ward.

No more than two rows of beds in a ward.

Amount of light required in hospitals.

Illustrations of good and bad hospital construction.

Advantages of recent French improvements.

Ventilation of hospitals. Various methods. Artificial, by extraction: by injection of air. Natural, by doors, windows, and fire-places. Best methods of natural ventilation. Their comparative facility, and advantages in securing freshness of the air. Amount of air which can be admitted by natural methods.

Quantity of air requisite for sick. Usefulness of artificial. ventilation in defective hospital construction.

Hospital water-closets. Their structure, position, and ventilation.

Cubic space for sick in different climates. Distance of beds

Warming of hospitals. Advantages of open fire-places. Their great ventilating power. Radiant heat best for warming, and why?

Walls and floors of hospitals should be of impervious materials.

Position of nurses' and orderlies' rooms.

Ward furniture and bedding.

Water supply of hospitals.

Baths, cold, hot, vapour, shower, medicated. Their structure and position with respect to wards.

Hygiènic uses of baths.

Best structure of hospital kitchens.

Hospital cooking and diets.

Diet rolls and tables. Analysis of diets. Explanation and use of diet tables.

Examination and selection of buildings for hospital purposes. Selection of Building for Temporary Hospitals.

Points requiring special inquiry. Position. Drainage. Ventilation. Cleanliness. Amount of accommodation.

Adaptation of buildings. Improvements and works necessary to remove defects.

Instances of disastrous results from sanitary neglects in hospital buildings.

Preliminary inquiries before troops take the field as to physical geography. Medical topography. Climate. Supplies. Numbers, and habits, and diet of the population. Houses, &c. Prevalent epidemics and diseases. Hygiène of Camps.

Manner of conducting inquiries. Subjects of inquiry. Reports. Precautions founded on reports.

Preliminary examination of country. Selection of camp sites.

Marks of positions favourable or unfavourable to health. Examination of vicinity, of surface and subsoil, of drainage, woods, vegetation, products, waters, prevailing winds.

Sanitary reports to Quartermaster-General on these points.

Methods of improving positions by drainage, cutting down timber and brushwood, &c.

Details of sanitary inspection of camps. Arrangement of Camps.

Arrangement of camp.

Order and distance of tents best adapted for health.

Estimate of the number of men on a given area in different forms of camp. Importance of the question as regards health.

Drainage of camp sites, on hillsides, slopes, and flats. Drainage of Camps.
Nature of drainage required in different inclinations of ground and in different soils.

Water supply of camps. Estimate of amount required for men and animals. Water.

Examination of water sources—microscopic, chemical.

Selection of sources. Plans and methods of supply in hilly countries and plains.

Methods of purification of water, construction of filters, tanks, wells, &c.

Arrangements for watering animals indispensable. Proper construction of watering troughs.

Construction, management, distance, and position of camp kitchens. Position and distance of Slaughtering-places. Camp Kitchens.
Latrines, Manure depôts, Stables, and Burial grounds.

Huts. Huts. Materials for construction, stones, planks, panels, wattles. Best form and dimensions.

Preparation of ground. Drainage of site. Raising of foundations above surrounding levels. Utility of this precaution.

Ventilation, and best methods of effecting it. Means of keeping huts cool in hot weather.

Utility of limewash.

Protecting hut sides during cold weather. Good and bad methods of doing so, and their influence on health.

Dangers to health from excavated huts.

Tents. Tents. Preparation and drainage of sites. The importance of this to health.

Methods of ventilating tents.

Bivouacs, &c. Bivouacs, &c. Sanitary precautions required as to ground, shelter, fires, food, clothing, &c.

Field Hospitals. Field hospitals. Selection and drainage of site and arrangement of Hospital.

Hospital huts, their structure, preparation of sites, draining, ventilating, warming, limewashing.

Marquees, their construction, and means of ventilation.

Flooring for huts, marquees, and tents. Boards, punned earth, stones, &c.

Method of paving vicinity of tents and huts.

Field Hospital kitchens. Various forms of construction. Cooking utensils.

Rations. Rations. Sources of supply. Those of every country should be known. Composition of rations on physiological grounds, according to the supplies available.

Changes in rations required to prevent disease.

Practical details of rations in conformity with the work, duties, climate, season, &c., to which the soldier is exposed.

Drinks. Drinks. Catalogues of those in use in different countries. Their wholesomeness or unwholesomeness. Drinks best suited for soldiers in foreign countries and climates.

Practical tests of their adulteration.

Canteens. Canteens. Their regulation and good sanitary state necessary to health.

Intemperance. Means of suppressing it in camps. Disease, mortality, and loss of efficiency arising from it.

Clothing and Equipments. Military clothing and equipments. Their material parts, make, and adaptation to duties by day and night, in different weather, climates, and seasons.

Invaliding. Invaliding. Examination of invalids. Diseases and accidents influencing health and efficiency. Effect of invaliding on the strength of armies.

Burial grounds. Burial of the dead in armies. Position of burial grounds, their regulation.

Troop and sick transport. Troop and sick transports and Hospital ships. Requisites for health, ventilation, cleanliness, deodorising substances, pumping out bilge water. Cubic and superficial area required. Equipments. Sanitary duties of Medical Officers on board ship.

Practical Instruction and Exercises.

Practical instructions on hygiène.

Exercises in examination of recruits.

Exercises in the examination into the qualities of various articles of food, drink, and clothing.

Exercises in the examination into the sanitary condition of country and town districts, buildings, barracks, hospitals, &c., for the purpose of pointing out defects and their remedies.

Exercises in making sanitary inspections and drawing up sanitary reports by Medical and Sanitary Officers.

Exercises on the sanitary regulations for the Army, explanation of their objects, and their application to the prevention of disease.

Exercises on the means of mitigating or preventing epidemic disease in armies.

Exercises in keeping statistical accounts of disease and mortality, with special reference to questions in Army hygiène. Statistical forms and reports in use.*

Exercises on medical topography, showing its sanitary relations.

Exercises on the preparation of camping ground.

Exercises in the routine of sanitary inspections and reports by Inspectors and Deputy Inspectors.

Drawings and Models. Drawings and Models of improved barracks, hospitals, tents, marquees, huts, kitchens, transport ships, drainage and ventilating arrangements, also illustrations of various temporary sanitary expedients, &c.

Poisons. Poisons.

Signs of poisoning. Medico-legal inquiries on these points. Detection of poisoning.

Remedies.

Precautions in the use of poisonous substances.

Signs of death.

Death from violence. To detect the manner of it.

II.

Clinical and Military Medicine.

Clinical and Military Medicine. This Course will consist of two parts:—

1. Clinical Instruction in the Hospital.
2. Systematic Lectures on the Diseases of Armies.

The Professor will give instruction at the bedside, more especially on the more prevalent diseases of armies. He will exercise the pupils in drawing up accurate histories of cases of disease under treatment. He will examine and practise them in the various methods of diagnosis, by auscul-

* Whenever possible, the Student might be allowed to acquire practice in keeping Statistics in the Statistical Branch of the Army Medical Department.

tation, the use of the microscope, and by the application of chemical tests. He will also deliver clinical lectures on the cases under treatment. In this part of the course the Professor will have an opportunity of illustrating the management of Hospitals, as to cleanliness, ventilation, nursing, &c., and of indicating the Hospital diets in different diseases and stages of disease, and during convalescence.

The method of drawing up Hospital Reports will also be properly taught in this part of the course.

The Professor will deliver lectures on the following subjects:—

History of Military Medicine, with notices of the more important writers on the subject.

The general character, habits, and duties of the soldier, and the influence of these in modifying his diseases.

General view of the diseases to which soldiers are most liable, from exposure, fatigue, intemperance, &c., in different climates.

General view of the medical history and management of yellow fever, remittents and intermittents, dysentery, cholera, scorbutus, phthisis pulmonalis, venereal diseases, &c., in different countries and climates.

Lectures and Clinical Instructions on Mental Diseases.

Medical history of the more remarkable epidemics which have occurred in the British and other armies.

Nature and medical management of the more prevalent diseases in different climates, in the British Colonies, and other places where our troops may be stationed, as in the Mediterranean, West Indies, coast of Africa, East Indies, &c.

Beneficial effects of change of air and of climate on invalids, and in convalescence from disease or wonnds, and in deteriorated health arising from long residence in unhealthy climates. Attention to this of great importance in maintaining the efficiency of troops serving in tropical climates.

Advantages of frequent medical inspection of troops, particularly in unhealthy stations, with the view of detecting the commencement of disease.

Hospital regulations, books, and forms.

Regulations regarding sick certificates, invaliding, and recruiting.

Instruction in Hospital duties.

III.

Clinical and Military Surgery.

Clinical and Military Surgery.

This course, like the preceding, will be of a special and practical character, and will have constant reference to Clinical instruction in the Surgical wards of the Hospital. The instructions and lectures will comprehend the following subjects:—

1. History of Military Surgery. Measures adopted by the Military Powers of Europe to improve the Art of Military Surgery.

2. Surgical Anatomy, including Regional Anatomy, with special reference to wounds. Operations on the Dead Body, especially such operations as are required in the field.

3. Lectures on Inflammation; its immediate importance and constant relations to Military Surgery, as a morbid and curative Agent.

4. Burns and Scalds. Ulcers.

5. Hospital Gangrene.

6. Wounds, Gunshot, Incised, Punctured, Lacerated, Wounds of Arteries and Nerves. Traumatic Aneurisms.

7. Tetanus.

8. Wounds of the Head, Face and Neck, Spine, Thorax, Abdomen, Extremities. Fractures and Luxations. Poisoned Wounds.

9. Amputations.

10. Dental Surgery.

11. Ophthalmia.

12. Syphilis, Gonorrhœa, Gonorrhœal Ophthalmia, Gonorrhœal Rheumatism, Strictures of the Urethra.

13. Dracunculus, or Guinea-worm.

14. Farunculus, or Boil.

15. Feigned and Factitious Diseases.

16. Application of Bandages and Splints.

17. Transport of Sick and Wounded; fitting up of transports, and hospital ships; the use and selection of Ambulances. Proportion of sick and wounded in Armies.

18. The Examination and Selection of Recruits.

19. The Examination and classifying of Invalids.

20. Proportion of Medical and Surgical means and Appliances to Corps and Divisions in different Climates.

21. Surgical arrangements on landing on an enemy's Coast: on taking the Field; and during and after a general action. Surgical arrangements with an advancing Army; with an Army in retreat; with a besieging Force. Trench duties and arrangements.

22. Surgical arrangements within a besieged town or fort.

IV.

Lectures and Demonstrations in Pathology and Morbid Anatomy.

Pathology and Morbid Anatomy.

Lectures and demonstrations on Morbid Anatomy, illustrated by specimens, selected from the Museum, and aided by accessory methods of observation, such as carefully recorded Clinical Histories of Cases of the more important and severe Diseases prevalent at the Military Stations abroad.

1. A series of specimens to illustrate the Morbid Anatomy of Dysentery as it has existed in the East and West Indies; in the Peninsula; in the Crimea.

2. Specimens illustrating the Morbid Anatomy of the Liver in connection with Dysentery.

3. Specimens illustrative of the lesions which occur in Fevers, similarly considered, especially of Typhus Fevers, and of Malarial, Littoral, or Paludal Fevers.

4. Specimens illustrative of the Morbid Anatomy of Cholera.

5. Specimens to illustrate Scorbutic States and Types of Disease.

6. Specimens illustrating the nature of Parasites and of Parasitic Diseases, such as Tape-worm, Guinea-worm, and the like.

7. Specimens illustrating the general Morbid Anatomy of Parts, independent of Zymotic Diseases.

8. Specimens illustrative of the Morbid Anatomy of Wounds and Injuries.

9. These topics might be also illustrated by recent specimens of Morbid Anatomy, obtained from post-mortem examinations of patients dying in the Hospital.

Practical instruction will also be conveyed—

1. By the opening of dead bodies, when special instruction will be given as to (*a*) how post-mortem examinations are to be made; (*b*) how the viscera are to be examined; (*c*) and how the results of disease-processes are to be distinguished from post-mortem changes and other pseudo-morbid appearances.

2. In this practical work of manual labour, dexterity would be acquired by the student. Special instruction will be given to each individual as to how he should use the various means and instruments of research by which departures from the state of health may be appreciated, as for example, the determination of the absolute and specific weights of the solid organs, membranes, and fluids in health and in disease, the determination of the bulk and capacity of parts and cavities.

3. A full course of practical instruction in the use of the Microscope, and its application in determining the nature of diseased conditions.

This Microscopic Course will embrace instruction—

(1) In the arrangement of the instrument, and how it is to be manipulated.

(2) In the various methods of examining objects by it, of drawing the objects seen, and of measuring the dimensions of the objects examined.

(3) In the examination of tissues and morbid products, and the application of chemical agents for their analysis under the microscope.

(4) Instruction in the preservation of microscopic objects.

One lecture, or series of lessons, weekly, till the topics are exhausted, will be sufficient for the microscopical instruction.

Practical instruction will also be given as to how specimens illustrative of Disease, Comparative Anatomy, or Natural History, are to be preserved, and sent home from abroad.

V.

Lectures and Practical Instructions on Applied Chemistry.

Applied Chemistry.

The Course of Chemistry and Pharmacy given in the Medical School must necessarily take for granted that the Students, having already obtained Medical Diplomas or Degrees, are sufficiently acquainted with Chemistry, except in the special applications of that science to practical Army purposes, and for the illustration of questions of hygiène. This will exclude all merely elementary instruction, and confine the business of the course to the following classes of subjects:—

The Atmosphere.

Pressure of the atmosphere at different elevations. Barometer, mode of construction and observation, use of the barometer for the measurement of heights.

Temperature of the atmosphere, proper construction of thermometers, correct method of observation of wet and dry bulb thermometers, maximum and minimum thermometers.

Determination of the elasticity and amount of vapour in the exterior atmosphere and in a confined atmosphere.

Hygrometers, their theory and practical uses. Determination of the relative moisture of the air over marshes and over dry regions.

The temperature of the boiling-point of water, and its correspondence with the diminished pressure of the air.

Formulæ for ascertaining altitudes by the boiling-point of water.

The preceding includes generally meteorological observations, to which may be added theories of dew, showers, rain, snow, hail, &c., effect of heat on air, laws of expansion, laws of the winds and hurricanes.

Its chemical constitution.

Chemical constitution of the atmosphere, normal constituents. Organic matter and gases containing carbon and hydrogen (?). Proof of the presence of these elements and compounds in the air, modes of demonstrating its composition. Analysis and synthesis of common air, its composition in different localities—temperate and tropical.

Atmospheric impurities.

Effects of respiration of animals on confined atmospheres. Analysis of large masses of air. Chemical nature of impurities in the air of private houses and hospitals, excess of

carbonic acid, and deficiency of oxygen: organic matter, and moisture deposited on walls, furniture, &c., of unventilated rooms. Composition of the air in the holds of ships, and of sewer atmospheres. Chemical modes of disinfecting impure atmospheres by chlorine-sulphurous acid, chloride of zinc, and other metallic preparations. Theory of their action.

Water. Composition of pure water. Physical characters of water, density, colour, odour, compressibility. The Gulf Stream. Influence of currents on climate. Ice, its distribution in the Arctic and Antarctic regions. Effect of accumulations of ice on climate. Vapour, important influence of the vapour in the atmosphere on climate.

Chemistry of the gases. Chemical constituents of water. Distilled water required in certain diseases, best and most economical modes of distilling water, distilled water required in certain localities where alone brackish water exists naturally. Filtration of water, different kinds of filters. Removal of colour from water. Analyses of waters. Sources of the contamination of water. Selection of the supply of water for ships, camps, and barracks. Mineral waters, nature and analyses. Connexion with geological strata. Hot waters, their connexion with volcanic action.

Chemical characters of *Chlorine* as a disinfecting agent.

Carbonic acid. Carburetted hydrogen or marsh gas. Olefiant gas. Coal gas, modes of analyses and detection of impurities injurious to health. Methods of estimating deleterious effect of these illuminating agents on the atmosphere of rooms and wards. Mode of removing impure products of combustion in connection with ventilation.

Phosphoretted Hydrogen, its occurrence in marshes. Sulphurous and sulphuric acids, existence of the former in the atmosphere of cities as a product of the combustion of coal and gas, likewise in the air of rooms and hospitals.

Sulphuretted Hydrogen in the air of sewers and impure atmospheres.

Chemistry of non-metallic bodies. Vegetable and animal charcoal. Wood and mineral coal. Modes of analysis. Methods of preparing charcoal for disinfecting, and other purposes.

Phosphorus and its compounds. Diseases produced by the manufacture of lucifer matches.

Sulphur and compounds. Geological derivation in connection with volcanic regions, originally evolved as sulphuretted hydrogen from volcanoes and hot springs.

The following division will be studied by constant testing and analysis in the laboratory.

Chemistry of metals. Alkaline Bases.—Natural alkaline salts distributed over the Globe. Modes of discrimination and analyses. Manufacture of gunpowder. Mode of detecting adulterations.

Alkaline Earths.—*Barium* and compounds. Pharmaceutical preparations.

Strontium and compounds.—Application to fireworks.

Calcium and compounds.—Lime as a mortar, and as a decomposer of organic substances and disinfecter. Sulphate of lime for casts.

Chloride of Lime or *Bleaching Powder*.—Manufacture of as a disinfecting agent. Mode of testing its value.

Magnesium and compounds.—Hydrate of carbonate, sulphate of magnesia, or Epsom salt, manufacture of. Pharmaceutical preparations. Detection of adulterations.

Earths. *Aluminium* compounds.—Alum manufacture. Value of as a preservative of cotton from combustion; as a medicine. Pharmaceutical preparations.

Iron, manganese, nickel, cobalt, copper, silver, chromium, uranium, molybdenum. Mode of testing and analyzing the ores. Geological source of the ores. Copper as a poison. Antidotes. Pharmaceutical preparations of these metals. Mode of detecting adulterations by tests and microscope.

Zinc, lead, tin, bismuth, mercury, antimony, arsenic. Ores and their geological sources. Modes of testing and analyzing ores of these metals. Pharmaceutical preparations. Adulterations and processes for detection. Detection of these metals as poisons by tests and microscope. Gold, platinum, palladium, rhodium, &c. Ores, and their geological sources. Testing, analyzing, and assaying. Pharmaceutical preparations. Adulterations and discovery of impurities.

Analysis and detection of mineral poisons. Mineral Poisons.

Substances forming the main portions of Plants and Trees.—Cellulose and ligneous matter. Organic Chemistry.

Substances found in the Cells of Plants.—Starch, flour. Modes of Analysis. Detection of adulterations. Potatoes. Diseases affecting them. Yams. Bread fruit. Cassava. Inferiority of arrowroot, sago, &c. as food. Laws regulating the proper constitution of well balanced food.

Substances found in the Juices of Plants.—Gums. Pectic acid. Sugars. Changes produced in sugar by heat, vegetation, fermentation. Spirits, use of as food and medicine. Different species in various countries. Brandy, rum, gin, whiskey, &c. Wines, mode of manufacture of different kinds. Determination of purity. Application in health and disease. Vinegar, acetic acid, oxalic acid, uses in medicine.

Vegetable Alkaloids and Allies.—Quinine, morphine, strychnine, caffeine, theine, coneine, nicotine, &c. Tests and adulterations.

Colouring matters, and plants supplying them.

Acids secreted by Plants.—Tartaric acid, citric, malic, tannic, meconic, konic, &c. Fatty substances employed as oils for burning and for candles. Soap making. Wax. Essential oils.

Analysis and detection of vegetable poisons. Vegetable Poisons.

Study of the changes produced in food by cooking. Convenient means of cooking. Stoves. Application of gas and oil lamps to cooking utensils. Application of steam to cook- Animal Chemistry.

ing. Secondary digestion or conversion of food into blood. Analysis of the blood, composition in different diseases. Analysis of the various parts of the body, bones, &c., nutrition or deposition of solid matter from the blood. Flesh, or muscle, composed of fibre and fat essentially. Mode of judging of the wholesomeness and diseased state of animal food. Meat of dead animals, slipped calves, measley pork, raw ham containing entozoa capable of communicating disease.

Rations and Diets. Secretions.

Chemical constituents of rations and hospital diets.

Secretions.—Milk, analysis of adulterations, milk of different animals, value in disease.

Urine.—Analysis in the healthy and diseased states, detection of sugar and albumen, indigo, crystalline deposits. Use of the microscope. Analysis of gravel and calculi, and consideration of the scientific treatment of urinary diseases, from a proper acquaintance with the chemistry of the animal system. Urine as a manure, mode of preserving its ammonia in barracks and stables.

Nature of the skin and skin diseases. Chemical composition of skin. Mucous membranes. Importance of preserving the skin clean by sponging, brushing, bathing—hot and cold. Function of the skin. Exhalation of gas and vapour.

Respiration by the lungs a source of impurity to the air. Relation of the intestinal surface to the respiratory or pulmonary surface to be properly observed in reference to health. Chemistry of the diseases of the lungs. Tubercles. Modified albumen. General relations of the system to the external world. Animal heat.

The Professor of Chemistry will also give practical instruction in the extemporaneous preparation of medicinal substances, and in dispensing.

Section III.

RULES FOR THE EXAMINATION OF ASSISTANT-SURGEONS PREVIOUS TO PROMOTION.

Examinations for Promotion.

This examination is intended as a test for promotion, and may be taken at any time after the Assistant-Surgeon has served five or more years.

When Assistant-Surgeons have served the requisite time they will be examined in the following manner:—

A series of printed questions, prepared by the Examining Board, will be sealed and sent by the Director-General to the Principal Medical Officers of Stations where Assistant-Surgeons may be eligible for examination. It will be the duty of the Principal Medical Officer of the Station to deliver these sealed questions to the Assistant-Surgeons, and to see that they are answered without the assistance of books, notes, or communication with any other person. The answers are to be signed, and delivered sealed, to the Principal Medical Officer, who is to send them unopened to the Director-General, together with a certificate from the Surgeon of the Regiment, or other superior Medical Officer, that the Assistant-Surgeon has availed himself of every opportunity of practising surgical operations on the dead body.*

The Assistant-Surgeon will also be required to transmit, together with his answers to the Director-General, a Medico-Topographical account of the Station where he may happen to be at the time, or of some other Station where he may have been resident sufficiently long to enable him to collect the necessary information for such a report. Failing this, he will send a Medico-Statistical Report of his Regiment for a period of at least twelve months.

If the Examining Board is satisfied with the replies to the questions, and the Director-General is satisfied with the certificates and with the Medico-Topographical or Statistical Report, the Assistant Surgeon will be held qualified for promotion.

The Assistant-Surgeon will thus be subjected to three separate examinations within the first ten years of his service,

* The Assistant-Surgeon may see this Certificate before it is sent to the Director-General.

each examination having a definite object. The FIRST, to ascertain, previous to his admission into the service as a Candidate, his scientific and professional education, and to test his acquirements in the various branches of professional knowledge. The SECOND, after having passed through a Course of special instruction in the Army Medical School, to test his knowledge of the special duties of an Army Medical Officer; and the THIRD, previous to his promotion, to ascertain that he has kept pace with the progress of Medical Science.

SIDNEY HERBERT.

War Office, October 17, 1859.

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For Her Majesty's Stationery Office.

3 pp. LP. 14/4

My dear Dr Gibson

When we met at our last Senate meeting you asked our opinion as to whether the terms of admission to the Service might not advantageously be altered in this way; viz ~~a selection by a Committee in London of any gentleman wishing to enter the Medical Department, followed by a practical examination at~~ ~~that gentleman des~~ the grad

that a Committee in London should select a number of gentlemen to proceed to Netley where they should be tested by service in the wards & retained or not ~~if they~~ according to their fitness.

At the time, we were not prepared to express any very definite opinion but on consideration we are all of opinion that this plan would not be at all a good one and we ~~think~~ have no doubt you would like to know why we have come to this conclusion ~~opinion~~. My colleagues therefore have asked me to write to you on the point. But I shall have no opportunity of reading this letter to them, so though I believe it expresses their views correctly, I am alone answerable for it.

Sir J. Gibson's proposal to substitute selection of Candidates by a Cttee instead of by Competitive Exam:n — Remarks on

1. We conceive you will have great difficulty in the selection in London.

You must either receive

All men with legal qualifications, or

Certain persons who bring recommendations

If you adopt the latter plan how are you to choose the persons who are to give recommendations? If you restrict it to certain schools of medicine or to certain teachers, you will at once have objections raised from all other schools & teachers. No single teacher in the United Kingdom will allow another to have such an advantage. If it were known that 3 or 4 schools had the monopoly of recommendation it would be ~~absolute~~ ~~tantamount to a great~~ for them a great attraction & to all other schools a serious loss, a loss which their interest would compel them to resist.

Without debating this obvious point it is clear to us that you will be forced by an amount of pressure that no Government can stand to receive the applications of all legally qualified persons.

Then you have to choose a certain number.

How will you do this?

If you choose the men with what you deem the best degrees, an outcry will be at once be raised from the licensing bodies whom you exclude. And besides this it is obvious that the best men ~~do~~ need not necessarily have the best degrees. It is clear to us that such pressure will be put on you ~~you~~ you will be forced again to make all legal degrees of equal value.

and that such a plan might exclude excellent men.

~~We look upon it as certain~~

If not by degrees you must select by Testimonials. But there is no worse plan than this. Testimonials are of all documents the most worthless. They are granted by private friendship, or goodnature, or carelessness, and are not worth any consideration. In fact the most forward & pushing men often get the best testimonials while the modest & retiring men do not ~~like~~ to apply.

Then your Committee will have to meet the pressure of interest which

is sure to be put upon it. It will be the vicious system of old days, ~~adopted which would be indeed unfortunate if~~

The system of Competition completely prevents this, as the answer to any private interest is ready; the examination has purged the men.

But your Committee will have no such answer and consequently we look upon it as very probable ~~certain~~ that their choice will ~~either~~ be influenced by persons from without, ~~or they will be~~ If not this is not the case at first, it will eventually come to this.

Contrast with this difficult and imperfect mode of selection, the fair, & open plan of examination, which gives a result which cannot be challenged or objected to. What would you gain by the change? What difficulties would you not encounter? If the examination

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is unnecessarily deterrent, alter it, but do not surrender what is not only the best but the only practicable plan of selection, unless you are prepared again to make the service a close one and to select just such men as you please, in the way Sir James McGrigor did. But this we presume you do not contemplate. In fact we do not believe it could be done, after the door has been once opened.

2. Admitting however that you ~~have~~ can devise~~d~~ a scheme for selecting a certain number of men, you send them to Netley ~~not~~ to be tested by the Professors.

~~Now to this we have very strong objection.~~ ~~This seems to us simply transferring the examination to Netley~~,

As regards ourselves we consider this would be a mistake. ~~We have to teach matter which the~~

Our province is teaching, not examining.
We take great pains to teach what the men
cannot learn elsewhere in the belief that except
in extremely rare cases, the London examinations
decides us from all men except those who are
certain of commissions. But if we are to
teach for 3 or 4 weeks & then find a man
is incompetent or reluctant, it all thrown away.
Regularity of teaching becomes impossible &
suppose that a number of men
a number of men come down for 3 or 4 weeks & sent
some are
away, & another must then take their places;
are our comers to begin again & how are
we to live in the new comers? A dozen
a 20 men may in this way be found
to be incompetent in the course of the
session. Do remember your principle
of selection will never secure that the
then the new comers must be
Newcomers, some of them will be incompetent &
must be supplied by others; how are they to be taught
when the teaching of the session is perhaps half over.

The system would simply be destructive of
the school teaching.

Supposing however that the men arriving
at Netley are put through an examination
at once? Then this is simply the transference
of the examination from London to Netley,
with this alteration that if some are found
incompetent, they must be sent away,
others must be sent down, another examiner
must be substituted, & thus in this way
examinations must go on till we have
weeded out all the incompetent men
who have been sent down (& not the number you require)
Till all is
finished no teaching can commence, &
the men who passed first will be idle.

You will say perhaps that
the selection in London will become as good
as the examination nowadays, but on this
point we can only argue from general
principles. I can new is that it would not do so.
In effect however you
admit that it would not do so, as
you propose ~~to~~ a test examination

at Netley.

Then as regard the men themselves. We look upon it it would be a much greater disgrace to a man to be selected &c to Netley & not be kept there than to ~~try~~ be beaten in a competitive examination in London. ~~In~~ In fact it would be very hard upon him to be sent away again.

The truth is it is only incompetent men who are deterred by the London examination. Make the service attractive & there will be no lack of men, any more than there are for the Indian Civil Service or for Sandhurst.

I feel quite sure you will excuse this long letter & will ~~understand~~ recognize the object we have in writing it which is ~~to put before you our views, what~~ ~~to assist you in forming an opinion on the~~ ~~important point by placing before you our views~~ ~~point~~ to aid yours as far as we can by what we know you desired us to give at our last meeting, a free expression of opinion.

Mr Sydney Herbert

28 Oct. 1857

LP. 14/5

(4 pp.)

My dear Sir

I find in the Medical Times & Gazette, a copy of which I send you a very complete statement of the Regulations of the different Examining bodies in the United Kingdom. I have therefore not thought it necessary to obtain any additional information, although I can do so at once if you do not find all that you require in this journal. ~~With~~

With respect to the several topics mentioned in your letter with best to be considered seriatim, and as you request it, I will give you my views without reserve, although I do not think you will find anything you have not yourself considered. Qualifications of Candidates & Admission examination.

The rules lately drawn up for the East India Company's Medical ~~Service~~ Service & the Examination now in force in that Service, ~~may be taken as a model~~ might be adopted in the first instance. The principle followed here was to admit everyone to competition who had any legal qualification and to depend rather

upon the Examination as proof of fitness, than upon mere evidence of previous education. Candidates for the I. S. C service are ~~under~~ permitted to show that they have received a very liberal ~~and and complete~~ medical education & to furnish testimonials of fitness, but evidence of this kind is quite subordinate to that derived from the examinations.

The East India Comp^{y} examination includes — Anatomy
Physiology
Medicine (with diseases of woman & children)
Surgery
Natural History
~~and the vacuum~~

and is conducted in writing, orally, & practically ~~by the vacuum~~ (& Operations & investigation of patients).

2 The organization of the Netley School.

The principle ~~of~~ left in view in its adaptation from that latter seems to be, that the teaching of this school should be altogether special. There is no doubt a temptation to supply in it some of the present deficiencies of the ordinary medical schools, but this ~~would be a mistake~~ should be resisted. ~~The Candidate~~ We must trust to the institution of examinations like the one ~~present~~ prepared to induce the medical schools to improve their modes of teaching, and not encroach on what should be their functions in a school, which will have enough to do with subjects which the ordinary schools will never teach. If an exception is made to this it should be in the subject of Hygiene. Properly the medical schools should teach the principles of Hygiene, and the Netley Professors should merely teach the application of these principles to the life of camps and armies, but as Hygiene is at ~~most important~~ present nowhere systematically taught and as nothing can be of greater importance for the Army Surgeon it might be as well to teach it fully

at Netley with the understanding that as soon as it is taught in the ordinary Schools its special application only will be taught at Netley.

I ~~May be~~ assumed that there will be at Netley

1. A Professor of Military Medicine & Hygiene
2. A Professor of " Surgery
3. Curator in charge of the Museum
4. Chemist in charge of the ~~drugs~~ laboratory & drug museum.

Candidates who have passed the ~~second~~ preliminary exam^n will be required to be at Netley six months before they can pass the 2^nd exam^n & be eligible for ~~promotion~~ service.

~~The amount~~ During this time 6 hours work daily for 5 days in the week and a shorter period on Saturday would be exacted from each Candidate; and this would be made up by attendance on lectures for 12

hours, in the museum a laboratory for 2 or 3 hours, in the wards or in duties fixed by the Professors for 2 or 3 hours. ~~On Saturday mostly Hospital duties must~~

Details of duties of the Teachers

Each Professor to ~~vowed~~ lecture or to give instruction equivalent to a formal lecture during 5 of each of the six months over which one course extends; 2 months to be allowed for vacation, it being so arranged that the two Professors do not discontinue lecturing at the same time. The curator to have a similar arrangement. ~~The duties of the Chemist in charge of the laboratory~~

Allowing ~~once~~ being made for vacations at Christmas Easter &. & for loss of time in attendance on examinations &c it may be calculated that each Professor will deliver 70 to 80 lectures in each half year or 140 or 160 in ~~all~~ the year

These lectures would be thus distributed

The Professor of medicine in each yearly course would give ~~would give~~

(a) 20 to 25 lectures on ~~the practice~~ those diseases which are especially prevalent in the English possessions and among troops; this would be a kind of supplement to the courses of lectures on the practice of medicine which the Candidate will have already attended in the ordinary Medical School, & will be illustrated by reference to cases in the ward;
~~20 to 30 lectures on Hygiene~~
if possible they will be in part ~~[illegible]~~ clinical lectures –

(b) ~~25~~ 35 to ~~30~~ lectures on Hygiene including its special application to the movements and operations of armies; their barracks, duties &c &c on recruiting, invaliding, and

(c) 10 to 15 ~~[illegible]~~ lectures on the construction and management of Hospitals, on the arrangements for dietary & washing under various circumstances and ~~[illegible]~~ in different climates &c

the object of the course being to make the Candidate thoroughly acquainted with every detail ~~both of the~~ of ward, kitchen, and laundry ~~which may be useful to him~~, as well as with the best arrangements to be made when regular Hospitals cannot be had & when the ordinary means of working Hospitals drop through from any cause. If there be a special Professor of Hygiene he will take these 2 last courses & the Professor of medicine will devote to a greater extent the first part & especially the clinical teaching

The Professor of Surgery would give in each course

(a) 20 to 30 lectures on Military Surgery in which like the corresponding part of the medical course the surgical injuries met with in warfare would be more fully treated than is usual in Medical Schools.

(b) 15 to 20 practical demonstrations and examinations in Operations, with a view especially to injuries received in war. Although each Candidate will have previously been examined in Operations the importance of this subject will justify a departure from the principle already alluded to of not teaching at Netley anything which can and ought to have been previously ~~learnt.~~ taught elsewhere

(c) 20 lectures and demonstrations of the Arrangements of field Hospitals in a campaign; the mode of conveying in different countries sick and wounded, ~~so as to enable the Candidates fully ac~~

The curator of the museum would give
Demonstrations drawn from the museum
and the deadhouse of the effects of the
diseases which chiefly affect soldiers, this
part of the course being combined if possible
with the more systematic and clinical
teachings of the Professor of Medicine on the
same subjects — Instruction in the mode of
preparing and putting up preparations &
perhaps in the use of the microscope, although
the Candidate ought to have previously learnt
this.
Demonstrations in Natural history

The Chemist in charge of the Laboratory and
the drug department will give a certain
number of lectures directing the Candidates
attention to the rarer drugs which he will
~~may meet and employ if he is placed~~
~~of the two position~~ be met with
during his foreign service and which
may be used as substitutes for the

more common
dups ~~which~~ He will also lead what are ~~teach~~ the various articles of food & luxury used by the natives among whom the British Soldier ~~served~~ serves; ~~and such a kind~~ This part of the ~~way~~
course being supplementary to the hygienic lectures on diet and food given by the Professor of Medicine.

In addition to these duties
the Professors of Medicine and Surgery should have charge of a certain number of patients

The curator of the museum would perform & caused to be performed by the Candidates the post mortem examinations, & would attend to the Museum.

Duties of the Candidates.

The Student will attend the lectures demonstrations &c and will also take a

share in the Hospital duties.

The Hospital duties might be advantageously divided as follows.

~~All Candidates who have been made~~ ~~3 months~~

During the first 3 months of attendance the Candidate should not have charge of patients but should attend the practice of the Professor who will test his clinical knowledge by making him examine patients in their presence. A very good plan also is to select ~~a~~ cases & make the Candidates examine & write a commentary upon them. The system in part of writing commentaries might be developed to a great extent with much advantage.

After 3 months work of this kind the Candidate should receive charge of a certain number of medical and Surgical cases; he should treat these just as the Assistant Surgeons of the Army now do. ~~He~~ should be from ~~h~~ During this 3 months he should also be ~~a~~ made familiar with the various forms of returns required in the Army. ~~He~~ should be especially taught the importance of accurate statistical returns as ~~to that~~ I should learn the importance of accurate statistics as giving information not merely as to the number of sick but ~~a~~ as to the causes of sickness. The whole subject of nomenclature & statistical arrangements ~~and~~ should practically be laught at this time though probably it would have been previously given in the ~~as~~ lectures on Hygiene Medicine.

~~As the older Candidates named~~ ~~thus~~ If the Candidates are sent down to Netley every 6 months it would be well to arrange that ~~just as many~~ only half the

As the senior Candidates would thus have charge of the patients the Professors would be much in the habit of overlooking & would not visit each case daily but would see merely several selected cases.

There would be no necessity for any Medical Officers such as Staff Surgeons & Inspectors of Hospitals.

During this course of study it would be desirable that if possible the Candidates should on the occasion of any great field day at Aldershot - against temporary Hospitals, & as far as possible imitate all the preparations made on an actual field of battle.

LP. 14/5

3. Second Examination

On the various topics treated in the lectures and demonstrations, and by ~~practical~~ visiting Commentaries on patients in the wards &c — No further detail is necessary on this point. The Professors should assist at this Examination but should not wholly conduct it.

4 Government of the School.

There should be a head not engaged in Teaching; whether this should be a medical man or not — is a matter for great consideration. ~~I am inclined to think~~ I am inclined to think he should not — as the Professors should be professionally paramount in their departments & this might be difficult with a medical head. The two Professors if aided by a clerk would be able to carry on all

the official detail of the Hospital except perhaps the invaliding which might be done by an Army Surgeon especially told off for that duty.

Senate

A senate composed of the Director General, the Under Secretary of State for War, two civilians (not both medical) appointed by the Crown and the two Professors of Medicine & Surgery would regulate all the details of the School. No Professor should have power to alter his course without leave from the Senate though at first it might be well to allow some latitude in this respect, and

Letter to Mr.
Sydney Herbert
Oct. ~~Nov~~ - 1857.

Examns for appts in the
Army Medical Services

Copy

LP. 14/6

War Office
29th December 1860.

Sir,

I have laid before the Secretary of State for War your letter of the 10th instant enclosing a Report by the Professors of the Army Medical School in reference to the question whether the position taken by the Candidates in the competitive examination in London is to be altered by the result of the Chatham Examination.

In reply I am to acquaint you that Mr Herbert approves of the course recommended by the Professors with regard to the Examination to be held in February next. I am however to add that though Mr Herbert is inclined to think that acquaintance with Special Army Service ought to be an important element in fixing

The Director General
of the
Army Medical Department

fixing the relative places of the young Assistant Surgeons, yet the subject is so entirely professional that he would hesitate before giving any opinion and at any rate he considers that additional experience should be gained before any change is made in the existing regulations, which certainly whether right or wrong contemplated only one competitive examination.

I am &c

/Signed/ Fred Poulet

W.O. 29th Decr 1860

Jr Paulet to Dirs Genl

(See Jr Wars opinion on Examn
of Candidates at close of 1st Session &c)

1

Copy

LP. 14/7

Medical
19024
14.15

Army Medical Depart.
5th January 1861

Sir,

I have the honor to forward for the information of the Professors of the Army Medical School the enclosed copy of a letter received from the War Office, substituted for the one laid before the Senate at our last meeting, containing the opinion of Mr. Secretary Herbert on the question as to whether the position taken by the Candidates in the competitive examination in London is to be altered by the result of the Chatham Examination.

I have &c

/Signed/ J. B. Gibson
Director General

Dr. Keene
P. M. O
Fort Pitt
Chatham

3rd Jan: 1861.

Dir.r Genl.

by

P. M.O. Hume, Chatham

Examn of Cands at close of Session.

LP. 14/8

Extract from Minutes of Senate
of date 20th January 1851.

"The Professors entertaining
the unanimous opinion
(considering the peculiar
circumstances of this Examination)
that it would be desirable
not to alter the order of Merit
of the Candidates as acquired
by them at the London Examination
Dr Aitken enquired of the Ld. J.
if he too was now of this opinion
The Dep. Journ. said he
thought it would be right to
gazette the Candidates according
to the order in which they stood
at the London Examination -
but, that he should be guided
in his choice of Regiments, and Stations
by the results of the Chatham Examination
in accordance with his views expressed
at the opening of the School" -

20th Feb: 1861.

Extract from Minutes of
Senate A. M. School

Position of Candidates at close
of Session. &c.

Permanent Appointment of the Professors of the Army Medical School

(2pp.)

ZP. 14/9

Ragshot Park, Surrey
March 26. 1863

My dear Sir,

I have read and carefully considered the reasons contained in your Memorandum of dissent from the proposed Report of our Committee on the mode of appointing the Professors of the Army Medical School.-

I regret exceedingly that any difference on so important a point should exist among men whose only object is the success of the School, and I should still hope that, on further consideration of the subject, you may be led to see the ~~expediency~~ propriety of permanent over temporary

temporary appointments in securing experienced and efficient teachers.-

I do not mean at present to go into an examination of your reasons, but I think it right to make one or two points in your Memorandum.-

You commence by assuming that the recommendation by the Committee to make the appointment of the Professors permanent would be "a change in the organization of the School".- Now this is not so:- on the contrary permanent appointments, after proved competency as teachers and trial of five years, was in reality the intention of Lord Herbert, and of those whom he consulted on the organization of the School.- Lord Herberts intention is clearly explained in a letter to Mr. Parkes on the subject from which the following is an extract.- "I propose to offer the appointments (including to the Professorships of Medicine and Surgery) to our own Officers for five years, with power of reappointment.- This would be, or rather my successor, to make a change in the not improbable event of a first rate man turning out a second rate Lecturer".- A copy of Lord Herberts letter will I presume be found at the War Office- it is dated January 19th 1860.- Lord Herberts intention was clearly to keep a good teacher when he found one. It was only when a Professor proved incompetent on trial that he meant to change him.-

It is for therefore not the majority of the Committee who desire to change the organization

organization of the school" by making the appointments terminate necessarily at the end of five years.-

Such only notice at present me by the reasons which you bring prominently forward against the permanent appointment of the Professors:- This is the frequent changes in the character of tropical diseases requiring "large and recent experience in our most important colonies and with experience of an army in the field".-

To this I would remark, in the first place, that such rapid changes (as you allude to) in tropical diseases are not, I believe, born out by experience, and that, even should they occur,

a

a Professor who had had persons experienced in such diseases would soon become acquainted with the nature of such changes of type and the requisite modification in their treatment, through the medium of the abundant medical literature of tropical diseases which is constantly issuing from the press both in this and foreign Countries.

Besides how much more practical experience was possible for one man to have obtained of all our "principal Colonies" I am at a loss to Comprehend.

I wish not, as I have said, to enter further into the other reasons adduced in your Memorandum, nor your plan of

of ~~finding~~ securing experienced teachers; but I
cannot help observing ~~that~~ from the whole
tenor of your memorandum ~~gives the~~
~~the impression~~ that you are not suffi-
ciently ~~alive to~~ impressed with the difficulty of finding
good teachers, nor to the importance
of keeping them when they are found.
If lately as the teachers are changed
every five years, so certainly will, I
am convinced, the destruction of the
School be the result.—

As your views differ so entirely
from the rest of the Committee on the
subject of the mode of appointing the
Professors, it will be necessary that you
should adopt one of two methods of
expressing them,— either to let them be
incorporated

incorporated in the body of the Report,
in order that the Committee may have
the opportunity of ~~replying~~ examining & replying to them;— or
to retain them in their present form as
a memorandum of dissent.— In this
latter case it will not be competent
for ~~the rest of~~ the Committee to reply,
but it will be quite competent for me
as President to do so in the form of a
memorandum ~~of reply~~, to be appended
with yours to the Report.—

This I should consider it my duty
to do and should then discuss & reply the
various ~~points of~~ reasons for your dissent.—
But I would again ~~repeat~~ express the hope
that on maturely reconsidering the
whole subject, and seeing that the
permanent

permanent appointment of the Professor was the original intention of Lord Herbert, you may feel inclined to withdraw your dissent. – I can safely assure you that such a termination of our difference would afford very great pleasure to the Committee and to every one of its members more than to

Yours very faithfully,